

Social Media in Emergencies: An examination of government accountability for risk communication and warning

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Social Media in Emergencies: An examination of government accountability for risk communication and warning

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Social media, Web 2.0, risk management, risk communication, risk governance, risk controls, policy, regulatory system, law of negligence, duty to warn, obvious risks, good faith, social contract theory, risk society, accountability, legal accountability, institutional risk, emergency management, statutory authority liability, National Strategy for Disaster Risk Reduction, shared responsibility, policy cycle, legal risk, responsibility

Abstract

Social media is an increasingly important platform for warning employed by statutory authorities in emergency situations. However, anecdotal evidence suggests that there are legal concerns surrounding its implementation. In light of these concerns, and in the knowledge that they may act as a barrier to implementation, this thesis poses two key questions. The first examines in what circumstances are statutory authorities within the Australian emergency management sector likely to be held legally accountable for warning generally, and warning through social media specifically? The investigation of this question involves an analysis of responsibilities for the dissemination of warning which are incorporated into the regulatory system. The corollary of responsibility is accountability. To answer the research question, the investigation focuses on legal accountability in the context of the law of negligence.

The examination of social media falls within a broader research context of the role of risk communication and warning in emergencies. The provision of risk communication and warning to the community is only one aspect of emergency management in Australia. However, as identified within the National Strategy for Disaster Resilience, it is a key area for action. Risk communication and warning is also a fundamental tool to mitigate and control risk. Supported by current theory and principles of good practice, the second research question examines the extent to which warning and risk communication are embedded into Australia's regulatory system for emergency management.

A theoretical narrative underpins the thesis. This narrative provides a normative platform from which to investigate the research questions. For example, the narrative incorporates social contract theory. Social contract theory explores ideals of the legitimate roles of government and citizens in society. It therefore provides a basis for ascertaining the share of responsibility each should take in the context of warning in emergencies. Social contract principles also provide a normative basis for the reasonable standard of behaviour that is expected of each party. It is noted in relation to the reasonable standard of behaviour embedded in the law, that government have

limited resources and are required to balance public and private interests. Concessions are therefore afforded to government which, when coupled with statutory immunities, make it less likely that they will be held legally accountable for warning. Consequently, the thesis questions whether further accountability mechanisms are required to meet policy objectives of disaster risk reduction and resilience.

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Dated 12 June 2017

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Contents

Chapter One: Introduction	11
Thesis objectives	11
Contextual Background	14
A gap in the literature on social media liability	21
A gap in the literature on responsibility and accountability for warning.....	25
Statement of the Research Problem.....	27
Methodology	27
Definition of Key Terms	31
Synopsis of Chapters.....	38
Chapter Two: Risk Management.....	44
Introduction.....	44
The risk society: moves to a risk based framework	45
What is a risk?	48
Natural hazards as a risk source	49
Risk Management.....	51
Risk ownership	53
Risk Governance: the role of law in the risk management process	56
Risk Management: Establishing the risk context	58
Risk Assessment	61
Risk Treatment	65
Conclusion.....	67
Chapter Three: Risk Communication.....	69
The role of trust in risk communication	71
The role of communication in risk management	72
Ineffective communication	74
Defining risk communication and warning	75
Planning and governance: risk communication and warning	78
Principles of good practice in risk communication: the detail.....	79
Challenges of risk communication	80
Characteristics of Government Agencies as social stations	83
Sender characteristics	84
Trust and risk communication.....	95
Conclusion.....	98

Chapter Four: Establishing the risk management context.....	101
Social contract theory: an introduction.....	103
Risk Society.....	108
Regulation of risk.....	110
Technological influences on modalities for communication: Social Media	116
Conclusion.....	120
Chapter Five: Risk communication and warning in the Australian emergency management regulatory system	126
Defining the regulatory system and its components	128
Methodology: Content Analysis	129
Regulatory components captured.....	133
The role of governance components in the regulatory system	135
A Hierarchy of Instruments	137
Roles and obligations within components: ‘functions’, ‘powers’ and ‘responsibilities’	143
Content Analysis Results.....	145
Question 1: Does the current regulatory system incorporate risk or public communication and information and warning within governance components?.....	145
Question 2: Are responsibilities for public communication, more particularly warning apparent in regulatory components?	154
Question 3: Is the need to use, and / or responsibilities for the use of social media present in regulatory system components?	160
Conclusion.....	164
Chapter Six: The law of negligence.....	168
Understanding the law of negligence.....	170
The role and function of torts and negligence.....	172
Social contract theory and the role of negligence	174
Applicability of the law of negligence to the state	176
Doctrinal analysis of the law of negligence	179
Case law on warning	189
Establishing a duty of care in the warning cases.....	190
Breach of a duty of care	195
Damage.....	205
Conclusion.....	213

Chapter Seven: Negligence - Defences and Immunities	216
Curtailment of rights and social contract theory	217
Defences	221
Contributory negligence	222
Voluntary assumption of risks of natural hazards	230
Obvious risks and their effect on natural hazard warnings	232
Immunities	239
Conclusion.....	249
Chapter Eight: Warning through social media - a Queensland case study of legal accountability and liability	253
Social Media	255
Social media: providing social networks	256
Expectations of uptake and legal concerns	257
Incorporating social media into operations: costs, benefits, challenges..	259
Benefits of social media to the emergency management sector.....	260
Challenges for the emergency management sector and their legal consequences	264
Hypothetical Scenario.....	266
Long-standing issues in a new medium.....	268
New issues to law: A cry for help, misinformation, and monitoring	288
Conclusions	293
Chapter Nine: Conclusions and Recommendations.....	298
Part One	298
Part Two: What were the conclusions?.....	304
Research Question One	304
Research Question Two	306
New Issues in Law.....	318
Part Three.....	320
Findings of relevance to Shared Responsibility.....	320
Findings on the role of hard and soft law instruments	323
Avenues for Future Research.....	326
Bibliography	329

Chapter One: Introduction

Thesis objectives

This research focuses on warning in the emergency management context. It has two key objectives. The first is to address a specific question of the circumstances in which statutory authorities within Australia's emergency management sector are likely to be held legally accountable for acts and omissions in warning. The focus is on warning through social media, an emerging channel. This examination of legal accountability addresses anecdotal concerns and uncertainties as to how the law will be applied to emerging technologies. Unless addressed, these uncertainties may act as a barrier to implementation, or lead to a sub-optimal incorporation of social media, a potentially relevant modality for warning.

Dissemination of timely and effective warning to the community is fundamental to a citizen's ability to protect their own interests. Protecting their own interests means that citizens can take a share of responsibility for disasters and emergencies. Risk communication and warning, as a critical driver for shared responsibility between citizens and the state, ought to be firmly embedded in the regulatory system. To do so would create a strong institutional foundation. Consequently, the second, broader objective of the research is to determine the extent to which risk communication, warning and the use of social media, are embedded in Australia's emergency management regulatory system.

Providing a strong institutional foundation for risk communication requires not only its inclusion in the regulatory system. The regulatory system itself needs to align with principles of good practice for regulation and governance.¹ Principles of good practice in regulation and governance identify a requirement to include avenues for determining accountability in a regulatory system.² This

¹ See, eg, Martin Lodge and Lindsay Stirton, 'Accountability in the Regulatory State' in Robert Baldwin, Martin Cave and Martin Lodge, *The Oxford Handbook of Regulation* (Oxford Handbooks Online, 2010) 3 (The handbook offers definitions of accountability which when used in 'modern parlance', "signify the obligations of officials to account for their behaviour").

² Blythe McLennan and John Handmer, 'Sharing Responsibility Australian Disaster Management - Final Report For The Sharing Responsibility Project' (Bushfire CRC, 2014) 118, 130-131 (This report noted that 'engaging with good governance'...will be important for formulating processes to negotiate responsibility sharing in Australian Disaster Management); OECD, *The Governance of Regulators* (OECD Best Practice Principles for

includes regulatory systems for the management of emergencies, which operate at a time when 'performance most matters'.³ As will be explored in Chapter Three, incorporating accountability into the regulatory system can demonstrate legitimacy and help to foster a relationship of trust with the community.⁴ Trust in turn, plays 'a significant role in successful crisis management', and in the effectiveness of risk communication messages and the perception of risk.⁵

'Accountability' has several definitions.⁶ In this thesis, the primary objective is to address legal accountability, or the circumstances in which statutory authorities will need to justify their decisions relating to warning at law. When the justification for decisions is determined to be unreasonable against the legal standards of conduct expected at law, penalties and sanctions are applied.⁷ 'Accountability', is not only a legal concept. The term also refers to

Regulatory Policy, 2014) 27, 79-80, 88; Better Regulation Task Force, *Principles of Good Regulation* (2003) Crown Copyright, 1
<<http://webarchive.nationalarchives.gov.uk/20100407162704/http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/principlesleaflet.pdf>>.

³ Lina Svedin, *Routledge Studies in Governance and Public Policy: Accountability in Crises and Public Trust in Governing Institutions* (Routledge, 2012) 1-2 (The suspension of normal administrative conditions may be due to the fact that the rules 'are neither adequate nor appropriate' for the circumstances).

⁴ Svedin, above n 3, 1-3; See, eg, Mary Campbell, 'Restoring Trust in Government: A Cost-Effective Approach to the Cry for "Accountability"' (2003) 26(3) *The Journal for Quality and Participation* 44, 45 (The author highlights that accountability mechanisms will only operate to instil trust from the community where the measures taken are known to the community, therefore agencies need to deliver on what they say they will do and inform them they have fulfilled their commitment); Peri K Blind, 'Building Trust in Government in the Twenty-First Century: Review of Literature and Emerging Issues' (7th Global Forum on Reinventing Government, Building Trust in Government, 26-29 June 2007, Vienna, Austria) 3 (Blind, defines political trust as being 'the judgment of the citizenry that the system and the political incumbents are responsive and will do what is right even in the absence of constant scrutiny').

⁵ Svedin, above n 3, 4; Jeanne X. Kasperson et al, 'The social amplification of risk: assessing fifteen years of research and theory' in Nick Pidgeon, Roger E. Kasperson and Paul Slovic (eds), *The Social Amplification of Risk* (Cambridge University Press, 2003) 31; Marjolein B.A van Asselt and Ortwin Renn, 'Risk Governance' (2011) *Journal of Risk Research* 431, 439-440; Paul Slovic, 'Perceived Risk, Trust and Democracy' (1993) 13 (6) *Risk Analysis* 675, 676.

⁶ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 18; House of Lords, 'The Regulatory State: Ensuring Its Accountability Volume I' (Report, Select Committee on the Constitution, 6th Report of Session 2003-04, 2004) 19.

⁷ Carol Harlow, *State Liability Tort Law and Beyond* (Oxford University Press, 2004) 51 citing D. Oliver, *Government in the United Kingdom: The Search for Accountability, Effectiveness and Citizenship* (Open University Press, 1991); McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 18; Svedin, above n 3, 5 (Reasonableness in a disaster or crisis can take on a new meaning when agencies are not only tasked with managing the impacts of the disaster, but 'often find themselves victims' of

performance measures and practice standards that provide a benchmark against which to scrutinise and independently review performance.⁸ Together the variety of accountability mechanisms help to ensure that when an entity, such as a statutory authority has a share of responsibility for managing a risk, they carry out their roles in an effective manner.⁹

What becomes evident in this research is that there is a low likelihood of legal accountability for failures in warning under the law of negligence. Yet the potential for legal accountability can act to improve standards of warning and deter poor performance. In the alternative, the promise of independent review through coronial inquiries may act as a further deterrent. However, a coronial inquiry is not the most effective review mechanism.¹⁰ The thesis therefore suggests that further investigation into the incorporation of performance measures, which can be applied prospectively, is warranted. Without some form of accountability measures, there is a possibility that responsibilities embedded in legislation and policy objectives will not be met.¹¹

the disaster as well) Reasonableness in this thesis is adjudged under the laws of negligence.

⁸ Better Regulation Task Force, above n 2, 4; OECD, *Risk and Regulatory Policy: Improving the Governance of Risk* (OECD Publishing, 2010) 25 (The presence of accountability mechanism such as performance standards are seen as a positive element of risk based approaches); Lodge and Stirton, above n 1, 2,4 (Noting that measures for accountability in the form of audit measures may have limited applicability); House of Lords, 'The Regulatory State: Ensuring Its Accountability Volume I' (Report, Select Committee on the Constitution, 6th Report of Session 2003-04 (2004) 6, 14, 23 (Accountability can act as a 'control mechanism' for 'Government to achieve efficient and effective regulation', and inform of issues which can be implemented to refine and improve regulatory performance).

⁹ Campbell, above n 4, 44, 45-46.

¹⁰ Michael Eburn and Stephen Dovers, 'Learning Lessons from Disasters: Alternatives to Royal Commissions and Other Quasi-Judicial Inquiries' (2015) 74(4) *Australian Journal of Public Administration*, 495, 496-497.

¹¹ See, eg, Emergency Management Victoria, *National Review of Warnings and Information: Final Report* (Victorian Government, Melbourne, Cube Group, 2014) 5, 78, 81 (The National Review of Warnings suggests performance measures are required for measuring and evaluating the effectiveness of the content of warnings); Svedin, above n 3, 5; Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, Report 1 (2015) 6.

Contextual Background

Extreme weather and the increasing burden on the emergency management sector

To appreciate the context of study and to underscore the importance of this research¹² some background of the hazard context is required. In Australia and around the world the climate is changing.¹³ Natural hazards in the form of extreme weather events are increasing in intensity and frequency.¹⁴ This increase is predicted to continue.¹⁵ Problematically, extreme weather events affect communities and manifest as emergencies. The impacts and the emergencies that follow disrupt society¹⁶ and bring high social,¹⁷ cultural, environmental and economic costs.¹⁸ Increasing frequency of events, coupled with growing 'community susceptibility' and vulnerability to the impacts of the hazard,¹⁹ means that associated costs will continue to rise,²⁰ as will the burden on emergency management services.²¹

¹² See, eg, Dr Blythe McLennan et al, 'Negotiating risk and responsibility through law, policy and planning' (2014) 29(3) *Australian Journal of Emergency Management* 22, 22 (This article highlights the relevance of this type of work in light of increasingly extreme weather events and climate change).

¹³ A Reisinger et al, '2014: Australasia' in V.R Barros et al, *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects* (Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change) 1371, 1374.

¹⁴ Climate Council of Australia Pty Ltd, 'The Burning Issue: Climate change and the Australian Bushfire Threat' (2015); Climate Council of Australia, 'Counting the Costs: Climate change and Coastal Flooding' (2014); Reisinger et al, above n 13, 1371, 1375.

¹⁵ Climate Council of Australia Pty Ltd, 'The Burning Issue', above n 14; Climate Council of Australia, 'Counting the Costs', above n 14; Reisinger et al, above n 13, 1371, 1375.

¹⁶ United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction* (2009) 9
<http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf>.

¹⁷ Australian Business Roundtable for Disaster Resilience and Safer Communities, 'The economic cost of the social impact of natural disaster' Deloitte (2015) 12-13 (Social costs include intangible costs such as mental health, family violence, alcohol and drug misuse).

¹⁸ Stephane Hallegatte, 'The Indirect Cost of Natural Disaster and an Economic Definition of Macroeconomic Resilience' (Policy Research Working Paper 7357, World Bank Group, 2015) 3-4 (There are numerous direct and indirect costs in natural disasters); Insurance Council of Australia, *Catastrophe events and the community* (2016)
<<http://www.insurancecouncil.com.au/issue-submissions/issues/catastrophe-events>>.

¹⁹ Productivity Commission (Cth), *Report on Government Services 2016*, 'Volume D: Emergency Management' (2016) D.11.

²⁰ Australian Business Roundtable for Disaster Resilience and Safer Communities, above n 17, 12 (Total costs are expected to increase and average \$33 billion per year by 2050 in real terms).

²¹ Productivity Commission (Cth), *Report on Government Services 2016*, above n 19, D.11.

Faced with an increased burden for service delivery and to effectively target limited resources, natural hazards and their potential impacts are being framed in the language of risk.²² Where emergency management once focused on a 'hazard centred' and a 'response management' approach, it now embeds risk management practices.²³ The aim is to strategically target risks with unacceptable consequences.²⁴ Policy and strategic frameworks both locally and internationally employ the language of disaster risk reduction.²⁵ This is no more evident than in Australia. The *National Strategy for Disaster Resilience* ('NSDR'),²⁶ the Australian policy statement for managing disasters focuses on disaster risk reduction, which is to be achieved by building resilience and fostering a shared responsibility for disaster risk.²⁷

Sharing responsibility for disaster risk reduction

Although disaster risk reduction is a shared responsibility, government, and the statutory authorities it creates, have a role in managing emergency and disaster related risk.²⁸ Viewed from a normative perspective, through the lens of social contract theories, government's role in managing disaster risk is linked to its legitimate function as a protector of life and property.²⁹ Viewed from a risk management perspective, the role of managing emergency related risk stems from the allocation of tasks to government as a risk owner. To

²² Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide* (Australian Emergency Management Handbook Series, 2015) 4-5 (Also Australian Institute of Disaster Resilience (Cth), *National Emergency Risk Assessment Guidelines: Practice Guide* (Australian Emergency Management Handbook Series, 2015); John Salter, 'Risk Management in the Emergency Management context' (1997) 12(4) *The Australian Journal of Emergency Management* 22, 22 (The author identifies the paradigm shift which has occurred).

²³ Salter, above n 22, 22; Mal Crondstedt, 'Prevention, Preparedness, Response, Recovery – an outdated concept?' (2002) 17(2) *Australian Journal of Emergency Management* 10, 11.

²⁴ Salter, above n 22, 22; Crondstedt, above n 23, 11.

²⁵ See, eg, United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1.

²⁶ Commonwealth, Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011).

²⁷ Commonwealth, Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011).

²⁸ McLennan et al, above n 12, 22.

²⁹ John Locke, *Two Treatises of Government* (1823)

<<http://socserv2.socsci.mcmaster.ca/econ/ugcm/3ll3/locke/government.pdf>>; Dr James Alvey, 'Classical Liberal vs Other Interpretation of John Locke: A Tercentenary Assessment' (Refereed paper presented to the Australasian Political Studies Association Conference, University of Adelaide, 29 September- 1 October 2004) 14; Patricia Sheridan, *The Stanford Encyclopedia of Philosophy* (Summer 2014 Edition) 'Locke's Moral Philosophy' <<http://plato.stanford.edu/archives/sum2014/entries/locke-moral/>>.

manage risk effectively, government as a risk owner and protector of citizens is expected to employ an effective risk governance framework. Ultimately, this governance framework³⁰ sets out the institutional foundation for management of natural hazard and emergency related risk. The regulatory system, which forms part of this framework, incorporates components that set out policy, functions, responsibilities and accountabilities for action. In this thesis, the focus is on functions and responsibilities for emergency warning.

The fundamental role of risk communication

In managing risk, including disaster risk, communication plays a key, if not critical role.³¹ The use of risk communication and warning procedures act as a mitigation strategy or control tool which, when effectively employed, modify emergency related risk.³² For example, communication and warnings out to the community, which provide meaningful, timely, and appropriate information, can empower individuals.³³ The information received enables them to make choices and take a share of responsibility for protecting their own lives and assets.³⁴

Receipt of risk communication and warning in all phases of the disaster cycle is beneficial. In Australia, emergencies and disasters are managed in line with the comprehensive approach to emergency management, which identifies four phases of the disaster cycle.³⁵ In the early phases of the disaster cycle provision of risk communication, allow individuals to take preparatory measures to ensure that when disaster strikes they are ready.³⁶ In view of this

³⁰ The term 'risk governance' is a broad term, in this thesis the focus is on the institutions and regulatory aspects of a governance framework.

³¹ Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 1.

³² Ibid 1; Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines* (Australian Emergency Management Handbook Series: Handbook 10, 2nd Edition, 2015) 50-52.

³³ Commonwealth, Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 8.

³⁴ Ibid 7-8.

³⁵ See, eg, Australian Institute for Disaster Resilience, *Emergency management in Australia: Concepts and Principles*, Manual 1 (2004) 3-4; National Governors' Association, 'Comprehensive Emergency Management – A Governor's Guide' (Centre for Policy Research, 1979) 11-13; Crondstedt, above n 23, 10 (Noting that these phases are not necessarily distinct and linear phases in an emergency but may be fluid).

³⁶ See, eg, Dr I.M. McNeill & Professor J.M Boldero, 'Improving the role of hazard communications in increasing resident' preparedness and response planning' (Annual

knowledge, statutory authorities undertake community meetings, disseminate brochures,³⁷ and create information campaigns that identify preparatory measures.³⁸ During the response phase of a disaster³⁹ the receipt of warnings plays an immediate role in enabling an individual to make timely choices about feasible action. The receipt of a message in the appropriate format may mean the difference between life and death or extreme property damage. The key role of communication in the prevention phase of an emergency should not be discounted. However, it is responsibility and accountability for risk communication in the response phase of a disaster that is the focus of this thesis. The reason for this focus is that legal accountability will more likely be sought in wake of a natural disaster or emergency. Claims are likely to focus on a failure to issue warning or for errors in warning during an event that have subsequently resulted in harm to a member of the public.

Emerging technologies for warning: benefits and challenges

Information about natural hazard risk is disseminated through numerous channels. Within the regulatory system, emergency management plans, guidelines, protocols and public information plans address how risk communication ought to be managed and disseminated. Historically, dissemination has taken place over traditional channels or modalities of communication. In Australia, these modalities have included television, radio, press releases, door knocking, along with the use of Standard Emergency Warning Signal (SEWS), and Emergency Alert (EA).⁴⁰ These modalities remain highly relevant. However, emerging Web 2.0 technologies, such as

Project Report 2014-2015, Bushfire and Natural Hazards CRC) 4 (This report highlights the work currently being undertaken in Australia on how best to connect with the community prior to emergency to ensure readiness and preparation for disaster events); Naim Kapucu, 'Collaborative emergency management: better community organising, better public preparedness and response' (2008) 32(2) *Disasters* 239, 239, 250-251.

³⁷ McNeill & Boldero, above n 36, 3.

³⁸ See, eg, Queensland Fire and Emergency Service (Qld), *If it's Flooded, forget it* (11 March 2014) <<https://www.qfes.qld.gov.au/communitysafety/swiftwater/>>.

³⁹ Attorney General's Department & Emergency Management Australia, *Emergency Management in Australia Concepts and Principles* (2nd Edition, 2014) 17,19 (The creation of warning systems is expected to occur in the preparedness phases of a disaster whereas the dissemination of warning messages has been classified as a response activity).

⁴⁰ Attorney General's Department, *Australia's Emergency Warning Arrangements* (April 2013) 15-16.

Facebook, Twitter, YouTube and Instagram now provide new channels over which to disseminate warning information.

In terms of relevance to emergency risk communication, the uptake and use of social media by the community in everyday life is high⁴¹ and in emergencies, it is growing.⁴² In Australia in 2016, 95 percent of the population were reported as having a Facebook account, and 19 percent used a Twitter account.⁴³ Unlike traditional modalities for communication, in an emergency, Web 2.0 platforms are available and used on mobile devices.⁴⁴ The ability to access social media on mobile devices is highly beneficial to the sector as the platforms afford a readily accessible channel over which to disseminate communication.

Social media channels in their varied presentations are attractive to the public and expected to stay.⁴⁵ However, rather than supporting one way methods of communication⁴⁶ Web 2.0 technologies present a new communication paradigm for the emergency management sector. They support two-way communication.⁴⁷ The technologies allow users to post content, to create

⁴¹ See, eg, Sensis, *Sensis Social Media Report 2016: How Australian people and businesses are using social media* (1 June 2016)
<https://www.sensis.com.au/assets/PDFdirectory/Sensis_Social_Media_Report_2016.PDF>

⁴² Tomer Simon, Avishay Goldberg and Bruria Adini, 'Socialising in emergencies – A review of the use of social media emergency situations' (2015) 35(5) *International Journal of Information Management* 609, 609, 613; Dr Olga Anikeeva, Dr Malinda Steenkamp and Professor Paul Arbon, 'The future of social media use during emergencies in Australia: insights from the 2014 Australian and New Zealand Disaster and Emergency Management Conference social media workshop' (2015) 30(1) *The Australian Journal of Emergency Management* 22, 22; Australian Civil-Military Centre & The University of Adelaide, Australian Government, *Social Networking, Social Media and Complex Emergencies* (Issues Paper, June 2014) 4.

⁴³ Sensis, above n 41, 7.

⁴⁴ Ibid 29 (72% of users prefer to access social media over their smartphone).

⁴⁵ Anikeeva, Steenkamp and Arbon, above n 42, 22.

⁴⁶ Connie M White, *Social Media, Crisis, Communication and Emergency Management: Leveraging Web 2.0 Technologies* (CRC Press, 2012) 131; Alisa Kongthon et al, 'The Role of Twitter during a Natural Disaster: Case Study of 2011 Thai Flood' (Paper presented at 2012 Proceedings of PICMET '12: Technology Management for Emerging Technologies (PICMET), Vancouver, 29 July - 2 Aug 2012) 2227.

⁴⁷ See, eg, White, above n 46, 131; Kongthon et al, above n 46, 2227; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 3-4; Jesper Falkheimer and Mats Heide, 'Strategic communication in Participatory Culture From One- and Two-Way Communication to Participatory Communication through Social Media' in Derina Holtzhausen and Ansgar Zerfass, *The Routledge Handbook of Strategic Communication* (Taylor and Francis, 2014) 342 (Two-way communication suggests the platforms are more democratic); Regina E. Lundgren and Andrea H McMakin *Risk*

communities or social networks that converse on diverse topics of interest.⁴⁸ As will be examined in Chapter Three, user generated content and two-way communication are beneficial as they facilitate greater participation. However, two-way communication is proving to be disruptive for a sector that has traditionally engaged in orderly, one-way, broadcast messaging.

That social media is important to the community and the sector, is evidenced by its ability to facilitate social networks and the exchange of information. These properties of social media can promote social capital and community resilience.⁴⁹ In times of crisis or emergency, information can rapidly cascade across social media networks, bringing messages to many sectors of the community. In some cases, social media may provide the most appropriate channels for some, if not all of the members of an at-risk community.⁵⁰ Accordingly, the channels require serious consideration for utilisation by the emergency management sector.

Emerging technology for warning: challenges and legal concerns

Alongside the benefits that social media channels may bring to emergency managers, they also bring challenges.⁵¹ Some of these challenges will be addressed in the hypothetical case study in Chapter Eight. If the challenges are not effectively managed, there is a concern or uncertainty as to whether

Communication: A Handbook for Communicating Environmental, Safety and Health Risks (John Wiley & Sons Ltd, Inc, 2013) 283.

⁴⁸ Timothy L. Sellnow and Matthew W. Seegar, *Theorizing Crisis Communication* (Wiley, 2013) 128; Akemi Takeoka Chatfield, Hans J. (Jochen) Scholl and Uuf Brajawidagda, 'Tsunami early warnings via Twitter in government: Net-Savvy citizens' co-production of time-critical information services' (2013) 30 *Government Information Quarterly*, 377, 384; Adam Crowe, *Disasters 2.0 The Application of Social Media Systems for Modern Emergency Management* (CRC Press, 2012) 9.

⁴⁹ Fran Norris et al, 'Community Resilience as a Metaphor, Theory, Set of Capacities and Strategy for Disaster Readiness' (2008) 41 *The American Journal of Community Psychology*, 136, 137-139.

⁵⁰ See, eg, John H Sorensen, 'Hazard Warning Systems: Review of 20 Years or Progress' (2000) 1(2) *Natural Hazards Review* 119, 119-122; Denise C, Walker, *Mass Notification and Crisis Communication: Planning, Preparedness and Systems* (Taylor and Francis, 2012) 37, 37-38; Chatfield, Scholl and Brajawidagda, above n 48, 384; Crowe, *Disasters 2.0*, above n 48, 9; Sensis, above n 41, 16 (Reflecting on the statistics, whether the channels are appropriate will depend on the demographic of the community – where there is a young to middle age population social media may be the most appropriate channel for communication); Hazelwood Mine Fire Inquiry, 'Hazelwood Mine Fire Inquiry Report' (2014) 384, 387, 400 (Social media will not be appropriate in all circumstances).

⁵¹ Department of Homeland Security, 'Using Social Media for Enhanced Situational Awareness and Decision Support: Virtual Social Media Working Group and DHS First Responders Group' (June 2014) 5, 8, 29.

legal accountability, and liability will result, thereby posing a legal risk for statutory authorities.⁵²

These legal concerns are reflective of the growing incidence of action across many areas of law in the wake of disasters.⁵³ As the growth in disaster law indicates, legal actions in the wake of disasters reflect a shift in beliefs. That is, disasters are no longer solely 'Acts of God' and 'exceptional circumstances'.⁵⁴ Rather the public sees them as phenomena capable of prediction, greater management and mitigation.⁵⁵ Phenomena for which government, as having some share of the responsibility, need to be held to account.

When statutory authorities are perceived to have 'obligations' and responsibilities in emergency management and warning,⁵⁶ which they fail to carry out and which result in loss, members of the public will seek to attribute blame.⁵⁷ As well as blame being sought through coronial inquiries and royal commissions, in Australia, citizens have also come together in the wake of flood and fire events to pursue class actions. Class actions have arisen against entities tasked with emergency management functions and responsibilities

⁵² A definition of legal risk is provided in the Definition of Key Terms section of this Chapter.

⁵³ Kristian Cedervall Laut, 'Legal Scholarship and Disasters' in Rasmus Dahlberg, Oliver Rubin and Morten Thanning Vendel, *Disaster research: multidisciplinary and international perspectives* (Routledge, ebooks, 2016) 98-99; Daniel A. Farber, 'Catastrophic Risk, Climate Change and Disaster Law' (2013) 16 *Asia Pacific Journal of Environmental Law* 37, 41-46, 53 (These legal actions can spread themselves across numerous areas of law throughout the disaster cycle).

⁵⁴ Laut, 'Legal Scholarship and Disasters', above n 53, 97-99, 104; See, also, David E. Alexander, 'Communicating earthquake risk to the public: the trial of the "L'Aquila Seven"' (2014) 72(2) *Natural Hazards* 1159; Daniel A. Farber, 'Tort Law in the Era of Climate Change, Katrina, and 9/11: Exploring liability for extraordinary risks' (2009) 43(3) *Valparaiso University Law Review* 1075, 1076.

⁵⁵ Laut, 'Legal Scholarship and Disasters', above n 53, 97-98, 104; See, also, Alexander, 'Communicating earthquake risk to the public', above n 54, 1159; Farber, 'Tort Law in the Era of Climate Change', above n 54, 1076.

⁵⁶ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 18; C. Wendling, J. Radisch and S. Jacobzone, 'The Use of Social Media in Risk and Crisis Communication' (2013) (OECD Working Papers on Public Governance, No. 25, OECD Publishing) 1-2, 8; John Carlo Bertot, Paul T. Jaeger, and Derek Hansen, 'The impact of policies on government social media usage: Issues, challenges, and recommendations' (2012) 29 *Government Information Quarterly* 30, 31-32 (Outlining some obligations and responsibilities with regards to social media.).

⁵⁷ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 15; Michael Eburn, 'Litigation for failure to warn of natural hazards and community resilience' (2008) 23(2) *The Australian Journal of Emergency Management* 9; Michael Eburn and Stephen Dovers, 'Legal Aspects of Risk Management in Australia' (2014) 4(1) *Journal of Integrated Disaster Risk Management* 61, 62-63.

within legislation.⁵⁸ In light of the growth of disaster law, Lauta asserts that 'liability after disasters is becoming as certain as death and taxes'.⁵⁹ Although the prospect of a claim arising may be becoming more certain, this thesis asserts that the likely satisfaction of claims under the law of negligence in Australia may be limited. The limited prospect of legal accountability may be reassuring to the sector. However, it is still important to ensure that prospective responsibilities for warning, which aim to achieve disaster risk reduction, are carried out effectively. Therefore, as previously highlighted, alternative accountability mechanisms that focus on performance may be required.

A gap in the literature on social media liability

As the introduction highlighted, there is an increasing uptake of social media technologies by members of the community. In part, as a response to this uptake, public expectations,⁶⁰ and the need to improve effective delivery, the emergency management sector is incorporating social media into the suite of channels used for warning.⁶¹ The incorporation of social media channels is occurring to varying degrees across multiple layers of government with disparate levels of expertise.⁶² Many emergency service agencies, as well as state and local government bodies, now at least have a presence on social

⁵⁸ See, eg, *Rodriguez & Sons Pty Ltd V Queensland Bulk Water Supply Authority (T/As Seqwater)* [2014] NSWSC 1771; *Rowe v AusNet Electricity Services Pty Ltd* [2015] VSC 232; *Matthews v AusNet Electricity Services Pty Ltd* [2014] VSC 663; *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701.

⁵⁹ Lauta, 'Legal Scholarship and Disasters', above n 53, 98-99.

⁶⁰ Ines Mergel, 'The social media innovation challenge in the public sector' (2012) 17 (3-4) *Information polity* 281, 283; Crowe, *Disasters 2.0*, above n 48, 81, 84; Victoria Government, *Victorian Emergency Management Reform*, White Paper (December 2012) 8; Roushi Low et al, 'Protecting the protectors: legal liabilities for the use of Web 2.0 for Australian Disaster response' (In Proceedings of the 2010 IEEE International Symposium on Technology and Society: Social Implications of Emerging Technologies, University of Wollongong, 7-9 June 2010) 416; Andrea Kavanaugh et al, 'Social media use by government: From the routine to the critical' (2012) 29 *Government Information Quarterly* 480, 489.

⁶¹ See, eg, NGIS, 'Social Media helping Emergency Management: Final Report' (Government 2.0 Taskforce, 2009) 5; Crowe, *Disasters 2.0*, above n 48, 88; Queensland Floods Commission of Inquiry, 'Queensland Floods Commission of Inquiry: Interim Report' (August 2011) 132-133; Western Australia, 'A Shared Responsibility: The Report of the Perth Hills Bushfire February 2011 Review' (2011) 124-125, 128; Victoria Government, *Review of the 2010-11 Flood Warnings and Response* (Final Report by Neil Comrie AO, APM, 1 December 2011) 7, 80 (Since 2009 there has been a call for active engagement with social media on the part of emergency management).

⁶² Hughes et al, above n 62, 1513 (The variability of usage of social media is a phenomenon noted in the United States); Anikeeva, Steenkamp and Arbon, above n 42, 23 (Noting considerations of slow adoption in some organisations in Australia).

media. This presence is primarily in the form of Facebook and Twitter accounts; however, even where accounts exist, the capability to disseminate warning and communicate is not always fully developed.⁶³ As adverted to, anecdotal evidence suggests a lack of development of social media capabilities is in some part, due to concerns and uncertainty over legal implications stemming from its use.

Concerns and uncertainty as to legal accountability

These concerns are problematic. A threat of legal action for example, may make the sector 'cautious and slow to issue warnings'.⁶⁴ A lack of adoption and capability development may hinder uptake of communication modalities that could inform community members of hazard impacts in a timely manner. Uncertainty over legal implications is also problematic as it can lead to over compliance or under compliance in line with 'perceived' responsibilities.⁶⁵ Inappropriate levels of compliance in turn can lead to a less than optimal or efficient outcome⁶⁶ and opens the door to economic cost and potential liability.⁶⁷

When uncertainty arises, it suggests a gap in knowledge exists. This gap may be due to a lack of research and understanding of the circumstances in which legal accountability will be imputed for social media usage in warning. It may also stem from a failure in current social media policies and guidelines to identify clearly, the legal basis for employing good practice principles. Alternatively, it may arise due to a gap in training. Of these three possibilities, the first two are the focus of this research.

⁶³ Anikeeva, Steenkamp and Arbon, above n 42, 23.

⁶⁴ Stephen Dovers and John Handmer, *Handbook of disaster policies and institutions: Improving emergency management and climate change adaptation* (Routledge / Earthscan, 2nd ed, 2013) 173.

⁶⁵ Simon Halliday, Jonathan Ilan, Jonathan & Colin, Scott, 'The Public Management of Liability Risks' (2011) 31(3) *Oxford Journal of Legal Studies*, 527, 527; Richard Craswell, and John E Calfee, 'Deterrence and Uncertain Legal Standards' (1986) 2(2) *Journal of Law, Economics & Organization*, 279, 279-280.

⁶⁶ Halliday, Ilan & Scott, above n 65, 527, 527-528; Craswell and Calfee, above n 65, 298-299; Dovers and Handmer, *Handbook of disaster policies*, above n 64, 173.

⁶⁷ Halliday, Ilan & Scott, above n 65, 527, 538-544.

The gap in policies, guidelines and research

An examination of the literature, policy, plans and guidelines, which guide dissemination of warning and the use of social media by government, reinforces that a gap in knowledge and doctrine does exist.⁶⁸ Instruments that support operational activity for warning and social media use are evident.⁶⁹ However, few are based on the most recent research and many fail to explicitly address legal issues, such as negligence, which might arise. Alternatively, they fail to link good practice with a legal rationale for action. To incorporate a legal rationale for action would reinforce the need to integrate certain activities into practice.

With gaps apparent in the policy and guidelines and legal uncertainties apparent, there is a need for research to fill this gap. Although there is a growing pool of literature on the benefits, challenges and patterns of use of social media channels in emergencies,⁷⁰ there is little peer-reviewed literature

⁶⁸ See, eg, Terry Flew et al, 'Support Frameworks for the Use of Social Media by Emergency Management Organisations: Policy Report' (13 November 2015) QUT Digital Media Research Centre, Brisbane, 4 (Noting the need for a national social media framework).

⁶⁹ See, eg, *Emergencies (ESA Social Media Policy) Commissioner's Guidelines 2011* (ACT); ACT Government, *ACT Government Social Media Policy Guidelines*, Version 1.0 (March 2012); Queensland, *Official Use of social media policy* (2012); Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>>; Public Service Commission (Vic), *Guidance for Use of Social Media in the Victorian Public Sector* (2010); Department of Business and Innovation (Vic), *Government 2.0 Projects in VPS: An introduction to managing risks* (2010); Victoria, *VPS Gov 2.0 Risk Register and Management Plan* (2010) <<http://www.vic.gov.au/blog/social-media-guides/victorian-public-service-government-2-0-risk-register-management-plan/>>; New South Wales Police Force, *Public Affairs Branch Official Use of Social Media Policy 2013* (2013); Northern Territory, *Web 2.0 for NT Public Servants (NTPS) Guidelines*, Version 1.2 (2013); Department of Finance (WA), *Social Media Guidelines* (September 2012); Government of South Australia, *Social Media: Guidance for Staff and Agencies* (2013) <http://files.oper.sa.gov.au/files/social_media_guideline_final.pdf>.

⁷⁰ Chatfield, Scholl and Brajawidagda, above n 48, 385; Axel Bruns and Jean Burgess, 'Crisis Communication in Natural Disasters: The Queensland Floods and Christchurch Earthquakes' in Katrin Weller et al (eds), *Twitter and Society* (Peter Lang, 2014) 379; Deanne Bird, Megan Ling and Katharine Haynes, 'Flooding Facebook – the use of social media during the Queensland and Victorian floods' (2012) 27(1) *The Australian Journal of Emergency Management* 27; Amanda Lee Hughes and Leysia Palen, 'Twitter Adoption and Use in Mass Convergence and Emergency Events' (Proceedings of the 6th International ISCRAM Conference – Gothenburg, Sweden, May 2009); Terry Flew et al, 'Social media and its impact on crisis communication: Case studies of Twitter use in emergency management in Australia and New Zealand' (Paper presented at ICA Regional Conference: Communication and Social Transformation, 8-10 November 2013, Shanghai, China) 5;

regarding the circumstances in which liability will arise. Moreover, there is little literature that specifically links the use of social media in warning to the law of negligence.⁷¹ Where there is some examination of social media liability, jurisdictional differences mean the findings of this literature are not directly applicable to the Australian context.⁷² A gap in policies, guidelines and research suggests that Australian based research is required.

Application of research outputs

As this section of the thesis has highlighted, it is important to incorporate legal issues and the legal rationale for action into social media policies and guidelines. The outputs of this research provide a framework for carrying out this process. To incorporate legal issues means that not only do the instruments describe how to carry out effective risk communication. When underpinned by legal research, instruments may act to limit institutional risk arising out of social media usage. Because of the dynamic nature of the law,⁷³

Crowe, *Disasters 2.0*, above n 48, 9; M Irons et al, 'Social Media, Crisis Communication and Community-Led Response and Recovery: An Australian Case Study' (Proceedings of the Research Forum at the Bushfire and Natural Hazards CRC & AFAC conference, Wellington, 2 September 2014).

⁷¹ Sharon Christensen, Bill Duncan and Amanda Stickley, 'Shifting Paradigms of Government Liability for Inaccurate Information' (2008) 15(2) *eLaw Journal*, 185; (Noting the issues being brought before the courts are primarily in the nature of private / public issues in employment relations, as well as defamation, see, eg, Lucy Carter, 'Social media defamation cases on the rise, as lawyers tell people to think before they tweet', *ABCNews* (online), 25 August 2015 <<http://www.abc.net.au/news/2015-08-25/social-media-defamation-cases-on-the-rise/6723328>>; Michael Eburn, 'The emerging legal issue of failure to warn' (2012) 27(1) *Australian Journal of Emergency Management* 52, 52; Michael Eburn, *Emergency Law* (Federation Press, 2015) (Although Michael Eburn covers a lot of the field of Emergency Law in Australia, even his work does not include an in-depth review of warning, or of social media).

⁷² See, eg, A Scolobig, 'The dark side of risk and crisis communication' (2015) 3 *Natural Hazards and Earth System Sciences Discussions* 2739; Robert P. Hartwig and Claire Wilkinson, 'Social Media, Liability and Insurance' (Insurance Information Institute, December 2011); Kar-Wai Tong, 'Online Legal Risk in Social Media: Lessons from a Few Court cases in Hong Kong' in Allan H.K Yuen et al (eds), *New Media, Knowledge Practices and Multiliteracies* (Springer, 2014); Alexander, 'Communicating earthquake risk to the public', above n 54, 1159 (Noting criminal liability for misleading information); Edward S Robson, 'Responding to liability: Evaluating and Reducing Tort Liability for Digital Volunteers' (2013) Woodrow Wilson International Center for Scholars, Washington DC, Policy Series 1.

⁷³ Derek Hansen, John Carlo Bertot & Paul T Jaeger, 'Government Policies on the Use of Social Media: Legislating for Change' (Proceedings of the 12th Annual International Conference on Digital Government Research, College Park, 12-15 June 2011) 131 (The author comments that 'many of the law which govern social media are to some extent antiquated' and will required updating).

it is important to ensure pre-existing policies and guidelines are up to date and in line with the most recent research.

A gap in the literature on responsibility and accountability for warning

Despite the key role of risk communication, the emergency management sector is often criticised for failing to communicate risk to the public in an effective manner.⁷⁴ Irrespective of whether public expectations of the sector are too high, because of the critique, considerable research to improve warnings has been undertaken. A focus of the regulator has been on the creation of more effective content to influence the perception / response process of individuals.⁷⁵ However, aside from sector reports and post disaster inquiries there has been little academic examination or evaluation of the regulatory system, as the institutional foundation for warning in emergencies in Australia. This includes a lack of analysis as to the extent to which risk communication and warning are embedded into hard and soft law instruments.⁷⁶ This is despite a statement at the national level of the fundamental importance of communication to achieving core policy objectives in the disaster context.⁷⁷

⁷⁴ Hazelwood Mine Fire Inquiry, above n 50, 31, 384; Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11, 6-7; Fire Services Commissioner (Vic), *Review of community responses to recent bushfires* (2013) 38; Monash Injury Research Centre, *Review of Recent Australian Disaster Inquiries* (2011) <<http://www.em.gov.au/AboutAGD/Authorityandaccountability/Committeesandcouncils/Documents/Review%20of%20Recent%20Australian%20Disaster%20Inquiries%20-%20final%20report.PDF>>.

⁷⁵ See, eg, Project which include, Professor Vivienne Tippett, *Connecting communities and resilience: A multi-hazard study or preparedness, response and recover communications* <<http://www.bnhcrc.com.au/research/resilient-people-infrastructure-and-institutions/239>>; Associate Professor Jennifer Boldero, *Improving the role of hazard communications in increasing residents preparedness and response planning* <<http://www.bnhcrc.com.au/research/resilient-people-infrastructure-and-institutions/238>>; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11.

⁷⁶ See, eg, Emergency Management Victoria, *National Review of Warnings and Information*, above n 11; Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11.

⁷⁷ Commonwealth, Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 8.

In 2014, a joint report by the International Federation of Red Cross and Red Crescent Societies and United Nations Development Program provided findings from the largest comparative study of effective legislation for disaster risk reduction.⁷⁸ Following on from this report in 2015, a 'Checklist on Law and Disaster Risk Reduction' was developed.⁷⁹ The aim of the Checklist is to provide 'guidance' on 'bringing national legal frameworks in line with international standards' and frameworks, such as the *Sendai Framework for Disaster Risk Reduction 2015-2030* ('*SFDRR*').⁸⁰ A framework that Australia endorses. Together, the findings of the report and the checklist identify key activities for warning in the disaster context.⁸¹ One area of focus is whether a 'country's laws establish clear procedures and responsibilities for early warning'.⁸²

The findings of the joint report align with practice standards for risk management that stipulate the need to plan for risk communication.⁸³ In the risk management context, planning for risk communication includes the need to identify:

- i. The objectives of specific communication
- ii. Who will be involved
- iii. How the channels will work
- iv. What will be communicated and
- v. How the information will be communicated.⁸⁴

Together the international reports and the risk literature suggest there is a need to examine Australia's regulatory system components for warning. The aim being to determine whether they satisfy principles of good practice. If the

⁷⁸ IFRC & UNDP, 'Effective law and regulation for disaster risk reduction: a multi country report' (New York, 2014) (Mary Picard).

⁷⁹ International Federation of Red Cross and Red Crescent Societies, 'The checklist on law and disaster risk reduction' (Pilot Version, March 2015).

⁸⁰ International Federation of Red Cross and Red Crescent Societies, above n 79, 4; United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1.

⁸¹ IFRC & UNDP, 'Effective law and regulation for disaster risk reduction', above n 78, 33-34, 36 (Both establishment and operation of early warning systems should be supported, along with authority for warning and decision making, although some countries will differ as to how the frameworks are put in place).

⁸² International Federation of Red Cross and Red Crescent Societies, above n 79, 3.

⁸³ Standards Australia, *Communicating and consulting about risk* (HB 327:2010)18-20.

⁸⁴ Ibid.

components meet good practice, it is more likely that they will provide a strong institutional framework, and act as effective procedural controls, for managing natural hazard and emergency related risk. The implementation of good practice measures may also demonstrate that Australia is attempting to meet its commitments under the SFDRR.⁸⁵

Statement of the Research Problem

The objectives of the thesis are to address two key questions. The first, investigates a particular problem in relation to social media, an emerging Web 2.0 technology relevant to the field of emergency warning. That is, **in what circumstances is a statutory authority within the emergency management sector likely to be held legally accountable for acts and/or omissions in warning?** As social media is one possible channel for warning, an initial understanding of the likely legal accountability for warning more generally is fundamental. Once this understanding is established, the principles are applied to a specific case study of social media.

The second question incorporated into the research problem is underpinned by broader and interlinked considerations regarding risk communication and warning more generally. That is, **due to the fundamental importance of risk communication and warning in an emergency, to what extent is it embedded into the soft and hard law instruments that make up the emergency management regulatory system?**

Methodology

Part One: Development of a theoretical narrative

To address the research questions, the thesis is divided into three parts. These distinct parts utilise theoretical and doctrinal research respectively. The first part develops an interdisciplinary theoretical narrative⁸⁶ or framework. The narrative draws on technical risk management standards, such as the Risk

⁸⁵ Although the United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1.outlines commitments, it is not 'legally binding or enforceable' on supporting nations.

⁸⁶ Lauta, 'Legal Scholarship and Disasters', above n 53, 100, 104 (Interdisciplinary research is required as 'disasters are interdisciplinary objects and studying their legal implications requires fundamental knowledge of the affected societies, technologies and natures').

Management - Principles and guidelines (AS/NZS ISO 31000:2009)⁸⁷ and the 'National Emergency Risk Assessment Guidelines'⁸⁸ which have been adopted by the emergency management sector in Australia. Part One draws on the theory of risk communication and theory which identifies normative propositions and good practice as to how risk should be managed and governed.⁸⁹

Normative propositions and considerations of principles for good practice used in this thesis derive from a variety of fields. They incorporate social contract theory, sociological theory on the risk society, as well as current research that examines drivers for regulatory reform, and good practice for regulatory design. By incorporating technical standards and theory, the research extends beyond the core legal research methodology of doctrinal analysis into 'a broader cross-disciplinary research framework'.⁹⁰ As will be examined below in the Synopsis of Chapters, the first stage of the research is captured in Chapters Two to Four of the thesis.

Part Two: A legal analysis

Section One: Exploring roles and responsibilities incorporated in the regulatory system for emergency management

The second part of the thesis addresses the research questions through a blend of doctrinal analysis and content analysis. The second part consists of two sections. The first section addresses the broader research question and identifies the extent to which responsibilities for risk communication and warning are present in the current regulatory system.⁹¹ This section involves

⁸⁷ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009).

⁸⁸ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines* above n 32; Australian Institute for Disaster Resilience (Cth), *National Emergency Risk Assessment Guidelines* (Australian Emergency Management Handbook Series, 2nd ed, 2015).

⁸⁹ Terry Hutchinson, *Researching and Writing in Law* (Thomson Reuters, 3rd ed, 2010) 97; Terry Hutchinson and Nigel Duncan, 'Defining and Describing What we Do: Doctrinal Legal Research' (2012) 17(1) *Deakin Law Review* 83, 85.

⁹⁰ Hutchinson and Duncan, above n 89, 83, 85.

⁹¹ Kylie Burns, 'Judicial Use and Construction of Social Facts in Negligence cases in the Australian High Court' (Doctor of Philosophy, Griffith Law School, 2011) 34-35 (Burns' thesis, outlines application of content analysis to legal research in some detail).

an analysis of hard and soft law instruments relevant to the Australian emergency management context.⁹²

The most suitable methodology to employ to bring all the relevant regulatory instruments together for examination is content analysis. Incorporation of content analysis in this section extends the field of analysis beyond the traditional boundaries of doctrinal analysis. Doctrinal analysis ordinarily focuses on an examination of primary materials such as case law and hard law instruments (statute).⁹³ If the examination of the regulatory system is limited to statute, a true picture of the extent to which risk communication and warning are embedded into the regulatory system, would be absent.

As previously indicated, legislation is only one mechanism through which to implement policy objectives. As becomes evident in Chapter Five, legislation may only incorporate broad and high-level powers and functions. The policy intent, and more detailed responsibilities for warning and risk communication, will only become evident when soft law instruments (such as policy, plans and guidelines) are included in the analysis.⁹⁴ The use of content analysis provides a methodology that achieves this holistic approach. Content analysis provides a basis for the researcher to determine patterns as to where risk communication and warning appear in the hierarchy of components. It also provides a basis for determining the extent to which risk communication and warning are present across the regulatory system as a whole. A comparison of the findings of the analysis against international good practice facilitates an evaluation of Australia's emergency management regulatory system. The aim is to determine whether the system reflects the relevant principles.

⁹² *Legislation Act 2003* (Cth) s 7, 8 (Provides a definition of a legislative instrument).

⁹³ See, eg, Hutchinson and Duncan, above n 89, 113; McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 74.

⁹⁴ See, eg, Douglas Fisher, *Legal Reasoning in Environmental Law: A study of Structure, Form and Language* (Edward Elgar, 2013) 425 (Fisher labels these type of materials as 'para-legal' rules); McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 74 (Policies and strategic documents are often considered as vision statements rather than hard law instruments); Benedict Sheehy & Donald Feaver, 'Designing Effective Regulation: A Normative Theory' (2015) 38(1) *University of New South Wales Law Journal* 392, 401-402 (Each of these instruments is one component within the entire regulatory system).

Section Two: Examining legal accountability under the law of negligence in light of functions and responsibilities

The second section of Part Two, involves in-depth doctrinal analysis of the case law on negligence and the duty to warn. As indicated, social media is one channel through which to disseminate warnings. To determine the circumstances in which legal accountability will result from the use of social media, a broad understanding of legal accountability for warning is established in the first instance.

To understand the likelihood of legal accountability, this section examines in the first instance how responsibility for warning is shared between government and citizens. Doctrinal analysis then facilitates an understanding of the circumstances in which responsibilities encapsulated in regulatory components are likely to act as a sufficient basis for the formulation of a common law duty to warn. The section then examines the standards of conduct that a statutory authority must seek to achieve when exercising their duty of care, along with the further elements that must be established at law. Together, these findings provide a basis for understanding the circumstances that are likely to result in exposure to legal accountability for any failure in warning. Doctrinal analysis in this phase will add to the body of disaster law by highlighting the recent application of the law of negligence to the area of warning in the context of emergency.⁹⁵ The findings in this Part highlight that, due to the limited likelihood of liability, gaps in accountability for warning by statutory authorities may be apparent.⁹⁶ These gaps may need to be addressed through alternative mechanisms.

Having established an understanding of the broader warning context, a hypothetical case study of social media usage in a specific hazard scenario, applies the findings of section one and two. The case study acts as an exploratory device⁹⁷ to explore, describe⁹⁸ and analyse in what circumstances,

⁹⁵ Lauterbach, 'Legal Scholarship and Disasters', above n 53, 100.

⁹⁶ *Ibid.*

⁹⁷ Robert K Yin, *Case Study Research: Design and Methods* (Sage Publications, 3rd ed, 2003) 15.

⁹⁸ Victor Jupp (ed), *The Sage Dictionary of Social Research Methods* (Sage Publications, 2006) 20.

statutory authorities may be held legally accountable for failures in warning through social media. Part Three then addresses conclusions and recommendations which arise out of the thesis.

Definition of Key Terms

The following is a definition of key terms frequently used throughout the thesis. Further definitions relevant to specific parts are identified within the relevant sections.

Accountability

'Accountability' can attract a myriad of definitions.⁹⁹ In the context of discussions of government, accountability signifies 'the obligation of officials to account for their behaviour'.¹⁰⁰ Taking this definition further accountability has been defined as not only being 'liable or required to give account of or explanation for actions', it also includes a requirement, where relevant, to 'suffer the consequences, take the blame or undertake to put matters right if it should appear that errors have been made'.¹⁰¹ As previously identified in this Chapter, one 'contentious' forum for seeking accountability in Australia, is the invocation of a coronial inquiry or royal commission after a disaster or emergency.¹⁰²

In this thesis, however, it is legal accountability, which is the focus of examination. 'Legal accountability' refers to those circumstances where the need to account for behaviour, to take blame, is formally recognised at law and attracts sanctions to ensure matters are put right.¹⁰³ Under the law of negligence, the sanction is the requirement to pay compensation.¹⁰⁴ Compensation is paid to a party suffering any relevant harm; harm caused by

⁹⁹ House of Lords, 'The Regulatory State: Ensuring Its Accountability Volume I' (Report, Select Committee on the Constitution, 6th Report of Session 2003-04 (2004) 19-21 (As stated in this report – 'accountability' 'is a generic term, the precise definition of which depends on the circumstances', and in practice there may be 'multiple accountabilities' to varying parties including citizens).

¹⁰⁰ Lodge and Stirton, above n 1, 2.

¹⁰¹ Harlow, above n 7, 51.

¹⁰² Eburn and Dovers, 'Learning Lessons from Disasters', above n 10, 497-500.

¹⁰³ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 18.

¹⁰⁴ *Mahony v J Kruschich (Demolitions) Pty Ltd* (1985) 156 CLR 522, 527; Peter Cane, *Responsibility in Law and Morality* (Hart Publishing, 2003) 4, 22, 49-50.

the behaviour of an entity that has contravened accepted standards of conduct.

As well as legal mechanisms that examine considerations of accountability against obligations,¹⁰⁵ accountability mechanisms may take the form of performance measures and standards. Performance measures and standards act as a benchmark to scrutinise activity.¹⁰⁶ As well as acting as a benchmark for scrutiny, standards can be adopted proactively to guide the behaviour of an entity in line with relevant legislative and policy objectives.¹⁰⁷ It is in Chapter Nine, that a further benefit of employing performance standards is that they may act as an objective benchmark against which to defend actions taken.

Disaster / emergency

In Australia, an emergency is defined as:

An event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response.¹⁰⁸

While international frameworks appear to utilise the term disaster rather than emergency, in Australia the latter of the terms is preferred.¹⁰⁹ In Australia,

¹⁰⁵ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 18.

¹⁰⁶ OECD, *Risk and Regulatory Policy*, above n 8, 25 (The presence of accountability mechanism such as performance standards are seen as a positive element of risk based approaches); Lodge and Stirton, above n 1, 2, 4 (Noting that measures for accountability – in the form of audit measures may have limited applicability); House of Lords, 'The Regulatory State: Ensuring Its Accountability Volume I' (Report, Select Committee on the Constitution, 6th Report of Session 2003-04 (2004) 6, 14, 23.

¹⁰⁷ See, eg, Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework* (2014); Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11 (Reviewing application of the emergency management standards in Queensland).

¹⁰⁸ Australian Institute for Disaster Resilience, *Australian Emergency Management Glossary*, Manual 3 (1998) 38; See, also United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction* (2009) 9 <http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf> (A definition of disaster - The UNISDR defines 'disaster' as: A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources).

¹⁰⁹ Australian Institute for Disaster Resilience, *Australian Emergency Management Glossary*, Manual 3 (1998) x; Kathleen Tierney, 'Disaster Response: Research Findings and Their Implications For Resilience Measures' (2009) CARRI Research Report 6, 1-2 (Noting there can be large differences between disasters and emergencies, these differences, are such

however, although there are some differences in the legislative definitions of the terms across the jurisdictions,¹¹⁰ the terms disaster and emergency appear to be used interchangeably. This thesis also adopts this approach.

Emergency Management Sector

The term 'emergency management sector' is utilised throughout this thesis. The term includes all statutory authorities involved in the management of emergencies in Australia. This involvement may either come about through direct delivery of services or due to an organisation's responsibility for creating regulatory arrangements for the delivery of those services. A broad definition of the term aims to encompass not only the statutory authorities traditionally created by government to deliver emergency services, such as fire, police, ambulance, and state emergency services.¹¹¹ It also aims to include layers of governments that have a legislated role in emergency management, such as State, Territory and local government.¹¹² The examination of risk communication and warning will refer primarily to statutory authorities such as local government, fire, police and state emergency services. These entities are the ones primarily tasked with warning activity in an emergency.

Legal Risk

A 'legal risk' is the uncertainty that a statutory authority will be held legally accountable for acts or omissions, and will be exposed to sanctions that can manifest as fines, penalties, or compensatory damages. Uncertainty can arise in two areas, factual uncertainty and legal uncertainty.¹¹³ Legal uncertainty, which is the focus of this thesis, arises out of vagueness in the law, or

that it is not possible just to upscale from localised emergency to widespread disaster, but different thinking and understandings of processes and reactions is required).

¹¹⁰ National Emergency Management Committee (Cth), *National Emergency Risk Assessment Guidelines* (2010) 52; Emergency Management Australia, *Emergency Risk Management Applications Guide: Manual 5* (2nd ed, 2004) 48; *State Emergency And Rescue Management Act 1989* (NSW) s 4; *Emergencies Act 2004* (ACT) s 4, Dictionary; *Emergency Management Act 2004* (SA) (Notably here a significant or co-ordinated response is not part of the definition); *Emergency Management Act 2005* (WA) s 3; *Emergency Management Act 2013* (VIC) s 3; *Disaster Management Act 2003* (Qld) s 13(2)(c).

¹¹¹ Productivity Commission (Cth), *Report on Government Services 2016*, above n 19, D.4.

¹¹² *Ibid* D.3-D.5.

¹¹³ Tobias Mahler, 'Defining Legal Risk' (Proceedings of The Conference "Commercial Contracting for Strategic Advantage - Potentials and Prospects", Turku University of Applied Sciences, 2007) 18-21.

uncertainty as to how the law regulates, or should be applied to a given set of facts.¹¹⁴ For example, legal uncertainty may arise as to how the law of negligence will be applied in a certain circumstance. The uncertainty arises from the fact that determination of a claim in negligence will always depend on the facts of the particular case, which can bring about unpredictable and varied outcomes. Factual and legal uncertainty has led to formal post event enquiries following many natural disasters to assess the response of the emergency services sector to the hazard.¹¹⁵ In some cases, class action litigation has followed. This process is not only costly to the sector and the community; it also acts as a blame game and may 'convey a message of distrust of the emergency services'.¹¹⁶

Regulatory System

The definition of a 'regulatory system' in this thesis follows the holistic description set forth in the recent work of Sheehy and Feaver. Sheehy and Feaver describe a regulatory system as being made up of both a normative dimension (the policy) and a positive dimension (which contains the substantive rules aimed at putting the policy into practice).¹¹⁷ Each dimension is comprised of 'numerous interconnected and interdependent components or instruments'.¹¹⁸ These components include a mixture of soft and hard law instruments that contain the substantive rules that govern the conduct of actors who are subject to the system.¹¹⁹ What constitutes a soft or hard law instrument, and those, which are relevant to this examination of emergency management system in Australia, are defined in Chapter Five.

¹¹⁴ Ibid 18-21.

¹¹⁵ Eburn and Dovers, 'Learning Lessons from Disasters', above n 10, 495-496.

¹¹⁶ Ibid 500.

¹¹⁷ Sheehy and Feaver, above n 94, 392, 392-393, 399, 401 (Noting that the policy or normative dimension informs the positive dimension or the substantive rules to be put in place).

¹¹⁸ Sheehy and Feaver, above n 94, 392-393.

¹¹⁹ Donald Feaver and Benedict Sheehy, 'Designing effective regulation: a positive theory' (2015) 38(3) *University of New South Wales Law Journal* 961, 976.

Resilience

There are varied definitions of 'resilience'. The variety of definitions can be attributable to the disparate disciplines from which the term has emerged.¹²⁰ In the academic domain, including within Australia, the definition is the subject of increasing debate.¹²¹ As an internationally recognised instrument, and absent a comprehensive definition in Australia emergency management doctrine, the definition provided by the UNISDR is utilised for the purposes of this thesis. The UNISDR defines resilience as:

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.¹²²

A resilient community

A 'resilient community' is a community, 'that works together to understand and manage the risks that it confronts'.¹²³ One aim of the *National Strategy for Disaster Resilience* in Australia, as the national policy statement for emergency and disaster management, is to build community and organisational resilience.¹²⁴

¹²⁰ Norris et al, above n 49, 130; Patricia H. Longstaff, T. G Koslowski and W. Geoghegan, 'Translating resilience: A framework to enhance communication and implementation' (Symposium on Resilience Engineering, 2013); Melissa Parsons et al, 'The Australian Natural Disaster Resilience Index: Conceptual framework and indicator approach' (2016) (Report No, 157 Bushfire and Natural Hazards Co-operative Research Centre) 4-5.

¹²¹ Parsons, above n 120, 4-5.

¹²² United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction* (2009) 24

<http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf> (Although it is noted that resilience is far more complex and involved than this definition might suggest, and in noting that in Australia research is currently being undertaken to provide indicators of resilience, for the purpose of this thesis, the definition provided internationally is sufficient for the message that needs to be conveyed); See, also, Australian Institute for Disaster Resilience, *Australian Emergency Management Glossary*, Manual 3 (1998) 94 (The Glossary defines resiliency as – 'a measure of how quickly a system recovers from failures')

¹²³ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iv; Productivity Commission (Cth), *Report on Government Services 2016*, above n 19, D.30.

¹²⁴ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) ii.

Response

In Australia, the comprehensive approach is applied to emergency management. The approach includes four phases of emergency management, which are examined in Chapters Two, and Three. This thesis is primarily concerned with risk communication in the response phase of a disaster or emergency. The Australian Emergency Management Glossary defines response as:

- Actions taken in anticipation of, during, and immediately after an emergency to ensure that its effects are minimised, and that people affected are given immediate relief and support
- Measures taken in anticipation of, during and immediately after an emergency to ensure its effects are minimised.¹²⁵

Responsibility

There is little agreement on a single clear meaning of the term 'responsibility', or the degree of accountability and obligation that it entails.¹²⁶ A review of the literature on responsibility is beyond the scope of this thesis. However, in the context of law, the influential works of H.L.A Hart define a taxonomy of responsibilities.¹²⁷ Of particular relevance to this research are Hart's role responsibilities and liability responsibilities.¹²⁸ Role responsibilities are the 'tasks assigned to a person by agreement or otherwise' which it is their responsibility to, 'think about' and 'to make serious efforts to fulfil'.¹²⁹ The extent to which obligation or the likelihood that liability responsibility will attach to role responsibilities will vary.¹³⁰ Chapter Five examines this concept. Rather than the term responsibility, terms such as 'powers', 'functions' and 'duties' are

¹²⁵ Australian Institute for Disaster Resilience, *Australian Emergency Management Glossary*, Manual 3 (1998) 94.

¹²⁶ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management' above n 2, 17-19; Cane, *Responsibility in Law and Morality*, above n 104, 2 (Responsibility is 'a term used in many different senses both inside and outside of the law').

¹²⁷ See, eg, Peter Cane, 'Role responsibilities' (2016) 20 *Journal of Ethics* 279, 279; H.L.A Hart, *Punishment and Responsibility* (Oxford University Press, 1968) 211-212 (These include – role responsibility, causal responsibility, liability responsibility, and capacity responsibility).

¹²⁸ Hart, *Punishment and Responsibility*, above n 127, 211-212.

¹²⁹ *Ibid* 212-213.

¹³⁰ *Ibid* 215-217.

more commonly used in legislation to connote some form of responsibility. These terms are also defined and examined in Chapter Five.

Shared responsibility

In Australia, government states that emergency management and disaster risk reduction is a shared responsibility. This is evidenced by the inclusion of the term 'shared responsibility' in Australia's national strategy for managing disasters.¹³¹ There is no clear definition of the notion of shared responsibility, and considerations of how disaster risk should be shared is the subject of ongoing research in Australia.¹³² The basic premise of shared responsibility is that in order to build a resilience-based approach to disasters, there needs to be a whole of nation effort that involves 'an increased responsibility' for all.¹³³ Those to be involved include 'political leaders, governments, businesses, community leaders, the not-for-profit sector as well as communities, individuals and households'.¹³⁴ In this thesis, how responsibility for warning is, or ought to be shared, is informed by social contract theory and an examination of the law of negligence.

Social Media

The term 'social media' describes a variety of Web 2.0 platforms. The platforms are online systems and tools.¹³⁵ The tools are designed to 'facilitate interaction and connection',¹³⁶ the creation of user generated content,¹³⁷ and 'peer production'.¹³⁸ Without limiting the list of platforms, social media includes:

¹³¹ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011).

¹³² McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 5.

¹³³ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) ii, 5 (citing Victorian Bushfires Royal Commission Final Report 2010).

¹³⁴ *Ibid* 5.

¹³⁵ White, above n 46, 148; Low et al, above n 59, 411.

¹³⁶ Kavanaugh et al, above n 60, 482; B Fitzgerald et al, *Internet and E-commerce Law Business and Policy* (Thomson Reuters, 2011) 13; Terry Flew et al, 'Social media and its impact on crisis communication', above n 70, 5; Crowe, *Disasters 2.0*, above n 48, 9.

¹³⁷ Rodrigo Sandoval-Almazan and J Ramon Gil-Garcia, 'Government-Citizen Interactions Using Web 2.0 Tools: The Case of Twitter in Mexico' in Christopher Reddick and Stephen Aikins (eds), *Web 2.0 Technologies and Democratic Governance* (Springer, 2012) 235; Paul Henman, 'Governmentalities of Gov 2.0' (2013) 16(9) *Information, Communication and Society* 1397, 1397.

¹³⁸ Henman, above n 137, 1399.

blogs, microblogs (Twitter), wikis, social networking sites such Facebook, Myspace, Instagram, YouTube'.¹³⁹ Of the platforms, Facebook and Twitter are most commonly referred to in this thesis, as they are key social media channels employed for dissemination in Australian emergency management.

Synopsis of Chapters

As adverted to in the methodology the thesis is divided into three main parts. The present Chapter, as the introductory Chapter, describes the primary objectives of the research, the contextual background and offers key definitions utilised throughout the thesis.

Part One: Developing a theoretical narrative

Part One consists of three Chapters that focus on building the theoretical narrative for the research. Chapter Two, entitled 'Risk', firmly situates the research in the risk management domain. In Australia, the emergency management sector has adopted a risk based narrative. Therefore, an understanding of the risk management process and the key role that risk communication plays in that process is highly relevant to this research. The Chapter provides an overview of central concepts and key definitions relevant to risk management. It also identifies and explores the risk management standards relevant to the emergency management sector in Australia.

In the context of natural hazard and emergency related risk, the Chapter introduces the concept of risk ownership. Risk ownership in turn provides an understanding as to who should be responsible for managing certain risks in society, including emergency and natural hazard related risk. The Chapter highlights, that in managing risk and creating governance frameworks and their legal components, there will be numerous contextual factors which impact upon or constrain regulatory design. Some of the contextual factors relevant to the Australia context are explored in more depth in Chapter Four, 'Establishing the Risk Context'. A key element of Chapter Two is that it makes the role of law in the risk management process explicit.

¹³⁹ Kavanaugh et al, above n 60, 482.

Chapter Three, 'Risk Communication', builds on the links made explicit between the role of risk communication and the success of risk management in Chapter Two. The Chapter defines key terms. It also examines some of the criticism which has been levelled at the emergency management sector regarding its ability to effectively deliver risk communication and warning. What is recognised in this Chapter, is that there are challenges and complexities which impact on the delivery effective risk communication and warning. A particular challenge which is noted, are the numerous influences on the perception / response process of individuals in the community. The Chapter restates factors which act as positive levers for influencing the perception / response process. Links are then made between a number of these factors and the benefits of utilising social media for warning dissemination. An underlying theme in this Chapter, due to its links with accountability and effective risk communication, is the role of trust in the relationship between citizens and the State.¹⁴⁰

Chapter Four, 'Establishing the Risk Context', concludes the first part of the thesis and the theoretical narrative. Chapter Two established that government is a risk owner required to incorporate a risk management strategy. This Chapter examines some of the contextual factors which influence or constrain the creation of an effective strategy and its supporting institutional foundation. Contextual factors range from abstract theoretical considerations to concrete mechanisms which influence regulatory design. In this Chapter for example, social contract theory highlights the shared roles of government and citizens in a well-ordered society. Sociological theory on the risk society, introduced in Chapter Two, is further engaged to demonstrate a shift towards the individualisation of risk. As identified in Chapter Four, some tensions exist between the two theoretical lenses.

The second part of the Chapter examines concrete mechanisms. It focuses on regulatory reform, the design of 'better regulation' and more specifically good practice for disaster risk governance. Finally, in light of the role of social media

¹⁴⁰ Identifying factors that positively or negatively affect upon trust is important in an era of declining trust in government.

in this thesis, emergent communication technologies and how they impact on strategic decisions for risk communication and warning are examined.

Part Two: Doctrinal analysis of the regulatory system which underpins legal accountability of the emergency management sector.

Part Two signals a shift in focus from theory to legal analysis. Chapter Five, 'Risk communication and warning in the Australian emergency management regulatory system', has two purposes. The first is to examine the broadest of the key objectives of the research. That is, the Chapter seeks to explore and evaluate against good practice principles identified in Chapter Four, the extent to which risk communication and warning is embedded within the emergency management regulatory system. The research adopts the methodology of a brief content analysis to achieve this task. Through analysis of national policy, state legislation, and soft law instruments, this Chapter provides findings on the integration of risk communication and warning in Australia's emergency management regulatory system. The Chapter also determines whether the need to use social media is becoming embedded within regulatory components.

The second purpose of the Chapter is to provide data that identifies functions, powers and responsibilities for warning and communication. These are functions and powers, which may form the basis of a duty of care. In light of the use of differing terms used to connote responsibility across the array of instruments examined, Chapter Six defines the terms, 'functions', 'powers' and 'responsibilities'. The Chapter also seeks to determine the level of obligation associated with each term. The functions, powers and responsibilities and the obligation to exercise them, are then further examined in Chapters Six and Seven against a background of current case law on the law of negligence. An underlying theme in Part Two, is the examination of the hierarchy of regulatory instruments and the role that the varying instruments play in the regulatory system. Specifically, Chapters Six and Seven begin to examine the weight that the various instruments which incorporate powers, functions and responsibilities carry at law and how they factor into any imputation of legal accountability.

Chapters Six and Seven investigate the law of negligence and the duty to warn as an area for which a gap in the literature is apparent. Although social media does not feature in these chapters, it is necessary to establish the broader question of legal accountability for warning before applying it to a specific channel for warning. Therefore, the two chapters set out the case law that is relevant to warning by a statutory authority. Chapter Six, 'The Law of Negligence', introduces the law of negligence and examines the required elements to establish a claim. Chapter Seven, 'Negligence – Defences and Immunities', examines defences and immunities which might be relevant. As well as investigating negligence and the duty to warn these Chapters, enrich the analysis by incorporating the theoretical narrative developed in Chapter Four. Consequently, each Chapter contains links to the abstract normative theory on the social contract and the risk society. The application of the theory to the law of negligence facilitates an understanding of how responsibility for certain risks is currently shared. It also highlights the legal standards of conduct required by of each party in light of their share of responsibility, in the context of civil liability and emergency management law.

Chapter Eight, 'Social media: a case study in legal accountability for warning', is the final chapter in this Part. The Chapter specifically addresses the research question as to the circumstances in which statutory authorities are likely to be held legally accountable for warning via social media. It provides an exploratory case study of a hypothetical natural hazard scenario. Drawing on the theoretical narrative developed in Chapter Three, Chapter Eight restates the unique features of social media which make it a relevant or beneficial channel for risk communication and warning. Chapter Eight then applies the findings of Chapter Five, Six, and Seven to determine in what circumstances legal accountability may be imputed to a statutory authority for the use of social media. The Chapter highlights that addressing legal accountability for the use of social media will, in some instances, raise old issues of legal accountability in a new form. However, new issues, which require new thinking and further research, are identified.¹⁴¹

¹⁴¹ Australian Communications and Media Authority (Cth), *Connected citizens: A regulatory strategy for the networked society and information economy* (June 2013) 4.

Part Three: Recommendations and Conclusions

Chapter Nine, 'Conclusions and Recommendations', as the final chapter draws out the conclusions from each of the preceding Chapters. The primary focus are the findings in Chapters Five, Six, Seven and Eight. In this Chapter, recommendations are made as to whether refinements need to be made to the current regulatory system for emergency management to more effectively incorporate risk communication and warning. The thesis suggests that by refining instruments within the regulatory system, the instruments become procedural controls that are more effective. Controls which help to avoid or mitigate natural hazard and emergency related risk.

Secondly, based on the findings of Chapters Six through Eight that legal accountability is likely to be limited, Chapter Nine identifies that further accountability mechanisms ought to be considered. In identifying this need, the thesis reinforces recent findings of the *National Review of Warnings and Information: Final Report*.¹⁴² As identified earlier in this Chapter, the inclusion of performance measures or standards of practice that acts as a benchmark against which to scrutinise activity are important. Standards for example can help to ensure that the emergency management sector is effectively managing its share of responsibility for achieving policy objectives. As a secondary consideration, adherence to performance standards may also act as an objective benchmark against which to defend actions taken during an emergency, in the context of a coronial inquiry. Chapter Nine recognises that in some jurisdictions performance measures and scrutinising bodies are already present. However, further research into the most appropriate mechanisms, and whether current mechanisms are effective, may be warranted.

¹⁴² Emergency Management Victoria, *National Review of Warnings and Information*, above n 11.

Part One: Developing a Theoretical Narrative

Chapter Two: Risk Management

Introduction

The management of natural hazard and emergency related risk is a complex task. This is because, a 'large number of diverse interacting' entities, may be required to manage the risks related to hazards, which in themselves exhibit uncontrollable, unpredictable behaviour and act in a disruptive manner.¹⁴³ Stakeholders¹⁴⁴ with responsibility for management of the risk may vary over the phases of the hazard.¹⁴⁵ Their roles may complement, and overlap each other, in order to bring about an integrated and effective response.¹⁴⁶ Yet response to and management of emergencies is not linear and confusion may result.¹⁴⁷

An effective way to manage risk, particularly across organisations, is by application of a structured, consistent and integrated approach. A recognised generic standard, which supports this approach, is the *Risk Management Standard (AS/NZS 31000: 2009)*.¹⁴⁸ A contextualised version of this standard for emergency management in Australia is evident. Currently in its second edition, the 'National Emergency Risk Assessment Guidelines' ('NERAG'),¹⁴⁹ provides a method for risk management which can be applied nationally. The application of NERAG represents a shift in emergency management from a

¹⁴³ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 5; OECD, 'Applications of Complexity Science: New Tools for Finding Unanticipated Consequences and Unrealized Opportunities' (Report, OECD Publishing, 2009) 2-3 (These are features of a complex system which may require specialised management and regulatory responses).

¹⁴⁴ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 5 (Stakeholders are defined as 'a person or organisation that can affect, be affected by, or perceive themselves to be affected by, a decision or activity' such as an emergency).

¹⁴⁵ See, eg, Attorney General's Department & Emergency Management Australia, *Emergency Management in Australia Concepts and Principles*, above n 39, 3 (These phases have been set out in Australia, as PPRR (Prevention, Preparation, Response and Recovery)).

¹⁴⁶ Productivity Commission, *Report on Government Services 2016*, above n 19, D.30; Ronald W Perry and Michael K. Lindell, 'Preparedness for Emergency Response: Guidelines for Emergency Planning Process' (2003) 27(4) *Disasters* 336, 344.

¹⁴⁷ Crondstedt, above n 23, 10; Attorney General's Department & Emergency Management Australia, *Emergency Management in Australia Concepts and Principles*, above n 39, 5.

¹⁴⁸ Standards Australia, *Risk Management - Principles and guidelines (AS/NZS ISO 31000:2009)*.

¹⁴⁹ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines* above n 32.

previously response and hazard focused sector to one based on risk management.¹⁵⁰ Despite, the recognised benefits of applying a consistent and structured approach, the guidelines were historically largely ignored by the emergency management sector.¹⁵¹ However, the sector appears to have an increased drive towards uptake of a national risk based approach.¹⁵² Employing the Standard is envisaged to assist in determining how best to 'expend limited community resources to achieve the greatest gain' in disaster risk reduction.¹⁵³

Acknowledging the relevance of risk management to emergency management this Chapter also requires an examination of sociological theory that explains the shifting paradigm towards a risk based society. As well as sociological theory, the Chapter examines the risk management standards identified in the above paragraph. The aim of this examination is to identify core concepts and to define key terms relevant to this thesis and its legal thread of enquiry. The Chapter will not include assessment of natural hazard or emergency related risk. Instead, and in keeping with the legal focus of the thesis, the focus of inquiry will be on the role of the law in providing an effective institutional framework and procedural controls for risk management.

The risk society: moves to a risk based framework

Sociological theory explains why risk has become a paradigm under which emergency management now operates and why it has become a key consideration for decision-makers.¹⁵⁴ Numerous sociological authors¹⁵⁵

¹⁵⁰ Salter, above n 22, 22; Ken Granger, Flo Bridger and Mikila Rosewall, 'Emergency Risk Management in Australia and the Pacific: Information, Policy and Governance' (Paper Presented at the Australian and New Zealand Disaster and Emergency Management Conference Surfers Paradise, Gold Coast (QLD), 5-7 May 2014).

¹⁵¹ Granger, Bridger and Rosewall, above n 150, 2-3; Edward Pikusa, 'The National Emergency Risk Assessment Guidelines: The Bumpy Road to National Consistency' (Paper presented at the 55th Annual Flood Plain Conference, 'Building a Resilient Australia', Brisbane Convention and Exhibition Centre, 19-22 May 2015).

¹⁵² Pikusa, above n 151.

¹⁵³ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 4-5.

¹⁵⁴ Salter, above n 22, 22.

¹⁵⁵ See, eg, Niklas Luhmann, *Risk: a sociological theory* (Aldine Transaction, 2005, 1st ed); M Douglas, *Risk and blame: essays in cultural theory* (Routledge, 1992); Anthony Giddens, 'Risk and Responsibility' (1999) 62(1) *The Modern Law Review* 1; Jens Oliver Zinn, 'The sociology of risk and uncertainty: current state and perspectives' (Conference Proceeding,

provide an understanding of risk in society¹⁵⁶ with the work of Ulrich Beck being some of the more influential.¹⁵⁷ Despite any contention or critique of Beck's work,¹⁵⁸ his theory continues to feature in work that links social and legal contexts¹⁵⁹ and is therefore relevant to this thesis.

In his work, Beck describes the transition of society to what he calls a 'risk society'.¹⁶⁰ A 'risk society' can be described as a society which is viewed as having an increased vulnerability and one which is facing new or a newly classified type of risk. The transition to a risk society incorporates an underlying shift in focus from classical risks, such as acts of god,¹⁶¹ to risks that are the side-effects of the industrial era,¹⁶² such as global warming and climate change. As Beck states, classical risks are now becoming intertwined with and exacerbated by man-made hazards.¹⁶³ In the natural hazard context, this is evidenced by more frequent and intense weather events potentially linked to global warming. As well as being subject to more frequent and intense events, society has become more vulnerable. This vulnerability is in part due to increasing development of at-risk environments, for example development of housing subdivisions on flood plains. It may also be due to the inability to mitigate natural weather events of increased intensity.¹⁶⁴ It is in this domain that emergency management must now operate, taking on the increasing

The Australian Sociological Association (TASA) Annual Conference, Australian National University, 2009).

¹⁵⁶ John Tulloch and Deborah Lupton, *Risk and Everyday life* (Sage Publications, 2003) 1; Deborah Lupton, *Risk* (Routledge, 1999) 24-25.

¹⁵⁷ See Kristian Lauta, *Disaster Law* (Taylor and Francis ebooks, 2015) 26 (work on disaster law and risk society also highlighted Giddens and Luhmann's work in defining a risk society); Zinn, above n 155, 1.

¹⁵⁸ See, eg, Zinn, above n 155, 3, 6.

¹⁵⁹ Lauta, *Disaster Law*, above n 157, 25-27; Lupton, above n 156, 60-61; Lee Godden et al, 'Law, Governance and Risk: Deconstructing the Public-Private Divide in Climate Change Adaptation' (2013) 36(1) *University of New South Wales Law Journal* 224, 234; Eburn and Dovers, 'Legal Aspects of Risk Management in Australia', above n 57, 62.

¹⁶⁰ Ulrich Beck, *Risk society: towards a new modernity* (Sage Publications, 1992).

¹⁶¹ See, also, Giddens, above n 155, 3.

¹⁶² Lauta, *Disaster Law*, above n 157, 26; Ulrich Beck, *World at Risk* (Wiley, ebook, 2013) 8, 19-21.

¹⁶³ Beck, *World at Risk*, above n 162, 7; See, also, Giddens, above n 155, 4 (Giddens refers to manufactured risk created by 'progression of human development').

¹⁶⁴ Lauta, *Disaster Law* above n 157, 24-25, 28 (citing Perry and Quarantelli 2005 vulnerability is the 'weakness in social structures and social system' – highlighting the links between risk and vulnerability, or more precisely risk as being the point of 'amalgam between hazard and vulnerability'); Productivity Commission, *Report on Government Services 2016*, above n 19, D.11.

burden of more frequent, intense and at times catastrophic events,¹⁶⁵ within the constraints of limited resources.

The nature of the risk society

The shift to a risk society changes the focus and actions of its members. In the first instance, organisations and individuals have an increased awareness and preoccupation with risk.¹⁶⁶ Accompanying this preoccupation is a new anxiety¹⁶⁷ as stakeholders, who could be affected by risks, have an increasing desire to undertake action to manage, eliminate and avoid them. Linked to this desire to act is the pre-occupation or focus on risk analysis. As will be identified in this Chapter, risk analysis seeks to objectively measure risk and identify methods for modification, avoidance and control of risk.¹⁶⁸ Risk analysis is supported by an apparatus which 'operationalises' it, for example guidelines and standards for risk management.¹⁶⁹ Particularly in the case of government, as a potential owner of or stakeholder in numerous risks, focusing on risk analysis helps to ascertain the most efficient and effective methods to allocate scarce resources to manage risk.

¹⁶⁵ Insurance Council of Australia, *Catastrophe Events and the Community*, above n 18; (It is noted in this research that catastrophes are 'qualitatively and quantitatively' different to disasters and emergencies which occur on a more frequent basis. This differentiation is relatively unimportant in the context of this thesis, as in all types of events risk communication and warning will still be required, although may have less of a mitigating effect where catastrophic events leave little room for evasive action, see eg, E.L Quarantelli, 'Emergencies, Disasters and Catastrophes Are Different Phenomena' (Disaster Research Centre, University of Delaware, 2000) 1.

¹⁶⁶ Some of these risks come to dominate debate and cause anxiety in society; See, eg Giddens, above n 155, 3 (noting the preoccupation with the future, with risk and safety).

¹⁶⁷ This anxiety can be coupled with frustration when government refuses to accept or address the relevant risk, see, eg, Nick O'Malley, 'Australia's climate stance savaged at UN summit', *The Sydney Morning Herald* (online), 27 September 2014 <<http://www.smh.com.au/environment/climate-change/australias-climate-stance-savaged-at-un-summit-20140926-3gsr3.html>>; Peter Hannam, 'Australia singled out as a climate change 'free-rider' by international panel', *The Sydney Morning Herald* (online), 5 June 2015 <<http://www.smh.com.au/environment/climate-change/australia-singled-out-as-a-climate-change-freerider-by-international-panel-20150604-ghgbde.html>>.

¹⁶⁸ Lauts, *Disaster Law*, above n 157, 26-27, 29 (the process of risk assessment is an idealised process which turns uncertainty into something which can be acted on, distributed and made 'controllable' in theory although not in practice, giving a false sense of security and limiting the imagination and building of general robustness into a system); Giddens, above n 155, 3 (Also highlights the 'idea of risk is bound up with the aspiration to control it').

¹⁶⁹ Michael Power, 'Risk, Social Theories and Organisation' in Paul S Adler et al (eds), *Oxford Handbook of Sociology, Social Theory and Organisation Studies Contemporary Currents* (Oxford University Press, 2014) 374, 382; Godden et al, above n 159, 236 (Noting 'the increasing inclusion of risk management procedures in a wide range of laws').

Emergency and disaster management regimes reflect the changes in focus and action apparent in a risk society. In the first instance, behaviour for managing natural hazards is now led by the new risk paradigm.¹⁷⁰ Internationally, for example, disasters are couched in terms of risk and disaster risk reduction.¹⁷¹ As previously adverted to, in Australia, the emergency management sector has an increasing drive to incorporate risk management principles through the application of NERAG.¹⁷² The NERAG guidelines propose analysis and assessments of natural hazards. Risk analysis and assessment activities are therefore now evident in each jurisdiction. Action is being taken to identify prominent hazards and understand their consequences for the community to effectively target limited resources.¹⁷³ Having gained an understanding of the shifts relating to risk in society, the question arises: what is a risk?

What is a risk?

As a core term in this research, 'risk' requires definition and contextualisation to the emergency management environment. The definition of risk used within the Australian Emergency Management context is that provided for by the AS/NZS 31000:2009 Risk Management Standard ('Risk Standard'). 'Risk' is defined as, 'the effect of uncertainty on objectives'.¹⁷⁴ Without further analysis, this definition lacks clarity. Further analysis suggests that a risk is a source (for example a natural hazard, such as a storm or cyclone) that has the potential

¹⁷⁰ Salter above n 22, 22.

¹⁷¹ See, eg, United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1.

¹⁷² Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines* above n 32; Australian Institute for Disaster Resilience (Cth), *National Emergency Risk Assessment Guidelines*, above n 88.

¹⁷³ See, eg, State Emergency Management Committee (WA), *Western Australian State-level Risk Assessment: Seven Sudden Onset Natural Hazards, Storm, Earthquake, Bushfire, Tsunami, Heatwave, Cyclone and Flood* (December 2013); Risk Frontiers, 'Significant historical natural hazards in Queensland: An overview' ('State-wide Natural Hazard Risk Assessment, Report 1, 2011) 1.

¹⁷⁴ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 5.

for interaction,¹⁷⁵ or an impact,¹⁷⁶ on something. The impacts may include impacts on 'financial, health and safety, and environmental goals'.¹⁷⁷ In the context of this thesis, a risk may be the uncertainty that a storm may cause flooding. Flooding may in turn affect a person's property, causing economic loss or require that a person be rescued.

Natural hazards as a risk source

As identified in the previous section, a risk derives from a risk source. A risk source is as 'an element either on its own or in combination which has the intrinsic or latent potential, to give rise to risk'.¹⁷⁸ In part, due to affiliation with the Bushfire and Natural Hazards Co-operative Research Centre, this thesis focuses on natural hazards, that is, hazards produced by nature that may interact with other elements to create risk.¹⁷⁹ The natural hazards forming the core focus of emergency management vary across Australian jurisdictions.¹⁸⁰ Commonly, they include storm, earthquake, bushfire, tsunami, earthquake, cyclone and flood. As indicated, the focus of this thesis is on risk arising out

¹⁷⁵ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 1; Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 10 (A risk is not an event but it is the potential of an interaction or impact on an objective).

¹⁷⁶ Ortwin Renn, 'White Paper on Risk Governance' in O. Renn and K Walker (eds), *Global Risk Governance: Concept and Practice Using the IRGC Framework* (Springer, 2008) 5.

¹⁷⁷ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 1; Renn, 'White Paper on Risk Governance', above n 176, 5 (Renn highlights these factors as objectives of value to people).

¹⁷⁸ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 4; Gisela Wachinger et al, 'The Risk Perception Paradox - implications for governance and communication of natural hazards' (2013) 33(6) *Risk Analysis* 1049, 1062 (The authors note that many disaster risks are 'multi-risk exposures' which link natural and human induced hazards such as the 2011 Japanese tsunami and Fukushima nuclear effect).

¹⁷⁹ See, eg, United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction* (2009) 20-21 <http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf>; Keith Smith, *Environmental Hazards: Assessing risk and Reducing Disaster* (Routledge, 6th ed, 2013) 5 (the author makes the distinction between natural and technological hazard types although makes an important point, that hybrid events do occur); Michael K Lindell and Ronald W Perry, *Communicating Environmental Risk in Multiethnic Communities* (Sage Publications, 2004) 5 (By contrast the authors here suggest natural hazards are the interaction of 'physical event' with the 'human system').

¹⁸⁰ See, eg, State Emergency Management Committee (WA), *Western Australian State-level Risk Assessment*, above n 173 (When it comes to undertaking risk assessment of natural hazards, Western Australia includes Storm, Earthquake, Bushfire, Tsunami, Heatwave, Cyclone And Flood); Risk Frontiers, 'Significant historical natural hazards in Queensland', above n 173 (Queensland hazards include riverine flooding, winds from tropical cyclones, hail from severe storms, bushfires, thunderstorm wind gusts, tornadoes, earthquakes, landslides and coastal hazards such as tsunamis, storm surge, and coastal erosion).

of natural hazards.¹⁸¹ When there is the potential for the natural hazard to pose emergency related risks¹⁸² or to manifest as an emergency, that the emergency management sector become involved.¹⁸³

'Natural' hazards: a growing, yet uncontrollable concern

Natural hazards are a 'natural' phenomenon and considered an 'involuntary' risk source.¹⁸⁴ The natural character of these phenomena adds to the complexity averted to at the commencement of this Chapter.¹⁸⁵ Each hazard has differing lead times to impact, a potentially unpredictable magnitude, path, and effect, when interacting with the physical environment.¹⁸⁶ They are also often uncontrollable.¹⁸⁷ Yet, as evidenced, in recent studies by the Australian Climate Council, natural hazards, are increasingly acting and predicted to act¹⁸⁸ on something that is of value to the community. To date, natural hazards impacts have led to severe consequences including extensive property loss, human fatalities, and economic cost.¹⁸⁹ The increasing cost and

¹⁸¹ It is noted that emergency management legislation and activities, also include response to other hazards such as technological hazards or human acts (See, eg, *Disaster Management Act 2003* (Qld) s 16).

¹⁸² Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 5.

¹⁸³ *Ibid* 5.

¹⁸⁴ See, eg. Smith, above n 179, 5,14, 72-73 (While natural hazards may be 'known' they are generally involuntary, which can impact negatively on a person's reactions, toleration and perception of the risk, this will be discussed at a later stage); Mads P. Sorensen and Allan Christiansen, *Ulrich Beck: An introduction to the theory of second modernity and the risk society* (Routledge, 2013) 18-19 (Noting there is some discussion over the 'natural' in natural hazards but this is not a point of debate here); United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction* (2009) 20 (On hazards as a natural phenomenon); Owen Ingles, 'A linguistic approach to Hazard, risk and Error' in John Handmer et al, *New Perspectives on Uncertainty and Risk* (Centre for Resource and Environmental Studies and Australian Counter Disaster College, 1991) 68-69 (The authors, in tracing the meanings of the words risk and hazard comment that the notion of 'involuntary and unforeseeable danger' formed the original meaning of the word hazard, distinguishing it from risk as more voluntary, although is now a disappearing phenomenon).

¹⁸⁵ Dennis Mileti, *Disasters by Design* (Joseph Henry Press, 1999) 133; Smith, above n 179, 47-49 (Complexity, Smith suggests, arises from interactions between physical and human systems as well as interactions within each system); John Handmer and Stephen Dovers, *Handbook of Disaster Policies and Institutions: Improving emergency management and climate change adaptation* (Earthscan, Routledge, 2nd Edition 2013) 59 (the authors note the presence of complexity and uncertainty in disasters and emergencies).

¹⁸⁶ Smith, above n 179, 47-49.

¹⁸⁷ *Ibid* 96.

¹⁸⁸ Climate Council of Australia Pty Ltd, 'The Burning Issue', above n 14; Climate Council of Australia, 'Counting the Costs', above n 14.

¹⁸⁹ See, eg, Risk Frontiers, 'Historical analysis of natural hazard building losses and fatalities for Queensland 1900-2011' (State-wide Natural Disaster Risk Assessment and Risk Register Program Prepared by Risk Frontiers for Queensland Department of Community

consequences have fuelled the drive, in emergency management, to 'understand, reduce and communicate risk' arising out of natural hazards.¹⁹⁰ Added to the cost, is the need to maintain effective service delivery in a climate of dwindling resources and high community expectations.¹⁹¹

Risk Management

To reduce and understand the likely exposure to the impact of natural hazards as an emergency, risk management is undertaken. Risk management is the 'activities undertaken to direct and control an organization with regard to risk'.¹⁹² Risk management includes the risk management process.¹⁹³ This process, represented in Figure 1 below, involves what has been stated as the 'systematic application of management policies, procedures and practices' to the management of risk'.¹⁹⁴ In brief, it includes 'the deliberate process of identifying, analysing, assessing, communicating, accepting, transferring and controlling risk to an acceptable level'.¹⁹⁵ In the process of identifying, analysing and evaluating risk, a risk statement is created. Each statement is assigned a level of risk based on the likelihood and consequences of the risk.¹⁹⁶ Likelihood and consequences are utilised as mathematical functions to

Safety, October 2012) 7-8; Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 2.

¹⁹⁰ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 1-2.

¹⁹¹ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 6; Productivity Commission (Cth), *Report on Government Services 2016*, above n 19, D.12-D.13.

¹⁹² Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 2-3.

¹⁹³ Amiso M. George, 'The Phases of Crisis Communication' in Amiso M George and Cornelius B Pratt (eds), *Case Studies in Crisis Communications* (Routledge, 1st ed, 2012) 31 (citing the FEMA definition for risk management which incorporates the process).

¹⁹⁴ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 2-3; Emergency Management Australia, *Emergency Risk Management Applications Guide*, above n 110, 49.

¹⁹⁵ George, above n 193, 32; Risk Steering Committee, US Department of Homeland Security, *DHS Risk Lexicon 2010 Edition* (September 2010) 30 <<https://www.dhs.gov/xlibrary/assets/dhs-risk-lexicon-2010.pdf>>.

¹⁹⁶ See, eg, Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 5 (These terms are defined respectively as the 'outcome of the event' and the 'change of something happening'); State Emergency Management Committee (WA), *Western Australian State-level Risk Assessment*, above n 173, 14 (In some instances likelihood can be defined for risk assessment purposes, as the likelihood of the occurrence of the event or hazard, as well as the likelihood of the consequences occurring when that hazard eventuates).

compute the level of risk.¹⁹⁷ However, it is important to note that this calculation may reduce risk to a simplistic calculation and fail to recognise the non-linear nature of risk.¹⁹⁸ Therefore, likelihood and consequences reflect the minimum considerations to taken into account when calculating risk levels.¹⁹⁹ Once risk levels are calculated, controls and mitigation activities are undertaken to reduce exposure to risk. These activities need to balance the management of the risk and safety and managing ‘other demands on resources’.²⁰⁰

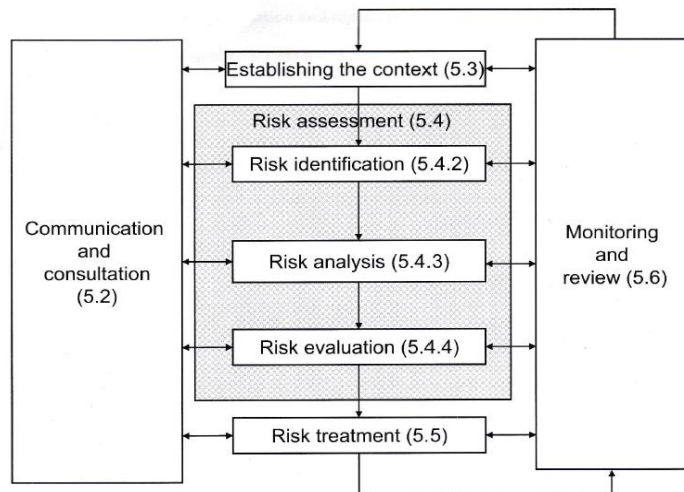


Figure 3 — Risk management process

Figure 1: AS/NZS 31000: 2009 Risk Management process²⁰¹

¹⁹⁷ See, eg, Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 5; State Emergency Management Committee (WA), *Western Australian State-level Risk Assessment*, above n 173, 14.

¹⁹⁸ van Asselt and Renn, above n 5, 436 (Many risks are suggested to be complex and have multiple causes, agents and effects).

¹⁹⁹ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 8 (Differing opinions are expressed in the literature on the determinants to be considered in the ‘calculus’ of risk; however for the purposes of this research, the definition and determinants provided in the risk standard are sufficient to demonstrate the core process operates see, also OECD, ‘Boosting Resilience through Innovative Risk Governance’ (OECD Publishing, 2014) 26; Salter, above n 22, 24; Smith, above n 179, 71; IPCC, ‘Summary for Policymakers’ (2012) in C.B Field et al (eds), *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change, Cambridge University Press, 2012) 6-7 - for consideration of resilience, exposure, vulnerability which affect calculations of risk levels).

²⁰⁰ Smith, above n 179, 89-90.

²⁰¹ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009).

Emergency Risk Management

Emergency risk management ('ERM') attracts its own definition. ERM is 'risk management applied in the emergency management context'.²⁰² As previously identified, in this thesis, the aspect of ERM investigated here, is the management of emergency related risks which derive from impacts of natural hazards on 'objectives of value to the community'.²⁰³ In Australia, these objectives are identified as 'health, property, economic performance and environmental quality'.²⁰⁴ In the context of ERM, the process for managing risk, which is outlined in Figure 1 above, has been adapted and contextualised to emergency management.²⁰⁵ Although risk management processes have been adapted to the emergency context, at times natural hazards present unimaginable and uncontrollable catastrophic risks. Catastrophic risk is challenging to treat and modify irrespective of any presence of a risk management framework. An exploration of key aspects of the risk management process provides a structure for the remainder of the Chapter.

Risk ownership

An integral aspect of risk management is the determination of who owns the risk and therefore how responsibility is shared or divided. The risk owner is the person or entity who, in line with their share of responsibility, have 'the accountability and authority to manage a risk'.²⁰⁶ In Australia, numerous entities that share responsibility for natural hazard and emergency related risk. For example, in the case of storm entities and stakeholders with responsibility for risk management have included local government (in the planning domain), relevant response agencies (for hazard planning and response), as well as insurance companies and the community.²⁰⁷ When the roles of entities overlap

²⁰² Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 5.

²⁰³ *Ibid* 5.

²⁰⁴ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 16.

²⁰⁵ *Ibid*.

²⁰⁶ British Standards Institution (BSI), *Risk management – vocabulary* (PD ISO Guide 73:2009, 30 September 2013).

²⁰⁷ Pamela Box, Frank Thomalla and Robin van den Honert, 'Flood Risk in Australia: Whose Responsibility is it anyway?' (2013) 5 *Water* 1580, 1582.

or are interdependent, complications as to who is responsible for which aspect of risk management can arise.²⁰⁸

Risk ownership and accountability

Theoretically, numerous stakeholders or entities are considered to own, or share responsibility for natural hazard related risk. However, in practice it is specific agencies and government, which have been formally 'charged with' authority, tasks and responsibilities to manage hazard risk in the context of emergencies.²⁰⁹ This allocation of risk is achieved through policy, legislation and plans.²¹⁰ Accompanying the formal allocation of responsibility is a correlating degree of public accountability or answerability for action.²¹¹ Notably, public accountability is not required of other stakeholders who share responsibility for emergency related risk. The extent to which the relevant state agencies, as risk owners, are held accountable at law is investigated in detail in Chapters Six and Seven, in the context of legal accountability under the law of negligence.

Clearly defined risk ownership, economic capability and accountability

It is apparent that some tasks associated with risk ownership are already allocated in the regulatory system. However, risk ownership is not always clearly delineated, nor is it allocated to those entities with the economic capacity to manage risk. Clearly defined risk ownership assists in designating responsibility for the strategic management of that risk.²¹² When ownership is

²⁰⁸ Commonwealth, Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iii, 1; Celeste Young, John Symons and Roger Jones, 'Whose Risk is it anyway? Desktop review of institutional ownership of risk associated with natural hazards and disasters' (Victoria Institute of Strategic Economic Studies, Victoria University, 2015) 3 (Noting that 'society has been divided into five key institutions: local, state, and federal government, industry and business and civil society'); Box, Thomalla and van den Honert, above n 207, 1584, 1589.

²⁰⁹ Young, Symons and Jones, above n 208, 2, 13 (Noting that the citizen's role in emergency management is not set out in the relevant instruments, as the relevant documents provide guidance as to how statutory authorities ought to carry out their role rather than what is expected of citizens).

²¹⁰ Ibid 2, 13.

²¹¹ Ibid 31 (Note that resource capacity to address responsibilities of risk ownership and ensure accountability can be problematic).

²¹² Young, Symons and Jones, above n 208, iv; Risk Management Capability Ltd, *Risk Ownership: Capability Guidance* (2011)

<<http://www.rmcapability.com/resources/Capability+Guidance+Sheet+-+Risk+Ownership.pdf>>.

defined, risk management can be strengthened and supported by strong policy and regulatory processes.²¹³ Not only is clear delineation of ownership important for the management of risk, so too is allocation of ownership to those with sufficient resource capacity to manage their responsibilities. It is becoming apparent that shifts away from 'state-centric' government, to integrated, decentralised 'multi-level governance systems, mean that risk ownership is being placed in the hands of entities with insufficient institutional capacity to manage their responsibilities.²¹⁴ An insufficient institutional obviously affects the ability to meet key objectives. It may also raise implications for accountability. Therefore, although clear delineation of risk ownership is important, economic considerations are also highly relevant to ensuring risk is effectively managed.

Allocation of risk ownership and shared responsibility

Given that numerous stakeholders may own risk, and in spite of the formal allocation of aspects of risk management to the emergency management sector, the Australian government considers that ownership of natural hazard and emergency related risk is a shared responsibility.²¹⁵ The expectation of a shared responsibility involves community members and other stakeholders playing an active role.²¹⁶ This notion of shared responsibility is a shift that is

²¹³ Young, Symons and Jones, above n 208, iv, 1.

²¹⁴ See, eg, Sophie Blackburn, 'The politics of scale and disaster risk governance: Barriers to decentralisation in Portland, Jamaica' (2014) 52 *Geoforum* 101, 101-102; Emily Wilkinson, Eva Comba and Katie Peters, 'Disaster Risk Governance: Unlocking Progress and Reducing Risk' (2014) United Nations Development Program 5-6, 20 (The authors highlight weak local strategies attributable to the negative impacts of funding constraints); Roger Miles, 'Empowering Emergency Responders' in Simon Bennett (ed), *Innovative thinking in risk, Crisis and Disaster Management* (Gower, 2012) 31-32; Ortwin Renn, Andreas Klinke, Marjolein van Asselt, 'Coping with Complexity, Uncertainty and Ambiguity in Risk Governance: A Synthesis' (2011) 20 *AMBIO* 231, 231; Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11, 19, 21 (The report highlights, difficulties with decentralisation and the costs involved in undertaking activities required to provide effective warning mechanisms); Ortwin Renn, 'Risk Governance: Towards an integrative framework', (White Paper No, 1, IRGC, 2006)58 (institutional capacities include not only economic resources, but assets, skills and capabilities).

²¹⁵ Commonwealth, Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iii, 1; Noting that risk ownership is a dynamic and fluid concept and can therefore change over time (See, eg Young, Symons and Jones, above n 208, iv, 16.

²¹⁶ Box, Thomalla and van den Honert, above n 207, 1587-1588; McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 5; Commonwealth,

indicative of the broader trend in today's risk society towards the individualisation of risk.²¹⁷ Notions of the 'risk society' and the individualisation of risk are covered in more depth in Chapter Four, 'Establishing the Risk Context'. However, in brief, 'individualisation of risk' requires citizens to become 'active risk managers'.²¹⁸ This involves individuals as risk owners, taking their share of responsibility by safeguarding, insuring and mitigating risk exposure to their own lives, property and assets.²¹⁹

Problematically, the expectation of a shared responsibility acts in tension with community expectations that risk will be taken care of for them. Moving forward, there will need to be some re-education of the public of the changing paradigm from 'protection' to 'shared responsibility'. However, a careful and legitimate approach by government is required. This is because although it is relevant to 'involve interested and affected parties in collective decision making' and action about risk, there may be issues in terms of negotiating the balance of 'benefits and burdens' of shared responsibility which fall on citizens.²²⁰ It is certainly clear that in light of the predicted increase in natural hazard impacts, and with dwindling resources for the sector, the expectations that government will take care of the risk is unrealistic.²²¹

Risk Governance: the role of law in the risk management process

Policy and regulation as regulatory components both shape and are shaped by the management of risk. Collectively, these and other legal instruments

Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iii.

²¹⁷ See, eg, Julia Black, 'The role of Risk in Regulatory Processes' in Robert Baldwin, Martin Cave and Martin Lodge (eds), *The Oxford Handbook of Regulation* (Oxford Handbooks Online, 2010) 6; Hazel Kemshall, 'Social policy and Risk' in Gabe Mythen and Sandra Walklane, *Beyond the Risk Society: Critical Reflections on Risk and Human Society* (Open University Press, 2006) 60-61; Myra Hamilton, 'The "new Social Contract" and the Individualisation of Risk in Policy' (2014) 17 *Journal of Risk Research* 453, 453.

²¹⁸ Kemshall, above n 217, 60-61.

²¹⁹ Young, Symons and Jones, above n 208, 11, 17 (Noting in this review, in line with a recent Productivity Commission report, that as asset owners, individual citizens may be best placed to manage the risk to their own property).

²²⁰ van Asselt and Renn, above n 5, 440; McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 6.

²²¹ Blythe McLennan and John Handmer, 'Changing the rules of the game: mechanisms for shaping responsibility sharing from beyond Australian Fire and Emergency Management' (2012) 27(2) *The Australian Journal of Emergency Management* 7, 12; Christine Owen et al, 'Politics, Policies and Paradigms, Challenges of Change in Future Emergency Management' (Paper presented at Bushfire CRC – AFAC 13, Melbourne, 2-5 September 2013) 4.

come under the umbrella term, 'risk governance'. Risk governance at a macro-level is defined as the: 'identification, assessment, management and communication of risk' in a setting of 'actors, rules, conventions, processes and mechanisms', and through 'the application of principles of good governance...to choose a solution which is politically and legally feasibly as well as ethically and publicly acceptable'.²²² At a more micro-level, risk governance is the 'institutional structures and policy processes that guide and restrain collective activities....to regulate, reduce or control risk problems'.²²³ This thesis examines the policy and legal instruments that regulate, reduce and control natural hazard and emergency related risk, in the context of emergency management.

Governance and risk management: supporting each other

Governance arrangements and risk management depend on each other. This interdependence provides a rationale for examining the instruments that comprise governance arrangements.²²⁴ If 'governance arrangements are effective, it is more likely that the organisation will function as intended and achieve its objectives' in managing a risk.²²⁵ Conversely, ineffective governance arrangements can result in a failure to achieve objectives and be a further source of risk. It is therefore important to examine the regulatory components, which aim to regulate and control natural hazard and emergency related risk, to determine whether they meet good practice principles for effectiveness. An examination of legal mechanisms is also important, as they are the devices against which an entity identified as a risk owner, 'is held to account'.²²⁶ If the regulatory components are ineffective, and accountability mechanisms employed, there can be a risk of exposure to legal claims that

²²² International Risk Governance Council, 'An introduction to the IRGC Risk Governance Framework' (White Paper No. 1, IRGC, 2008) 4; van Asselt and Renn, above n 5, 432 (Noting the recency of the development of the term).

²²³ Renn, Klinke, van Asselt, above n 214, 231; Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 13 (Or to direct, control and organise management of a risk).

²²⁴ Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 14.

²²⁵ Ibid 13.

²²⁶ Ibid.

require mitigation.²²⁷ The regulatory components and the role they play in directing, and providing responsibilities for emergency service agencies and government are examined in Chapter Four. The role of the law in directing, controlling and managing the risk itself, now requires examination.

Risk Management: Establishing the risk context

The first step in the risk management process, outlined in Figure 1 above is the establishment of the risk context. Establishing the risk context involves 'articulation of the objectives of the organization', and the parameters that influence these objectives.²²⁸ The objectives of entities involved in emergency management have been outlined in Chapter One, as reducing disaster risk and building community resilience. The parameters influencing or constraining the ability to meet these objectives can be extensive. They include, internal parameters such as, 'policy, accountabilities, information systems, decision making processes and adopted standards' within the organization.²²⁹ They also include external parameters such as '**social and cultural, legal, regulatory or political**, financial, **technological**, economic' influences.²³⁰ These influences and constraints are important to understand, as they will affect the type and content of legal components that can be utilised to achieve the objectives.²³¹

Influences and constraints on regulatory system design for risk management

To address each of the parameters that influence the risk management context is beyond the scope of this thesis. In line with the theme of the role of law in risk management, a limited range of parameters are introduced below and expanded upon in Chapter Four. These parameters include social, political

²²⁷ William Nicholson, *Emergency Response and Emergency Management Law: Cases and Materials* (Charles C Thomas, 2013) 255.

²²⁸ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 15.

²²⁹ *Ibid* 15-16.

²³⁰ *Ibid*.

²³¹ A final element, in the establishment of the context, which will not be investigated in this research, is the identification of 'criteria for evaluation of the significance of risk' (See, eg, Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 17).

and legal / regulatory parameters, as well as the emerging technologies that are influencing the action of emergency management.

Risk society and the individualisation of risk

The first parameter addressed, focuses on the influence of **sociological** theory on regulatory system design for risk management. That is the notion that we now live in a risk society.²³² Living in a risk society influences the way we see risk, expect it to be managed and seek to attribute blame for its mismanagement.²³³ The individualisation of risk, previously highlighted within this Chapter, is one aspect of this sociological theory. Considerations of the risk society and individualisation of risk, are seeing greater incorporation into legal analysis of risk, responsibility and accountability, and are therefore a highly relevant contextual parameter to consider.²³⁴ As has already been identified, notions of the individualisation of risk, or personal responsibility, are driving the design of policy initiatives such as shared responsibility.

Social contract theory

The second external parameter addressed is social contract theory. Social contract theory, is a **political** philosophy which espouses normative propositions as to the extent government may legitimately act in a liberal society. An investigation of social contract theory in Chapter Four acknowledges that emergency management is a legitimate area for regulatory action by government. However, in creating regulatory frameworks to support emergency management, social contract theory highlights that there are limitations on government power to curtail the rights of citizens.²³⁵ These

²³² See, in general works of, Beck, *World at Risk*, above n 162; Mads Peter Sørensen and Allan Christiansen, *Ulrich Beck: An Introduction to the Theory of Second Modernity and the Risk Society* (Routledge, 2013); Lupton, above n 156.

²³³ See, eg, Lupton, above n 156, 25; Thomas E Drabeck & Enrico L. Quarantelli, 'Scapegoats, Villains and Disasters' (1967) 4 *Transaction* 12, 12 (Noting that there is a tendency to 'personalise blame' and seek a person as a cause rather than a thing (hazard); Lauta, *Disaster Law*, above n 157, 1, 105.

²³⁴ See, eg, Francine Rochford, 'The Law of Negligence in a 'Risk Society'' (2007) 16(1) *Griffith Law Review*, 172, 173; Eburn and Dovers, 'Legal Aspects of Risk Management in Australia', above n 57, 62-63; Black, 'The Role of Risk in Regulatory Processes', above n 217, 34.

²³⁵ John Rawls, *A theory of Justice Revised Edition* (Oxford University Press, 1999) 178; J.E Penner & E. Melissaris, *McCoubrey & Whites Textbook on Jurisprudence* (Oxford University Press, 5th edition, 2008) 190-191.

limitations and the respective roles of government and citizens in society will be examined and linked to the concepts of risk ownership and shared responsibility raised in this Chapter. Chapters Six and Seven also examine links between social contract theory and the role of common law. The focus in these Chapters is how negligence and related civil liability legislation set the standards of conduct and behaviour of government and citizens and create the basis for legal accountability.

Risk based regulation

The third parameter examined is the regulatory environment and the good practice principles that identify how regulation ought to be created once legitimate power for risk management has been established. In the regulatory environment, there is a trend towards the development of a 'risk regulatory state' and the use of risk based regulation.²³⁶ This trend suggests that 'risk' in general is increasingly being utilised as an 'organizing principle' for regulation.²³⁷ The role of risk is either as the object of regulation, as a justification for regulation, or as a frame for procedures or a frame for accountability.²³⁸ The literature on risk-based legislation again links back to the individualisation of risk and the notion that current regulatory frameworks, are seeking to 'push responsibility for risk management down to the level of the individual or civil society'.²³⁹ Whether this tendency is evident or manifested in the words of the statutes in Australia will be adverted to in Chapter Five, in the content analysis of the relevant legislation.

As well as a trend in the regulatory environment that highlights a move towards risk-based regulation, good practice principles for the creation of risk-based regulation are also evident. These principles are relevant to the evaluation of the current regulatory system and any recommendations in the concluding

²³⁶ Black, 'The Role of Risk in Regulatory Processes', above n 217, 3; Professional Standards Authority, *The role of risk in regulatory policy: A review of the literature* (October 2015) 2-3 <<http://www.professionalstandards.org.uk/docs/default-source/publications/research-paper/risk-in-regulatory-policy-2015.pdf?sfvrsn=6>>; Andrew Nicholls, 'The Challenges and Benefits of Risk-Based Regulation in Achieving Scheme Outcomes' (Paper Presented to the Actuaries Institute Injury Schemes Seminar, Adelaide, 8 – 10 November 2015) 2 (A move which has been noted in the UK and in Australia).

²³⁷ Black, 'The Role of Risk in Regulatory Processes', above n 217, 1, 28.

²³⁸ *Ibid* 1, 2.

²³⁹ *Ibid* 1, 6-7.

Chapter of the thesis. Together these three external parameters outline some aspects of the societal, political and regulatory influences and their associated constraints, within which emergency management must operate.

Social Media

The final parameter examined relates to technological influences that impact on the risk communication in the emergency risk management context. Risk communication is discussed in depth in Chapter Three; however, important to any discussion of risk communication is an acknowledgement of the technological changes that are occurring in the channels for communication. Social media is having a strong impact on the way in which information is shared; the speed at which it reaches recipient; as well as the breadth of penetration.²⁴⁰ As a growing modality for risk communication, it poses challenges and unanswered concerns for the emergency management sector. Therefore, it is a key contextual factor in this thesis and in the design of the regulatory system.

Risk Assessment

Once the risk context is established, risk assessment occurs. As Figure 1 displays risk assessment is a three-staged process. It involves identification, analysis and evaluation of a risk. Risk identification, the first stage of the risk assessment process, engages in 'identification of sources of risk'.²⁴¹ As established in Chapter One, the risk source being examined is natural hazards that have the potential impact on communities as emergencies. Once the risk source is identified, the second stage of the risk assessment process is risk analysis. Risk analysis seeks to create an 'understanding of the risk', an understanding of its source, its possible consequences and potential likelihood of these consequences.²⁴² Although the analysis of the risk on paper is a seemingly straightforward process, as already highlighted, a 'considerable

²⁴⁰ Chatfield, Scholl and Brajawidagda, above n 48, 384; Crowe, *Disasters 2.0*, above n 48, 9.

²⁴¹ Standards Australia, *Risk Management - Principles and guidelines (AS/NZS ISO 31000:2009)* 17.

²⁴² *Ibid* 18.

degree of uncertainty',²⁴³ complexity, and unpredictability is apparent.²⁴⁴ Once identified, evaluation of the collective risks, individually outlined in risk descriptions,²⁴⁵ takes place. This is the third stage of the process. The evaluation process applies the ALARP principle. That is, the evaluation determines the level of acceptability of the risk, whether it is intolerable, tolerable or acceptable and what is a feasible response to the risk in order to make it 'as low as reasonably practicable'.²⁴⁶ The final stage of the risk management process requires that a decision is made as to whether further action is required, to 'treat'²⁴⁷ or manage the risk.

Acceptability of risk, risk treatment and management

Once risks are described and the level of risk assessed, as indicated, the acceptability of the risk is considered. Medium to high-level risks may be considered unacceptable or intolerable to a community or to risk managers.²⁴⁸ Controls and mitigation options are then utilised to modify and manage an unacceptable risk. As indicated in the context of the ALARP principle, the aim is to make the risk as low as reasonably practicable. The mechanisms to be

²⁴³ OECD, 'Boosting Resilience through Innovative Risk Governance' (OECD Publishing, 2014) 20 (Unpredictability arises from unexpected 'cascading impacts').

²⁴⁴ Gustav A. Koehler, Gunther G. Kress and Randi L. Miller, 'What Disaster Response Management Can Learn from Chaos Theory', in Ali Farazmand (ed), *Crisis and Emergency Management: Theory and Practice* (Taylor and Francis, 2nd ed, 2014) 111-113; Hazelwood Mine Fire Inquiry, above n 50, 12-13, 385 (this is one example where complex fire hazard conditions existed due to what started as a natural hazard and progressed to a technological hazard to produce and both a fire and public health emergency); Mileti, *Disasters by Design*, above n 185, 133; Smith, above n 179, 47-49 (Complexity, Smith suggests, arises from interactions between physical and human systems as well as interactions within each system); Handmer and Dovers, above n 185, 59 (the authors note the presence of complexity and uncertainty in disasters and emergencies).

²⁴⁵ Australian Institute of Disaster Resilience, *National Emergency Risk Assessment Guidelines: Practice Guide*, above n 22, 114 (including source, events, cause and consequences); OECD, 'Boosting Resilience through Innovative Risk Governance', above n 199, 21-22.

²⁴⁶ Smith, above n 179, 89 (ALARP stands for 'as low as reasonably practicable', looking a 'what is feasible in the wider social and economic frameworks); Terje Aven & Ortwin Renn, *Risk Management and Governance* (Springer, 2010) 121; See, eg, Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines: practice guide*, above n 22, 41- 44 (the evaluation of the risk occurs with the 'confidence level of the risk in mind', and those measures which are intolerable generally require risk treatment no matter what the cost, levels are either intolerable, tolerable or acceptable).

²⁴⁷ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 6 (Risk treatment is defined as the process used to modify a risk which can include – 'avoiding the risk, removing the risk source, changing the likelihood, changing the consequences or sharing the risk with another party').

²⁴⁸ David N Petley and Keith Smith, *Environmental Hazards: Assessing Risk and Reducing Disaster* (Taylor and Francis, 2009) 66-67 (Examining the application of ALARP).

employed, and who will pay for their implementation, can be a contentious issue. In 2016, for example, in New South Wales, Australia, coastal storms impacted on dwellings, causing millions of dollars of damage as properties eroded into the sea.²⁴⁹ Naturally, this loss was unacceptable to the homeowners. Although mitigation options had been mooted, the issue of who would pay had meant no mitigation activity had been undertaken.²⁵⁰ Therefore, even when risks are unacceptable, contention as to who should own the risk, and who should pay can, mean that the required action is not taken.

In the process of assessing risk, contention is also evident as to which risks to manage and what constitutes an unacceptable or intolerable level risk.²⁵¹ When risk management processes are applied, there are suggestions of an imbalance towards a more technical perspective of the unacceptability of risk.²⁵² Applying a purely technical perspective means any assessment of what is an unacceptable or undesirable consequence of risk that needs to be treated, is based on consensus.²⁵³ Yet each person has a different view of risk, and the adoption of an approach that includes social perspectives of risk and a plurality of views, is important.²⁵⁴ The need to include a plurality of view is perhaps amplified when attempting to garner community support for a model of shared responsibility. Its importance stems from the assertion that the inclusion of social perspectives into risk management, brings about politically legitimate policy which is then perceived as 'equitable, relevant or acceptable'

²⁴⁹ 'NSW weather: Collaroy swimming pool collapses as giant waves hit beachfront houses', *ABCNews* (online), 6 June 2016 < <http://www.abc.net.au/news/2016-06-06/nsw-weather-large-waves-hit-collaroy-coast/7479846>>; Daisy Dum as, Nick Ralston and Ava Benny-Morrison, 'Sydney storm: Seawall delayed by funding row with Collaroy homes on the brink of collapse', *The Sydney Morning Herald* (online), June 8, 2016 <<http://www.smh.com.au/nsw/sydney-storm-seawall-delayed-by-funding-row-with-collaroy-homes-on-the-brink-of-collapse-20160607-gpdqsk.html>>.

²⁵⁰ Daisy Dum as, Nick Ralston and Ava Benny-Morrison, 'Sydney storm: Seawall delayed by funding row with Collaroy homes on the brink of collapse', *The Sydney Morning Herald* (online), June 8, 2016 <<http://www.smh.com.au/nsw/sydney-storm-seawall-delayed-by-funding-row-with-collaroy-homes-on-the-brink-of-collapse-20160607-gpdqsk.html>>.

²⁵¹ Black, 'The Role of Risk in Regulatory Processes', above n 217, 9.

²⁵² Ortwin Renn, 'Concepts of Risk: a Classification' in: S. Krimsky and D. Golding (eds.) *Social Theories of Risk* (Praeger 1992) 57.

²⁵³ Renn, 'Concepts of Risk: a Classification' above n 252, 58-59.

²⁵⁴ Alexandre Liveira Tavares and Pedro Pinto dos Santos, 'Re-scaling risk governance using local appraisal and community involvement' (2014) 17(7) *Journal of Risk Research* 923, 924; van Asselt and Renn, above n 5, 437.

to the population.²⁵⁵ Policy, that is politically legitimate, is more likely to be successful.²⁵⁶ Although the thesis touches on normative concepts of politically legitimate policy in Chapter Four, as there is no assessment of risk included in the thesis, it is beyond the scope of the research to examine this tension. However, this tension should be recognised in government decision making.

The role of law in risk mitigation and modification

During the three-stage process of risk assessment, controls, which are, or can be, put in place to modify the likelihood and consequences of a risk, are considered. Legal instruments and procedures may control or modify the potential for a risk to arise or reduce the severity of consequences. Controls to modify risks can range from physical objects to mandated processes.²⁵⁷ A physical control to modify risk of storm and flooding may include construction of a levees or sea walls; it may also include the dissemination of a warning.²⁵⁸ Mandated processes or procedural controls include regulations, procedures and guidelines.²⁵⁹ In emergency management, procedural controls such as public Information plans and warning guidelines outline how and when to warn the public. In this way, they act both as a control in themselves, as a mandated process, as well as supporting the effective utilisation of the physical control, the actual dissemination of the message.

Utilisation of a warning to modify risk will not remove all of the risk of exposure to hazard impacts.²⁶⁰ In fact, it is acknowledged that warnings, while going some way to reducing impacts,²⁶¹ may have a low control strength. This is because 'not everyone will necessarily respond' and take, or be able to take,

²⁵⁵ Renn, 'Concepts of Risk: a Classification', above n 252, 57, 71-72; Tavares and dos Santos, above n 254, 923.

²⁵⁶ Ibid.

²⁵⁷ Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 71.

²⁵⁸ Ibid 11-12.

²⁵⁹ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 6; Ibid 11.

²⁶⁰ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 10, 51-52 (Noting the need to calculate level of the control as either very low, low, medium or high, based on 'control strength and expediency').

²⁶¹ Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 72.

preventative actions to reduce the likelihood of harm occurring.²⁶² To increase the effectiveness of warnings as a risk control, they must be part of a 'well-integrated set of controls including forecasts, intelligence gathering and public warnings'.²⁶³ To be effective, the controls also require ongoing monitoring to ensure they are achieving the modification to the risk that is sought. In keeping with risk management principles, of continual improvement, responsiveness to change and 'best practice',²⁶⁴ this research seeks to review some of the current procedural controls. The aim in Chapter Five, is to determine whether the controls hinder or support risk communication and warning, and function 'as assumed',²⁶⁵ or require enhancement.

Risk Treatment

The final stage of the risk management process is risk treatment. Risk treatment is also labelled 'risk mitigation and risk reduction'.²⁶⁶ Risk mitigation is defined as the 'ongoing and sustained action' to 'limit the impact' of events.²⁶⁷ The risk treatment phase involves the selection and implementation of options to address a risk.²⁶⁸ Notably, and in line with concepts of shared responsibility, this may involve transference of the risk to other parties.²⁶⁹ Whichever option is selected, it is unrealistic and not economically possible,

²⁶² Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 10, 50-51.

²⁶³ *Ibid* 10, 50.

²⁶⁴ Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 15.

²⁶⁵ Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 42.

²⁶⁶ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 6; Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 10 (refers to risk reduction rather than risk mitigation); Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 6 (Refers to both risk mitigation and risk reduction).

²⁶⁷ See, eg, Lindell and Perry, above n 179, 8; Risk Steering Committee, US Department of Homeland Security, *DHS Risk Lexicon 2010 Edition* (September 2010) 21 <<https://www.dhs.gov/xlibrary/assets/dhs-risk-lexicon-2010.pdf>> ('Ongoing and sustained action' to 'limit the impact' of events).

²⁶⁸ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 18-19.

²⁶⁹ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 6.

to expect 'absolute safety' and 'zero-risk level'.²⁷⁰ Consequently, there will be some residual risk, which the community will need to manage.²⁷¹

Risk mitigation options for natural hazard and emergency related risks include risk communication in the form of warnings.²⁷² Therefore, as well as performing as a control, a warning has been acknowledged as a valid mitigation tool in the treatment phase of the risk management process.²⁷³ Early warnings and risk communication may for example, proactively modify a risk by alerting communities of the need to prepare their properties as storm season commences. Warnings prior to, or during an event, particularly when consequences are likely to be of greater magnitude or have a different effect than first anticipated, may be a reactive mechanism to mitigate or control the immediate consequences and likely exposure to the impacts of the hazard. Whether warning is used to modify or mitigate natural hazard related risk, it will be incorporated in a control,²⁷⁴ such as legislation, an emergency management plan, guideline or standard. In recognition of the role that warnings and risk communication can play in modifying and controlling risk, Chapter Three undertakes a more thorough examination to highlight some elements that make warning effective. The Chapter also begins to identify the

²⁷⁰ Ingles, above n 184, 74-75; OECD, 'Boosting Resilience through Innovative Risk Governance', above n 243, 19, 48; Smith, above n 179, 4.

²⁷¹ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 6.

²⁷² Mileti, *Disasters by Design*, above n 185, 190-191; Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) (Risk communication here is differentiated from the process of communication which occurs throughout the entirety of the risk management process).

²⁷³ Mileti, *Disasters by Design*, above n 185, 174 (Warning systems 'give information to people at risk, enable those in danger to make decision and take action'); Sellnow & Seegar above n 48, 106.

²⁷⁴ United Nations International Strategy for Disaster Reduction (UNISDR), 'Early Warning as a Matter of Policy' (The Conclusions of the Second International Conference on Early Warning, Bonn, 16-18 October 2003) 5, 6, 12-14; Mileti, *Disasters by Design* above n 185, 174; Cardona et al, 'Determinants of risk: exposure and vulnerability' in C.B Field et al (eds), *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (2012) (A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press) 75, 82, 85; Salter, above n 22, 25; United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction* (2009) 19 <http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf> (the meaning for mitigation is 'the lessening or limitation of the adverse effects of hazards' and can include public awareness).

²⁷⁴ Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 76.

role that social media plays in the dissemination of effective warning. It is anticipated that the elements for effective warning would be promoted and supported within the legal controls.

Conclusion

This Chapter outlines the risk management process, key definitions and the role of law in the management of risk. In doing so, the Chapter provides a framework and rationale for the research that forms the remainder of the thesis. Risk is defined at the outset of the Chapter, as the effect of uncertainty on objectives, such as financial, safety and environmental goals. An example of a risk source was given: a storm. A storm has the potential to lead to flooding and cause property damage. Risk ownership, determines who ought to be responsible and accountable for the management of the potential for the storm to cause property damage. Risk ownership may come about through physical ownership of an asset, so that the property owner is responsible for damage to their house. As well as the property owner, in Australia, emergency service agencies and government entities are allocated elements of risk ownership through policy and regulatory instruments. The relevant entities will be held accountable for their share of responsibility for managing natural hazard and emergency related risk. The purpose of this thesis is to examine the role of law in assisting emergency service agencies to manage their allocated risk.

To effectively manage risk, an organisation puts in place governance structures, which include regulatory systems. These systems include policies and regulatory components. When governance structures and the relevant regulatory system for emergency management are effective, it is more likely that the objectives of risk reduction and community resilience will be achieved. Where ineffective, instruments can give rise to further risk, such as legal claims. Contextual parameters place will place limitations on government's ability to effectively govern, control, manage and reduce risk. Some of the external parameters that influence the regulatory or governance context were briefly mentioned in this Chapter. They include social, political and regulatory influences that shape the governance context in Australia. Specific influences in each of these domains were identified as relevant to the emergency

management context. These were, shifts towards a risk society, individualisation of risk, the relevance of social contract theory to how responsibility for risk management should be shared, as well as the growing trend towards risk based regulation.

Once the governance and regulatory system is created, the relevant instruments require ongoing monitoring and evaluation to ensure policy objectives are being achieved.²⁷⁵ Some of the regulatory components will play an important role in the modification and mitigation of risk. Legal instruments which support warning may act as, or support procedural controls to limit the exposure of the community to impacts of hazards. In the context of an emergency, an instrument that requires the community to be warned of an impending hazard may ensure that community members are alerted to the need to prepare their properties for potential impacts for example, of a storm. When individuals act on warning messages, the likelihood that damage will be suffered from the impact of storm may be lowered to an acceptable level. As indicated, to ensure specific controls and instruments are meeting their objectives, and reflect current good practice principles, they need to be monitored and updated. The following Chapter examines risk communication and warning in more detail. It aims to draw out the good practice principles that the procedural controls ought to incorporate, support and promote.

²⁷⁵ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) vi, 9.

Chapter Three: Risk Communication

'Effective communication or the non-existence thereof, has a major bearing on how well people are prepared to face and cope with risk'.²⁷⁶

Chapter Two examined the risk management framework and the role of the law in supporting that framework. The Chapter highlighted that communication and warning can be an effective control and mitigation measure in the management of natural hazard related risk.²⁷⁷ Communication, particularly warnings,²⁷⁸ which 'inform and advise'²⁷⁹ citizens, provide a basis for decision making about the feasible actions that can be taken to protect lives,²⁸⁰ property,²⁸¹ and 'manage risk'.²⁸²

The importance of communication in the process of managing risk should not be underestimated. Communication occurs throughout all phases of the risk and hazard management cycles and takes place both internally and externally to an organisation. For example, emergency service agencies will undertake inter and intra-agency communication. This internal communication is a high priority, particularly for the effective co-ordination and activation of resources to prepare for, and respond to emergency related risk. Agencies will also communicate to external parties such as businesses and the community. The aim of this type of communication is to inform the relevant stakeholders of their likely exposure to hazard impacts. As indicated, the communication informs, advises, educates and facilitates informed decision making of citizens. In keeping with the gap identified in Chapter One, of the ability to deliver effective communication to the public, this thesis focuses on external communication.

²⁷⁶ Renn, 'Risk Governance: Towards an integrative framework', above n 214, 55.

²⁷⁷ Jane Bullock, George Haddow and Damon P. Coppola (eds), *Homeland Security: The Essentials* (Elsevier Inc, 2013) 270.

²⁷⁸ Attorney General's Department (Cth), *Best Practice Guide for Warning Originators* (June 2013) 1.

²⁷⁹ *Ibid* 1, 4.

²⁸⁰ Jeanette Shepherd and Kitty van Vurren, 'The Brisbane flood: CALD gatekeepers' risk communication role (2014) 23(4) *Disaster Prevention and Management* 469, 471.

²⁸¹ Mileti, *Disasters by Design*, above n 185, 197.

²⁸² Attorney General's Department (Cth), *Best Practice Guide for Warning Originators*, above n 278, 4, 5.

In an emergency, the communication of risk to the public in an effective manner, is a highly complex and challenging task. There are practical issues for the dissemination of communication if critical infrastructure is disabled.²⁸³ Hazard lead time²⁸⁴ along with issues of predicting the hazards paths,²⁸⁵ which are often prone to rapid change, may mean that there is a high degree of uncertainty as to what to communicate and to whom.²⁸⁶ Once the target audience is identified, there are then numerous factors that affect a citizen's interpretation of information, their perception of risk, and the need to act. The actions of emergency service agencies for example, may influence the perception / response process. As entities tasked with communication of risk, it is important for these entities to identify activities they can take to positively impact on this process. Optimally, the activities, which have a positive influence, will be embedded in components of the risk governance framework so that the components act as effective controls in the management of emergency related risk.

Extensive research has been undertaken in the field of risk communication, to determine factors that positively and negatively influence the perception / response process. One conceptual framework, which seeks to bring this work together, is the social amplification of risk framework ('SARF').²⁸⁷ This Chapter briefly examines the SARF, to illustrate the perception / response process, and to highlight the role that government and emergency service agencies play in affecting the process.²⁸⁸ Also examined is one of the less visible, but no less important factors, which impacts on this process, trust.²⁸⁹ A brief examination

²⁸³ Koehler, Kress and Miller, above n 244, 111-113; Tasmania, '2013 Tasmanian Bushfire Inquiry Report', Volume 1 (2013) 143, 159 (For example, in the Tasmanian Bushfires, communications towers were disabled which led to the inability to communicate effectively in some regions); State Government Victoria, *Review of the 2010–11 Flood Warnings and Response*, above n 61, 19.

²⁸⁴ D J Parker, S J Priest and S M Tapsell, 'Understanding and enhancing the public's behavioural response to flood warning information' (2009) 16 *Meteorological Applications* 103, 109 (The authors highlight that with 'a decreasing warning lead time, more are expected to die').

²⁸⁵ Koehler, Kress and Miller, above n 244, 111-113; Hazelwood Mine Fire Inquiry, above n 50, 12-13, 385.

²⁸⁶ Lundgren & McMakin, above n 47, 314.

²⁸⁷ Kasperson et al, 'The social amplification of risk', above n 5, 13.

²⁸⁸ Kasperson et al, 'The social amplification of risk', above n 5, 13.

²⁸⁹ Ibid 31.

of the role of trust in delivering effective risk communication and warning follows.

The role of trust in risk communication

Trust 'underlies public confidence' and credibility of the message sender in the eyes of the public.²⁹⁰ If the message sender is trusted, the citizen will have confidence in the agency. They will believe the agency is a credible source of information and are therefore more likely to respond positively to the communication. In contrast, a lack of trust may negatively affect a citizen's risk perception.²⁹¹ A lack of trust becomes problematic when citizens fail to take the desired or necessary action in response to communication, action that is necessary to protect themselves and reduce impacts. When there is a lack of trust, emergency service agencies will carry the burden in terms of increased response call outs. Government may also carry a greater cost burden by having to provide recovery assistance. Consequently, understanding and embedding factors into governance frameworks, which positively affect trust, are vital considerations for the emergency management sector.

The aim of this Chapter is to articulate good practice principles that support effective risk communication and the building of trust. Once good practice principles are identified and articulated as tangible actions, the relevant actions can be embedded into the legal components of the regulatory system. Good practice continues to develop over time. Therefore, regulatory components and procedures require ongoing revision to reflect these changes if they are to continue to perform as effective risk control and mitigation mechanism. If regulatory components across the regulatory system reflect good practice, the system can support consistent and competent action. This in turn assists in building trust and confidence in the emergency management sector.

Before investigating principles of good practice that underpin effective risk communication and trust, the role of risk communication in the risk management process requires further investigation. Key terms require

²⁹⁰ Ibid 32.

²⁹¹ Ibid 32.

definition. The following sections define these key terms, before going on to examine the perception / response process of citizens. Further research then identifies characteristics that can be leveraged to support effective communication. These characteristics, and how they are articulated as tangible actions, provide the basis of the findings for this Chapter.

The role of communication in risk management

Renn asserts that, 'effective communication has to be at the core of any successful activity to assess and manage risks'.²⁹² The integral role of communication is represented in the risk management frameworks provided in Figures 1 & 2 below. Figure 1 clearly links risk communication and consultation with each stage of the risk management process. This process was first examined in Chapter Two. Figure 2, adds another layer to the understanding of the central role of communication, demonstrating its relevance to each phase of the risk governance process.

Outside of these generic risk management and risk governance frameworks, and as highlighted in Chapter Two, communication is recognised as a significant risk mitigation / reduction tool in emergency management.²⁹³ Even in instances, where empirical studies suggest there is limited data to link timely warnings and saving of lives; these same studies still highlight that 'receipt of a warning of some sort makes a positive difference to damage saving efforts'.²⁹⁴ As adverted to in Chapter One, the key role of communication and warning is also formally recognised in international frameworks for disaster

²⁹² Renn, 'White paper on Risk Governance' above n 176, 54; van Asselt and Renn, above n 5, 439.

²⁹³ Mileti, *Disasters by Design*, above n 185, 174 (Warning systems 'give information to people at risk, enabling those in danger to make decision and take action'); Sellnow and Seegar, above n 48, 106; United Nations International Strategy for Disaster Reduction (UNISDR), 'Early Warning as a Matter of Policy' (The Conclusions of the Second International Conference on Early Warning, Bonn, 16-18 October 2003) 5, 6, 12-14 (this report, highlights that early warning has 'repeatedly been identified as a critical element of disaster risk reduction strategies').

²⁹⁴ Parker, Priest and Tapsell, above n 284, 109 (The authors also highlight that with 'a decreasing warning lead time, more are expected to die').

risk reduction.²⁹⁵ The *Sendai Framework for Disaster Risk Reduction*,²⁹⁶ for example sets out seven key targets. The framework reinforces the need to implement and improve early warning systems at all levels of government in order to achieve disaster reduction goals and objectives.²⁹⁷ In sum, the key role, which communication plays in disaster risk reduction and management, appears incontestable.²⁹⁸

Figure 1: Risk Management Process AS/NZS ISO 31000:2009²⁹⁹

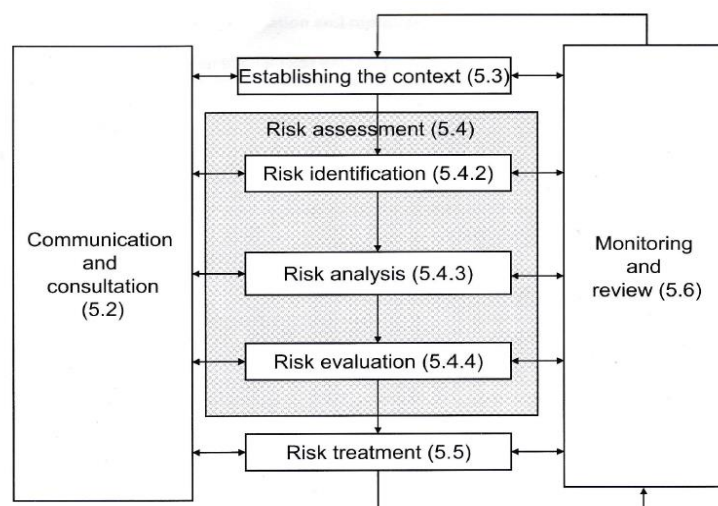


Figure 3 — Risk management process

²⁹⁵ See, eg, United Nations, *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*, Adopted 18-22 January 2005, UN Doc A/CONF.206/6; United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1.

²⁹⁶ United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1.

²⁹⁷ United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1, 12 (Goal 7: Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030).

²⁹⁸ Norris et al, above n 49, 132, 135, 140; Longstaff, Koslowski, and Geoghegan, above n 120 (It is also important to note that the provision of communication and information also supports the building of resilience, one of the key objectives of Australian national disaster policy).

²⁹⁹ Standards Australia, *Risk Management - Principles and guidelines (AS/NZS ISO 31000:2009)*.

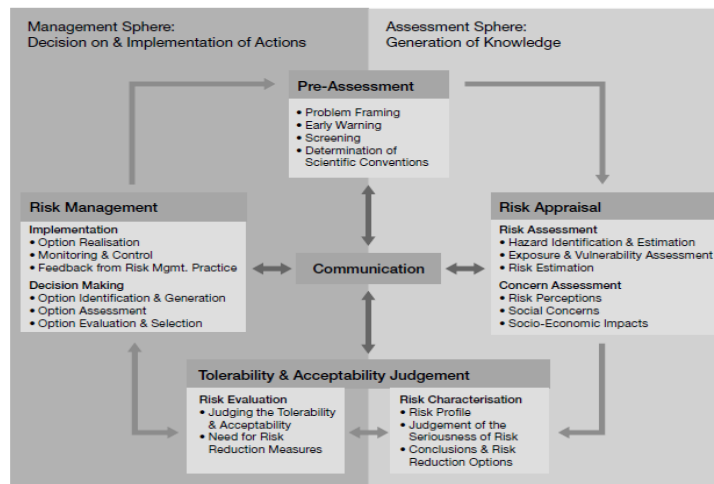


Figure 2: IRGC Risk Governance Framework³⁰⁰

Ineffective communication

In recognition of the key role of communication in reducing or mitigating disaster related risk, and as previously noted in Chapter One, extensive research is being carried out to establish principles of good practice. A need for this research is attributable to the failure of communication in emergencies. A failure 'to capture complex elements of communications, the diverse needs of the public, and evolving role of mass media and new communications.'³⁰¹ This failure and the need for improvement is documented in Australia in post disaster enquiries.³⁰² Failures focus on risk communications 'not meeting best practice standards', failing to deliver, 'timely and appropriate' information³⁰³ or effective communication.³⁰⁴ At the local government level, there is also a noted lack of development and testing of warning capacity.³⁰⁵ Although 'a higher priority has been given to providing warnings in recent years', it is recognised there are still 'opportunities for improvement'.³⁰⁶ As previously indicated in this

³⁰⁰ Renn, 'White paper on Risk Governance', above n 176, 13.

³⁰¹ Sellnow and Seegar, above n 48, 106.

³⁰² Monash Injury Research Centre, *Review of Recent Australian Disaster Inquiries*, above n 74, 23; Hazelwood Mine Fire Inquiry, above n 50, 31, 384; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11.

³⁰³ Hazelwood Mine Fire Inquiry, above n 50, 31, 384.

³⁰⁴ Fire Services Commissioner (Vic), *Review of community responses to recent bushfires* above n 74, 38; Emergency Management Victoria, *National Review of Warnings and Information* above n 11, 1.

³⁰⁵ Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11.

³⁰⁶ Fire Services Commissioner (Vic), *Review of community responses to recent bushfires*, above n 74, 38; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 1.

Chapter, as principles of good practice continue to emerge, it is important that doctrine, governance frameworks and regulatory systems reflect any developments.

Defining risk communication and warning

Risk communication

‘Communication’, in the risk management vocabulary, is often coupled with consultation. ‘Communication’ is defined as, the ‘continual and iterative processes that an organization conducts to provide, share or obtain information and to engage in dialogue with stakeholders regarding the management of risk’.³⁰⁷ This broad definition suggests a dynamic, ongoing, two-way process. A process, which can include internal and external stakeholders. It is evident from this definition and Figures 1 & 2 provided above, that communication occurs throughout the whole of the risk management and risk governance cycle. The focus in this thesis, as identified in Chapter One, is not on the whole of the process and on all types of information. The focus is instead on that information provided to external stakeholders in the reactive or response phase of risk management.³⁰⁸ That is, as hazards are imminent or approaching, and communities are facing a likely exposure to hazard related risk that may manifest as an emergency.

Communication, which takes place during an emergency, is referred to both as crisis communication,³⁰⁹ or crisis risk communication.³¹⁰ Although it is

³⁰⁷ British Standards Institution (BSI), *Risk management – vocabulary* (PD ISO Guide 73:2009, 30 September 2013); Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 3.

³⁰⁸ See, eg, Renn, ‘White paper on Risk Governance’, above n 176, 21 (Noting the steps in the risk chain based on Hoheneser et al’s work); Australian Institute for Disaster Resilience, *Emergency management in Australia: Concepts and Principles*, above n 35, 4 (Response activities are those activities, ‘which activate preparedness arrangements and plans to put in place effective measures to deal with emergencies and disasters if and when they do occur’).

³⁰⁹ B Reynolds and M W Seegar, ‘Crisis and Risk Communication as an Integrative Model’ (2005) 10 *Journal of Health Communication* 43, 45-46 (Risk communication has its origins in public health, whereas crisis communication has been said to have links to PR type communications); George, above n 193, 32 (George links the origins of risk communication to environmental health).

³¹⁰ Deborah C. Glik, ‘Risk Communication for Public Health Emergencies’ (2007) 28 *Annual Review of Public Health* 33, 34-35 (Uses the term crisis risk communication).

suggested that these labels may be interchangeable,³¹¹ there is research that also highlights the differences between the terms.³¹² This differentiation can revolve around timing and purpose in the risk management process.³¹³ For the purposes of this thesis, it is sufficient to refer to risk communication in a broad sense, to capture risk and crisis communication.³¹⁴ **Risk communication** is not defined in the risk management vocabulary. It is however, a commonly used term,³¹⁵ and attracts a multitude of overlapping interpretations.³¹⁶ Risk communication in this thesis refers to a type of communication that involves 'the exchange of information among interested parties about the nature, magnitude, significance or control of a risk'.³¹⁷ Interested parties considered in this thesis include 'government agencies...communities and individual citizens'.³¹⁸

Risk communication has a definable purpose. In drawing together a number of overlapping perspectives, that purpose is to; 'limit, contain, mitigate or reduce public harm'; by 'identifying a threat or crisis' and creating 'public messages which create specific responses'; 'enabling those at risk to make decisions and take action'.³¹⁹ Renn's research extends this purpose and

³¹¹ See, eg, Cornelius B. Pratt, 'Theoretical Approaches to and Sociocultural Perspectives in Crisis Communication' in Amiso M George and Cornelius B Pratt (eds), *Case Studies in Crisis Communications* (Routledge, 1st ed, 2012) 14 (Who suggests the terms can serve as substitutes); Wendling, Radisch and Jacobzone, above n 56, 7 (Risk and Crisis used interchangeably).

³¹² Reynolds and Seegar, above n 309, 43, 45-47; Ben Sheppard, Melissa Janoske, and Brooke Liu, "Understanding Risk Communication Theory: A Guide for Emergency Managers and Communicators," (2012) (Report to Human Factors/Behavioral Sciences Division, Science and Technology Directorate, U.S. Department of Homeland Security. College Park, MD) 5 (Crisis communication specifically refers to communication in the response phase of a disaster or emergency); M W Seegar, 'Best Practices in Crisis Communication: An expert Panel Process' (2006) 34(3) *Journal of Applied Communication Research* 232, 234-235 (Differences in terms stems from their disparate beginnings: risk communication deriving from a health context, whereas Crisis communication has been linked to Public Relations and 'repairing a damaged image after a crisis').

³¹³ Bullock, Haddow and Coppola (eds), above n 277, 269.

³¹⁴ See, eg, Sheppard, Janoske, and Liu, above n 312, 5.

³¹⁵ Dennis S. Mileti and Colleen Fitzpatrick, 'The Causal Sequence of Risk Communication in the Parkfield Earthquake Prediction Experiment' (1992) 12(3) *Risk Analysis* 393, 394 (As a seminal author in this area Mileti uses the term risk communication).

³¹⁶ Sheppard, Janoske, and Liu, above n 312, 5.

³¹⁷ Vincent T Covello, 'Risk Communication: An Emerging Area of Health Communication Research' (1992) 15 (1) *Annals of the International Communication Association*, 359, 359.

³¹⁸ Ibid.

³¹⁹ Reynolds and Seegar, above n 309, 48; Mileti, *Disasters by Design*, above n 185, 191 (Mileti adds emphasis to the aim of warnings to 'inform and prompt appropriate response', by containing 'alert and notification components'); Sorensen, above n 50, 119.

provides a more holistic view of risk communication. The author suggests that risk communication has a number of functions.³²⁰ Not only does it assist stakeholders in making informed choices. It also enables stakeholders to ‘understand the rationale of the results and decisions from the risk appraisal and risk management phases’, made by risk managers such as government.³²¹ Being able to understand the rationale for risk management decisions, assists in building mutual trust and confidence in institutions.³²²

Knowledge of the wider purpose of risk communication and its impact on trust and confidence is important to the emergency management sector. This is because trust and confidence underlie credibility, and it is credibility, that effective risk communication then relies on to persuade.³²³ Building competence and effective strategies for risk communication is therefore not only important for the purpose of mitigating harm. As identified at the commencement of this Chapter, it is also important for building trust and confidence in audiences. The aim is that audiences react appropriately and take the desired action in response to risk communication.³²⁴ Tangible activities, which can support trust, is discussed in the final section of this Chapter.

Warning

Warning is one aspect of risk communication.³²⁵ Warning in Australian emergency management is, ‘the dissemination of a message signalling an imminent hazard which may include advice on protective measures’.³²⁶ Its

³²⁰ Renn, ‘White paper on Risk Governance’, above n 176, 56-57 (Four functions of risk communication are: ‘education and enlightenment, risk training and inducement of behaviour changes (which helps people cope), creation of confidence in institutions for the assessment and management of risk, involvement in risk related decision and conflict resolutions’).

³²¹ Ibid 15.

³²² Ibid 22.

³²³ Reynolds and Seegar, above n 309, 48; Mileti, *Disasters by Design*, above n 185, 191 (Mileti adds emphasis to the aim of warnings to ‘inform and prompt appropriate response’, by containing ‘alert and notification components’); Sorensen, above n 50, 119.

³²⁴ Renn, ‘White paper on Risk Governance’, above n 176, 55.

³²⁵ Mileti and Fitzpatrick, above n 315, 394 (For example, Mileti includes dissemination and reaction to warnings in his discussion of risk communication).

³²⁶ Attorney General’s Department (Cth), *Best Practice Guide for Warning Originators*, above n 278, 1; Attorney General’s Department (Cth), *Australia’s Emergency Warning Arrangements*, above n 40, 2.

purpose reflects the narrow view of risk communication. That is, that risk communication seeks to 'inform the community of an impending or current threat and to prompt an appropriate response or action'.³²⁷ Activities that support warning are relevant to all phases of an emergency. The establishment of early warning systems³²⁸ for example, usually occurs in the prevention / preparation phases. Testing of warning messages and education of the public also occurs in these early phases. This preparatory activity provides the basis for effective action once the warning message is disseminated during, or just prior to, an emergency.³²⁹ This suggests, warning, like communication more generally, is an ongoing process. With these definitions in mind, how to create effective risk communication and warning, and how to embed tangible action for effective warning in the governance framework is now investigated.

Planning and governance: risk communication and warning

Before examining principles of good practice in risk communication and warning, a brief comment on the incorporation of risk communication and warning into regulatory systems and governance structures, is required. A more detailed examination will take place in Chapter. For now, it is important to note that early warning systems should be supported or mandated down to a local level where possible, supported by legislative structures,³³⁰ and risk communication planned.³³¹ This final element, the risk communication plan,

³²⁷ Attorney General's Department (Cth), *Australia's Emergency Warning Arrangements*, above n 40, 2; Bullock, Haddow and Coppola, above n 277, 269.

³²⁸ United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction* (2009) 12
<http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf> (Defines an early warning systems as, 'The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss').

³²⁹ Attorney General's Department (Cth), *Australia's Emergency Warning Arrangements*, above n 40, 3.

³³⁰ IFRC & UNDP, 'Effective law and regulation for disaster risk reduction', above n 78, 33-34, 36 (Both establishment and operation of early warning systems should be supported, along with authority for warning and decision making, although some countries will differ as to how the frameworks are put in place).

³³¹ Standards Australia, *Communicating and consulting about risk* (HB 327:2010); Commonwealth of Australia, Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 31.

should be 'developed at an early stage of the risk management process'.³³² This plan will be one component of the governance framework. As identified in Chapter One, the plan should outline 'the objectives of specific communication, who will be involved, how the channels will work, what will be communicated, and how the information will be communicated'.³³³

In light of these recommendations, the focus in Chapter Five, is on whether there is a clear inclusion of risk communication and warning in governance components. This includes whether there is a communication plan, one with identified objectives, and whether responsibilities for who should be involved in warning, are clearly allocated. In keeping with the focus on social media, attention is also drawn to how warning and risk communication will be delivered. An understanding of the need to plan, leads into the next section of this Chapter. This next section examines the process of an individual's perception and response to risk. It also identifies principles of good practice which positively influence this process and which ought to be incorporated into a communication plan.

Principles of good practice in risk communication: the detail

What constitutes good practice in carrying out risk communication has evolved over time. There are suggestions that there have been three phases in the development of risk communication, which even though dated, are still referred to by prominent scholars.³³⁴ The first phase focused on conveyance of probabilistic information and education with regards to risk in a one-way trajectory.³³⁵ The second phase employed 'greater levels of persuasion', to alter unacceptable behaviour.³³⁶ For example, in areas such as health, negative images have been utilised to depict the long-term effects of smoking, to deter such habits. The third phase, focuses on **two-way communication**,

³³² Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 18-20.

³³³ Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 18-20.

³³⁴ Renn, 'White paper on Risk Governance', above n 176, 55; William Leiss, 'Three Phases in the Evolution of Risk Communication Practice' (1996) 545 *The Annals of the American Academy of Political and Social Science* 85, 87-91.

³³⁵ Renn, 'White paper on Risk Governance', above n 176, 55-56.

³³⁶ Ibid.

that is, mutual education and consensus building between stakeholders as to risk, risk acceptability and risk perception.³³⁷

Importantly, the two-way dialogue enables entities to understand how risk is being perceived and responded to in the community. As identified in Chapter Two, incorporating community perceptions of risk and its acceptability into risk management decision making, adds to a more legitimate approach.³³⁸ The incorporation of community perspectives also provides opportunities to incorporate local knowledge on hazard impacts.³³⁹ Local knowledge is an important factor for building an understanding of how hazards affect, or are likely to affect, a community. Although risk communication is a two-way process, in relation to natural hazard and emergencies, government will usually take a leading role.³⁴⁰ This is in part due to their greater knowledge of a risk, their possession of the predictive tools, which identify risk, and its responsibility to protect the community.³⁴¹ Although greater responsibility is allocated to government, it is important to continue to build risk communication, which supports a two-way dialogue and the positive attributes it brings. As will be demonstrated in Chapter Eight, social media platforms will be an important, although disruptive technology to facilitate two-way interaction.

Challenges of risk communication

In communicating risk and creating 'effective mutual communication', there are numerous challenges to overcome.³⁴² Not least of which is the diversity of stakeholders, with their differing 'views, knowledge and understanding 'or

³³⁷ Ibid 57; Leiss, above n 334, 90-91; Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 18; Baruch Fischhoff, 'Comment: Four answers to four questions (about risk communication) (2014) 17(10) *Journal of Risk Research* 1265, 1265 (That is for authorities to listen rather than 'assuming they know what to say').

³³⁸ See Chapter Two, on the concerns over legitimacy of risk management decisions and processes as being too technical.

³³⁹ United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1,15 (Calls for the use of local and indigenous knowledge in disaster risk reduction practices).

³⁴⁰ Renn, 'White paper on Risk Governance', above n 176, 57; Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 2.

³⁴¹ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 2.

³⁴² Van Asselt and Renn, above n 5, 439.

perceptions of risk',³⁴³ as well as their needs and relative vulnerability to exposure.³⁴⁴ Although risk communication was previously considered a linear process of transmission, receipt and action, as Renn's theory indicates, the linear theory is overwhelmingly rejected.³⁴⁵ It is now recognised that individuals do not react on the objective risk content alone.³⁴⁶ Instead, they go through a staged³⁴⁷ or sequential³⁴⁸ social process³⁴⁹ of assimilation,³⁵⁰ which involves a number of steps. The SARF framework, in Figure 3 below, diagrammatically represents the stages of the perception / response process.³⁵¹ A key purpose of the model is also to demonstrate how risk is amplified and attenuated in the community. However, the key focus here, is on the perception /response element of the framework and the role of government agencies in impacting that process.

³⁴³ Renn, 'White paper on Risk Governance', above n 176, 57; Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 11 (Also known as their risk perceptions).

³⁴⁴ Renn, 'White paper on Risk Governance', above n 176, 15, 19, 39-40 (For a definition of vulnerability); Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 28, 30; Koehler, Kress and Miller, above n 244, 113-115; Cardona et al, above n 273, 67, 95.

³⁴⁵ E L Quarantelli, 'People's reactions to emergency warnings' (Article 170, University of Delaware Disaster Research Center, Transcript of Dam Safety Conference 1983) 178, 186; (a linear model provides an incomplete picture); Parker, Priest and Tapsell, above n 284, 108; Mileti, *Disasters by Design*, above n 185, 141 (The author states that variations exist in the source, channel and receiver and additional factors also affect processing); David Paton and David Johnston, 'Disasters and communities: vulnerability, resilience and preparedness' (2001) 10(4) *Disaster Prevention and Management: An International Journal* 270, 270 (the author notes care is to be taken in making information-action link assumptions'); N. Dash and H. Gladwin, 'Evacuation Decision Making and Behavioral Responses: Individual and Household' (2007) 8(3) *Natural Hazards Review* 69, 70; Marie-Pierre L Markon & Louise Lemyre, 'Public Reactions to Different Sources of Uncertainty' (2013) 19(4) *Human and Ecological Risk Assessment* 1102, 1103.

³⁴⁶ See, eg, Paton and Johnston, above n 345, 270 (the author notes 'care is to be taken in assuming information-action link assumptions'); Dash and Gladwin, above n 345, 70; Quarantelli, 'People's reactions to emergency warnings', above n 345, 186.

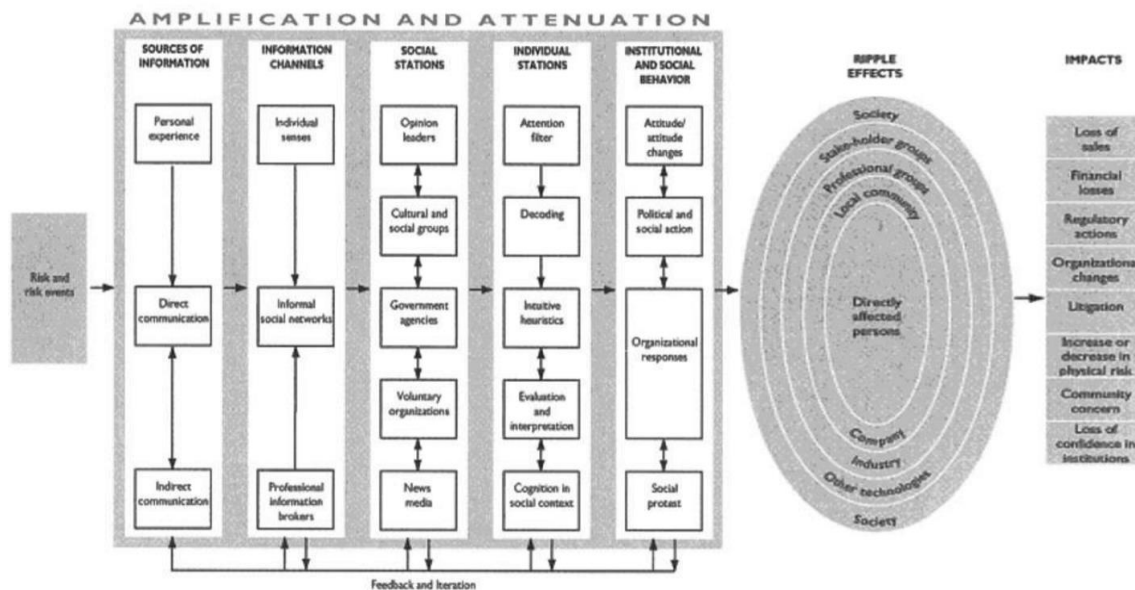
³⁴⁷ Mileti, *Disasters by Design*, above n 185, 191.

³⁴⁸ Glik, above n 310, 38.

³⁴⁹ Dash and Gladwin, above n 345, 69 (This process involves a 'balance of objective and subjective processes for risk perception'); Fire Services Commissioner (Vic), *Review of community responses to recent bushfires*, above n 74, 2; See, eg, Quarantelli, 'People's reactions to emergency warnings', above n 345, 178-179 (During this process, individuals speak to others and seek additional information, which the author calls social confirmation, in that 'people react in the context of interaction with others' to warnings).

³⁵⁰ Paton and Johnston, above n 345, 271.

³⁵¹ Kasperson et al, above n 5, 13.



Roger Kasperson, and J. X. Kasperson, "The Social Amplification and Attenuation of Risk: A Conceptual Framework", *The Annals of the American Academy*, Vol. 545, May, (1996), pp. 112-123

Figure 3: The Social Amplification and Attenuation of Risk³⁵²

As the first portion of the diagram indicates, there are numerous sources of information, information channels, social stations, as well as individual and social influences, which influence how a risk is perceived. Therefore, when a warning is sent, it may not bring about the intended response.³⁵³ The response and the way an individual personalises risk and what they should do about it³⁵⁴ will instead depend on a number of factors. These factors include:

- The channel or entity a warning or message is received from (does it come from a trusted reliable source?)
- The personal experiences of the individual (have they experienced similar situations which mean they know the relevant action to take?)
- The feasibility of response (is it possible to collect family in time to evacuate or get to a place of safety?).³⁵⁵

³⁵² Kasperson et al, above n 5.

³⁵³ Quarantelli, 'People's reactions to emergency warnings', above n 345, 178.

³⁵⁴ Dash and Gladwin, above n 345, 71; Shepherd and van Vurren, above n 280, 470, 476 (In the case of diverse ethnic groups, this may be because 'information to match their needs is not disseminated' or only disseminated in English).

³⁵⁵ Mileti, *Disasters by Design*, above n 185, 191; B. N Frisby, S.R Veil and T.L Sellnow, 'Instructional Messages During Health-Related Crises: Essential content for Self-Protection' (2014) 29(4) *Health Commun.* 347, 348 (The authors suggest that ' individuals need to understand the message relates to them, understand the risk they face if they do not take the action, decide if they should act and what action to take').

Consequently, any perception of risk derived from risk communication, is a product of 'psychological, social, and political factors'.³⁵⁶ Pertinent to this thesis is the role of government agencies as a social station, a direct and indirect communicator of risk communication and warning. One that can influence, although not control, the perception / response process. The aim of this Chapter is to determine optimal strategies for these agencies to positively influence risk communications where they can.

Characteristics of Government Agencies as social stations

Acting as a conceptual framework, the authors of SARF recognise that further and more in-depth research is available on each of the elements within the perception / response process. Mileti, for example, has undertaken research into characteristics of the senders and receivers of messages. Leveraging these characteristics can positively influence message perception and response.³⁵⁷ Government agencies responsible for disseminating risk communication need to be aware of the receiver characteristics, to ensure they deliver appropriately framed³⁵⁸ message content.³⁵⁹ Message content, which positively influence the social / psychological aspects of the message receiver,³⁶⁰ to bring about compliant action.³⁶¹ As already indicated, these receiver characteristics include previous experience of hazards,³⁶²

³⁵⁶ Paul Slovic, 'The Psychology of risk' (2010) 19(4) *Saúde e Sociedade* 731, 742.

³⁵⁷ Mileti and Fitzpatrick, above n 315, 395.

³⁵⁸ Glik, above n 310, 35-37.

³⁵⁹ Mileti, *Disasters by Design*, above n 185, 191.

³⁶⁰ See, eg, Glik, above n 310, 35-37 (appropriate message framing assists 'stressed individuals with skewed perceptions to process the information at hand').

³⁶¹ Paton and Johnston, above n 345, 273.

³⁶² Quarantelli, 'People's reactions to emergency warnings', above n 345, 180; Parker, Priest and Tapsell, above n 284, 108; Wachinger et al, above n 178, 1052-1053 (Direct and indirect experience); Mileti, *Disasters by Design*, above n 185, 191, 228 ('Prior disaster experience is a major predictor of higher levels of preparedness and effective response); Dennis Mileti & Paul W. O'Brien, 'Warnings During Disaster: Normalising Communicated Risk' (1992) 39(1) *Social Problems* 40, 45 (in the context of response to aftershocks, those having experienced damage during a quake' are more likely to prepare' in the advent of aftershock warnings or to 'take the risk seriously').

environmental cues³⁶³ as well as normative or optimistic bias.³⁶⁴ The appropriate framing of message content for emergency management warning is the subject of ongoing research.³⁶⁵ While the outputs of this thesis should work in conjunction with the findings on the framing of message content for recipients, the focus here is on sender rather than receiver characteristics. This is because, the sender characteristics are perhaps easier to operationalise as tangible activities that can be incorporated into legal components of the regulatory system.

Sender characteristics

Sender characteristics, which can positively influence perceptions of risk, and therefore the effectiveness of risk communication as mitigation tool, are numerous. In the first instance, positive responses from the community generally occur where information disseminated, **'is correct and correctly transmitted'**.³⁶⁶ Therefore, it is necessary to ensure accuracy³⁶⁷ or correctness of information. A number of sender characteristics then support **'correct' transmission** of information. These include timing,³⁶⁸

³⁶³ Fire Services Commissioner (Vic), *Review of community responses to recent bushfires* above n 74, 2 (In some cases these direct observations from environmental cues are the first trigger of awareness of hazards); Barry Dewitt et al, 'Environmental risk perception from visual cues: the psychophysics of tornado risk perception' (2014) 10 (12) *Environmental Research Letters* 1, 1-2.

³⁶⁴ Dash and Gladwin, above n 345, 71-72 (In some cases those familiar with hazards in their area 'did not wait for government warnings to make decisions' but made their own independent assessments of response requirements); Parker, Priest and Tapsell, above n 284, 108 (This type of bias leads to a 'underestimated likelihood of adverse consequences' as affecting the individual, (while it is seen as 'dangerous to generalise socio-economic factors have some correlations to response action'); Miletti, *Disasters by Design*, above n 185, 142 (Some of the socio-economic, psychological and geographic factors have produced mixed results in their ability to explain behaviour, and group and individual habits need changing to affect action); Mileti and O'Brien, 'Normalising Communicated risk', above n 362, 53 (Household factors have also been identified as impacting on perceptions); Dash and Gladwin, above n 345, 72 (These factors highlighted across a broad range of research may include, 'age, gender, presence of children, race and ethnicity, income and disability'); Shepherd and van Vurren, above n 280, 471 (Building on the notion of race and ethnicity, perceptions of threats can be a function of 'values, social influences, attitudes (for example 'mistrust of government sources due to previous exposure to authoritarian governments') which impact on 'decoding of information').

³⁶⁵ See, eg, Professor Vivienne Tippett et al, 'Building Resilient Communities: Effective Multi-Channel Communication in Disasters: Annual Report 2015-2016' (2016) (Queensland University of Technology and Bushfire and Natural Hazards CRC).

³⁶⁶ Norris et al, above n 49, 127, 140.

³⁶⁷ Norris et al, above n 49, 140.

³⁶⁸ White, *Social Media, Crisis, Communication and Emergency Management*, above n 46, 148.

consistency,³⁶⁹ credibility, reach or penetration³⁷⁰ and tailored messaging.³⁷¹ To these factors Mileti would also add, specificity, certainty, channel, source and frequency.³⁷² Many of these characteristics correspond with criteria for effective risk communication set out in the risk management standards.³⁷³ What these characteristics suggest, is that a correctly disseminated risk or warning message, needs to be issued with sufficient time for individuals to react, and over a channel that is likely to reach them. The message also needs to come from a credible source. If multiple messages are disseminated, there also needs to be inconsistency across organisations. The following, highlights tangible activities to support these characteristics, along with corresponding challenges.

Timing

To ensure risk communication acts as an effective control of the management of hazard and emergency related risks, the message sender can leverage the timing of risk communication. A well-timed warning is critical for decision-making.³⁷⁴ Studies within the community suggest that timely warning is particularly critical for persons classified as ‘threat monitors’ and ‘threat avoiders’.³⁷⁵ For example, those personality types categorised as ‘threat monitors’, generally ‘won’t leave unless necessary’ and they expect detailed warnings and information to inform their decisions of ‘when they really need to leave’.³⁷⁶ Obviously, such a person given a less than timely warning may not

³⁶⁹ Quarantelli, ‘People’s reactions to emergency warnings’, above n 345, 180.

³⁷⁰ Attorney General’s Department (Cth), *Best Practice Guide for Warning Originators*, above n 278, 8-9; Paton and Johnston, above n 345, 271-272 (tailoring is required for the ‘community context’ rather than ‘an assumption homogeneity of message recipient).

³⁷¹ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 10 (this policy document highlights accuracy, tailoring and broad reach); Corina Hoppner et al, ‘Linking social capacities and risk communication in Europe: a gap between theory and practice?’ *Natural Hazards* (2012) 64, 1753, 1755 (A new challenge is the need to tailor message for ‘different actors at different spatial scales’).

³⁷² Mileti and Fitzpatrick, above n 315, 395, 399 (In this study particularly Mileti highlights the need for ‘repeated communications’ to reinforce messages as a ‘paramount factor’, warranting that risk communication suggests receiver seek additional information).

³⁷³ Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 19 (These include, ‘clarity, objectivity, timeliness, regularity and an opportunity for input or the exchange of views’).

³⁷⁴ Sellnow and Seegar, above n 48, 107.

³⁷⁵ Fire Services Commissioner (Vic), *Review of community responses to recent bushfires* above n 74, 16-17, 33.

³⁷⁶ *Ibid.*

be able to process the message and make the necessary arrangements for evasive action.³⁷⁷ In sum, components of the governance frameworks that support risk communication should highlight the need for timely communication. Actions to support timeliness will need to take into account when selecting the channel for message dissemination. This is examined below.

Challenges for timing

Despite ongoing efforts in this area, timeliness continues to assert itself as an area where effectiveness is lacking or at times impossible.³⁷⁸ Ineffectiveness may be linked to the fast-moving nature of events and the problems they pose.³⁷⁹ This proposition is evidenced in examples of fire, flood and hail. In 2010-2011, severe flooding affected Queensland. There was insufficient time to 'warn of evacuation before access roads were closed' due to rapidly rising floodwaters.³⁸⁰ In 2014, a storm supercell swept through Brisbane, Queensland, again there was no time to warn until hail was already raining down.³⁸¹ In Victoria, in the case of bushfires, it is noted that when fire breaks out and threatens people or homes very quickly, it might not be possible to issue timely warning.³⁸² If events are fast moving, reliance on a 'total warning system', a system that incorporates public education to ensure general

³⁷⁷ Thomas J. Cova et al, 'Warning Triggers in Environmental Hazards: Who Should be warned to do what and when?' (2016) *Risk Analysis* 1, 4-5, 7 (The authors highlight considerations of timing between receipt of warning and evacuation travel times which need to be considered in issuing warnings and balanced with warning too early when uncertainty margins are higher).

³⁷⁸ Tasmania, '2013 Tasmanian Bushfire Inquiry Report', above n 283, 161-163, 165; Hazelwood Mine Inquiry, above n 50, 384, 393, 401 (here communication failed to reach residents in 'a timely way' if they received communication at all, although the CFA were commended for timely services); Sweeney Research, 'A qualitative research Report on CFA Warnings' (September 2009) Reference No. 18942, 9.

³⁷⁹ Mileti, *Disasters by Design*, above n 185, 191; Rebecca E. Morss et al, 'Flash Flood Risks and Warning Decisions: A Mental Models Study of Forecasters, Public Officials and Media Broadcasters in Boulder Colorado' (2015) 35(11) *Risk Analysis* 2009, 2010 (Flash Flooding); Betty H Morrow et al, 'Improving Storm Surge Risk Communication: Stakeholder Perspectives' (Jan 2015) 96.1 *Bulletin of the American Meteorological Society* 35, 35.

³⁸⁰ Queensland Floods Commission of Inquiry, 'Queensland Floods Commission of Inquiry – Final Report' (March 2012) 174.

³⁸¹ Cameron Atfield, 'A year on from Brisbane's freak hail storm', *The Brisbane Times* (online), 27 November 2015 <<http://www.brisbanetimes.com.au/queensland/a-year-on-from-brisbanes-freak-hail-storm-20151126-gl94so.html>>.

³⁸² Victoria, *2009 Victorian Bushfire Royal Commission Final Report*, 'Volume II: Fire Preparation, Response and Recovery' (2010) (The Hon. Bernard Teague AO) 51.

readiness prior to events is necessary.³⁸³ Public education should also acknowledge that a warning may not be received.³⁸⁴ Current practice within the emergency management sector, in storm, cyclone and fire season, indicates community education of this type is beginning to take place.³⁸⁵

Many of the enablers for timely delivery of messages relate to internal or interagency procedures for data collection and sharing, which facilitates organizational decision making. These procedures are not the focus of this research however, they need to be acknowledged. Timely delivery of warnings and risk communication will depend on data availability and the speed at which decisions to take action and inform the public are made.³⁸⁶ Critical dependences for the provision of this data, in a format which can be utilised in decision making, can make expedient warning difficult.³⁸⁷ Emergency services agencies and local government for example, may rely on forecasts from the Bureau of Meteorology in order to understand the likely exposure to natural hazard related risks in their jurisdiction. Therefore, communication frameworks facilitating effective intra and inter-agency communication, with interoperability between systems, is required.³⁸⁸ However, this is a challenging process.³⁸⁹

Once decisions are made as to who and what to communicate,³⁹⁰ public information professionals will create messages for dissemination. Message content requires signoff. Approval processes must balance the need to ensure

³⁸³ Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 25-26.

³⁸⁴ Ibid.

³⁸⁵ Curriculum and Assessment Authority (Vic), *Bushfire Education teaching and learning resources for early childhood settings, primary and secondary schools* (2016) <<http://www.bushfireeducation.vic.edu.au/>>; State Emergency Service (Qld), *Get Storm Ready* <<http://www.stormwise.com.au/step/how-prepare-storm/>>; ABC Emergency, *Plan for an emergency: Cyclone* (2016) <<http://www.abc.net.au/news/emergency/plan-for-an-emergency/cyclone/>>.

³⁸⁶ Morss et al, above n 379, 2009-2010; Sorensen, above n 50, 122; Cova et al, above n 377, 1 (Decision making in deciding what targets group needs to take protective action, what is the best protective action and when should the protective be initiative are difficult questions – research is ongoing into the use of triggers to support timely decision making and action).

³⁸⁷ Noting that the ability to predict and supply data is the subject of ongoing research, See, eg, Jeffrey D. Kepert et al, 'Improved Predictions of Severe Weather to Reduce Community Impact: Annual Project Report 2014-2015' (2015).

³⁸⁸ State of Victoria, '2009 Victorian Bushfires Royal Commission: Final Report – Summary' (July 2010) (The Hon. Bernard Teague) 11, 18.

³⁸⁹ Morss et al, above n 379, 2010.

³⁹⁰ Cova et al, above n 377, 2-4.

appropriate content is sent, with the need to disseminate information quickly to the public. Creating efficiencies in these processes, for example, by creating pre-approved message templates, is key if government wishes to share of responsibility for taking action with community members. It is often only when the public become aware of a risk from an external source such as government, that evasive action can be taken. In sum, timely communication is critical for decision-making, and needs to be emphasised in protocols. The success of a protocol as a risk control will however be dependent on internal processes being efficient and streamlined.

Accuracy

A second point of leverage for effective risk communication, is accuracy or the provision of correct information. From a psychological perspective, communicating accurate information with the 'best available knowledge and source of a threat' helps to reduce anxiety and fear'.³⁹¹ From a practical perspective the positive influence of accurate, or certainly the absence of misinformation, is self-evident. If a citizen is trying to assess their potential exposure to hazard impacts, misinformation 'may lead to a poor or passive response', a lack of understanding of the relevant action to take and the period in which they need to respond.³⁹² Early errors in risk communication can also lead to a crisis or create problems'.³⁹³

It is particularly this aspect, the provision of inaccurate information, information that leads a person into greater danger, where links to legal accountability become evident in Chapters Six and Seven. In light of the need for accuracy, there are tangible activities that can be incorporated into communication and warning protocols. These include the verification of information prior to issue. If this is not possible, notification that the information is unverified or of an unofficial nature of the content should be given.³⁹⁴ Information channels need

³⁹¹ Misse Wester, 'Fight, Flight or Freeze: Assumed Reactions of the Public During a Crisis (2011) 19(4) *Journal of Contingencies and Crisis Management* 207, 207-208, 212.

³⁹² Parker, Priest and Tapsell, above n 284, 110.

³⁹³ Sellnow and Seegar, above n 48, 109, 111 ('small variance in the communication process, in form, content, distribution and timing may produce wide fluctuations in system behaviour and lead to crisis'); George, above n 193, 32.

³⁹⁴ See, eg, Brisbane City Council, *Brisbane Storm and Flood Map* <<https://bnestorm.crowdmap.com/>>.

to be monitored in order to address rumours and misinformation that might result in an inappropriate amplification or attenuation of a risk. There are however challenges in providing accuracy in messaging.

Challenges for accuracy

As highlighted in relation to timing there are challenges in accuracy in part due to technology. If predictive modelling of the likely impact of a hazard is available, there is an expectation that it should be utilised to provide accurate information.³⁹⁵ However, there is a limit in the ability to model and objectively assess or predict impact or exposure to hazards.³⁹⁶ This is particularly the case when a hazard of the relevant magnitude has never been experienced, and data is incomplete.³⁹⁷ Even if predictions are uncertain, there is a body of research, which supports the transmission of uncertainty. Framed in an appropriate way, being transparent about uncertainty, can lead to self-efficacy and 'autonomous risk management'.³⁹⁸

Chapter Four introduces contextual influences in emergency management. One of these influences is the growing use of social media in the community and its impact on the information landscape and the availability of accurate information. In anticipation of the examination of social media, it is noted that the platforms provide a large amount of unofficial, unconfirmed information that can compete with, contradict, or provide a stark contrast to official sources.³⁹⁹ The vast quantities of information on social media, may overwhelm resource

³⁹⁵ Tasmania, '2013 Tasmanian Bushfire Inquiry Report', above n 283, 161-162, 165.

³⁹⁶ Ibid 29, 55; Victoria Government, *Review of the 2010-11 Flood Warnings and Response*, above n 61, 71-72.

³⁹⁷ Gyrð Braendeland and Atle Refsdal, 'Risk factors in emergency response (2013) 9(2) *International Journal of Emergency Management* 127, 128.

³⁹⁸ Marie-Pierre L. Markon, Joshua Crowe, Louise Lemyre, 'Examining uncertainties in government risk communication: citizens expectations' (2013) 15(4) *Health, Risk and Society*, 313, 313-314; 321-322; Markon & Lemyre, 'Public Reactions to Different Sources of Uncertainty', above n 345, 1105-1106, 1116 (some types of uncertainty leads to a diminished uptake in action and a view of 'incompetence of experts', but if appropriately framed communication uncertainty can be positive where it relates to a 'lack of data' rather than 'diverging expert opinion' coupled with conceptualisation of a risk and appropriate strategies, increasing trust and reducing suspicion); Parker, Priest and Tapsell, above n 284, 111-112.

³⁹⁹ Mileti, *Disasters by Design*, above n 185, 196; Dennis J Parker and John W Handmer, 'The role of Unofficial Flood Warnings Systems' (1998) 6(1) *Journal of Contingencies and Crisis Management* 45, 45 (these systems are 'ignored as being beyond government control').

capacity to monitor and correct misinformation.⁴⁰⁰ Issues of legal accountability in this area will be examined in Chapter Eight. Although technology can pose challenges for the provision of accurate information, the importance of accuracy should not be underestimated. This is because; the provision of inaccurate information may have negative impacts on response to subsequent warnings⁴⁰¹ and may undermine trust.⁴⁰² As briefly highlighted at the commencement of this chapter, trust is a key issue in the perception / response process.⁴⁰³

Clarity, Conciseness and Specificity / Tailored messaging

Due to their similarity, the characteristics of clarity, conciseness and specificity, which can positively influence the perception / response process, are examined here. These attributes are linked to message content and message design. They are important to note, not only because they improve the effectiveness of risk communication, but also because of the likely legal implications for failing to take them into account. Tailored messaging is described as ‘providing information that people are actually seeking’.⁴⁰⁴ Information that is relevant and ‘strategically matched to audience needs, values, backgrounds, culture and experience’.⁴⁰⁵ A requirement for specific and tailored messaging features heavily in policy documents and inquiry

⁴⁰⁰ Queensland Police Service, Media and Public Affairs Branch, *Queensland Police Service: Disaster Management and Social Media – a case study* (2011) v, vi (Myth busting is helpful, if not required, for correcting inaccurate information), however see, eg, Wouter Jong & Michel L.A. Duckers, ‘Self-correcting mechanisms and echo-effects in social media: An analysis of the “gunman in the newsroom crisis”’ (2016) 59 *Computers in Human Behaviour* 334, 334 (In social media communities inaccurate information may over a period of time self-correct due to the ongoing input of citizens, therefore agency correction may not be as necessary).

⁴⁰¹ Glik, above n 310, 39; Tierney, *Disaster Response*, above n 109 (Tierney disputes this negative impact of false warnings).

⁴⁰² Parker, Priest and Tapsell, above n 284, 110; Hoppner et al, above n 371, 1768.

⁴⁰³ Wachinger et al, above n 178, 1053, 1061; Kasperson et al, above n 5.

⁴⁰⁴ Fire Services Commissioner (Vic), *Review of community responses to recent bushfires* above n 74, 30.

⁴⁰⁵ Reynolds and Seegar, above n 309, 45; State Government Victoria, *Review of the 2010–11 Flood Warnings and Response*, above n 61, 47; Hazelwood Mine Fire Inquiry, above n 50, 386, 396, 400 (Needs for ‘tailored communication that resonates with target audiences’ values’, considering complexity).

reports⁴⁰⁶ and has 'high empirical support for an increase in public response'.⁴⁰⁷

Conversely, a universal rather than tailored message 'can have negative consequences' where it does not take into account the physical spread of the audience. A universal message which contains directions for example on where to evacuate to, may cause some recipients to go in the wrong direction and send them into a 'potentially dangerous' situation.⁴⁰⁸ As well as tailoring, lack of clarity or the presence of ambiguity in a message, may mean the nature of the risk of harm is misunderstood. In either of these situations, legal implications may arise.⁴⁰⁹ In optimal circumstances, a warning will be tailored and unambiguous. However again the ability to predict hazard impacts and the ability to make decisions on who and what to communicate will challenge an agency's ability to deliver to tailor and provide certain information.

Consistency and Channels

Further factors, which influence effective risk communication and warning, are the choice of message channels, and consistency in messages. In this regard, research supports the frequent use of multiple channels and the provision of consistent messages across each channel, to increase public response to risk communication.⁴¹⁰ As earlier highlighted, with the advent of new technologies

⁴⁰⁶ Hazelwood Mine Fire Inquiry, above n 50, 386, 396, 400, 402; Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 1, 8.

⁴⁰⁷ Mileti, *Disasters by Design*, above n 185, 191.

⁴⁰⁸ Tasmania, '2013 Tasmanian Bushfire Inquiry Report', above n 283, 163-164.

⁴⁰⁹ See, eg, *State of Queensland v Kelly* [2014] QCA 27, [36], [44]-[47] (Where the symbols did not clearly depict the type of harm that could arise).

⁴¹⁰ Mileti, *Disasters by Design*, above n 185, 191; Mileti and Fitzpatrick, above n 315, 395, 399 (In this study particularly Mileti highlights the need for 'repeated communications' so as to reinforce messages as a 'paramount factor', warranting that risk communication suggests receiver seek additional information); See also guidelines which suggest use of multiple channels, Queensland Government, *Queensland State Disaster Management Plan* (2015) 29; Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework*, above n 107, 23; New South Wales Government, *New South Wales State Emergency Management Plan* (2012) 7 (The full suite of traditional and social media channels may be used); *Emergencies (Emergency Plan) 2014 (No 1)(ACT)* (Reference is made to a range of mediums); Emergency Management Committee (NSW), *New South Wales Public Information Services Functional Area Supporting Plan* (2005); State Government Victoria, *Victorian Warning Protocol*, Version 2.0 (July 2013) 11 (Where a 'multi-faceted approach' is recommended to 'ensure maximum penetration and saturation'); Attorney General's Department (Cth), *Code of Practice for Warning Republishers* (April 2013); Attorney General's Department (Cth), *Best Practice Guide for Warning Originators*, above n 278.

the information landscape is changing. This includes a change in the types of channels that can, and are expected by the public, to be employed to disseminate messages. Instead of traditional mechanisms for communication, such as television, radio and press releases for example, the public are communicating over the internet. They are using mobile devices and applications such as Snapchat, Twitter and Facebook.

New channels for communication

Post disaster inquiries include recommendations for the inclusion of new technologies and channels of communication as part of a multi-channel strategy.⁴¹¹ As becomes apparent in the following Chapter, many of these newer channels have the advantage of speed of delivery on their side. However, and in reflection on the need for tailored delivery, it is important to deliver over channels that are relevant and appropriate to the target audience.⁴¹² To determine the most appropriate channel for the local community, procedures ought to highlight the need for community profiling⁴¹³ and protocols ought to reinforce the use of multiple message channels.

Consistency

As well as employing multiple channels for message delivery, the key issue is then consistency across channels. Consistency, or at least a lack of conflicting or contradicting information, will reduce frustration, confusion, discounting or disbelief in information.⁴¹⁴ A presence of contradicting information also negatively affects the perceived competence of the relevant organisations and therefore trust and credibility. Inconsistency, also affects the ability of the

⁴¹¹ Victoria, *2009 Victorian Bushfire Royal Commission Final Report*, above n 382, 51.

⁴¹² Hoppner et al, above n 371, 1767; Hazelwood Mine Fire Inquiry, above n 50, 384, 387, 400.

⁴¹³ See, eg, Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11.

⁴¹⁴ Dennis Mileti et al, *Public Hazards Communication and Education – the State of the Art* (March 2004)

<https://www.researchgate.net/profile/Dennis_Mileti/publication/253943459_Public_Hazards_Communication_and_Education_The_State_of_the_Art/links/56ebee608aefd0fc1c71b5a.pdf>; Mileti and O'Brien, 'Normalising Communicated risk', above n 362, 40,42; Hazelwood Mine Inquiry, above n 50, 392, 393 (a number of organisations involved meant contradictory information arose) Mary-Elise Manuell and Jeffrey Cukor, 'Mother Nature versus human nature: public compliance with evacuation and quarantine (2011) 35(2) *Disasters* 417, 429-430 (these authors discuss research that suggests an 'overwhelming factor in evacuation success was co-ordinated information where provided by multiple organisations).

public to take timely action to avoid hazard impacts, when further verification is required.⁴¹⁵

There are noted challenges to the ability to provide consistent messaging. Chapter Five in its analysis of the current regulatory system, identifies that numerous parties may have a responsibility, or at least authority to warn. With the likely involvement of numerous entities, frameworks for collaboration and joint operating procedures are imperative. In Victoria, the One Source One Message initiative has been adopted to ensure all agencies are working on the same information to inform their communication.⁴¹⁶ However, these initiatives are not necessarily occurring across each hazard, nor are they relevant for cross-jurisdictional events. This suggests gaps in consistency across agencies involved in warning requires some attention.

Reach and penetration

Intertwined with the use of multiple channels and timing is the notion of reach and penetration. As the Victorian Flood Review indicates, 'a more accurate or timely warning' is of 'little value unless it is disseminated to those who need it'.⁴¹⁷ Broad reach for risk communication and warning is highlighted in the *National Strategy for Disaster Resilience*.⁴¹⁸ During the Queensland floods, for example, deaths occurred where people tried to drive through floodwaters. This was in some part attributable to the lack of information on road conditions.⁴¹⁹ No message on the likely exposure to the hazard, reached the driver. The need for receipt, across a vastly differing population, who access different sources of information, reinforces the need for protocols to incorporate multi-channels initiatives to reach the target audience.⁴²⁰

⁴¹⁵ Mileti, *Disasters by Design*, above n 185, 196.

⁴¹⁶ Emergency Management Victoria, *Joint operating procedure: Incident public information for fire SOP J04.01 10.0* (February 2016) <<http://files.em.vic.gov.au/JSOP/SOP-J04.01.pdf>>; Fire Services Commissioner (Vic), *Reference Architecture Victorian Information Network for Emergencies (VINE)*, Version 1.2 (May 2013).

⁴¹⁷ Victoria Government, *Review of the 2010-11 Flood Warnings and Response*, above n 61, 39; See also, Manuell and Cukor, above n 414, 429 (On the need for 'receipt' of a warning).

⁴¹⁸ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 10.

⁴¹⁹ Queensland Floods Commission of Inquiry, 'Queensland Floods Commission of Inquiry – Final Report', above n 380, 387-388.

⁴²⁰ Fire Services Commissioner (Vic), *Review of community responses to recent bushfires*, above n 74, 39.

Leveraging tangible actions and characteristics

To this point, several characteristics have been highlighted which government agencies, as the sender of risk communication and warnings, can leverage to influence citizen response. These characteristics included timely delivery, of accurate information, and a consistent message that is delivered via multiple channels. A message that is tailored to its audience and likely to reach its target.

Overall, this and the preceding Chapter, have identified tangible activities to assist risk communication and warning. In the first instance, regulatory components need to support warning and the creation of early warning systems. They need to incorporate clear lines of responsibility and frameworks that support collaboration and bring about consistency in messaging across the sector. Discrete actions, which support the individual characteristics of an effective message, require both legislative support and inclusion in a communication plan. Tangible activities are ones that support and authorize decision-making and the dissemination of messaging. They are activities, which balance the need for formal processes and the need for timely information. Multiple channels underpinned by community profiling need to be incorporated, along with the use of new technologies to ensure relevant messages reach as many sectors of the community as possible.

On an operational level, plans should, and already incorporate, the need for the correction of misinformation to ensure accuracy where possible. Verification of data will be required, and any uncertainty communicated to ensure transparency. Above all, and to ensure actions taken for warning are seen as legitimate, systems which promote a two-way conversation, a conversation which includes local information and multiple social views and perspective of risk, are necessary. This last point on legitimacy brings the research back to the idea of trust that was raised at the beginning of this Chapter.⁴²¹

⁴²¹ van Asselt and Renn, above n 5, 439-440 (Not only does trust affect communication but communication can affect, by providing a 'better basis' for building trust, so that 'risk

Trust and risk communication

As identified at the commencement of this Chapter, trust is critical to risk perception.⁴²² Having now established tangible activities for effective risk communication, trust is examined in more depth. Research into the links between trust and risk communication reflects a wider field of research on the development of trust between government and citizens, known as social trust.⁴²³ As previously adverted to, trust feeds confidence⁴²⁴ and confidence and trust build credibility with an audience.⁴²⁵ If both trust and credibility are present, then there is more likely to be positive response to a risk message. Conversely, if trust is lacking, then risk management efforts may fail.⁴²⁶ When trust is lacking, risk may be misconstrued, perhaps over exaggerated or amplified, which in turn brings about inappropriate responses.⁴²⁷ In relation to current levels of trust, between government and citizens, studies suggest, there is a 'long term decline in public confidence and trust in public social institutions', with a corresponding decline in institutional credibility.⁴²⁸ This data suggests that government is in a 'deficit position' with regards to trust⁴²⁹ and further work is necessary to secure public trust.

management measures and arrangements' become acceptable); Lundgren & McMakin, above n 47, 316; Slovic, 'Perceived Risk, Trust and Democracy', above n 5, 676.

⁴²² Slovic, 'Perceived Risk, Trust and Democracy', above n 5, 676.

⁴²³ Cynthia G. Jardine et al, 'Risk communication and trust in decision-maker action: a case study of the Giant Mine Remediation Plan' (2013) 72 *International Journal of Circumpolar Health* 1, 2 (Social trust is defined here as 'the willingness to make oneself vulnerable to another in a particular context (trust in government agencies)').

⁴²⁴ Ibid (Confidence is defined as 'the belief that certain future events will occur as expected (confidence in government to take appropriate action)').

⁴²⁵ Kasperson et al, above n 5, 31 (The decline in credibility aligns with the belief that trust underlies confidence and where there is confidence there is credibility); van Asselt and Renn, above n 5, 439-440; Lundgren & McMakin, above n 47, 316.

⁴²⁶ Kasperson et al, above n 5, 31.

⁴²⁷ Ibid 31; Shepherd and van Vurren, above n 280, 471 (A history of distrust can mean interpersonal sources which may be less reliable are consulted for information rather than government, which could generate inappropriate responses).

⁴²⁸ Richard G Peters, Vincent T. Covello and David B. McCallum, 'The Determinants of Trust and Credibility in Environmental Risk communication' (1997) 17(1) *Risk Analysis* 43, 45-46 (the determinants of trust and credibility were: knowledge and expertise, openness and honest and concern and care'); Kasperson et al, above n 5, 32; Edelman, *Trust in Asia Pacific, Middle East & Africa 2015*

<http://issuu.com/edelmanapac/docs/trust_in_apacmea_2015/36?e=7100583/11155664>.

⁴²⁹ Jardine et al, above n 423, 3.

Improving trust

Before addressing how trust can be improved, it is necessary to understand how trust is destroyed. 'Trust is fragile' and easier to destroy than create.⁴³⁰ It can be negatively impacted by past performance.⁴³¹ For example, past performance may have led to a perception in the community that there was lack of caring and competence.⁴³² Responsibilities for risk management may not have been fulfilled and 'information not disclosed in a timely manner.'⁴³³ Destruction of trust can also occur if there is a 'lack of coordination amongst risk management organisations, lack of listening, dialogue or an unwillingness to acknowledge risks'.⁴³⁴ Therefore, if emergency service agencies have previously failed to warn communities, have provided incorrect information, or sent inconsistent messages, distrust may be evident. The resulting distrust may lead individuals to make their own decisions as to how to respond to the risk at hand, based on what they perceive to be more reliable sources.

In a context where distrust is evident, a question arises as to how trust can be improved. Although trust is fragile and readily destroyed, it can be built over time.⁴³⁵ What is relevant to note, is that not only is trust required for risk communication to be effective, risk communication also builds trust.⁴³⁶ It is therefore important to embed activities that support the building of trust and credibility, in to the design of governance frameworks. Activities can be based on elements that positively affect trust such as 'competence, objectivity, fairness, consistency and faith',⁴³⁷ 'knowledge and expertise, openness and

⁴³⁰ Slovic, 'The Psychology of risk', above n 356, 731, 742; Kasperson et al, above n 5, 31; Ibid 1.

⁴³¹ Jardine et al, above n 423, 2.

⁴³² Lundgren & McMakin, above n 47, 317.

⁴³³ Ibid.

⁴³⁴ Ibid.

⁴³⁵ Slovic, 'The Psychology of risk', above n 356, 731, 742 (Trust is built slowly yet is 'destroyed in an instant', and the 'when it comes to winning trust, the playing field is tilted towards distrust').

⁴³⁶ Renn, 'Risk Governance: Towards an Integrative Framework', above n 214, 15; Jardine et al, above n 423, 1.

⁴³⁷ Kasperson et al, above n 5, 32; Wouter Poortinga & Nick F Pidgeon, 'Exploring the Dimensionality of Trust in Risk Regulation' (2003) *Risk Analysis* 961, 965; Peters, Covello and McCallum, above n 428, 45-46 (Similar determinants of trust are: knowledge and expertise, openness and honest and concern and care').

honesty, and concern and care'.⁴³⁸ Although these elements appear abstract, it is possible to turn them into practical activities. For example, when constructing risk messages and warning, the message tone will need to convey care and concern, to show 'value similarity'.⁴³⁹ The content will need to demonstrate knowledge and expertise, as well as communicate any uncertainty, in the area of the risk. Ongoing research is already evident in this area.

Trust at the macro-level

As well as measures, which focus on message tone and content, there are also practical measures that can be incorporated into risk governance frameworks.⁴⁴⁰ In keeping with the legal theme of the thesis, these measures are the focus of this research. The measures range from macro level activities, which include ensuring the design of the governance framework and regulatory system supports cross agency co-ordination as well as clear role allocation. These activities can support demonstrations of competence, consistency and co-ordination. Role allocation also needs to take into account, at the macro-level, that who delivers the message will affect trust.⁴⁴¹

Trust at the micro-level

At a micro-level, there are also activities that are relevant to building trust. Leveraging the 'sender characteristics' raised earlier in this Chapter; operating procedures of government agencies, the sender of messages, can embed sign-off practices which allow for the timely release of information. Sufficient

⁴³⁸ Peters, Covello and McCallum, above n 428, 43, 45-46; Lundgren & McMakin, above n 47, 317 (Factors which support trust also include caring, empathy, dedication, commitment, competence, expertise, honesty, openness, confidentiality and equity); See, also Australian Bureau of Statistics, *1370.0 – Measure of Australia's Progress, 2013*, November 2013 <<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/1370.0main+features422013>>.

⁴³⁹ Jardine et al, above n 423, 2 (Value similarity is similarity between government and public values).

⁴⁴⁰ Poortinga & Pidgeon, above n 437, 962, 965-967 (For example to demonstrate competence, to bring about predictability and measures to ensure that citizens have trust in risk regulation).

⁴⁴¹ Lundgren & McMakin, above n 47, 318 (The authors suggest that 'local officials and emergency responders were more trusted than federal officials', and that 'direct personal contact has the most significant effect on a person's willingness to trust'); Jardine et al, above n 423, 4 (Trust may be held with an individual although the organisation they represent may still be distrusted).

resource allocation will be required to support active monitoring of information channels to correct misinformation. Correction of misinformation is also relevant in operational protocols. When errors occur, admission of the error and action to correct misinformation as soon as it is discovered is important.⁴⁴² Within protocols that determine how agencies operate as a sender of warning messages, there needs to be a balance between engagement in two-way conversation and limitations on employees to speak on behalf of the organisation. Although not an exhaustive list of activities, which support the building of social trust,⁴⁴³ these activities provide examples, which should be borne in mind in the examination of current governance structures.

Conclusion

While the previous Chapter identified the risk management process relevant to the management of natural hazard and emergency related risk, this Chapter has focused on the role of risk communication in that process. As the Chapter identifies, communication is a key or pivotal component in the management, mitigation and modification of risk. In light of this pivotal role, and the existing gaps in effective delivery, further activity is required to improve current processes.

In terms of definitions, risk communication, an activity that can assist in the control or mitigation of risk, is the exchange of information amongst interested stakeholders. Its purpose is to mitigate harm, by 'identifying a threat' and creating 'public messages which create specific responses', 'enabling those at risk to make decisions and take action'.⁴⁴⁴ Warning, a mitigation tool, is a sub-category of risk communication. Warning involves 'the dissemination of a message signalling an imminent hazard which may include advice on

⁴⁴² Lundgren & McMakin, above n 47, 317.

⁴⁴³ Slovic, 'Perceived Risk, Trust and Democracy', above n 5, 678 (Slovic's provides examples of trust-increasing activities with regards to a nuclear plant which included – the existence of plans, responsive to any sign of problems, effective action taken, hold regular public hearings, monitoring, no evidence of withholding information, careful training of staff).

⁴⁴⁴ Reynolds and Seegar, above n 309, 48; Mileti, *Disasters by Design*, above n 185, 191 (Mileti adds emphasis to the aim of warnings to 'inform and prompt appropriate response', by containing 'alert and notification components'); Sorensen, above n 50, 119.

protective measures'.⁴⁴⁵ The purpose of a warning, is to 'inform the community of an impending or current threat and to prompt an appropriate response or action'.⁴⁴⁶ The dissemination of a warning can assist in sharing responsibility for disaster risk reduction. It does so by identifying threats and informing the community of their likely exposure to hazard related risk, along with any relevant action to be taken. In this way, the burden of taking action, rather than falling on the emergency management sector, can become the personal responsibility of the informed individual.

To be effective, both risk communication and warning, require planning and support in the components of the risk governance structure. They require clear lines of responsibility to be drawn, and processes that facilitate co-ordination and support competent and consistent activity. Based on these recommendations, the research in Chapter Five, which examines the current risk governance structure, focuses on: whether there is clear inclusion of risk communication and warning in governance components; the presence of a communication plan; the objectives of the plan and whether responsibilities for who should be involved are clearly allocated. What is noted is that risk communication is envisaged as a two-way ongoing and dynamic process. A process that supports the mutual education of stakeholders. Where these two-way conversations are utilised, and local information and community perspectives are included in risk management activity, risk management solutions will be deemed more legitimate. They are also more likely to be acceptable to the public. Inclusion of activities into the governance framework, which support a two-way dialogue, are therefore important.

For the components of the governance structure to be effective, and assist in consistent and competent delivery of risk communication, an understanding of the risk perception / response process is required. An understanding of this process along with the activities that positively influence response is

⁴⁴⁵ Attorney General's Department (Cth), *Best Practice Guide for Warning Originators*, above n 278, 1 (A warning is defined as 'is the dissemination of a message signalling an imminent hazard which may include advice on protective measures'); Attorney General's Department (Cth), *Australia's Emergency Warning Arrangements*, above n 40, 2.

⁴⁴⁶ Attorney General's Department (Cth), *Australia's Emergency Warning Arrangements*, above n 40, 2; Bullock, Haddow and Coppola, above n 277, 269.

fundamental for governance and regulatory system design. The framework utilised to represent the perception / response process in this Chapter, is the SARF framework. Analysis of the framework highlights that perception / response and personalisation of risk communication and warning, is a staged process with numerous inputs. It is a highly complex process; one with many aspects that government is unable to control. As depicted in Figure 3, government agencies are only one of the many social stations that influence individuals' decision-making processes. Despite their potentially limited sphere of influence, there are characteristics, which statutory authorities can leverage, to support competent action on their behalf. The Chapter provided examples of some of the factors, which underpin a correct or correctly transmitted message. These factors included timeliness, consistency, accuracy, specificity and tailored messaging. There was also a need to ensure that message receipt is achieved through the employment of multiple channels of communication.

In highlighting these factors, and drawing attention to the role of social media in the bigger picture, this Chapter also acknowledged that the context within which risk communication occurs is now disrupted by emerging technologies. Social media is changing the way people communicate, the speed at which people can communicate, and the public expect that they will be used. The two-way nature of the platform is challenging to incorporate into regulatory systems, and embed in processes that have traditionally supported one-way broadcast warnings. Technology and the impact it has design of a regulatory system design is one of the contextual factors that influences risk management. Contextual factors relevant to the risk management context are discussed in the following Chapter.

Chapter Four: Establishing the risk management context

The purpose of this Chapter is to establish the context in which risk management activities for emergency related risks are being undertaken. As Chapter Two highlighted, in the process of allocating management of risk, risk owners are identified. The risk owner is expected to strategically manage their share of the relevant risk. This thesis examines the role of statutory authorities, as shared owners of natural hazard and emergency related risk. More particularly, it examines the regulatory system or governance structures which have been created to support risk management activities. This Chapter recognises that when designing governance strategies and the regulatory system, there will be factors that influence or constrain the way the system is conceptualised. These include, although are not limited to, sociological, political, regulatory and technological influences. In continuing to add depth to Chapters Two and Three, this Chapter investigates these four factors of influence.

These contextual factors, which affect decision-making at different levels, can be grouped into two categories. The sociological and political factors, for example, provide abstract theories, or theoretical lenses, which impact the design of a regulatory system. Out of these theories come moral norms upon which to base decisions. The regulatory and technological influences affect concrete practices for the creation of effective instruments, as well as communication of risk and warning.

In terms of theoretical lenses, the first to be examined in this Chapter is social contract theory. Social contract theory outlines normative propositions on the need for legitimate governance, the duty of government to act within the limits of its powers, and the responsibility to enable and protect the freedoms and liberties of individual citizens.⁴⁴⁷ When making decisions about the most appropriate risk governance components to adopt, ensuring these components act and remain within, legitimate limits of power, will be important.

⁴⁴⁷ See, eg, Locke, *Two Treatises of Government*, above n 29; Alvey, above n 29, 14; Sheridan, above n 29.

As indicated in Chapter Three, remaining within the legitimate limits of power is important for engendering trust in the community.⁴⁴⁸

The second theory, which was first examined in any depth in Chapter Two, is the sociological theory of the risk society.⁴⁴⁹ In Chapter Two the Beck's theory on the risk society provided insights into the current shift towards a risk based society and the operationalisation of risk into procedures of risk analysis. In this Chapter, the theory is employed to demonstrate the drive in a risk society towards the individualisation of risk,⁴⁵⁰ or the pushing of the management of risk back onto the individual.⁴⁵¹ As becomes evident, this principle creates tensions with the social contract view that government is a protector of life and property. However, individualisation of risk is evident in emergency management under the concept of shared responsibility. A policy objective which seeks to spread responsibility across a broad cross section of stakeholders, including citizens.

In contrast to abstract norms for decision-making, regulatory and technological influences directly impact decision-making. These influences highlight principles which regulation should seek to uphold, and identifies channels through which to communicate risk. In terms of construction of regulation (a specific component of the governance framework), ongoing research provides principles which seeks to improve its design. Of particular relevance to this thesis, the principles of good practice in regulation highlight the need for decision-makers to streamline procedures through the removal of red tape. As becomes apparent, they also identify the need to incorporate accountability measures. The general shift towards risk based regulation, and how best to regulate for disaster risk regulation is examined.

In terms of technology, and as has been adverted to frequently in the thesis, new channels for communicating risk, in the form of social media have emerged. The presence and increasing use of these technologies, affect how

⁴⁴⁸ Poortinga & Pidgeon, above n 437, 962; Kasperson et al, above n 5, 32; Peters, Covello and McCallum, above n 428, 45-46; Lisa M. PytlikZillig et al, 'The dimensionality of trust-relevant constructs in four institutional domains: results from confirmatory factor analyses' (2016) 6(2) *Journal of Trust Research* 111, 111, 114.

⁴⁴⁹ See, eg, Beck, *World at Risk*, above n 162; Sørensen and Christiansen, above n 232.

⁴⁵⁰ Hamilton, above n 217, 453.

⁴⁵¹ Black, 'The Role of Risk in Regulatory Processes', above n 217, 6.

individuals communicate with each other and expect to be communicated with by government. Although the unique features of social media can be harnessed to improve risk communication and build trust, they also provide challenges. As identified in Chapter Three, social media disrupts traditional processes for the dissemination of risk communication which have historically been based on the broadcast of official warnings and government control of information. For emergency managers' challenges, apparent in the use of social media, raise concerns about legal accountability and institutional risk. A key question for decision makers in the sector is how best to utilise the technologies, and incorporate them into governance components, in a way that supports: effective risk communication; ongoing legitimacy of government; and addresses legal concerns.

Before proceeding to examine each of the theoretical lenses and practical factors in more detail, it is noted, that they are not the only influences on decision-makers that affect risk governance choices. Certainly, organisational culture, economics, and internal processes, will also influence action.⁴⁵² The four factors are however relevant to demonstrate that numerous components constrain and influence the decisions taken as to the most appropriate method for risk management. With these factors in mind, it is now appropriate to examine the influence of social contract theory on the management of risk.

Social contract theory: an introduction

Social contract theory provides normative political principles, which outline the nature and theory of government, as well as key factors that ought to be upheld by decision-makers in the creation of law.⁴⁵³ Some critics would argue the concept of social contract is anachronistic;⁴⁵⁴ has fallen out of favour;⁴⁵⁵ or

⁴⁵² Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 3.

⁴⁵³ Marett Leiboff and Mark Thomas, *Legal Theories: Contexts and Practice* (Lawbook Co, 2009) 1; Penner & Melissaris, above n 235, 3-4 (The authors highlight the obvious linkage that 'principles underpinning political society will have a direct impact on the form and content of the law'); John Rawls, *Political liberalism* (Columbia University Press, 1999) 44,46; George E Glos, 'The Normative Theory of Law' (1969) 11 *William and Mary Law Review* 151, 159.

⁴⁵⁴ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009) 3.

⁴⁵⁵ Johann Sommerville, 'The social contract (Contract of Government)' (2011) *Oxford Handbooks online*

focuses too heavily on the individual rather than the common good.⁴⁵⁶ However, interpretations of social contract theory are still highly relevant today.⁴⁵⁷ The ongoing relevance of the theory is in part due to the dominant role it has played in shaping Australia's legal institutions.⁴⁵⁸ Although the interpretations of social contract theory reference an idealised or hypothetical moral order,⁴⁵⁹ the theory does provide an understanding that a 'plurality of individuals' make up society'.⁴⁶⁰ Both of these factors are important to consider in the creation of legitimate risk governance frameworks, which in turn engender trust in the community.⁴⁶¹ As an idealised moral order, the theories draw attention to what ought to be.⁴⁶² The principles they espouse, articulate norms, duties and obligations, from which expectations of accountability will flow.

<<http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199238804.001.0001/oxfordhb-9780199238804-e-33>>.

⁴⁵⁶ Ruth W. Grant, *John Locke's Liberalism* (University of Chicago Press, 2010) 2-3; John Rawls, *A Theory of Justice* (The Belknap Press of Harvard University Press, 1971) 27-29. (Social contract theory contrasts with utilitarian and economic theories of law, which focus on 'impersonal economic efficiency' and for 'the best outcome for all').

⁴⁵⁷ David Boucher and Paul Kelly (eds), *The social contract from Hobbes to Rawls* (Routledge, 1994) 1; Amir Paz-Fuchs, 'The Social Contract Revisited the Modern Welfare State: Overview and Critical Report' (The Foundation for Law, Justice and Society, 2011) (Rawls work has led a modern renaissance in social contract theory).

⁴⁵⁸ Stephen Bottomley and Simon Bronitt, *Law in Context* (The Federation Press, 4th ed, 2012) 1, 37, 38; Leiboff and Thomas, above n 453, 18; Penner & Melissaris, above n 235, 4; Robert C. L. Moffat, 'Philosophical Foundations of The Australian Constitutional Tradition' (1965) 5 *Sydney Law Review* 59, 61, 78-79 (The Australian constitution is said to have drawn heavily on the US constitution, aspects of which are said to be 'pure translations of words of John Locke', a prominent social contract theorist); Sir Robert Garran, *Commentaries on the Constitution of the Commonwealth of Australia (1867-1957)*(2000) (A digital text sponsored by New South Wales Centenary of Federation Committee University of Sydney Library) <<http://adc.library.usyd.edu.au/data-2/fed0014.pdf>>; Paz-Fuchs, above n 457, 3 (Noting Australia's position as a liberal democracy).

⁴⁵⁹ Paz-Fuchs, above n 457, 3.

⁴⁶⁰ Ibid.

⁴⁶¹ PytlikZillig et al, above n 448, 111, 114.

⁴⁶² Glos, above n 453, 159; Jordan Daci, 'Legal Principles, Legal Values and Legal Norms: are they the same or different' (2010) 1(2) *Academicus International Scientific Journal*, 109, 113.

Key principles from social contract theory

The examination of social contract theory focuses on the works of John Locke⁴⁶³ and John Rawls.⁴⁶⁴ These theorists provide early and modern interpretations of the theory. Principles from the social contract theory are embedded or implicit in legal institutions.⁴⁶⁵ However, at times it is important to explicitly refer to the ideal. Re-articulation of the principles reminds decision makers that they need to take a holistic and objective viewpoint when addressing emergency related risk in the regulatory system. This is a viewpoint, which can be forgotten, or misunderstood.

Turning firstly to Locke, his theory highlights the need for **legitimate government, legitimate use of power, and obligations to uphold certain rights within society**.⁴⁶⁶ In applying Locke's theory, it is clear to see that emergency management is a legitimate area of power.⁴⁶⁷ This is because the objective of emergency management is to protect society 'against those things that threaten health, safety and welfare of the people'.⁴⁶⁸ Exercise of the power to manage emergency related risk, must remain within boundaries of legitimate action. It must uphold the rights of freedom and liberty of those in society. Therefore, when asking citizens to evacuate property, for example, there must be a balance between the use of power to remove a person, and

⁴⁶³ Locke, *Two Treatises of Government*, above n 29, (Locke is considered to be the founding father of liberal political theory which is still pertinent in Australia today, see, eg, Grant, above n 456, 200; John Summers, Dennis Woodward and Andrew Parkin, *Government, Politics, Power and Policy in Australia* (Pearson Education Australia, 7th ed, 2002) 297, 304; Department of Foreign Affairs and Trade (Cth), *About Australia: The land and its people* <<http://dfat.gov.au/about-australia/land-its-people/Pages/government.aspx>>; Ariadne Vromne, Katharine Gelbert, Anika Gauja, *Powerscape: Contemporary Australian politics* (Allen & Unwin, 2009) 36.

⁴⁶⁴ See, eg, Rawls, *A Theory of Justice*, above n 456; Rawls, *Political liberalism*, above n 453.

⁴⁶⁵ Grant, above n 456, 200; Paz-Fuchs, above n 457, 3-4.

⁴⁶⁶ Locke, *Two Treatises of Government*, above n 29.

⁴⁶⁷ See, eg, Mark Pelling and Kathleen Dill, 'Disaster politics, tipping points for change in the adaptation of socio-political regimes' (2010) 34 (1) *Progress in Human Geography*, 21, 31-34. (Care needs to be taken when legislating to ensure that a shared or decentralised response does not 'limit the States presence or lead to a failure to deliver').

⁴⁶⁸ Thomas Pope, *Social Contract Theory in American jurisprudence: Too much liberty and too much authority* (Taylor and Francis, 2013) 4; Locke, *Two Treatises of Government*, above n 29, Essay 2, 94, 97, 229, 135; Gary Gerrard, *The New Social contract* (University Press of America, 2002) xii; (In Locke's work power was to be used for, 'good of man', for the 'preservation of their lives, liberties, property and possessions').

their right to stay and defend their property.⁴⁶⁹ In an emergency however, powers can be extensive in order to ensure that lives of both emergency service providers and the public are not at risk.⁴⁷⁰ The final principle of relevance in Locke's theory is that while government has the rights to enforce the law, it will also be subject to the law. Therefore, when it fails to meet any responsibility to protect, which has a concurrent obligation or duty attached, it may have to face the consequences for breaching a legal duty or obligation. The extent to which statutory authorities are likely to be held legally accountable for failing to meet responsibilities for communication and warning, will be investigated in Chapters Six and Seven.

In contrast to Locke's work on the creation of government, Rawls' presents a more modern theory, which identifies principles of justice, or **justice as fairness**, within society. These principles underpin state legitimacy, and, in practice are incorporated into the Constitution,⁴⁷¹ and in some cases a Bill of Rights.⁴⁷² The principles reinforce the need for regulators and emergency managers to balance rights and action. The 'liberty principle'⁴⁷³ for example, endorses the individual's right to retain the 'most extensive total system of liberties'⁴⁷⁴ and the freedom to pursue their own private lives. In practice, and in context of risk communication, warning systems may be created for the advancement of community safety. However, Mileti suggests that in respecting individual rights and liberties, warning must 'influence and guide public

⁴⁶⁹ See, eg, *Emergency Management Act 1986* (VIC) s 24(7) (Victorian legislation which seeks to balance the right of homeowners to stay at their property).

⁴⁷⁰ (In this instance, it could be said that power is being used for the 'good of man', see, eg, John Locke, *Two Treatises of Government*, above n 29, Essay2, 229)

⁴⁷¹ See, eg, Moffat, above n 458, 61, 78-79.

⁴⁷² Rawls, *A theory of Justice Revised Edition*, (Belknap Press, 1999) 194; James Waghorne and Stuart MacIntyre, 'Liberty: A history of civil liberties' (University of New South Wales Press, 2011) 6, 167, 172; Louise Chappell, John Chesterman and Lisa Hill, *The politics of human rights in Australia* (Cambridge University Press, 2009) 9 (the authors describe rights 'as permitting action and imposing obligations on others', setting 'minimum standards of treatment and entitlement'); Gwynneth Singleton et al, *Australian Political Institutions* (Pearson Australia, 10th ed, 2013)11 (these can be known as positive rights); Vromne, Gelbert and Gauja, above n 463, 30 (a 'core liberal idea' is obedience by individuals of objective laws, that is 'the rule of law'); *Human Rights Act 2004* (ACT); *Charter of Human Rights and Responsibilities Act 2006* (VIC) (There is no Commonwealth Bill of Rights in Australia, and the Commonwealth Constitution houses only a limited number of mostly negative rights).

⁴⁷³ Penner & Melissaris, above n 235, 190.

⁴⁷⁴ John Rawls, *A theory of Justice Revised Edition* (Belknap), above n 472, 56.

behaviour but not interfere with civil liberties'⁴⁷⁵ by breaching privacy, or by ordering action. Therefore, regulators will need to balance risk management action, with rights. They will need to tailor action to fit the currently accepted norms of society. However, and as was noted in the previous paragraph, the power to limit rights, may be extensive in times of emergencies, particularly where the curtailment of rights acts for the 'good of man'.⁴⁷⁶

Shared responsibility under the social contract

From Rawls' work, regulators in emergency management can also gain insight into the legitimate expectations they may have of society to share responsibility for managing their own risk. For example, in an ideal world, and in pursuit of a well-functioning society, individuals would 'restrain their actions (so that they) are compatible (and not encroach upon) similar access to freedom and liberty of others'.⁴⁷⁷ As well as this core principle, interpretations of Rawl's theory also highlight further duties of the individual. In a well-functioning and co-operative society for example, there are **natural duties** for individuals to support just institutions and have mutual respect for citizens.⁴⁷⁸ There is also **civic duty**. Civic duty stems from an individual's public identity. It requires them to act with the public interest; standards of public reason; and a fair system of social cooperation in mind.⁴⁷⁹

Identified in Rawl's theory are moral ideals of civic duty, and citizen responsibility. In practice, these ideals could be legitimately interpreted by government in the context of emergencies to mean that, for example, in pursuing the freedom to build a home, an individual might not build on a flood plain with high likelihood of exposure to impact of natural hazards. If a citizen

⁴⁷⁵ Miletì, *Disasters by Design*, above n 185, 195.

⁴⁷⁶ Nan Hunter, *The law of Emergencies: Public Health and Disaster Management* (Elsevier Science, 2009) 45, 58.

⁴⁷⁷ Rawls, *A Theory of Justice*, above n 456, 60-61 (The basic liberties are 'political liberty, freedom of speech and assembly, liberty of conscience and freedom of thought, freedom to hold property and freedom from arbitrary arrest and seizure under the rule of law').

⁴⁷⁸ Rawls, *A theory of Justice Revised Edition* (Belknap), above n 472, 98 (It is relevant to note the duty to provide natural aid has not been encapsulated as a positive legal obligation on citizens, for example there is no duty to rescue or provide first aid See, eg, Eburn, *Emergency Law*, above n 71, 61-62.

⁴⁷⁹ Richard Dagger, 'Citizenship as fairness John Rawls Conception of Civic Virtue' in Jon Mandle and David A. Reidy (eds), *A companion to Rawls* (John Wiley & Sons, 1st ed, 2014) 297-299, 304 (Dagger suggests it is the duty of citizens to also hold government to standards of public reasons).

chooses to take this type of risk, their civic duty should compel them to support institutional decisions to establish appropriate building regulations. An individual would insure and protect their asset. They would have a plan in mind so as not to place an extra burden on emergency services when a hazard affects their person or property. In the context of communication and warning, the government may also legitimately expect that in the interests of a well-functioning society, and in the event of an emergency, an individual would seek out information. An individual would listen to and support institutions, by heeding instructions directed at them, and the public at large. Interestingly, the application of Rawls theory of the social contract as a basis for regulatory construction appears to fit more readily with modern government ideas of shared responsibility.⁴⁸⁰

This brief overview of moral and normative propositions provides insight into high-level considerations, which need to be factored into the design of governance structures, and regulation of risk. Normative propositions identify the need for legitimate government, and the need to balance action with right. In addition, they provide a foundation as to what can reasonably be expected of individuals who share responsibility for natural hazard and emergency related risk. These norms do however operate in the context of a risk society, and within a modern and complex state. Consequently, the fundamental proposition that government is a 'protector of life and property' may require renegotiation in light of the shift to the acceptance of shared responsibility. To investigate this proposition further, the following section examines the increasing pre-occupation and prevalence of risk in modern society that is impacting on regulatory structures.

Risk Society

Chapter Two identified the work of Ulrich Beck on the risk society. Theory on the risk society highlights the changes that have become apparent in society due to the increasing focus on risk. Building on the initial examination of the theory, a further feature of the risk society, which is relevant in this thesis, is the shift towards the individualisation of risk. As management of risk in society

⁴⁸⁰ This contrasts with the acceptance that government is a protector of life and property.

becomes more burdensome on government and expectations for risk management higher,⁴⁸¹ personal responsibility in the form of resilient community members, becomes a crucial element of risk management. Government policies therefore attempt to ‘mesh risk, responsibility and the exercise of prudent choice’⁴⁸² and formulate policy directions such as shared responsibility.⁴⁸³ These policies act to transfer or shift responsibility and management of risk across a variety of stakeholders.⁴⁸⁴ Such policy initiatives aim to turn citizens from passive to active participants, and redefine what it is to be a responsible or prudent citizen.⁴⁸⁵ In practice, the responsible individual will now be required to ‘manage their exposure to risks, such as property damage, from extreme weather events exacerbated by climate change’.⁴⁸⁶ There is an anticipation that citizens will protect or insure against their own exposure to risk.

In developing mechanisms to individualise and push the burden of risk back on society, it is important to remember social contract theory and its norms for legitimate government. When attempting to mesh both social contract theory and the individualisation of risk into a functional regulatory system, there will be tensions between the theory and normative propositions. For example, the ability to reconcile propositions that government is a protector of life and property, and the expectation that individuals will take care of their own interests, may require fundamental changes to the current emergency management governance system. Individualisation of risk, and the sharing of responsibility, even when considering citizen’s civic duty for social co-operation, must occur within the boundaries of legitimacy. To remain legitimate and maintain trust, it is essential that government act within traditional boundaries. In the meantime, a renegotiation or agreement to modernise the

⁴⁸¹ Eburn and Dovers, ‘Legal Aspects of Risk Management in Australia’, above n 57, 61, 62-63 (Regarding litigation and blame); Rochford, above n 234, 173.

⁴⁸² Kemshall, above n 217, 60-61.

⁴⁸³ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iii, 1.

⁴⁸⁴ Godden et al, above n 159, 237-238.

⁴⁸⁵ Hamilton, above n 217, 454, 456; Black, ‘The Role of Risk in Regulatory Processes’, above n 217, 6.

⁴⁸⁶ Kemshall, above n 217, 60-61; Godden et al, above n 159, 238.

application of the principles underpinning the social contract needs to be negotiated.

Regulation of risk

Building competence and trust into regulation

While the previous section investigated abstract theoretical lenses, which influence decisions for governance and management of risk, this section examines design of risk based regulation itself. Regulatory instruments are one component of the regulatory system. As previously emphasised, to be effective the design of the regulatory system must facilitate competent and legitimate action. The necessity for competent, legitimate, and therefore effective action is two-fold. First, it ensures that emergency related risk is managed appropriately and effectively, and ensures that policy objectives are met. Secondly, and as was examined in Chapter Three, competence and legitimacy underpin community trust.⁴⁸⁷ Trust in turn is important to generating appropriate responses to risk communication and warning. Regulation, which underpins emergency management action, should be designed to ensure the relevant statutory authorities are able to do their job. It should therefore ensure that authorities are seen as legitimate authority; that they perform as they should and exercise their power appropriately; making fair decisions and engaging in fair treatment in the execution of power.⁴⁸⁸

New direction in regulation: risk based regulation

As society has become more pre-occupied with risk, and risk analysis has intensified, there has also been an increase in the creation of risk-based regulation.⁴⁸⁹ Risk based regulation has risk as an organising principle, either as an object of regulation, justification for regulation, or a frame for regulatory procedures and accountability relationships.⁴⁹⁰ The incorporation of risk as an

⁴⁸⁷ Poortinga and Pidgeon, above n 437, 962; PytlikZillig et al, above n 448, 1, 6.

⁴⁸⁸ See, eg, PytlikeZillig et al, above n 448, 1, 14.

⁴⁸⁹ Professional Standards Authority, *The role of risk in regulatory policy*, above n 236, 3-4; OECD, *Risk and Regulatory Policy*, above n 8, 46.

⁴⁹⁰ Black, 'The Role of Risk in Regulatory Processes', above n 217, 1, 7, 30-31; Professional Standards Authority, *The role of risk in regulatory policy*, above n 236, 2; OECD, *Risk and Regulatory Policy*, above n 8, 29-30; (In Australia, in emergency management risk plays each of these roles).

organising principle is believed to have benefits that include; assisting decision making on risk priorities, as well as effective targeting of scarce resources.⁴⁹¹ The term 'risk based regulation' has two distinct meanings. It refers to regulation which deals with societal risks, such as risk to health and safety; it also refers to regulatory and institutional risks, such as liability and damage to reputation for failing to meet regulatory objectives.⁴⁹² In this thesis, both definitions are relevant. In Australia, emergency management legislation seeks to manage societal risks emanating from natural hazards. However, it also seeks to manage inter-related risks of liability and reputational risk when legislative objectives are not met.⁴⁹³ While it is not deemed feasible to reduce natural hazard and emergency related risks to zero,⁴⁹⁴ the focus of risk based regulation is to improve effectiveness of the risk governance and the regulatory system. As highlighted in Chapter Two, effective risk governance helps to achieve policy objectives and effective management of risk.⁴⁹⁵

Principles for better regulation

When considering risk based regulation, it is important to consider principles for building better regulation and more particularly principles for building better risk regulation. This includes providing good governance through, ensuring 'role clarity', 'accountability and transparency' and 'performance evaluation'.⁴⁹⁶ These principles of good governance align with properties of better regulation such as proportionality, accountability, consistency, transparency and

⁴⁹¹ Professional Standards Authority, *The role of risk in regulatory policy*, above n 236, 2 (As an organising principle, focusing on risk assists in directing finite resources more efficiently to solve social problems); OECD, *Risk and Regulatory Policy*, above n 8, 16-18, 25, 28 (It also helps 'improve decision making processes by providing new insights' and provide 'defensible rationale for decision making').

⁴⁹² Black, 'The Role of Risk in Regulatory Processes', above n 217, 30-31; Professional Standards Authority, *The role of risk in regulatory policy*, above n 236, 2; OECD, *Risk and Regulatory Policy*, above n 8, 29-30.

⁴⁹³ See, eg, Black, 'The Role of Risk in Regulatory Processes', above n 217, 2; *Emergencies Act 2004* (ACT) s 198; *State Emergency and Rescue Management Act 1989* (NSW) s 62; *Emergency Management Act 2013* (NT) s 113; *Disaster Management Act 2003* (Qld) s 144; *Emergency Management Act 2004* (SA) s 32; *Emergency Management Act 2006* (TAS) s 55; *Emergency Management Act 2013* (VIC) s 75; *Emergency Management Act 2005* (WA) s 100; Professional Standards Authority, *The role of risk in regulatory policy*, above n 236, 8.

⁴⁹⁴ OECD, *Risk and Regulatory Policy*, above n 8, 239.

⁴⁹⁵ *Ibid* 13.

⁴⁹⁶ *Ibid* 27.

targeting.⁴⁹⁷ Reflecting on these principles, the thesis focuses on accountability. Accountability was defined in Chapter One. The definition included legal accountability along with mechanisms for scrutinising and independently reviewing action.⁴⁹⁸ With indications of limited legal accountability, this thesis seeks to determine whether there is a need to build in additional accountability mechanisms for emergency management in Australia. Conclusions on accountability will be highlighted in Chapter Nine.

Viewed from a normative perspective, principles for better risk based regulation also align with the drive for individualisation, which arose out of examination of the risk society. For regulation, which manages risk to be effective, it is suggested that risk ought 'to be managed at the level of society where it will be most effective'.⁴⁹⁹ The current regulatory structure which allocates control and management of risk to agencies within the emergency management sector. On the basis of the above assertion however, it would be expected that government should not 'intervene and assume responsibility for risks that are better management by individuals, businesses, families...'.⁵⁰⁰ That risk should be managed with the individual at the top of a risk management hierarchy, further supports notions of shared responsibility and resilient communities, and the move away from government as protector of life and property.⁵⁰¹ In practice, this might involve an individual taking care of and insuring their property against seasonal hazards. If risk were to be managed on this basis, government would only need to intervene to assist vulnerable persons or upon occasions of events of high impact, where a co-ordinated response is required.

⁴⁹⁷ Better Regulation Task Force, above n 2, 1; OECD, *Risk and Regulatory Policy*, above n 8, 39 (The outcomes of the Better Regulation Taskforce have been received a high level of support).

⁴⁹⁸ Better Regulation Task Force, above n 2, 4; OECD, *Risk and Regulatory Policy*, above n 8, 25 (The presence of accountability mechanism such as performance standards are seen as a positive element of risk based approaches).

⁴⁹⁹ OECD, *Risk and Regulatory Policy*, above n 8, 25.

⁵⁰⁰ Ibid.

⁵⁰¹ Ibid.

Guidelines for Better Regulation: Cutting Red Tape

The regulation of risk is not only influenced by broad principles for regulatory reform. It is also influenced by specific reforms in Australia that focus on the reduction of red tape and regulatory burden.⁵⁰² Any critique of current governance components for emergency management requires an understanding the nature of this reform. The reduction of regulatory burden seeks to refocus regulators away from the default utilisation of legislation to solve policy problems.⁵⁰³ It also calls for a 'proportionate regulatory response' to risks.⁵⁰⁴ Therefore, in the Chapter Five content analysis, any critique that regulation does not cover a relevant area, may be because an alternative policy instrument has been deemed more appropriate to achieving the task. In reviewing governance components, it is relevant to note, that the reduction in red tape also seeks to ensure processes and procedures do not get in the way of effective deployment of emergency response activities.⁵⁰⁵ Therefore, any recommendations for improvements, or for accountability mechanisms, will need to balance, prescriptiveness and additional burdens on the sector, with the need for effective local deployment. To date, the emergency management sector has already undertaken activities that seek to reduce red tape.⁵⁰⁶

⁵⁰² Australian Government, *Cutting Red Tape* <<https://www.cuttingredtape.gov.au/>>; (Similar initiatives are evident in the context of Emergency Management in the United States, see, eg, George D. Haddow, Jane A. Bullock and Damon P. Coppola, *Introduction to Emergency Management* (Elsevier, 4th Edition, 2010) 341 (The reduction in regulatory burden is similarly being felt in the United States, see, eg, Anthony Kimery, 'Bill to Cut FEMA Contracting Red Tape Stalled in US Senate, Lawmakers Say', *Homeland Security today.us*, 11 March 2012 <<http://www.hstoday.us/briefings/industry-news/single-article/bill-to-cut-fema-contracting-red-tape-stalled-in-us-senate-lawmakers-say/0fac7fbd468343ee59d7e5e356680afd.html>> and the United Kingdom, see eg, Professional Standards Authority, *The role of risk in regulatory policy*, above n 236, 2).

⁵⁰³ Department of the Prime Minister and Cabinet (Cth), *The Australian Government Guide to Regulation* (2014) 4, 21, 24, 26, 29 (Looking for example at whether the options chosen is 'effective, appropriate, efficient, least costly, has the lowest regulatory impact' and using for example, light touch less prescriptive legislation, self-regulation, quasi-legislation, co-regulation, or other policy instruments such as information campaigns, market based instruments, service charters, standards).

⁵⁰⁴ OECD, *OECD Reviews of Regulatory Reform: Australia 2010: Towards a Seamless National Economy* (OECD Publishing, 2010) 105.

⁵⁰⁵ See, eg, *Cutting Red Tape in Emergency Response with Proper Planning* (8 November 2012), Technical Response Planning <<http://www.emergency-response-planning.com/blog/bid/56235/Cutting-Red-Tape-In-Emergency-Response-with-Proper-Planning>>.

⁵⁰⁶ See, eg, Inspector General Emergency Management (Qld), *Emergency Management Assurance in Queensland: Sharing Responsibility, Accepting Accountability and Measuring Performance* <<https://www.igem.qld.gov.au/reports-and-publications/documents/Emergency->

Regulating disaster risk

In addition to Australia's moves towards greater risk based regulation and red tape reduction, international research highlights 'best practice' design of disaster risk regulation. Chapter One, for example, identified the checklist which focuses law makers for disaster risk reduction on ten key questions.⁵⁰⁷ Given policy objectives in Australia, it is important to note that the checklist may be predicated on a business as usual, or traditional approach to disaster and emergency management. An approach, which sees the role of government as protector of citizens, rather than one supporting a shared responsibility. However, without a renegotiation of the social contract, the international approach remains relevant.

As stated, the checklist would contain a number of matters for the consideration of lawmakers. Questions range from, whether there is a presence of dedicated and tailored law for disaster risk management with clear roles and responsibilities from a national to a local level, through to budgetary considerations, and the training and inclusion of civil society and vulnerable persons.⁵⁰⁸ The presence of dedicated law and the clarity and distribution of roles and responsibilities across differing levels of government will be investigated in Chapter Five. Further to this, a question as to whether 'laws include adequate mechanisms to ensure that responsibilities are fulfilled', is posed.⁵⁰⁹ This question is addressed in the first instance in Chapters Six and Seven in the context of the breach of a legal duty, through negligence. Where the findings suggest that negligence does not act to adequately ensure responsibilities are fulfilled, this thesis will argue that further accountability

Management-Assurance-in-Queensland.pdf>; Queensland Fire and Emergency Service, 'Queensland Fire and Emergency Service 2013-2014 Annual Report' (2014) 36-37.

⁵⁰⁷ International Federation of Red Cross and Red Crescent Societies, above n 79 (Although the checklist was created in reflection on the previous international framework for Disaster Risk Reduction, the focus on warning has changed little in the new iteration of the framework: United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1).

⁵⁰⁸ International Federation of Red Cross and Red Crescent Societies, above n 79, 3, 8-9 (Further sub-items are outlined throughout the checklist document to ensure disaster law is on track).

⁵⁰⁹ International Federation of Red Cross and Red Crescent Societies, above n 79, 3.

mechanisms are required to ensure that the policy objectives for management of emergency related risk are met.

Regulating risk communication

To ensure policy objectives for disaster risk reduction are met, questions around the inclusion of risk communication in regulatory components arise. This point was raised in Chapter Three, but requires reiteration here. The first consideration when examining risk communication and the regulatory system is that risk communication and the presence of early warnings systems in emergency management are of high importance. In light of this knowledge, risk communication and warnings systems should be supported or mandated down to a local level, ensuring there are laws that establish 'clear procedures and responsibilities for early warning'.⁵¹⁰

Risk communication should also be planned⁵¹¹ and 'developed at an early stage of the risk management process'.⁵¹² The plan should outline, 'the objectives of specific communication, who will be involved, how the channels will work, what and how the information will be communicated'.⁵¹³ Whether incorporation of these factors, are sufficient to bring about effective communication in the context of dynamic and often unpredictable natural hazard events remains to be seen. Together, however these properties for effective governance of risk communication provide a benchmark for action. They also provide a framework against which to analyse the current governance frameworks in Chapter Five. Chapter Five focuses on, not only the presence of disaster law, it also seeks to identify the incorporation of requirements for communication plans, as well clear responsibilities in communication and warning.

⁵¹⁰ International Federation of Red Cross and Red Crescent Societies, above n 79, 107 (The guiding questions which support this checklist items suggest ensuring the 'laws require EWS for the most frequent and serious hazards'); IFRC & UNDP, 'Effective law and regulation for disaster risk reduction', above n 78, xiii, 33-34, 36 (Both establishment and operation of early warning systems should be supported, along with authority for warning and decision making, although some countries will differ as to how the frameworks are put in place).

⁵¹¹ Standards Australia, *Communicating and consulting about risk* (HB 327:2010); Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 32, 31.

⁵¹² Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 18-20.

⁵¹³ *Ibid.*

Technological influences on modalities for communication: Social Media

The final influence, which establishes the contemporary context for regulatory system design for the management of emergency and hazard related risk, is the influence of technology on risk communication. As adverted to in Chapters One and Three, technological change has brought about the introduction of new channels or modalities for communication. These channels, collectively known as social media, include third party Web 2.0 platforms. Platform include blogs, microblogs (Twitter), wikis, as well as social networking sites such Facebook, Myspace, Instagram and YouTube'.⁵¹⁴ The wide availability and usage of these platforms is in part because they are free to use. The wide availability and usage of these platforms is also influencing expectations as to how government can, and should, go about communicating risk and warning to the community.⁵¹⁵ As an added benefit, the platforms are also creating new possibilities in communication.⁵¹⁶

As will be identified in Chapter Eight, the exponential growth of the platforms, expectations of use and reliance on them,⁵¹⁷ now mean that social media is a prominent, if not 'crucial' consideration in emergency risk and warning communications.⁵¹⁸ How best to utilise these channels and incorporate them

⁵¹⁴ Kavanaugh et al, above n 60, 482.

⁵¹⁵ Crowe, *Disasters 2.0*, above n 48, 8, 10; See, eg, Sensis, above n 41, 3 (Three Quarters of Australian's are now on social media); White, *Social Media, Crisis, Communication and Emergency Management*, above n 46, 122 (Noting that the platforms are here to stay); Twenty First Century Communications, *Using Social Media for Emergency Notifications: Seven Questions for Emergency Managers to Consider*, 6 <<http://www.tfccalert.com/media/Social-Media-for-Emergency-Managers.pdf>> (This means they are also a cost effective platform, aside from the resource capacity required to monitor them).

⁵¹⁶ Andrew Skuse and Tait Brimacombe, 'Social Networking, Social Media and Complex Emergencies' (Issues Paper, Australian Civil-Military Centre & The University of Adelaide, 2014) 4.

⁵¹⁷ Crowe, *Disasters 2.0*, above n 48, 81, 84; Victoria Government, *Victorian Emergency Management Reform*, above n 60, 8; Low et al, above n 60, 416; Kavanaugh et al, above n 60, 489; Mergel, above n 60, 283; Victoria Government, *Review of the 2010-11 Flood Warnings and Response*, above n 61, 7, 80; Tasmania, '2013 Tasmanian Bushfire Inquiry', above n 283, ix, 1, 137. (These expectations exist within the sector as well as within the public circles).

⁵¹⁸ Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 4; Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11, 21 (It is notable that local governments are at varying stages of development of social media initiatives, and some difficulties with their use

into regulatory components such as communications plans, procedures and protocols, requires serious consideration.⁵¹⁹

Benefits of social media

There are numerous benefits in using social media as a dissemination channel for warning. When traditional modalities for communication can lack timeliness or fail, social media may still be available. In the dynamic environment of natural hazard events, they can be used to disseminate rapidly changing information.⁵²⁰ This thesis focuses on the benefits to agencies when using social media to 'push' information to the public.⁵²¹ Social media is characterised as online systems and tools.⁵²² A further benefit of these online systems they are designed to, 'facilitate interaction and connection'.⁵²³ They allow the creation of user generated content⁵²⁴ and facilitate participation; creation of community; and the building of collective intelligence.⁵²⁵

As well as participation and the creation of community, the unique features of social media support aspects of trust building and effective risk communication

due to resource capacity are noted); Anikeeva, Steenkamp and Arbon, above n 42, 22-23. (Noting the reliance on social media); Skuse and Brimacombe, above n 516, 50.

⁵¹⁹ Eleanor R. Burgess and Aaron Shaw, 'Evaluating Open Collaboration Opportunities in the Fire Service with FireCrowd' (Paper presented at the Open Symposium 2016, Berlin, Germany, August 17-19, 2016) (One way to do this is through open collaboration through groups to create the best standard operating procedures.

⁵²⁰ Victoria Government, *Review of the 2010-11 Flood Warnings and Response*, above n 61, 97-99; Tasmania, *2013 Tasmanian Bushfires Inquiry - Recommendations and Response* (2013).

⁵²¹ The focus on pushing information is purely designed to limit the scope of the thesis and in no way detracts from the key role social media is now playing in pulling information for situation awareness and for humanitarian efforts, see, eg, NGIS, above n 61, 14; Cf Sarah Vieweg et al, 'Microblogging During Two Natural Hazards Events: What Twitter May Contribute to Situational Awareness' (Paper presented at CHI 2010: Crisis Informatics, Atlanta, 10-15 April 2010) 1079, 1080; Adriana S. Vivacqua and Marcos R. S. Borges, 'Taking advantage of collective knowledge in emergency response systems' (2012) 35(1) *Journal of Network and Computer Applications* 189, 189.

⁵²² White, *Social Media, Crisis, Communication and Emergency Management*, above n 46, 148; Low et al, above n 60, 411.

⁵²³ Kavanaugh et al, above n 60, 482; Fitzgerald et al, above n 136, 13; Flew et al, 'Social media and its impact on crisis communication', above n 70, 5; Crowe, *Disasters 2.0*, above n 48, 9.

⁵²⁴ Sandoval-Almazan and Gil-Garcia, above n 137, 235; Henman, above n 137, 1397; Sellnow and Seegar, above n 48, 128.

⁵²⁵ Henman, above n 137, 1399; Anikeeva, Steenkamp and Arbon, above n 42, 22. (The ability to create content allows community groups to create their own locally owned social media groups which 'engages and involve the community'); Derina Holtzhausen and Ansgar Zerfass, *The Routledge Handbook of Strategic Communication* (Taylor and Francis, 2014) 341.

that were raised in Chapter Three. Social media, for example, supports two-way communication between multiple stakeholders.⁵²⁶ As highlighted in Chapter One, the two-way nature of communication is disruptive to traditional processes of communication within the emergency management sector. However, and importantly, the ability to build collaborative content between stakeholders helps to make information transparent, and ‘democratises’ communication.⁵²⁷ Both transparency and two-way communication are fundamental for trust and risk communication.⁵²⁸

On a practical level, the use of social media to disseminate messages assists in timing and the reach of communications. Social media platforms are available online and are widely used in conjunction with mobile devices.⁵²⁹ Mobile devices are often with the public 24 hours a day. Remembering that reach of risk information facilitates effective communication, social media via these devices may ensure greater reach and a more accessible audience than traditional channels.⁵³⁰ Additional benefits of the platforms are not only that they facilitate broader reach;⁵³¹ the information supplied operates in real time.⁵³² Timely messaging can also further increase confidence (and therefore trust) in the sector.⁵³³ Although there are numerous benefits to social media,

⁵²⁶ See, eg, White, *Social Media, Crisis, Communication and Emergency Management*, above n 46, 131; Kongthon et al, above n 46, 2227; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 3-4; Falkheimer and Heide, above n 47, 342 (This suggests the platforms are open and more democratic); Lundgren & McMakin, above n 47, 283 (Building community).

⁵²⁷ Falkheimer and Heide, above n 47, 342 (This suggests the platforms are open and more democratic); Aine Regan et al, ‘Risk communication and social media during food safety crises: a study of stakeholders’ opinions in Ireland’ (2014) *Journal of Risk Research* 1, 1; Maria Grazia Busa, ‘Trust-building through Social Media Communications in Disaster Management’ (Paper presented at WWW 2015 Companion, Florence, Italy, 18-22 May 2015)

⁵²⁸ Regan et al, above n 527, 2 (The tone used is more conversational and personal, which conveys empathy and care – key to building trust).

⁵²⁹ Anikeeva, Steenkamp and Arbon, above n 42, 22; Sensis, above n 41, 4 (‘Smartphone continues to grow as the most likely device people use to access social media’, in some age groups over ‘90% of their social media interaction is by Smartphone).

⁵³⁰ Anikeeva, Steenkamp and Arbon, above n 42, 26.

⁵³¹ Chatfield, Scholl and Brajawidagda, above n 48, 385; Bruns and Burgess, ‘Crisis Communication in Natural Disasters’, above n 70, 379 (The ability to retweet is ‘the most important driver of visibility’ of messages).

⁵³² Chatfield, Scholl and Brajawidagda, above n 48, 377; Crowe, *Disasters 2.0*, above n 48, 9; White, *Social Media, Crisis, Communication and Emergency Management*, above n 46, 3.

⁵³³ Anikeeva, Steenkamp and Arbon, above n 42, 23; Kasperson et al, above n 5, 32.

the platforms are not always accessible,⁵³⁴ nor does everyone favour them.⁵³⁵ Therefore, as was specified in Chapter Three, the usage of multiple modalities of communication, and ones tailored to the respective community is still necessary.⁵³⁶ Evidence that this approach is being incorporated into governance components will also be examined in Chapter Five in the content analysis.

Social media, institutional risk and effective policies

In using social media, regulators need to incorporate principles of good practice into policies and procedures for risk communication. The importance of good practice is two-fold. In the first instance, it ensures, as was raised in Chapter Two, that any channels utilised for risk communication are of use in furthering its effectiveness as a risk modification device. Secondly, where principles of good practice, backed by legal analysis is incorporated, it assists in limiting the institutional risk of organisations and therefore removes a barrier to implementation. In view of concerns over institutional risk, Chapter Eight provides a case study of social media. The case study examines the unique and disruptive features of the platforms that can raise concerns regarding legal accountability. Unique features which will be considered in Chapter Eight are the algorithms in Facebook which affect message timing⁵³⁷ and the decentralised nature, and therefore lack of control, of a message.⁵³⁸ The case study also identifies legal issues that might arise from the volume of unverified and unverifiable data. Unverified and unverifiable data can affect the credibility

⁵³⁴ Although they are more robust than traditional channels which require electricity.

⁵³⁵ Sensis, above n 41, 15 (There is a marked decline in use of social media for the 50-64 and 65+ age groups); Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 11; Regan et al, above n 527, 10-11; Hazelwood Mine Fire Inquiry, above n 50, 25, 31, 400.

⁵³⁶ Hazelwood Mine Fire Inquiry, above n 50, 384, 387-388; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 11; Anikeeva, Steenkamp and Arbon, above n 42, 24.

⁵³⁷ Marijn Janssen & George Kuk, 'The challenges and limits of big data algorithms in technocratic governance' (2016) 33 *Government Information Quarterly* 371, 371; T Gillespie, 'The relevance of algorithms' in T Gillredpir, P Boczkowski & K Foot (eds), *Media Technologies: Essays in Communication, Materiality, and Society* (MIT Press, 2014) 167, 168.

⁵³⁸ Falkheimer and Heide, above n 47, 342-343; Crowe, *Disasters 2.0*, above n 48, 9, 11.

of the message, and can raise concerns over information accuracy, which might then cause amplification of a risk and consequent unnecessary panic.⁵³⁹

The case study applies findings of doctrinal analysis related to the duty to warn, developed in Chapters Six and Seven, to determine the circumstances under which liability is likely to result. The case study will highlight principles of good in light of the prospect of legal liability in the area of negligence. In taking this approach, the case study provides legal rationale for including activities such as monitoring, verification and channel choice, into social media guidelines, a perspective that at this stage is largely lacking.⁵⁴⁰ More generally, these findings are important, as without concrete analysis, perceptions of liability may act as a barrier to implementation. They may also result in under or over-compliance and a less than optimal approach.⁵⁴¹ Therefore, information, which grounds these perceptions, and provides mechanisms for action, are an important step forward.

Conclusion

This Chapter has outlined four contextual factors, which operate at varying levels of abstraction, to influence government action and governance

⁵³⁹ Regan et al, above n 527, 3-4, 12 (Concerns are raised over inaccurate, unverified or biased information which can then cause alarm in the population); Lundgren & McMakin, above n 47, 286 (To alleviate the pressure, partnerships may be set up with VOSTS which assist in processing this type of data, see, eg, Leila Martini, 'Monitoring and Use of Social Media in Emergency Management in Florida' (Doctor of Public Health, University of South Florida, 2015) 72, 109; Hughes et al, above n 62, 1506; Department of Homeland Security, 'Using Social Media for Enhanced Situational Awareness', above n 51, 5).

⁵⁴⁰ See, eg, *Emergencies (ESA Social Media Policy) Commissioner's Guidelines 2011* (ACT), 'ACT Government, ACT Government Social Media Policy Guidelines (March 2012) Version 1.0; ICT Policy and Coordination Office (Qld), *Official Use of social media guideline: Final* (December 2010); Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>>; Public Service Commission (Vic), *Guidance for Use of Social Media in the Victorian Public Sector* (2010); Department of Business and Innovation (Vic), *Government 2.0 Projects in VPS: An introduction to managing risks* (2010); Victoria, *VPS Gov 2.0 Risk Register and Management Plan* (2010) <<http://www.vic.gov.au/blog/social-media-guides/victorian-public-service-government-2-0-risk-register-management-plan/>>; Public Affairs Branch, NSW Police Force, *Official Use of Social Media Policy* (3 September 2013); Northern Territory, Web 2.0 for NT Public Servants (NTPS) Guidelines, Version 1.2 (2013); Department of Finance (WA), *Social Media Guidelines* (September 2012); Government of South Australia, *Social Media: Guidance for Agencies and Staff* (2010); Government of South Australia, *Social Media: Guidance for Staff and Agencies* (2013) <http://files.oper.sa.gov.au/files/social_media_guideline_final.pdf>.

⁵⁴¹ Craswell and Calfee, above n 65, 279-280.

structures that underpin management of emergency and natural hazard related risk. It represents the final in a series of three framework Chapters. The first of these Chapters examined concepts of risk, risk management and the role of law and governance frameworks in supporting risk management. It also highlighted that government is a shared owner of emergency and natural hazard risk and in order to effectively manage this risk, strong governance frameworks need to be in place. The Chapter highlighted that each component of the framework may act as a control mechanism to modify and mitigate risk. It is therefore important that they are robust. Risk management is an iterative and dynamic process. Therefore, each component needs to be updated with the most recent principles of good practice to ensure their ongoing relevance. This forms one of the purposes of this thesis.

Where Chapter Two examined risk management, Chapter Three identified risk communication as a pivotal element of effective risk management. Risk communication and the related task of warning are pivotal to risk management. This type of communication 'informs the community of impending or current threat to prompt action and response'.⁵⁴² This information in turn enables citizens to make decisions and take evasive action.⁵⁴³ Dissemination of warning and information also allows emergency managers to share the burden for disaster risk reduction.

As identified in Chapter Three, risk communication and the ability to affect behaviour in the desired fashion is complex. This is because a number of inter-related elements come together to affect the perception / response process of individuals within the community. The Chapter also identified that a key element for effective risk communication is the development of trust.⁵⁴⁴ To engender trust in the community, government needs to demonstrate competence, care, effectiveness and legitimacy. In light of the need to facilitate competent action, principles of good practice for government agencies, as a

⁵⁴² Attorney General's Department (Cth), *Australia's Emergency Warning Arrangements*, above n 40, 2; Bullock, Haddow and Coppola (eds), above n 277, 269.

⁵⁴³ Reynolds and Seegar, above n 309, 48; Mileti, *Disasters by Design*, above n 185, 191 (Mileti adds emphasis to the aim of warnings to 'inform and prompt appropriate response', by containing 'alert and notification components'); Sorensen, above n 50, 119.

⁵⁴⁴ Kasperson et al, above n 5, 31; van Asselt and Renn, above n 5, 439-440; Lundgren & McMakin, above n 47, 316.

sender of risk communication, need to be incorporated into policies and procedures. At a broad level, this includes, incorporating two-way channels for communication, as well as focusing on timing, accuracy and consistency in messaging.

In the knowledge that government is a shared owner of natural hazard and emergency related risk, and in light of the need to effectively incorporate and plan risk communication, the subject of this Chapter was contextual elements, which influence government's ability to do so. The elements considered, operated at varying levels of abstraction. They included philosophical, sociological, regulatory and technological influences. These influences highlighted that any governance components designed to support the management of risk needed to be in legitimate areas of government; remain within the limits of power; and balance individual rights and the need for action. A qualification to the absolute duty to protect individual rights is apparent in emergencies however; in the form of the extended powers to support need to react in an emergency.

Modern interpretations of social contract theory also outlined expectations that government might have of citizens when responsibility is shared. This included a reasonable expectation that citizens, due to their civic duty, and mutual respect for another's rights, would protect themselves from exposure to the relevant risks. Sociological theory also highlighted the rationale for the increased pre-occupation with risk and its increasing inclusion in governance components to improve efficiency and target limited resources. Sociological theory also noted the increasing individualisation of risk, and the associated redefinition of what it is to be a prudent and responsible citizen. What became apparent is that, at times, sociological theory and traditional normative principles of social contract theory, which underpin Australia's constitutional arrangements, may act in tension.

The final part of the Chapter focused on specific mechanisms, which influence the design of regulation, as well as technologies, that impact on risk communication. It was noted that risk based regulation is becoming more prevalent. Reform into regulatory approaches is also evident. Regulatory

reform, suggests that a regulatory approach, whether based on risk or otherwise, should seek to streamline processes and cut regulatory burden on organisations and the community. Each of these factors will influence how government chooses to regulate and govern risk management.

The final component of this Chapter focused on changing modalities in communication. These changes influence the design of governance components for risk communication and warning. Social media for example, has become a prevalent and expected form of communication amongst some groups in society. While the technologies have unique features, which will improve competence in risk communication and warning, they are disruptive to traditional communication processes. The unique features of social media platforms also raise legal concerns. Any decision as to how to design effective governance components for risk communication and warning will need to incorporate social media, to ensure risk communication continues to be effective across all sectors of society. However, decision-making will also need to account for institutional risks of liability.

The following Chapters form Part Two of the thesis. These Chapters analyse legislation and case law relevant to emergency management. The framework of analysis is based on the key principles for effective governance, regulation and risk communication. These principles were highlighted in each of the framework Chapters. The analysis of case law and legislation illustrates how normative principles and principles of good practice, which have been previously identified, align with the existing legislative and legal frameworks. Chapter Five for example, will examine the current risk governance components, to determine whether they incorporate specific disaster laws, clear responsibilities and embed communication as a fundamental risk mitigation factor. Chapters Six and Seven will then determine whether the current laws, provide effective 'adequate mechanisms'⁵⁴⁵ to ensure responsibilities in these areas are met. The findings of these Chapters will be applied in Chapter Eight, to a case study of social media. The aim of Chapter

⁵⁴⁵ International Federation of Red Cross and Red Crescent Societies, above n 79, 3.

Eight is to determine whether legal concerns are well founded and what needs to be done to remove any barriers to action.

Part Two: A Legal Analysis

Chapter Five: Risk communication and warning in the Australian emergency management regulatory system

Chapters Two, Three and Four developed the conceptual theoretical framework, which will be applied to explore and critically analyse the emergency management regulatory system in Australia. The theoretical framework incorporated technical standards for risk management and intertwined these with layers of theory. Chapter Two identified that the emergency management sector is allocated some aspects of ownership of natural hazard and emergency related risk. Agencies within the sector are expected to manage the risk that has been allocated to them by law through the creation and employment of risk governance components. Risk governance and the hard and soft law components that make up the governance system, play a key role in supporting effective management of natural hazard and emergency related risk.

This thesis focuses on the dissemination of risk communication and warning that the risk governance system ought to address based on concepts of effective governance. Chapters Two and Three identified that both risk communication and warning, play a key role in the risk management process, acting as both a risk control or modification mechanism. International studies suggest, that risk communication needs to be planned, and early warning systems incorporated into the regulatory structure. The regulatory structure needs to clearly articulate particular responsibilities for risk communication and warning. As well as identifying the importance of risk communication.

Chapters Three and Four, highlight that it is essential to utilise multiple modes of dissemination of risk messaging. Social media, for example, is an emerging channel, gaining significant traction. The inclusion of social media within regulatory components is now expected. Where responsibilities for risk communication, warning and social media usage are included in hard and soft law regulatory instruments, they need to be backed by adequate accountability

mechanisms to ensure they are fulfilled as far as practicable.⁵⁴⁶ The presence of accountability mechanisms, ensure that the statutory authorities with a share of responsibility for managing emergency related risk, meet the standards required for emergency messaging. The inclusion of accountability mechanisms ensures that governance components, act as effective risk controls, and facilitate positive trust relationships between governments and citizens.

With these theoretical considerations in mind, this Chapter turns its focus to addressing the two key areas of research. Of the two key areas of research identified in Chapter One, the first to be addressed is the question as to the extent to which risk communication and warning is present in the regulatory system. To organise the response to this question, further questions which reflect principles of good practice and help to organise the response have been developed. These questions include:

1. Whether the current regulatory system incorporates risk communication and warning throughout the various layers of the system;
2. Whether the regulatory components articulate clear responsibilities for risk communication and warning;
3. Whether the regulatory system components embed a requirement to use social media, and if so, whether there is clear articulation of responsibility for the use of the channels.

Question 1, aims to determine whether there is recognition in the regulatory system of risk communication as a key mitigation tool. Questions 2 and 3, as well as assisting in an examination of the broader research question, also serve a second purpose. These Questions identify functions and responsibilities for warning. These functions and responsibilities are then utilised in Chapters Six and Seven in the examination of legal accountability under the law of negligence. As the thesis move into doctrinal analysis, it

⁵⁴⁶ See, eg, Feaver and Sheehy, above n 119, 968, 971 (The authors highlight the need for a tight coupling of control and accountability components in the regulatory system, noting the need to ensure accountability mechanisms are not 'over burdensome').

becomes apparent that the terms responsibility and liability are ‘certainly not synonymous’.⁵⁴⁷ As will be demonstrated in the remaining Chapters of the thesis, the presence of responsibilities and functions within regulatory system components may not be sufficient to formulate a duty of care. Consequently, their presence in legislation may not be sufficient and ground a cause of action under the law of negligence, from which sanctions will flow.

Defining the regulatory system and its components

Before addressing the methodology, which underpins the research in this Chapter, a re-iteration of the definition of the regulatory system is essential. As identified in Chapter One, a regulatory system is defined as having both a normative (the policy) and positive dimension (which contain the substantive rules aimed at putting the policy into practice).⁵⁴⁸ Each dimension is ‘made up of numerous interconnected and interdependent components or instruments’.⁵⁴⁹ These components include a mixture of soft and hard law instruments. These instruments contain the substantive rules that govern or guide the conduct of the party.⁵⁵⁰

The terms, ‘hard law’ and ‘soft law’ also require a brief definition. A hard law instrument is one, which is binding and enforceable at law, usually with sanctions attached.⁵⁵¹ Recognised forms of hard law instruments are regulations, which includes statutes, subordinate and delegated legislation.⁵⁵² By contrast, the ‘orthodox understanding of the effect of soft law’ instruments,⁵⁵³ is that they are not directly legally enforceable.⁵⁵⁴ There is

⁵⁴⁷ Cane, *Responsibility in Law and Morality*, above n 104, 1.

⁵⁴⁸ Sheehy and Feaver, above n 94, 392-393, 399, 401 (Noting that the policy or normative dimension informs the positive dimension or the substantive rules to be put in place).

⁵⁴⁹ Sheehy and Feaver, above n 94, 392-393.

⁵⁵⁰ Feaver and Sheehy, above n 119, 976.

⁵⁵¹ Greg Weeks, ‘*Soft Law and Public Authorities: Remedies and Reform*’ (Hart Publishing, 2016) 16; McLennan and Handmer, ‘Sharing Responsibility Australian Disaster Management’, above n 2, 69.

⁵⁵² McLennan and Handmer, ‘Sharing Responsibility Australian Disaster Management’, above n 2, 69 (Hard laws also include the Constitution and enforced quasi-regulation).

⁵⁵³ Commonwealth of Australia, ‘Grey-Letter Law’ (December 1997) Report of the Commonwealth Interdepartmental Committee on Quasi-regulation, ix (Soft law instruments have also been labelled ‘grey letter law’).

⁵⁵⁴ McLennan and Handmer, ‘Sharing Responsibility Australian Disaster Management’, above n 2, 70 (They are aimed at ‘encouraging rather than compelling people to make decisions or change behaviour’); Weeks, above n 551, 1-2, 13 (The author notes the court does ‘take notice of soft law’).

some confusion as to the status of the instruments, and it may depend on the extent to which they are integrated with legislation, as to whether compliance with them is necessary.⁵⁵⁵ Recognised forms of soft law components are policies, plans, guidelines, standards and manuals.⁵⁵⁶ Hard and soft law instruments, those emanating from both the normative and positive dimensions of the emergency management regulatory system, form the subject of this Chapter. With the growing use of soft law instruments, to provide flexible approaches to 'solving social problems',⁵⁵⁷ an important thread of this Chapter, is the extent to which soft law instruments will be binding on the emergency management sector.

Methodology: Content Analysis

As identified in Chapter One, to address the research questions, a short form, or abbreviated content analysis, was utilised as the primary research method in this Chapter. The rationale for adopting this research method was also provided. Content analysis is a method of 'empirical legal research',⁵⁵⁸ which allows for the collation and systematic investigation of a nominated set of texts. The use of this research method allows the research to uncover patterns and draw inferences, around an identified theme.⁵⁵⁹ Although content analysis is relatively new to the field of law, its usage is evolving, particularly in the United States.⁵⁶⁰ As identified in Chapter One, the adoption of this methodology is suitable in this context as it furnishes the researcher with a holistic view of the presence of warning across the whole of the regulatory system.

⁵⁵⁵ Fisher, *Legal Reasoning in Environmental Law*, above n 94, 337; Commonwealth of Australia, 'Grey-Letter Law', above n 553, ix, xiv, xvi, xviii (Those that are binding have been labelled quasi-regulation, a 'range of rules, instruments and standards').

⁵⁵⁶ Weeks, above n 551, 2, 14, 18, 22 (The author notes different types of policy, identifying policy which seeks to 'modify and effect conduct' as being soft law, so too guidelines, and manuals may be interpretative rules which do not 'impose new legal obligations', however some may constitute quasi-regulation); Fisher, *Legal Reasoning in Environmental Law*, above n 94, 425 (Fisher describes the materials defined as soft law instruments, as paralegal materials).

⁵⁵⁷ Feaver and Sheehy, above n 119, 961.

⁵⁵⁸ Lee Epstein and Andrew D. Martin, 'Quantitative Approaches to Empirical Legal Research' in Peter Cane and Herbert M. Kritzer (eds), *The Oxford handbook of empirical legal research* (Oxford University Press, 2010) 902.

⁵⁵⁹ Klaus Krippendorff, *Content Analysis: an introduction to its methodology* (Sage, 3rd ed, 2013) 10, 24.

⁵⁶⁰ Burns, above n 91, 34-35.

An alternative research approach, which is often adopted in a legal thesis, is doctrinal analysis. In this thesis, doctrinal analysis was not considered an appropriate methodology to answer this first research question, as the methodology provides a limited analysis of legislation and case law. In this examination of the regulatory system, the research question required that mentions of risk communication, warning and social media, were to be examined across a variety of regulatory components. Content analysis was therefore employed to allow for the incorporation of paralegal materials,⁵⁶¹ such as public policy and plans. As identified in the definition of a regulatory system the formulation of policy is the first stage in addressing a social problem or risk problem.⁵⁶² Inclusion of policy within this analysis is therefore essential in providing a more complete picture of whether risk communication and warning is identified a key priority from the outset.

As a research tool, content analysis can be utilised for three principle purposes:

1. 'describing the manifest characteristics of the communications, asking **what, how** and **to whom** something is said
2. To make inferences as to the antecedent conditions of the communication – that is why something is said and
3. To make inferences as to the consequences of the communications – what are **the effects of what is said**⁵⁶³

Reflecting on the principles for the use of content analysis, the research method in this context⁵⁶⁴ is used to identify what is said about responsibilities. The methodology is also used to examine how the responsibilities are framed, for example whether they are mandatory or discretionary, as well as to whom the responsibilities are directed. Content analysis is also used to draw inferences as to the effect of what is said, by applying doctrinal analysis to

⁵⁶¹ Fisher, *Legal Reasoning in Environmental Law*, above n 94, 425 (These materials include policies, plans, and guidelines).

⁵⁶² Sheehy and Feaver, above n 94, 402-403.

⁵⁶³ Krippendorff, above n 559, 51 (Using the principles purposes cited in Holsti's work as being an effective framework for examining the various components of the regulatory system).

⁵⁶⁴ Epstein and Martin, above n 558, 902.

determine its legal effects and whether responsibilities form the basis of legal duties. Inferences can also be drawn from the body of the texts collectively.⁵⁶⁵ These inferences provide an understanding of the extent to which risk communication is a priority within the system. The method of analysis also allows the researcher to identify the extent to which risk communication and warning is embedded and aligned across all layers of the regulatory system.

Technical aspects of the content analysis

A short form, content analysis was utilised in this thesis. What is meant by short form, or abbreviated content analysis, is that not every relevant document was captured, nor was each associated process fully developed. The aim of the analysis was to provide indicative results and draw out some initial patterns from which inferences could begin to be drawn and from which research that is more detailed might follow. Consequently, it is acknowledged that there are limitations as to the application of results. It is also acknowledged that one of the drawbacks of content analysis, is the 'subjective view of the researcher', when it comes to interpretation of the data.

Process

The content analysis required the creation of a simple Microsoft Access database to capture the contents of the components. The relevant fields are highlighted in a 'view' of the table in Figure 4. Data was entered through the form identified in Figure 5. To ensure consistency in data entry, descriptions were included against each field in the underlying table. These descriptions outlined the scope of what was to be included within the field. From the data collected, Microsoft Access reports were generated. These reports formed the basis of analysis and incorporated various cross-sections of the data. The first reports created sought to identify the wording around risk communication. A second set of reports drew out the responsibilities, and the type of component in which responsibilities were contained. To determine whether there was

⁵⁶⁵ Krippendorff, above n 559, 30.

alignment of responsibilities throughout the regulatory system, further reports were created to compare similar components across jurisdictions.⁵⁶⁶

Figure 4: Content Analysis: Database Fields

Field Name	Data Type	Description
Document_Type	AutoNumber	
Document_Type	Text	The document type will be allocated as either (Policy, Plan or Legislation)
Document_Name	Text	
Document_Author	Text	
Creation_Date	Number	To ensure any comparison with this content analysis is based similarly dated documents
Document_Version	Text	
Jurisdiction	Text	The jurisdiction may be one of (CTH, ACT, WA, TAS, QLD, NT, NSW, VIC, SA)
Document_Level	Text	Notes whether the document is a State or Federal document
Mandatory_Discretionary_Crea	Text	Is the creation of the document mandatory or discretionary
Interaction_with_other_docs	Memo	More specifically for legislation but stated interaction with other documents
Docs_to_follow	Memo	When using the document are there other documents which either must or should be followed or consistent with
When_doc_applicable	Memo	Statement on when the document applies - e.g Emergency Management legislation during or for imminent emergencies
Approach_to_communication	Memo	Search for refs for communication and risk information to the public; Terms: Communication, Information, Community Engagement
Warning	Yes/No	Search Term 'Warning'
Warnings_Mentions	Number	Count of any mentions of the Term 'Warning'
Document_Purpose	Memo	Copy and paste of the document purpose, preamble in an act.
Warning_Def	Text	Direct paste of any direct and indirect 'warning' definition
Wording	Memo	Inclusion of sentences with the term 'Warning' as it relates directly to warning the public
Warnings_who_Responsible	Memo	Lists those parties noted as having some task related to 'Warning'
Where_situated	Memo	Highlighting within which part or section of the document the term 'Warning' falls - can be relevant to statutory interpretation
Authority_to_create	Text	Any direct mentions of power to create a document for example Plans being created under a power given in Legislation
SocialMedia_NewTech	Yes/No	Search terms 'social media' and 'new tech'
SM_Mentions	Number	Count of any mentions of the terms 'social media' and 'new tech'
SM_Definition	Yes/No	Yes / No field for the presence of a social media definition
SM_Definition_Content	Text	Copy and paste of an definition of 'social media' or 'new tech'
SM_Who_Responsible	Text	Lists those parties noted as having some task related to 'social media'
SM_Wording	Memo	Inclusion of the sentences with the term 'social media' or 'new tech'

Figure 5: Content Analysis: Database Form

The screenshot shows a web-based form titled 'Content Analysis_Form' with a sub-header 'Document Type'. The form is organized into two columns of input fields. The left column contains fields for: Document Type (dropdown), Document Name, Document Author, Creation Date (with a '0' in the input), Document Version, Jurisdiction (dropdown), Level of Government (dropdown), Creation Mandatory or Discretionary, Authority to create doc, Interaction_with_other_docs, Documents to follow or be consistent with, and When_doc_applicable. The right column contains fields for: Document Purpose, Approach to public communication and, No. Warnings Mentions (with a '0' in the input), Warning (checkbox), 'Warning' Wording, Warning Responsibility, Warning Definition, Where 'Warning' is situated in the document (dropdown), SocialMedia or New Tech present (checkbox), No. Social Media Mentions (with a '0' in the input), Definition of social media, Social Media / New tech Wording, and Who is responsible.

⁵⁶⁶ Sheehy and Feaver, 'above n 94, 398 (At least a lack of inconsistency is required, or absence of friction between components).

Regulatory components captured

In total, fifty-five regulatory components were captured in the database. These components included policy, legislation, plans, guidelines, standards, codes and frameworks, which were publicly available on searching the internet. A search of the core organisations websites, for example, the State Emergency Services, and Emergency Management Australia, was also undertaken. The aim of this search was to pinpoint the governance components that the organisation perceived to be the most recent version. A drawback of the content analysis is that since its completion in February 2016, some of these components have been updated. As all of this material was publicly available, no ethical clearance was required to carry out the analysis.

Relevant instruments

As a federation, each State and Territory in Australia provides its own instruments and emergency management framework. Policy, plans and relevant emergency or disaster management legislation, were therefore sought from each jurisdiction. From a preliminary survey of the legislation, two points became clear. Emergency and disaster management legislation, as defined in Chapter One, usually only operates in conditions that constitute an emergency as defined within the statute. Agencies may derive power or responsibilities to warn from alternative legislation, for example, from specific legislation establishing and outlining functions for fire, police or state emergency services.⁵⁶⁷ In most cases, the emergency and disaster legislation works in tandem with the alternate legislation covering some of the same field. What this highlights, is that powers, responsibilities and functions for communication and warning may be derived from alternate legislation. These powers, functions and responsibilities, could conceivably continue to coexist during emergencies, and would therefore be relevant to identifying agency responsibility. To more effectively identify an agency's responsibility to warn and utilise social media, a wider net had to be cast which captured this additional legislation.

⁵⁶⁷ See, eg, *Fire Brigades Act 1989* (NSW); *Fire and Emergency Services Act 1990* (Qld).

Data extraction strategy

Once the relevant instruments were located, three main strategies were employed to extract the data. The first was a plain reading of the component to extract any information that was manifest in the express wording of the instrument. This included the date of creation, the jurisdiction, the level of government from which it derived and the type of instrument. Secondly, a scan was undertaken to locate the aim of the instruments, its links to other components. There was also consideration as to whether there was a mandatory requirement to create the components. The mandatory nature of the instrument is important to discussions in this Chapter of whether the component will constitute soft law or quasi-regulation. Finally, searches were conducted for the key words. The mentions of these terms were counted and the wording around the terms was incorporated into the database. Within the wording of the relevant section, any information as to the party responsible for warning, communication and particularly the use of social media was identified.

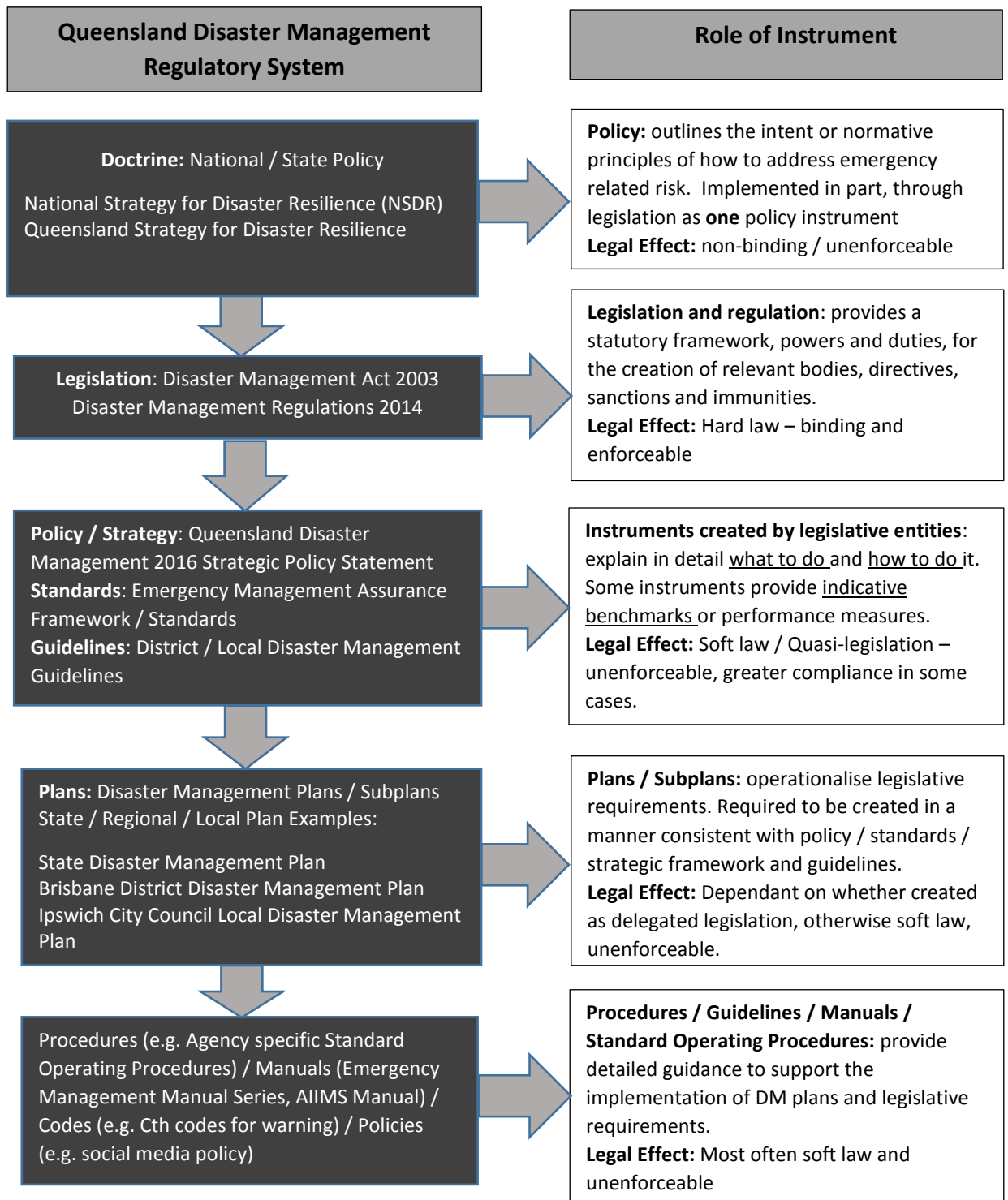
Identification of Terms and Keywords

From an early reading of the components, it was clear that alternative search terms to 'risk communication' and 'social media' might be required. In most instances for example, communication to the public was incorporated under a variety of terms. These terms included 'communication', 'information' or 'community engagement'. Although the term 'social media' was utilised, in some instruments an alternative term, 'new tech' was utilised. These terms were therefore incorporated into the search strategy. The next step was to classify each component by type. This classification is important because as becomes apparent in the following sections, the type of component in which responsibility for risk communication and warning resides can be highly relevant to the determination of a legal duty. Fortunately, and in most cases, instrument types were clearly and were extracted from their title.

The role of governance components in the regulatory system

As stated, the regulatory components examined in this Chapter include hard and soft law instruments such as policy, legislation, plans, guidelines and other governance components. As previously identified, each component plays a different role in the hierarchy of the regulatory system, some are enforceable and binding, while others are not. **Figure 6** below provides an example of the hierarchy of instruments that may be present in a regulatory system for emergency management. Absent a comprehensive Australian representation of a regulatory system, one, which places policy and doctrine at the top of the hierarchy, the diagram, is adapted from Emergency Management in Ontario. The diagram represents Queensland's disaster management arrangements, as it is the basis for the case study in Chapter Eight. The diagram aims to provide an understanding of the role of each of the various regulatory components, their legal effect, and how they operate together to deliver policy objectives for disaster risk reduction. These aspects of the diagram are discussed in detail in the remainder of this Chapter.

Figure 6: Hierarchy of Instruments in Queensland's Regulatory system for disaster management⁵⁶⁸



⁵⁶⁸ Figure 6 is adapted from, Minister of Community Safety & Correctional Services (Ontario), *Legislation and Regulation* (25 May. 2016) <http://www.emergencymanagementontario.ca/english/insideemo/legislationandregulation/emergency_management_doctrine.html>.

As indicated in the above hierarchy, the nature and role of the component, will determine whether it is appropriate to incorporate detailed responsibilities or prescriptive 'how to' processes for operational activity. The diagram also indicates whether the relevant instrument is hard law, and therefore enforceable, or soft law. As becomes clear in Chapter Six, even the functions, powers and responsibilities contained within the hard law components, may not be sufficient to ground a cause of action in the event of a failure to comply. While to a layperson, a function, power or responsibility may suggest some level of obligation, this is not always the case. As is made evident by the definitions below, and as becomes apparent in Chapter Six, a legal obligation to carry out the activity may not attach. Both the role of each of the instruments within the hierarchy and the language used within the instruments are examined below.

A Hierarchy of Instruments

Policy

Referring to Figure 6 above, and in line with the definition of the regulatory system in this Chapter, policy (rather than doctrine), is the relevant starting point for examination of the regulatory system.⁵⁶⁹ Policy development is a multi-layered process, which can incorporate stakeholder and community consultation.⁵⁷⁰ The process seeks to characterise, and determine how to address a problem or risk from an abstract or normative perspective.⁵⁷¹ The resulting policy statement, 'influences' the directions taken in subsidiary components, or policy instruments to address a risk.⁵⁷² The role of high level

⁵⁶⁹ Catherine Althaus, Peter Bridgman and Glyn Davis, *Australian Policy Handbook* (Allen & Unwin, 5th Ed, 2013) 207(Although the policy statement is utilised as the starting point for analysis here, the policy cycle is iterative and often non-linear).

⁵⁷⁰ Althaus, Bridgman and Davis, above n 569, 101-102; Sheehy and Feaver, above n 94, 409, 414; Sarah Maddison, and Richard Denniss, *An introduction to Australian Public Policy: Theory and Practice* (Cambridge University Press, 2nd ed, 2013) Ch 7.

⁵⁷¹ Althaus, Bridgman and Davis, above n 569, 101-102; Sheehy and Feaver, above n 94, 409, 414; Maddison and Denniss, above n 570.

⁵⁷² Handmer and Dovers, above n 185, 50; See, eg, Sheehy and Feaver, above n 94, 402 (The authors put forward a model for regulatory coherence which commences with the normative axis, containing the policy framing and approach followed by the regulatory approach which implements the policy objectives); Yvonne Haigh, *Public Policy in Australia: Theory and practice* (Oxford University Press, 2012) 85-87; Althaus, Bridgman and Davis, above n 569, 92-93 (Policy instruments more commonly used in Australia include,

policy is to act as a vision statement,⁵⁷³ a strategic benchmark,⁵⁷⁴ or guide,⁵⁷⁵ which articulates the desired approach to emergency management.

As previously highlighted, the Australian *National Strategy for Disaster Resilience* provides policy directives for disaster risk reduction, which envisage shared responsibility and resilience building.⁵⁷⁶ Each State and Territory government, as well as each State Emergency Management Committee, may also have policy or a strategic framework for managing a problem.⁵⁷⁷ As a vision statement or guiding instrument, policy is non-binding. It is unlikely to include particular responsibilities for risk communication and warning. Instead, in this context, policy will usually indicate the level of priority which should be attributed to risk communication and warning when managing a problem.

Legislation

Legislation is a common instrument used to implement policy. As indicated, in relation to principles of better regulation, it may not however, be the most effective or appropriate.⁵⁷⁸ As a hard law instrument, legislation is an authority based device, aimed at 'individuals, groups or institutions'.⁵⁷⁹ It is used to prescribe behaviour, mandate action or to 'prohibit or permit forms of

'advocacy, policy through the leveraging of network partnerships, money (spending and incentives', direct government action through agencies, as well as policy through law and legislation).

⁵⁷³ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 74.

⁵⁷⁴ State Disaster Management Group (Qld) *Disaster Management Strategic Policy Framework* (November 2010) 4.

⁵⁷⁵ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iii.

⁵⁷⁶ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iii, 1, 4-5.

⁵⁷⁷ See, eg, Queensland Government, *Queensland Strategy for Disaster Resilience* <<http://www.dilgp.qld.gov.au/resources/plan/local-government/queensland-strategy-for-disaster-resilience.pdf>>; State Disaster Management Group (Qld) *Disaster Management Strategic Policy Framework* (November 2010); State Emergency Management Committee (Tas), *Strategic Directions Framework* (2013-2018); Emergency Management (Vic), *Victorian Emergency Management Strategic Action Plan 2015-2018* (2015) (It is noted that State Emergency Management Committee policies may fall lower in the hierarchy as reflected in Figure 6, as it is only many of these bodies are created by legislation within the jurisdiction and are then afforded the power to create policy and strategic frameworks).

⁵⁷⁸ Department of the Prime Minister and Cabinet (Cth), above n 503, 26-27.

⁵⁷⁹ Haigh, above n 572, 86.

conduct',⁵⁸⁰ with referable sanctions in place.⁵⁸¹ Chapter Seven also identifies that legislation may contain immunities which act to legally exculpate a person or statutory authority for activities carried out in pursuance of the Act.

Legislation is also utilised to create the institutions which carry out the policy objectives. A statute will often establish the agencies responsible for action and delegate power to appropriate parties.⁵⁸² In the United States and Australia, emergency management is a creature of law.⁵⁸³ Each jurisdiction has a specific disaster or emergency management statute, as well as alternate legislation which creates the agencies which are operative within the emergency services sector. The different statutes operate in tandem during an emergency. Agencies may therefore be afforded powers and functions for warning under both emergency management legislation, and agency specific legislation. In general, legislation is adopted for broad level considerations, and for matters of significance,⁵⁸⁴ rather than for 'matters of detail or matters likely to experience frequent change'.⁵⁸⁵ As risk communication and warning is considered significant to risk mitigation, it is likely that there will be related functions in legislation for these activities.⁵⁸⁶ Details of the channels for dissemination however, are unlikely to be found.

In this Chapter, the aim is to determine to what extent responsibilities for warnings and risk communication exist in the legislation and other regulatory components. Extracting specific responsibilities from legislation is often complex. In the first instance, this is because responsibilities framed in

⁵⁸⁰ Ibid.

⁵⁸¹ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 69.

⁵⁸² Office of Queensland Parliament, *Legislative Instruments Handbook 2.1* (2015) 1 <http://www.opc.gov.au/about/docs/LI_Handbook.pdf?v1>.

⁵⁸³ Nicholson, above n 227, 237.

⁵⁸⁴ See, eg, Haigh, above n 572, 85-91 (Noting that each policy instrument and tool are utilised differentially to achieve the aims of policy); Department of the Premier and Cabinet (Qld), *The Queensland Legislation Handbook – Governing Queensland* (5th ed, 2014) 2.2 Some of these reasons include a 'permanence of a significant policy objective', 'modification of existing rights and obligations' or the 'high level importance of the policy'.

⁵⁸⁵ Department of the Premier and Cabinet (Qld), above n 584, 7.

⁵⁸⁶ See, eg, Barbara Ryan and Dr Amalia Matheson, 'Significance of communication in emergency management' (2010) 25(1) *The Australian Journal of Emergency Management* 54,54; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11.

legislation can be vague rather than prescriptive. A less prescriptive approach in legislation affords flexibility to respond to 'changing disaster demands'.⁵⁸⁷ Secondly, legislative instruments provide for 'powers' or 'functions',⁵⁸⁸ rather than responsibilities relevant to statutory bodies.⁵⁸⁹ These terms will be examined in due course. To provide an example however, the *Meteorology Act 1955* (Cth), conveys specific functions on the Bureau of Metrology (BOM). The statute includes a function to 'issue warnings of gales, storms and other weather conditions likely to endanger life or property, including weather conditions likely to give rise to floods or bushfires'.⁵⁹⁰ Further particular wording within statutory provisions may be used to convey whether the function is mandatory or discretionary. Figure 6 suggests legislation is ordinarily considered binding and enforceable. However, in Australia, unless the legislation is prescriptive, it is only on analysis of the case law which interprets the legislation that enforceability of the legislation will be understood. An analysis of the case law will assist in making a determination as to whether a function constitutes a mandatory legal responsibility or duty, for which an agency may be held legally accountable in negligence.

Additional regulatory components

Across the regulatory system for emergency management there are numerous other instruments, predominately soft law, which influence activity and operations of the sector. These instruments also contain responsibilities. As depicted in Figure 6, in terms of relevant components, emergency or disaster management plans and standards, are required to be created under the relevant legislation.⁵⁹¹ A discretionary power may also exist to create further

⁵⁸⁷ See, eg, Perry and Lindell, above n 146, 342-343.

⁵⁸⁸ Macmillan Publishers Group Australia, *Macquarie Dictionary 2003* (online), 'function' (A 'function' suggests, 'an activity or action proper to a person or institution'); Lexis Nexis, *Encyclopaedic Australian Legal Dictionary* (14 September 2016) 'function' (A function is a power, duty or authority, it may also include a responsibility – however in the definition highlighted, this reading of the word function was defined in the Act itself, see, eg, *Animal Health Act 1995* (TAS) s 3(1)).

⁵⁸⁹ A statutory body must then allocate its resources as it sees fit across the range of functions it is charged with.

⁵⁹⁰ *Meteorology Act 1955* (Cth) s 6(1)(c).

⁵⁹¹ See, eg, *Emergencies Act 2004* (ACT) s 147; *Emergency Management Act 2013* (NT) s 9; *Disaster Management Act 2003* (Qld) s 49; *Emergency Management Act 2006* (Tas) s 32; *Emergency Management Act 2013* (Vic) s 48 (Although both Tasmania and the Northern Territory also required the creation of regional and municipal / local emergency plans only

supporting guidelines, codes, protocols and communication plans and sub-plans which incorporate activities adapted to regional requirements.⁵⁹² These plans and standards are more detailed, because as Figure 6 demonstrates, they explain how to carry out the legislative requirements. These components may therefore specifically outline which party will be responsible for a warning or public communication, and who will take the lead role in communication. They may also highlight the relevant modalities which should be used to disseminate information in the emergency setting.

As identified, additional regulatory components contain ‘responsibilities’ for operational activity. However, as earlier highlighted, there is some uncertainty, as to the role that soft law, or paralegal materials play at law, and whether liability might flow from a failure to comply with them.⁵⁹³ At times, soft law instruments may be so integrated with legislation that a failure to comply with it may be sufficient ground liability. In these instances, the soft law instrument is more akin to ‘explicit (and enforceable) government regulation’.⁵⁹⁴ However, whether the content of these instruments provides the basis for the formulation of a duty of care, and therefore, whether they are enforceable at law, will need to be determined in each circumstance. The question will be, does the failure to follow a guideline or a protocol provide grounds to raise an action in negligence or a duty of care?

The ‘voluntary’ nature and the enforceability of additional regulatory components

While Figure 6 suggests soft law instruments such as guidelines, standards and procedures may be non-binding and unenforceable; this may not prove to be true in the Australia context. As will be demonstrated in Chapter Six, the

Queensland District and Local Plans were included in the content analysis, as these will be utilised in the case study example to demonstrate the role of such plans or guidelines).

⁵⁹² See, eg, *Emergency Management Act 2013* (Vic) s 44 (The commissioner may create protocols and guidelines in relation to warning – note the State Government Victoria, *Victorian Warning Protocol*, Version 2.0 (July 2013)).

⁵⁹³ Fisher, ‘Legal Reasoning in Environmental Law’, above n 94, 337; Commonwealth of Australia, ‘Grey-Letter Law’, above n 553, ix, xiv, xvi, xviii (Those that are binding have been labelled quasi-regulation, a ‘range of rules, instruments and standards’).

⁵⁹⁴ Fisher, ‘Legal Reasoning in Environmental Law’, above n 94, 337; Weeks, above n 551, 2; Commonwealth of Australia, ‘Grey-Letter Law’, above n 553, x.

case law suggests that soft law components may not have the force of law and only be the subject of voluntary compliance. However, as previously indicated whether they have the force of law, and 'dictate a conclusion' or action⁵⁹⁵ may depend on the language used; whether the instrument is publicly available;⁵⁹⁶ and the way in which the instrument is integrated with the primary Act.⁵⁹⁷ For example, the legislation may afford a discretion to create guidelines and standards. Upon creation of the guidelines, the legislation may stipulate that a degree of compliance, or at least consistency with the instrument is required.⁵⁹⁸ Therefore, the soft law instrument may have some binding effect. Conversely, the legislation may afford a discretion or be silent on the creation of further instruments. If a manual, guideline or protocol is created to assist in meeting legislative responsibilities, or to outline effective practice, it is likely that compliance with this type of soft law instrument will be voluntary.

In Queensland, for example, the creation of guidelines and standards respectively is discretionary.⁵⁹⁹ Once created however, the legislation requires the state, district and local disaster management plans are to be consistent with the relevant guidelines and standards.⁶⁰⁰ The Chief Executive then has

⁵⁹⁵ *Smoker v Pharmacy Restructuring Authority* (1994) 125 ALR 577, 579.

⁵⁹⁶ Weeks, above n 551, Chapter Nine (See generally, examination of the duty of care and the various applications to a Manual which is known or unknown to the public).

⁵⁹⁷ See, eg, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, 429-430; *Sheridan v Borgmeyer* [2006] NSWCA 201, [18]; *Maynard v Rover Mowers Ltd* [2000] QCA 26; [17] (Where protocols and codes were deemed not more than a standard without legal force, however they may prove relevant to determining whether reasonable precautions have been taken) *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [78]-[79] (An emergency plan does not constitute delegated legislation which would bring about a statutory duty but may assist in the finding of a common law duty); See, also LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 13 Sept 2016) 'guidelines' (Guidelines may be considered policy which 'does not have the force of law unless the empowering legislation provides it is binding'); Fisher, *Legal Reasoning in Environmental Law*, above n 94, 337 (For example 'there may be obligations on how to perform rather than obligations on outcomes', or there may be a 'clear link to ensure compliance with the plans' for example).

⁵⁹⁸ Cf, Attorney General's Department (Cth), *Code of Practice for Warning Republishers* (April 2013), Attorney General's Department (Cth), *Best Practice Guide for Warning Originators*, above n 278 (By contrast the Commonwealth Code of practice and best practice guidelines are not intended to impose mandatory requirements but act as complementary guidance for state activities).

⁵⁹⁹ *Disaster Management Act 2003* (Qld) s 49, 50, 54, 58 (Interestingly the District and Local Disaster Management Guidelines themselves state their purpose is to provide guidance and support to meet legislated functions, rather than overtly requiring consistency with their contents) See, also, *Emergency Management Act 2005* (VIC) s 18, 41 (Where the same position exists for Emergency Management Plans).

⁶⁰⁰ *Disaster Management Act 2003* (Qld) s 50, 54, 58.

the function, to ensure that 'disaster management and disaster operations in the State are consistent with' the strategic policy framework, the guidelines, standards and disaster management plan.⁶⁰¹ Where there is a mandate to act consistently with an instrument, there may be greater likelihood that any failure to do so abide by them would be sufficient to raise a duty of care, the breach of which would ground a cause of action.⁶⁰² This proposition will be examined further in Chapters Six, Seven and Eight. Irrespective of a legal obligation to comply with a soft law instrument and the functions it provides, the failure to do so may still lead to public criticism. A non-judicial inquiry which also follow and can negatively impact on the reputation and feelings of trust with the authority.

Roles and obligations within components: 'functions', 'powers' and 'responsibilities'

As identified in the preceding paragraphs, across the regulatory components analysed in this Chapter, various terms are used to describe the role of an authority in warning. A statutory authority may have a function to warn, a power to warn, or a responsibility to issue warnings. To appreciate the likely legal implications for failing to carry out these functions, powers, and responsibilities, it is necessary to understand the level of obligation that attaches to these terms when they are used within statute.

Function, power, duty

In the first instance, a 'function' is addressed. A 'function' may be a power, authority or a duty.⁶⁰³ A function appears to grant power or authority to carry out a role or activity,⁶⁰⁴ which includes a power to act. These definitions do not however appear to incorporate an obligation to act. The term 'duty' is also

⁶⁰¹ *Disaster Management Act 2003* (Qld) s 16A.

⁶⁰² See, eg, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, 429-430; *Sheridan v Borgmeyer* [2006] NSWCA 201, [18]; *Maynard v Rover Mowers Ltd* [2000] QCA 26; [17] (Where protocols and codes were deemed not more than a standard without legal force, however they may prove relevant to determining whether reasonable precautions have been taken).

⁶⁰³ See, also, *Civil Liability Act 2003* (Qld) s 34 (Where a function includes a power); *Acts Interpretation Act 1954* (Qld) Schedule 1.

⁶⁰⁴ See, eg, Hart, *Punishment and Responsibility*, above n 127, 212-213 (As in role responsibilities).

included in the definition of a function. A 'duty' is defined in legal terms as 'a legal obligation owed from one person to another', which 'may require performance of certain actions'.⁶⁰⁵ This definition incorporates a greater sense of obligation, however, as becomes apparent in Chapter Six the obligation does not necessarily mean that liability will ensue. In some jurisdictions, there remains a discretion over whether to discharge a duty.⁶⁰⁶ Therefore, depending on the wording of the relevant act, something more may be required to demonstrate there is an obligation to discharge a duty, function or power to act.

Responsibility

The term 'responsibility', defined in Chapter One, was found in this analysis to be the term more commonly used in soft law instruments. Applying Hart's taxonomy of responsibilities, responsibility for warning in an emergency situation in hard and soft law instruments is likely to be classified as role responsibilities.⁶⁰⁷ As becomes evident, in some cases, statements of role responsibility purely act to outline what responsibilities are,⁶⁰⁸ while others embed an obligation to act.⁶⁰⁹ The following three Chapters highlight, in the context of warning, that although a person may be blameworthy for failure to perform functions, they may not be legally responsible or legally accountable.⁶¹⁰ A finding of legal responsibility will depend on the legal rules,

⁶⁰⁵ LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 8 October, 2016) 'duty'.

⁶⁰⁶ See, eg, *Acts Interpretation Act 1954* (Qld) s 23(1)(2), 32CA (1) Schedule 1 (Given that a function includes a duty, and that a function may be performed, there is an element of discretion in the discharge of a duty); *Interpretation of Legislation Act 1984* (Vic) s 40, 45 (A duty 'shall' be performed from time to time, and shall means that the power must be exercised).

⁶⁰⁷ Karin Boxer, 'Harts Sense of 'Responsibility'' in Christopher Pulman (ed) *Hart on Responsibility* (Palgrave Macmillan, 2014) 31, 32; McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 17-19; Cane, *Responsibility in Law and Morality*, above n 104, 30-31; Cane, 'Role responsibilities', above n 127, 279-280 (Role responsibilities can be attached to 'persons who occupy a distinctive office in a place or institution, and to which specific duties are attached'); Hart, *Punishment and Responsibility*, above n 127, 212-213 (A role responsibility outlines duties, which are the relevant person's responsibility to perform or fulfil – it is a task assigned to a person).

⁶⁰⁸ Boxer, above n 607, 31, 32; McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 17-19; Cane, *Responsibility in Law and Morality*, above n 104, 30-31; Cane, 'Role responsibilities', above n 127, 281.

⁶⁰⁹ See, eg, *Emergency Management Act 2013* (VIC) s 42, 43 (Where certain person must ensure that warnings are issued) *Interpretation of Legislation Act 1984* (VIC) s 45; Cane, *Responsibility in Law and Morality*, above n 104, 1-2 (Noting that there may be 'responsibility without legal liability and legal liability without responsibility').

⁶¹⁰ Hart, *Punishment and Responsibility*, above n 127, 223.

and whether the relevant elements of liability have been satisfied in the circumstances.⁶¹¹ Having defined the relevant terms which appear within the instruments, it is now necessary to address the findings that were made after the examination of the regulatory components. The findings will address the key questions outlined at the commencement of this Chapter.

Content Analysis Results

The following results identify whether risk communication and warning is incorporated into regulatory components. They also provide an indication of whether responsibility for warning and the use of social media is clearly identifiable. The results are grouped as a response to each of the three key questions identified at the commencement of the Chapter. In response to each research question, the results are segmented to delimit the type of regulatory components in which references to warning and social media were identified. This segmentation is important in the following Chapters. As highlighted in the previous section, the type of component in which the responsibility is found, may play a role in whether a duty of care, which would ground a cause of action in negligence, is likely to be formulated.

Question 1: Does the current regulatory system incorporate risk or public communication and information and warning within governance components?

Because of its important role in the mitigation and control of natural hazard and emergency related risk, this question was formulated to determine whether risk or public communication and warning, feature within regulatory system components. The frequency of the terms within the data suggests that public communication, specifically warning is present in a variety of regulatory components. As **Table 1** identifies, this is particularly true, in the case of soft law instruments such as plans, protocols, guidelines, standards. It is less frequently true for legislation⁶¹² and policy. Qualitative analysis of the wording

⁶¹¹ Hart, *Punishment and Responsibility*, above n 127, 215.

⁶¹² See, legislative exceptions, *Emergency Management Act 2013* (VIC) s 21, 42, 43 (where warning and communications are specifically mentioned as a function of the chief executive and other relevant bodies); See also, *Disaster Management Act 2003* (Qld) s 4(c) (Where the objects of the Act include ensuring that communities receive appropriate information

of the components provides a further level of understanding as to the emphasis placed on communication and warning. In high level policy for example, despite few mentions of warning, The *National Strategy for Disaster Resilience*, identifies ‘communicating with and educating people about risks’ as one of seven key areas for action.⁶¹³ The strategy places a fundamental importance on the role of communication in building a resilient community. As defined in Chapter One, a resilient community ‘works together to understand the risks that is confronts’⁶¹⁴ and is a self-reliant community.

Table 1: Presence of the term ‘warn’ across Australia’s emergency management regulatory components

Policy Document		
State	Legislation	Warn Mentions
Commonwealth (CTH)	National Strategy for Disaster Resilience	2
Queensland (QLD)	Queensland’s Strategy for Disaster Resilience	2
	Disaster Management Strategic Policy Framework	2
Tasmania (TAS)	Tasmania State Emergency Management Committee Strategic Policy Framework	1
Victoria (VIC)	Victorian Emergency Management Strategic Action Plan 2015-2018	9

about responding to and recovering from a disaster); *Emergencies Act 2004* (ACT) s 8(4)(h), 149 (This Act emphasises the importance of communicating information, advice and warning to the community during an emergency, and requires that the emergency plan contain a community communication and information plan, which addresses a number of details); *Fire and Emergency Act* (NT) (Role of the fire and rescue service includes conduct of emergency education and awareness).

⁶¹³ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 8, 9 (The fundamental importance of communication is noted for building a resilient, empowered and self-reliant community).

⁶¹⁴ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 8,9 (The strategy notes the importance of knowledge building when communicating with individuals, so communicating is about educating and assisting in the understanding of risks).

	Emergency Management in Victoria Part 1: Emergency Management Manual Victoria ⁶¹⁵	1
Legislation		
State	Name of Act	Warn Mentions
Australian Capital Territory (ACT)	<i>Emergencies Act 2004</i>	1
Commonwealth	<i>Meteorology Act 1955</i>	1
New South Wales (NSW)	<i>State Emergency Service Act 1989</i>	1
	<i>State Emergency and Rescue Management Act 1989</i>	1
	<i>Rural Fires Act 1997</i>	1
	<i>Fire Brigades Act 1989</i>	0
Northern Territory (NT)	<i>Bushfires Act</i>	0
	<i>Fire and Emergency Act 2004</i>	0
	<i>Emergency Act 2013</i>	2 ⁶¹⁶
Queensland (QLD)	<i>Fire and Emergency Services Act 1990</i>	23 ⁶¹⁷
	<i>Public Safety Preservation Act 1986</i>	0
	<i>Disaster Management Act 2003</i>	5 ⁶¹⁸
South Australia (SA)	<i>Emergency Management Act 2004</i>	0
	<i>Fire and Emergency Services Act 2005</i>	5 ⁶¹⁹
Tasmania (TAS)	<i>Emergency Management Act 2006</i>	0

⁶¹⁵ See, eg, Emergency Management (Vic), *Emergency Management Manual Victoria* <<https://www.emv.vic.gov.au/policies/emmv/>> (The determination for this research that the manual provides policy is based on the web reference which outlines the purpose of the manual, the first Chapter of the manual was classified as a policy document for the content analysis, in part because it contains the framework and objectives for Emergency Management).

⁶¹⁶ *Emergency Act 2013* (NT) s 18 (The references to warn in this Act refer to when an emergency situation is deemed to exist).

⁶¹⁷ Although there is a high count of the word warning in this Act, none of the references to warning here relate to public information warnings.

⁶¹⁸ Only one of the references to warn in this Act relate to public warning for emergencies.

⁶¹⁹ *Fire and Emergency Services Act 2005* (SA) s 80 129 (The references to warning here relate only to broadcast of total fire bans and the power to provide and erect sirens for the purpose of warning for outbreak or threat of fire).

	<i>Fire Service Act 1979</i>	1 ⁶²⁰
Victoria (VIC)	<i>Victoria State Emergency Service Act 2005</i>	0
	<i>Country Fire Authority Act 1958</i>	7 ⁶²¹
	<i>Forests Act 1958</i>	4
	<i>Emergency Management Act 2013</i>	11 ⁶²²
	<i>Emergency Management Act 1986</i>	0
	<i>Metropolitan Fire Brigades Act 1958</i>	5
Western Australia (WA)	<i>Bush Fires Act 1954</i>	0
	<i>Fire Brigades Act 1942</i>	0
	<i>Fire and Emergency Services Act 1998</i>	0
	<i>Emergency Management Act 2005</i>	0
Other Regulatory Components		
State	Component Name	Warn Mentions
Australian Capital Territory (ACT)	<i>Emergencies (Plan) 2014 (No.1)</i>	16
Commonwealth (CTH)	Emergency Warnings choosing your own words	97
	Best Practice Guide for Warning Originators	189
	Code of Practice for Warning Republishers	65
	Australia's Emergency Warning Arrangements	150
New South Wales (NSW)	New South Wales State Emergency Management Plan	13
	New South Wales Public Information Services Functional Area Supporting Plan	6
Northern Territory (NT)	Territory Emergency Plan	20

⁶²⁰ *Fire Service Act 1979* (TAS) s 133 (Relates to the governor's ability to create fire regulations with an inclusion of warning).

⁶²¹ A duplication of the word warning can exist in legislation such as this Act, where warning is mentioned in the contents of the Act as well as within substantive sections of the Act.

⁶²² A duplication of the word warning can exist in legislation such as this Act, where warning is mentioned in the contents of the Act as well as within substantive sections of the Act.

Queensland (QLD)	Queensland State Disaster Management Plan	34
	Emergency Management Assurance Framework	14
	Queensland District Disaster Management Guidelines	12
	Queensland Local Disaster Management Guidelines	32
	District Disaster Management Plan example: Brisbane District Disaster Management Plan 2014-2015	43
	Local Disaster Management Plan example: Redland City Disaster Management Plan (2016)	23
South Australia (SA)	State Emergency Management Plan	165 ⁶²³
Tasmania (TAS)	Tasmanian Emergency Management Plan	41
Victoria (VIC)	State Emergency Response Plan: 'Part 3: Emergency Management Manual Victoria'	67
	Emergency Management Performance Standards (VIC)	13
	Victorian Warning Protocol	244 ⁶²⁴
Western Australia (WA)	State Emergency Management Plan for Fire August 2013: Westplan – Fire	21
	State Emergency Management Plan for Flood (Westplan– Flood)	64
	State Public Information Emergency Management Support Plan (Westplan - Emergency Public Information)	18

⁶²³ This document appears as an anomaly in that it combines not only the emergency management plan but the public information plan as an appendix to the document, therefore acting to combine, what in some jurisdictions appears as two separate documents, and being based in part on public information there are a high number of references to warning.

⁶²⁴ This number of mentions of warning in this document is somewhat of an anomaly, in that as the word warning is utilised within the header, footer and title of the document, these are included in the count and are difficult to separate out, 4 metadata references for warning were not included in the count.

Policy statements

There are a limited number of jurisdictions that have created policy statements directed towards emergency management. As indicated in Table 1 there is little evidence of publicly available, state government or emergency sector policy in South Australia, Western Australia or New South Wales. Of those jurisdictions which have created policy statements, those formed by central government and the relevant State and Territory emergency management committees, indicate a presence of public communication and warning. There is however, less emphasis on communication and warning in the State components, than in the *National Strategy for Disaster Resilience*. Accordingly, rather than being a central area for action, statements related to communication and warning are usually incorporated under key areas for action such as 'Response'. Where a statement related to risk communication and warning is present, it tends to acknowledge the need for 'ongoing effort to communicate risk information to the community';⁶²⁵ the need to develop strategies within the response phase for effective communication in order to minimise the impacts of a disaster;⁶²⁶ or the need to improve communication and 'enhance public information and community warning capabilities'.⁶²⁷ These policy statements reflect the need for risk communication in the form of ongoing education, as well as a response-related tasks focused on a specific threat.

Legislation

As earlier indicated, legislation is a hard law instrument, which is legally binding on a statutory authority, and therefore legally enforceable. As indicated **communication** has been identified as a key mitigation mechanism and a key strategic priority at a national level. Despite the national focus, as Table 1 highlights, the need to communicate or more particularly warn the community,

⁶²⁵ Queensland Government, *Queensland Strategy for Disaster Resilience* 4 <<http://www.dilgp.qld.gov.au/resources/plan/local-government/queensland-strategy-for-disaster-resilience.pdf>>.

⁶²⁶ State Disaster Management Group (Qld) *Disaster Management Strategic Policy Framework* (November 2010) 11.

⁶²⁷ State Emergency Management Committee (Tas), *Strategic Directions Framework* (2013-2018) 7; Emergency Management (Vic), *Victorian Emergency Management Strategic Action Plan 2015-2018* (2015) 23.

filters down into legislation, to a limited degree. In addressing public communication more generally, the emergency management legislation in Queensland, is the only example which links the need to convey information to the public, to achieve the objects of the Act.⁶²⁸ The remainder of the emergency management legislation that incorporates warning and public communication, focuses more generally on the establishment of the statutory bodies, and the necessary framework and infrastructure for efficient and effective emergency management or service delivery generally.⁶²⁹ Functions relevant to communication include the need to 'emphasise the importance of communication and warnings' or to provide a forum for their development and improvement.⁶³⁰

Regarding **warning** more specifically, there are again limited references in the emergency management legislation. The exception to this is in Victoria, where there is direct incorporation of a function to issue warnings for fire.⁶³¹ Becoming more diluted, in Queensland, warning is one of the many response activities which an agency can carry out.⁶³² In contrast to even infrequent references to communication and warning in these jurisdictions, South Australia, the Northern Territory and Tasmania do not include the words communication, information or warning, in their emergency management legislation.⁶³³ Outside of the emergency management statutes, and as earlier identified, warning is mentioned once in relation to functions of the Bureau of Meteorology in Commonwealth legislation.⁶³⁴ In Victoria and New South

⁶²⁸ *Disaster Management Act 2003* (Qld) s 3(a), 4(c) (Where the provision of information is linked to achieving the objects of the Act to mitigate, prepare and response effectively to emergencies).

⁶²⁹ *Emergencies Act 2004* (ACT) s 149 (This reference in this Act is about the requirement to create a community communication and information plan); *Emergency Management Act 2013* (VIC) s 5, 42, 43 (In this Act, there is an emphasis on issuing warnings and providing information about fire to the community); *State Emergency and Rescue Management Act 1989* (NSW) s 15 (The only reference is for the SEMC to arrange for graduated warnings of emergencies to the public).

⁶³⁰ *Emergencies Act 2004* (ACT) s 8(4)(h); *Emergency Management Act 2005* (WA) s 14.

⁶³¹ *Emergency Management Act 2013* (VIC) s 5, 42, 43 (In this Act, there is an emphasis on issuing warnings and providing information about fire to the community); *State Emergency and Rescue Management Act 1989* (NSW) s 15 (The only reference for the SEMC to arrange for graduated warnings of emergencies to the public).

⁶³² *Disaster Management Act 2003* (Qld) Schedule (Definition of response activities).

⁶³³ *Emergency Management Act 2004* (SA); *Emergency Management Act 2006* (TAS).

⁶³⁴ *Meteorology Act 1955* (Cth) s 6(1)(c).

Wales, there is also some inclusion of warning in fire legislation.⁶³⁵ An initial conclusion based on these results is that there is little direct inclusion of functions for risk communication and warning in hard law instruments. As will be demonstrated in Chapter Six, the absence of functions in this area will affect the ability to assert a duty of care is owed at common law.

Other Regulatory Components

In contrast to high level policy and legislation, and as is evident in Table 1, the soft law instruments incorporate a greater number of references to warning. The communications plans, standards and guidelines across all levels of government, also include greater emphasis on public communication more generally. The greater emphasis on both warning and public communication in these instruments is likely to be related to their role, identified in Figure 6, as providing a 'how to'⁶³⁶ of emergency management. These instruments generally take a more comprehensive approach to communication and warning. They suggest or require public communication plans and sub-plans. They include the need to create communication infrastructure. They also highlight leading combat agencies, allocate roles and responsibilities for the dissemination of public communication and warning,⁶³⁷ as well as identifying key capabilities to be developed, and principles to follow.⁶³⁸

⁶³⁵ See, eg, *Meteorology Act 1955* (Cth) s 6; *State Emergency Service Act 1989* (NSW) s 12(3); *Fire and Emergency Services Act 1998* (WA) s 18E; *Fire and Emergency Services Act 2005* (SA) s 108 (3)(3), 129.

⁶³⁶ See Figure 6.

⁶³⁷ See, eg, *Emergencies (Emergency Plan) 2014 (No 1)* (ACT); Queensland Government, *Queensland State Disaster Management Plan* (2015) 14 (Replaced by Queensland Government, *Queensland State Disaster Management Plan* (September 2016) (Provides that the functional lead agency for warning is Queensland Fire and Emergency Services supported by the State Disaster Coordination Centre); New South Wales, *New South Wales State Emergency Management Plan* (2012) 7 (This plan suggests that combat agencies have statutory responsibilities to issue warnings – however on a survey of the legislation there is no direct reference to warning aside from Fire and the State Emergency Services); Department of Police and Emergency Management (Tas), *Tasmanian Emergency Management Plan*, Issue 8 (2015) 48 (Which highlights the key role of BOM with assisting parties being DHHS, council media the State Emergency Service and the Tasmanian Police); Government of South Australia, *State Emergency Management Plan*, Version 2.14 (2015) 186-187; Territory Emergency Management Council (NT), *Territory Emergency Plan* (2014) 48, 73; Emergency Management Victoria (Vic), *Emergency Management Manual Victoria*, 'Part 3: State Emergency Response Plan' (2014) 3-10-3-13 (Where fire, control agencies and the Bureau of Meteorology have responsibilities to issue warnings).

⁶³⁸ Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework*, above n 107, 23-25; Queensland Government, *Queensland State Disaster Management Plan* (May 2015); Emergency Management Queensland, Department of

Conclusion

From the components analysed, and in response to the question posed in this section, the results clearly indicate that risk communication in the form of public communication and warning is present in a number of regulatory components. Principally references to these terms occur in policy, plans, standards and guidelines. As identified in the earlier framework Chapters however, international research suggests that warning and communication should be incorporated into law. Aside from exceptions within Queensland and Victoria, the greater emphasis is placed on public communication and warning in the 'how to' instruments. As previously identified many of the 'how to' components would not create a legal duty to act. Where these instruments are not binding and enforceable, there may be gap in the Australia regulatory system which is inconsistent with international recommendations.⁶³⁹

In terms of horizontal alignment within the regulatory system, and in reflecting on Figure 6, public communication and warning flows down from high level policy to the 'how to' documents. The adoption of communication and warning in these documents is presumed to be in response to the priority which is placed on this area in the *National Strategy for Disaster Resilience*. However, the lack of inclusion in State policy and legislation, suggest a lack of alignment and therefore coherence, in the national regulatory system as a whole.⁶⁴⁰ Further research is required to understand the effect of the lack of focus on communication and warning within state policy and legislation. The aim of this research would be to determine whether an absence of warning and communication decreases the understanding amongst agencies that risk communication is a key control or mitigation device for natural hazard and emergency related risk.

Community Safety, *Queensland District Disaster Management Guidelines* (2012); Emergency Management Queensland, *Queensland Local Disaster Management Guidelines* (2012) (See sections referring to response and planning phases); Emergency Management Victoria (Vic), *Emergency Management Manual Victoria*, 'Part 3: State Emergency Response Plan' (2014) 3-29.

⁶³⁹ See, eg, International Federation of Red Cross and Red Crescent Societies, above n 79, 4.

⁶⁴⁰ Sheehy and Feaver, above n 94, 398.

Question 2: Are responsibilities for public communication, more particularly warning apparent in regulatory components?

This section builds on the knowledge developed in response to Question 1, to further develop an understanding of whether clear responsibilities for public communication and warning exist. The focus here is on the responsibility to **warn** the community of potential risks which can enable individuals within a community to be self-reliant and undertake self-protection in an emergency situation. By drawing out the data related to warning, any responsibility can be aligned with the case law analysed in the following Chapters in relation to the duty to warn and a breach of that duty.

Policy Statements

As identified in the previous section, the need to incorporate public communication and warning as a priority was apparent in limited policy documents. This outcome is most likely attributable to the role of policy in the overall regulatory system as a broad vision statement on how to approach and manage emergencies. With incorporation in policy limited, the extent to which responsibilities for communication and warning are expressed and identifiable, or as being attributable to a specific agency, is negligible.

Legislation

Hard law instruments such as the Emergency and Disaster Management Acts within each Australian jurisdiction, along with the Acts that establish emergency service agencies, formed the next layer of instruments examined. On a plain reading of the legislation, it can be difficult to pinpoint 'responsibilities' for public communication and warning. This is because, as highlighted earlier, the term 'function' is often used. A 'function' has been defined in legal terms as 'a power, duty or authority' to act, it may only include a responsibility where expressly defined within an Act.⁶⁴¹ Although the

⁶⁴¹ Macmillan Publishers Group Australia, *Macquarie Dictionary 2003* (online), 'function' (A 'function' suggests, 'an activity or action proper to a person or institution'); Lexis Nexis, *Encyclopaedic Australian Legal Dictionary* (14 September 2016) 'function' (A function is a power, duty or authority, it may also include a responsibility – however in the definition highlighted, this reading of the word function was defined in the Act itself, see, eg, *Animal Health Act 1995* (Tas) s 3(1)).

definition provided here incorporates the notions of duty, as previously averted to it is only in particular circumstances that a function or power in statute, is sufficient to form the basis for a legal duty of care.

As indicated, a limited number of functions for communication and warning were incorporated in the relevant statutes. In Queensland, as was highlighted in response to the previous research question, there was an acknowledgement of the need to convey information to meet the objects of the Act. However, there are only indirect references to responsibilities for warning and communication.⁶⁴² In this Act, a reference is also made to functions of district and local government management groups. These functions include the need to ensure the community is 'aware of ways of mitigating the adverse effects of an event and preparing for, responding to and recovering from a disaster'.⁶⁴³ While this suggests communication is required, there is no mandate or direct reference to the need to warn.

In Victoria, greater emphasis is placed on warning for fire. Responsibilities are made clear in both emergency management and related emergency service legislation. In this jurisdiction, for example it is a mandated requirement to ensure the community is warned of fire.⁶⁴⁴ This requirement falls on the Emergency Management Commissioner, with the specific requirement to issue major fire warnings, falling on the State Response Controller, and otherwise the controlling officer.⁶⁴⁵ So too, fire legislation in the jurisdiction highlights the duty to warn of fire and the party responsible.⁶⁴⁶ Despite an all-hazard approach,⁶⁴⁷ which would be expected to be incorporated in this legislation, the focus on fire in Victoria, is presumably due to the previously

⁶⁴² See, eg, *Disaster Management Act 2003* (Qld) Schedule (Issuance of a warning is one possible response activity and then many parties have responsibilities for 'responding' to a disaster).

⁶⁴³ *Disaster Management Act 2003* (Qld) s 23(f), 30(f).

⁶⁴⁴ *Emergency Management Act 2013* (Vic) s 42.

⁶⁴⁵ *Emergency Management Act 2013* (Vic) s 42, 43, 44 (Noting here that in carrying out these roles, 'the relevant person must have regard to guidelines, protocols and operating protocols issued under the Act').

⁶⁴⁶ *Country Fire Authority Act 1958* (Vic); *Metropolitan Fire Brigades Act 1958* (Vic) (The responsibility falling on the chief officer); *Forests Act 1958* (Vic).

⁶⁴⁷ Emergency Management Australia, *Emergency Management Australia: Concepts and Principles* (Manual 1, 2004) viii.

identified allocation of warning functions to the Bureau of Meteorology. As identified the Bureau of Meteorology, at a federal level, has a function to issue warnings for 'gales, storms and other weather conditions likely to endanger life and property including weather conditions likely to give rise to flood and bushfires'.⁶⁴⁸

In both Western Australia and the Australian Capital Territory, there are legislated functions to 'emphasise the importance of communication and warnings', or to provide a forum for their development.⁶⁴⁹ Functions are also outlined for the creation of infrastructure which supports communications and warnings.⁶⁵⁰ However it is only in New South Wales, that the emergency service legislation, which establishes the respective services, provide for functions falling on the 'service' to act as the combat agency for a specific hazard, and provide warning infrastructure and warnings specifically.⁶⁵¹ If there are two sources of potential powers or functions for a statutory authority in the emergency management sector, confusion may arise as to which takes precedence, or whether the emergency services legislation continues to operate in an emergency. Aside from these functions, which at times are vague, and fall on a 'service' rather than an individual, there is an absence in legislative instruments of clear and specific legal responsibilities or requirements to issue a warning.

Additional Regulatory Components

Table 1 identifies numerous instances where the term 'warning' is used within soft law instruments. In each jurisdiction, emergency or disaster management plans are required to be created under statute. In each of these plans, either combat agencies, nominated agencies, or public information co-ordinators,

⁶⁴⁸ *Meteorology Act 1955* (Cth) s 6(1)(c).

⁶⁴⁹ *Emergencies Act 2004* (ACT) s 8(4)(h); *Emergency Management Act 2005* (WA) s 14 (These functions fall on the Emergency Services Commissioner and the State Emergency Management Committee respectively).

⁶⁵⁰ *Emergency Management Act 2013* (NT) s 46; *Emergencies Act 2004* (ACT) s 9; *State Emergency and Rescue Management Act 1989* (NSW) s 3.

⁶⁵¹ *Rural Fires Act 1997* (NSW) s 9(1)(a1) ('The rural fire service has a function to issue public warnings about bush fires and bush fire threats in the State for the purpose of protecting life and property'); *State Emergency Service Act 1989* (NSW) s 8(1)(a) (The State Emergency Service is the combat agency responsible for dealing with flood, 'including the establishment of flood warning systems').

are assigned specific ‘responsibilities’, or at least the role of managing or issuing public information and warning.⁶⁵² It is noted that allocation of responsibilities, is not uniform and differs in each jurisdiction. The most comprehensive of the emergency management plans, is the South Australian *State Emergency Management Plan* which includes a public information plan as an appendix.⁶⁵³ Although the legislation requires the plans, they are still soft law in that they are not regulation. Confusingly, however, the extent to the responsibilities within plans may be quasi-regulation and more likely enforceable, is unclear.⁶⁵⁴ As will be examined in Chapter Six, despite lacking legislative qualities, ‘courts are now prepared to view soft law as both significant and persuasive to the extent that it ‘often has something approaching [binding legal effect]’.⁶⁵⁵

The language of public information plans, warning protocols and supporting hazard specific plans in some jurisdictions afford a greater understanding as to responsibilities and whether there is a requirement to comply with the instruments.⁶⁵⁶ Plans along with relevant standards, note the critical role that

⁶⁵² See, eg, *Emergencies (Emergency Plan) 2014 (No 1)*; Queensland Government, *Queensland State Disaster Management Plan* (May 2015) (Provides that the functional lead agency for warning is Queensland Fire and Emergency Services supported by the State Disaster Coordination Centre, replaced by the Queensland Government, *Queensland State Disaster Management Plan* (September 2016)); New South Wales Government, *New South Wales State Emergency Management Plan* (2012) (Interestingly this plan suggests that combat agencies have statutory responsibilities to issue warnings – however on a survey of the legislation there is no direct reference to warning aside from Fire and the State Emergency Services); Department of Police and Emergency Management (Tas), *Tasmanian Emergency Management Plan*, Issue 8 (2015) (Which highlights the key role of BOM with assisting parties being DHHS, council media the State Emergency Service and the Tasmanian Police); Government of South Australia, *State Emergency Management Plan* Version 2.14 (2015) (Replaced by Government of South Australia, *State Emergency Management Plan*, Version 2.15 (2015)); Territory Emergency Management Council (NT), *Territory Emergency Plan* (2014) (Replaced by Territory Emergency Management Council (NT), *Territory Emergency Plan* (February 2016)); Emergency Management Victoria (Vic), *Emergency Management Manual Victoria*, 'Part 3: State Emergency Response Plan' (2014) (Where fire, control agencies and the Bureau of Meteorology have responsibilities to issue warnings).

⁶⁵³ Government of South Australia, *State Emergency Management Plan* Version 2.14 (2015).

⁶⁵⁴ Commonwealth of Australia, ‘Grey-Letter Law’, above n 553, 9-10 (Noting the blurred lines between explicit government regulation and quasi-regulation); Weeks, above n 551, 15, 24.

⁶⁵⁵ Weeks, above n 551, 15.

⁶⁵⁶ See, eg, Government of Western Australian, *State Emergency Management Plan for Fire (Westplan – Fire)*(2013)(Replaced by Department of Fire and Emergency Services (WA), *State Hazard Plan for Fire (WESTPLAN - FIRE)*(May 2016))(In this supporting hazard plan for example, the Department of Fire and Emergency Services is responsible for the

the public information role plays in an emergency.⁶⁵⁷ The Standards themselves, rather than attributing responsibility, 'play an informational and quality assurance role'⁶⁵⁸ and indicate the performance benchmarks, that are required to be met.⁶⁵⁹ The Commonwealth codes and guidelines are not prescriptive. Instead, their stated purpose is to act in an advisory capacity, to outline the principles and policies relevant to effective warning, and therefore compliance with them is voluntary.⁶⁶⁰ The Commonwealth component which outlines warning arrangements, also highlights the limited role or responsibility of the Commonwealth government in warning. *Australia's Emergency Warning Arrangements*, identify that the role of the Commonwealth government is to provide 'national leadership around emergency warning activity' which includes assisting states and territories to enhance their warning

distribution of Severe, Extreme and Catastrophic fire weather warnings and other warnings beyond the normal Department of Meteorology dissemination); Brisbane District Disaster Management Group, *Brisbane District Disaster Management Plan 2014-2015* (September 2014); Redland City Council, *Redland City Disaster Management Plan: Part 1*(2016)(Specific agencies are identified under the response strategy for carriage of warnings for specified events, with the district and local groups being identified as having a responsibility to support early warnings, or as being the official source of public information); State Government Victoria, *Victorian Warning Protocol*, Version 2.0 (July 2013); State Emergency Management Committee (NSW), *New South Wales Public Information Services Functional Area Supporting Plan* (2005) (Which provides for the role of the Public Information Services functional area co-ordinator, and noting that all agencies responding to an emergency are entitled to release information); Western Australia, *State Public Information Emergency Management Support Plan (Westplan Emergency Public Information)*(2012) (Which outlines the role of the controlling agency in managing the public information function).

⁶⁵⁷ Emergency Management Victoria, *Emergency Management Performance Standards* (December 2015) 19 (Replaced by Emergency Management Victoria, *Emergency Management Performance Standards*, Version 2.0 (December 2016)); Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework*, above n 107, 23-24.

⁶⁵⁸ Commonwealth of Australia, 'Grey-Letter Law', above n 553, xv.

⁶⁵⁹ Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework*, above n 107.

⁶⁶⁰ Australian Government, *Emergency Warnings choosing your own words* (Edition 2, December 2008); Attorney General's Department (Cth), *Best Practice Guide for Warning Originators*, above n 278; Attorney General's Department (Cth), *Code of Practice for Warning Republishers* (April 2013); Attorney-General's Department(Cth), *Australia's Emergency Warning Arrangements* (April 2013); Weeks, above n 551, 18; See also, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, 429-430, *Sheridan v Borgmeyer* [2006] NSWCA 201, [18]; *Maynard v Rover Mowers Ltd* [2000] QCA 26; [17] (Where protocols and codes were deemed not more than a standard without legal force, however they may prove relevant to determining whether reasonable precautions have been taken) See, also LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 24 September 2016) 'Administrative Law' (Where a guidelines may be considered policy which 'does not have the force of law unless the empowering legislation provides it is binding').

capabilities'.⁶⁶¹ Therefore, while clear responsibilities are incorporated into soft law components, compliance with the majority are voluntary. As will be highlighted in Chapter Six however, compliance with soft law instruments, in particular standards and procedures, may be influential in determining whether a breach of a duty of care has occurred.

Conclusions

These results for this section reveal that responsibilities for public communication and warning, are to be found within regulatory components in the Australian Emergency Management context. With a few exceptions, clear and direct references to responsibilities are primarily identifiable in soft law instruments, rather than high level policy and legislation. In terms of the enforceability of the soft law components, aside from those created in the Australian Capital Territory (ACT),⁶⁶² many of the instruments may not have the force of law.⁶⁶³ Consequently, aside from the exceptions described in legislation, where there is a clear function for warning allocated to the Bureau of Metrology, or a duty to warn of fire is evident, the Australian regulatory system for emergency management might not meet recommendations arising out of principles of good practice for disaster risk reduction law. As highlighted in Chapters Three and Four, principles of good practice call for clear responsibilities for communication and warning, as well as provision for early warning systems to be incorporated into law.⁶⁶⁴ In examining these responsibilities further, Chapters Six and Seven, will examine case law to determine which components will more likely act to ground a cause of action in negligence based upon a breach of a legal duty of care.

⁶⁶¹ Attorney-General's Department (Cth), *Australia's Emergency Warning Arrangements* (April 2013) 5.

⁶⁶² See, eg, *Emergencies (ESA Social Media Policy) Commissioner's Guidelines 2011* (ACT) (Which are created as legislative instruments).

⁶⁶³ See, eg, *Legislation Act 2003* (Cth) s 4 ('primary law means an Act or an instrument made under an Act or a provision of an Act or an instrument made under an Act').

⁶⁶⁴ International Federation of Red Cross and Red Crescent Societies, above n 79, 3-4.

Question 3: Is the need to use, and / or responsibilities for the use of social media present in regulatory system components?

In response to the third research question, an analysis of the data identifies an inclusion, although lack of emphasis on social media as a channel for dissemination. This is true across Commonwealth and State level policy and legislation. The exceptions are indirect references to new technologies in the *National Strategy for Disaster Resilience* when it is appropriate to the audience needs,⁶⁶⁵ as well as a limited reference to emerging technologies, within the 'Victorian Emergency Management Strategic Action Plan 2015-2018'.⁶⁶⁶ As earlier identified, these instruments are vision statements, and instruments which should not attract detail, therefore these findings are unsurprising.

Table 2: Depicts regulatory components other than legislation and policy where 'social media' is mentioned.

State	Component Name	Social Media Mentions
Australian Capital Territory (ACT)	Emergencies (Plan) 2014 (No.1) ⁶⁶⁷	2
Commonwealth (CTH)	Emergency Warnings choosing your own words	0
	Best Practice Guide for Warning Originators	1
	Code of Practice for Warning Republishers	1
	Australia's Emergency Warning Arrangements	2

⁶⁶⁵ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011), 8, 13 (The Strategy notes the 'significant progress being made through the introduction of new technologies', and refers to the growing use of mobile applications and smart devices in the area of communication, as well as the expectation 'from the community that government agencies' will utilise them).

⁶⁶⁶ Emergency Management (Vic), *Victorian Emergency Management Strategic Action Plan 2015-2018* (2015) 23 (The plan envisages enhancing system and platforms to deliver services including 'the implementation of communications plans in line with social, technical environments and emerging technologies where appropriate').

⁶⁶⁷ *Emergencies Act 2004* (ACT) s 147 (The creation of the plan is mandatory under this primary legislative instrument).

New South Wales (NSW)	New South Wales State Emergency Management Plan ⁶⁶⁸	1
	New South Wales Public Information Services Functional Area Supporting Plan	0
Northern Territory (NT)	Territory Emergency Management Plan ⁶⁶⁹	1
Queensland (QLD)	Queensland State Disaster Management Plan ⁶⁷⁰	5
	Emergency Management Assurance Framework	0
	Queensland District Disaster Management Guidelines	1
	Queensland Local Disaster Management Guidelines	2
	District Disaster Management Plan example: Brisbane District Disaster Management Plan 2014-2015	1
	Local Disaster Management Plan example: Redland City Disaster Management Plan (2016)	1
South Australia (SA)	State Emergency Management Plan ⁶⁷¹	7
Tasmania (TAS)	Tasmanian Emergency Management Plan ⁶⁷²	1
Victoria (VIC)	State Emergency Response Plan: Part 3: Emergency Management Manual Victoria ⁶⁷³	1
	Emergency Management Performance Standards (VIC)	0
	Victorian Warning Protocol	2

⁶⁶⁸ *State Emergency and Rescue Management Act 1989* (NSW) s 12 (The creation of the plan is mandatory under this primary legislative instrument).

⁶⁶⁹ *Emergency Management Act 2013* (NT) s 9 (The creation of the plan is mandatory under this primary legislative instrument).

⁶⁷⁰ *Disaster Management Act 2003* (Qld) s 49, 53, 57 (The creation of the plan is mandatory under this primary legislative instrument).

⁶⁷¹ *Emergency Management Act 2004* (SA) s 9(1)(b) (preparation of the plan is stated as a function so may carry less of a mandate than in other jurisdictions).

⁶⁷² *Emergency Management Act 2006* (TAS) s 32.

⁶⁷³ *Emergency Management Act 2013* (VIC) s 48, 53.

Western Australia (WA)	State Emergency Management Plan for Fire August 2013: Westplan – Fire ⁶⁷⁴	3
	State Emergency Management Plan for Flood (Westplan– Flood)	0
	State Public Information Emergency Management Support Plan (Westplan - Emergency Public Information)	7

Table 2 presents results from publicly available emergency management plans, public information or related plans, general codes and guidelines, for communication and warning. In Queensland, district and local plans or guidelines were also included as this jurisdiction will form the basis of analysis of the case study. As figures in the Table demonstrate, the greater frequency of references to social media, are in emergency management and communications plans, standards, and guidelines, as opposed to policy and legislation. In some instances, however, references to social media or new technologies are not present or are limited.

Where a reference to social media was present, a qualitative examination of the related wording was undertaken. When social media is mentioned this examination identified that there is an expectation to consider its use. In some cases, components merely **highlight the availability of the channels**,⁶⁷⁵ noting that as one modality for warning, social media is ‘increasingly used’, and is seen as ‘an effective and inexpensive, contemporary form of mass communication’.⁶⁷⁶ The components call for inclusion **in public information**

⁶⁷⁴ *Emergency Management Act 2005* (WA) s 18 (This provision was difficult to interpret in terms of the mandatory nature of the plans, as it is mandatory to create plans but specific plans are not specified. Two plans are selected as Western Australia have created hazard specific plans incorporating all aspects of emergencies, whereas other have created a central emergency management plan supported by hazard specific plans).

⁶⁷⁵ Queensland Government, *Queensland State Disaster Management Plan* (May 2015) (Replaced by Queensland Government, *Queensland State Disaster Management Plan* (September 2016) 30); Queensland Government, *Queensland Government arrangements for coordinating public information in a crisis* (2011) 2

<http://www.disaster.qld.gov.au/Disaster-Resources/Documents/DPC2739_Crisis_Communication_Document_FINAL.PDF>.

⁶⁷⁶ Attorney General’s Department (Cth), *Australia’s Emergency Warning Arrangements*, above n 40, 16-17; Emergency Management Queensland, *Queensland Local Disaster Management Guidelines* (2012) 44.

and warnings plans⁶⁷⁷ and communications infrastructure and systems.⁶⁷⁸ Other components identify that social media channels should,⁶⁷⁹ will⁶⁸⁰ and are being adopted⁶⁸¹ to communicate and warn the public during emergencies. Even where specific reference to using social media is not made, a reference is made to the need to employ multiple methods or channels for warning.⁶⁸² Throughout the components there is an absence of a prescriptive requirement to use the channels, which are clearly envisaged as a discretionary channel.⁶⁸³ Adopting this position in the components is consistent with the notion developed in Chapter Three, that the channels may not be relevant or appropriate to every audience.⁶⁸⁴ When

⁶⁷⁷ See, eg, Emergency Management Queensland, *Queensland Local Disaster Management Guidelines* (2012) 45

⁶⁷⁸ Government of South Australia, *State Emergency Management Plan*, Version 2.14 (2014) 185, 187 (Replaced by Government of South Australia, *State Emergency Management Plan*, Version 2.15, 'Annex C: Public Information and Warnings' (2015) Part 3, 10, 12 (All possible means of communication to be used to disseminate warnings)).

⁶⁷⁹ Western Australia, *State Public Information Emergency Management Support Plan (Westplan Emergency Public Information)* (2012) 24.

⁶⁸⁰ Redland City Council, *Redland City Disaster Management Plan: Part 1* (2016) 47 (The group 'will provide information and warning via a number of sources including electronic media'); Government of Western Australia, *State Emergency Management Plan for Fire (Westplan – Fire)* (2013) 42 (alerts are issued via social media channels); Territory Emergency Management Council (NT), *Territory Emergency Plan* (2014) 28 (Where the ABCNT will endeavour to deliver information including on social media).

⁶⁸¹ Attorney General's Department (Cth), *Australia's Emergency Warning Arrangements*, above n 40, 17-18 (Social media is now being recognised by many emergency service agencies as important tools for communicating with people in an emergency).

⁶⁸² Western Australia, *State Public Information Emergency Management Support Plan (Westplan Emergency Public Information)* (2012) 24 ('Twitter; Facebook and YouTube should be actively used', however, still on the condition that it is appropriate); Queensland Government, *Queensland State Disaster Management Plan* (2015) 28 (Queensland Government, *Queensland State Disaster Management Plan* (September 2016) 29); Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework*, above n 107, 23-24; New South Wales Government, *New South Wales State Emergency Management Plan* (2012) 7 (The 'full suite of traditional and social media' channels may be used); *Emergencies (Emergency Plan) 2014 (No 1)* (2014) (ACT) 14 (Reference is made to a range of mediums); Emergency Management Committee (NSW), *New South Wales Public Information Services Functional Area Supporting Plan* (2005) 21-22; State Government Victoria, *Victorian Warning Protocol*, Version 2.0 (July 2013) 9 (Where a multi-faceted approach is recommended to ensure 'maximum penetration and saturation'); Attorney General's Department (Cth), *Code of Practice for Warning Republishers* (2013) 3; Attorney General's Department (Cth), *Best Practice Guide for Warning Originators*, above n 278, 9.

⁶⁸³ Queensland Government, *Queensland State Disaster Management Plan* (May 2015) 29 (reference is made to 'non-government (warning) systems being available such as social media') Emergency Management Victoria (Vic), *Emergency Management Manual Victoria*, 'Part 3: State Emergency Response Plan' (2014) 3-28; Department of Police and Emergency Management (Tas), *Tasmanian Emergency Management Plan*, Issue 8 (2015) 60 (Where it is stated that warning channels **might** include social media).

⁶⁸⁴ See, eg, Attorney-General's Department (Cth), *Best Practice Guide for Warning Originators*, above n 278, 10 ('A 'high technology' solution may not be appropriate in all

social media is embedded in these components, **there are limited discernible responsibilities attributable to a specific organisation**, against which to ground a cause of action.⁶⁸⁵ The findings in this section will inform the case study in Chapter Eight that examines whether legal implications will arise for the failure to utilise social media. However, based on these initial findings, there may be little likelihood of legal obligation to use social media as a channel.

Conclusion

The objective of this Chapter was to explore the Australian emergency management regulatory system in light of the conceptual theoretical framework developed in Chapters Two, Three and Four. This Chapter addresses key areas of research identified in the problem statement. The contribution of this Chapter to the thesis and field of study, is two-fold. In the first instance, the Chapter clarifies whether in recognition of its fundamental role in mitigating and controlling impacts of hazards, risk communication and warning, is reflected and emphasised in the emergency and disaster management regulatory system, and, hard law instruments.

The second contribution of the Chapter is that it provides foundation material as to the responsibilities which arise for risk communication and warning, as well as the use of social media. These responsibilities will be examined in further Chapters, in light of the case law relevant to the duty to warn. The aim of the further analysis is to determine whether the identified responsibilities are likely to form the basis of a duty of care, which is a necessary component for

situations if, for example, the solution is not sufficiently robust to warn the greatest majority in a timely manner.’).

⁶⁸⁵ Queensland Government, *Queensland State Disaster Management Plan* (May 2015) 23 (Where agencies using social media are responsible for updating, maintaining and monitoring social media constituent with the Official Use of Social Media Guideline (Qld) replaced by Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>>); Queensland Government, ‘Coordinating public information in a crisis’, above n 675, 2; Government of South Australia, *State Emergency Management Plan*, Version 2.14 (2015) 182 (Where the control agencies are responsible for distribution of messages generally, and the PIFS will support the release of public information monitoring all channels including social media); Western Australian, *State Public Information Emergency Management Support Plan (West-plan – Emergency Public Information)* (2012).

legal accountability in negligence. The rationale for this inquiry, is that it follows recommendations of international studies on effective disaster risk law. These studies identify the need for communication, in particular warning, to be embedded in dedicated emergency and disaster law, to ensure that communication is planned, and that clear responsibilities exist. Secondly, the identification of responsibilities that might give rise to a duty of care, will provide a foundation for doctrinal analysis. The doctrinal analysis in turn aims to give greater certainty to agencies in the sector, with regards to their concerns about legal implications for warning in an emergency situation.

At the commencement of the Chapter, the regulatory system was defined as comprising of interrelated components. These components include both hard and soft law instruments which have different effects in law in terms of their enforceability. Attention was drawn to the knowledge that the instruments within the regulatory system operate in a hierarchy. In terms of the need to comply with differing components, few appear to compel action, however there is some confusion as to the effect of soft law instruments, which may act as quasi-regulation. Guidelines and protocols for example, are considered voluntary soft law instruments which do not require compliance, nor are they legally enforceable. However, the enforceability of soft law instruments may depend on the language of the statute which provides the power for their creation. Therefore, when guidelines or plans, are required by legislation, and there is also a requirement to act consistently with them, they may have some legal effect. Moreover, identification of the role each component plays within the hierarchy is important to building an understanding as to whether the responsibilities they contain will be sufficient to ground a cause of action. The outcome will depend however, not on whether the component is labelled a guideline or regulation, but whether the language imports some notion of the use of discretion in the exercise of a function.

Considering the knowledge that each component plays a different role in the hierarchy, a content analysis of the instruments was undertaken. In response to the two areas of inquiry there are a number of findings. It was apparent from the content analysis of the components for example, that the need for

communication and warning in an emergency or disaster is recognised. The emphasis placed on communication and warning across the regulatory components however, varies and is not aligned. At the federal level, there is emphasis on communication with the public as a priority area. This emphasis is based on the understanding that communication can assist in the achievement of national policy objectives for disaster risk reduction and resilience in communities. A limited number of State policy components and legislation reflect this priority. What is apparent, from the analysis, is that further down the hierarchy there is a strong emphasis upon the incorporation of what is called 'public communication' and warning, in soft law instruments such as plans, guidelines, and standards. However, in critiquing the design of the regulatory system, whether this strong emphasis in components which does not constitute hard law, is sufficient to meet requirements to be an effective law in the area of disaster risk reduction, is doubtful.

In line with the second research question, the data identified clear responsibilities for public communication and warning embedded within some of the regulatory components. Again, however, clear roles and responsibilities are primarily found within the soft law instruments such as emergency management and supporting plans, guidelines and standards, rather than in legislation. The effect of responsibilities at this level of the hierarchy, may be that while they are sufficient to raise a public expectation and perhaps reliance on the fact that they will be met, they may not be sufficient to ground a cause of action in law. In a few instances, the components contain a mandated duty to warn in the area of a fire emergency. However, in other examples the term 'function' is associated with warning. As earlier defined, the term 'function' suggests there is a power and authority to carry out an activity, rather than a mandated responsibility or obligation recognised at law. This will be further examined in Chapters Six and Seven. In critiquing the regulatory components, the lack of a clear assignment of responsibilities may not meet recommendations for good practice in disaster risk reduction.⁶⁸⁶

⁶⁸⁶ International Federation of Red Cross and Red Crescent Societies, above n 79, 4, 13 (Although there is some room for inclusion of these facets of disaster risk reduction in

With regard to the final area of inquiry, responsibilities related to the use of social media, references within the components were sparse. At the level of policy, there is an acknowledgement of social media through indirect references to the significant progress which is being made with new technologies. The researcher did not expect to find references to social media within the policy and legislation because these are high level components, which provide either vision statements, powers or frameworks for action, rather than attracting detail. The data supported this supposition. References to social media were instead found within emergency management and communications plans, standards and guidelines. These components in some cases merely highlighted the availability of the channels as an option to incorporate into a multi-channel warning strategy. In some components, there was an assertion that the channels, should, will, and are being adopted. However, it was clear overall that there was no prescriptive requirement to incorporate social media. Even when the channels were referred to, there were limited discernible responsibilities or actions attributed to an organisation. Moving forward, these findings will provide the basis of analysis for legal implications for the use, or failure to use social media in an emergency, in Chapter Eight.

procedures, the document requires a check of national laws, along with disaster risk reduction legislation and regulation).

Chapter Six: The law of negligence

'In light of these now regularly occurring natural disasters, it is unclear whether the state has a legal duty to prepare, warn, and mitigate natural disaster damages'.⁶⁸⁷

The primary aims of this thesis are firstly to examine whether risk communication is embedded within the regulatory system. Secondly, the aim is to gain clarity of the circumstances in which, when using or failing to use social media as a warning dissemination channel, the emergency management sector is likely to face legal implications. Chapter Six specifically addresses one area of law in which legal implications may be faced, the law of negligence. The investigation of the law of negligence draws on theoretical principles established in Chapters Two, Three and Four to explain the role of this area of law in society and its application to the State.

Chapter Two, identified that the statutory authorities which comprise the emergency management sector, own aspects of natural hazard and emergency related risk. To reiterate, a risk owner, is a 'person or entity with the accountability and authority to manage a risk'.⁶⁸⁸ Risk ownership arises in emergency management from the government's legitimate role as a body with power to protect society 'against those things that threaten health, safety and welfare of the people', such as natural hazards.⁶⁸⁹ Risk ownership may also be allocated. In Australia, the emergency management sector, through policy, legislation and plans, have been formally 'charged with' functions, powers and responsibilities, to manage natural hazard risk in the context of emergencies.⁶⁹⁰

In this thesis, emphasis is placed on the examination of responsibilities for risk communication and warning of natural hazard events, which have been

⁶⁸⁷ JL Frattaroli, 'A State's Duty to Prepare, Warn, and Mitigate Natural Disaster Damages' (2014) 37(1) *Boston College International and Comparative Law Review* 173, 175.

⁶⁸⁸ British Standards Institution (BSI), *Risk management – vocabulary* (PD ISO Guide 73:2009, 30 September 2013).

⁶⁸⁹ Pope, above n 468, 4; Locke, *Two Treatises of Government*, above n 29, Essay2, 94, 97, 229, 135; Gerrard, above n 468, xii.

⁶⁹⁰ Young, Symons and Jones, above n 208, 2, 13.

allocated to statutory authorities within the sector. Chapter Five, sought to establish through application of content analysis, whether clear responsibilities for risk communication and warning were embedded into regulatory system components. Several functions and responsibilities were pinpointed. As indicated, risk ownership also includes notions of accountability. Legal accountability seeks to ensure that the responsible party is 'required to give account or explanation of their actions, and where appropriate, suffer the consequences, take the blame or undertake to put matters right'.⁶⁹¹ The major objective of Chapter Six is to assess through doctrinal analysis, whether failures in performance of functions and responsibilities for the dissemination risk communication and warning are sufficient to formulate a duty of care, for which an agency may be held legally accountable.

The belief that statutory authorities ought to be held to account is supported by the frequency of actions arising from a natural disaster, collectively known as disaster law.⁶⁹² However, although the public may wish to lay blame for damage suffered to their person or property, this desire may be based a moral belief that someone should be held accountable.⁶⁹³ What becomes apparent, is that the responsibilities incorporated in hard and soft law instruments may be what have been labelled task or role responsibilities.⁶⁹⁴ The extent to which this type of responsibility attracts liability responsibility⁶⁹⁵ will depend on the 'rules of liability',⁶⁹⁶ and the extent these rules impose accountability.⁶⁹⁷

⁶⁹¹ Harlow, above n 7, 51.

⁶⁹² Lauta, 'Legal Scholarship and Disasters', above n 53, 97-98, 104; See, also, Alexander, 'Communicating earthquake risk to the public', above n 54 (The article highlights the desire to place blame and the extent of claims in the aftermath of a disaster); Farber, 'Tort Law in the Era of Climate Change', above n 54, 1076; Eburn, 'Litigation for failure to warn', above n 57; Eburn and Dovers, 'Legal Aspects of Risk Management in Australia', above n 57, 62-63.

⁶⁹³ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 44.

⁶⁹⁴ Hart, *Punishment and Responsibility*, above n 127, 212, 215-217.

⁶⁹⁵ Ibid 215-217.

⁶⁹⁶ Cane, *Responsibility in Law and Morality*, above n 104, 31 (Cane asserts that outlining prospective responsibilities is one of the prime functions of law); McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 18 (The authors label these prospective responsibilities as ex-ante obligations); Fisher, *Legal Reasoning in Environmental Law*, above n 94, 62-63, 330.

⁶⁹⁷ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 18, 44 (Noting Handmer and McLennan acknowledgement that 'ex-ante obligations are closely connected to 'ex-post' accountability); Cane, *Responsibility in Law and Morality*, above n 104, 35 (Ex-post accountability is the 'attribution of historical responsibility, as a means of enforcing, reinforcing and underwriting prospective responsibility).

Consequently, legal outcomes may not equate with individual expectations of how the law should apply, and a statutory authority as a risk owner may not be made to suffer the consequences of their omissions at law. The findings of these next two Chapters appear to support the notion a limited notion of legal accountability. That is, despite the presence of responsibilities to protect, which can give rise to high public expectations and perhaps reliance on receipt of information, the law of negligence has already shifted to notions of shared responsibility. It therefore only recognises a qualified and limited responsibility to protect.

In this Chapter, doctrinal analysis of the case law draws into focus how ‘rules of liability’ apply between particular parties in the context of responsibilities and functions for risk communication and warning for natural hazard events. A variety of legal causes of action may be relevant to acts or omissions in the use of social media and warning.⁶⁹⁸ In this thesis, however, the aim is to address a gap in the research and guidelines. Consequently, the focus is on one of the most dominant areas of tort law: the law of negligence. Chapter Six, draws on social contract theory which was identified in Chapter Four, to provide an examination of the role of tort law, and the law of negligence, in society. The Chapter identifies and addresses in detail the three elements which are necessary to establish an action in negligence. It investigates how these elements have been applied in the context of the duty to warn, both for a failure or omission to warn in an emergency, as well as a failure to provide an adequate or effective warning.

Understanding the law of negligence

As negligence acts as a basis for examining legal accountability in this thesis a fundamental understanding of the law torts; the law of negligence; its

⁶⁹⁸ See, eg, New South Wales Police Force, *Public Affairs Branch Official Use of Social Media Policy 2013* (2013)11-12; Department of Finance (WA), *Social Media Guidelines* (September 2012) 25; ABC Editorial Policies, *Guidance Note: Moderating User Generated Content* (19 May 2014) 7-8 <<http://about.abc.net.au/reports-publications/moderating-user-generated-content-guidance-note/>> (Note is made of defamatory statement, disclosure of confidential information); ACT Government, *ACT Government Social Media Policy Guidelines, Version 1.0* (March 2012) 10-13; Government of South Australia, *Social Media: Guidance for Agencies and Staff* (2010) 4, 7 (Noting comments on privacy risks and on monitoring for defamatory material, this is alongside the reference to the need to ensure adequate record retention).

application to the State; and its function in maintaining a well-ordered society, is necessary. The law of torts originated in medieval times.⁶⁹⁹ Based on case law, torts has continued to develop and adapt to changes in society to become a collection of distinct legal actions, which include defamation, negligence and nuisance.⁷⁰⁰ Of these actions, negligence has become one of the dominant torts. Due to a gap in the research identified in Chapter One, the law of negligence is also the legal action, which is the subject of investigation in this Chapter.⁷⁰¹

What is negligence?

Negligence is a private law remedy which protects individual rights⁷⁰² when fault or wrongdoing by another causes a risk of harm or injury.⁷⁰³ Fault or wrongdoing is based upon either a failure to act (non-feasance) or wrongful, negligent or careless action (misfeasance). To establish an action in negligence in Australia, three elements must be proven by the plaintiff on the balance of probabilities. The elements will be examined in further detail later in this Chapter, however in brief they are:

1. The existence of a duty of care
2. A breach of the duty of care

⁶⁹⁹ Amanda Stickley, *Australian Torts Law* (LexisNexis Butterworths, 4th ed, 2016) 1; David, Ibbetson, *A Historical Introduction to the Law of Obligations* (Oxford University Press, 2001) 158, 170 (Links may also be made further even further back to Roman law).

⁷⁰⁰ Stickley, *Australian Torts Law*, above n 699, 1 (These wrongs include, trespass to person, land, or personal property, negligence, misrepresentation, defamation and nuisance); LexisNexis, *Halsbury's Laws of Australia* (at 01 March 2016) 415 Tort.

⁷⁰¹ Stickley, *Australian Torts Law*, above n 699, 143; P. H. Winfield 'The History of Negligence in Torts (1926) 42 *The Law Quarterly Review* 184, 191, 194-196; James Oldham, *English Common Law in the Age of Mansfield* (The University of North Carolina Press, 2014) 276 (Negligence came into its own around the 19th Century and was known as 'an action on the case in negligence', prior to the 19th century negligent was used as a descriptor of mode of behaviour referring to what a reasonable man would or would not do when considering others).

⁷⁰² See, eg, Danuta Mendelson, *The New Law of Torts* (Oxford University Press, 3rd ed, 2014) 6 (The rights that tort law in general protects include, rights to 'physical integrity (bodily harm), right to freedom of serious interference with mental integrity, rights to property); Amanda Stickley, *Australian Torts Law* (LexisNexis Butterworths, 3rd ed, 2013) 175 citing *Sullivan v Moody* (2001) 207 CLR 563, [64].

⁷⁰³ Andrew Clarke, John Deveraux, Julian Werren, *Torts: A practical learning approach* (LexisNexis, 2nd ed, 2011) 73 (The meaning of the word tort in French is 'a civil wrong', the remedy is distinguished as private as opposed to public law) 14; Kit Barker et al, *The Law of Torts in Australia* (Oxford University Press, 5th ed, 2012) 1-2 (Public law by contrast is 'concerned with institutions and powers of government and relations and interactions between government and citizens', although it is notable that although a private remedy torts can also be applied the government / citizen relationship).

3. Damage related to the breach⁷⁰⁴

The law of negligence has now been modified by statute in Australia.⁷⁰⁵ If negligence is established, a remedy of compensatory damages is available to the plaintiff, subject to the defendant being unable to establish a relevant defence.⁷⁰⁶

In its assessment of fault and wrongdoing, the law of negligence has been labelled a 'law of responsibility', as it 'allows persons to be held responsible for having wrongfully injured others'.⁷⁰⁷ Establishment of the three elements, which may lead to attribution of liability, ensure 'legal responsibility' is allocated to the wrongdoer, and ensure reparation is made when 'they have harmed others without justification'.⁷⁰⁸ Consequently, the party held responsible, 'restores the injured person to the position he or she was in before the tort was committed', in effect, 'making them whole'.⁷⁰⁹ This thesis examines fault or wrongdoing by a statutory authority in an emergency situation. It analyses, in light of each of the elements required to be established: in what circumstances are they likely to be held legally responsible when there is a failure to warn (non-feasance). It also analysis the circumstances in which an authority may be legally responsible if it employs a negligent or careless warning strategy (misfeasance). A key aspect of a finding of legal responsibility will be that the action of the authority causes a risk of harm to another person and or their property.

The role and function of torts and negligence

In keeping with the theoretical understandings developed in Chapter Four, of the role of the institution of law within society, it is important to understand the

⁷⁰⁴ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 552.

⁷⁰⁵ *Wrongs Act 1958* (Vic); *Civil Liability Act 1936* (SA); *Civil Liability Act 2002* (NSW); *Civil Liability Act 2002* (WA); *Civil Liability Act 2002* (Tas); *Civil Law (Wrongs) Act 2002* (ACT).

⁷⁰⁶ *Livingstone v Rawyards Coal Co* (1880) LR 5 App Cas 25, 39; *Mahony v J Kruschich (Demolitions) Pty Ltd* (1985) 156 CLR 522, 527.

⁷⁰⁷ John C.P Goldberg and Benjamin C Zipurskey, 'Tort law and Responsibility' in John Oberdiek (ed) *Philosophical Foundations of the law of torts* (Oxford, 2014) 17, 25.

⁷⁰⁸ Justice Keith Mason, 'Fault, causation and responsibility: Is tort law just an instrument of corrective justice?' (2000) (19) 3 *Australian Bar Review* 201.

⁷⁰⁹ See, eg, *Livingstone v Rawyards Coal Co* (1880) LR 5 App Cas 25, 39; *Mahony v J Kruschich (Demolitions) Pty Ltd* (1985) 156 CLR 522, 527; Goldberg and Zipurskey, above n 707, 28.

function of the law of torts and negligence. A number of instrumental functions are commonly associated with the law of torts. For example, negligence is said to be instrumental in distributing loss, deterring unreasonable conduct, as well as providing access to corrective justice and compensation.⁷¹⁰ If an individual's interest is harmed through the fault of another, as earlier described, the law of negligence will seek to correct the harm between the parties, and provides compensatory damages for the harm that has occurred.⁷¹¹

Notions of instrumental functions of tort can be abstract, it is therefore relevant to provide a practical understanding of how these functions would apply to the emergency management sector. For example, when agencies fail to act, or act without reasonable care in warning of an imminent hazard, they may be liable to pay compensatory damages for the harm that a member of the public has suffered. Compensatory damages will aim to restore the injured person to 'the same as he would have been in if he had not sustained the wrong'.⁷¹² In this way, the law of negligence corrects behaviour and compensates for harm. However, the law of negligence also acts as a deterrent. The possibility of liability in negligence for example, means that statutory authorities within the sector may seek to improve their conduct. An authority may seek to ensure it takes what is recognised as 'reasonable care', in order to avoid causing harm to others and to avoid the potential liability that ensues. Consequently, and as

⁷¹⁰ Peter Cane, 'Tort Law and Public Functions' in John Oberdiek (ed) *Philosophical Foundations of the Law of Torts* (Oxford, 2014) 161,164-165, 168 (Non-instrumentalist and responsibility theories have also been highlighted as relevant to tort); Stephen Perry, 'The Moral foundations of Tort Law' (1992) 77 *Iowa Law Review* 449, 449; Nicola Anna May Durrant, 'The role of law in responding to climate change: emerging regulatory, liability and market approaches' (Doctor of Philosophy, Queensland University of Technology, 2008); Jules Coleman, Scott Hershovitz and Gabriel Mendlow, 'Theories of the Common Law of Torts' in Edward N. Zalta (ed) *The Stanford Encyclopedia of Philosophy* (Winter 2015 Edition) <<http://plato.stanford.edu/archives/win2015/entries/tort-theories/>> (These theories are mooted for overarching purposes or as a tool for 'remediation of a social problem'); Cane, *Responsibility in Law and Morality*, above n 104, 219 (Tort law and private law cannot be 'solely explained in terms of deterrence of corrective justice and both represent functions of law but not its only functions').

⁷¹¹ See, eg, *Mahony v J Kruschich (Demolitions) Pty Ltd* (1985) 156 CLR 522, 527; Cane, *Responsibility in Law and Morality*, above n 104, 4, 22, 49-50.

⁷¹² *Livingstone v Rawyards Coal Co* (1880) LR 5 App Cas 25, 39.

will become highly relevant to the conclusions in this thesis, negligence offers a mechanism to encourage the improvement of performance.⁷¹³

Social contract theory and the role of negligence

A system to reconcile rights

As well as the more commonly considered instrumental functions of the law of tort and negligence further functions are identified. These further functions are examined as they better align with some of the underlying theoretical narrative and themes of this thesis, which include a focus on social contract theory and understandings of shared responsibility.⁷¹⁴ To demonstrate the linkages between functions of negligence and theory, it is necessary to recall that Chapter Four introduced the theories of John Locke and John Rawls. The examination of Locke's social contract theory identified, that on entering the social contract, on the creation of government, citizens give up their rights to the State to pursue one another at law. The State instead establishes a system, the institution of law, which allows citizens to pursue these rights.⁷¹⁵ The institution acts as a machine of the State.⁷¹⁶ It is adjudicated by the courts,⁷¹⁷ and acts to reconcile the rights between parties.⁷¹⁸ In light of social contract theory therefore, the function of tort law, or more specifically the law of negligence, is to reconcile the rights of individuals against each other when harm has occurred. While not negating that the earlier mentioned instrumental functions of negligence, due to better alignment with the underlying themes of the research, the role of negligence in reconciling rights and how they lead to a sharing of responsibility for action, is the focus of this thesis.

⁷¹³ Bernadette Richard, Melissa De Zwart, Karinne Ludlow, *Tort Law Principles* (Lawbook Co, 2013) 24; John F Flemings, C Sappideen and Prue Vines, *Fleming's the law of torts* (Thomson Reuters, 10th ed, 2011) 8.

⁷¹⁴ Coleman, Hershovitz, and Mendlow, above n 710.

⁷¹⁵ Paz-Fuchs, above n 457, 3-4; Penner & Melissaris, above n 235, 195.

⁷¹⁶ Arthur Ripstein, 'As if it never happened' (2007) 48 *William and Mary Law Review* 1957, 1969.

⁷¹⁷ Arthur Ripstein, 'Tort Law in a Liberal State' (2007) (1)2 *Journal of Tort Law* 1, 7 (Noting that Ripstein rather looking for a description of the function that tort plays, as an instrumentalist would, seeks instead to describe the place of tort in a state system).

⁷¹⁸ *Ibid.*

Standards of conduct

To reconcile or adjudicate the rights of the respective parties, the courts require a recognised standard. Proponents of social contract theory suggest a starting point for identifying this standard is embodied in the normative principles set forth in Locke and Rawls work.⁷¹⁹ The normative principles identify the limits to an individual's freedom to pursue their own interests with respect to another.⁷²⁰ That is, social contract theory suggests that individual freedom is tempered 'by the knowledge that no one ought to harm another in life, health, liberty of possession'.⁷²¹ This means that when exercising individual freedom, the individual ought to consider compatibility of action with others' rights to pursue their interests.⁷²² The law of negligence then translates 'the need to act with another's interests in mind'⁷²³ into a standard of conduct embodied within the institution of law. This standard of conduct is required by the law if a duty of care is recognised.

Ultimately, the purpose of the standard of conduct is to procure, 'civil peace and prosperity'.⁷²⁴ The standard also ensures, society is preserved and that, every member of society enjoys 'a free and peaceable enjoyment of all the good things of this life that belong to each of them'.⁷²⁵ As indicated, the standards of conduct embedded in the formulation of a duty of care, are legal standards of behaviour which have evolved over time. It is important to note that the legal standards of care may not align with 'moral or ethical obligations, or what common sense might or might not have dictated as an appropriate course of action'.⁷²⁶ Consequently, the reconciliation of rights that society expects of statutory authorities with regards to their perceived legal obligations

⁷¹⁹ Locke, *Two Treatises of Government*, above n 29, Essay 2, 109; Rawls, *Political liberalism*, above n 453, 60-61.

⁷²⁰ Ripstein, 'As if it never happened', above n 716, 1969.

⁷²¹ Locke, *Two Treatises of Government*, above n 29, Essay 2, 109; Jeffrey C. Sindelar Jr, 'Of form and function: Lockean Political Philosophy and Mass Tort (2012) 90(4) *Nebraska Law Review* 887, 908.

⁷²² Rawls, *A Theory of Justice*, above n 456, 60-61.

⁷²³ Rawls, *A Theory of Justice*, above n 456, 60-61.

⁷²⁴ Sindelar, above n 721, 916.

⁷²⁵ *Ibid.*

⁷²⁶ *Stuart v Kirkland-Veenstra* (2009) 237 CLR 215, 223; James Goudkamp, 'The Spurious Relationship between Moral Blameworthiness and Liability for Negligence' (2004) 28(2) *Melbourne University Law Review* 343, 343-344 (Goudkamp argues there may be some alignment with moral considerations but argues that 'morality and legal liability often fail to coincide').

to warn in emergency situations, may not be realised when moral and legal positions diverge.

Applicability of the law of negligence to the state

The previous section outlined the role and purpose of the law of negligence. The section established that negligence is an action which aims to reconcile the rights between parties in the light of harm which has occurred. As the focus in this thesis is on acts or omissions of statutory authorities, the next question to arise is whether the law of negligence and the standard of conduct are applicable to the government as a public body. If so, a further question is whether the law of negligence reconciles rights between public and private parties in the same way as it does between private parties.

As a starting point to answer these questions, social contract theory asserts that government as lawmakers are subject to the law.⁷²⁷ This would suggest negligence ought to apply to government bodies and statutory authorities. From an historical perspective, actions in negligence were brought against those in positions of trust and responsibility. Certain categories of relationships, such as the doctor / patient relationship, became recognised as automatically giving rise to a duty of care. However, the extension of negligence to government bodies came later⁷²⁸ as the category of persons to whom negligence applies continued to evolve.⁷²⁹ In certain circumstances actions between a private party and a government body will be considered as falling within a category of recognised relationship, for example when they act as an employer or an occupier. Otherwise, actions between government and citizens, including those which relate to nonfeasance and misfeasance in warning, are treated as a new category of relationship: as a 'novel case'. Novel cases will be discussed in due course, what is important to note is that they

⁷²⁷ Locke, *Two Treatises of Government*, above n 29, Essay 2, 89, 143.

⁷²⁸ Oldham, above n 701, 277, 279.

⁷²⁹ LexisNexis, *Halsbury's Laws of Australia*, (at 01 March 2016) 415 Tort, 'Person who may be liable in Tort' [415-140]; Mark Aronson, 'Government Liability in Negligence' (2008) 32(1) *Melbourne University Law Review* 44, 44-45; See, also, *Disaster Management Act 2003* (Qld) s 4A(c); *Civil Liability Act 2003* (Qld) s 34 (Definitions of public authority means the Crown, local government and public authorities constituted under an Act).

are decided on a case by case basis, and therefore their outcomes can be unpredictable.⁷³⁰

Limits on the application of negligence to the State

The previous paragraph identified that the law of negligence is applicable to the State. However, the manner in which it has been applied to reconcile rights between a public body and a private party contrasts to its application to private parties.⁷³¹ This is because, as opposed to an individual pursuing only their own interests, the State is a 'public functionary'.⁷³² A public functionary 'acts in the interest of the public as a whole' within the constraints of limited resources and has numerous matters of policy to consider.⁷³³ For example, emergency service agencies, are publicly funded bodies, which act to provide safety and security to the community as a whole. That a different application of the principles of negligence is required when considering liability against the State, is circumscribed by statute.⁷³⁴ Within civil liability statutes, concessions are afforded to public functionaries. These concessions help to ensure that the need to balance 'public interest in the performance of public functions, against the interest of individual citizens' are taken into account in a determination of a case.⁷³⁵ When compared with actions against private citizens,⁷³⁶ the relevant provisions support a 'swing' away from expansive development of establishment of liability under the law of negligence against the State and by implication the emergency management sector.⁷³⁷

⁷³⁰ See, eg, Prue Vines, 'The Needle in the Haystack: Principle in the Duty of Care in Negligence' (2000) 23(2) *University of New South Wales Law Journal* 35, 36-37.

⁷³¹ Cane, *Responsibility in Law and Morality*, above n 104, 251 (As Cane, suggests, the social function of the law of negligence to repair harm between parties is the same for individuals and statutory bodies, however the distributive function is applied differently); *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 553.

⁷³² Cane, *Responsibility in Law and Morality*, above n 104, 252-254 (Public functions are those 'that are meant to be performed on behalf of and in the interests of the public', rather than performed on 'behalf of or in the interests of any particular individual or group'); *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 553.

⁷³³ Commonwealth, 'Review of the law of Negligence – Final Report' (Honourable David Ipp, Chairperson) Canberra, September 2002, 151-152.

⁷³⁴ Stickley, *Australian Torts Law*, above n 699, 238-240.

⁷³⁵ Cane, *Responsibility in Law and Morality*, above n 104, 252-254.

⁷³⁶ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 553.

⁷³⁷ The Hon Wayne Martin, 'The Civil Liability Act: Impact and Effect' (2011) 22 *Insurance Law Journal* 187, 187, 202 (This has occurred in part due to the introduction of legislative provisions as well as through a general movement in common law principles which recognised the expansive ability to claim liability and associated burden).

The law of negligence and shared responsibility

That there is a limit to the extent to which public functionaries may be pursued under the law of negligence, is supported by the following excerpt from the Australian High Court:

Employers, government, statutory authorities and others have been forced to exercise their minds in the interests of those who may be injured by their conduct and to improve their performance accordingly. **Even empires must however have their borders and equally society should be entitled to expect that people will take elementary precautions at least for their own safety against obvious risks.**⁷³⁸

As this excerpt suggests, not only is there a limit to the extent statutory authorities may be pursued, there is an expectation embodied within this statement that individuals will take some precaution for their own safety. This statement not only resonates with broad theoretical principles, such as Rawls' concepts of civic duty. It aligns with the noted change in direction in society towards individualisation of risk – where responsibility for risk is pushed back on the individual.⁷³⁹ It also aligns with the concept of a shared and personal responsibility for disaster risk reduction, which has been raised in the emergency management context.⁷⁴⁰

In limiting claims against the State, and seeking to share responsibility, it is important to remember that the protection of life and property is a legitimate area of government action. Reflecting this underlying normative proposition, it is evident that the protection of life and property in an emergency, has been allocated to statutory bodies within the emergency management sector. As identified in Chapter Three, the activity of warning will assist in the protection of life and property and is fundamental to successful risk reduction and community resilience. Consequently, should it become clear from analysis in this Chapter, that negligence actions against the State, which might otherwise

⁷³⁸ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 511.

⁷³⁹ Hamilton, above n 217, 454, 456; Black, 'The Role of Risk in Regulatory Processes', above n 217, 6 (Black highlights the drive to 'push responsibility for risk management down to the level of the individual or civil society'); Commonwealth, 'Review of the law of Negligence', above n 733, 29.

⁷⁴⁰ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) iii, 1.

deter unreasonable conduct will be limited, further accountability mechanisms may need to be put in place. Accountability mechanisms aim to ensure that policy goals, such as reduction of disaster risk and increased community resilience, are met.

Doctrinal analysis of the law of negligence

The first part of this Chapter provided a framework of understanding as to what negligence is, and what it seeks to achieve. It also identified, that although this legal action is relevant for consideration against statutory authorities, there will be limits to its application against these government bodies. The remainder of the Chapter addresses the three elements of negligence to determine the circumstances in which statutory authorities have previously been held legally accountable for acts and omissions in warning. The findings of this section will then be applied to the case study of warning over social media in Chapter Eight.

The first element: Duty of care

Without a duty, there can be no liability.⁷⁴¹ As earlier adverted to, in some instances there will be a recognised category of relationship between the parties which automatically gives rise to a duty of care.⁷⁴² However, the relationship between a citizen and a statutory authority in the context of warning, is likely to be classified as a novel case. In novel cases, 'there is no simple test for determining whether a duty of care exists', instead there must be something else in the relationship between the parties to demonstrate that a duty of care existed, and that legal responsibility for harm should ensue.⁷⁴³ The features which determine whether there is a sufficient relationship upon which to base a duty of care, are examined below.

⁷⁴¹ *Sullivan v Moody* (2001) 2017 CLR 562, [42]; *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 555; See, also, Carolyn Sappideen, Prue Vines and Penelope Watson, *Torts: Commentary and Materials* (Lawbook Co, 2012, 11th ed) 181 (the duty defines the scope and substance of negligence law and describes the behavior for which the plaintiff should be compensated); Clarke, Deveraux and Werren, above n 703, 28-29.

⁷⁴² See, eg, Sappideen, Vines and Watson, *Torts: Commentary and Materials*, above n 741, 180.

⁷⁴³ Stickley, *Australian Torts Law*, above n 699, 192-193; Vines, 'The Needle in the Haystack', above n 730, 36-37.

One aspect of establishing the duty is identification of its scope and content.⁷⁴⁴ The content of a duty will be, 'to conform to the legal standard of reasonable conduct in the light of the apparent risk', that is, to take reasonable care, or 'reasonable steps, to avoid foreseeable risks' of harm or injury.⁷⁴⁵ In the context of warning of a natural hazard, the duty of care may be to warn a potentially affected community of an imminent hazard. The requirement to take reasonable care when issuing a warning may only require the agency to issue a general warning to that community. The warning would provide information regarding the nature of the hazard and steps that they can take to avoid foreseeable injury.

Criteria for formulating a duty of care

The 'test' for formulating a duty of care in the novel cases relevant to this thesis, has developed over time.⁷⁴⁶ The Australian High Court has held that to establish a duty of care, there must first be **reasonable foreseeability** of harm, to either the victim, or 'a class of person of which the victim was one'.⁷⁴⁷ In the emergency context the issue would be, is it reasonably foreseeable that a person in an affected community, if not warned of a flood hazard, will suffer harm? A judgment is then made as to whether a duty of care should arise because of the '**salient**' or **factual features** in the relationship between the parties.⁷⁴⁸ The factual features examined below generally incorporate a mixture of policy and legal questions, which attempt to balance the respective rights and obligations of the parties.⁷⁴⁹ As will be demonstrated in the

⁷⁴⁴ See, eg, *Electro Optic Systems Pty Ltd v State of New South Wales* [2014] 204 LGERA 238, [321] (This case highlights that formulation of a duty of care needs to look at, by whom, to whom and in what circumstances a duty is owed).

⁷⁴⁵ *Mulligan v Coffs Harbour City Council* [2003] NSWSC 49, 248 (Whealy J); *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330, 347 (Gummow) citing *Vairy v Wyong Shire Council*, McHugh J.

⁷⁴⁶ See, eg, *Donoghue v Stevenson* [1932] AC 562 (the neighbour principle); *Anns v London Borough of Merton* [1978] AC 728 (the two-stage test); *Janesch v Coffey* (1984) 155 CLR 549 (tests for proximity); *Caparo Industries v Dickman* [1992] 2 AC 605 (the Caparo test); *Sutherland Shire Council v Heyman* [1985] 157 CLR 424 (incremental approaches); Sappideen, Vines and Watson, *Torts: Commentary and Materials*, above n 741, 193-196.

⁷⁴⁷ *Donoghue v Stevenson* [1932] AC 562, 572, 581; *Sullivan v Moody* (2001) 207 CLR 563, 582.

⁷⁴⁸ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 647; Sappideen, Vines and Watson, *Torts: Commentary and Materials*, above n 741, 193, 196.

⁷⁴⁹ See, eg, Norman Katter, "'Who then in law is my neighbor?'" Reverting to first principles in the High Court of Australia (2004) 12(2) *The Tort Law Review* 85, 89 (These considerations are court policy, which include indeterminate liability, unwarranted

examination of the case law specific to warning, in the context of natural hazards and emergencies, which are dynamic, often uncontrollable and difficult to predict, formulation of a duty of care can be a difficult process.

Examining reasonable foreseeability

Reasonable foreseeability is the ‘touchstone of recognising a duty of care’.⁷⁵⁰ The test of reasonable foreseeability derives from Lord Aitkin’s judgment in *Donoghue v Stevenson*:⁷⁵¹

The rule that you are to love thy neighbour becomes in law; you must not injure your neighbour; and the lawyer’s questions, Who is my neighbour? receives a restricted reply. You **must take reasonable care to avoid acts or omissions which you can reasonably foresee would likely to injure your neighbour (reasonable foreseeability)**. Who, then, in law is my neighbour? **The answer seems to be persons who are so closely and directly affected by my act that I ought reasonably to have them in contemplation as being affected when I am directing my mind to the acts or omissions which are called into question (who is my neighbour).**⁷⁵²

This excerpt from Lord Aitkin’s judgment begins to delineate the boundaries of the expected standards of conduct between parties. The judgment identifies that an individual, when pursuing their own interests, need not consider every other person, as alluded to under social contract theory. Instead they must consider their neighbour. In the law of negligence, a neighbour is someone ‘so closely and directly affected by my acts’ that they should be held in contemplation.⁷⁵³ The risk of harm to be foreseen is one ‘a reasonable person

interference with the autonomy of individuals; vulnerability and control, knowledge, undermining existing patterns of law in other fields, statutory intent, economic efficiency); See more specifically notes on indeterminacy in: Clarke, Deveraux and Werren, above n 703, 50, 74; Richard, De Zwart, Ludlow, above n 713, 24; *Caltex Refineries (Queensland) Pty Limited v Stavara* (2009) 259 ALR 616, 642-643 (Allsop J); *Donoghue v Stevenson* [1932] AC 562, 580 (As Lord Atkin states, ‘acts or omission which any moral code would censure cannot in a practical world be treated so as to give a right to every person injured by them to demand relief’, so limits must apply, and that limitation is reasonable foreseeability).

⁷⁵⁰ *Tame v New South Wales* (2002) 211 CLR 317, 330 (Callinan J); Katter, above n 749, 85.

⁷⁵¹ [1932] AC 562.

⁷⁵² *Donoghue v Stevenson* [1932] AC 562, 580 (emphasis added); Noting discussion in Katter, above n 749, 95.

⁷⁵³ *Donoghue v Stevenson* [1932] AC 562, 580; See, also, Katter, above n 749, 95; Clarke, Deveraux and Werren, above n 703, 8, 73, 282, 284 (Who is my neighbour changes and ‘responds to the social, economic and cultural changes’ in contemporary society’).

in the defendant's position would have foreseen', or what they 'ought to anticipate'.⁷⁵⁴ In the hazard context, 'a neighbour' may be a community that the emergency management sector, having knowledge of an imminent hazard, would have foreseen would be impacted by that hazard. Although a touchstone of the duty of care, reasonable foreseeability on its own is not sufficient to ground that duty in novel cases.⁷⁵⁵

Salient or 'factual' features

The second aspect to formulating a duty of care, is judicial consideration of the salient or 'factual' features of the relationship between the parties.⁷⁵⁶ These salient features may bear differential weighting in each case,⁷⁵⁷ and can include:

...the foreseeability of harm, the nature of the harm alleged, the degree of control able to be exercised by the defendant to avoid harm; the degree of vulnerability of the plaintiff to the harm from the defendant's conduct, including the capacity and reasonable expectation of a plaintiff to take steps to protect itself; any degree of reliance or assumption of responsibility, the nature of the hazard and knowledge by the defendant that the conduct will cause harm, **conflicting duties arising in statute or law, consistency with the scope, terms and purpose of any statute relevant to the existence of a duty.**⁷⁵⁸

Of the salient features listed, control⁷⁵⁹ and the knowledge of the plaintiff, along with the defendant's vulnerability,⁷⁶⁰ commonly feature in the reasoning of the court.

⁷⁵⁴ *Donoghue v Stevenson* [1932] AC 562, 580; *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 578 (McHugh) (The precise risk of injury is not required to be foreseen, but the 'class of risk'); Barker et al, above n 703, 460-461; *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 456 (Hayne).

⁷⁵⁵ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 555.

⁷⁵⁶ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 642-643 (Allsop P); *Sullivan v Moody* (2001) 207 CLR 562, 573 (Noting that reasonable foreseeability on its own is not sufficient for the finding of a duty of care).

⁷⁵⁷ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 643 (Allsop P).

⁷⁵⁸ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 642-643 (Allsop P).

⁷⁵⁹ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 541, 558, 577 (Where the court determined that the 'Council had no control over the risk of harm that eventuated', the pollution of a lake which resulted in contaminated oysters).

⁷⁶⁰ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 577-578 (In fact McHugh went as far to say, that if questions of foreseeability, control, knowledge and vulnerability are answered affirmatively, and questions regarding impacting on core-policy making, or

Control

Examining each of these core features in turn, references to, and application of control within case law, has been inconsistent.⁷⁶¹ Control has been referred to as direct control over the ‘harmful cause of the damage’, such as the hazard itself,⁷⁶² for example a storm or a fire. Utilising this application of control there would be few cases in which a statutory authority within the sector would have control over a natural hazard. However, control has also been referred to as ‘the degree and nature of control able to be exercised by the defendant to avoid harm’.⁷⁶³ The application of this definition of ‘control’, brings into question the powers that an authority possesses, its managerial control for example.⁷⁶⁴ Applying this definition of control calls for an examination of statutory functions which might be relevant to show that had powers and functions been exercised, harm may have been avoided. For example, if an authority had exercised a power or function to warn, this might have alerted members of the public, who could then have taken precautionary or preventative action to avoid the harm. Having defined the terms functions, powers and responsibilities in Chapter Five, this Chapter highlights that when judicial reasoning is applied, there will only be limited instances where the presence of a ‘function’, ‘power’ or ‘responsibility’ will give rise to a duty of care and a legal obligation will result.

supervening policy reasons are answered negatively a duty will ordinarily be found); *Perre v Apand* (1999) 198 CLR 180, 180 (although knowledge appears to be linked to means of knowledge of an ascertainable class of vulnerable persons who were unable to protect themselves from harm’ rather than knowledge of the risk).

⁷⁶¹ Scott Wotherspoon, ‘Translating the public law “may” into the common law “ought”’: The case for a unique common law cause of action for statutory negligence’ (2009) 83 *Australian Law Journal* 331, 333.

⁷⁶² *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [707]; *Brodie v Singleton Shire Council* (2001) 206 CLR 512 (In *Brodie v Singleton Shire Council* there is consideration of control over the road as they physical structure which is the cause of the harm).

⁷⁶³ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 643 (Allsop P); *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 577 (McHugh J)

(Alternatively, was the authority in a position of control and did it have the power to control the situation that brought about the harm to the injured person).

⁷⁶⁴ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 558-559, 579-581.

Functions, powers, responsibilities and links to a duty of care

As a starting point, the case law related to the law of negligence indicates that the finding of a common-law duty of care in novel cases, is not dependent on the presence of statutory power or function.⁷⁶⁵ Therefore agencies within the emergency management sector, may still be subject to a duty of care to warn, despite any absence of power in statute. Where a function or power for warning does exist in statute or another regulatory component, it may be considered as a starting point or foundation for asserting a duty of care. The function or power will be examined with respect to the degree of control that the authority had in the circumstances.⁷⁶⁶ The duty of care however, arises independent of statute law and arises under the common law.⁷⁶⁷

The case of *Graham Barclay Oysters v Ryan*⁷⁶⁸ demonstrates this latter principle. The case states: ‘a public **authority has no duty to take reasonable care to protect other persons merely because the legislature has invested it with a power** whose exercise could prevent harm to those persons.’⁷⁶⁹ In this case claimants became ill after ingesting contaminated oysters harvested from a lake. The question arose as to whether the State had a duty to exercise its power to control the oyster industry. Whether the local government also had a duty to exercise a power in regards to the lake where the oysters were contaminated, was also a relevant consideration. The above statement, reinforces that the decision to exercise a power or function within a statute, is often discretionary. Noted exceptions, to this principle is when an authority uses its ‘powers to intervene in a field of activity and increased the risk of harm to persons’, or when, ‘where the power is invested

⁷⁶⁵ *Caltex Refineries (Queensland) Pty Limited v Stavar* [2009] NSWCA 258, [115]-[121] (Where the claim for negligence was based on an Asbestos Rule rather than any specific statute); *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [114]-[116].

⁷⁶⁶ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584 at 606, 609-610.

⁷⁶⁷ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584 at 606, 609-610 citing *Stuart v Kirkland-Veenstra* (2009) 237 CLR 215, 259-260; See, also, *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 632, 646 (citing *Sibley v Kais* (1967) 118 CLR 424, 427-428 (Where it was ‘accepted that the existence of the regulation and its breach is not determinative either of the existence of a co-ordinate common law duty or of its breach’).

⁷⁶⁸ (2002) 211 CLR 540.

⁷⁶⁹ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575-576 (McHugh) (emphasis added); *Pyrenees Shire Council v Day* (1998) 192 CLR 330, 343-345 (Brennan CJ) (The case refers to this as the earlier considered ‘doctrine of reliance’).

to protect the community from a particular risk and the authority is aware of a specific risk to a specific individual.⁷⁷⁰ Therefore when an agency within the emergency management sectors uses its power to disseminate warning, and by doing so increases the risk of harm, perhaps by providing an ambiguous, poorly timed or inadequate warning, a duty of care may arise.

Even where powers and functions are in statute, the court has historically taken a cautionary approach to imputing a duty of care. The caution arises out of the limits of the courts powers, and a reluctance to go beyond those limits. When entering into the social contract, a system of government is created. In Australia, the Constitution created by the government enshrined the doctrine of the separation of powers that divides the powers of government between the executive, the legislature and the judiciary, as a means to safeguard liberty.⁷⁷¹ As a collection of unelected representatives, the role of the judiciary is to interpret legislation, and apply common law precedent.⁷⁷² By contrast, parliament enact statute law underpinned by policy and reasoning.⁷⁷³ The policy of the legislature that underpins statute law must be taken into consideration by the judiciary.⁷⁷⁴ Therefore, and so as not to overstep the extent of their powers, a court has stated that without clear words of parliament that indicates they want to create a duty, the court is reluctant to translate the wording of a statute to impute a duty of care.⁷⁷⁵ Further analysis of the case law shift now from ideas of control, and statutory power into considerations of knowledge and vulnerability.

⁷⁷⁰ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575-576 (McHugh) (As stated in the judgement, 'If the legislature has invested the power for the purpose of protecting the community, it obviously intends that the power should be exercised in appropriate circumstances').

⁷⁷¹ Haig Patapan, 'Separation of Powers in Australia' (1999) 34(3) *Australian Journal of Political Science* 391, 394-395.

⁷⁷² Harold Luntz, 'The use of policy in negligence cases in the High Court of Australia' in Michael Bryan (ed) *Private Law in Theory and Practice* (Taylor and Francis, 2007) 55 (Noting that Australia is based on the Westminster system and the doctrine of the separation of powers); *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575 (McHugh).

⁷⁷³ *Pyrenees Shire Council v Day* (1998) 192 CLR 330, 345.

⁷⁷⁴ *Pyrenees Shire Council v Day* (1998) 192 CLR 330, 345-346, 358; *Sutherland Shire Council v Heyman* (1985) 157 CLR 424, 483.

⁷⁷⁵ See, eg, *Pyrenees Shire Council v Day* (1998) 192 CLR 330, 346.

Knowledge

As well as control, the **knowledge** of the agency is a salient feature for the formulation of a duty of care.⁷⁷⁶ On its own however, knowledge is not sufficient to raise a duty.⁷⁷⁷ Knowledge refers to knowledge 'of an existing risk of harm to the plaintiff or, to a specific class of persons who included the plaintiff (rather than a risk to the general public)'.⁷⁷⁸ In the emergency context, this may be knowledge of flash flooding due to storms for example. In general, government knowledge about hazards is rapidly improving due to the presence of experts within the sector and the development of predictive tools.⁷⁷⁹ This means that statutory authorities within the emergency sector, will often have a vastly greater degree of knowledge than the public about how the weather event is developing and tracking.⁷⁸⁰ Where the risk of harm is high,⁷⁸¹ this information can, and perhaps should be pro-actively used to generate warnings.⁷⁸²

In circumstances where government has greater knowledge, the share of responsibility for proactive warning may or should fall on government. This is particularly so if there are no environmental cues which would signal citizens to take care of their own interests, or for example where individuals are visitors to an area.⁷⁸³ In cases of greater comparative knowledge in the hands of government, there will also be a greater tendency to consider a duty of care may arise. However, as earlier adverted to, natural hazard events, their direction and force, are inherently unpredictable and dynamic. Despite increasingly available predictive technologies and growing expertise, as recent reports demonstrate, it can still be incredibly challenging to find available and

⁷⁷⁶ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 582.

⁷⁷⁷ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 583 (There is 'no affirmative duty of care merely because the authority knows that unless it acts an individual will suffer harm').

⁷⁷⁸ *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 46-48 (Mason J).

⁷⁷⁹ Lauterbach, *Disaster Law*, above n 157, 106.

⁷⁸⁰ Inspector General of Emergency Management (Qld), *2015 Callide Creek Flood Review: Volume 1*, Report (June 2015) 79-80; Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 3 (This means shared responsibility may be unequal at times and the burden may fall on the emergency management sector to provide information).

⁷⁸¹ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [117].

⁷⁸² Inspector General of Emergency Management (Qld), *2015 Callide Creek Flood Review: Volume 1*, above n 780, 79-80.

⁷⁸³ See, eg, *State of Queensland v Kelly* [2014] QCA 27.

'credible information' for events.⁷⁸ Therefore although the authority may have information about a risk of harm regarding a hazard to the public, actual knowledge of 'a specific problem to certain individuals' may be limited, and so too will be the likelihood of a finding of a duty of care.⁷⁸⁴

A court will also consider the **vulnerability** of the public. Vulnerability is taken as, 'the degree of vulnerability of those who depend on the proper exercise by the authority of its powers'⁷⁸⁵ that the 'authority exists and is empowered to protect them from'.⁷⁸⁶ Therefore, if communities depend on government powers to warn of emergency events, a court will consider whether the community are vulnerable. A court will also consider any assumption of responsibility for the dissemination of warning by the relevant statutory authorities.⁷⁸⁷ A determination of vulnerability however will also consider, whether the 'injured person could not reasonably be expected to adequately safeguard himself or herself or those interests from harm?'⁷⁸⁸ Consequently, in some cases, the individual may be no more vulnerable 'than any other members of the public'⁷⁸⁹ and there will be no reason that a specific duty will be owed to them as an individual.

In terms of self-protection, even if there is no warning on the day, public information campaigns are another tool in the policy toolbox⁷⁹⁰ which are used to pre-empt storms, cyclone and fire seasons. Queensland, for example has instituted the 'Get Ready Queensland' campaign in conjunction with the RACQ,⁷⁹¹ and the 'If it is Flood Forget it' campaign.⁷⁹² These campaigns outline actions individuals within the community can take, empowering them to protect themselves in anticipation of events occurring. Flood and coastal

⁷⁸⁴ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 583.

⁷⁸⁵ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 597.

⁷⁸⁶ *Pyrenees Shire Council v Day* (1998) 192 CLR 330, 332.

⁷⁸⁷ *Perre v Apand Pty Ltd* (1999) 198 CLR 180, 228; *Sutherland Shire Council v Heyman* (1985) 157 CLR 424, 498 (That is an 'assumption by one party of a responsibility to take to avoid or prevent injury, loss or damage to the person or property of another').

⁷⁸⁸ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 577.

⁷⁸⁹ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [708].

⁷⁹⁰ Althaus, Bridgman and Davis, above n 569, 93.

⁷⁹¹ Queensland Government, *RACQ Get Ready Queensland* (2016) <<https://getready.qld.gov.au/>>.

⁷⁹² Queensland Fire and Emergency Service (Qld), *If it's Flooded, forget it* (11 March 2014) <<https://www.qfes.qld.gov.au/communitysafety/swiftwater/>>.

hazard maps are also becoming widely available to the public which might preempt and empower individuals to take preparatory action.⁷⁹³ With information available for protective measures widely available,⁷⁹⁴ rather than being reliant on emergency managers exercising their powers to warn on the day, individuals may be able to help themselves. Consequently, it may only be in catastrophic events, where the risk of harm is high, general information is not available, and specific communities are unable to take self-protection measures, that a duty may be found. However, as identified later in this Chapter, establishing causation, particularly for property damage in a catastrophic event may be an issue. In catastrophic events, it is quite possible the harm complained of may have occurred despite a warning.

Supervening policy considerations

In conjunction with factors of control, knowledge and vulnerability, to balance public and private interests and how responsibility for harm should be shared, a court will consider supervening policy reasons for imputation of a duty of care.⁷⁹⁵ Where reasonable foreseeability, knowledge, control and vulnerability all favour the finding of a duty of care against a statutory agency, supervening policy issues may be of little relevance.⁷⁹⁶ A key issue in the management and response to a natural hazard emergency, for example is that statutory authorities need to be able to make key decisions without fear of liability.⁷⁹⁷ Having examined some of the commonly referred to salient features

⁷⁹³ Department of Environment and Heritage Protection (Qld), *Coastal Hazards and mapping* (2 July 2015) <<https://www.ehp.qld.gov.au/coastalplan/coastalhazards.html>>; Department of Environment and Heritage Protection, Queensland Government, *Coastal hazard map index* (3 August 2016) <<http://environment.ehp.qld.gov.au/coastal-hazards/>>.

⁷⁹⁴ Which for example, may trigger individuals to take out insurance for potential hazard impacts where available, see, eg, Commonwealth of Australia, *National Disaster Insurance Review – inquiry into flood insurance and related matters* (September 2011) <http://www.ndir.gov.au/content/report/downloads/NDIR_final.pdf>; Justine Bell, 'Insurance for Extreme Weather Events in Australia – Current Policy Trends and Future Directions' (2011) 8 *Macquarie Journal of Business Law* 339, 357; 'Insurance claims in doubt as superstorm threatens to erode property values', *9Finance*, 7 June 2016 <<http://finance.nine.com.au/2016/10/07/15/18/insurance-claims-in-doubt-as-superstorm-threatens-to-erode-property-values>>.

⁷⁹⁵ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 642-643 (Allsop P); *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 577-578.

⁷⁹⁶ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701 [686] citing *Crimmins v Stevedoring Industry Finance Committee* (1999) 200 CLR 1, [93].

⁷⁹⁷ Explanatory Notes, Civil Liability Bill 2003 (Qld) 2-3; *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [686], [713] citing *Crimmins v Stevedoring Industry Finance Committee* (1999) 200 CLR 1, [93].

for establishing a duty of care, an examination of judicial consideration of the formulation of a duty is necessary.

Case law on warning

Before examining an application of the criteria for establishing a duty of care in the context of warning, a background understanding of the nature of the cases examined is provided. The negligence cases which examine the duty to warn, and which were analysed in this thesis, cover a variety of factual circumstances and differing relationships. They include for example medical negligence cases where the doctor has failed to warn the patient of a risk within a procedure. These cases examine fault and wrong-doing in the context of the doctor / patient relationship. In these cases, a duty of care automatically arises due to the existence of the relationship.⁷⁹⁸ As identified in this research the relationship between citizens and the state, in the context of warning, rather than being a relationship automatically recognised at law, is usually a novel one. Despite this difference in establishing the duty of care, the case law on warning and medical negligence provides relevant examination of the element of causation which is highly valuable to an understanding of the action.

Further warning cases, include a series of recreation and diving injury cases. These cases focus on the omission or failure to adequately warn of a potential danger in the natural environment. This includes for example, the presence of a rock or sandbar in a body of water which may not be visible to an observer yet poses a potential risk if a person were to dive into the body of water.⁷⁹⁹ In a number of these cases, the defendant is a public authority with a statutory power for care, control and management of a channel, a coastline, or a reserve in which the risk is located. The authority will owe a duty of care to entrants

⁷⁹⁸ See, eg, Tracey Carver and Malcolm K Smith, 'Medical Negligence, Causation and Liability non-disclosure of Risk' (2014) 37(3) *University of New South Wales Law Journal*, 972, 973; *Chappel v Hart* (1998) 195 CLR 232; *Rosenberg v Percival* (2001) 205 CLR 434.

⁷⁹⁹ *Wyong Shire Council v Shirt* (1980) 146 CLR 40 (Water-skiing, ambiguous signage); *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 423 (Diving, no sign erected); *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486 (Diving no sign erected); *Swain v Waverley Municipal Council* (2005) 220 CLR 517 (Diving into sandbar at Bondi Beach, placement of the flags as a safe place to swim); *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330, 338, 345-346 (Reference is made to the statutory functions).

upon land.⁸⁰⁰ Where the defendant is not an occupier of land, a novel duty is considered. Whatever the different cases contribute to ascertaining a duty of care, they provide an examination of breach and causation, often arguing principles from the highest courts in Australia. These cases are very relevant here as they identify judicial precedent which will be followed across the differing jurisdictions.

The final collection of warning cases is those focused on the natural hazard context. These cases examine negligence in relation to a public or statutory authority, where a duty to warn is included in the scope of the duty of care. Although being most relevant to this examination of warning there are limited cases in this area and many have settled out of court. Others, derive from courts which are lower in the court hierarchy and therefore may have less value in their ability to offer judicial precedent. Of those available, most have arisen in Australia in the context of fire hazard and related emergencies.⁸⁰¹ The following exposition, examines the formulation of a duty of care in these cases. An understanding of how the court has historically adjudicated warning claims in the context of a duty to warn, is fundamental to an understanding of likely outcomes for future claims, which will be examined in Chapter Eight.

Establishing a duty of care in the warning cases

With a background understanding of the contributions of the case law to this thesis in mind, this section examines specific cases to investigate how the criteria for establishing a duty of care have been applied in the warning context. As indicated in the previous section, in some warning cases the

⁸⁰⁰ See, eg, *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 642, 643; See, also, *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 423; *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 486; See, also, *Papatonakis v Australian Telecommunications Commission* (1985) 156 CLR 7, 28 (Brennan and Dawson); *Australian Safeway Stores Pty Ltd v Zaluzna* (1987) 162 CLR 479, 480 (Questions about an occupiers liability are now resolved under the general principles of negligence).

⁸⁰¹ See, eg, *Matthews v Ausnet Electricity Services Pty Ltd (Formerly SPI Electricity Pty Ltd) (Ruling No 40)* [2015] VSC 131 (settled); *Rowe v AusNet Electricity Services Pty Ltd* [2015] VSC 232 (Murrindindi Black Saturday bushfire class action) (settled 2015); *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701; *Electro Optic Systems Pty Ltd v State of New South Wales* [2014] 204 LGERA 238; *Father Evans v New South Wales (No 2)* [2007] NSWSC 1381 (ongoing) (This list of cases does not profess to be exhaustive).

formulation of a duty of care has been non-problematic. This is either because of the pre-established relationship between the parties; the reliance on duties to entrants on land; and statutory powers and functions of the authority which enabled them to regulate and ‘control human activity’.⁸⁰² Warning in emergency situations will however be considered a novel case. Therefore, an examination of how courts have examined the criteria of reasonable foreseeability, and the salient features of the relationship and functions provided for in regulatory components, is required.

As identified, the first criteria to be satisfied in the formulation of a duty of care is identification of a **reasonably foreseeable risk of harm**. For example, is it reasonably foreseeable that the failure to warn a potentially affected community of an imminent hazard, could lead to harm to persons or their property interests.⁸⁰³ In the context of warning and hazards, the weight of precedent suggests that reasonable foreseeability will not be difficult to prove. For example, in *Electro Optic Systems Pty Ltd v State of New South Wales* where fire spread outside of containment lines and ‘weather conditions were escalating to almost unprecedented levels of fire danger’, ‘significant fire danger approaching extreme’ would have been reasonably foreseeable.⁸⁰⁴

Turning to salient features, it would be impossible to adequately cover the evaluative process of each of the features, however some examples in the hazard context, where novel cases are specifically addressed, are useful. In *Matthews v SPI Electricity Pty Ltd (Ruling No 2)*,⁸⁰⁵ both a statutory and common law duty to warn were claimed. The facts of this case relate to a fire initially caused by a broken powerline, which spread in multiple directions causing unprecedented loss of life and property destruction. The warning component of this case was directed at State parties in Victoria (Country Fire Authority (CFA), Victoria Police and the Department of Sustainability and

⁸⁰² *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 422 (The requirement to exercise this power in this case was uncontested); *Mulligan v Coffs Harbour* (2005) 223 CLR 486, 497.

⁸⁰³ There is no requirement that the extent of the harm nor the exact chain of events needs to be foreseeable, see, eg, *Chapman v Hearse* (1961) 106 CLR 112, 112.

⁸⁰⁴ *Electro Optic Systems Pty Ltd v State of New South Wales* [2012] ACTSC 184, [141]-[142] (Although it was highlighted that the level of damage could not have been considered reasonably foreseeable).

⁸⁰⁵ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584.

Environment) for a failure to provide proper and adequate warnings of the fire.⁸⁰⁶

The claimant argued that particularly the CFA had a duty to provide what were effectively quite detailed warnings and information.⁸⁰⁷ In this case there was an insufficient basis to establish a statutory duty to warn. However, to determine early on whether there was merit in the case proceeding, and whether there could be any foundation to assert a duty of care was owed, the judge considered the relevant regulatory components. As a starting point, Forrest J considered that the *Emergency Management Act* (VIC), along with the associated emergency management plan might provide a sufficient 'basis for a common law duty of care', such that the claim was not dismissed at first instance.⁸⁰⁸ Ultimately this case was settled out of court, and as an early review has little precedential value. The case was correct in considering statute as an initial consideration in the duty of care. However, it does not provide a rule that subsidiary regulatory components will always be a sufficient basis for the formulation of a duty of care.

Further case law in the area of warning reiterates that statutory powers are a starting point for formulation of a duty. The cases then undertake an evaluative judgment of statutory powers where relevant, alongside the salient factors. For those cases where there is no recourse to the argument that the relevant authority is an occupier of land with a common law duty, the reasoning usually leads to the inability to formulate a duty of care to warn.⁸⁰⁹ In *Warragamba Winery Pty Ltd v State of New South Wales (No 9)*⁸¹⁰ for example a negligence claim was brought against statutory authorities for various issues relating to a bushfire in the Blue Mountains in New South Wales. In this case, the warning component of the case was directed at a number of parties for the failure to

⁸⁰⁶ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [4].

⁸⁰⁷ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [92]-[94].

⁸⁰⁸ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [111]-[112].

⁸⁰⁹ *Electro Optic Systems Pty Ltd v State of New South Wales* 2014 ACTCA 45 [461]-[462] (The case includes a short reference to a duty to warn (alongside a case for negligent misstatement) in respect of fires originating in NSW in 2003 and burning into ACT, causing property damage); *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1114], [1119], [1120], 1121].

⁸¹⁰ [2012] NSWSC 701.

give warnings to those who could have protected themselves.⁸¹¹ The claimant unsuccessfully tried to rely on the consideration that the National Parks and Wildlife Service were an occupier of the Park and had a duty to its neighbours, which included a duty to warn.⁸¹²

In this case, a salient factor relied on by on plaintiffs was the agency's knowledge of the existence of fire and its direction.⁸¹³ As a key counter argument, and in seeking to apply the narrower interpretation of control, the defendant alleged a lack of control over 'the harmful cause of the damage', the fire.⁸¹⁴ If the wider definition had been applied however, it may have been considered that there was managerial control of the area. Rather, an in line with the highlighted reasoning in *Graham Barclay Oysters v Ryan*,⁸¹⁵ the fire was identified as the natural force causing the harm, to which the agency had not contributed or worsened,⁸¹⁶ therefore a duty of care was not established.⁸¹⁷ In the fire cases, supervening policy considerations have also been raised. These policy considerations seek to reinforce that a fire fighter, must 'make difficult decisions in difficult circumstances (for example where unpredictable and non-uniform hazard risks impact communities in a short space of time) and should be given considerable latitude before being held guilty of negligence', so as not to divert resources from core duties.⁸¹⁸ As this policy consideration is likely to apply to all emergency situations, formulation of a duty of care may be a difficult hurdle to overcome.

⁸¹¹ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1116].

⁸¹² *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1121].

⁸¹³ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [687]-[690].

⁸¹⁴ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [707].

⁸¹⁵ (2002) 211 CLR 540.

⁸¹⁶ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [707].

⁸¹⁷ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [701]-[703].

⁸¹⁸ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [712]-[713].

Scope of the duty to warn

Recalling that a duty of care is limited by its scope and content, plaintiffs have tended to seek a scope which requires specific warnings. Ultimately however, their claims have often been unsuccessful. In the diving and recreation cases, the scope of the duty included the erection of unambiguous signs, either prohibiting or warning of the dangers of the specific risk.⁸¹⁹ In the case of fire, plaintiffs have suggested that warnings should have included: 'the fire source, direction, speed, spread, communities likely to be impacted, approximate time of impact, changing conditions and their effects and unpredictability of the fire and consequences of not heeding a warning'.⁸²⁰ In *Warragamba Winery Pty Ltd v State of New South Wales (No 9)*, plaintiffs have argued the scope of the duty should include the dissemination of warnings over specific radio channels relevant to the community.⁸²¹

An examination of the judgments in these warning cases, highlights that a court focuses more on whether the duty to warn is established generally, rather than focusing on identifying specifics of the duty. In negating a duty of care which includes a requirement to warn, it can be difficult to extract the precise reasoning which has been applied by the various courts. Often the duty of care and the breach of the duty are examined together. It is therefore difficult to extract a unifying principle. A few examples indicate however, that in refusing the imposition of the duty as cast, the various courts have taken into consideration principles applicable to establishing liability of a public authority, which are now reflected in civil liability legislation.⁸²² That is, judges have considered the burden that would be placed on a statutory authority, as a public functionary. In *Vairy v Wyong Shire Council*⁸²³ for example, when considering the need to erect signs to warn of a risk of injury when diving from

⁸¹⁹ *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 422, 427 (It is noted that in their dissenting judgement, Gleeson CJ and Kirby J, suggest that 'warning signs only serve a purpose if they are likely to inform a person of something that the person does not already know, or to draw attention to something that the person might have overlooked or forgotten.');

⁸²⁰ *Matthews v AusNet Electricity Services Pty Ltd* [2014] VSC 663, [272].

⁸²¹ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1123].

⁸²² See, eg, *Civil Liability Act 2003* (Qld) s 35.

⁸²³ (2005) 223 CLR 422.

a rock platform into shallow water, the court decided that to impose a duty to 'erect of signs', would impose too great a burden. Imposition of the duty, would require a potentially indeterminate number of warning signs be erected given the large area of coast line under its management.⁸²⁴ As a specific example in the hazard context, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* reiterates the principles relevant to statutory authorities as public functionaries, highlighting that a specific duty may be too wide, particularly where a multitude of specific warnings would need to be issued due to the number of fires burning.⁸²⁵

The case law examined here suggests that the formulation of a duty of care for warning, particularly in the context of hazard, where multiple impacts are occurring, may be difficult. Where there is little control over the cause of harm, provided that the authority has not created or worsened the harm, it may be difficult to meet the threshold test. This may be the case unless specific powers have been provided in the statute creating the authority.

Breach of a duty of care

Should the formulation of a duty of care be successful, the breach of that duty, is the second element of the negligence claim. The breach of a duty of care is determined by application of a multi-faceted calculus of factors. These factors are applied to determine whether the act or omission is a breach of the legal standard of care which is expected in society. That is, whether the statutory authority has exhibited a reasonable standard of care, or has fallen 'short of the standard of behaviour measurable in law'.⁸²⁶ The question of breach, is a prospective consideration. It examines not whether the risk could have been prevented but whether a reasonable standard of care was exercised in the circumstances, given the probable risk of harm.⁸²⁷

⁸²⁴ *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 422, 449, 452.

⁸²⁵ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [765].

⁸²⁶ Clarke, Deveraux and Warren, above n 703, 292, 159 (The standard of behaviour is that of the reasonable person, 'a hypothetical construct').

⁸²⁷ *Roads and Traffic Authority of New South Wales v Dederer* (2007) 234 CLR 330, 343, 353.

When considering a particular hazard risk, a fire, a flood, or a cyclone, what would constitute reasonable care? Research suggests that what constitutes 'reasonable' at law, may not be 'commensurate with actions adopted by risk managers' when considering the same risk.⁸²⁸ The reasonable standard of care, or actions necessary to be taken, at law, in certain circumstances, may therefore be lower. Despite this assertion, there is a concern in the hazard context, that as 'super-storms and natural disasters become a constantly worsening phenomenon; the necessary standard of care seems to be intensifying'.⁸²⁹

'Calculus' of Breach

To determine whether there has been a breach of a duty of care, a number of factors are taken into consideration. In Australia, most jurisdictions have enacted civil liability legislation, which slightly modifies the original common law calculus of the breach of a duty of care.⁸³⁰ Under the civil liability legislation, breach of a duty requires examination of whether the risk was reasonably foreseeable and not insignificant,⁸³¹ and the precautions a reasonable person would have taken to meet the risk.⁸³² To determine the precautions a reasonable person, or in this case a reasonable statutory authority, would take the court considers: the probability of the harm eventuating; the seriousness of the harm; the burden of taking precautions; and the social utility of the risk causing activity.⁸³³ Of further relevance may be customary and statutory standards and anticipation of carelessness by the

⁸²⁸ Rochford, above n 234, 183.

⁸²⁹ Frattaroli, above n 687, 200-201.

⁸³⁰ See, eg, *Wrongs Act 1958* (VIC); *Civil Liability Act 2002* (NSW); *Civil Liability Act 2002* (WA); *Civil Liability Act 2002* (Tas); *Civil Law (Wrongs) Act 2002* (ACT); *Civil Liability Act 2003* (Qld); See, also, *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 47-48 (Mason J) (This case outlines the original common law formulation of a breach of a duty of care).

⁸³¹ *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 47-48 (Mason J); Eburn, 'The Emerging Issue of a failure to warn', above n 71, 52 (That is as long as the risk is not far-fetched or fanciful, as Eburn has suggested in the medical cases, a 1:14000 risk, or one that is 'extremely unlikely' is still considered in certain circumstances to be reasonably foreseeable, as it is not the 'probability or likelihood of the occurrence' that is measured, more whether it is a fantastic or far-fetched possibility).

⁸³² See, eg, *Wrongs Act 1958* (VIC) s 48; *Civil Liability Act 2002* (NSW) s 5B; *Civil Liability Act 2002* (WA) s 5B; *Civil Liability Act 2002* (Tas) s 12; *Civil Law (Wrongs) Act 2002* (ACT) s 43; *Civil Liability Act 2003* (Qld) s 9(1).

⁸³³ *Civil Liability Act* (2003) Qld s 9(2).

person to whom the duty is owed.⁸³⁴ In assessing the burden of taking precautions, the fact that alternate actions could have avoid or reduce the risk, or that subsequent action to address the risk of harm has been taken, does not on its own give rise to liability.⁸³⁵

As well as provisions which apply to breach of care generally, there are further provisions specifically relevant to public authorities.⁸³⁶ These provisions include considerations of policy. The policy considerations call for an examination of the range of activities the authority is required to address, any resource limitations as well as the freedom a public authority has to choose in which areas to allocate resources.⁸³⁷ These latter provisions, as has already been noted in the formulation of the duty of care, are explicitly referred to within the warning cases to defeat a claim against local government authorities. It is these provisions which at times make a breach of a duty a difficult hurdle to overcome.

Breach in the warning cases

To determine a breach, it is relevant to understand what a warning is seeks to achieve:

A warning sign seeks to convey information which an observer would not or may not otherwise have known, or seeks to remind the observer of something that otherwise would not or may not be considered... A warning would remind those (considering the risk). It may inform the young or the ill-informed of something they did not know or understand.⁸³⁸

As the excerpt highlights, a warning conveys unknown information or reminds a party of information that may not have been considered. For example, a warning provides information of the direction and magnitude of a natural

⁸³⁴ *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 47-48 (Mason J).

⁸³⁵ See, eg, *Wrongs Act 1958* (VIC) s 49; *Civil Liability Act 2002* (NSW) s 5C; *Civil Liability Act 2002* (Tas) s 12; *Civil Law (Wrongs) Act 2002* (ACT) s 44; *Civil Liability Act 2003* (Qld) 10.

⁸³⁶ *Wrongs Act 1958* (VIC) s 83; *Civil Liability Act 2002* (NSW) s 42; *Civil Liability Act 2002* (WA) s 5W; *Civil Liability Act 2002* (Tas) s 38; *Civil Law (Wrongs) Act 2002* (ACT) s 110; *Civil Liability Act 2003* (Qld) s 35.

⁸³⁷ *Wrongs Act 1958* (VIC) s 83; *Civil Liability Act 2002* (NSW) s 42; *Civil Liability Act 2002* (WA) s 5W; *Civil Liability Act 2002* (Tas) s 38; *Civil Law (Wrongs) Act 2002* (ACT) s 110; *Civil Liability Act 2003* (Qld) s 35.

⁸³⁸ *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 467.

hazard such as a fire, or cyclone, which would not be known to the public. A warning, should also inform the public of the general nature of the particular risk.⁸³⁹ In alerting people to something they may already know, a warning is not necessarily required where the risk is one which would be in the minds of persons generally.⁸⁴⁰ Nor is the standard such that the authority has to envisage every type of person who might be subject to the risk when determining whether to issue a warning.⁸⁴¹

However, when warnings are issued, clarity is required, and any ambiguity as to the nature of the risk, may equate to a failure to exercise reasonable care, and therefore a breach of duty.⁸⁴² When warnings are clear, 'evidence of non-compliance by others with the warning signs, does not justify the conclusion that they are inadequate'.⁸⁴³ For example, when agencies warn not to drive through flood waters, and a person dies for failing to comply with the warning, this does not necessarily lead to the conclusion that the warning issued was inadequate. Highly relevant to a determination of breach, is the shared responsibility of the public, in that it is 'incumbent' upon members of the public to 'read the signs'.⁸⁴⁴

Factual circumstances and basis for breach

Across the case law related to a duty to warn, there are a number of acts or omissions which claimants have referred to as having the potential to establish a breach of the duty of care. These are variously described as a failure to

⁸³⁹ *Sharp v Parramatta City Council* (2015) 209 LGERA 220, 220; *Woods v Multi-Sport Holdings Pty Ltd* (2002) 208 CLR 260, 473-474; Tracey L. Carver, 'Obviously Obvious: Obvious Risks, Policy and Claimant Inadvertence' (2007) 14(1) *eLaw Journal* 66, 67 (The warning does not have to state the precise nature and full extent of the risks).

⁸⁴⁰ *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 439.

⁸⁴¹ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 495-496.

⁸⁴² *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 40; *State of Queensland v Kelly* [2014] QCA 27, [71]. (In this Queensland court decision, the findings at first instance commented on the effectiveness of the signs, that in negating a signs effectiveness the use of pictograms may have inaccurately demonstrated the nature of the risk, the final court decision reversed the decision of trial judge based on a failure to consider the obviousness of the risk).

⁸⁴³ *State of Queensland v Kelly* [2014] QCA 27, [35], [42].

⁸⁴⁴ *State of Queensland v Kelly* [2014] QCA 27, [27].

notify,⁸⁴⁵ a failure to provide ‘proper’ and ‘adequate’ warning⁸⁴⁶ or to provide adequate and complete information as to the threat posed.⁸⁴⁷ Issues also stem from the type of warning issued, for example, general rather than specific warnings,⁸⁴⁸ the choice of media,⁸⁴⁹ or inappropriate timing of warnings.⁸⁵⁰ These claims, although often unsuccessful, highlight that the public expect and rely upon well timed warning messages, with sufficient and adequate information, over a broad range of media channels. These expectations, reinforce attributes of risk communication that were identified in Chapter Three, as good practice to adopt in order to bring about public response. The presence of case law regarding these attributes suggests that there is a continued perception of a failure to deliver in these areas. Despite the recommendations and public expectations, failure to deliver on these qualities have not equated to a breach of a duty of care.⁸⁵¹ Rather it is the complete lack of warning (a failure to warn at all of the particular risk), or lack of clarity and ambiguity, which has given rise to liability. To date, none of the case law has raised issues of inconsistency across messages.

Determining a reasonable standard of care in warning cases

The factors relevant to establishing a breach of a duty of care have been outlined. In the first instance, when assessing reasonable care in light of an

⁸⁴⁵ See, eg, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701 [1130]-[1132] (Notably the court would not have found the parties to have been in breach); *Matthews v AusNet Electricity Services Pty Ltd* [2014] VSC 663, [270]; *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 429-430, 455-456 (The breach was a failure to erect one or more signs warning against diving from a rock platform).

⁸⁴⁶ *Matthews and Ausnet Electricity Services* [2014] VSC 663, [285] (The warning was too late for those involved).

⁸⁴⁷ *Electro Optic Systems Pty Ltd v State of New South Wales* [2014] 204 LGERA 238, [457]; *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 40, 48 (Where the warning issued was a sign indicating a change in depth of water, however its placement meant it had an ambiguous meaning and could easily be read incorrectly so as to induce a person to believe otherwise about a hazard).

⁸⁴⁸ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1133] (Where general warnings did not include warnings to the specific community).

⁸⁴⁹ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1123], [1125] (Preferred radio station).

⁸⁵⁰ See, eg, *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 465 (A reasonable person would not have marked at every point).

⁸⁵¹ See, eg *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1124] (Discussion in *Warragamba Winery* where timings were an issue however the intervals at which warnings were issued was adjudged reasonable without the necessity to add those preferred by the community).

act or omission a court will take into account the **entirety of the warnings**.⁸⁵² Case law indicates that a court will also consider the **content of any warnings** or information issued.⁸⁵³ This will include pre-season messaging, general community information sessions, in-season warnings, or warnings over a number of consecutive days or hours prior to the impact of an event.⁸⁵⁴ A court will also consider the general practice and policy historically adopted by the agency. For example, issuing a general, rather than a specific warning to a community, may demonstrate reasonable care if it has been the normal practice.⁸⁵⁵ Of general note, this should alert agencies to the fact that if one method of warning is no longer practicable or desired, for example warning by door-knocking, time must be taken to re-educate the community to avoid breaching a duty of care. Incorporating notions of personal and shared responsibility it is important to re-iterate that the court will expect, in assessing any allegation of breach, that ‘plaintiffs will exercise reasonable care for their own safety’.⁸⁵⁶

The calculus: reliance on ‘limited resources’

Of the factors which establish breach, establishing reasonable foreseeability of the risk of harm has been unproblematic to prove. It is difficult to discern however, the role the individual factors such as the ‘probability that harm would occur if action was not taken’ and ‘the likely seriousness of the harm’ have

⁸⁵² See, eg, *Matthews and Ausnet Electricity Services* [2014] VSC 663, [276],[288]; *State of Queensland v Kelly* [2014] QCA 27, [42] (Sufficiency of the signs taken in combination to bringing home the message to a reasonable person).

⁸⁵³ *Electro Optic Systems Pty Ltd v State of New South Wales* [2014] 204 LGERA 238, [457].

⁸⁵⁴ See, eg, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701; *Matthews v Ausnet Electricity Services* [2014] VSC 663, [276],[288] (These might include warnings given rather than in the immediate vicinity of the hazard impact, those warnings issued at the commencement of the season, and general community information sessions ‘in the years leading up to’ the event, along with the ‘notoriety of the risk’); *State of Queensland v Kelly* [2014] QCA 27, [42] (Sufficiency of the signs taken in combination to bringing home the message to a reasonable person).

⁸⁵⁵ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [710], [1142].

⁸⁵⁶ *Roads and Traffic Authority of New South Wales v Dederer* (2007) 234 CLR 330, 398 (Gummow).

played.⁸⁵⁷ These factors rather than being reasoned independently, become part of an ‘amalgam’ which ‘obscures the underlying reasoning of the court’.⁸⁵⁸

One factor which does stand out, and is used by authorities to negate a claim, is an argument centred on the ‘limited availability of resources’.⁸⁵⁹ This argument is usually aligned with recognition of the statutory authority’s collective responsibilities. Ultimately, any lack of resources means that, in most jurisdictions,⁸⁶⁰ if the cost to the authorities of carrying out numerous responsibilities when considering all obligations is burdensome, they may be excused from taking action.⁸⁶¹ The case of *Warragamba Winery Pty Ltd v State of New South Wales (No 9)*,⁸⁶² provides an example. In this case, it was stated that: ‘there is a limit to what (the organisations) can do’ as all were ‘entities with limited resources’.⁸⁶³ To issue ‘specific and targeted warnings’ when there ‘were so many fires burning’ at the same time, when there was greater urgency in other communities, would not have been practical and been too great a burden on resources.⁸⁶⁴ Whether the same claims of limited resources, would continue to support the absence of a breach of a duty of care in the future, is unclear. In the case of communication and warning for example, jurisdictions now have escalation frameworks in place. These frameworks give access to a greater capacity to warn⁸⁶⁵ when resource capabilities of the entity responding are pushed beyond the limit.

⁸⁵⁷ Jane Stapleton, ‘Factual Causation’ (2010) 38 *Federal Law Review* 467, 469; *Civil Liability Act 2003* (Qld) s 9(2).

⁸⁵⁸ Stapleton, ‘Factual Causation’, above n 857, 469.

⁸⁵⁹ See, eg, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [710]; *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 451-452; *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486; See, eg, comment in Martin, above n 737, 200 (That should a public hospital ‘which decided it lacks resources to support round the close specialist obstetric care would be in a position to rely on the exception...(where it was asserted) there was a failure to provide that care or a delay).

⁸⁶⁰ *Wrongs Act 1958* (VIC) s 83; *Civil Liability Act 2002* (NSW) s 42; *Civil Liability Act 2002* (WA) s 5W; *Civil Liability Act 2002* (Tas) s 38; *Civil Law (Wrongs) Act 2002* (ACT) s 110.

⁸⁶¹ See, eg, *Civil Liability Act 2003* (Qld) s 35 (Including the burden of taking precautions, and limitations on general resources of authorities).

⁸⁶² *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701.

⁸⁶³ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1133].

⁸⁶⁴ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1246]; Note also the reference to *Matthews v AusNet Electricity Services Pty Ltd* [2014] VSC 663, [286] (Where it was observed that the agency was fighting a ‘unprecedented catastrophe involving a number of major fires’); See, eg, *Civil Liability Act 2003* (Qld) (In Queensland this would take into account s 35(a) and (c)).

⁸⁶⁵ See, eg, *Disaster Management Act 2003* (Qld) s 30(d).

The calculus: multiple responsibilities

Alongside resource constraints, the collective responsibilities of a statutory authority are referred to in determining whether there was an absence of a breach of duty. For example, in the diving and recreation cases, the court reasoned that, to exercise a reasonable standard of care would not have required the entity to single out the particular risk or require that preventative action be taken.⁸⁶⁶ This conclusion was in part because the risk was a readily apparent and ever-present danger, even if posing a catastrophic risk.⁸⁶⁷ It was a risk that was likely to be in the knowledge and understanding of the users of the area generally. It would also one among a multitude of risks which was required to be managed by the public authority.⁸⁶⁸ This conclusion of the court is qualified where the magnitude of the risk increases and there is a greater probability of injury, making the requirement for a warning more likely.⁸⁶⁹ The case of *Warragamba Winery Pty Ltd v State of New South Wales (No 9)*⁸⁷⁰ reinforces that this same argument has been applied to a statutory authority established for the purposes of emergency prevention.

The role of regulatory components in assessing a breach and reasonable care

Chapter Five, identified that some regulatory components, rather than acting as the basis for formulating a duty, will be relevant to the determination of breach. In that Chapter, numerous soft law instruments at various levels of the hierarchy, were identified. Many of the guidelines, plans, protocols and codes contained detailed roles and responsibilities of the statutory bodies. How do they impact the breach of a duty of care? Compliance with regulatory components can have a positive effect on negating a breach of a duty for a public authority. In Queensland, statutory provisions relating to liability for public authorities, reinforce this proposition. Civil liability provisions specifically state that compliance with procedures and standards, may act as 'evidence of the proper exercise of its functions in the matter to which the proceeding

⁸⁶⁶ *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 464 (This was in consideration of the greater number of risk and the cost and efficacy is placing such signs as being likely to prevent behaviour).

⁸⁶⁷ See, eg, *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 466, 470.

⁸⁶⁸ *Vairy v Wyong Shire Council* (2005) 223 CLR 422, 454.

⁸⁶⁹ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 496 (McHugh).

⁸⁷⁰ [2012] NSWSC 701.

relates' and that reasonable care has been taken.⁸⁷¹ Therefore, 'non-compliance' or certainly inconsistency⁸⁷² with any standard or guidelines, in carrying out a duty of care, 'may be persuasive evidence of negligence'.⁸⁷³

It is important to remember however, that compliance with procedures is balanced with all the other factors to be considered in the determination of the breach of a duty. Therefore, although evidence of compliance is recognised under the civil liability legislation as evidence of proper exercise of an authority's functions,⁸⁷⁴ it is not conclusive evidence of the exercise of reasonable care.⁸⁷⁵ This is particularly the case if the procedures complied with are out of date or do not reflect good practice. So, too the case of *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* suggests that procedures, or 'protocols are guidelines. Like Australian Standards, they can show what is possible or desirable. But the breach of a protocol does not of itself ground a cause of action or point to a breach of statutory duty.'⁸⁷⁶ Despite this assertion, case law does suggest that any non-compliance will, 'call for a convincing explanation the more the standard in question is adhered to by everyone else'.⁸⁷⁷ In considering the role of these components, a court will also examine the interaction of the component with the legislation, and whether the wording suggests adherence to the component is mandatory.⁸⁷⁸

⁸⁷¹ *Civil Liability Act 2003* (Qld) s 35(d).

⁸⁷² See, eg, *Disaster Management Act 2003* (Qld) s 50.

⁸⁷³ Flemings, Sappideen and Vines, above n 713, 427.

⁸⁷⁴ *Civil Liability Act 2003* (Qld) s 35(d).

⁸⁷⁵ *Sibley v Kais* (1967) 118 CLR 424, 427.

⁸⁷⁶ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, 429-430; *Sheridan v Borgmeyer* [2006] NSWCA 201, [18]; *Maynard v Rover Mowers Ltd* [2000] QCA 26; [17] (Where protocols and codes were deemed not more than a standard without legal force, however they may prove relevant to determining whether reasonable precautions have been taken) *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [78]-[79] (An emergency plan does not constitute delegated legislation which would bring about a statutory duty but may assist in the finding of a common law duty); See, also, LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 24 September 2016) 'Administrative Law'; Fisher, *Legal Reasoning in Environmental Law*, above n 94, 337 (For example 'there may be obligations on how to perform rather than obligations on outcomes', or there may a 'clear link to ensure compliance with the plans' for example). *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 377 (In this case procedures were 'very theoretical', not necessarily suited to the issue at hand however in this case a discussion of the failure to follow protocols went to discussion of a lack of good faith).

⁸⁷⁷ Flemings, Sappideen and Vines, above n 713, 150; *Rodriguez & Sons Pty Ltd v Queensland Bulk Water Supply Authority (t/as Seqwater)* [2014] NSWSC 1565 [13].

⁸⁷⁸ LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 24 September 2016) 'Administrative Law' (Where a guideline may be considered policy which 'does not have the

As an example, in Queensland, the *Disaster Management Act 2003* (Qld) in its guiding principles, states that 'all events...**should** be managed in accordance with the...'strategic policy framework, the disaster management plan and any disaster management guidelines'.⁸⁷⁹ In the state of Queensland, the use of 'should' suggests some level of discretion, which may mean that a failure to follow plans and guidelines may not be sufficient on its own to demonstrate an actionable breach of duty.

Conclusions on breach

As highlighted in this section, whether a duty of care has been breached is tested from the perspective of what action a party, who was prospectively faced with a risk of harm, would do in the circumstances.⁸⁸⁰ In the context of a natural hazard and in assessing whether reasonable care has been taken, the finding of a breach of a duty of care has often been defeated. This is despite the fact that the harm suffered is often reasonably foreseeable. A decision to negate the finding of breach will usually reference policy decisions over the limited availability of resources, and the multiple responsibilities of a statutory authority. With frameworks in place which extend the resource capacity of agencies, recourse to this particular policy consideration may carry limited weight in the future. In entering a pleading for the breach of a duty of care, either party may seek to lead evidence of compliance, or lack of compliance with procedures, protocols and guidelines. However, the success of this tactic will depend on the interaction of the components with the legislation. It will also depend on the factual circumstances, as to whether in the particular circumstances, a failure to comply will demonstrate breach. As a final note, courts recognise when examining factors which may constitute breach, that

force of law unless the empowering legislation provides it is binding'); Fisher, *Legal Reasoning in Environmental Law*, above n 94, 337.

⁸⁷⁹ *Disaster Management Act 2003* (Qld) s 4A(b), 16A(b), 50 (the chief executive is also to ensure that disaster management and disaster operations are consistent with these same documents, as well as the disaster management guidelines, equally any plans must be consistent with the disaster management standards and guidelines).

⁸⁸⁰ Martin, above n 737, 192; (There is a shift in the case law after the millennium away from 'hindsight bias' to look 'from the perspective of the participants prior to the occurrence of the risk having eventuated').

some risks are ever present in the landscape. In light of these hazards it is anticipated that citizens should exercise reasonable care for their safety.

Damage

Damage, the final element in a negligence action, is absolutely necessary to perfect liability.⁸⁸¹ Damage generally includes harm to property, person (physical or mental injury) or economic loss, which is the reasonably foreseeable consequence of the breach.⁸⁸² That is, the damage is within the scope of the liability to be considered. To prove the element of damage, there needs to be a causal link 'between the breach of duty and the harm suffered'.⁸⁸³ The harm suffered must be considered to be in the scope of the defendant's liability as set out in the duty of care.⁸⁸⁴ Thus, it must be proven on the balance of probabilities⁸⁸⁵ that the failure, for example, of a statutory authority to adequately warn of the presence or imminent exposure to a fire or flood, led to property damage or personal injury.

The test for causation

Establishing the test for causation, which is applied in practice, has historically been problematic and confusing. This is because causation has been described as 'the most ill-defined' principles of law.⁸⁸⁶ Although it might be imagined that a review of the judgments would be enlightening, Stapleton suggests that the reasoning of the courts has become a truncated amalgam

⁸⁸¹ *Tabet v Gett* (2010) 240 CLR 537, 577; *Harriton v Stephens* (2006) 226 CLR 52, 52; *Civil Liability Act 2003* (Qld) s 11; See, also, The Hon Justice Susan Keifel AC, 'Developments in the Law Relating to Medical Negligence in the last 30 Years' (2016) 19 *International Trade and Business Law Review* 1, 4.

⁸⁸² *Chappel v Hart* (1998) 195 CLR 232, 234, 257; *Tabet v Gett* (2010) 240 CLR 537, 547 Margaret Beazley, 'Damages' in John F Flemings, C Sappideen and Prue Vines (eds), *Fleming's the law of torts* (Thomson Reuters, 10th ed, 2011) 225-226 (Types of damage recognised will differ within jurisdictions, and have differential controls applied to the action).

⁸⁸³ See, eg, *Chappel v Hart* (1998) 195 CLR 232, 242; *March v E & MH Stramare Pty Ltd* (1991) 171 CLR 506, 509; *Civil Liability Act 2003* (Qld) s 11; Keifel, above n 881, 4.

⁸⁸⁴ *Chappel v Hart* (1998) 195 CLR 232, 234.

⁸⁸⁵ See, eg, *Civil Liability Act 2003* (Qld) s 12; *Chappel v Hart* (1998) 195 CLR 232, 234.

⁸⁸⁶ Mirko Baragic and Sharon Erbacher, 'Causation in negligence: From anti-jurisprudence to principle – Individual responsibility as the cornerstone for the attribution of liability' (2011) 18 *Journal of Law and Medicine* 759, 759.

of ideas.⁸⁸⁷ Conclusions, are often 'reached intuitively and without a lengthy articulation of the reasons'.⁸⁸⁸ Consequently, it has been difficult to discern a clear pattern of reasoning or to determine with any sense of predictability how the court will decide.⁸⁸⁹ Legislative restatements of the element within statute purported to assist in clarifying the test, for causation.⁸⁹⁰ Since the judgments of *Strong v Woolworth Ltd*⁸⁹¹ in 2012, and *Wallace v Kam*⁸⁹² in 2013, the application of the test for causation have also now become clearer.⁸⁹³

The two arms of causation: factual and legal causation

The establishment of the causation follows two key factual tests. The two separate questions or arms of the test include; one of factual causation (the causal or factual link between the harm and the damage),⁸⁹⁴ and the second, the scope of liability (as a normative consideration or value judgement as to whether liability ought to be 'extend to the harm so caused').⁸⁹⁵ Historically common law reasoning for causation has related to either the 'but for', and the common sense tests of causation.⁸⁹⁶ It is the 'but for' test, which has been aligned with the factual causation provision in legislation.⁸⁹⁷ Although the

⁸⁸⁷ Stapleton, 'Factual Causation', above n 857, 381-382 (Where it states the distinct nature of the questions has been overlooked in the articulation of the common law and the separate questions obscured', although 'statute now requires the two questions be kept distinct').

⁸⁸⁸ R P Balkin & J L R Davis, *Law of Torts* (LexisNexis Butterworths, 5th ed, 2013) 319.

⁸⁸⁹ Baragic and Erbacher, above n 886, 760.

⁸⁹⁰ Martin, above n 737, 196-197 (This is a generally noted issue with the imposition of civil liability legislation; and in certain regards some courts have continued to assert there is no 'need to differentiate between common law principles and the statutory provisions because the outcomes of the case will be the same whichever approach is taken).

⁸⁹¹ (2012) 246 CLR 182.

⁸⁹² 250 CLR 375.

⁸⁹³ *Wallace v Kam* (2013) 250 CLR 375; See, eg, Carver and Smith, above n 798, 972 (for a clear expression of the tests to be applied); *Adeels Palace Pty Ltd v Moubarak* (2009) 239 CLR 420, 440 (in that causation is governed by the provisions under Civil liability legislation and may therefore differ to common law approaches).

⁸⁹⁴ Clarke, Deveraux and Werren, above n 703, 17, 28-29, 30,292, 338; Beazley, above n 882, 228; *Chappel v Hart* (1998) 195 CLR 232, 242 (McHugh).

⁸⁹⁵ David Hamer, "Factual causation' and 'scope of liability': What's the difference?" (2014) 77(2) *Modern Law Review* 155, 157-8; *Civil Liability Act 2003* (Qld) s 11(1)(b).

⁸⁹⁶ *March v E & MH Stramare Pty Ltd* (1991) 171 CLR 506, 506, 508 (Mason CJ) (While the Queensland civil Liability legislation is referred to in this thesis, the relevant sections are 'substantially replicated' in other Australian jurisdiction as highlighted in *Wallace v Kam* (2013) 250 CLR 375, 382, citing *Wrongs Act 1958* (VIC) s 51; *Civil Liability Act 1936* (SA) s 34(1)(3); *Civil Liability Act 2002* (NSW) s 5D; *Civil Liability Act 2002* (WA) s 5C; *Civil Liability Act 2002* (Tas) s 13; *Civil Law (Wrongs) Act 2002* (ACT) s 46).

⁸⁹⁷ See, eg, *Wallace v Kam* 250 CLR 375,383; *Strong v Woolworths Ltd* (2012) 246 CLR 182, 183; *Civil Liability Act 2003* (Qld) s 11(1)(a) (The provision is expressed as a

common sense test will apply when there is an evidentiary gap, predominantly, it is the 'but for' test which applies, that is 'but for' the breach, would the plaintiff have suffered harm'.⁸⁹⁸ This test will be explained in the following paragraphs.

Precondition of the harm: the 'but for' test

Tests for causation apply a limit to the burden of liability. The aim of the tests is to ensure that there is a reasonable connection and equally some limitation, on the ability to 'place an excessive burden on human activity' when liability is imposed.⁸⁹⁹ As stated above, the 'but for test' considers but for the breach would the plaintiff have suffered the harm.⁹⁰⁰ The test requires a comparison 'between what has happened and what would have happened' if the breach did not occur.⁹⁰¹ This question is considered 'subjectively and in the light of all relevant circumstances'.⁹⁰² As long as the defendant's conduct either materially contributes or is a necessary precondition of the harm, the test for causation will be made out.⁹⁰³ In the case of *Strong v Woolworths Ltd*,⁹⁰⁴ the claimant slipped on a chip 'on the sidewalk outside a department store' and 'the sidewalk was in the control of the store operator'.⁹⁰⁵ The question was whether Woolworths failure to engage in 'periodic inspection' which would have led to the detection and removal of the chip, had been a necessary condition of the plaintiffs harm.⁹⁰⁶ That is had the store operator not breached its duty of care to entrants by failing to clean up the sidewalk would the passer-by have slipped and been injured.⁹⁰⁷ If the chip would have been detected and they would not have slipped, then compensation would be required.

determination as to whether 'the breach of duty was a necessary condition of the occurrence of the harm').

⁸⁹⁸ *March v E & MH Stramare Pty Ltd* (1991) 171 CLR 506, 513; *Wallace v Kam* 250 CLR 375, 383.

⁸⁹⁹ Beazley, above n 882, 227.

⁹⁰⁰ *Civil Liability Act Qld* (2003) s 11(3).

⁹⁰¹ Beazley, above n 882, 229.

⁹⁰² *Civil Liability Act Qld* (2003) s 11(3)(a).

⁹⁰³ *Strong v Woolworths Ltd* (2012) 246 CLR 182, 194.

⁹⁰⁴ (2012) 246 CLR 182.

⁹⁰⁵ *Strong v Woolworths Ltd* (2012) 246 CLR 182, 182.

⁹⁰⁶ *Strong v Woolworths Ltd* (2012) 246 CLR 182, 196.

⁹⁰⁷ *Strong v Woolworths Ltd* (2012) 246 CLR 182, 196.

As this example highlights, the 'but for' test, is a negative test.⁹⁰⁸ It requires proof that had the wrong not occurred; the result would have been different or not occurred at all.⁹⁰⁹ If the damage would have occurred anyway,⁹¹⁰ or the plaintiff was prepared to accept the risk,⁹¹¹ there is no causal connection, and the essential element of causation is not made out.⁹¹² In the context of a hazard the question which may arise is: if an agency had not breached its duty of care by issuing a hazard warning, would the person have suffered the damage or would they have evacuated and not been injured? Consequently, and as will be demonstrated in examination of the warning case law, if a property would have been destroyed for example, by fire anyway, even if a warning had been given, there will be no argument to support causation. A second test for factual causation arises in exceptional cases where there is an evidentiary gap; however, there has been little need of its application and it has not been relevant to warning cases.⁹¹³

Legal causation: scope of liability

Once factual causation is established the second arm of causation considers the scope of liability. The proof of this factor goes to whether the type of damage suffered was reasonably foreseeable and whether tortfeasor should be answerable for the particular damage which occurred.⁹¹⁴ Proof of this factor focuses on, 'whether or not and why, responsibility for the harm should be imposed on the party who was in breach of the duty.'⁹¹⁵ This arm of the test aims to link the scope of liability back to the scope of the duty of care. The aim of this test is to ensure that the harm being claimed lies within the scope of the duty of care, and that 'the defendant's breach is a legally significant cause of

⁹⁰⁸ *March v E & MH Stramare Pty Ltd* (1991) 171 CLR 506, 515.

⁹⁰⁹ *Chappel v Hart* (1998) 195 CLR 232, 244-246; *Civil Liability Act 2003* (Qld) s 11(1).

⁹¹⁰ *Chappel v Hart* (1998) 195 CLR 232, 245.

⁹¹¹ *Wallace v Kam* (2013) 250 CLR 375, 391.

⁹¹² *Chappel v Hart* (1998) 195 CLR 232, 245.

⁹¹³ See, eg, *Civil Liability Act 2003* (Qld) s 11(2); *Strong v Woolworths Ltd* (2012) 246 CLR 182, 184; *Adeels Palace Pty Ltd v Moubarak* (2009) 239 CLR 420, 443 citing *Fairchild v Glenhaven Funeral Services Ltd* [2002] 3 All ER 305; See also *Zanner v Zanner* (2010) 79 NSWLR 702, [25],[52]; Stickley, *Australian Torts Law*, above n 699, 304-305 (This case highlights the relevance of the provision for cases where it is difficult to establish 'the negligence of the defendant was a necessary condition of the harm suffered' as there are multiple or complex causes).

⁹¹⁴ *Wallace v Kam* (2013) 250 CLR 375, 385.

⁹¹⁵ *Civil Liability Act 2003* (Qld) s 11(4).

the plaintiffs loss'.⁹¹⁶ Consequently, the risk that 'comes home to the plaintiff' ought to be one that the defendant 'had a duty to warn the plaintiff of'.⁹¹⁷ In attempting to link harm and liability, the test for legal causation has been labelled vague,⁹¹⁸ due to its incorporation of 'value judgement and policy'.⁹¹⁹ Despite this assertion, research has suggested that reasoning in this area includes considerations of: 'intervening and successive causes'; 'foreseeability and remoteness' of damage;⁹²⁰ 'the terms of the applicable statute'; and the 'purpose of the rule or duty of care violated'.⁹²¹

Causation and warning

The judgment of *Chappel v Hart*⁹²² is informative as to the outcomes of the application of the tests for causation in the warning context. As a common law judgment, decided before the introduction of statutory amendments, it retains ongoing relevance. The judgement sets out several principles as follows:

1. A causal connection will exist if it is probable the plaintiff would have acted on the warning and desisted from their course of conduct.
2. No causal connection will exist if the plaintiff would have persisted even if a warning was given.
3. No causal connection will exist if every alternate means of achieving the goal gave rise to an equal or greater probability of the same risk of injury and the person would have attempted to achieve this goal notwithstanding injury.
4. No casual connection will exist if the eventuation of the risk is so statistically improbable so as not to be attributable to the defendant's omission.⁹²³

⁹¹⁶ See, eg, *Wallace v Kam* [2012] NSWCA 82, [12]-[13]; *Wallace v Kam* (2013) 250 CLR 375, 389-390; Stickley, *Australian Torts Law*, above n 699, 319.

⁹¹⁷ *Wallace v Kam* (2013) 250 CLR 375, 388.

⁹¹⁸ Baragic and Erbacher, above n 886, 768.

⁹¹⁹ Beazley, above n 882, 259.

⁹²⁰ *Wallace v Kam* (2013) 250 CLR 375, 385-386; See, eg, Beazley, above n 882, 246, 249; *Chappel v Hart* (1998) 195 CLR 232, 247; *Overseas Tankship (UK) Ltd v Miller SS Co* [1967] 1 AC 617 (Historically a foreseeable consequence of a breach is one that was a 'real risk', one 'created by the negligence', (one not too remote 'far-fetched') or 'so statistically improbable as to be fairly attributable to the defendant's omission').

⁹²¹ Carver and Smith, above n 798, 978; Stickley, *Australian Torts Law*, above n 699, 311.

⁹²² *Chappel v Hart* (1998) 195 CLR 232, 245-246.

⁹²³ *Chappel v Hart* (1998) 195 CLR 232, 247 (McHugh).

As identified below, it may be difficult to provide the necessary evidence to support the supposition that these actions would have been undertaken and would have had the suggested effect. This is particularly the case in the context of natural hazards when the likely impacts of the hazard in particular circumstances, can be difficult to predict.

Establishing causation in the warning context

A review of the case law, suggests the ability to prove factual causation may be difficult, particularly in the context of hazards. This proposition is illustrated in a recent case law concerning damage by fire. In *Matthews and Ausnet Electricity Services*, where a powerline ignited a bushfire and warnings were submitted not to have been given, or were given to the community too late and with inadequate information.⁹²⁴ In this case the judge stated that ‘the role of warnings in the “causal chain“, was highly contentious’.⁹²⁵ In this case it was stated it would be necessary for the claimants to show that ‘further and other particular warnings would have affected their course of conduct in a way which altered outcomes’.⁹²⁶ As a class action it was stated that there would be cases whether some claimants would be unable to establish causation.

In *Warragamba Winery Pty Ltd v State of New South Wales (No 9)*,⁹²⁷ claimants sought a finding that warnings should have been given at certain times over the local radio station. In considering causation, it was asserted that it would have been difficult for the claimant to confirm they would have received the message if it had been broadcast on the relevant station, and that causation would be made out.⁹²⁸ In the same case, it was identified that causation would not be established if for example, property destruction was unavoidable as the property had been destroyed due to radiant heat rather than embers (which they could have extinguished).⁹²⁹ In reflection on this last

⁹²⁴ *Matthews and Ausnet Electricity Services* [2014] VSC 663, [278]-[279].

⁹²⁵ *Matthews and Ausnet Electricity Services* [2014] VSC 663, [278]-[279].

⁹²⁶ *Matthews and Ausnet Electricity Services* [2014] VSC 663, [290].

⁹²⁷ [2012] NSWSC 701.

⁹²⁸ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1252].

⁹²⁹ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701 [1253].

point, the ability to alter outcomes will be very relevant to other hazards such as cyclone, tsunami, flood and earthquake. In the context of these hazards, regardless of any action to warn the event will still occur and there would be little likelihood of saving property.

Case law outlines what, in light of all the relevant circumstances, the claimant needs to be able to demonstrate to support a claim that alternative action would have been taken.⁹³⁰ In *Nagle v Rottness Island Authority*,⁹³¹ the court suggested there was a need for ‘uncontradicted evidence’,⁹³² evidence that demonstrated, that the person impacted by the lack of warning, had taken a cautious approach. A cautious approach would have indicated that, had a warning been in place the person would have heeded the warning.⁹³³ That alternative action would have been taken might also be more readily provable where, for example, an emergency plan was in place prior to the event, or there was evidence that he or she had heeded previous warnings.⁹³⁴ The court will consider the ‘attitude and conduct (of the person) at or about the time when the breach occurred’.⁹³⁵ Consequently, a person can provide evidence that they had adequate resources to take the steps that they suggested they intended to take causation might more readily be provision.⁹³⁶ This contrasts with a speculative statement as to what they ‘think they might have done’.⁹³⁷ Overall however, the case law presents a number of hurdles which may be insurmountable for proof of this final element.

⁹³⁰ *Civil Liability Act 2003* (Qld) s 11(3).

⁹³¹ (1993) 177 CLR 423.

⁹³² See, eg, *Civil Liability Act 2003* (Qld) s 11(3)(b).

⁹³³ *Nagle v Rottness Island Authority* (1993) 177 CLR 423, 433.

⁹³⁴ Eburn, ‘The emerging legal issue of a failure to warn’, above n 71, 54-55; Michael Eburn, ‘Are Fire Brigades Liable for Poor Operational Decisions’ (2015) 37(1) *The Bulletin* 8, 10-11 (citing *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701– at trial).

⁹³⁵ *Chappel v Hart* (1998) 195 CLR 232, 246-247 (McHugh); Bill Madden & Tina Cockburn, ‘What the plaintiff would have done: s 5D(3) of the Civil Liability Act 2002 (NSW) (2006) 3(5&6) *Australian Civil Liability* 47, 47-48.

⁹³⁶ See, eg, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, [1250]; Stapleton, ‘Factual Causation’, above n 857, 480; Eburn, ‘The emerging legal issue of a failure to warn’, above n 71, 54-55 (Noting the requirement for the absence of self-serving testimony).

⁹³⁷ *Commissioner of Main Roads v Jones* (2005) 79 ALRJ 1104, 1108; Eburn, ‘The emerging legal issue of a failure to warn’, above n 71, 54-55.

Conclusion on causation

In Australia, the current test for establishing causation includes both factual and legal tests. There is a requirement to show that, 'but for' the act or omission, the harm would not have occurred. As *Chappel v Hart*⁹³⁸ asserted, 'most plaintiffs will genuinely believe that if he or she had been given an option that would or might have avoided the injury, the option would have been taken.'⁹³⁹ However, there will need to be uncontradicted evidence that this would have been the case.⁹⁴⁰ As well as the test for factual causation, a series of normative questions, as to 'whether or not and why' responsibility for the harm should be imposed.⁹⁴¹

If negligence can be established, liability may be negated by raising a defence. The following Chapter will address the defence and indemnity provisions relevant to refuting a claim in negligence. However, where no defence applies, the cost burden, or a portion of it, will transfer from the plaintiff to the defendant. Statutory authorities who incur this cost burden, may be able to transfer it to government insurers however, there will still be impacts upon the public purse.⁹⁴² As well as a requirement to pay damages, there may also be damage to reputation and deterioration of trust relationships between the parties, which are highly important to effective risk communication.⁹⁴³ In light of these consequences, the aim of the emergency management sector is to understand in what circumstances a claim in negligence will arise in the case of a failure to warn adequately or at all. This knowledge allows the agencies to put in place mitigation activities which will assist in avoiding litigation. This knowledge, when applied can also assist in demonstrating competence in the area of warning, a factor necessary to building trust with the community.

⁹³⁸ (1998) 195 CLR 232.

⁹³⁹ *Chappel v Hart* (1998) 195 CLR 232, 246-247 (McHugh).

⁹⁴⁰ *Civil Liability Act 2003* (Qld) s 11(3); See, also, *Civil Liability Act 2002* (NSW) s 5D(3).

⁹⁴¹ *Civil Liability Act 2003* (Qld) s 11(4).

⁹⁴² See, eg, Martin, above n 737, 188; (Where claims for insurance increase in frequency and amount, this may be passed on to the community – for example previously local government have passed this on by increased land rates to pay for public liability insurance).

⁹⁴³ Kasperson et al, above n 5, 31.

Conclusion

As the introduction of this Chapter stated, the aim of this thesis is to answer two questions. The first is to determine to what extent risk communication and warning are embedded in the legal system. The second is whether in light of any perceived responsibilities, statutory authorities will be held accountable for acts and omission in failing to meet a duty to warn. This Chapter, along with Chapter Seven, provides doctrinal analysis of the case law on warnings. The case law helps to determine in what circumstances legal accountability is likely, with regards to role responsibilities for warning. The findings of these Chapters are applied in Chapter Eight, to specifically demonstrate in what circumstances legal accountability, will arise for acts and omissions in warning over a specific modality of communication: social media. The examination of the case law provides a significant contribution. Not only does it highlight instances of liability that require mitigation,⁹⁴⁴ it also provides concrete findings which support the notion that legal and moral responsibility can diverge. In practice, this means that although the public may wish to place blame upon a third party for their losses, and that agencies perceive they will be subject to liability, the legal reality can be different. This knowledge may remove a barrier to action for agencies which act too cautiously because of their perceptions of liability.

Another thread of investigation in this Chapter, has been an examination of theory as to application of the law of negligence to the state and its role or function within society. Principles of negligence evolve to meet the changing circumstances in society. As a tort, negligence sets legal standards of conduct between individual parties. The standards of conduct seek to ensure that when a person pursues their own interests, they take into consideration not only their right to pursue their interests, they also consider the interests of others who might be closely and directly affected by their actions. If another's interests are not considered and harm occurs, then the wrong doer may be required to correct the damage, and compensate the party who suffered the damage. These standards of conduct apply not only to relationships between

⁹⁴⁴ Nicholson, above n 227, 255.

individuals; they also apply to relationships between a citizen and a statutory authority, such as those present within the emergency management sector.

Impacting the standards of conduct and the balance of responsibilities, the law of negligence has been modified by statute. These modifications were applied as a response to recommendations for reform. This reform, sought to reduce expansive claims and to balance a party's duty to care for the interests of another when pursuing their own interests.⁹⁴⁵ The increased focus generally in the law, on an individual's responsibility to take care of their own interests, aligns with theoretical positions noted earlier in Chapter Four. These theories identified a drive towards the individualisation of risk, and in Australia, the shared responsibility for disaster risk reduction. Statutory modifications, which support the 'swing' away from expansive claims in negligence, have also impacted on claims against statutory authorities.⁹⁴⁶ Civil liability legislation for example, specifically incorporates provisions, which take into consideration the multiple roles and the limited resources of a statutory or public authority,⁹⁴⁷ as a public functionary. The application of this line of reasoning may mean, that although statutory authorities may be required to 'give account or explanation of their actions', they may not frequently 'suffer the consequences, take the blame, or need to undertake to put matters right'.⁹⁴⁸

Doctrinal analysis of the case law on negligence, in the context of warning, demonstrated that establishing an action in negligence can be difficult, often because of these considerations. Establishing an action in negligence requires satisfaction of three elements: a duty of care, the breach of a duty of care and damage. To formulate a duty of care, a court considers whether the harm was reasonably foreseeable as well as the salient features of the relationship. In the recognition of the role of public authorities as public functionaries, these salient features include and will weigh the multiple responsibilities, the burdens to be placed on the authority, as well as other policy considerations. It became apparent in this Chapter, that in many instances, particularly in the context of

⁹⁴⁵ Commonwealth, 'Review of the law of Negligence', above n 733, 29.

⁹⁴⁶ Martin, above n 737, 187-188. 191 (Whether it is due to the introduction of civil liability legislation or not is debated).

⁹⁴⁷ See, eg, *Civil Liability Act 2003* (Qld) s 34, 35.

⁹⁴⁸ Harlow, above n 7, 51.

hazard, although harm was reasonably foreseeable, the statutory authority had little control over the hazard, as a natural force. In some cases, attempts have been made to establish a duty based on functions and powers within statute. However, unless the authority has undertaken action to increase the risk of harm, a discretionary general power in statute is not, on its own, a sufficient basis on which to establish a duty of care.

The establishment of breach and causation may also be problematic for a claimant. In relation to the breach of a duty, and particularly to reconciling rights between citizens and public authorities, resources are often limited. The authority is therefore unable to provide the frequency, or level of specificity in warning that the public demands. Consequently, and although the calculus of breach considers all circumstances, a lack of resources and a multitude of competing demands has meant that a breach of a duty has not been substantiated. Where claimants have attempted to demonstrate that the breach of a duty related to a failure to follow protocols and guidelines, the comment of courts, is that unless there is some language to suggest otherwise, the regulatory components are targets for action.

The final element of damage requires proof of factual and legal causation. To establish factual causation, the claimant must be able to demonstrate that 'but for' the act or omission by the defendant, harm would not have been suffered. Without the ability to provide self-serving testimony, the availability of uncontradicted evidence which demonstrates what the claimants would have done, may be lacking. Further consideration of legal causation and 'whether or not and why, responsibility for harm should be' imputed to a public authority in breach of their duty, are also considered.⁹⁴⁹ Following on from the examination of the case law in this Chapter, Chapter Seven will now address the defences and indemnities. Defences and immunities which are relevant to the statutory bodies which comprise the emergency management sector, will negate a finding of liability. Examination of defences and immunities will provide a complete understanding of how responsibility for warning is shared at law.

⁹⁴⁹ *Civil Liability Act 2003* (Qld) s 11(4).

Chapter Seven: Negligence - Defences and Immunities

This Chapter examines the defences and immunities which may be raised by statutory authorities in response to an action in negligence. That is an action arising from breach of duty, based upon a failure or omission in warning in a natural disaster. Reference to a defence or statutory immunity by a statutory authority will either reduce the amount of compensatory damages required to be paid. Alternatively, it may act to negate an action in negligence, so that the authority will not be held legally accountable. Chapter Six has already examined the circumstances in which statutory authorities within the emergency management sector, may be held legally accountable for acts and omissions in warning.

To briefly restate the findings of Chapter Six, three elements of negligence must be established to prove the breach of a duty. Firstly, the relationship between the parties must be of a nature to create a duty of care. Secondly, the act or omissions of one party must be sufficient to constitute a recognisable breach of that duty. Finally, a causal link must be shown between the duty owed and the harm that occurred. A duty of care has been found to exist between citizens and statutory authorities, such as those within the emergency management sector. However, when reconciling the rights between a public authority and private party, there are additional policy considerations which must be taken into account. The policy considerations qualify the rules of application or the standard of conduct to be observed. The policy considerations may act to deny culpability, because public functionaries have numerous roles to fulfil and limited resources to achieve them.

Chapter Six highlighted that both the failure to warn, and the failure to warn appropriately, have formed the basis for a claim in negligence against statutory authorities. More particularly, a claim could include an assertion that there was a failure to issue a warning, or the failure to exercise reasonable care when issuing a warning. The failure may for example, mean that the warning was ambiguous (leading to harm). The asserted failure may focus on the untimeliness of warnings or that warning was inadequate as it did not provide sufficient information. There may also be an assertion that a warning was not

disseminated on an appropriate channel. Analysis of the case law demonstrated that in establishing negligence, claimants may have to overcome a number of hurdles. This Chapter examines the defences and immunities available to statutory authorities should a negligence action of this nature be established.

Relevant defences and immunities derive from common law as well as civil liability and emergency management legislation. The common law defences include: contributory negligence; voluntary assumption of risk; as well as considerations of whether a risk is obvious.⁹⁵⁰ Statutory immunities are based upon negation of liability when acts or omissions are carried out in 'good faith'.⁹⁵¹ As in Chapter Six this analysis raises the defences and immunities available in Queensland, many of which are available in other Australian jurisdictions. The findings of Chapters Six and Seven, will then applied to the case study in Chapter Eight. The case study aims to build a specific understanding, as to the circumstances in which there will be legal accountability in the area of warning through the use of social media. The ability to broadly apply the findings of the thesis may be limited, due focus on the defences and immunities available in Queensland. However, the extent of this limitation will depend on the degree to which statutory provisions vary across Australian jurisdictions. As the key principles which underpin judicial reasoning remain common across jurisdictions, there will be elements of the findings which will be broadly applicable.⁹⁵²

Curtailment of rights and social contract theory

Before applying the defences and immunities, something should be said of the theory which provides a rationale for their existence. Defences and immunities modify, limit or curtail a right to, or success of, a legal action and thus a right

⁹⁵⁰ Flemings, Sappideen and Vines, above n 713, 317; Balkin & Davis, above n 888, 343; Mark Lunney, 'Personal Responsibility and the "new" volenti' (2005) 13 *Tort Law Review* 76, 87.

⁹⁵¹ See, eg, *Emergencies Act 2004* (ACT) s 198; *State Emergency and Rescue Management Act 1989* (NSW) s 62; *Emergency Management Act 2013* (NT) s 113; *Disaster Management Act 2003* (Qld) s 144; *Emergency Management Act 2004* (SA) s 32; *Emergency Management Act 2006* (TAS) s 55; *Emergency Management Act 2013* (VIC) s 75; *Emergency Management Act 2005* (WA) s 100.

⁹⁵² Iain Field, 'Good Faith Defences in Tort Law' (2016) 38 *Sydney Law Review* 147, 148.

to compensation by effectively exempting 'certain classes of defendant from liability'.⁹⁵³ As social contract theorists assert, modification or curtailment of rights and liberties, is acceptable in limited circumstances, such as when it ensures a 'fairer distribution of greatest equal liberty to others'.⁹⁵⁴ For example, speed limits, which restrict an individual's personal freedom to speed on roads, ensure all other road users have the freedom to travel in a safe environment.

Referring to the normative propositions of Locke and Rawls, government may make laws which enact policy linked to legitimate areas of governance. As identified in Chapters Three and Five, the emergency management regulatory system, articulates powers or functions which allow government to carry out their duties surrounding natural hazard related risk. For example, the powers and functions identified in Chapter Five, provided for the creation of warning infrastructure, and in limited examples acted to allocate warning functions to responsible bodies. Within the legislation, rights and liberties are also curtailed. For example, warnings can require individuals to follow directions, or in some jurisdictions evacuate their own property.⁹⁵⁵ However, in curtailing rights, it is acknowledged there must be a balance between effective delivery of emergency services, which benefit the community as a whole, and some regard for the protection of individual rights. Consequently, when disseminating a hazard warning to the community, in some jurisdictions legislation recognises the right of individuals with a pecuniary interest in property, to stay and defend their assets.⁹⁵⁶

The need to balance service provision and rights in the creation of regulatory instruments, has been incorporated into the legislative drafting guidelines. It is

⁹⁵³ Ibid 147; Andrew Dyson, James Goudkamp and Frederick Wilmot-Smith, 'Central Issues in the Law of Tort Defences' in Andrew Dyson, James Goudkamp and Frederick Wilmot-Smith, *Defences in Tort* (Hart Publishing, 2015) 5-6, 8 (There has been a distinction made between the definition and consequence of a defence, as there are numerous positions on the definition of defences, although commonly it is recognised as 'something for the defendant to plead and prove').

⁹⁵⁴ Rawls, *A theory of Justice Revised Edition* (Oxford) above n 235, 286; Penner & Melissaris, above n 235, 190-191 (There is a difference between 'restricting a liberty and merely regulating it', curtailment is permitted to ensure fairer distribution of greatest equal liberty to others).

⁹⁵⁵ *Emergencies Act 2004* (ACT) s 34, 67, 150C, 164, 189; *Emergency Management Act 2004* (SA) s 25, 28; *Emergency Management Act 2006* (Tas) s 40, 41, 52, Schedule (Penalties apply for the failure to comply with directions).

⁹⁵⁶ *Emergency Management Act 1986* (VIC) s 24(7).

an essential element of the drafting process. In Queensland for example, fundamental legislative principles have been adopted.⁹⁵⁷ The principles stipulate that, 'sufficient regard' must be had to the rights of individuals in all legislation, at the same time ensuring there is a balance between 'individual and community interests'.⁹⁵⁸ When drafting a Bill, there is a requirement to ensure that the explanatory notes 'contain a brief assessment (or statement) of the consistency of the legislation with fundamental legislative principles'.⁹⁵⁹ If the Bill or subordinate legislation is inconsistent with these principles for example, it curtails an individual's right to liberty, a statement of the reason for the inconsistency' is required.⁹⁶⁰ Within the Act itself, a court will seek a clear statement of the intent to abrogate or modify rights, before deciding a limitation applies.⁹⁶¹

One method of modifying rights in legislation, is through the incorporation of immunities. As the guidelines suggest, there will be times where immunities, which might otherwise curtail or limit an individual's right to litigate and seek compensation, will be legitimate, particularly where a 'significant public interest' must be recognised.⁹⁶² However, in contemplating incorporation of immunities a balance must be struck between affording citizens freedom of action and the obligation of statutory authorities to protect life and property of its citizens generally. There is also a need to consider balance individual rights with the protection of the lives of volunteers or employees engaged to provide emergency services.

⁹⁵⁷ *Legislative Standards Act 1992* (Qld) s 4.

⁹⁵⁸ Queensland Government, *The Queensland Legislation Handbook: Governing Queensland* (2nd ed, 2004) 31, 34; Department of Premier and Cabinet (Qld), *7.1 Introduction: Rights and Liberties of Individuals* (18 May 2016) <<http://www.premiers.qld.gov.au/publications/categories/policies-and-codes/handbooks/legislation-handbook/fund-principles/introduction.aspx>>

⁹⁵⁹ Queensland Government, *The Queensland Legislation Handbook*, above n 958, 31; Department of Premier and Cabinet (Qld), *7.2 Rights and Liberties of Individuals* (18 May 2016) <<http://www.premiers.qld.gov.au/publications/categories/policies-and-codes/handbooks/legislation-handbook/fund-principles/rights-and-freedoms.aspx>>; *Legislative Standards Act 1992* (Qld) s 23.

⁹⁶⁰ Queensland Government, *The Queensland Legislation Handbook*, above n 958, 31, 34.

⁹⁶¹ *Ibid.*

⁹⁶² *Ibid* 34.

Curtailment of rights in emergency management and civil liability legislation

The restriction of civil liability in the performance of emergency management duties, are considered legitimate areas for government to enact legislation. The effect of these enactments is to establish the boundaries of the legal duties of State actors. In establishing these boundaries, the rights of citizens to pursue legal action against statutory authorities may be modified. Civil liability regulation which impacts on statutory authorities, for example, has been enacted in relation to all 'civil claims for damages for harm'.⁹⁶³ Its provisions modify the common law criteria for establishing a legal claim, in line with the current social norms. As identified in Chapter Six, the civil liability legislation specifies the basis upon which statutory or public authorities may be subject to a legal claim.⁹⁶⁴ As highlighted in the previous Chapter, this modification is justified, as it recognises the shift in society towards a greater need for personal responsibility. It also recognises a social need, for the ongoing availability of personal injury insurance.⁹⁶⁵ It is important to note however, that insurance refusal for certain risks is becoming a growing concern for private citizens.

Co-existing with civil liability legislation, emergency management legislation establishes the framework within which statutory bodies operate to protect lives, and property, from hazard impacts. To ensure an overall safer community, the need to curtail an individual's rights in the emergency management context may be more compelling than in other contexts.⁹⁶⁶ Indemnity or protection provisions which protect statutory bodies against legal action are identifiable within the legislation. The curtailment of the right to legal action through imposition of this immunity on the following basis. That is, imposition of an immunity is acceptable due to the:⁹⁶⁷

⁹⁶³ *Civil Liability Act 2003* (Qld) s 34.

⁹⁶⁴ *Civil Liability Act 2003* (Qld) s 34.

⁹⁶⁵ Explanatory Notes, *Civil Liability Bill 2003* (Qld) 2-3; Commonwealth, 'Review of the law of Negligence', above n 733, 62-64, 67-68, 121-125, 129-130, 153-163 (The report included discussion and recommendations for limitations of liability for; obvious risk and inherent risk, public authorities, as well as incorporating contributory negligence, in the name of ensuring the availability of insurance).

⁹⁶⁶ Hunter, above n 476, 33, 58 (In the context of public health emergencies, some 'trade-offs', the author suggests, will need to occur to achieve safety of the population).

⁹⁶⁷ Explanatory note, *Disaster Management Bill 2003* (Qld) 7; *Civil Liability Bill 2003* (Qld) 7.

...unique position of emergency services in being called on to make crucial decisions on an urgent basis. If no immunity were provided, there could be exposure to substantial liability in carrying out these functions, for example, in a catastrophic event. A lack of protection could give rise to uncertainty and undue hesitation in the making of vital decisions for the benefit of communities, such as evacuations.

This similar position was restated in *Warragamba Winery Pty Ltd v State of New South Wales* (No 9).⁹⁶⁸ The justification for limited liability embodied in this statement, demonstrates normative propositions in a practical way. That is, the need to take action to ensure public safety of the broader community will take precedence, over the right of those individuals who have suffered harm, to pursue litigation and seek compensation for their losses.

Defences

A defence to a claim in negligence is raised to completely deny that claim or if partially admitted to, reduce compensation that might otherwise be payable.⁹⁶⁹ As earlier stated, defences derive from both common law and the civil liability legislation. Two main defences to negligence at common law are contributory negligence and voluntary assumption of risk. That is, either the plaintiff has contributed to the damage, or the plaintiff has voluntarily assumed or consented to the risk of harm, so that no other party should not be burdened with compensating the entire loss. The defence does not deny the existence of fault by the defendant. The defences do however take into account that the balance of responsibility on the plaintiff was of such a magnitude that their claim to compensation should be completely refused or reduced.⁹⁷⁰ As will be demonstrated, legislation has modified both of these common law defences.

⁹⁶⁸ [2012] NSWSC 701, [712]-[713].

⁹⁶⁹ Balkin & Davis, above n 888, 361; *Kelly v State of Queensland* [2013] QSC 106, [164].

⁹⁷⁰ Commonwealth, 'Review of the law of Negligence', above n 733, 128; Dyson, Goudkamp and Wilmot-Smith, above n 953, 11 (Noting that McDonald suggests that when considering the fault elements in tort, 'it is morally justifiable for the law to consider also the claimant's behaviour in relation to the risk').

Contributory negligence

Contributory negligence is claimed to be 'one of the most important parts of the law of torts'.⁹⁷¹ The defence recognises the role the plaintiff contributes to their own damage or harm. A finding of contributory negligence involves the weighing of a number of factors in order to determine allocation of blame between the claimants and the defendant. The factors, are the same as those utilised in the determination of a breach of a duty of care at common law, which was examined in Chapter Six.⁹⁷² The difference is that there is no duty of care owed by the plaintiff.⁹⁷³ The standard of care, 'is that of a reasonable person in the position of that person (the plaintiff)'.⁹⁷⁴ It is 'decided on the basis of what that person knew or ought reasonably to have known at the time',⁹⁷⁵ rather than what was known in hindsight.⁹⁷⁶ Both 'the circumstances and conditions', assist in forming a view as to whether, the plaintiffs actions, amounted to mere inadvertence, inattention or misjudgement, or to negligence' and whether they therefore contributed to their own foreseeable loss.⁹⁷⁷

In taking into account these elements, contributory negligence considers any failure to take reasonable care for personal 'safety and wellbeing', or property, by an individual.⁹⁷⁸ The court will determine whether an individual's actions was an 'operating cause' to the harm.⁹⁷⁹ Where a failure to take care is an operating cause, there is discretionary apportionment of liability by the court of the total cost of the damage.⁹⁸⁰ For example, in the case of warnings, if an

⁹⁷¹ James Goudkamp, 'Apportionment of damages for contributory negligence: a fixed or discretionary approach?' (2015) 35(4) *Legal Studies* 621, 621 (Due in part to its regularity of use).

⁹⁷² *Civil Liability Act 2003* (Qld) s 9, 23; *Astley v Austrust Ltd* (1999) 197 CLR 1, 16.

⁹⁷³ *Civil Liability Act 2003* (Qld) s 23.

⁹⁷⁴ *Civil Liability Act 2003* (Qld) s 23(2)(a); *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330, 333, 366 (In this case, the plaintiff was a 14-year-old, the standard of care required was that of a 14-year child).

⁹⁷⁵ *Civil Liability Act 2003* (Qld) s 23(2)(b).

⁹⁷⁶ *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330, 366, 401.

⁹⁷⁷ *Podrebersek V Australian Iron & Steel Pty Ltd* (1985) 59 ALR 529, 532.

⁹⁷⁸ *Astley v Austrust Ltd* (1999) 197 CLR 1, 14.

⁹⁷⁹ *Astley v Austrust Ltd* (1999) 197 CLR 1, 37 (the action of the plaintiff is that action which 'contributes to the damage not the accident').

⁹⁸⁰ *Law Reform Act 1995* (Qld) s 10; See, also, Goudkamp, 'Apportionment of damages for contributory negligence', above n 971, 624, 637-638, 640 (There are differences between discretionary and fixed apportionment, and the fact that discretionary apportionment allows for a 'nuanced response to the individual circumstances of each case', however in

individual does not heed a warning which they have received, and which then led to the harm occurring, they may bear some of the responsibility of the harm. Any reduction in compensation will take into account the relative blameworthiness, or the 'comparative culpability' of the parties.⁹⁸¹ It will also consider the 'relative importance' of their acts, or in other words the 'respective degree by which each has diverged from the standard of care of the reasonable man'.⁹⁸² Where a finding of contributory negligence is made out, culpability on the part of the plaintiff will reduce the amount of damages by an amount considered 'just and equitable'.⁹⁸³

The consideration of an individual's role in exercising a reasonable standard of care so as not to contribute to their loss, aligns with theoretical principles raised in Chapters Three and Six. In those Chapters, Rawls' social contract theory identified that the individual, with a view to ongoing social co-operation, has a civic duty to consider the rights of others when pursuing their own self-interests.⁹⁸⁴ In reconciling the rights and obligations of others, negligence sets the standards of conduct between the parties. The standard of conduct, is underpinned by the principle that individuals must take care for their own safety. A failure to do so affects their right to claim full compensation. Consequently, the right to claim, is dependent on a party taking reasonable care, or at least elementary precautions for their own safety.⁹⁸⁵ In doing so they need to consider the 'burden' they may be placing on others.⁹⁸⁶

Contributory negligence and warning cases

Of those warning cases examined, a number have raised contributory negligence at first instance. However, in many of these cases the defence was

discretionary systems there is a lack of scientific or mathematical computation which would lead to predictability across cases).

⁹⁸¹ *Podresbersek v Australian Iron & Steel Pty Ltd* (1985) 59 ALJR 492, 493-494 (The comparison requires 'with a consideration of relative importance of the acts of a party in causing the damage' and the 'degree of departure from the standard of care of a reasonable man'); *Pennington v Norris* (1956) 96 CLR 10, 10.

⁹⁸² *Podresbersek v Australian Iron & Steel Pty Ltd* (1985) 59 ALJR 492, 493-494; *Pennington v Norris* (1956) 96 CLR 10, 10.

⁹⁸³ *Astley v Austrust Ltd* (1999) 197 CLR 1, 1; *Law Reform Act 1995* (Qld) s 10(1)(b).

⁹⁸⁴ Rawls, *Political liberalism*, above n 453, 60-61.

⁹⁸⁵ *Mulligan v Coffs Harbour City Council* (2005) 223 CLR 486, 511; *Roads and Traffic Authority of New South Wales v Dederer* (2007) 234 CLR 330, 398 (Gummow).

⁹⁸⁶ *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 483.

not pursued to the court of final judgment.⁹⁸⁷ With this in mind, and as there are a limited number of judgments available, it is difficult to draw conclusions as to the likelihood of a positive application of the defence in the natural hazard warning context.

Contributory negligence where a warning is present

Recourse to the defence of contributory negligence, is made in instances where there is either an omission to warn, or a warning is inadequate. As stated above, in the context of hazard warning the defence requires consideration of whether: a member of the public took the standard of care required. If they did not uphold a reasonable standard of care and by doing so contributed to their own loss, then some reduction in damages is possible. For example, in the context of hazard warning, if the plaintiff received, but did not heed a warning to evacuate, yet sustained personal injury because of their failure, a court may consider they have contributed to their personal injury. In failing to take the requisite standard of care the plaintiff may have some comparative culpability leading to a reduction in compensatory damages.

In making this assertion, it is recognised that comparative culpability and what is fair and reasonable will depend entirely on the circumstances of the case. It will also be based on comparative knowledge of the risk and clarity and timeliness of any warning. To demonstrate: at first instance, in *Kelly v State of Queensland*⁹⁸⁸ a man ran down sand dunes, stumbled, fell into the water below and sustained catastrophic injury. Warning signs had been erected. However, the plaintiff argued that the warning signs were inadequate. Countering this argument, the defendant pleaded that the plaintiff had failed to heed the warnings and exercise reasonable care in running down the dunes.⁹⁸⁹ The final determination of the court, based on comparative culpability, was a finding of 15% contributory negligence on the part of the plaintiff.

⁹⁸⁷ See, eg, *Vairy v Wyong Shire Council* [2005] 223 CLR 422; *Mulligan v Coffs Harbour City Council* (2005) 223 CLR 486; *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330.

⁹⁸⁸ [2013] QSC 106.

⁹⁸⁹ *Kelly v State of Queensland* [2013] QSC 106, [167].

In determining contributory negligence and assessing comparative culpability, the court took into account a number of factors. This included the knowledge of the parties. Here, as the plaintiff was a visitor to the area, they did not understand 'the true nature and extent of the risk of injury'.⁹⁹⁰ By comparison the risk, was 'well known by the defendant'.⁹⁹¹ Without the plaintiff having the relevant knowledge, and without an intention to actually dive into the water, the court suggested it was 'difficult to criticise the plaintiffs conduct'.⁹⁹² However on further examination, the court did find that the plaintiff failed 'to study warning signs closely', which was 'incumbent upon him'.⁹⁹³ 'Had he read the signs and obeyed the message, the accident would have been averted', despite the significance of the danger not being conveyed in the signs.⁹⁹⁴ On appeal, Fraser JA confirmed the finding at first instance. The judge stated that by running down the dune, 'the visitor had departed from the standard of care of a reasonable person in failing to appreciate and heed the signs, warning that running down the dune was dangerous'.⁹⁹⁵ The limited reduction in damages, suggested the balance of responsibility still lay with the authority to provide clear and unambiguous signage. This case supports the finding that in an emergency, although not removing liability, warnings need to be clear and unambiguous to achieve a total reduction in liability.

Further case law supports the need for the claimant to heed a warning sign in order to avoid a reduction of the claim through a finding of contributory negligence. For example, in *Roads and Traffic Authority of New South Wales v Dederer*,⁹⁹⁶ the plaintiff dived from a bridge sustaining injury. Although breach was not established, the lower courts examined the issue of causation. The plaintiff had observed a warning, yet deliberately disregarded it and put himself at an obvious risk with regards to a dangerous recreational activity.⁹⁹⁷ He had knowledge of the consequences of his action, and knowledge of the area. At first instance and on appeal, contributory negligence was found to be

⁹⁹⁰ *Kelly v State of Queensland* [2013] QSC 106, [168]-[171].

⁹⁹¹ *Kelly v State of Queensland* [2013] QSC 106, [168]-[171].

⁹⁹² *Kelly v State of Queensland* [2013] QSC 106, [170].

⁹⁹³ *Kelly v State of Queensland* [2013] QSC 106, 171.

⁹⁹⁴ *Kelly v State of Queensland* [2013] QSC 106, [172]-[174].

⁹⁹⁵ *State of Queensland v Kelly* [2015] 1 Qd R 577, [53].

⁹⁹⁶ (2007) 234 CLR 330.

⁹⁹⁷ *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330,339, 399.

applicable.⁹⁹⁸ Had the claim in negligence been made out, a finding of contributory negligence would have led to a 50 percent reduction of damages.⁹⁹⁹ While only a sample, these cases indicate that where a warning is present, the standard of care expected is that a warning should be read, and obeyed. A failure to do so, which results in loss or harm, will inevitably result in a finding of contributory negligence.

This case law also suggests, that a person who has greater knowledge of the risk, yet proceeds with their course of action, may find a higher reduction in damages results. Therefore, for example, in an emergency, if a specific warning has been given to avoid flood waters, yet an individual, who would reasonably have been expected to see the warning, drives through flood waters their claim may be considerably reduced or completely denied. A reduction in compensation would be more certain if they were familiar with the hazard, and would have appreciated the risks, yet still proceeded. As in the determination of the breach of a duty of care, one of the most important factors in determining contributory negligence is the knowledge of the plaintiff.

Contributory negligence in the absence of warning

In the absence of warning, similar linkages between contributory negligence and knowledge may be found. Where a warning is absent, a plaintiff demonstrating reasonable care is expected to make some independent assessment of the risk. This is particularly the case if the risk is obvious. In *Vairy v Wyong Shire Council*¹⁰⁰⁰ for example, a person was injured diving into water. There was no warning sign present. A departure from the reasonable standard of care was said to exhibited by 'the failure (of the plaintiff) to make an independent assessment of a risk of diving'.¹⁰⁰¹ Instead the plaintiff made an assumption of safety based on the action of others'.¹⁰⁰² In the Court of Appeal, it was found that the plaintiff knew of a previous accident, and was 'well-armed with knowledge of the grave consequences that could befall those

⁹⁹⁸ *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330, 331.

⁹⁹⁹ *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330, 331.

¹⁰⁰⁰ [2005] 223 CLR 422.

¹⁰⁰¹ *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 478; *Mulligan v Coffs Harbour City Council* [2004] NSWCA 247, [250], [254].

¹⁰⁰² *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 478; *Mulligan v Coffs Harbour City Council* [2004] NSWCA 247, [250], [254].

who entered waters of unknown depth without first investigating the condition of the water'.¹⁰⁰³ The reduction of damages deemed just and reasonable in that case, was 55 percent, as it was the diving into waters of unknown depths that was the 'operating cause of the harm'.¹⁰⁰⁴

The case of *Mulligan v Coffs Harbour* ('*Mulligan*')¹⁰⁰⁵ features a similar finding. Had the action in negligence been successful, the Court of Appeal would have reduced the defendant's damages by 15 percent.¹⁰⁰⁶ In *Mulligan*, the plaintiff dived into water, sustaining injury.¹⁰⁰⁷ One of the distinctions between this case and the case of *Wyong Shire Council v Vairy*¹⁰⁰⁸ was the degree of knowledge the plaintiff possessed. The plaintiff had general knowledge of 'variable depth' of the water.¹⁰⁰⁹ Although the Court found 'diving into water of variable depth is risky', there was no specific knowledge of previous incidents.¹⁰¹⁰ There were also indications that the plaintiff had tried to ascertain the depth of the water, and, therefore, made an independent assessment of the circumstances.¹⁰¹¹ Having taken some degree of care, the comparative culpability of the plaintiff was less.

By contrast, where there is knowledge of the general type of risk and no attempt to assess the risk, the plaintiff's culpability will be greater. This proposition is reinforced in *Swain v Waverley Municipal Council* ('*Swain*').¹⁰¹² In *Swain*, a reduction in damages of 25% was suggested for diving into waves.¹⁰¹³ Although not directly stated, there were indications that the decision to dive in the common knowledge that the ocean bed is dynamic and sandbanks may form from time to time, was such that the claim was reduced.¹⁰¹⁴ In contrast to *Mulligan*, common knowledge of any risk with no

¹⁰⁰³ *Wyong Shire Council v Vairy* [2004] NSWCA 247, [252].

¹⁰⁰⁴ *Wyong Shire Council v Vairy* [2004] NSWCA 247, [252].

¹⁰⁰⁵ *Mulligan v Coffs Harbour City Council* [2004] NSWCA 247; *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486.

¹⁰⁰⁶ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 506.

¹⁰⁰⁷ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 486.

¹⁰⁰⁸ [2004] NSWCA 247.

¹⁰⁰⁹ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 491, 493.

¹⁰¹⁰ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 491, 508.

¹⁰¹¹ *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 491, 493.

¹⁰¹² (2005) 220 CLR 517.

¹⁰¹³ *Swain v Waverley Municipal Council* (2005) 220 CLR 517, 517.

¹⁰¹⁴ *Swain v Waverley Municipal Council* (2005) 220 CLR 517, 524.

attempt to ascertain the degree of risk before accepting it, may result in a greater reduction of damages. A finding will still depend on the comparative culpability between the parties.

Applying the case law to the hazard context

Chapter Six identified some of the acts or omissions which might lead to claims of negligence against statutory authorities in the context of warning. These included the failure to issue a warning, as well as failure to exercise reasonable care in the act of warning. In either instance, proof of either of these factors, may give rise to some liability on the part of the authority whose duty it is to issue a warning.

Contributory negligence in the presence of warning

As identified in Chapter Five, statutory authorities have been allocated ownership of some elements of risk. For example, they may have been identified in emergency management plans as a 'combat' agency responsible for issuing hazard warnings. In light of the case law, these agencies need to convey information as to the degree of risk in a clear and unambiguous way. Providing a clear and unambiguous warning, is the first step in encouraging the public to undertake their share of responsibility. This includes taking heed of potential danger, and taking appropriate care of themselves and their property. If a clear warning is issued and an individual sustains harm due to their failure to heed the warning, that individual risks a reduction in damages if they pursue an action against an authority. This is particularly the situation where there is a blatant disregard for the warning.

A finding in contributory negligence will depend on what is reasonable in the circumstances. The case law which addresses the defence does not however, identify a principle, as to the extent to which the public need to seek out hazard warnings. Neither does it examine whether it is appropriate to act on a single warning, or whether individuals should take it upon themselves to confirm the accuracy of warnings through an additional source before taking action.¹⁰¹⁵ In

¹⁰¹⁵ See, eg, Quarantelli, 'People's reactions to emergency warnings', above n 345, 177-178 (On receipt of information, social confirmation is a normal process, where individuals speak

this instance, much may depend on the source of the warning, for example warning from an official source may be taken more seriously than one issued by a private person over social media. Reflecting on the case law, where there have been instances of warnings via radio from an official source, and a general knowledge that there is a risk of fire danger, the defence of contributory negligence has never been raised. However, in light of the need for shared responsibility, there needs to be greater consideration of the use of the defence of contributory negligence. Rather than placing the burden on the emergency service sector to reach all members of the community, this might motivate the audience to become proactive in seeking out warning information.

A reasonable standard of care for the plaintiff

In light of the differences in the nature of the risks and the method of warning dissemination, the reasonable standard of care for the plaintiff may vary, depending upon the matrix of facts which are operating. It is perhaps not unreasonable to think that the receipt of a single unconfirmed warning from an authoritative source, should, in the normal course of events, alert a reasonable individual to consider their own safety. In some circumstances however, natural hazards are dynamic and every changing events. Modalities for communication of warning, which can alert an individual may be unavailable at the time of impact.¹⁰¹⁶ In 2016, in South Australia for example, during to an intense weather event, the entire State was without electricity for approximately 3-11 hours.¹⁰¹⁷ In that time mains electricity would not have been available for television and radio. In light of the nature of hazards and the variable availability of communication modalities, is it reasonable to expect that an individual would opt in to an alert service for to a mobile device? Is it reasonable to expect they have a battery powered radio on hand? These

to others and seek additional information, as 'people react in the context of interaction with others' to warnings).

¹⁰¹⁶ Koehler, Kress and Miller, above n 244; 111-113; Tasmania, '2013 Tasmanian Bushfire Inquiry Report', above n 283, 143, 159 (For example, in the Tasmanian Bushfires, communications towers were disabled which led to the inability to communicate effectively in some regions); State Government Victoria, *Review of the 2010–11 Flood Warnings and Response*, above n 61, 19.

¹⁰¹⁷ 'SA weather" Power 'gradually' returning after blackout plunged state into darkness', *ABCNews* (online), 29 September 2016 <<http://www.abc.net.au/news/2016-09-28/sa-weather-south-australia-without-power-as-storm-hits/7885930>>.

questions remain untested. For a person living in a hazard prone area, who is familiar with the risks however, the case law indicates that the expected standard of care of the plaintiff may be higher.

Contributory negligence in the absence of warning

Where no warning is issued, yet there is a general understanding that risks such as fire and flood are present in the landscape, the individual may still need to take reasonable care for their own safety. The case law suggests a reasonable individual should make some type of self-assessment of the risk of harm. They may need to decide, based on the evidence before them, whether the potential effect of the risk requires them to take protective action. For example, in the context of a flood hazard an individual may need to consider the intensity and duration of the rain, and whether it seems likely to cause inundation? If the individual has prior knowledge of these effects, there may be an expectation that a reasonable person would compare the events to previous occurrences of flooding. In the context of a fire hazard, an assessment may take into account observable environmental factors, such as temperature, wind direction or the visible presence of smoke.

By failing to consider any observable environmental cues or to take action, even by attempting to seek further information, a person may contribute to their harm and face a reduction in damages. If an independent assessment is made and the risk is deliberately disregarded, based on the case law which was previously examined, the individual may have a greater comparative personal culpability. By contrast, for a visitor, or someone unfamiliar to a locality, the environmental cues which should alert a local, may be more difficult to read, or understand. A visitor to an area would have comparatively less knowledge, and the assessment that their behavior was an operating cause of the harm, would be less likely.

Voluntary assumption of risks of natural hazards

The second defence examined, is the voluntary assumption of risk by the plaintiff. At common law, a voluntary assumption of risk was the 'consent to a tort' by the plaintiff, due to their knowledge and appreciation of the nature of

the risk they were taking.¹⁰¹⁸ The elements to be proven are that the defendant was fully aware of the risk, fully appreciated its nature and extent, and freely and willingly accepted the risk.¹⁰¹⁹ The common law defence, has now been slightly modified by statute in Australia.¹⁰²⁰ The onus or burden of proof to demonstrate awareness of the risk has been modified by the insertion of statutory provisions on obvious risks.

The rationale for this defence is that, in light of consent and knowledge of risk, which is appreciated and fully consented to by the plaintiff,¹⁰²¹ there was no reason for the defendant to bear the burden of the plaintiff's loss. Instead, having knowledge of the risk, the plaintiff is expected to exercise care, or take 'elementary precautions'¹⁰²² to avoid injury or harm to themselves.¹⁰²³ It is unlikely that this defence will play a major role in cases of negligence against statutory authorities in the context of warning. This conclusion is part due to the difficulty in proving the final element of the defence: the voluntary acceptance of a risk.¹⁰²⁴ The ability to prove this final element can arise from the lack of belief in the plaintiff. For example, even though the plaintiff may have been aware of a danger, they did not have a belief that the danger would eventuate. In such cases the plaintiff will not be considered to have accepted the danger or risk.¹⁰²⁵ For example, although a person who chooses to stay and defend a property in the path of a fire emergency may be aware of a risk

¹⁰¹⁸ *Rootes v Shelton* (1967) 116 CLR 383, 395; See, also, *Balkin v Davis*, above n 888, 364.

¹⁰¹⁹ *Carey v Lake Macquarie City Council* [2007] NSWCA 4, [74] citing *Woods v Multi-Sport Holdings Pty Ltd* (2002) 186 ALR 145, [125]; *Randwick City Council v Muzik* [2006] 66, [48].

¹⁰²⁰ *Civil Liability Act 2003* (Qld) s 13, 14(1); *Woodcroft-Brown v Timbercorp Securities Ltd* [2011] VSC 427, [129]; *Carey v Lake Macquarie City Council* [2007] NSWCA 4, [74].

¹⁰²¹ *Ibid.*

¹⁰²² *Mulligans v Coffs Harbour City Council* (2005) 223 CLR 486, 511 (Callinan & Heydon).

¹⁰²³ *Kelly v State of Queensland* [2013] QSC 106 [62]-[63] citing *Brodie v Singleton Shire Council*; *Ghantous v Hawkesbury City Council* (2001) 206 CLR 512, 581 (Gaudron, McHugh and Gummow JJ); *Schultz v McCormack* [2015] NSWCA 330, [23]-[24], [33] (Obvious risks require people to keep a proper lookout) See also, Carver, 'Obviously Obvious', above n 839, 67 (Carver suggests that the legislative construction may focus more on the plaintiff's responsibility rather than on 'balance of the plaintiffs and defendants rights' which was evident in common law).

¹⁰²⁴ *Carey v Lake Macquarie City Council* [2007] NSWCA 4; *Canterbury Municipal Council v Taylor* [2002] NSWCA 24, [141] (This requires that the plaintiff is not only aware of or knew about the risk but that they agree that if 'injury befalls him, the responsibility should be on him and not on any other negligent party').

¹⁰²⁵ *Canterbury Municipal Council v Taylor* [2002] NSWCA 24, [147] citing cf *O'Shea v The Permanent Trustee Company of New South Wales Limited* (1971) Qld R 1.

of personal injury, this does not mean that they accept that any loss should fall on them. On this basis, it is asserted that the voluntary assumption of risk is unlikely to be utilised as a defence in its own right. Attention therefore turns to the effect that 'obvious risks' have on determining the breach of a standard of care, or the effect they have on the necessity to issue a hazard warning in the first instance.

Obvious risks and their effect on natural hazard warnings

As identified, civil liability statutes now incorporate provisions regarding obvious risks. The finding that a risk is obvious can be applied to an action in negligence in two ways. First, identifying a risk as being obvious will negate a duty to warn, this is obviously highly relevant for statutory authorities within the emergency management sector.¹⁰²⁶ An exception to the rule that an obvious risk negates the duty to warn, is that where a duty to warn is required by written law, the duty to warn will still exist.¹⁰²⁷ As identified in Chapter Five however, aside from Victoria, where the duty to warn is embedded within statute, no other jurisdiction contained the explicit requirement to warn within emergency management legislation. Even if jurisdictions outside of Queensland have the same provision in statute, the exception is unlikely to apply. Therefore, recourse to considerations of natural hazards as obvious risks, which negate a duty to warn, may still be available to statutory authorities within the sector.

The second application of obvious risks is relevant to the determination of whether there has been a breach of the duty of care. The question is whether, in light of the obvious risk, the defendant exercised a reasonable standard of care in the circumstances.¹⁰²⁸ In the second application of the defence, even if a risk is obvious, the court may still reason that there was a breach of the reasonable standard of care in any particular case.¹⁰²⁹ The biggest hurdle in each of these applications of obvious risks, is the establishment of the risk as being obvious.

¹⁰²⁶ *Civil Liability Act 2003* (Qld) s 13, 15.

¹⁰²⁷ *Civil Liability Act 2003* (Qld) s 13, 15.

¹⁰²⁸ *Civil Liability Act 2003* (Qld) s 13, 15 (Exceptions do apply, noting the incorporation of obvious risks under part 1: Breach of duty); Carver, 'Obviously Obvious', above n 839, 76.

¹⁰²⁹ Cf *Schultz v McCormack* [2015] NSWCA 330, [84].

Establishing a risk is obvious

The application of the obvious risk defence requires a number of steps to be successfully applied. The first step is to identify the risk of harm. For example, it is necessary to identify the type of harm that might result if a particular risk occurs.¹⁰³⁰ In the context of storms, this might be the chance of property damage when there is failure to warn of likely flooding, which would otherwise alert an individual to sandbag their property. The second step is a two-limbed test as to whether the risk of harm is obvious.¹⁰³¹ The statutory provision sets out the two limbs¹⁰³² as firstly, whether the ‘factual scenario facing the plaintiff’ was obvious.¹⁰³³ Secondly, would the risk of harm be ‘apparent to and recognisable by a reasonable [person], in the position of the [plaintiff]’.¹⁰³⁴ The common law definitions of what is an obvious risk, remain relevant to the reasoning under the statutory provisions. The most comprehensive common law definition which aligns with the statutory provisions, is that a risk of harm must be such that, ‘both the condition and the risk are apparent to and will be recognised by a reasonable man, in the position of the [plaintiff], exercising ordinary perception, intelligence, and judgment...’.¹⁰³⁵ As is evident from the following case analysis, determination of a risk is obvious tends to turn on the second limb of the test.

¹⁰³⁰ *Schultz v McCormack* [2015] NSWCA 330, [85]-[86]; *Streller v Albury City Council* [2013] NSWCA 348, [29] (Risk has been defined under similar New South Wales provisions as, referring ‘to the chance or possibility of an occurrence which results in harm’ with the definition of harm being provided in the Act); *Collins v Clarence Valley Council* [2015] NSWCA 263, [143], [145] (It is the same risk of harm that is ‘identified for the duty of care purposes’. It does not have to be the precise risk of harm that materialised that needs to be obvious, rather than kind of thing that could have occurred).

¹⁰³¹ *Swain v Waverley Municipal Council* (2005) 220 CLR 517, 563 (The consideration of the factual circumstances of each case means that previous case law may have little precedential value).

¹⁰³² *Civil Liability Act 2003* (Qld) s 13(1); Carver, ‘Obviously Obvious’, above n 839, (28-29); *Streller v Albury City Council* [2013] NSWCA 348, [31] (This allows inclusion of the position of the person, allows the court to take into account the circumstances of each particular case, potentially incorporating a wide variety of considerations to be taken into account ‘when establishing obviousness’ – such as ‘age, expertise and personal characteristics’).

¹⁰³³ *Collins v Clarence Valley Council* [2015] NSWCA 263, [153].

¹⁰³⁴ *Collins v Clarence Valley Council* [2015] NSWCA 263, [138].

¹⁰³⁵ *Wyong Shire Council v Vairy* [2004] NSWCA 247 at [161],[162]; *Streller v Albury City Council* [2013] NSWCA 348, [38]; See, also, *Consolidated Broken Hill Ltd v Edwards* [2005] NSWCA 380, [53] (Offers a looser definition which suggests obvious is ‘a descriptive phrase that signifies the degree to which risk of harm may be apparent.’).

Factors influencing categorisation of a risk as obvious

When assessing the two limbs of obvious risk, a number of sub-criteria are taken into account. The court considers temporal factors, such as whether the risk of harm was obvious when the negligent act and harm occurred.¹⁰³⁶ Whether the risk of harm is 'common knowledge', 'of low probability', 'prominent, conspicuous or physically observable', also play a role in judicial consideration of the risk of harm.¹⁰³⁷ On classification of the risk as obvious, a rebuttable presumption arises.¹⁰³⁸ There is also then an expectation that a reasonable person will 'exercise sufficient care by looking where they are going and perceiving and avoiding obvious hazards'.¹⁰³⁹ The value of the defence is reflected by the 'explosion' of references to obvious risks within the warning case law.¹⁰⁴⁰ Given the explosion of references, and in order to understand the abstract sub-criteria, an examination of the case law below provides a greater understanding of how definitions of obvious risks have been applied by the courts.

Obvious risks and warnings of natural hazards

On a plain reading of the statutory provisions for obvious risk, the presence of fire, flood, cyclone, earthquake or heatwave, appear capable of classification as a legally recognisable obvious risk. Even a low probability of a natural hazard event, or one that may not be immediately physically observable, or conspicuous (such as an earthquake), seem to constitute an obvious risk at law. However, when the two limbs of obvious risk factors are applied, a

¹⁰³⁶ *Streller v Albury City Council* [2013] NSWCA 348, [31] (This allows inclusion of the position of the person, it also allows the court to take into account the circumstances of each particular case, potentially incorporating a wide variety of considerations to be taken into account 'when establishing obviousness' – such as 'age, expertise and personal characteristics'); Carver, 'Obviously Obvious', above n 839, 68 (Noting additional characteristics).

¹⁰³⁷ *Civil Liability Act 2003* (Qld) s 13(2)(3)(4); See also, Commonwealth, 'Review of the law of Negligence', above n 733, 51-52.

¹⁰³⁸ Lunney, above n 950, 87; Carver, 'Obviously Obvious', above n 839, 76 ('This reduces the defendants need to demonstrate that the 'plaintiffs were fully aware of the particular risk and its extent', depending on the jurisdiction what is required is for the plaintiff is then 'only a general knowledge of the risk').

¹⁰³⁹ *Kelly v State of Queensland* [2013] QSC 106, [62]-[63] citing *Brodie v Singleton Shire Council*; *Ghantous v Hawkesbury City Council* (2001) 206 CLR 512, 581 (Gaudron, McHugh and Gummow JJ). *Schultz v McCormack* [2015] NSWCA 330, [23]-[24], [33] (Obvious risks require people to keep a proper lookout).

¹⁰⁴⁰ Carver, 'Obviously Obvious', above n 839, 66.

distinctly different outcome, results. In undertaking this analysis, it is conceded that the ability to predict the result in a court is difficult. Any determination of a risk as obvious will turn on the factual circumstances, which may differ significantly in each case.¹⁰⁴¹ The following case analysis examines the approach courts have taken to determine the circumstances in which naturally occurring hazards, are classified as obvious risks.¹⁰⁴² This knowledge is important to statutory authorities, as the finding of the courts departs from a laypersons assumption that a natural hazard risk is obvious. As the case law demonstrates, it cannot be assumed the court will, without more, determine impact from a natural hazard event is an obvious risk. This finding suggests that there may be limited resource to 'obvious risks' to excuse an authority from a duty to warn, or reduce their standard of care in disseminating warnings.

Determinations of obvious risks

This examination of the warning case law, which focuses on naturally occurring hazards, follows three cases. Each case has regard to a natural hazard, yet each demonstrates differential reasoning of the court. Examination of the case law does however bring into focus the increasing emphasis of the court, on the perception of the 'reasonable person in the position of the plaintiff' as a basis to refute the assertion that the risk was obvious. The case analysis does not include fire related cases as the defence has yet to be employed in this context.

*Secretary to the Department of Natural Resources & Energy v Harper*¹⁰⁴³

The first case, *Secretary to the Department of Natural Resources & Energy v Harper* ('*Harper*'),¹⁰⁴⁴ was decided at common law, before the introduction of statutory provisions. The case is used as a starting point, to show the progressively narrower consideration of obvious risks by the court. In this case, and in reflection on the two different applications of obvious risks identified

¹⁰⁴¹ *Angel v Hawkesbury City Council* [2008] NSWCA 130, [84].

¹⁰⁴² This contrasts to case law which address negligence with regard to care of roads, parks, footpaths, and 'latent natural defects', See, eg, Carver, 'Obviously Obvious, above n 839, 80.

¹⁰⁴³ *Secretary to the Department of Natural Resources & Energy v Harper* (2000) 1 VR 133.

¹⁰⁴⁴ *Secretary to the Department of Natural Resources & Energy v Harper* (2000) 1 VR 133.

above, the court sought to determine whether the relevant risk was obvious in relation to the breach of the duty of care. In *Harper*, personal injury was sustained when an individual was hit by a branch while walking through the forest on a windy day. The plaintiff asserted that as part of the duty of care to manage reserves, warnings should have been given of the possibility of this occurrence. However, the risk of death or injury from falling branches, even if remote, was considered obvious, particularly when it was windy. The risk was considered part and parcel of camping, walking or living in the Australian outdoors.

In *Harper*, the Court held that there was no breach of the duty. This was in part because the Bureau of Meteorology had issued a gale warning and the defendant had no knowledge of the dangerous nature of the tree. Further, the 'burden' which would be placed on the organisation to give individual oral warnings to campers, was out of proportion to the remote risk and could not have been delivered in a reasonable time to be practicable.¹⁰⁴⁵ Consequently, and in light of this case, it might be argued that a fire, flood or cyclone, particularly on a very hot, windy or wet day as the case may be, could conceivably be considered an obvious risk of the Australian landscape. However, if the statutory authority has the means of knowledge of the possibility of such an occurrence; the risk of harm is not remote; and there is time to issue a warning, there may still be a finding of the breach of a duty of care.

*Schultz v McCormack*¹⁰⁴⁶

The second case, *Schultz v McCormack*,¹⁰⁴⁷ was decided in light of the statutory provisions. It relates to personal injury caused by slipping on tiles, where **no warning was issued**. In this case, the emphasis on the second limb of the test, where what the person in the position of the plaintiff knew in regard to the risk, becomes relevant. Here the plaintiff was standing on steps about to walk away from a house. Unknown to them, the tiles were wet from the rain.

¹⁰⁴⁵ *Secretary to the Department of Natural Resources & Energy v Harper* (2000) 1 VR 133, [47].

¹⁰⁴⁶ [2015] NSWCA 330.

¹⁰⁴⁷ [2015] NSWCA 330.

The house owner did not warn of the risk of slipping. In contrast to *Harper*,¹⁰⁴⁸ where there appeared to be a broad acceptance of the general nature of the risk, here the reasoning becomes narrower. For example, although to the ordinary person, steps would be slippery when wet, the case turned on evidence of the particular perception of the plaintiff.

The plaintiff's perception at the time that the harm was suffered was that where they were standing was dry. As such, the plaintiff did not need to consider the extent of the protection by an awning, and their view was obscured as the light on the porch was off.¹⁰⁴⁹ Moreover, they would not have any perception before walking out on the porch, of the risk of harm and that they needed to take care. Consequently, the decision in the Court of Appeal reversed the finding at first instance that the risk was obvious and no warning was required.¹⁰⁵⁰ When balancing all of the factors of the case, the defendant was found negligent. This finding was related to the fact that 'they ought to have known of the high risk of slipperiness the tiles posed when wet'¹⁰⁵¹ and therefore should have taken some precautions, including warning the plaintiff.

*Queensland v Kelly*¹⁰⁵²

In *Queensland v Kelly* ('*Kelly*'),¹⁰⁵³ personal injury was sustained in running down a sand dune despite the **presence of a warning sign**. The defendant sought a finding that the risk was obvious and therefore there was no duty to warn, as provided for under the *Civil Liability Act 2003* (Qld). The court however determined that the risk that materialised was not obvious and there was a duty to warn.¹⁰⁵⁴ In making this the determination, the Court investigated whether the defined risk of harm would be obvious in the absence of a warning sign. The judge did not accept that 'the risk of serious injury

¹⁰⁴⁸ *Secretary to the Department of Natural Resources & Energy v Harper* (2000) 1 VR 133.

¹⁰⁴⁹ See, also, *Angel v Hawkesbury City Council* [2008] NSWCA 130, [64], [81] (Although not in the context of warning, this case noted the person had also not walked in that location before, it was not common knowledge and was unknown to the appellant. The judgement recognised, that a risk which is not conspicuous can still be obvious, however in taking reasonable care a person is not 'required a person walk along a footpath with their eyes continuously glued to the area immediately in front of them').

¹⁰⁵⁰ *Schultz c McCormack* [2015] NSWCA 330, [14].

¹⁰⁵¹ *Schultz c McCormack* [2015] NSWCA 330, [3].

¹⁰⁵² *State of Queensland v Kelly* [2015] 1 Qd R 577.

¹⁰⁵³ *State of Queensland v Kelly* [2015] 1 Qd R 577.

¹⁰⁵⁴ *State of Queensland v Kelly* [2015] 1 Qd R 577, (2)-(3).

resulting from a fall, when running down the sand dune into the lake, would have been obvious to a reasonable person in the respondent's position.'¹⁰⁵⁵ The court then considered the role of warning signs and a video. The particular focus was on whether the signs 'effectively communicated the risk which materialised, so as to make that risk obvious to a 'reasonable person in the respondent's position'.¹⁰⁵⁶ The signs conveyed that serious injury or death might result from "running and diving", rather than from "running or diving" down sand dunes. Therefore, the warning signs did not effectively communicate the risk of harm that materialised, and altogether the risk was not obvious.¹⁰⁵⁷ Ultimately, the Court found there was a breach of the duty of care for failing to provide adequate warning of the dangers inherent in the lake.¹⁰⁵⁸ Again, this finding represents a narrow view of what is obvious to a reasonable person in the position of the plaintiff.

Conclusion as to obvious risk

These three cases highlight important considerations for the emergency management sector. The first is that where on the face of it, a flood, fire or cyclone, which may seem like an obvious risk, may not equate to a 'legally' obvious risk. This finding would negate any requirement at law to warn and might be a complete answer to any allegation made. Applying *Schultz v McCormack*¹⁰⁵⁹ for example, a person may be generally aware that they live in a flood plain, a fire or cyclone prone environment: however, in the absence of any warning, they may lack knowledge of the possibility of harm to them, in the event that one of the natural hazards eventuated. For example, a reasonable person might know it is raining outside, but may not perceive that catastrophic flooding is likely, having not perceived inundation as a result. If the person is familiar with their surrounds,¹⁰⁶⁰ their knowledge might be sufficient to make the perception of risk obvious to them. This would infer they

¹⁰⁵⁵ *State of Queensland v Kelly* [2015] 1 Qd R 577, [39]-[40].

¹⁰⁵⁶ *State of Queensland v Kelly* [2015] 1 Qd R 577, [41].

¹⁰⁵⁷ *State of Queensland v Kelly* [2015] 1 Qd R 577, [42].

¹⁰⁵⁸ *State of Queensland v Kelly* [2015] 1 Qd R 577. [2].

¹⁰⁵⁹ [2015] NSWCA 330 [101].

¹⁰⁶⁰ *Schultz v McCormack* [2015] NSWCA 330 [101].

must take care of their own safety, by 'keeping a proper lookout' and seeking information.¹⁰⁶¹

If a person is a visitor to an area, or is not familiar with the area or the risk, even where there is a warning of the prospect of heavy rain, the danger of fire or occurrence of a cyclone in the area, if the warning does not describe the significant risk of harm, the risk may not be obvious. The examination of the case law reinforces that a finding of impact from a natural hazard may not constitute a legally obvious risk. The defence that a natural hazard was an obvious risk may therefore not be relied upon, to negate a duty to warn. At the same time, it will constitute one factor in determining a breach of a duty of care, although its influence in the determination of liability, will depend entirely on the factual circumstances of the case.

Immunities

Immunities, or protection from liability, have become a standard drafting practice in Australia and are common place across the world.¹⁰⁶² The inclusion of a statutory right to immunity is a regulatory response to managing institutional risk to statutory authorities. As identified in Chapter Four, institutional risk arises out of activities and functions undertaken by the statutory authority. These are activities or functions to which the public may seek to assign legal responsibility if they are not carried out effectively, or at all. A statutory immunity, excuses an action in negligence against statutory authorities, which might otherwise have been justiciable. As well as managing institutional risk, the inclusion of an immunity is further justified by the assertion that it aims to support, 'public interests over private law rights'.¹⁰⁶³ Therefore, inclusion of the immunity, allows emergency service agencies to provide public safety services. They afford the legal certainty that operations can be carried out 'untrammelled by any fears of action'.¹⁰⁶⁴ What is relevant to note however, is that while immunities excuse statutory authorities from liability, it is still

¹⁰⁶¹ See, eg, *Schultz v McCormack* [2015] NSWCA 330 [23]-[24], [33].

¹⁰⁶² See, eg, Lauta, *Disaster Law*, above n 157, 126-127; Field, above n 952, 147.

¹⁰⁶³ Field, above n 952, 147-8.

¹⁰⁶⁴ See, eg, Explanatory note Disaster Management Bill 2003 (Qld) 7; *Myer Stores Ltd v State Fire Commission* [2012] TASSC 54, 5-6 citing *Tally v Motueka Borough* [1939] NZLR 252.

important that the functions are carried out effectively. Therefore, and as principles of good practice indicate, there may need to be further accountability mechanisms put in place, to ensure the policy objectives are achieved.

Statutory immunities in Australia

Protections or immunities, as they are interchangeably labelled, are included in civil liability and emergency management legislation. They are also included in the variety of statutes that establish the emergency service agencies. Although variably worded, these provisions integrate the notion of 'good faith', which 'ordinarily describes one or more of the defendant's motives for engaging in conduct or the quality of their beliefs that led to the conduct'.¹⁰⁶⁵ As Field suggests, and as is evident in the reasoning of the court which follows, the immunity is concerned with, 'the ends to which the defendant's conduct is directed, rather than the 'means' by which those ends are achieved'.¹⁰⁶⁶ For example, a combat agency, is the agency identified as 'primarily responsible for controlling response to a particular emergency'.¹⁰⁶⁷ If the combat agency goes about warning the community (the ends), yet does not follow all protocols and policies (the means), they may still be held to have acted in good faith. In such cases the good faith immunity will be applied to excuse liability. This statement will be true, as long as the relevant agency was acting rationally, with the motive of assisting the community,

Rather than trying to cover the field, in this section the civil liability and emergency and disaster management legislation in Queensland are used to illustrate the principles of a good faith immunity. In Queensland, the *Civil Liability Act 2003* (Qld) provides protection for prescribed persons or entities that 'perform duties to enhance public safety'.¹⁰⁶⁸ The entities protected by this provision include statutory authorities involved in emergency management such as Queensland Fire and Emergency Services, the State Emergency

¹⁰⁶⁵ Field, above n 952, 149.

¹⁰⁶⁶ Field, above n 952, 149

¹⁰⁶⁷ *State Emergency and Rescue Management Act 1989* (NSW) s 3.

¹⁰⁶⁸ *Civil Liability Act 2003* (Qld) s 26, 27 ('Liability does not attach for an act or omission for aid and assistance to enhance public safety, where it is given in circumstances of emergency and is done, or omitted to be done in good faith and without reckless disregard for the safety of the person').

Service, and local government.¹⁰⁶⁹ It is however unlikely that these provisions will apply to exclude protection for acts and omissions in hazard warning. Instead, they appear to apply to the giving of assistance to a person in distress and focus on personal injury.¹⁰⁷⁰

Aside from the civil liability protections, the relevant emergency management statute, the *Disaster Management Act 2003* (Qld), incorporates a protection from civil liability. This provision extends to actions of the 'State, a Minister, a local government or an official'.¹⁰⁷¹ The emergency management protections, which will be the focus of the next section, employ similar language to the civil liability provisions. That is, the protection applies to **acts done, or 'omitted to be done' under the Act, 'in good faith and without reckless disregard'** for personal injury, property loss and damage.¹⁰⁷² The elements of this protection are similar to other Australian jurisdictions, which incorporate 'good faith' protections.¹⁰⁷³ Across these States, varying permutations of wording occurs however, the principles involved align.¹⁰⁷⁴ In some jurisdictions for example, the 'protection' shifts the burden of any claim from the individual to the State, while in others a broader immunity, which includes the State, is evident.¹⁰⁷⁵ The reasoning behind the quality of conduct described as 'good faith' will be broadly applicable to the various jurisdictions, as the provisions are 'construed by reference to general principles'.¹⁰⁷⁶ As indicated, the effect of the statutory protection is that it negates the ability to claim damage, despite the elements of a claim for negligence being satisfied.

¹⁰⁶⁹ *Civil Liability Regulation 2014* (Qld) Schedule 2 (In other Australian jurisdictions comparative provisions for the Protection of Good Samaritans are used).

¹⁰⁷⁰ *Civil Liability Act 2003* (Qld) s 25, 26, 27.

¹⁰⁷¹ *Disaster Management Act 2003* (Qld) s 144(1)(3) (An official, meaning, a member of a 'state, district or local group, a declared disaster officer, a person authorised under the act to exercise rescue power for example).

¹⁰⁷² *Disaster Management Act 2003* (Qld) s 144(1).

¹⁰⁷³ See, eg, *State Emergency and Rescue Management Act 1989* (NSW) s 62; *Emergency Management Act 2013* (NT) s 113; *Emergency Management Act 2004* (SA) s 32; *Emergency Management Act 2013* (VIC) s 75; *Emergency Management Act 2005* (WA) s 100 (Noting the differences in the *Emergencies Act 2004* (ACT) s 198 which refers to acts done 'honestly and without recklessness' as well as the *Emergency Management Act 2006* (TAS) s 55 (Which takes on an alternate approach).

¹⁰⁷⁴ Eburn, 'Are Fire Brigades liable for poor operational decisions?', above n 934, 11.

¹⁰⁷⁵ See, eg, *Disaster Management Act 2003* (Qld) s 144; *Emergency Management Act 2005* (WA) s 100(1).

¹⁰⁷⁶ Field, above n 952, 148.

Factors for establishing statutory protection

There are a number of elements which must be satisfied to trigger the statutory protection. First there needs to be, **an act done, or omitted to be done** and this act must constitute an act or omission **under the relevant Act**.¹⁰⁷⁷ The act or omission must be carried out in **good faith** and **without reckless disregard** for the possible occurrence of injury or loss. There must also be some consideration as to whether the person or entity the subject of the claim, is a class of persons protected.¹⁰⁷⁸ In Queensland, if the defendant is not a Minister, or the State, an examination of the facts determines whether the person is a 'recognised official'. A 'recognised official or the person committing the act must be a member of a 'state, district or local group, a declared disaster officer, or a person authorised under the act to exercise rescue power'.¹⁰⁷⁹ Although the good faith exception has been considered in the context of negligence, it has not been examined in the context of warning, and therefore a broader consideration of case law is required.

Relevant cases for analysis of the good faith protections, are the cases of *Electro Optic Systems v New South Wales* ('*Electro Optic*') and *Warragamba Winery Pty Ltd v State of New South Wales (No.9)* ('*Warragamba*').¹⁰⁸⁰ These cases operate in the context of natural hazards and emergencies. In *Electro Optic*, the breach of a duty of care focused on the alleged failure to contain a bushfire through adoption of a 'flawed strategy for containment'.¹⁰⁸¹ In *Warragamba Winery*,¹⁰⁸² there was consideration of whether the failure to contain and extinguish a fire which spread outside of a national park, destroying property, constituted a breach of a duty of care.¹⁰⁸³ Both cases came before the court in New South Wales in relation to immunities contained

¹⁰⁷⁷ See, eg, *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 241; *Hamcor Pty Ltd v State of Queensland* [2016] 1 Qd R 271, [46] (This judgement discussed, rather than good faith, a protection where action was bona fide and without negligence, however discussion of whether the action came under the Act was relevant).

¹⁰⁷⁸ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 241, 271.

¹⁰⁷⁹ *Disaster Management Act 2003* (Qld) s 144(1)(3).

¹⁰⁸⁰ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701.

¹⁰⁸¹ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 245, 328-330.

¹⁰⁸² *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701.

¹⁰⁸³ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [1].

within the *Rural Fires Act*.¹⁰⁸⁴ The case law may be influential in other Australian jurisdictions where similar factual circumstances are evident.

Judicial consideration of good faith

As the cases highlight, any finding of good faith will be ‘very much a product of its statutory and factual content’.¹⁰⁸⁵ A starting point for determining whether act or omissions were taken in good faith, is that they need to demonstrate honesty and lack of malice.¹⁰⁸⁶ An act or omission may be carried out, or not carried out in good faith even if a person is ‘honest, albeit careless’.¹⁰⁸⁷ At times, however, there will need to be an enquiry into the state of mind or state of knowledge of the relevant person. There may also be a consideration of the persons motive, or whether acts carried out under a statutory power are exercised skilfully or negligently.¹⁰⁸⁸ These latter considerations, may give rise to the expectation, ‘that an honest person of ordinary prudence’ would act with ‘caution and diligence’, or at least that a ‘proper system’ would be in place.¹⁰⁸⁹ Reference may be made to whether the statutory authority had procedures in place, and whether soft law instruments,¹⁰⁹⁰ such as the standard operating procedures, protocols and guidelines identified in Chapter Five, were followed.

¹⁰⁸⁴ *Rural Fires Act* (NSW) 1997 s 128.

¹⁰⁸⁵ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 396.

¹⁰⁸⁶ *Mid Density Developments Pty Ltd v Rockdale Municipal Council* (1993) 81 LGERA 104, 113.

¹⁰⁸⁷ *Ibid.*

¹⁰⁸⁸ *Mid Density Developments Pty Ltd v Rockdale Municipal Council* (1993) 81 LGERA 104, 111, 113-114; *Port Stephens Shire Council v Booth* (2005) 148 LGERA 351, 379-380 (In relation to a systematic failure to provide advice in the exercise of powers under a statute and lack of good faith); *Bankstown City Council v Alamo Holdings Pty Ltd* (2005) 223 CLR 660, [49]-[51]; *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 397-398 (For an assertion of lack of good faith in the exercise of responsibility in dealing with requests for information, particular in consideration of the importance of the information sought – certainly there needs to be more than negligence to oust a claim of good faith); *Ardouin v Board of Fire Commissioners (NSW)* (1960) 61 SR (NSW) 910 [114] (In discussing acting in a bona fide manner was without indirect or improper motive); Field, above n 952, 149 (A court will make a determination of the means by which objectives were undertaken rather than the outcomes).

¹⁰⁸⁹ *Mid Density Developments Pty Ltd v Rockdale Municipal Council* (1993) 81 LGERA 104, 113-114; Cf *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 241; 397-398 (Where this standard was not required, or was stated only to be required when caution and diligence were not present).

¹⁰⁹⁰ Commonwealth of Australia, ‘Grey-Letter Law’, above n 553, ix, xi, xiii.

Good faith in an emergency or hazard context

The following cases illustrate examples of judicial reasoning on the application of the good faith protection to acts or omissions. Those acts or omissions for which a statutory authority might otherwise be liable. As the reasoning demonstrates, there is some freedom or flexibility afforded to statutory authorities in exercising their statutory powers. This is because statutory authorities operate in the complex circumstances presented by dynamic and often unpredictable natural hazard environments.

*Electro Optic Systems Pty Ltd v New South Wales ('Electro-Optic')*¹⁰⁹¹

In *Electro-Optic*¹⁰⁹² the court had to determine whether good faith provisions under the *Rural Fire Act 1997* (NSW) applied. The determination was in response to an allegation that fire incident controllers failed 'to use reasonable care to avoid the spread of fire so as to avoid damage to persons and property'.¹⁰⁹³ Having established that the Act protected the defendants, and that the implementation of the fire containment strategy was an act done or omitted to be done under the Act,¹⁰⁹⁴ Higgins CJ, at first instance reviewed the actions of the parties. The judge concluded that the failure to 'observe established procedures' and formulate a strategy, 'did not equate to a lack of good faith', nor did it detract from actions which 'were clearly directed towards the containment of the fire'.¹⁰⁹⁵

On appeal, Jagot J confirmed that the action taken in response to the fire, was, 'not inexplicable' but a 'rational response to the best available information'.¹⁰⁹⁶ The employment of the strategy used was not 'reckless, lacking in diligence or conscientiousness or honest but inept'.¹⁰⁹⁷ The incident controllers were found

¹⁰⁹¹ [2014] 204 LGERA 238.

¹⁰⁹² *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238.

¹⁰⁹³ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 270.

¹⁰⁹⁴ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 270.

¹⁰⁹⁵ *Electro Optic Systems Pty Ltd v the State of New South Wales* [2012] ACTSC 184, [347], [359] (Particularly where 'the established procedures were of no utility in the circumstances').

¹⁰⁹⁶ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 380 (Jagot).

¹⁰⁹⁷ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 380-381 (Jagot).

to have acted 'diligently and conscientiously to fulfil their responsibilities'.¹⁰⁹⁸ There was also no evidence that the 'action or inaction was based on indifference to the safety of the people or property', which might otherwise demonstrate a lack of good faith.¹⁰⁹⁹ It was held that there was no 'ulterior motive' and 'protection of life' and the 'safety of fire fighters', was a high priority and a guiding consideration in the decision making.¹¹⁰⁰

Warragamba Winery Pty Ltd v State of New South Wales (No. 9) ¹¹⁰¹

In the context of good faith provisions under *Rural Fires Act 1997* (NSW), the *Warragamba Winery* case, involved claims of negligence and breach of statutory duty in failing to put out a bushfire. There were a number of acts and omissions to consider in the determination of good faith. Some related to passing on information and a failure to give notice. However, these acts or omissions were not considered 'malevolent' or acts that were 'not in accordance with procedures', so as to establish bad faith.¹¹⁰² Further acts and omissions arose in the context of fighting the fire. Generally stated, the acts or omissions purporting to constitute negligence were: failing to intervene earlier and undertake more rapid response;¹¹⁰³ failure to carry out risk management and operations according to protocols, plans and manuals (soft law instruments); the improper employment of strategies and tactics;¹¹⁰⁴ and the failure to more effectively fight the fire.¹¹⁰⁵ In light of these acts and omissions the court found that:¹¹⁰⁶

¹⁰⁹⁸ *Electro Optic Systems Pty Ltd v New South Wales* (2014) 180 ACTLR 1, 380-381 (Jagot).

¹⁰⁹⁹ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 397-398 (Jagot).

¹¹⁰⁰ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 397-398 (Jagot) (While the ordinary meaning of reckless may be behaviour which exhibits, 'a lack of caution or prudence', the primary meaning is 'heedless of, indifferent to, the consequences of one's actions').

¹¹⁰¹ [2012] NSWSC 701.

¹¹⁰² *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [750]-[751] (As to go no further than their purpose).

¹¹⁰³ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [998].

¹¹⁰⁴ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [983]-[985].

¹¹⁰⁵ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [1], [42],[765].

¹¹⁰⁶ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [1], [42],[765].

...those who made the decision and did the work or made the questioned omissions, did so honestly (honesty); none of them had anything to gain by not doing so (motive); all of them were seasoned and dedicated fire fighters; they only stood to lose public esteem had they not acted properly; each of them made a real attempt to do what it was they were attempting to do (ends), namely fight a number of fires, with limited resources and a need to make judgements about the best way to allocate priorities; in doing so, they complied with established procedures.

The effect of soft law instruments on determinations of good faith

In both of the cases examined, the failure to adhere to practices contained within soft law instruments was tested against the obligation to act in good faith. In *Electro Optic Systems Pty Ltd v New South Wales*¹¹⁰⁷ the plaintiffs claimed there was a failure to comply with protocols which demonstrated a lack of good faith. The defendants were required to follow, AIIMS protocols (Australian Inter-Service Incident Management System) and the Incident Control System Manual (ICS Manual) in order to identify and assess 'a number of alternative strategies, and rate the risks of each being successful'.¹¹⁰⁸ The analysis tool was not followed and 'written documents (were not completed) to the standard required'.¹¹⁰⁹ However, as Jagot J indicated, the failure to adopt the practices within these regulatory components, did not impact on the choice of strategy implemented.¹¹¹⁰ Nor did it support a finding that there was an absence of good faith. Therefore, the good faith provisions were applied to provide immunity against the claim of negligence.

A similar finding arose in *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)*.¹¹¹¹ The claimant alleged the failure to follow soft law instruments, such as protocols and manuals, was indicative of a lack of good faith. The judge concluded; however, that the relevant instruments did not

¹¹⁰⁷ [2014] 204 LGERA 238.

¹¹⁰⁸ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 252, 376-377.

¹¹⁰⁹ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 266, 380-381 (Rather the incident controller felt there was no reasonable alternative but to take the action taken).

¹¹¹⁰ *Electro Optic Systems Pty Ltd v New South Wales* [2014] 204 LGERA 238, 266, 303, 380-381.

¹¹¹¹ [2012] NSWSC 701.

have specific legal force and were only ideals or targets of ‘what was possible and what was desirable’.¹¹¹² Therefore, non-compliance did not indicate a lack of good faith.¹¹¹³ The court’s position aligns with the notion, that to make soft law instruments, or quasi-legislation mandatory, may place an ‘unjustifiable burden’ on the statutory authority in trying to meet the targets.¹¹¹⁴

The judge further reasoned, than in attempting to follow protocols and manuals, some targets would give way to others, ‘especially when the safety of crews was a relevant factor to consider’.¹¹¹⁵ Moreover, in this case, good judgment was exercised and there was no indication that the defendants could have done more to meet the standards required by protocols than they had done in the circumstances.¹¹¹⁶ Therefore, had negligence, breach of statutory duty and the failure to warn been made out, the statutory immunity would have excused the relevant acts or omissions. These findings further reinforce the hypothesis that soft law instruments aligned with emergency management legislation, act to guide, rather than prescribe mandatory responsibilities, for which statutory authorities will legally be held to account.¹¹¹⁷ In circumstances where the language within soft law instruments were mandatory, and application of the instruments themselves are mandatory, this finding may be different.

¹¹¹² *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [988]-[989], [994].

¹¹¹³ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [988]-[989], [994].

¹¹¹⁴ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [988]-[989] (See, eg, *Sheridan v Borgmeyer* [2006] NSWCA 201; *Maynard v Rover Mowers Ltd* [2000] QCA 26); See, also, Commonwealth of Australia, ‘Grey-Letter Law’, above n 553, xiv (Noting that the approach adopted in codes of practice may be to ‘improve the overall quality of products and services’, this means they incorporate best practice, but were best practice and therefore targets to become mandatory, the report suggests there may be a significantly higher and ‘unjustifiable’ compliance and cost burden, in contrast to the notion that ‘mandatory regulation should be the minimum necessary to achieve the set objectives’); Mark Aronson, ‘Private Bodies, Public Power and Soft Law in the High Court’ (2007) 35 *Federal Law Review* 1, 3-4 (This also aligns with the perspective of the court in administrative law that soft laws may be strictly procedural, so as not to ‘fetter statutory discretion).

¹¹¹⁵ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [994].

¹¹¹⁶ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [993], [995].

¹¹¹⁷ Weeks, above n 551, 270 (This is because ‘legal remedies attach to law’s form rather than to its effect or substance’, being soft law there is a lack of enforceability of its substance).

Application to warning in emergencies

A number of points arise from the cases analysed, which can be applied in the hazard warning context. The thesis has considered the status and role of guidelines, protocols and other soft law instruments. In the context of good faith, the case law demonstrates that in the relevant circumstances, a failure to comply with soft law instruments does not automatically lead to a conclusion that there was a lack of good faith. In the warning context, this proposition holds true. This is the case as long as when an agency selects a warning strategy, its motive is honest and is focused on the safety of the public and emergency service personnel. A second condition of immunity, is that the acts or omissions are carried out in a real and genuine attempt to achieve the functions of the Act, in a diligent and conscientious manner. Consequently, when assessing whether to warn, at what interval to warn, or over which channel to disseminate a warning, all relevant information available will need to be considered. So too, the nature of the hazard, and the profile of the community will need to be taken into account, so that the warning sent, and the timeframe in which it is delivered, is a rationale response to each of these factors.

When judgment is exercised, and there is a need for rapid response, as long as the decision is rational and demonstrates good judgment it is unlikely that there will be evidence of either a lack of good faith or reckless disregard for personal safety or property damage. The key issues in establishing the immunity will be that the accused party is a protected person under the legislation and that the act being carried out is either pursuant to, or in furtherance of the legislation.¹¹¹⁸

Warning – an act done under the Act

A question will arise as to whether warning is an act done under the relevant Act. As Chapter Five established, there were few direct references to warning within the legislation. Therefore, it is not often possible to refer to specific powers for warning contained in the Act. In Queensland, for example, there is

¹¹¹⁸ Field, above n 952, 155-158 (Reference to pursuance or furtherance of the legislation, considers the differential wording across the jurisdictions).

only an indirect reference to warning, as being one possible activity for 'responding to a disaster'.¹¹¹⁹ However it may be argued that the giving of a warning constitutes, 'an integral part or step in the very thing which the provisions under the Act give a power to do'.¹¹²⁰ Therefore giving a warning may constitute an act undertaken in response to the requirements of the legislation and provide access to the immunity. If the emergency management statute does not apply in the circumstances, access to a good faith immunity may still be available in the legislation which establishes the emergency service agency.¹¹²¹

Conclusion

This Chapter has addressed the defences and immunities which can be applied to excuse a claim in negligence. Defences and immunities, address the need for emergency service agencies to act in the public interest. They allow agencies to respond quickly without fear of legal action. However, the incorporation of immunities in statute needs to be appropriately tailored. The immunities must ensure there is a balance between the modification of individual rights to pursue legal action, and the statutory authority's ability to act in the public interest in an emergency situation.¹¹²² Achieving this balance will require consideration of the individual's need to take reasonable care when pursuing their own interests.

In any claim against a statutory authority involved in emergency management, the court must balance individual's rights to pursue litigation and claim compensation, against what is a reasonable and honest response of the

¹¹¹⁹ *Disaster Management Act 2003* (Qld) Schedule (Responding to a disaster includes the issuance of a warning).

¹¹²⁰ *Disaster Management Act 2003* (Qld) Schedule, s 3 (Responding to a disaster includes the issuance of a warning, while the very thing that the act requires which is to help communities respond to a disaster or emergency situation); *Board of Fire Commissioners (NSW) v Ardouin* (1961) 109 CLR 105, 117.

¹¹²¹ See, eg, *Emergencies Act 2004* (ACT) s 198; *State Emergency and Rescue Management Act 1989* (NSW) s 62; *State Emergency Service Act 1989* (NSW) s 25; *Emergency Management Act 2013* (NT) s 113; *Emergency Management Act 2004* (SA) s 32; *Fire and Emergency Services Act 2005* (SA) s 127; *Emergency Management Act 2006* (Tas) s 55; *Emergency Management Act 2013* (Vic) s 75; *Emergency Management Act 1986* (Vic) s 37; *Metropolitan Fire Brigades Act 1958* (VIC) s 54A; *Emergency Management Act 2005* (WA) s 100.

¹¹²² Hunter, above n 476, 58.

authority in the circumstances. For example, the defence of contributory negligence examines whether the claimant exercised reasonable care to avoid contributing to their own loss. The culpability of the plaintiff may be significant when: they have knowledge of the relevant risk of harm; they fail to heed a warning; fail to assess the risk of harm in the absence of a warning; or act with reckless disregard as to whether there is any risk of harm from a natural hazard. In assessing contributory negligence, the role, the defendant has played is not disregarded, however any part the plaintiff has, by their own acts or omissions, played in the suffering of harm or injury, is also taken into account. The result is a reduction of damages, which could mean, if appropriate, a reduction of 100 percent.¹¹²³ The reduction is based on what is a fair and reasonable apportionment of blame between the parties in the circumstances.

Just as the defence of contributory negligence considers the standard of care that is reasonable for the plaintiff to have exhibited, the determination that a risk of harm is obvious, also raises the expectation that the plaintiff will take a degree of care. A classification that a risk of harm is legally obvious, may act to expressly negate a duty to warn. Whether a risk of harm is obvious will also be taken into consideration to determine whether in carrying out warning, the defendant has failed to take reasonable care and has breached their duty. A layperson may classify impacts of a flood, fire, or cyclone, as an obvious risk of living in the Australian landscape, however emergency service agencies should not take it for granted that the defence will apply. This is because, as the case law highlighted, the pivotal consideration is what was obvious to a reasonable person in the position of the plaintiff. The view of what is obvious to a reasonable person appears to be subject to a narrow interpretation. At times, a risk of harm may be obscured or not evident to the person at the time the harm took place. It will not therefore be obvious.

Statutory protections and immunities are increasingly incorporated into legislation, and may also be relevant in the circumstances. Statutory immunities provide a stricter curtailment of the right of an individual to make a

¹¹²³ *Civil Liability Act 2003* (Qld) s 24.

claim at all. As opposed to a defence, rather than reducing damages, an immunity will negate a negligence claim. Although the wording differs across the jurisdictions, the relevant immunities invoke considerations of 'good faith'. There is limited application of the immunity in the warning context. However, applications to claims of negligence provide relevant examples of the utilisation of a good faith immunity in the emergency context more generally. In the first instance, for these immunities to be applicable, the act or omission, must be carried out pursuant to either the emergency management legislation, or the relevant Act which establishes that authority.

To invoke the immunity, the statutory authority will need to identify a power or function under the legislation. An authority will then need to demonstrate its act or omission was carried out pursuant to, or was at least an integral step, in carrying out the relevant function. It is likely, particularly in the Queensland context that warning will fall under the *Disaster Management Act 2003* (Qld), as an anticipated action in responding to a disaster, or to the potential of a disaster. As long as the defendant is a protected person under the Act. As long as they have demonstrated honesty, a lack of ulterior motive, and had made a genuine attempt to carry out their functions under the Act, the immunity may apply. If applied, the immunity will excuse any action established in negligence.

This Chapter, signals the completion of the analysis of the legislation and case law pertaining to the law of negligence and warning which is relevant to the emergency management sector. The following Chapter, will extract the relevant findings from Chapters Five, Six and Seven, and apply them to a case study of warning through a specific medium: social media. The major objective of Chapter Eight, is to determine the circumstances in which statutory authorities may be held legally accountable, for acts and omissions in warning, over this emerging channel. The case study will examine how the functions and responsibilities found in Queensland's soft and hard law instruments, might translate into a duty of care, and require a warning to be issued. It will also address in what circumstances, upon undertaking warning, a statutory authority may be deemed to have breached a duty of care in the circumstances. The case study will draw out the unique features of social

media examined in Chapter Four, to explore whether they are likely to increase the possibility that liability will be found.

Chapter Eight: Warning through social media - a Queensland case study of legal accountability and liability

Chapter One described social media as a collection of Web 2.0 platforms increasingly being used to communicate across communities. These technologies play a key role in forming social networks. The technologies can also empower the community to share responsibility for natural disaster mitigation, by contributing relevant information on its potential impacts. Importantly, the technologies can also be effectively leveraged by the emergency management sector to improve risk communication and warning during a natural disaster or emergency. In reflecting on the use of social media in this context, this Chapter has two key objectives. The first is to address a central question in the thesis, that is, in what circumstances are statutory authorities likely to be legally accountable for acts and omissions when using social media to warn of the likely impacts of a natural disaster. This question is addressed as a case study which utilises the Queensland regulatory system for emergency management as an exemplar. In addressing this question, the Chapter speaks to a gap in understanding of the potential liability for the use of social media as an emerging technology. Potential liability was identified as a concern in Chapter One.

The second objective of this case study is to demonstrate how functions and responsibilities created by hard and soft law instruments, combine to determine legal accountability for statutory authorities. This second objective builds on themes investigated in Chapters Five, Six and Seven. As previously noted, the focus of this case study is upon the application of the law of negligence, in the specific context of the duty to warn. The purpose of this analysis is to highlight that despite articulated responsibilities for warning in an emergency, legal accountability may arise from the undertaking of this function only in limited factual circumstances. This finding does not preclude the fact that an authority may be called upon to defend a claim. However, the finding does suggest that rather than creating a hook for liability, the function to warn is often purely an articulation of power. The function aims to 'give capacity to

statutory authorities that they would otherwise lack'.¹¹²⁴ An examination of the exercise of functions by statutory authorities in this context reinforces the notion that at times, ideals of moral accountability will diverge from the reality of legal accountability.¹¹²⁵

The ideals or norms of moral accountability are reflected in the underlying theoretical precepts upon which civil society and therefore, modern legal institutions are based. Social contract principles, for example, highlight that both government and private citizens will both have responsibilities in the public domain. As the thesis has demonstrated, in the current context, statutory authorities have a legitimate role to protect life and property. In practice, statutory authorities are made responsible for facets of risk ownership to delineate their role of protection. Delineation of their role can include a function for warning the community of a hazard related risk before and during an emergency. Offering guidance in how to carry out the warning function, soft law instruments at times recommend the use of social media as part of the warning strategy.

The protection of life and property before and during an emergency is not the only role of a statutory authority. As a 'public functionary', statutory authorities such as local government will have numerous competing responsibilities to manage. There is a legitimate expectation in the public that statutory authorities will meet these responsibilities effectively. However, authorities are required to deploy limited resources across a wide variety of areas of responsibility. When deciding how to deploy these limited resources they are required to balance the benefits to individual citizens and the benefits to the wider public in carrying out their responsibilities.¹¹²⁶ The result of the need to incorporate balance is that, in some instances, an individual's expectation of performance, and of the notion that government will act to protect, will not be met. In carrying out their activities, and because individual expectations may

¹¹²⁴ Wotherspoon, above n 761, 337.

¹¹²⁵ McLennan and Handmer, 'Sharing Responsibility Australian Disaster Management', above n 2, 44.

¹¹²⁶ Wotherspoon, above n 761, 338; Cane, *Responsibility in Law and Morality*, above n 104, 252-254 (Public functions are those 'that are meant to be performed on behalf of and in the interests of the public', rather than performed on 'behalf of or in the interests of any particular individual or group'); *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 553.

not be met, statutory authorities must be conscious of the potential for legal liability. Authorities need to be aware of the factors which may lead to liability if an individual suffers a loss as a result of their acts or omissions. As identified in Chapters Six and Seven, the principles of negligence set the legally accepted standards of conduct between parties. The standards of conduct include the benchmark as to what is the standard of care required for giving warnings in an emergency situation. From the perspective of a statutory authority, adhering to these standards is critical for retaining legitimacy and trust in the eyes of the community. If trust and legitimacy are retained, statutory authorities will have greater prospects of positive collaboration with private citizens.

This Chapter does not suggest that statutory authorities should be made to bear the burden of sanctions in the form of legal accountability for warning or not warning. However, the thesis does highlight that without sanctions, which might otherwise deter poor service delivery; further mechanisms may be needed to be put in place within the regulatory system to ensure their powers are effectively exercised to meet the policy objectives that have been set. Accountability mechanisms, may take the form of performance standards which ensure warning and communication strategies are effectively deployed. Accountability mechanisms may also take the form of improved policies and protocols which underpin operational standards for warning. Accountability mechanisms which strengthen service delivery for communication and warning in an emergency, ensure that risk communication is effectively disseminated. Effective risk communication in turn assists citizens to take responsibility for their own interests. Consequently, the burden for disaster risk reduction can be more effectively shared.

Social Media

Developments in internet technology have led to increasing incidence and use of social media platforms to the point that they are now ubiquitous in the community.¹¹²⁷ As defined in Chapter One, the term social media describes a

¹¹²⁷ Martini, above n 539, 1; Mayank Yadav & Zillur Rahman, 'The social role of social media: the case of Chennai Rains-2015' (2016) 6:101 *Social Network Analysis and Mining* 1, 1 (Social media has become 'part and parcel of everyday life').

series of Web 2.0 technologies which have been developed for use on internet enabled devices, both static and mobile. Chapter Four, further identified the unique characteristics of the technologies as online systems designed to facilitate interaction and connection through user-generated content and peer production.¹¹²⁸ Providing this capacity ensures that social media supports rich and complex two-way communication.¹¹²⁹

Social media: providing social networks

Both from a sociological and psychological perspective, the use of social media platforms is important to society as the platforms allow individuals to build connections with others.¹¹³⁰ These connections facilitate the formation of communities and social networks on a local and global basis.¹¹³¹ In facilitating this ability to create networks, the effect of the internet has been described as revolutionary.¹¹³² The social networks that are created provide several benefits for the community and are particularly useful for the emergency management sector. For example, social networks facilitate the ability to readily exchange and share information, and the ability to build social capital.¹¹³³ Social networks, with this ability to exchange information and build social capital, are identified as important factors which underpin a resilient community, a key objective of Australia's disaster policy.¹¹³⁴ Consequently, social media is used in the disaster and emergency context, to connect individuals, and communities. Social media has also been used to mobilise populations and to

¹¹²⁸ Walker, *Mass Notification and Crisis Communication*, above n 50, 225 (Web 2 technologies are the second generation of websites which provide mechanisms for interactive communication).

¹¹²⁹ Robert Chandler, *Emergency Communication* (ALC-CLIO, 2010) 24.

¹¹³⁰ Sonja Utz and Nicole Muscanell, 'Social Media and Social Capital: Introduction to the Special Issue' (Editorial) (2015) 5 *Societies* 420, 420 (This includes building both weak and strong ties).

¹¹³¹ Yadav & Rahman, above n 1127, 1.

¹¹³² Nan Lin, 'Building a Network Theory of Social Capital' (1999) 22(1) *Connections* 28, 45.

¹¹³³ Norris et al, above n 49, 136-138; Lin, above n 1132, 39-40 (Lin identifies a definitions of social capital as 'an investment in social relations by individuals through which they gain access to embedded resources to enhance expected returns of instrumental or expressive actions) Utz and Muscanell, above n 1130, 420; Marjolijn L. Antheunis, Mariek M.P. Vanden Abeele and Saskia Kanters, 'The Impact of Facebook Use on Micro-Level Social Capital: A Synthesis' (2015) 5 *Societies* 399, 401-2 (This thesis does not go into depth in defining social capital, however it is noted, that there are differential types of social capital which may be built over social media).

¹¹³⁴ Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011) 5; Norris et al, above n 49, 136; Yadav & Rahman, above n 1127, 1-2, 7-8.

respond in real time to the broader needs of the community in the wake of a disaster.¹¹³⁵ At times mobilisation of populations in an undirected or unmanaged fashion can be problematic for emergency service agencies. However, social media has demonstrated that it can assist individuals in taking a share of responsibility for their own behaviour in dynamic circumstances during natural disasters and emergencies.

The sociological and psychological benefits of social media in the community are evident. Where possible it is beneficial for agencies within the emergency management sector to support and be involved in the social networks. By disseminating messages through social media, authorities within the sector may be able to access communities they have previously been unable to access in a timely manner. Social media also gives access to an audience, which based on the figures provided in Chapter One, outnumber the day to day listening audiences of traditional modalities for warning dissemination such as radio.¹¹³⁶ The ability to access and provide information to such a broad and diverse audience may lead to improved mobilisation of individuals and enable the sector to reduce the burden on the public-sector services.

Expectations of uptake and legal concerns

As well as this common-sense rationale for adopting social media in emergency situations, the public expect that the emergency management sector will keep pace with technology and integrate social media into the operational environment.¹¹³⁷ From a business perspective, the suitability of the

¹¹³⁵ Irons et al, above n 70, 3-4; Siobahn Heanue, 'Nepal earthquake: How open data and social media helped the Nepalese to help themselves', *ABCNews* (online), 18 August 2015 <<http://www.abc.net.au/news/2015-08-16/nepal-earthquake-how-open-data-social-media-helped-rebuild/6700410?pfmredir=sm>>.

¹¹³⁶ See, eg, McNair Ingenuity Research, *Community Radio National Listener Survey 2016 Wave #1: Fact Sheet Australia* (July 2016) <<https://www.cbaa.org.au/sites/default/files/media/McNair%20Ingenuity%20Research%20-%20NLS%20Fact%20Sheet%20-%20Australia%20-%202016%20-%20Wave%20%231%20-%201605R.pdf>> (Data from 2016 suggests in an average week there are 15,598,000 listeners of radio, both commercial and community radio, which is 82% of all people in Australia aged 15+).

¹¹³⁷ Melissa W. Graham, Elizabeth J. Avery, Sejin Park, 'The role of social media in local government crisis communications' (2015) 41 *Public Relations Review*, 386, 387; Mergel, above n 60, 283; NGIS, above n 61, 5; Crowe, *Disasters 2.0*, above n 48, 88; Flood Response Review Board, 'Brisbane Flood January 2011: Independent Review of Brisbane City Council's Response 9-11 January 2011' (2011) 35; Kevin McDougall, 'Using

channels to an organisation or crisis should be assessed on a 'case by case basis'.¹¹³⁸ Nonetheless there has been an increase in the adoption of the channels such as Twitter, Facebook and YouTube by the sector. What began as high profile, isolated examples of usage of social media,¹¹³⁹ has now become a day-to-day function for some agencies.¹¹⁴⁰ The extent of adoption of the technologies across the emergency management sector generally, does vary.¹¹⁴¹ Understandings of the implications of the use of social media by government is still maturing.¹¹⁴² Anecdotal evidence does however still suggest that legal concerns may be creating a barrier to adoption, or at least a reluctance to fully utilise the capacity of the channels.¹¹⁴³ Some of these concerns relate to uncertainties as to the application of accepted legal

Volunteered Information to Map the Queensland Floods' (Proceedings of the Surveying & Spatial Sciences Biennial Conference 2011, Wellington, 21-25 November 2011) 15.

¹¹³⁸ Ioannis Kotsiopoulos, 'Social Media in Crisis Management: Role, Potential and Risk' (2014 IEEE/ACM 7th International Conference on Utility and Cloud Computing, London, 8-11 December 2014) 683.

¹¹³⁹ See, eg, Queensland Police Service, Media and Public Affairs Branch, above n 400.

¹¹⁴⁰ See, eg, Australian Government, *Social Media* <<http://www.australia.gov.au/news-and-social-media/social-media>> (This site provides a list of government social media accounts across a number of jurisdictions – including emergency service authorities); Fire and Emergency Services (Qld), *Reminder: how to contact QFES Media* (22nd February 2016) <<https://newsroom.psba.qld.gov.au/Content/Local-News/01-ENL/Article/Reminder-how-to-contact-QFES-Media/1017/1071/12066>>; Emergency Management Victoria, *Victoria's warning system* (28/10/2016) <<https://www.emv.vic.gov.au/responsibilities/victorias-warning-system>>; New South Wales Government, *Our Social Media Channels* (2016) <<http://www.nsw.gov.au/social-media>>.

¹¹⁴¹ See, eg, Lise Ann St Denis, Leysia Palen, Kenneth M Anderson, 'Mastering Social Media: An Analysis of Jefferson Country's Communications during the 2013 Colorado Floods' (Proceedings of the 11th International ISCRAM Conference – University Park, Pennsylvania, USA, May 2014)(Public usage has 'far outpaced' adoption by the emergency management sector despite it being noted as best practice); Anikeeva, Steenkamp and Arbon, above n 42, 23; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 53 (Although it is suggested that 'a majority of agencies are currently developing their capability to use social media', noting that this does not include local government who in some jurisdictions have a function for warning) See, eg, Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11, 6, 21.

¹¹⁴² Henman, above n 137, 1398.

¹¹⁴³ See, eg, St Denis, Palen and Anderson, 'Mastering Social Media', above n 1141 (Lack of uptake may also be attributed to 'lack of official support or resources for staffing social media, policies which prohibit use of social media, impracticalities of its use in a command and control environment'); Crowe, *Disasters 2.0*, above n 48, 67 (There are concerns over 'doing it wrong' and the need for policies which 'include clarification of murky legal issues'); Martini, above n 539, 80.

principles of liability in a new medium.¹¹⁴⁴ There is also a lack of understanding as to how legal principles will evolve to meet new circumstances.¹¹⁴⁵

Incorporating social media into operations: costs, benefits, challenges

When integrating any new technology into business, some assessment needs to be made of the costs and benefits of that technology. In relation to social media, the Queensland and Victorian governments have suggested that statutory authorities consider the risks of its use.¹¹⁴⁶ Having undertaken some consideration of risk, policy has been created across the jurisdictions to guide activity for social media usage. These policies tend to incorporate issues such as the public / private use of social media by employees,¹¹⁴⁷ record keeping and security protocols.¹¹⁴⁸ As identified in Chapter Two, policies and protocols provide good practice principles for using social media. Importantly, policies and protocols also act as a control to ensure risk communication is effective,¹¹⁴⁹ and a control to reduce institutional legal risk.¹¹⁵⁰ Therefore, the

¹¹⁴⁴ Australian Communications and Media Authority (Cth), above n 141, 4; National Research Council, 'Public Response to Alerts and Warnings using social media: Report of a workshop on current knowledge and research gaps' (2013) (Washington, D.C) 54.

¹¹⁴⁵ Ibid 54.

¹¹⁴⁶ Department of Business and Innovation (Vic), *Government 2.0 Projects in VPS: An introduction to managing risks* (2010) <<http://www.vic.gov.au/blog/social-media-guides/government-2-0-projects-vps-introduction-managing-risk/>>; Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) 14

<<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>>.

¹¹⁴⁷ See, eg, Jacinta Buchbach, 'Social Media Policies and Work: Reconciling Personal Autonomy Interests and Employer Risk' (Postdoctoral thesis, Queensland University of technology, submitted for examination); International Federation of Red Cross and Red Crescent Societies, *Social Media guidelines for IFRC staff* (2009) 2 <<http://sm4good.com/wp-content/uploads/2009/11/Red-Cross-Red-Crescent-SocialMedia-Guidelines.pdf>>.

¹¹⁴⁸ See, eg, Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>>.

¹¹⁴⁹ Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009); Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 11-12, 72.

¹¹⁵⁰ See, general discussion in Black, 'The Role of Risk in Regulatory Processes', above n 217, 30-31; Professional Standards Authority, *The role of risk in regulatory policy*, above n 236, 2; OECD, *Risk and Regulatory Policy*, above n 8, 29-30.

potential legal effects of usage must be considered as an essential element for inclusion in social media policies.

To date, the application of the law of negligence as a consideration in warning practices has had little attention within social media policies. However, the risk of liability which might be faced for failure to warn or negligent warning,¹¹⁵¹ could become a significant potential cost to statutory authorities in the sector. Despite the findings in Chapters Six and Seven identifying there is limited potential for liability in warning, this does not mean that an agency will not be required to defend a claim that has arisen. With a clear gap in risk assessment in this area, this Chapter will address the potential liability which may be faced by a statutory authority through the application of the principles of the law of negligence for the breach of an identifiable duty in this context. Before examining the benefits, challenges and risks of liability, it is important to reiterate that social media platforms have been recommended to augment current communication channels. Social media ought to provide an 'additional means for people to receive information about emergencies', rather than acting as a substitute for traditional modalities of warning communication.¹¹⁵²

Benefits of social media to the emergency management sector

Over and above the benefits of social capital and network building already identified, social media has several attractive attributes which can be leveraged by the emergency management sector. These benefits suggest that the use of social media channels should become an 'invaluable part of

¹¹⁵¹ Jana Hrdinová, Natalie Helbig and Catherine Stollar Peters, *Designing Social Media Policy for Government: Eight Essential Elements* (Center for Technology in Government, University at Albany, 2010) <<http://assembly.nu.ca/library/Edocs/2010/000957-e.pdf>>.

¹¹⁵² See, eg, St Denis, Palen and Anderson, 'Mastering Social Media', above n 1141; Hazelwood Mine Fire Inquiry, above n 50, 386-387; Yu Xiao, Qunying Huang & Kai Wu, 'Understanding social media data for disaster management' (2015) 79 *Natural Hazards* 1663, 1664; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 53 (Social media is likely to reach younger audiences than traditional forms of communication); Virtual Social Media Working Group and DHS First Responders Group, Homeland Security, *Next steps: Social Media for Emergency Response* (January 2012) 5-6 (Microblogging and social networking sites like Twitter and Facebook are likely to reach mobile users, frequently younger audiences, tech savvy and deaf or hard of hearing audiences); Robby Westbrook et al, 'A Holistic Approach to Evaluating Social Media's Successful Implementation into Emergency Management Operations: Applied Research in an Action Research Study' (2012) 4(3) *International Journal of Information Systems for Crisis Response and Management* 1, 2.

emergency response'.¹¹⁵³ The benefits relate to information that can both be pushed out through the channels, as well as data that may be pulled, or crowd-sourced to build situational awareness.¹¹⁵⁴ Crowd-sourcing will be mentioned briefly in this Chapter. Instead, the core focus in this thesis is the 'pushing' or dissemination of information through social media, and the risk of liability which will arise in line with the duty to warn.

A wealth of information

A key aspect of social media is that it enables content creation by all users. Community members can therefore 'act as human sensors'¹¹⁵⁵ and contribute immediate on-the-ground information about disaster impacts. Consequently, individuals within the community can often be the true 'first responders'.¹¹⁵⁶ Creation of content over a dispersed population creates a wealth of information,¹¹⁵⁷ which the emergency management sector can utilise to build situational awareness. The sector must quickly and accurately analyse this data from diverse community sources to create coherent information and build useful knowledge.¹¹⁵⁸ The information and knowledge derived is then used as a basis for more effective warnings for appropriate action,¹¹⁵⁹ or to determine how resources should be best allocated for the most effective response.

Timely delivery

As identified in Chapter Four, further benefits of social media, and a key focus of this thesis, is the ability to disseminate a message in real time.¹¹⁶⁰ Rather than the delays experienced in utilising traditional media for warning

¹¹⁵³ Ibid.

¹¹⁵⁴ See, eg, Bruns and Burgess, 'Crisis Communication in Natural Disasters', above n 70, 38; Crowe, *Disasters 2.0*, above n 48, 9.

¹¹⁵⁵ Axel Bruns, 'Crisis Communication' in Stuart Cunningham and Sue Turnbull (eds), *The Media and Communications in Australia* (Allen & Unwin, 2014) 2.

¹¹⁵⁶ See, eg, Crowe, *Disasters 2.0*, above n 48, 46; Kotsiopoulos, above n 1138, 684.

¹¹⁵⁷ danah boyd & Kate Crawford, 'Critical Questions for Big Data' (2012) 15(5) *Information, Communication & Society* 662, 663 (The large data sets being produced through social media interactions is known as 'big data', the use of which comes with its own its ethical questions, it is likely that the emergency management sector will undertake mostly small-scale analysis).

¹¹⁵⁸ Martini, above n 539, 40-43.

¹¹⁵⁹ boyd & Crawford, 'Critical Questions for Big Data', above n 1157, 663-664 (Big data is often analysed to create better services to the public); Chatfield, Scholl and Brajawidagda, above n 48, 377.

¹¹⁶⁰ Chatfield, Scholl and Brajawidagda, above n 48, 384; Crowe, *Disasters 2.0*, above n 48, 9.

broadcasts, some social media platforms allow for instantaneous message delivery. Twitter, for example, allows a message to be sent instantaneously to Twitter users within the community who may then quickly pass on the message to others.¹¹⁶¹ As identified in Chapter Three, timely delivery of messages has a positive impact upon the perception / response process.¹¹⁶² Timely delivery gives individuals an opportunity to make decisions about feasible protective action in response to a hazard related risk. The receipt of timely risk information and warning to a broad cross section of the public is also a pivotal trigger point to facilitate shared responsibility.

Low Cost and accessibility of the audience

As well as supporting timely delivery, social media platforms are low cost,¹¹⁶³ readily implementable technologies.¹¹⁶⁴ They are able to be used across a range of devices, both static and mobile.¹¹⁶⁵ Low cost platforms ensure there is no barrier to entry. It is however noted that consideration must be given to administrative costs¹¹⁶⁶ and the relevant training and human resources which are required for proper and responsible use. As identified in Chapter Four, the ability to use social media platforms on highly mobile devices also means community members are nearly always accessible, and often at times when traditional media has failed.¹¹⁶⁷ Accessibility to both platforms and audience, further supports timely delivery of emergency warnings for dynamic and

¹¹⁶¹ Miles Godfrey, 'Firies use Twitter to fight bushfires', *The Sydney Morning Herald*, 24 October 2013 <<http://news.smh.com.au/breaking-news-national/firies-use-twitter-to-fight-bushfires-20131024-2w31x.html>>; Kavanaugh et al, above n 60, 489; Chatfield, Scholl and Brajawidagda, above n 48, 385.

¹¹⁶² Defence Research and Development Canada, *Social Media for Emergency Management Expert Roundtable Workshop: Summary of Findings Technical Note* (December 2013) 2; Fire Services Commissioner (Vic), *Review of community responses to recent bushfires*, above n 74, 16-17, 33 (Timely information is particularly important for threat avoiders).

¹¹⁶³ Graham, Avery, Park, above n 1137, 387; White, *Social Media, Crisis Communication and Emergency Management*, above n 46, xiii, 67; Guy Paul Cooper Jr et al, 'Twitter as a Potential Disaster Risk Reduction Tool. Part 1: Introduction, Terminology, Research and Operational Applications' (2015) 7(1) *Plos Currents*; Crowe, *Disasters 2.0*, above n 48, 9; Wendling, Radisch, Jacobzone, above n 56, 7.

¹¹⁶⁴ See, eg, Westbrook et al, above n 1152, 11; Hughes and Palen, 'Twitter Adoption and Use in Mass Convergence and Emergency Events', above n 70.

¹¹⁶⁵ See, eg, Westbrook et al, above n 1152, 11; Hughes and Palen, 'Twitter Adoption and Use in Mass Convergence and Emergency Events', above n 70.

¹¹⁶⁶ See, eg, Amisha M Mehta, Axel Bruns and Judith Newton, 'Trust but verify: social media models for disaster management' (2016) *Disasters*.

¹¹⁶⁷ Office for the Coordination of Humanitarian Affairs, 'Hashtag Standards for Emergencies' (OCHA Policy and Study Series, October 2014) 4.

unpredictable emergencies, which can occur day or night, and often leave little time to respond.¹¹⁶⁸

Reach

As identified, social media facilitates the ability to build connections and social networks on line. Leveraging these networks to disseminate messages means warnings may have a broad **reach**.¹¹⁶⁹ Platforms such as Twitter for example, are a one-to-many communication technology,¹¹⁷⁰ which supports the spread of messages far and wide in a short space of time. When an organisation with a Twitter account sends a message (tweets), and another Twitter user rebroadcasts their message (retweets), the message become visible to all people who follow their account.¹¹⁷¹ In some cases, those who disseminate messages are key influencers that is, they are a user who is seen as credible and who has strong influence over their online followers.¹¹⁷² When a key influencer retweets a warning message, because of the credibility which attaches and the influence they exert, the message becomes amplified as it is cascaded out to numerous followers, who may also retweet the message.¹¹⁷³ This cascade of information creates social connections across sectors of the community¹¹⁷⁴ which traditionally may not be a captive audience for the sector.

¹¹⁶⁸ Alexandra Olteanu, Sarah Vieweg and Carlos Castillo, 'What to Expect When the Unexpected Happens: Social Media Communications Across Crises' (Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing, New York, USA, 2016) 994, 994 (Twitter has been stated to be 'unmatched in terms of getting the information out quickly to a broad audience'); Bruns and Burgess, 'Crisis Communication in Natural Disasters', above n 70, 374 (Highlighting the use of social media to disseminate breaking news').

¹¹⁶⁹ Wendling, Radisch, Jacobzone, above n 56, 11, 20 (A good practice is to include a sign-off in emergency tweets of 'Please RT'); Chatfield, Scholl and Brajawidagda, above n 48, 385; Bruns and Burgess, 'Crisis Communication in Natural Disasters', above n 70, 379 (The ability to retweet is 'the most important driver of visibility' of messages); St Denis, Palen, Anderson, 'Mastering Social Media', above n 1141.

¹¹⁷⁰ Olteanu, Vieweg, Castillo, above n 1168, 994, 994.

¹¹⁷¹ Axel Bruns et al, '#qldfloods and @QPSMedia: Crisis Communication on Twitter in the 2011 South East Queensland Floods' (2012) ARC Centre of Excellence for Creative Industries and Innovation; Bruns and Burgess, 'Crisis Communication in Natural Disasters', above n 70, 379; Cooper Jr et al, above n 1163; Eunae Yoo et al, 'Evaluating information diffusion speed and its determinants in social media networks during humanitarian crises' (2016) *Journal of Operations Management* 1, 4; Danah Boyd, Scott Golder, and Gilad Lotan, 'Tweet, Tweet and Retweet: Conversational Aspects of Retweeting on Twitter' (43rd Hawaii International Conference on System Sciences (HICSS), Honolulu, 6 January 2010).

¹¹⁷² Yoo et al, above n 1171, 123-125.

¹¹⁷³ Ibid.

¹¹⁷⁴ Bruns and Burgess, 'Crisis Communication in Natural Disasters', above n 70, 376.

An additional benefit of the links and connections made between the emergency management sector and the community over social media, is that they can assist in building trust over time.¹¹⁷⁵ This is particularly the case when agency posts are endorsed by an influential person in an individual's social circle.¹¹⁷⁶ Consequently, not only is the inclusion of social media platforms into a communication strategy beneficial for timely delivery, to a broad audience,¹¹⁷⁷ its inclusion also help to build the community trust which is a key component of effective risk communication.¹¹⁷⁸ Although the benefits of social media listed here are not exhaustive, they are sufficient to illustrate the key role that the platforms can play in contemporary emergency situations.

Challenges for the emergency management sector and their legal consequences

Alongside its benefits, the use of social media channels in emergencies also provides numerous challenges. These challenges are not insurmountable; however, they have the potential to have legal implications if not properly managed. Legal action which could result from the use of social media, and which should therefore be considered in any risk assessment, will potentially include breaches of privacy, defamation, breach of confidentiality and negligence. As earlier identified, only those related to the law of negligence,

¹¹⁷⁵ Busa et al, above n 527; Wendling, Radisch, Jacobzone, above n 56, 10, 25 (Particularly as it allows for bottom-up communication, improves transparency and facilitates a dynamic flow of information rather than information just 'being pushed on the public').

¹¹⁷⁶ See, eg, Bruns et al, '#qldfloods and @QPSMedia', above n 1171, 29 (Networks of followers are 'important partners in disseminating information more widely than is possible for the services alone'); Bruns and Burgess, 'Crisis Communication in Natural Disasters', above n 70, 376, 379; Kate Jones, 'Social media influencers the new marketing darlings', *The Sydney Morning Herald* (online), 22 February 2016 <<http://www.smh.com.au/small-business/smallbiz-marketing/social-media-influencers-the-new-marketing-darlings-20160217-gmx2y2.html>>; Margaret C. Stewart, B. Gail Wilson, 'The dynamic role of social media during Hurricane #Sandy: An introduction of the STREMI model to weather the storm of the crisis lifecycle' (2015) 54 *Computers in Human Behaviour*, 639, 643; Yoo et al, above n 1171, 1, 3 (Diffusion rates of information tend to increase, if the network users 'perceive that cascades contents are informational and sharing these contents will be helpful to others').

¹¹⁷⁷ Bruns and Burgess, 'Crisis Communication in Natural Disasters', above n 70, 375.

¹¹⁷⁸ Wendling, Radisch, Jacobzone, above n 56, 25 (On social media as a tool for building trust); Reynolds and Seegar, above n 309, 48; Mileti, *Disasters by Design*, above n 185, 191 (Mileti adds emphasis to the aim of warnings to 'inform and prompt appropriate response', by containing 'alert and notification components'); Sorensen, above n 50, 119; Renn, 'Risk Governance: Towards an Integrative Framework', above n 214, 55.

will be raised here. The following sections outline some of the keys challenges of social media and the relevant links to the law of negligence.

Challenges of two-way communication

Principles for good practice, identified in Chapter Three highlighted that communication ought to adopt a two-way model of communication.¹¹⁷⁹ To align with these principles, the integration of social media channels into a risk communication and warning strategy for emergencies is prudent. However, the two-way nature of social media communications is a hurdle that the emergency management sector is attempting to address. Historically, the emergency management sector has broadcast emergency warnings via television, radio, and emergency alert, which are a one-way channel for communication. Therefore, social media's two-way communication presents a new communication paradigm for the emergency management.¹¹⁸⁰ How to adapt business and operational practices to incorporate protocols for social media usage is proving difficult. There are tensions between trying to retain traditional aspects of message control and the need for authorisation in an environment of uncontrolled and immediate information. As well as trying to adapt communication strategies to fit this new communication paradigm there are also legal concerns as to how the law will be applied to resolve disputes in this relatively untested domain. So, what are the risks that legal action may arise under the law of negligence when using social media in an emergency situation?

To address this question a hypothetical scenario is used to draw out acts or omissions which may occur when statutory authorities use social media in an emergency. Based on the information in the scenario, seven questions which address a cross section of legal issues are investigated to provide an understanding of the reality as to whether legal action may result. These are not means an exhaustive list of the questions that may arise. As adverted to

¹¹⁷⁹ See, eg, Leiss, above n 334, 85, 90-91; Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 18; Fischhoff, above n 337, 1265 (That is for authorities to listen rather than 'assuming they know what to say'); D Feldman et al, 'Communicating flood risk: Looking back and forward at traditional and social media outlets' (2016) 15 *International Journal of Disaster Risk Reduction* 43, 44; Renn, 'Risk Governance: Towards an Integrative Framework', above n 214, 55-56.

¹¹⁸⁰ Crowe, *Disasters 2.0*, above n 48, 61.

in Chapters Six and Seven these questions are investigated against the background of Queensland disaster management legislation.

Hypothetical Scenario

It is storm season and an unusually severe storm is approaching the Queensland coast. Its magnitude is such that it is likely lead to widespread property damage. This likelihood is in part due to the prospect of coastal storm surge and flash flooding coupled with high intensity winds. The likelihood of flooding is increased by the fact that it has been raining for the past week. As such, not only is there a risk of property damage, there also is the potential for loss of life if the public are not alerted of the need to take preventative measures.

The public have been alerted through pre-season public information campaigns of the need to prepare for storm season. The Bureau of Meteorology has issued a general storm warning. One local government, whose catchment is likely to be first hit by the storm, have recently created a Facebook page and a Twitter account. The local government catchment is made up of a young demographic and previous attempts to warn through traditional channels have had little effect. On the day of the storm, the public information officer responsible for **social media is unavailable. Therefore, a general warning of the storm is transmitted only through radio and television broadcasts.** Unfortunately, the message does not reach many residents.

As the storm crosses the coastline the damage is severe. Flooding has caused several road closures. The relevant local government authority posted information about the likely impact to the local communities in their catchment on their Facebook page. Unfortunately, they posted **incorrect information about which towns would be hit.** As a result of this incorrect information one community which bore the full force of the storm was missed. Without advance warning, the community failed to prepare themselves or take preventative action. Citizens sustained both property damage and personal injuries. Further, residents are trapped in rapidly rising floodwaters and with their smart phones at hand, one individual sends a tweet to an emergency service

authority requesting assistance. Their need for assistance is urgent. However due to the number of posts and tweets on both Facebook and Twitter **the request for assistance on Twitter is overlooked by the public information officer.**

During the storm, members of the public post information on social media. One particularly troublesome user retweets a message sent by the emergency service authority and alters its content so that it reads incorrectly. Aside from this troublesome user, other social media users with the best intentions are posting information which is inaccurate. As a result, **misinformation is rapidly circulating on Facebook and Twitter** about rising floodwaters in certain areas, as well as the intensity of the storm. Due to limited resources, **the emergency service agency is unable to address this misinformation.** A member of the public also posts their own incorrect information on the authority's Facebook page. The information is **unverified however it is shared** by the public information officer as they believe they should urgently alert the public.

At the last minute, the storm changes direction, new warnings need to be disseminated urgently. The public information officer, due to their high number of Facebook users, decides to post a warning on Facebook. **However due to the algorithms on Facebook, many users do not receive the warning in sufficient time to take preventative action.** As community members are calling in for further information, the public information officer realises that the warning has not reached the public and quickly tweets a new warning. However, the limited number of characters available in a tweet means the warning **reads ambiguously** and members of the public are unsure of the action they are required to take. Consequently, they do not protect their property, nor do they move to higher ground. As a result of this ambiguous warning a significant number of the public suffer loss.

This scenario gives rise to a number of questions as to the circumstances in which legal accountability will arise:

1. In respect of issuing the original warning over radio and television, would the local government owe a duty of care and would that duty require the use of social media?
2. If a duty is owed, is it possible that the emergency service authority breached its duty to warn due to the Facebook algorithms failing to disseminate the message in a timely manner?
3. With regards to the ambiguous warning over Twitter, will the emergency service authority have breached any duty of care it may owe to warn?
4. If posting inaccurate information on Facebook, is the local government exposed to liability where reliance on the information has led to harm?
 - a. Could the emergency service authority be held legally accountable for sharing unverified and incorrect information posted by a user on their Facebook page if it leads to harm?
5. Having failed to respond to a request for assistance over Twitter, is it possible that the emergency service authority be held legally accountable?
6. Will the failure to address misinformation on social media give rise to a claim in negligence?
7. Will the failure to address misinformation on the emergency services own Facebook page lead to a claim in negligence?

Long-standing issues in a new medium

The issues which arise in this first section reflect legal concerns apparent in warning of natural hazards and emergency related risk. To provide some certainty as to how the court will address these issues, recourse may be had to current case law and judicial reasoning concerning the duty to warn. It is important to note that any findings are indicative, they provide a point in time view of the law, and any outcomes will depend on the factual circumstances of each case.

- 1. In respect of issuing the original warning over radio and television, would the local government owe a duty of care to warn and would that duty require the use of social media?**

Chapter Six examined the law of negligence identifying the three elements required to establish a claim in negligence. These were a duty of care, the breach of a duty of care and damage caused by the breach of the duty of care. The focus in answering this question is on whether the duty of care, in this case a duty to warn of a hazard related risk in an emergency situation, will be established. Chapter Six identified that to formulate a duty of care in novel cases of warning, requires consideration of both a reasonably foreseeable risk of harm and salient factors. As indicated in Chapter Six, the first hurdle is that the harm must be reasonably foreseeable. In the context of warning and hazards, the weight of precedent indicated this will not often be difficult to prove. Based on the facts highlighted in the scenario, it is perhaps reasonably foreseeable that if residents did not receive a warning which enabled them to take preventative action, they could incur loss or suffer personal loss. Consequently, reasonable foreseeability of the harm through omission will likely be made out.

As reasonable foreseeability is not sufficient to impose a duty on its own, the next consideration in the formulation of a duty of care is the identification of the relevant salient factors. Chapter Six identified these factors as including control, knowledge, vulnerability and policy factors such as those embedded in civil liability legislation. The Chapter also indicated, that the existence of relevant statutory powers may be an important factor in determining whether a duty of to warn exists.¹¹⁸¹ The presence of a statutory power, in this scenario this would be a power to issue hazard warnings, may demonstrate that the authority had some degree of control which could be exercised to avoid the relevant harm.¹¹⁸² However, as was also highlighted, in the case of non-feasance (or a failure to warn), it may be a 'rare exception' that a duty of care is imposed, particularly where the exercise of the power is discretionary.¹¹⁸³

Before examining the salient features, it is important note that not every natural hazard weather event will be sufficient to meet the definition of an

¹¹⁸¹ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575 (McHugh J).

¹¹⁸² *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575 (McHugh J); Wotherspoon, above n 761, 331-332.

¹¹⁸³ Wotherspoon, above n 761, 331-332; *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575-576 (McHugh J); *Pyrenees Shire Council v Day* (1998) 192 CLR 330, 343-345 (Brennan CJ).

emergency or disaster under the legislation.¹¹⁸⁴ In such cases the associated functions and responsibilities will not be triggered. If the provisions are not triggered, further reference to functions delineated within the legislation which establishes the emergency service organisations will need to be considered.¹¹⁸⁵ From the content analysis in Chapter Five, it is suggested that in Queensland alternative legislation takes its form in the *Fire and Emergency Services Act 1990* (Qld). This Act contains broad provisions, similar to the *Disaster Management Act 2003* (Qld) with regards to warning. The reasoning process and the application of the principles of negligence outlined in relation to the *Disaster Management Act 2003* (Qld) can be applied in a similar way. In relation to the scenario and based on the Queensland provisions which define a 'disaster', due to the high risk or property damage and potential loss of life, stemming from the storm, it is assumed that the relevant *Disaster Management Act 2003* (Qld) provisions are triggered.¹¹⁸⁶

Salient features: Exploring Queensland statutory provisions and notions of control

Having established a likely reasonable foreseeability of harm, the first consideration concerns the effect of statutory 'functions' and 'powers' relevant to warning.¹¹⁸⁷ As noted, these powers are suggestive of some degree of control, either control of the hazard, or managerial control of the circumstances; however considerations of control in the case law have been inconsistent.¹¹⁸⁸ Reflecting on judicial reasoning of control identified in Chapter Six, the Queensland legislative provisions examined below contain broad and indirect powers to ensure public safety. They are not powers referring to a 'clearly identified cause of harm, specific action or inaction on the part of the Council' which would otherwise suggest a duty of care is owed.¹¹⁸⁹ This

¹¹⁸⁴ *Disaster Management Act 2003* (Qld) s 13(1)(2) (A disaster is a 'serious disruption, caused by the impact of an events that requires a significant coordinated response', with a serious disruption meaning loss of life, widespread or severe property or environmental loss or damage).

¹¹⁸⁵ In Queensland, this might include the, *Fire and Emergency Services Act 1990* (Qld); *Public Safety Preservation Act 1986* (Qld).

¹¹⁸⁶ *Disaster Management Act 2003* (Qld) s 13, 14, 16 (Provisions on events which constitute a disaster).

¹¹⁸⁷ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 574.

¹¹⁸⁸ Wotherspoon, above n 761, 333.

¹¹⁸⁹ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 564.

conclusion suggests that a duty to warn will not arise based on the Queensland statutory functions and powers for warning housed in the disaster management legislation.

Hard law instruments: powers and functions for warning in Queensland

As well as considering powers and function and their relationship to control, the formulation of a duty to warn also considers the objects and purpose of the Act to assist in determining legislative intent.¹¹⁹⁰ In Queensland, the *Disaster Management Act 2003* (Qld) does not include a duty or mandated responsibility to warn a community of a hazard or emergency.¹¹⁹¹ Instead, the objects of the Act are to seek to **help the community effectively respond to a disaster** or emergency situation.¹¹⁹² This is to be achieved by **making provisions to ensure communities receive appropriate information**,¹¹⁹³ by taking appropriate measures to respond to a disaster event,¹¹⁹⁴ which can include, the issue of a warning.¹¹⁹⁵ Notably, any reference to the provision of information in this Act is to ‘the community’ or the public at large, which as previously identified, can preclude a duty being found.¹¹⁹⁶

As mentioned in Chapter Five, in a disaster not only will the relevant emergency legislation operate, so too will the statute which establishes the emergency service authority. In Queensland, the *Fire and Emergency Services Act 1990* (Qld) establishes both Queensland Fire and Emergency Service and the State Emergency Service. However, again in this Act, there is only reference to broad functions, rather than any mandate to warn in an emergency situation.¹¹⁹⁷ Although the statutes refer to only broad and discretionary functions, as identified in Chapter Six the case of *Matthews v SPI*

¹¹⁹⁰ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 643; Wotherspoon, above n 761, 333 citing *Sutherland Shire Council v Heyman* (1985) 157 CLR 424, 500.

¹¹⁹¹ See, eg, Balkin & Davis, above n 888, 516-518; *Pyrenees Shire Council v Day* (1998) 192 CLR 330; *Sutherland Shire Council v Heyman* (1985) 157 CLR 424.

¹¹⁹² *Disaster Management Act 2003* (Qld) s 3(a)(iii), 5 (The Act binds the State).

¹¹⁹³ *Disaster Management Act 2003* (Qld) s 4.

¹¹⁹⁴ *Disaster Management Act 2003* (Qld) s 4A.

¹¹⁹⁵ *Disaster Management Act 2003* (Qld), Schedule (Responding to a disaster).

¹¹⁹⁶ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701 [686] citing *Crimmins v Stevedoring Industry Finance Committee* (1999) 200 CLR 1, [93].

¹¹⁹⁷ See, eg, *Fire and Emergency Services Act 1990* (Qld) s 8B, 131.

*Electricity Pty Ltd (Ruling No 2)*¹¹⁹⁸ there is some indication that the court may begin to take soft law instruments into account when attempting to formulate a duty of care.

Soft law instruments

In Queensland, there are many layers of soft law instruments in the hierarchy of the emergency management regulatory system. At the State level, there is the 'Queensland State Disaster Management Plan' and the 'Disaster Management Strategic Policy Framework'.¹¹⁹⁹ These instruments are further supported and explained by Disaster Management Guidelines for local and district groups.¹²⁰⁰ When a local disaster management plan is created it must be consistent with these guidelines.¹²⁰¹ In terms of warning, the relevant guidelines outline the role of local government in warning and the importance of ensuring notification and dissemination of warning; however the guidelines are not prescriptive in their language mandating warning.¹²⁰² Further, government departments have then issued standards for disaster management¹²⁰³ and generic policies for the use of social media in government.¹²⁰⁴ As Chapter Five noted, these soft law instruments incorporate a greater level of detailed responsibilities and functions for warning in any

¹¹⁹⁸ *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [110]-[111]; See, also, *Caltex Refineries (Queensland) Pty Limited v Stavar* [2009] NSWCA 258, [120] (Where the case centred around the question of whether a duty could be found on an Asbestos Rule).

¹¹⁹⁹ Queensland Government, *Queensland State Disaster Management Plan* (May 2015) (Replaced by Queensland Government, *Queensland State Disaster Management Plan* (September 2016); State Disaster Management Group (Qld) *Disaster Management Strategic Policy Framework* (November 2010).

¹²⁰⁰ Emergency Management Queensland, *Queensland Local Disaster Management Guidelines* (2012); Brisbane District Disaster Management Group, *Brisbane District Disaster Management Plan 2014-2015* (September 2014); See, also localised plans, Local Disaster Management Group, Redland City Council, *Redland City Disaster Management Plan* (2016); Brisbane City Council, *Local Disaster Management Plan: Chapter Two: Brisbane CBD Emergency Plan* (July 2014); Brisbane District Disaster Management Group, *Brisbane District Disaster Management Plan 2014-2015* (September 2014).

¹²⁰¹ *Disaster Management Act 2003* (Qld) s 57, 58.

¹²⁰² Emergency Management Queensland, *Queensland Local Disaster Management Guidelines* (2012) 29, 43-44 (A public information subplan is not mandatory).

¹²⁰³ Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework*, above n 107.

¹²⁰⁴ The State of Queensland, Department of Science, Information Technology and Innovation, *Principles for the official use of social media networks and emerging social media* (October 2015) 14 <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>> (Which replaces the ICT Policy and Coordination Office (Qld), Official Use of social media guideline: Final (December 2010)).

jurisdiction. For example, the Queensland Disaster Management Plan, identifies the function of warning. The plan allocates the warning function to the lead agency (Queensland Fire and Emergency Services (QFES) supported by the State Disaster Co-ordination Centre (SDCC), which ultimately support local disaster management groups as the first responders.¹²⁰⁵

Outlining specific responsibilities, the Queensland State Disaster Management Plan identifies that the SDCC **will** issue warnings to key stakeholders. As one of the key stakeholders, the emergency service agencies are then **responsible** for further disseminating these warnings.¹²⁰⁶ The Plan states that when disseminating warnings, 'multiple means of communicating warnings **should** be used'.¹²⁰⁷ As well as the QFES, each agency 'responsible for a specific hazard needs to include provision for communicating'.¹²⁰⁸ However, alongside any warnings required to be delivered by the Bureau of Meteorology,¹²⁰⁹ the issue of alerts and warnings, 'is primarily done through local governments'.¹²¹⁰

From this snapshot of soft law instruments, it is clear that detailed responsibilities are incorporated at the lower level of the regulatory hierarchy. However, as identified in Chapter Five, the purpose of these documents is primarily to guide action of the agencies. That is, the instruments aim to outline role responsibilities rather than to create liability or define responsibility which may form the basis of a duty of care. The effect of these documents is to explain how to effectively manage disasters, and they include expressions of intent to support activity, which may be relevant to formulating a duty of care. Reflecting upon the principles to be drawn from *Graham Barclay Oysters*

¹²⁰⁵ Queensland Government, *Queensland State Disaster Management Plan* (May 2015) 24 (Replaced by Queensland Government, *Queensland State Disaster Management Plan* (September 2016).

¹²⁰⁶ Queensland Government, *Queensland State Disaster Management Plan* (May 2015) 28 (Replaced by Queensland Government, *Queensland State Disaster Management Plan* (September 2016).

¹²⁰⁷ *Ibid.*

¹²⁰⁸ *Ibid.*

¹²⁰⁹ *Meteorology Act 1955* (Cth) s 6.

¹²¹⁰ Queensland Government, *Queensland State Disaster Management Plan* (May 2015) 28 (Replaced by Queensland Government, *Queensland State Disaster Management Plan* (September 2016).

*Pty Ltd v Ryan*¹²¹¹ examined in Chapter Six, the functions and responsibilities which these instruments contain are unlikely to provide a sufficient basis upon which to formulate a duty to warn.¹²¹²

Further salient features

The examination of the hard and soft law instruments relevant to a disaster suggest there will be few grounds upon which to establish a duty of care. Consideration of knowledge, vulnerability and policy factors are relevant.¹²¹³ To restate the principle, knowledge refers to knowledge 'of an existing risk of harm to the plaintiff or, to a specific class of persons who included the plaintiff (rather than a risk to the general public)'.¹²¹⁴ Based on the case study this might be knowledge of the severity of the storm, its direction and the likely impacts of flooding and property damage. However, these risks could be classified as risks to the general public. In this scenario, there was clearly knowledge on the part of authorities, as they had issued a warning. In terms of comparative knowledge, however, warnings had been issued over traditional channels, as well as by the Bureau of Meteorology. These warnings could have alerted individuals to the potential of the storm and provided a source of knowledge to the community, had they been listening.

Vulnerability of the public in this case is also relevant. Having some knowledge that it was storm season, due to pre-season warnings; citizens could have taken measures to safeguard their property more generally. Had they also considered the other warnings issued, they could also have chosen to stay inside depending on the lead time from the issue of the warning to its receipt. As was raised in Chapter Six however, there is a question as to what extent citizens should seek out warnings particularly if they notice environmental factors which would have been evident to anyone who looked.

¹²¹¹ (2002) 211 CLR 540.

¹²¹² *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575-576.

¹²¹³ *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 582.

¹²¹⁴ *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 46-48 (Mason J).

Policy issues

In conjunction with factors of control, knowledge and vulnerability, supervening policy reasons are relevant.¹²¹⁵ As Chapter Six mentioned, in Queensland, a key issue which drove the inclusions of statutory protections in Act, was the need for statutory authorities to be able make key decisions for the protection of the public more generally without fear of liability.¹²¹⁶ Based on the factors considered, although reasonable foreseeability is generally likely to be made out, in the circumstances outlined in the case study, it is unlikely that the facts provided will be sufficient to raise a duty of care.

The scope of the duty

Even if duty of care could be formulated, it is unlikely that the scope of the duty will extend to a specific requirement to issue warnings over a particular channel such as social media. Generally, the duty will be a broad duty to issue warnings to persons at risk of harm from the natural hazard to enable them to take steps to avoid loss or damage to themselves or their property. Examination of the actions which were undertaken, and the channels which were used to warn, will then be considered in the determination of the existence of a breach of the duty of care.

Breach and causation in the context of a failure to warn

The previous section on a duty to warn concludes that in most circumstances, where there is no mandate within the legislation or the soft law instruments to warn, it is unlikely that a court would find a duty to warn is owed by a statutory authority which also extends to social media. However, were a duty to be found, a conclusion as to a finding of negligence is subject to a consideration of the remaining elements of a breach of that duty and causation. Chapter Six concluded, that in the determination of breach of a duty to warn, a court will consider all the warnings sent by the authority, which includes pre-season messaging. In the case study scenario, it is arguable that not only were pre-

¹²¹⁵ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 642-643 (Allsop P); *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 577-578.

¹²¹⁶ See, eg, Explanatory note, Disaster Management Bill 2003 (Qld) 7; *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701 [686], [713] citing *Crimmins v Stevedoring Industry Finance Committee* (1999) 200 CLR 1, [93].

season storm warnings apparent, so too were warnings disseminated on the day by the Bureau of Meteorology and local government over traditional channels. In this factual matrix, the community profile includes a younger demographic who could perhaps better be reached by social media. However, the Queensland hard and soft law instruments are not such that they require mandatory incorporation of these channels into a warning strategy, although notably some instruments state an intent to do so. As identified throughout this thesis, the use of social media as a channel to disseminate messages is recommended as an additional channel.

As Chapter Six noted, in the case of *Warragamba Winery Pty Ltd v State of New South Wales (No 9)*¹²¹⁷ the claimant argued that warnings should have been disseminated over a radio station that was frequently listened to within the community.¹²¹⁸ In that case, issues arose with the ability to do so because the broadcasts were around a time of public holidays and the ability to send a message was dependent on the radio station and was therefore limited. In examining this case, Eburn suggested that the outcome of the case may be different in the context of social media.¹²¹⁹ This is because with social media there is no similar dependency on a third party, or at least only to the extent that the social media platform remains operational.¹²²⁰

Eburn's suggestion that the requirement to warn over social media may be an emerging consideration, requires further consideration. In the first instance, and in contrast to radio, which is a broadly accepted traditional platform for message dissemination, social media is still largely emerging and its use is discretionary. In Queensland, in some local government catchments, there are clear indications of an intention to 'broadcast to stakeholders via official social

¹²¹⁷ [2012] NSWSC 701.

¹²¹⁸ *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 70, [1123] (Where it was the specific community affected claimed they should have received warnings over the frequently used radio channels relevant to that community).

¹²¹⁹ Michael Eburn, 'Warragamba Winery Pty Ltd v State of New South Wales [2012] NSW 701' on *Australian Emergency Law* (19 July 2012) <<https://emergencylaw.wordpress.com/2012/07/19/warragamba-winery-pty-ltd-v-state-of-new-south-wales-2012-nswsc-701/>>.

¹²²⁰ Sam Thielman and Chris Johnston, 'Major cyber attack disrupts internet service across Europe and US', *The Guardian* (online), 22 October 2016 <<https://www.theguardian.com/technology/2016/oct/21/ddos-attack-dyn-internet-denial-service>>.

media channels'.¹²²¹ However at this stage, it may be more likely that this statement of intent is, without more, construed only a target,¹²²² rather than a local government binding itself to action. In some circumstances, however, where localities have stated an intent; have profiled their community to ascertain that social media channels are most suitable dissemination channel;¹²²³ and have created a public expectation based on historical action, that social media will be used;¹²²⁴ a failure to warn over social media may be unreasonable. What the case study does reinforce is the need to use a multiple range of warning channels.¹²²⁵

The case study considers the prospect breach of a duty in a context where warnings are disseminated over at least one channel. As earlier indicated, and considering the increasing awareness of the importance of warning, unless the event is one which is highly unpredictable or is a rapid onset event, it is unlikely there will be no warning given at all.¹²²⁶ An exception to this statement is where the loss of power affects communication. If a natural hazard is catastrophic and poses a significant risk with the probability of serious harm, there is more likely to be a finding of breach if no warning has been given at all. This is because a catastrophic event is likely to be a significant natural phenomenon which could be tracked and monitored by the relevant authorities. However, again, the finding of a breach will depend on the resources available and the likely multiple impacts of a catastrophic events. Catastrophic events, which require a multi-faceted response can place a heavy burden on responding

¹²²¹ Brisbane City Council, *Local Disaster Management Plan*, 'Chapter Two: Brisbane CBD Emergency Plan' (July 2014)10 (The Plan states that messages **will** be broadcast over social media).

¹²²² *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [988]-[989], [994] (This case does not set a binding precedent on this issue – however is further supported by other case law).

¹²²³ See, eg, Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework*, above n 107, 25 (Considers as an enabler to warnings, the need to profile communities to identify barriers to effective communication); Redland City Council, *Redland City Disaster Management Plan: Part 1* (2016) 47; Feldman et al, above n 1179, 44-45, 48 ('Risk communication experts now generally agree that it is critical that risk communicators know their audiences' as the sources which citizens utilise to 'access risk information varies by demographic and local community characteristics' and age is strong predictor of channel preference).

¹²²⁴ Eburn, 'Warragamba Winery Pty Ltd v State of New South Wales', above n 1219.

¹²²⁵ Feldman et al, above n 1179, 44.

¹²²⁶ Inspector General of Emergency Management (Qld), *2015 Callide Creek Flood Review: Volume 1*, above n 780, 80, 89.

agencies.¹²²⁷ It is important to consider here that the ability to rely on a claim of limited resources may be restricted in the future.¹²²⁸ This is due to the incorporation of escalation pathways in emergency management regulatory frameworks which give access to extended resource capacities. In the case study under examination the local government for example, can notify QFES and the State Disaster Co-ordination Centre, to assist its operations for warning.¹²²⁹

Causation and immunity

If a breach of a duty of care is proven, no compensation is payable to an injured party unless the claimant proves causation. Even if the individual can prove they would have received a social media warning, they will still need to demonstrate they would have taken alternative action and that the action they would have taken would have changed the outcomes.¹²³⁰ As earlier indicated, in the case of catastrophic events, this may be more likely in the case of serious loss like personal injury and death rather than property damage. On the facts of the case study, it is likely that property damage caused by the storm sweeping through would have occurred anyway. It would have occurred despite any warning over social media. Considerations of personal injury however, may require some alternate consideration.

Further, to issues with establishing causation the statutory authority may seek to employ the good faith protections under the *Disaster Management Act 2003* (Qld).¹²³¹ To invoke the relevant provisions, and gain statutory immunity for a claim in negligence, the defendant would need to be a person under the Act.¹²³² In this instance a local government public information officer is likely to be captured by these provisions. Further to this first element, and as

¹²²⁷ See, eg, *Warragamba Winery Pty Ltd v State of New South Wales* [2012] NSW 701; *Civil Liability Act 2003* (Qld) s 35.

¹²²⁸ See, eg, Wotherspoon, above n 761, 338.

¹²²⁹ Inspector General of Emergency Management (Qld), *2015 Callide Creek Flood Review: Volume 1*, above n 780, 81; Queensland Government, *Queensland State Disaster Management Plan* (Reviewed May 2015) 24, 28.

¹²³⁰ See, eg, *Chappel v Hart* (1998) 195 CLR 232, 247 (McHugh); *Civil Liability Act 2003* (Qld) s 11(3).

¹²³¹ *Disaster Management Act 2003* (Qld) s 144.

¹²³² See, eg, *Disaster Management Act 2003* (Qld) s 144; Field, 'Good Faith Defences', above n 952, 155-158.

positively concluded in Chapter Seven, the act of warning must be an integral step in achieving the objective of emergency management.¹²³³ With the requirements of local government to actively manage during disasters, the act of warning is likely covered as a response operation.

If these two elements are satisfied; if the failure to warn is a rationale response to the information available; and if the actions taken by the defendant displayed reasonable diligence,¹²³⁴ liability may not attach under the relevant 'good faith' protection provisions.¹²³⁵ Instead, the provision of warning over channels for which relevant human resources were available, may demonstrate an honest intent to achieve the objective of public safety. So too, local disaster management guidelines afford flexibility in the method of release of warnings. Although social media is noted as a consideration, the primary vehicle of dissemination is broadcast radio.¹²³⁶ Consequently, and considering the analysis of the duty to warn in this section, in answer to this first question this thesis asserts, there will only be limited circumstances in which a negligence action will be made out. To reinforce, this finding does not preclude a requirement to defend a claim.

2. If a duty is owed, is it possible that the emergency service authority breached its duty to warn due to the Facebook algorithms failing to disseminate the message in a timely manner?

In contrast to non-feasance, or a complete failure to warn, when agencies have exercised functions and powers to warn, but have not delivered a warning in a timely manner, and this has resulted in harm, the imposition of a duty of care is more likely.¹²³⁷ The initial question will be whether the relevant authority owed a common law duty to any claimants 'to take reasonable care to issue

¹²³³ *Warragamba Winery Pty Ltd v State of New South Wales (No. 9)* [2012] NSWSC 701, [757].

¹²³⁴ *Electro Optic Systems Pty Ltd v State of New South Wales* [2014] 204 LGERA 238, 241 380.

¹²³⁵ *Disaster Management Act 2003* (Qld) s 144.

¹²³⁶ Queensland Government, *Queensland Local Disaster Management Guidelines* (2012) 44.

¹²³⁷ See, eg, *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 575-576 (McHugh); *Pyrenees Shire Council v Day* (1998) 192 CLR 330, 332.

effective and timely bushfire warnings to persons in the hazard areas'.¹²³⁸ Once the duty is established, and as is relevant to this issue, questions arise as to breach of the duty of care and whether reasonable care was taken to ensure warnings were issued. Based on the facts of the case study, the question of reasonable care arises when the public information officer disseminates time critical hazard warnings over Facebook and a significant number of the public fail to receive the message.

The issue of message timing is one which is very relevant to social media, most specifically Facebook.¹²³⁹ One of the challenges of social media, as with any modality of communication, is that although messages can be delivered in real time on some platforms, timeliness of receipt is not guaranteed.¹²⁴⁰ In the first instance, access to computers or mobile devices, to send the message requires enduring mains or battery power. The availability of power supply is out of the control of statutory authorities within the sector.¹²⁴¹ Secondly, social media platforms are owned and managed by third party providers. The business practices of third party providers are driven by the interests of their audiences and advertisers. To meet the needs of the audience, Facebook, for example, has incorporated algorithms¹²⁴² which 'govern the flow' and select the information which 'is considered most relevant to' the user, displaying it on their newsfeed.¹²⁴³ The use of an algorithm means that, despite an agency posting a timely message on Facebook, unless the organisation pays to

¹²³⁸ *Matthews v AusNet Electricity Services Pty Ltd* [2014] VSC 663, Annexure A.

¹²³⁹ See, eg, David Pierce, 'What you need to know about Twitter's algorithmic timelines', *Wired* (online), 10 February 2016 <<https://www.wired.com/2016/02/what-you-need-to-know-about-twitters-algorithmic-timeline/>>; Elaine Pittman, 'Twitter Launches an Alert Systems for Emergencies', *Emergency Management* (online), 25 September 2013 <<http://www.emergencymgmt.com/disaster/Twitter-Alert-System-Emergencies.html>>; Twitter Inc, *A step-by-step guide to Twitter Alerts* (2016) <<https://about.twitter.com/products/alerts/how-it-works>>; Twitter Inc, *Guidelines* <<https://about.twitter.com/products/alerts/guidelines-faq>> (The number of Tweets that can be received per hour is limited, noting also that the presence of algorithms on Twitter is also relevant however is a lesser concern, and specific services such as Twitter Alert have been created to allow public safety and emergency management agencies to push out real time information to those users who subscribe to this alert function with their agency).

¹²⁴⁰ Inspector General of Emergency Management (Qld), *2015 Callide Creek Flood Review: Volume 1*, above n 780, 87.

¹²⁴¹ See, eg, White, *Social media, Crisis communication and Emergency Management*, above n 46, 280.

¹²⁴² Janssen & Kuk, above n 537, 371 (An algorithm, is a 'step-by-step process and/ or rules processing inputs into outputs' – they manipulate data to provide outputs – in this case to end-users of social media platforms).

¹²⁴³ Gillespie, above n 537, 167, 168.

promote their post,¹²⁴⁴ there is no certainty the message will be received on time. The algorithm may determine that the emergency warning is not a 'most relevant' piece of information to be displayed in a news feed.¹²⁴⁵ Consequently, and as was highlighted by this example, the message, although posted in a timely manner, will not reach the audience in sufficient time for them to take preventative measures. As the control of algorithms are outside the control of statutory authorities, there is unlikely to be a duty of care for poor timing where it is dependent on the workings of a third-party platform.

Again, it is likely that good faith provisions under the *Disaster Management Act 2003* (Qld) are likely to be available to the public information officer. However, in consideration of these provisions, the use of algorithms by Facebook is well-known. Therefore, relying on the platform to deliver timely messages is less likely to demonstrate diligence, which would otherwise invoke good-faith provisions. An immediate remedy to the issue of algorithms, and as advised in formal policy, is the need to broadcast warnings over multiple modalities for communication, as part of normal business practice. If social media is used in isolation, and messages fail to reach the intended recipient in time to avoid harm, individuals may seek to bring a legal cause of action in negligence. However, where multiple channels are employed to disseminate messages, the totality of messages will be taken into consideration when examining any breach of a duty and reduce the likelihood of any positive finding in negligence.

3. With regards to the ambiguous warning over Twitter, will the emergency service authority have breached any duty of care it may owe to warn?

As the case study highlights, limitations are apparent in the use of social media channels such as Twitter. That is, there may be a limited ability to send a clear and unambiguous message in an emergency due to the limit in detail which

¹²⁴⁴ Facebook Business, *How to boost your posts* (2016)

<<https://www.facebook.com/business/a/online-sales/promoted-posts>>.

¹²⁴⁵ Andrew Quodling, 'Is social media responsible for your safety during a disaster', *The Conversation*, 10 November 2014 <<https://theconversation.com/is-social-media-responsible-for-your-safety-during-a-disaster-33138>>; Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 54.

can be incorporated in the message space provided.¹²⁴⁶ Ambiguity in messaging is a common problem now being experienced in a new communication medium.¹²⁴⁷ The case law examined in Chapter Six indicated that warning messages must be clear and unambiguous. A lack of reasonable care may be asserted if the content of the warning does not alert the recipients to the type of harm which may result.¹²⁴⁸ In this case study, citizens were unable to take measures to protect property or move to higher ground.

To compensate for the limited message characters, Twitter has developed specific syntax or language conventions. The conventions and syntax provide for short form references to topics and keywords for example in the form of hashtags (#). The service also provides for the inclusion of abbreviated URL's (uniform resource locator) which can be used to link to further or more detailed information,¹²⁴⁹ to more clearly explain the content of the message. The use of commonly known short form syntax and links to further information, are clearly relevant devices to employ to avoid ambiguity, from a legal perspective. So too, the use of tested message template may assist. The inclusion of these mechanisms may demonstrate diligence in the provision of a warning when seeking to utilise 'good faith' provisions. Inclusion of links to further information may then place the onus on the message recipient to not only read the message but to seek the further information. However, in some circumstances, there is no guarantee that the message recipient will be able to access further information. Although this inability, is not the fault of the agency, it should be taken into consideration when crafting messages. In terms of legal accountability, again a claimant will need to demonstrate that they would have taken alternative action if the message had been clearer.

As Chapter Seven indicated, if an agency is faced with a claim for negligence in this area, it may be relevant to consider the defence of contributory

¹²⁴⁶ See, eg, St Denis, Palen and Anderson, 'Mastering Social Media', above n 1141; Hughes and Palen, 'Twitter Adoption and Use in Mass Convergence and Emergency Events', above n 70 (The character limit 'can be too constricting when a user wants to convey large amounts of information'); Cooper Jr et al, above n 1163; Boyd, Golder and Lotan, above n 1171 (This is because 'the system was originally designed for tweets to be shared via SMS).

¹²⁴⁷ Australian Communications and Media Authority (Cth), above n 141, 4.

¹²⁴⁸ *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 40, 48.

¹²⁴⁹ Boyd, Golder and Lotan, above n 1171.

negligence.¹²⁵⁰ Political correctness may mean that there is reluctance on the part of agencies to employ the defence. However, if this defence is enlivened, a court will determine whether the claimant had taken reasonable care for their own safety and apportion the relevant loss.¹²⁵¹ A court will determine whether the individual had, apart from the warning, made any assessment of the likely harm to themselves.¹²⁵² As a final comment, the need to clarify a warning has not been a previous requirement within the case law. This thesis does suggest that it would not be unreasonable to expect that if a message is confusing or ambiguous, the message recipient may need to take 'elementary precautions'.¹²⁵³ These precautions might include undertaking to clarify the message on another channel if they were technically able to do so.

4. Does posting inaccurate information on Facebook mean the local government authority is likely to be exposed to liability where reliance on the information has led to harm?

a. Could the emergency service authority be held legally accountable for sharing unverified and incorrect information posted by a user on their Facebook page if it leads to harm?

Both questions indicate that legal issues can arise from information disseminated about a natural hazard which is inaccurate or incorrect. Legal accountability for dissemination of inaccurate information is an old problem in a new communication medium.¹²⁵⁴ Within the law of torts, legal action for inaccurate information is considered under the action of negligent misstatement. The action has been relied on in conjunction with a claim that there is a duty to warn and therefore requires brief consideration.

Inaccurate content in a warning message is highly problematic, in that it can inform decisions leading to wrong action.¹²⁵⁵ Once inaccurate information has

¹²⁵⁰ See, eg, Balkin & Davis, above n 888, 343, 348-349, 362.

¹²⁵¹ *Mulligan v Coffs Harbour City Council* (2005) 223 CLR 486, 511; *Road and Traffic Authority of NSW v Dederer* (2007) 234 CLR 330, 398 (Gummow); *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 483.

¹²⁵² *Vairy v Wyong Shire Council* [2005] 223 CLR 422, 478; *Mulligan v Coffs Harbour City Council* [2004] NSWCA 247 [250], [254].

¹²⁵³ *Mulligan v Coffs Harbour City Council* (2005) 223 CLR 486, 511; *Roads and Traffic Authority of New South Wales v Dederer* (2007) 234 CLR 330, 398 (Gummow).

¹²⁵⁴ Australian Communications and Media Authority (Cth), above n 141, 4.

¹²⁵⁵ Glik, above n 310, 38-39; Sellnow and Seegar, above n 48, 109.

been disseminated to the community through social media, the information can rapidly continue to cascade out into the community.¹²⁵⁶ It may be possible to retrieve the posts to a limited extent.¹²⁵⁷ However it is almost impossible to ensure that corrective messages which are sent out, for example, through Twitter, will be retweeted in the same pattern. Nor is it possible to ensure they cascade out to the same recipient community who received the first messages. The receipt of the corrected message by the community would ensure that harm is averted.

The crowd – a source of inaccuracies?

In the realm of traditional media, information which informed the basis of warnings may have been passed on from authoritative sources. In most instances, this information is verified to some degree to ensure accuracy and reliability.¹²⁵⁸ It may even come from a trusted source such as the Bureau of Meteorology. In the era of social media, as stated, the community are often the first true responders. Users create content, they upload self-made video and post comments on disasters and emergencies as they are impacting their community.¹²⁵⁹ In general, the information shared online will be accurate,¹²⁶⁰ however the stories and ‘facts’ uploaded, may also be a ‘product of faulty memory or limited perspective’ with the potential to be inaccurate.¹²⁶¹

Despite the potential for inaccurate information, the wealth of data and information which can be sourced from the social media crowd, may be useful to the emergency management sector. The information can be utilised to gain intelligence and build situational awareness. The information may also be

¹²⁵⁶ National Research Council, ‘Public Response to Alerts and Warnings’, above n 1144, 51; Jeremy Finn, Ursula Cheer and Sarah Rosanowski, ‘Media, Family and Employment’ in Jeremy Finn and Elizabeth Toomey (eds), *Legal Responses to Natural Disasters* (Thomson Reuters, 2015) 99; Adrien Friggeri et al, ‘Rumour Cascades’ (International AAAI Conference on Web and Social Media, Eighth International AAAI conference on Weblogs and Social Media, North America, May 2014).

¹²⁵⁷ Twitter, Inc, *Retweeting another Tweet* (2016) <<https://support.twitter.com/articles/20169873>>.

¹²⁵⁸ Crowe, *Disasters 2.0*, above n 48, 184.

¹²⁵⁹ Sellnow and Seegar, above n 48, 128; Wendling, Radisch and Jacobzone, above n 56, 10-11; Office for the Coordination of Humanitarian Affairs, above n 1167, 3.

¹²⁶⁰ K Silverman, ‘Social Media for Emergency Management: A good Practice Guide’ (Wellington Region CDEM Group: Wellington, 30 June 2014) 14.

¹²⁶¹ *Ibid* 16-17 (Individuals may innocently pass on misinformation, or a limited recount of what is happening).

essential for making 'swift and critical decisions'.¹²⁶² A key challenge for the sector, however, is to detect 'operationally relevant' information.¹²⁶³ Agencies need to be able to question to what extent unverified data will be sufficiently reliable to form the basis for community warnings, or in light of this case study, sufficiently reliable to reshare.¹²⁶⁴ New tools are being developed to gather information and assess patterns in conversations.¹²⁶⁵ However, it is impossible to verify each tweet or Facebook post.¹²⁶⁶ With an acknowledgement that some process of verification, triangulation or other form of assessment is required,¹²⁶⁷ principles of good practice is emerging. Good practice principles provide models which include, identification of the original uploader, confirming the date and location from which the message originated,¹²⁶⁸ as well as basing decisions on 'aggregate patterns in large sets of data'.¹²⁶⁹

¹²⁶² See, eg, Adam Crowe, 'The social media manifesto: A comprehensive review of the impact of social media on emergency management' (2011) 5(1) *Journal of Business Continuity & Emergency Planning* 409, 412 (Crowdsourcing – getting information from the crowd); Vivacqua and Borges, above n 521, 189 (Crowd-sourcing is defined as 'outsourcing to the crowd by giving them a task to execute'); Amanda L Hughes and Leysia Palen, 'The Evolving Role of the Public Information Officer: An examination of Social Media in Emergency Management' (2012) 9(1) *Journal of Homeland Security and Emergency Management* 1547, 1548; Mehta, Bruns and Newton, above n 1166.

¹²⁶³ Department of Homeland Security, 'Using Social Media for Enhanced Situational Awareness', above n 51, 17-18, 24-25; Hughes and Palen, 'The Evolving Role of the Public Information Officer', above n 1262, 1548; Olteanu, Vieweg and Castillo, above n 1168, 994.

¹²⁶⁴ Silverman, above n 1260, 13-14 (This is also an issue for journalists); Mehta, Bruns and Newton, above n 1166.

¹²⁶⁵ See, eg, Silverman, above n 1260, 20 (The use of Tweet deck to create a dashboard); Adam Crowe, *Disasters 2.0*, above n 48, 8; See also, Wendling, Radisch and Jacobzone, above n 56, 21.

¹²⁶⁶ See, eg, Silverman, above n 1260, 20 (The use of Tweet deck to create a dashboard); Crowe, *Disasters 2.0*, above n 48, 8; See also, Wendling, Radisch and Jacobzone, above n 56, 21; VOSG, *Virtual Operations Support Group: Implementing VOST SMEM – social media for emergency management* (2016) <<http://vosg.us/>>; VOSTAUS (27 April 2016) <<http://vostaus.blogspot.com.au/>>; VOST Victoria <<http://vostvic.net.au/>> (In this regard a number of agencies are beginning to turn to Virtual Operations Support groups – which are groups of volunteers who can process this type of information and augment services by agencies).

¹²⁶⁷ See, eg, Silverman, above n 1260, 17-18, 19, 24 (Which suggests that principles of verification need still to be applied to social media, however they can often now be completed more quickly than in earlier times with so many people on the internet, and comment is made that the information on social media is the first step for finding out what is actually happening rather than the last word); K McSaveney et al, 'Social Media for Emergency Management: A good Practice Guide' (Wellington Region CDEM Group: Wellington, 30 June 2014) 15 (Check social media accounts 'that you trust', look for 'trending topics'); Mehta, Bruns and Newton, above n 1166.

¹²⁶⁸ Silverman, above n 1260, 29, 30, 36, 39 (This includes using the free programs available on the internet to verify an image).

¹²⁶⁹ Mehta, Bruns and Newton, above n 1166.

Inaccuracy as a legal issue

Legal issues can arise when agencies send inaccurate information, such as unverified data provided by social media users. The relevant action is for negligent misstatement. Under this action, a duty of care may be owed by a person giving advice and information. The duty is 'to take reasonable care in providing that information when they know, or ought to know, that the recipient intends to rely on it'.¹²⁷⁰ This action extends to information provided by statutory authorities 'in the practice of supplying information'.¹²⁷¹ Historically claims for negligent misstatement have arisen where direct requests for information have been made, for example by a member of the public.¹²⁷² However, a claim may also result when information has been disseminated.¹²⁷³ With regard to the latter type of claim, if information is disseminated over a medium of mass communication, which is available to the public generally, there may be limits to the success of the action due to considerations of indeterminacy.¹²⁷⁴ Again, however, the duty of care will need to be established.

In this case study, there are two examples of conduct which could give rise to an action in negligent misstatement. The first is the posting of incorrect information by the local government authority. The second is the re-sharing of incorrect information posted by a member of the public on Facebook by the emergency service organisation. Although neither of these examples includes a request for information, they have the potential to give rise to a claim. On our

¹²⁷⁰ *L Shaddock & Associates Pty Ltd v Parramatta City Council (No.1)* (1981) 150 CLR 225, 225, 231, 238; Low et al, above n 60, 411 (Questions over formality of the source may be raised here, or its official nature).

¹²⁷¹ *L Shaddock & Associates Pty Ltd v Parramatta City Council (No.1)* (1981) 150 CLR 225, 225.

¹²⁷² See, eg, *Shaddock & Associates Pty Ltd v Parramatta City Council (No.1)* (1981) 150 CLR 225; Queensland Floods Commission of Inquiry, 'Queensland Floods Commission of Inquiry – Final Report', above n 380, 70; Department of Environment (Cth), *Coasts and Climate Change Council advice to Minister Combet* (December 2011) <<http://www.environment.gov.au/climate-change/adaptation/australias-coasts/coasts-climate-change-council-advice>> (Often the requests revolved around s 149 certificates in NSW, some Queensland does not have a mandatory equivalent for).

¹²⁷³ See, eg, *Shaddock & Associates Pty Ltd v Parramatta City Council (No.1)* (1981) 150 CLR 225, 231.

¹²⁷⁴ See, eg, *Shaddock & Associates Pty Ltd v Parramatta City Council (No.1)* (1981) 150 CLR 225, 231 (However it may be relevant to the determination of duty that publication on the web may give such a wide circulation to material that concerns may be raised over indeterminacy); See also discussion in Christensen, Duncan and Stickley, above n 71, 204.

facts, it is clear that the member of the public relied on the information disseminated by the local government authority regarding the likelihood of impact to their detriment. So too, if an emergency service organisation shares or retweets (republishes) unofficial information from the public, a community member may perceive the emergency service organisation has effectively endorsed the information. They may believe this endorsement adds sufficient credibility to warrant reliance upon the message. Yet if the information is inaccurate, and community member relies on it to their detriment, claims for compensation may result.¹²⁷⁵ As indicated, the purpose of this section is to raise awareness of the action. However, there is insufficient depth of analysis here to make any indicative conclusions as to what a court is likely decide.

To avoid legal implications from unverified information which is then shared, it would be prudent to insert a disclaimer into the message.¹²⁷⁶ The effectiveness of a disclaimer is a question of law examined on a case by case basis.¹²⁷⁷ Its insertion into a short message, for example a tweet may also be problematic, due to space limitations. Until some clear resolution is found, as a first step, an agency should indicate unreliability of a message.¹²⁷⁸ The alternative measure, adopting a policy not to republish unofficial information, may limit the ability to affect positive outcomes for the community. One method which has been adopted, is the insertion of the standardised hashtag (#unverified) into messages.¹²⁷⁹

¹²⁷⁵ *San Sebastien Pty Ltd v The Minister* (1986) 162 CLR 340, 355; *Sutherland Shire Council v Heyman* (1985) 157 CLR 424, 427.

¹²⁷⁶ See, eg, Christensen, Duncan and Stickley, above n 71, 201-202; Balkin and Davis, above n 888, 439; *Burke v Forbes Shire Council* (1987) 63 LGRA 1, 8, 18, 20; *L Shaddock & Associates Pty Ltd v Parramatta City Council (No. 1)* (1981) 150 CLR 225, 231; Department of Justice and Attorney-General (Qld), *Social Media Disclaimer* (7 October 2015) <<http://www.justice.qld.gov.au/global/legals/social-media-disclaimer>>; Queensland Treasury, *Social Media Disclaimer* <<https://www.treasury.qld.gov.au/social-media-disclaimer.php>>; Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) 1, 12 <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>>.

¹²⁷⁷ Christensen, Duncan and Stickley, above n 71, 192.

¹²⁷⁸ See, eg, Attorney-General's Department (Cth), *Code of Practice for Warning Republishers* (April 2013) 4 (Although a non-mandatory document to follow – from the perspective of legal accountability there is a strong rationale for undertaking these activities).

¹²⁷⁹ Office for the Coordination of Humanitarian Affairs, above n 1167, 3-4.

New issues to law: A cry for help, misinformation, and monitoring

The issues which arise in this next section appear to be new challenges in warning practices. Challenges which do not fit neatly into precedent and reasoning for the duty to warn. They raise issues which challenge the traditional structures and processes for emergency response, and it is unclear how the law might address the issues. Suggestions are provided in this section based on considerations of analogous case law. Indicative conclusions have been drawn which reflect the ideals of shared responsibility and the legitimate roles of citizens and statutory authorities acting in collaboration. In this section, the challenges which arise for agencies can be specifically linked to two-way communication and the ability of users to create social media content.

5. Having failed to respond to a request for assistance over Twitter, is it possible that the emergency service authority be held legally accountable?

In the facts of our case study, the public information officer overlooked a request for assistance on Twitter. Again, although this issue does not fall within the boundaries of negligence, it warrants mention. Imagine picking up the telephone, broadcasting information and then 'hanging up as soon as the listener asked a question' or asked for help.¹²⁸⁰ Alternatively, imagine a Triple Zero responder does not pick up the phone. Not only is there the potential that harm may occur to the person on the other end of the line but the lack of response is likely to damage the reputation of the responder. It may also impact their trust relationship with the caller. Yet with social media, with the vast quantities of data produced, it is possible to miss a post which asks for help. Consequently, concerns arise within agencies over individuals posting Triple Zero type requests to their social media pages.¹²⁸¹

¹²⁸⁰ Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 53 citing M Anderson, 'Integrating social media into traditional emergency management command and control structures: the square peg into the round hole?' (Paper Presented at Emergency Media & Public Affairs Conference Melbourne, 8 May 2012).

¹²⁸¹ Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 53-54; Ministers for the Department of Communications and the Arts, 'Review of the national Triple Zero (000) operator' (Media release, 8 July 2014) 13 <http://www.minister.communications.gov.au/malcolm_turnbull/news/review_of_the_triple_z

Triple Zero, or emergency calls are governed by specific legislation in Australia.¹²⁸² At this stage, and despite the expectation of the public that authorities will respond to posts requesting help, Australia's technology is not developed to address Triple Zero calls via social media.¹²⁸³ Aside from Triple Zero type posts, statutory authorities have identified significant resource issues meeting any expectations of real time response to social media posts more generally.¹²⁸⁴ Anecdotal evidence suggests that where possible, statutory authorities tasked with emergency response, with their remit to protect life and property, will seek to respond to social media emergency posts. However, boundaries need to be set. For example, Homeland Security as the emergency service provider in the United States suggests 'sending sporadic messages out via all communication channels reminding the public of the appropriate channels for specific types of information'.¹²⁸⁵ Practitioners within the sector also use disclaimers to state that they do not monitor tools 24 hours a day. The aim is to remind the community 'that not all posts will be viewed in a timely manner especially during an emergency'.¹²⁸⁶ As earlier stated, whether these disclaimers are effective will depend on the circumstances, however

ero_000_operator#.V_7EIfI96UI>; Crowe, *Disasters 2.0*, above n 48, 4 (Demonstrates that this is a phenomenon which is already occurring).

¹²⁸² In Australia, Triple Zero calls are administered under the *Telecommunications (Consumer Protection and Services Standards) Act 1999* (Cth).

¹²⁸³ See, eg, Matt Brian, 'Tweet your emergency: London Fire Brigade plans to accept callouts over Twitter', *The Next Web*, 18 December 2012

<<http://thenextweb.com/uk/2012/12/18/london-fire-brigade-looks-to-set-up-uks-first-emergency-twitter-feed-allowing-you-to-tweet-incidents>> (There is some availability of tweet based services in the United Kingdom and the United States of America); Australian Government, Attorney General's Department, *About the Emergency Call Service* (15/10/2012) <<http://www.triplezero.gov.au/pages/abouttheemergencycallservice.aspx>> (In Australia, Triple Zero calls are administered under the *Telecommunications (Consumer Protection and Services Standards) Act 1999* (Cth) Part 8, s 147, and regulated and monitored by the Australia Communications and Media Authority); Ministers for the Department of Communications and the Arts, 'Review of the national Triple Zero' (000) operator' (Media release, 8 July 2014) <http://www.minister.communications.gov.au/malcolm_turnbull/news/review_of_the_triple_zero_000_operator#.V_7EIfI96UI> (The ACMA notes the increasing use of social media and while reviewing its service to accommodate emerging technologies is yet to integrate the channels into the Emergency Call Service offering); Department of Communications (Cth), *Review of the National Triple Zero (000) Operator* (Discussion Paper, July 2014) 13 (In the United States and Europe, Next Generation Emergency Call systems are being investigated).

¹²⁸⁴ Emergency Management Victoria, *National Review of Warnings and Information*, above n 11, 53; Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11, 21.

¹²⁸⁵ Virtual Social Media Working Group and DHS First Responders Group, Homeland Security, above n 1152, 7.

¹²⁸⁶ *Ibid.*

ultimately, as part of their civic duty, and until proper, fit for purpose technology can be developed, it is up to members of the community to use appropriate channels as much as possible.

In terms of legal accountability, as previously stated, there is no duty to rescue. However, if social media becomes a sanctioned channel over which to request help, a duty of care may arise in the provision of this service. For now, the question must arise, if authorities are creating a presence on Facebook or Twitter, inviting participants to follow them and start to respond to Triple Zero like requests, could a duty of care arise based on assumption of responsibility.¹²⁸⁷ In seeking to address this question, a wider view of the case law was cast, to examine negligence and the failure to respond to Triple Zero requests. There is however, little legal precedent on this subject which could inform an understanding of likely legal sanctions.¹²⁸⁸ Without further case law to inform of a courts likely position, response to these types of requests, particularly when the dedicated service for Triple Zero calls is widely known, is more likely to be a moral or ethical duty.¹²⁸⁹ As Triple Zero systems develop however to incorporate social media, this will likely change.

6. Will the failure to address misinformation on social media give rise to a claim in negligence?

7. Will the failure to address misinformation on the emergency services own Facebook page lead to a claim in negligence?

As the questions highlight, there are two issues of misinformation which arise in the case study. The first is that misinformation about a disaster, which is created by community members, is circulating on social media. The second is that misinformation has been posted on the emergency service organisations Facebook page. Undoubtedly, either of these situations becomes problematic when the misinformation leads to harm for the general populace. As a reflected in the risk communication literature however, individuals will usually seek to

¹²⁸⁷ See, eg, *Crimmins v Stevedoring Industry Finance Committee* (1999) 200 CLR 1, 39; *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, 610.

¹²⁸⁸ See, eg, *Telecommunications (Consumer Protection and Services Standards) Act 1999* (Cth) Part 8, s 147 (Little consideration of the relevant provisions under the Act could be found in this regard).

¹²⁸⁹ *Stuart v Kirkland-Veenstra* (2009) 237 CLR 215, 223.

confirm information from multiple sources.¹²⁹⁰ Principles of good practice and social media guidelines, suggest that social media channels should be monitored by agencies, and rumours corrected.¹²⁹¹ Anecdotal evidence supports view that the monitoring of messages is a crucial function for statutory authorities within the emergency management sector.¹²⁹² However, there are vast quantities of information available on social media. This information is broadcast beyond the control of agencies, and often out of reach. Consequently, the ability to actively monitor and capture all misinformation is limited, let alone to identify the culprit.

Legal accountability

Misinformation in the public domain

Should either of the sets of facts provided lead to harm for a member of the public who has then relied upon the information, they may seek to blame and hold a party legally accountable. The first question to address is whether a statutory authority has a duty to correct misinformation in the public domain? In terms of legal accountability, there is no relevant case law on this subject. At a stretch, an analogous area of case law may be the consideration of a duty to rescue. At common law, there is 'no general duty to rescue' or to prevent harm to another.¹²⁹³ The general rule, 'is that one man is under no duty of controlling another man to prevent his doing damage to a third'.¹²⁹⁴ This area of law usually refers to physical rescue rather than protection from a mistruth. However, if it is considered sufficiently analogous, a statutory authority is unlikely to have a duty to rescue the public at large, from rumours and misinformation created by the community on social media in a natural disaster.

¹²⁹⁰ See, eg, Kaspersen et al, above n 5, 13.

¹²⁹¹ Ministers for the Department of Communications and the Arts, 'Review of the national Triple Zero (000) operator' (Media release, 8 July 2014) 33 <http://www.minister.communications.gov.au/malcolm_turnbull/news/review_of_the_triple_zero_000_operator#.V_7EIfI96UI>; Queensland Police Service, Media and Public Affairs Branch, above n 400, v; Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>> 12 (The Queensland social media principles highlight the need to factor in monitoring and moderating when considering resource implications of social media).

¹²⁹² Queensland Police Service, Media and Public Affairs Branch, above n 400.

¹²⁹³ *Stuart v Kirkland-Veenstra* (2009) 237 CLR 215, 248; Wotherspoon, above n 761, 335.

¹²⁹⁴ *Stuart v Kirkland-Veenstra* (2009) 237 CLR 215, 248.

From the perspective of shared responsibility, it is up to community members to post accurate information and consider others interests in society. In the alternative, it would be difficult to expect that a statutory authority would have sufficient resources to correct misinformation during a natural disaster.

Misinformation on a Facebook page

The second issue regarding misinformation raises a slightly different question. It involves misinformation posted to the Facebook page of the emergency service organisation, a page over which the organisation has control. Again, there is little relevant case law directly pertaining to this issue. There are, however, some indications in the case law as to how the court approaches misinformation in tort law in the area of negligent misstatement and at a stretch, deceit. It is difficult to make predictions on the likely outcome on either of these actions, as the outcome will depend on the factual circumstances in each case. Also, the elements of each action do not map neatly onto case study.

Limitations of the application of the torts, negligent misstatement and deceit

As stated, there are limitations in the ability to apply the torts of negligent misstatement or deceit. With regard to negligent misstatement, a duty of care may be owed by a person giving advice and information, 'to take reasonable care in providing that information when they know, or ought to know, that the recipient intends to rely on it'.¹²⁹⁵ With respect to deceit, again there must be a misrepresentation of the fact, that the representor knew was false, and for which they intended the recipient of the information to rely on.¹²⁹⁶ Perhaps the biggest hurdle in either of these cases is that a representation is required to be made by the defendant.¹²⁹⁷ On our facts, the Facebook post (representation) is made by a member of the public, rather than the statutory authority who is the host of the Facebook page. A further hurdle in the case of deceit is that the defendant (the statutory authority) must have intended that

¹²⁹⁵ *L Shaddock & Associates Pty Ltd v Parramatta City Council (No.1)* (1981) 150 CLR 225, 225, 231, 238; Low et al, above n 60, 411 (Questions over formality of the source may be raised here, or its official nature).

¹²⁹⁶ *Derry v Peek* (1889) 14 App Case 337, 337.

¹²⁹⁷ See, eg, *Gould v Vaggelas* (1985) 157 CLR 215, 220; *L Shaddock & Associates Pty Ltd v Parramatta City Council (No.1)* (1981) 150 CLR 225.

the plaintiff would rely on the information.¹²⁹⁸ Without the authority making the statement, intention to deceive which would be difficult to prove. Further research is required to consider whether a statement made by a member of the public as a third party, but supported by the defendant could form the basis of an action in either area of law.

Conclusions

Social media is increasingly being used across the community. The technologies play a key role in forming social networks and empowering the community to share responsibility for disasters by contributing relevant, timely information, on its impacts. The platforms can also be effectively leveraged by the emergency management sector to improve risk communication and warning during a disaster or emergency. The challenge of adoption, is adapting current communication procedures and strategies to manage the nuances of the platforms. This Chapter has examined two key areas of research in relation to social media. The first is the circumstances in which a statutory authority may be held legally accountable for acts and omissions in warning over social media in an emergency. This research focused on the Queensland context. The second is to examine the role that hard and soft law instruments within the emergency management regulatory system play, in establishing an action in negligence. Each of these questions is informed by a theoretical narrative of shared responsibility and notions of legitimate roles of government and citizens in society.

The reasoning in this Chapter, with regard to the first question, reinforces the findings of Chapters Six and Seven. Chapters Six and Seven identified the elements of negligence and the statutory defences and immunities that are available. Chapter Six identified the three elements of negligence as the duty of care, the breach of a duty and damage caused by the breach. The Chapter concluded that there may be very limited instances where legal accountability for warning will be imputed to statutory authorities, within the emergency management context. This Chapter reinforces these findings in the Queensland context, noting that the formulation of a duty to warn over social

¹²⁹⁸ *Derry v Peek* (1889) 14 App Case 337, 337.

media may be difficult to demonstrate. This is because the powers and functions provided for in statute, are broad and indirect and are formulated for the protection of the general public, rather than for a specific individual. The power to warn is also discretionary. Soft law instruments containing more detailed responsibilities also exist. However, it is unlikely they are sufficient, on their own, or in combination with the Act, to provide the basis of a duty to warn. They are more likely to act as performance indicators and guidance documents which outline role responsibilities. Even if a duty to warn could be distilled from the relevant instruments, as the case law indicates, it may be difficult to demonstrate causation of harm as being linked to the failure to warn. If any decision not to warn is a rationale response to the information at hand, liability may also be excused.

As a technology platform, which supports two-way communication, social media provides numerous challenges which have not previously been experienced on traditional broadcast channels for emergency warnings. In the first instance, there is a wealth of information. Although critical to informing situational awareness, the information may contain inaccuracies. There is the potential for this information to be incorporated into messaging. However, when inaccurate messages are disseminated, they can persist and it is difficult to ensure, that any corrective message, will reach the relevant misled audience. If crowd sourced information is utilised as a basis for warning, then there is the potential for claims of negligent misstatement. The potential for these claims, provides a legal rationale for ensuring social media policies contain requirements to either ascertain accuracy of the information; include a disclaimer; or include an indication that the information is unverified. By including this requirement in social media policy, not only do the policies ensure good practice activity for warning is undertaken, they also act to reduce the likelihood of institutional risk arising.

As well as inaccurate information, which may be sent by statutory authorities, misinformation and rumours circulate on social media. However, there is a wealth of information available on social media. It is therefore difficult for statutory authorities within the sector to dedicate sufficient resources to monitoring, or detecting the source of these rumours. In terms of legal

accountability however, unless misinformation is posted directly to social media sites or newsfeeds of the emergency management agencies, it is unlikely there will any be duty for the agencies to rescue the public from harm. Instead, based on the legitimate role of citizens and government, and in reflection on notions of shared responsibility, the onus may rest with the individuals to take care of their own interest. Consequently, an individual may need to ensure as part of their civic, rather than legal duty, that they post correct information. On receipt of information an individual should also take steps to check the information against information from an official source.

This Chapter also highlighted potential new legal issues associated with social media. However traditional legal issues for statutory authorities, such as the ability to warn in a timely and unambiguous fashion will continue to arise and can be exacerbated by the use of social media. Social media facilitates the dissemination of real time information. However, sites such as Facebook incorporate algorithms which impact on the likelihood that the post of an agency will be received on time. The presence of algorithms is outside the control of an agency. However, and particularly if relying solely on social media for warning dissemination, it is unlikely that a court will consider it diligent practice to post a time critical message on Facebook. This reinforces the need to use social media only to augment traditional broadcast platforms. It reinforced the need to disseminate multiple messages over multiple platforms at one time.

Social media platforms also pose challenges for the ability to provide unambiguous warning messages. Challenges of unambiguous warnings are not unknown to the law of negligence. In the case of social media, when using Twitter for example, the ability to send clear, precise and sufficiently detailed messages is limited due to maximum number of characters in a tweet. If statutory authorities have embarked on warning, yet messages have sent individuals into greater danger because they are unclear or ambiguous, there is a greater potential for the authority to be held legally accountable. Although issues of causation and inclusion of immunities may limit the likelihood of liability, it is important from a legal perspective for agencies to carefully

construct messages. Agencies ought to consider test message templates and incorporate further links to more detailed information in their online posts.

This Chapter demonstrates that, as with the integration of any new technology into business as usual operations, statutory authorities need to be aware of the risks and challenges that come with social media platforms. Legal risks are one key element of this consideration. Risk of legal liability is not an insurmountable hurdle. As this Chapter, has demonstrated, all that is required is an understanding of the circumstances in which liability may arise. Once these circumstances are understood actions can be incorporated into doctrine; actions that from a legal perspective can limit or avoid the likelihood of this consequence. By incorporating principles of good 'legal' practice into communications strategies and social media protocols, the controls that support effective risk communication are strengthened. Concerns over liability, which may have acted as a barrier to effective implementation, may also be diminished. Consequently, the inclusions of good practice may support a more effective and optimal use of the platforms. This in turn can assist the dissemination of risk communication and warning more generally. Ultimately, good practice can support policy objective which focus on building community resilience and disaster risk reduction.

Part Three: Conclusions and Recommendations

Chapter Nine: Conclusions and Recommendations

Chapter Nine, as the final Chapter, provides the findings and recommendations of the research. Part One of this Chapter, restates the key areas of research, the rationale for engaging in the research, along with the theoretical perspective from which the research questions were approached. Part Two then provides conclusions and recommendations in response to each of the research questions. As well as the key research questions, secondary lines of investigation were evident in the thesis. Part Three therefore identifies further findings relating to, in the first instance, shared responsibility. This Part then identifies the role of the various hard and soft law instruments relevant to warning. In particular it examines how the instruments allocate responsibility and act as a basis for determining legal accountability for authorities within the emergency management sector. Further areas for future research are also identified at the conclusion of the Chapter.

Part One

What was researched?

As stated, the thesis set out to address two key research objectives. These were:

1. To examine the extent to which risk communication generally and warning more particularly is embedded in instruments which make up the emergency management regulatory system in Australia.
2. The second was to examine the circumstances in which statutory authorities within Australia's emergency management sector are likely to be held legally accountable for acts and omissions in warning through social media during an emergency

These questions investigated broad and particular considerations of how the law, and regulatory systems, support and regulate risk communication and warning during an emergency. In the first instance, the questions examine dissemination of risk communication and warning over a particular channel, noting the legal issues that can arise when using emerging technologies. Secondly, they examine the broader regulatory system for emergency

management, to determine the extent to which risk communication and warning is supported by the institutional framework.

Why it was researched?

Effective use of social media for message dissemination in an emergency can be critical to the saving of lives and property. Social media, or Web 2.0 platforms, have become ubiquitous in society. They are inexpensive, mobile and have demonstrated benefits for both the sector and the community during an emergency. However, the use of social media as a new technology for warning in emergencies has challenged traditional processes for communication. Use of the channels has also raised concerns about legal liability within the emergency management sector. The purpose of Question Two, is to examine the validity of these concerns, which have not been fully investigated by any previous research. These concerns may act as a barrier for implementation of social media by agencies within the sector, or lead to a less than optimal approach to disaster messaging. Yet, the ability of a statutory authority to disseminate a message, which reaches a wide cross section of the population, in a timely manner is important. Receipt of a message can be a critical trigger for community members to make decisions about protective actions, thereby making disaster response a true shared responsibility.

The need to be able to use social media effectively, is underpinned by theoretical understandings, that the dissemination of risk communication and warning is fundamental to the management of disaster risk. As the research in this thesis identifies, risk communication and warning act as a control or mitigation device in the management of natural hazard and emergency related risk. Risk communication and warning, has the potential to reduce the likelihood, that natural hazards will have negative impacts on persons and property. An individual informed of likely impacts of a disaster before it occurs, can consider the feasible options for their own self-protection. Actions taken by individuals can remove a considerable burden from statutory authorities during an emergency. This leaves those authorities to deal with other aspects of the emergency that require immediate attention.

Noting the fundamental role of risk communication and warning in an emergency, the first research question is directed towards an examination of the regulatory system for emergency management more broadly. The first research questions aim to determine whether there is a strong institutional foundation for risk communication and warning in place. A foundation which supports communications key role in disasters and emergencies. If there are gaps in the regulatory system, the thesis suggests that changes should be made. As previously identified, it is only when 'governance arrangements are effective...that the organisation will function as intended and achieve its objectives' in managing a dynamic risk which affects a broad section of the public.¹²⁹⁹

From what perspective?

To answer the research questions, a normative platform from which to investigate how things ought to be, and why they are as they are, was established. The theoretical narrative sought to integrate not only theory, but principles of good practice. A restatement of the key aspects of the theoretical narrative and the theoretical lenses utilised follows.

The risk society

As mentioned in Chapter One, the thesis addresses risk communication, which warns of natural hazards and their potential to manifest as emergencies in society, and which require an urgent societal response. Historically natural hazards have been viewed as 'acts of god',¹³⁰⁰ for which no-one in particular is responsible. However, there has been a shift in the views of society concerning the treatment of natural hazards and their impacts. Sociological theory on the risk society for example, identifies this shift which has taken place. The theory explains that there is an increasing focus in society on the management, quantification and treatment of 'risk'.¹³⁰¹ In light of this shift,

¹²⁹⁹ Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013) 13.

¹³⁰⁰ Lauts, 'Legal Scholarship and Disasters', above n 53, 97-99.

¹³⁰¹ Lauts, 'Legal Scholarship and Disasters', above n 53, 97-99, 104; See, also, Alexander, 'Communicating earthquake risk to the public', above n 54, 1159; Farber, 'Tort Law in the Era of Climate Change', above n 54, 1076; Rochford, above n 234, 172-173.

natural hazards and their impacts are therefore now labelled as risks, rather than acts of god.

The theory of the risk society also highlights that in order to manage risk, generic risk management frameworks and practice based standards are required. Frameworks should and have therefore been developed to guide and facilitate any risk management activity. In Australia, these standards take the form of the AS/NZS 31000:2009 Risk Management Standard.¹³⁰² The generic risk management standards have also been contextualised for the emergency management context in the form of the *National Emergency Risk Assessment Guidelines*.¹³⁰³ As there is an increasing drive in the sector to adhere to these Guidelines, they were used in the thesis to provide a framework and structure for addressing the issue of natural hazard related risk.

Roles of government and citizen in risk management: social contract theory

What the theory, or more particularly the standards, also identify is that where there is risk there will be risk owners, or entities that have been charged with ownership. These entities have both 'the accountability and authority to manage a risk'.¹³⁰⁴ In Australia, statutory authorities, as a reflection of their traditional roles as protector of life and property, have been charged with some aspects of risk ownership through policy and legislation. However, with limited resources, increasingly frequent and intense weather events, over which the emergency management sector have little or no control, government are driving a shift to a shared responsibility for disaster risk reduction. This responsibility is sought to be shared across multiple stakeholders, which include government and citizens.

Social contract theory has been highly influential in the development of Australia's system of law and government. A shift towards shared responsibility, and individual management of risk, creates tension between

¹³⁰² Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009).

¹³⁰³ Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88; Australian Institute for Disaster Resilience (Cth), *National Emergency Risk Assessment Guidelines*, above n 88.

¹³⁰⁴ British Standards Institution (BSI), *Risk management – vocabulary* (PD ISO Guide 73:2009, 30 September 2013).

normative principles of social contract theory which identify the roles of government and citizens in society. Locke's theory of the social contract notes for example, that government have a legitimate role in the protection of people and property. In a more modern form of the theory, and a form perhaps more fitting to the shift apparent in the emergency management context, Rawls social contract theory has been interpreted to suggest that citizens also have a role in society. That is, a role to protect their own interests and a civic duty to take care when pursuing their own interests. Citizens must therefore act in a manner which is compatible with, and minimises harm, to others. However, despite the presence of this more modern theory, government need to remain legitimate and retain the trust of individuals in society. Government agencies therefore need to be clear about, and gain agreement, in renegotiating or modernising the social contract to redistribute the burden of disaster risk reduction.

Principles of good practice and the need for accountability

Government and its agencies have a legitimate role to protect life and property, and have been charged with aspects of management of natural hazard and emergency related risk. There is therefore, an expectation that institutions will create systems which effectively support service delivery. There is a need to ensure these systems, more particularly the regulatory system, is designed in line with principles of good practice. Principles of good practice for regulation, state that mechanisms which support good governance will ensure 'role clarity', 'accountability and transparency' and 'performance evaluation'.¹³⁰⁵ The focus in this thesis was upon the accountability aspect of these principles. That is, ensuring that the regulatory system provided either legal accountability, or mechanisms which support the scrutiny and independent review of action to ensure service delivery is effective.¹³⁰⁶ Ultimately, when governance systems support effective service delivery, and effective delivery of warning in emergencies, policy objectives for disaster risk reduction are

¹³⁰⁵ British Standards Institution (BSI), *Risk management – vocabulary* (PD ISO Guide 73:2009, 30 September 2013) 27.

¹³⁰⁶ Better Regulation Task Force, above n 2, 4; OECD, '*Risk and Regulatory Policy*, above n 8, 25 (The presence of accountability mechanism such as performance standards are a positive element of risk based approaches).

more likely to be met. It is important to consider, in the Australian context, that the development of regulatory systems which support good governance is also balanced by the need to cut red tape, and to provide a 'proportionate regulatory response' to risks.¹³⁰⁷

As well as general principles for good practice regulation, more particular Guidelines have been established to assist in the development of effective disaster risk regulation,¹³⁰⁸ and effective risk communication.¹³⁰⁹ The Guidelines for effective disaster risk regulation highlight the need for a presence of dedicated and tailored law for disaster risk management.¹³¹⁰ Law which clearly delineates roles and responsibilities.¹³¹¹ Relevant to this thesis, the Guidelines state that laws for risk communication and warning systems need to establish 'clear procedures and responsibilities for early warning'.¹³¹² They also need to be supported or mandated down to a local level.¹³¹³

Alongside these general Guidelines, more specific Guidelines pertaining to effective risk communication have been developed. These Guidelines identify the need to plan and develop risk communication 'at an early stage of the risk management process'.¹³¹⁴ Any risk communication plan should outline 'the objectives of specific communication, who will be involved, how the channels will work, what, and how, the information will be communicated'.¹³¹⁵ Together, the theory, principles of good practice and practice based standards inform the perspective from which the research questions were examined. With this multi-layered narrative in mind, the following section identifies the key conclusions and recommendations of the thesis.

¹³⁰⁷ OECD, *OECD Reviews of Regulatory Reform*, above n 504,105.

¹³⁰⁸ International Federation of Red Cross and Red Crescent Societies, above n 79; IFRC & UNDP, 'Effective law and regulation for disaster risk reduction', above n 78.

¹³⁰⁹ Standards Australia, *Communicating and consulting about risk* (HB 327:2010); Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines*, above n 88, 31.

¹³¹⁰ International Federation of Red Cross and Red Crescent Societies, 'Effective law and regulation for disaster risk reduction', above n 78, 3, 8-9.

¹³¹¹ *Ibid.*

¹³¹² *Ibid* 107; IFRC & UNDP, 'Effective law and regulation for disaster risk reduction', above n 78, xiii, 33-34, 36.

¹³¹³ *Ibid* 107; IFRC & UNDP, 'Effective law and regulation for disaster risk reduction', above n 78, xiii, 33-34, 36.

¹³¹⁴ Standards Australia, *Communicating and consulting about risk* (HB 327:2010) 18-20.

¹³¹⁵ *Ibid.*

Part Two: What were the conclusions?

Research Question One

Addressing the broader question on risk communication and warning, Chapter Five addressed the extent to which risk communication and warning were embedded within the components of the emergency management regulatory system. The methodology utilised in this Chapter, was a content analysis. The content analysis examined hard and soft law instruments which comprise the emergency management regulatory system. The findings of the content analysis were directed to answering three further sub-questions. These sub-questions, reflected principles of good practice outlined in the theoretical narrative in relation to effective disaster law, and effective mechanisms for risk communication.

Sub-question One

The sub-questions examined, in the first instance, **whether the current regulatory system incorporates risk communication and warning throughout the various layers of the system.** To answer this question, instruments from the various layers of the regulatory system were analysed. As indicated in Chapter Five, 'the results clearly indicate that risk communication in the form of public communication and warning is present in a number of regulatory components, principally policy, plans, standards and guidelines'. In other words, they are present in soft law instruments. It was evident however, that there was a lack of explicit integration of warning into legislation. The lack of integration in legislation was surprising given the policy directives at a national level, that communication in a disaster is identified as a core area of priority. As well as a lack of integration of warning into legislation, it became apparent that the national prioritisation of communication is not reflected across State policy and legislation, more generally. This suggests there is a lack alignment in the regulatory system as a whole.¹³¹⁶

¹³¹⁶ Sheehy and Feaver, above n 94, 398.

As Chapter Five concluded, international good practice states that the obligation to warn should be incorporated into law. In Australia, with the exceptions of Queensland and Victoria, references to public communication and warning is provided for only in soft law instruments. Soft law instruments are not binding and unenforceable. This suggests that Australia's regulatory system may be inconsistent with international recommendations.¹³¹⁷

Recommendation

It is recommended **that, due to its fundamental role in reducing disaster risk, there is consideration of an explicit inclusion of warning within legislative instruments.** In the alternative, further research may be required. This research would focus on firstly, the reasoning behind the exclusions of risk communication and warning. Secondly, the research would examine whether inclusion of risk communication and warning would increase the understanding of its importance as a mitigation and control device.

Sub-question Two

The second sub-question examined, **whether the regulatory components articulate clear responsibilities for risk communication and warning.** In line with the previous sub-question, the content analysis revealed similar findings. That is, that responsibilities for risk communication and warning are primarily present in soft law instruments within the regulatory system, rather than high level policy and legislation. Aside from noted exceptions within Chapter Five, it is suggested that the regulatory system for emergency management in some Australian jurisdictions might not meet principles of good practice for disaster risk reduction law.

Recommendation

It is recommended that further research is conducted into design of regulatory components, and a comparative analysis between common-law countries such as the United States, New Zealand or the United Kingdom be

¹³¹⁷ See, eg, International Federation of Red Cross and Red Crescent Societies, above n 78, 4.

undertaken. The aim would be to determine how countries with similar judicial systems have addressed incorporation of responsibilities for risk communication. Whether there is something unique in the Australian landscape which supports a deviation from principles of good practice, is also an important point for analysis.

Sub-question Three

The final sub-question examined **whether the regulatory system components embed a requirement to use social media, and if so, whether there is clear articulation of responsibility for the use of the channels.**

The findings highlight that there are limited references to a mandatory requirement to embed social media within communication strategies, particularly in policy and legislation. There is also a lack of clear articulation of responsibility for the use of social media, and an inconsistent approach to its use. In some jurisdictions for example, the use of social media is identified as a possible dissemination channel, while in others there is only a statement of intent that it will be used. Certainly, the benefits and relevance of using social media will depend on the demographics of the jurisdiction, or more likely the local community. Ultimately however, principles of good practice recommend that a suite of channels be utilised for the dissemination of warnings.

Recommendation

The recommendation in this section reinforces principles of good practice for risk communication and use of social media from a legal perspective. In the first instance, it is recommended that community profiling take place to determine the likely effectiveness of social media as a channel for warning. Where the demographic suggests that warning through this channel is likely to be effective, explicit inclusion of the use of social media into local information and communication plans is suggested.

Research Question Two

The second research question examined the circumstances in which statutory authorities are likely to be held legally accountable, for acts and omissions in

warning through social media, during an emergency. To provide a background understanding of the relevant area of law, it was first necessary to examine legal accountability for warning more generally. This examination involved an analysis of case law pertaining to the law of negligence. It outlined the three elements required to be established a claim: a duty of care, the breach of a duty of care and damage sustained in relation to the breach. As well as how each element is applied to constitute negligent acts and omissions.

The law of negligence determines the standards of conduct, or the reasonable standards of care expected of statutory authorities in taking measures to warn during emergencies. It is only when there is a failure to adhere to the relevant legal standard of care, that liability can ensue. Chapter Seven identified the statutory immunities and defences which may be invoked by statutory authorities charged with negligent conduct. The effect of a successful application of a defence or immunity, is that even where negligence is found against the relevant authority, liability will not ensue. In Chapter Eight, the findings of Chapters Six and Seven were then applied to the specific context of a duty to warn in relation to the dissemination channel of social media as an emerging technology.

Broad Findings on the law of negligence and the duty to warn

Chapters Six and Seven identified broad findings of the circumstances in which a duty to warn would likely be found in a statutory authority in the context of natural hazard management. Chapter Six identified that although the law of negligence sets the standards of conduct between parties and the reasonable standard of care, there are some concessions made which temper liability in statutory authorities. These concessions include policy considerations such as the need to allocate limited resources across numerous competing areas of responsibility, as well as the recognition that statutory authorities need to be able to make time critical decisions without fear of liability.¹³¹⁸ The first of these concessions acknowledges the numerous roles of statutory authorities as

¹³¹⁸ Explanatory note, Disaster Management Bill 2003 (Qld) 7; *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701 [686], [713] citing *Crimmins v Stevedoring Industry Finance Committee* (1999) 200 CLR 1, [93].

public functionaries, and the finite resources available to fulfil their roles. With limited resources, a statutory authority may be unable to deliver as effectively in some areas as in others. Instead, the authority will be required to balance the public interest, and private interests of individuals, to determine which areas of responsibility they are able to, and should address. The effect of these concessions is that, in some circumstances, they raise the threshold at which liability will be attributed to statutory authorities. Consequently, the level of service that a member of the public might expect of a statutory authority, including in the area of warning, is not the same as that required by law.

Formulating a duty of care

Chapter Six further identified hurdles in establishing each of the elements of negligence in the warning context. The establishment of an action for a failure to warn, or a failure to take reasonable care in warning, is a novel action in torts law. Categorisation as a novel action, impacts on the criteria required to be fulfilled to formulate whether a duty of care exists at all. Chapter Six clearly identified the need to establish a risk of harm was reasonably foreseeable, however, a court will also consider salient factors.¹³¹⁹ These factors include control that a statutory authority might have. Control has both a narrow and broad interpretation in the case law, either as control over the hazard itself, or control over management of the hazard. In making a determination as to control of a statutory authority, a court will consider any functions or powers within legislation. As well as control, a court will also consider the knowledge an authority has of the hazard, and the associated vulnerability of the public. Although not an exhaustive list of the considerations of the court, control, knowledge and vulnerability are perhaps key considerations.

Chapter Six examined each of the criteria outlined above, which form the basis for the formulation of a duty of care, in detail. When applied it became apparent that the ability to establish that a duty of care, or a duty to warn were owed is limited. In considering the criteria which establish a duty of care in novel cases, although many of the impacts of a natural hazard are likely to be reasonably foreseeable, certain salient factors may mean that a duty of care could be

¹³¹⁹ *Caltex Refineries (Queensland) Pty Limited v Stavar* (2009) 259 ALR 616, 647.

difficult to establish in this context. This is despite the existence of powers and functions for warning. Therefore, even when powers or functions for warning are provided for in statute, this does not necessarily suggest there is a legal obligation to act. It will only be in certain circumstances that a duty of care to issue a proper warning may be found. These circumstances may include: when powers to warn are specific and mandatory; when natural hazard impacts are likely to be catastrophic; and when an authority's knowledge of the likely impacts of the hazard authority is greater than the public's.

Further elements: Breach of a duty, damage

Even if a duty of care is established, the ability to establish there was a breach of the reasonable standard of care, and that the breach caused the damage, may be difficult to prove. As indicated policy concessions are in place which mean that if the authority, as a public functionary, is subject to resource limitations this may impact on the ability to prove conduct breached the reasonable standard of care. As the final element, the establishment of causation of damage may also be difficult to prove. In the face of a natural disaster, there may be no action that an individual, even with the benefit of warnings, could have taken that would have prevented the harm they suffered.¹³²⁰ Based on historic case law, the findings of Chapter Six suggest there will only be limited circumstances in which an action in negligence can be made out against a statutory authority.

Defences and immunities

In conjunction with the concessions made in the case of statutory authorities to limit liability, relevant defences to actions and immunities from liability are also found in common law and in legislation. Defences and immunities negate liability for, or reduce the amount of compensatory damages which might otherwise be payable by the statutory authority. Chapter Seven identified that the defence of contributory negligence has been infrequently used in warning cases related to emergencies. Yet a successful application of this defence

¹³²⁰ *Chappel v Hart* (1998) 195 CLR 232, 245-246; Eburn, 'The emerging legal issue of failure to warn', above n 71, 54-55.

could also support apportionment of liability against an individual claimant. The apportionment of liability will be determined by the comparative culpability of the parties. The defence is based on a presumption that an individual will take reasonable care to protect their own interests. The thesis concluded, that where even a single warning is issued, theoretically the warning should be a sufficient trigger to alert an individual to take reasonable care in light of the predicted hazard impacts. Even when there is an absence of warning, yet there is a known hazard, such as storm season approaching, a potential claimant ought to make an independent assessment of the risk of hazard impacts. In addition to the defence of contributory negligence, a court may consider whether a natural hazard or emergency related risk, which might otherwise negate a duty to warn, is obvious. In most instances however, a court is unlikely to find that a natural hazard and emergency related risk is obvious, although it will depend on the factual circumstances of the case.

As well as defences, the incorporation of immunities and protection from liability into statute has become standard drafting practice. The practice aims to limit institutional risk. Immunity from liability, curtails the ability of citizens to claim compensatory damages for harm caused. However, it also ensures a degree of certainty for statutory authorities responsible for making time critical decisions, that no liability will arise. In Australia, in most jurisdictions, legislation which establishes the emergency management and emergency service authorities, and provide framework for emergency management, incorporate immunities or protections for action which has been taken in 'good faith'. If the statutory authority can establish the pre-requisites, these defences may be very effective in negating liability. Evidence of action, or inaction, to establish good faith include: actions or decisions which are a rationale response to the situation; actions which demonstrate diligence; actions carried out honestly and conscientiously, have no ulterior motive, but are otherwise clearly directed towards the protection of life and safety. The analysis of the case law revealed that actions may be considered to be carried out in good faith even if they fail to follow procedures and protocols.

Recommendations

The findings on the duty to warn suggest there will be limited circumstances in which a duty of care to warn in a natural disaster setting will be owed. However, there are some steps that can be put in place to further limit the potential liability of a statutory authority for failure to warn properly or at all. Moreover, the implementation of these steps alone may demonstrate competency and legitimacy of action in discharging the duty to warn. As established in Chapter Three, competent and legitimate action supports the development of trust with private citizens, and trust, is a key factor in achieving a positive response from citizens to risk communication.

Establishment of a duty of care

- It is recommended that a statutory authority seek advice so that they understand the nature of any legislated responsibilities to warn. The aim is to ascertain whether any power or function is mandatory, discretionary or likely to be construed as providing a sufficient basis to constitute a duty of care to warn.
- If a statutory authority has knowledge of a likely significant hazard impact, subject to considering warning fatigue,¹³²¹ a warning should be issued to the public. The warning should incorporate where relevant, information concerning the degree of uncertainty or unpredictability of the event.

Establishment of the breach of a duty of care

- Historically concessions have been made for statutory authorities based on resource limitations. The concessions reduce or negate the breach of a duty of care. However, with the inclusion of escalation pathways within instruments which provide for greater resource capacity, **it is recommended that authorities make a reasonable**

¹³²¹ Brenda Mackie, 'Warning Fatigue: Insights from the Australian Bushfire Context' (Thesis submitted in fulfilment of Doctor of Philosophy in Media and Communication, University of Canterbury, 2013) 2.

attempt to escalate and gain assistance in warning where possible.

- The dissemination of warnings which lack clarity or are ambiguous have historically been used to assert there was a lack of reasonable care in warning. It is therefore recommended that statutory authorities engaged in warning activities **undertake evidence based research to test that communities understand the meaning of warning messages, particularly where symbology which could be misconstrued is utilised.**
- To determine that a statutory authority has exhibited a reasonable standard of care in warning a court will consider the entirety of messages sent. **It is therefore recommended that statutory authorities continue to provide a suite of messages which include pre-season warning.**
- To make a determination as to whether reasonable care has been demonstrated, a court will consider the general practice of the statutory authority in delivering warnings. It is recommended that if an authority seeks to alter its systems for message delivery, for example, an authority no longer has the resource capacity to undertake door knocking; **the authority ought to educate the public, or the relevant community of the change in warning procedures.**
- If procedures and protocols exist, which outline recommended action for warning, it is recommended in the first instance these **protocols are kept up-to-date in order to reflect current principles for good practice.** Secondly activity should either comply with these procedures and protocols or at least, where possible, be consistent with them.¹³²²

¹³²² Although the cost of compliance may appear onerous, the cost of non-compliance is often greater where errors occur. It is recognised that due to the dynamic and unpredictable nature of natural hazards, some flexibility in application of protocols and procedures are required. If alternative activities are undertaken in good faith – and demonstrate diligent action and a well-reasoned rationale, negligence is unlikely to result.

Immunities and protections in law

- Should an action in negligence be brought against a statutory authority, it is recommended that consideration be given to use of the defence of contributory negligence where there is evidence to support its use.
- Should an action in negligence be brought against a statutory authority, it is recommended that recourse is made to statutory immunity provisions.
- To give greater certainty that statutory immunities provisions will be available, it is recommended that decision making processes are documented even informally. This document might include the material that was considered at the time. The aim is to demonstrate that the decision was a rational and diligent response to the circumstances at hand.
- When possible it is recommended that protocols and procedures for warning are complied with, if they are up to date. There may be time when deviations from protocol is necessary. In those time evidence to demonstrate the reasoning behind the need to deviate from targets should be captured if time allows.

It is envisaged that these recommendations will provide further safeguards against findings of legal accountability against statutory authorities engaged in warning practices. Many may reflect common sense, or moral and ethical notions of good practice, however it is important to reiterate the role of these actions with regard to reducing the likelihood of the risk of liability.

Findings on the circumstances in which legal accountability will arise in social media

Chapters Six and Seven reached a number of conclusions on the circumstances in which legal accountability will be attributed for failure to warn properly or to warn at all. These conclusions were then applied to a hypothetical case-study. The scenario in the case study was embedded in the Queensland emergency warning context and the use of social media as a dissemination tool in the Queensland context. A number of sub-questions

were posed to reflect the challenges faced by statutory authorities within the emergency management sector. The findings and recommendations will be addressed with reference to these sub-questions. These investigations identified some challenges which are common to channels for communication and warning. Challenges which have historically been experienced, and to which the law of negligence has been applied. There will however, be some situations to which the law of negligence has not been applied. In these cases, further research is recommended.

In terms of originality, the findings of this Chapter restate some aspects of principles of good practice which are currently in the risk communication domain. However, the Chapter reinforces that it is importance to incorporate certain specific activities which support effective communication, activities which also limit the likelihood that a statutory authority will be held legally accountable for its use of social media. The need to include certain activities ought to be further reinforced to those involved in warning during emergencies, in order to alleviate legal concerns.

Question One

In respect of long-standing challenges which can lead to legal accountability, the first question **was whether local government in Queensland would owe a duty of care to warn and whether that duty would require the use of social media?**

The determination of whether a duty of care would arise required an examination of the soft and hard law instruments relevant to Queensland's emergency management regulatory framework. The powers and functions for warning, particularly within legislation, were found to be broad and indirect. Those in soft law instruments lacked prescription. The overarching conclusion in this Chapter aligned with the findings of Chapter Six. The conclusions highlighted that it may be difficult to assert there is a duty of care to warn, or one that would include a specific requirement to warn over social media. However, if a duty to warn is established in Queensland an examination of the content of a reasonable standard of care is required. The case study

concluded that in taking reasonable care for warning, the relevant statutory instruments do not require incorporation of specific channels such as social media into communication strategies.

In some local and regional catchments, soft law instruments, which identify the public information strategies that will be used, include a statement of intent that social media will be used to warn in emergencies. It is important to note, that these statements may create a public expectation and reliance on the fact that the channels will be used. When a statement of intent, or historical usage of the platforms creates a reliance on the channel by the public, a failure to employ them, gives greater weight to a possible finding of breach of duty. However, a positive finding that there is a breach of the reasonable standard of care in warning will depend on the circumstances and the resource capacity of the relevant authority. Even if a duty of care or breach of the duty to warn could be established, there may be insurmountable hurdles for the claimant in regard to causation of damage from a natural hazard. Finally, a statutory authority may have recourse to immunity provisions found in the *Disaster Management Act 2003* (Qld).

Recommendation

It is recommended that care is taken in making statements of intent as to the use of social media. If a statement of intent regarding the use of social media has been made, or if the channels have historically been used, it is recommended that every effort be made to diligently communicate over these channels. A failure to do so may be used to assert that there was a breach of a duty of care in the circumstances, an assertion that will need to be defended. A failure to use social media in these circumstances may also undermine trust relationships between statutory authorities tasked with warning, and citizens. As established in Chapter Three, trust relationships are important to supporting effective risk communication.

Question Two

Question One, identified that it may be difficult to formulate a duty of care to warn. In the knowledge that there may still be certain circumstances which could lead to a duty to warn, **the second question focused on whether an**

emergency service authority would breach a duty to warn if it relied on Facebook to disseminate timely warning messages. One challenge of Facebook is that the presence of algorithms can affect timely delivery of messages. For seasoned users of the platform, this fact is common knowledge. So too is the knowledge that an ill-timed message can mean that citizens are unable to take measures to take care of their own safety.

Recommendation

Bearing in mind the limitations on timely delivery, and although it is an unlikely course of action against a statutory authority, it is recommended that Facebook is not relied on as a sole channel for warning. This is particularly the case when timely message delivery is required. To rely solely on Facebook would perhaps fail to demonstrate diligent and reasonable behaviour. Consistent with emerging principles of good practice on social media, the thesis reinforces the need to utilise multiple channels for dissemination of warning.

Question Three

Question Three addressed challenges of sending unambiguous messaging over platforms such as Twitter due to the limitations on message length. Judicial precedent identifies that an ambiguous warning fails to demonstrate a reasonable standard of care has been taken. An ambiguous message does not properly alert the recipient to the nature of the risk being faced. Without training and the use of due care and skill, the use of platforms such as Twitter has the potential to increase the possibility for message ambiguity which could lead a message recipient in to harm's way and lead to consequent liability in the sender.

Recommendation

To lessen the likelihood of ambiguity in Twitter warning messages, it is recommended that links to further, and more detailed information, be provided. It should be acknowledged, however, that some Twitter users may not be able to access further content, and therefore attention needs to be paid to the clarity within the single message. Tested message templates may assist. It is also

recommended that users of social media within the relevant authority are trained in syntax and language conventions used on Twitter, in order to avoid confusion.

Question Four

In Chapter Eight, questions were also posed as to whether posting inaccurate information on Facebook could lead to a breach of a duty of care. Inaccuracy of information or advice in warning messages, and the ability of recipients to face harm where they rely on inaccurate advice, has been a long-standing concern in the warning context. Provision of inaccurate information by a statutory authority may lead to an action for negligent misstatement. Inaccurate information on social media is an issue, in that it can rapidly cascade to numerous social media followers in a short space of time. It is then difficult to retract an inaccurate statement, or to ensure that any correction reaches the same audience as the initial post. Inaccuracies in content may become more apparent as information created by the crowd is uploaded and broadcast. Should an authority then share this unofficial content created by a community member, which is not verified, and is incorrect, real concerns over legal accountability would arise.

Recommendation

As negligent misstatement is beyond the scope of inquiry in this thesis, it is recommended that further research is undertaken to fully identify issues of misstatement. In the interim, and to avoid legal implications for sharing unverified information for example, it is recommended that care or at least an informed decision is made as to whether or not to share user created content. Anecdotal evidence suggests some statutory authorities have systems in place to allocate a weighting to the veracity of user created content and its degree of reliability. As a second course of action, the inclusion of a hashtag (#unverified) within the post will also alert the message recipient that further information ought to be sought. Alternatively, the crowd could be used to verify the unconfirmed content, or at least be educated to check the source of the original message.

New Issues in Law

Question Five

The use of Twitter and Facebook, as a ubiquitous channel for communication, means that it is being used by community members in emergencies to post requests for assistance. These requests would ordinarily be channelled through official Triple Zero call centres. **Question Five, addressed whether a statutory authority which failed to respond to a request for assistance over Twitter would be likely to be held legally accountable.**

Technological developments are occurring, which signal a movement towards incorporation of social media into Triple Zero response systems. However, in Australia this functionality is yet to be established. In response to emergency social media, a statutory authority with limited resources, may be unable to capture all social media requests and therefore be able to respond in a timely manner. There is little case law which examines negligence or the failure to respond to a Triple Zero call in Australia, and the examination of this question extends beyond the scope of this research. An initial review of literature suggests there is unlikely to be a legal duty to respond, although anecdotal evidence suggests that where possible social media requests for help are eliciting a response due to a sense of moral or ethical duty. Certainly, any failure to do so may damage the reputation of the authority in question.

Recommendation

It is recommended that further research be undertaken into legal accountability in this area. The thesis also suggests that an authority ought to clearly notify the public of the monitoring hours of social media sites. If requests for assistance are met by emergency response authorities, it is important to note that the authority may be assuming a responsibility which leads to ongoing expectations. It is, therefore, recommended that the emergency management sector supports ongoing investigation of the incorporation of social media into a Triple Zero response facility.

Questions Six and Seven

The final questions provided for in the scenario, focused on liability for misinformation. This may be described as the failure to address misinformation and rumours in the public domain about a disaster or natural hazard event, as well misinformation posted on a Facebook page of an emergency service authority. As previously highlighted misinformation, whether inadvertent or not, has the potential to provide a platform for wrong action if it is followed. Consideration of areas of law which might be provide answers for these issues are beyond the scope of this thesis. However, initial conclusions could be drawn.

In the first instance, despite the increasing availability of tools which monitor and track information, and general acknowledgement that it is good practice to address rumours,¹³²³ it is unlikely that a statutory authority will be held legally accountable for failing to address rumours in the wider social media community. With regards to misinformation posted on a social media page of an authority in the first instance, the authority is not the source of the information and secondly, it is unlikely they have any intent to mislead their audience. These factors are otherwise important if a claimant seeks to establish an action in deceit or misrepresentation. However, if a statutory authority does become aware of misinformation on its Facebook page for example, it would be wise to correct or at least alert the audience of the fact that the veracity of its content may not have been checked.

Overarching Conclusion

Social media provides new challenges for statutory authorities within the emergency management sector. However, as indicated, few of these are likely to lead to circumstances in which the authority will be held legally accountable. Recommendations which identify action and which can help to avoid legal accountability have been highlighted throughout this Chapter. These recommendations ought to be incorporated into doctrine which delineates principles of good practice for emergency warning. Incorporation into doctrine

¹³²³ See, eg, Queensland Police Service, Media and Public Affairs Branch, above n 400, v, vi.

and the relevant guiding instruments may then act as an effective control to limit institutional risk, or risk of other legal liability. In some instances, the findings of the research restate emerging principles of good practice which have arisen out of disciplines outside of law. The legal rationale for the inclusion of the relevant principles into good practice ought to be made clear to end-users of the instruments. The final recommendation is that those authorities that have concerns over the use of social media need to be educated as to the realistic prospects of legal action. Education may assist to remove any barriers to implementation of social media where it is a relevant technology.

Part Three

Additional Findings

As well as the key research objectives, two secondary threads of investigation were evident in the thesis. The first focused on how responsibility for communication and warning is, or ought to be shared, between government and citizens in society. The second thread of investigation, focused on understanding the roles of the hard and soft law instruments in attributing responsibility and accountability for emergency warning. Many of these instruments, particularly soft law instruments, contain responsibilities, powers and functions for warning. An understanding of the role of these instruments in assigning a legal obligation to act was a particular point of interest. Findings in relation to these secondary threads of investigation are outlined below.

Findings of relevance to Shared Responsibility

Investigation of social contract theory, focusing on moral responsibilities of government and citizens in society, provided some insights into what the role of each party ought to be in society. In the first instance, Locke's theory identified the need for legitimate government, legitimate use of power, and obligations to uphold certain rights within society.¹³²⁴ In light of the role of government in protecting life and property, undertaking actions in the area of

¹³²⁴ Locke, *Two Treatises of Government*, above n 29.

emergency management was seen as a legitimate use of power. However, the theory notes that any action which is undertaken must balance the rights of individuals with the 'most extensive total system of liberties'¹³²⁵ and freedom to pursue their own private lives. The right to pursue their own private lives, highlights the corresponding role of citizens. The role of citizens also includes a need for individuals to consider their own risks in pursuing their freedom to live as they please. Any action an individual takes, must also be compatible with the corresponding rights of others to pursue their own interests. In the context of disaster and emergencies, this includes the right to safety of emergency management volunteers and employees. As part of civic duty, it is also expected that citizens will abide by just laws and uphold the institutions of society. These moral ideals were then extrapolated into the context of risk communication and warning.

Governments share of responsibility for warning and communication

Addressing the role of government in warning, the *National Strategy for Disaster Resilience* emphasises the important role played by government. The strategy highlights that at times statutory authorities will face a disproportionate burden in providing information to the public. The disproportionate burden may be warranted. This is because the authority has access to a greater degree of knowledge, particularly reliable knowledge, and has the ability to apply technology to determine relevant impacts of a hazard on the community. To support the role of government in warning, frameworks and regulatory components have been created which identify role responsibilities in the area. It is important that these roles are carried out. However, as has been demonstrated, it is unrealistic to expect that government can reduce any hazard or emergency related risk to zero. It is also unrealistic to expect that the government will be able to warn in every instance, particularly when faced with unpredictable and dynamic events. When a warning is provided however, in order to remain legitimate in the eyes of the

¹³²⁵ Rawls, *A theory of Justice Revised Edition* (Belknap), above n 478, 56.

community, the warning content needs to take into account rights of individuals to stay and defend their property.

Social contract theory further identified that government is subject to the law.¹³²⁶ The law of negligence was therefore examined, to determine the extent to which the responsibilities and functions within regulatory components would result in a legal obligation on statutory authorities. The case law revealed that even though government is subject to the law, it may be difficult to impute a duty of care to warn. So too, the standard of care required of a statutory authority, in light of the relevant functions and responsibilities, is not such that it is unlikely to face legal liability for acts and omissions in warning during an emergency.

This finding suggests that although government is allocated a share of responsibility, without more, there may be a lack of accountability for warning in an emergency. While ‘accountability’ or perhaps more likely ‘blame’ will be determined, in some instances, through coronial inquiries and royal commissions, there is research to suggest such proceedings do not necessarily lead to improved processes.¹³²⁷ In light of these findings, and acknowledging the mitigation role that communication and warning can play in a disaster, this thesis suggests further research is required to determine whether further accountability mechanisms should be evident. As identified in Chapter One, accountability mechanisms act as controls to ensure that the institutional framework and regulation itself, is effective.¹³²⁸ Having ‘a duty to explain’ and ensuring there is relevant exposure to scrutiny may also demonstrate transparency and reinforce trust relationships between the citizens and the State.¹³²⁹ A further benefit of accountability mechanisms is that, when taking the form of performance standards, adherence to them may provide an objective benchmark against which to defend action in the context of post-disaster inquiries.

¹³²⁶ Locke, *Two Treatises of Government*, above n 29, Essay 2, 89, 143.

¹³²⁷ Eburn and Dovers, above n 10.

¹³²⁸ House of Lords, ‘The Regulatory State: Ensuring Its Accountability Volume I’ (Report, Select Committee on the Constitution, 6th Report of Session 2003-04, 2004) 21.

¹³²⁹ *Ibid* 19, 23.

Citizen's share of responsibility for warning and communication

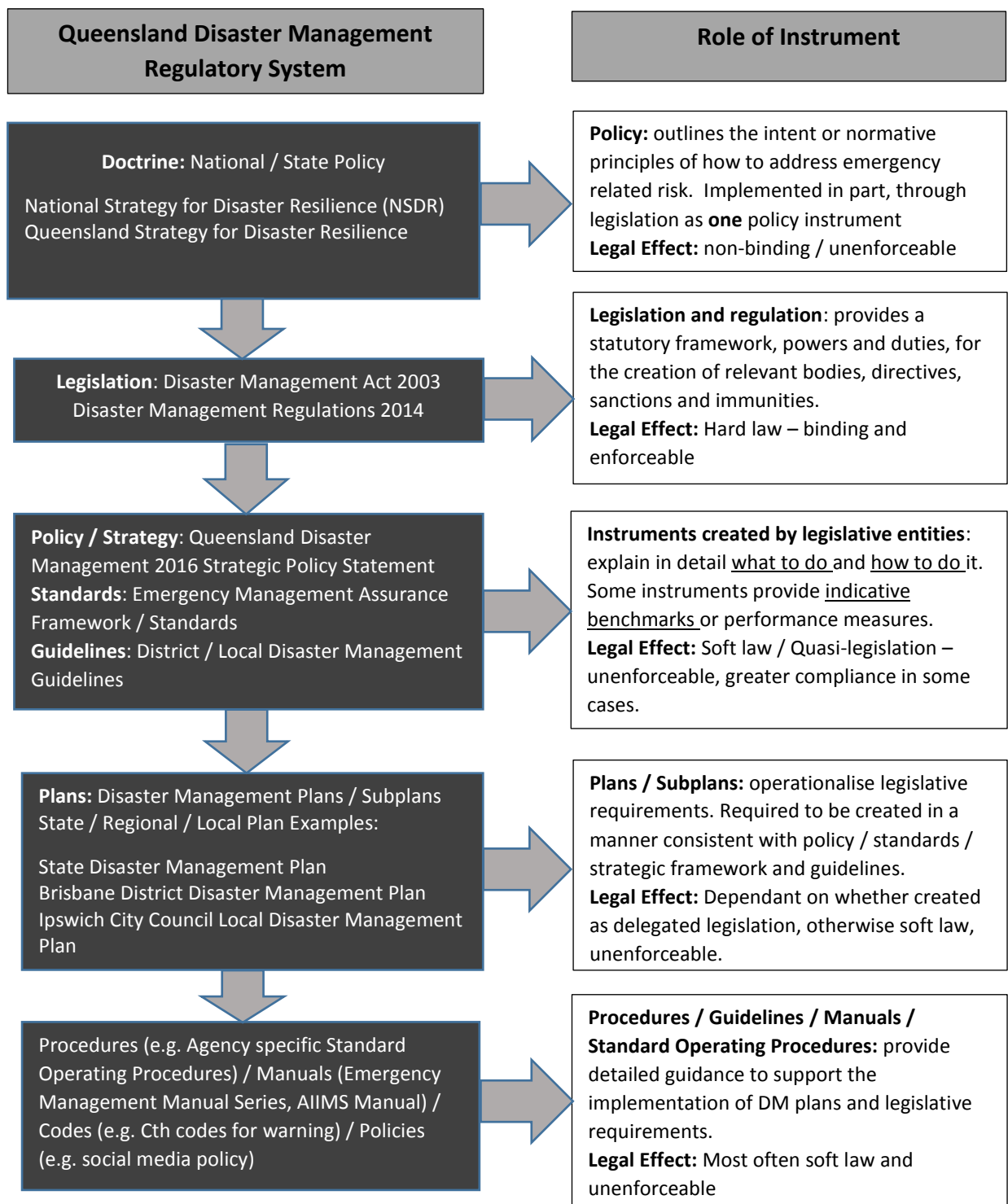
Despite any expectation of citizens that natural hazard and emergency related risk can be managed, or that government ought to shoulder legal responsibility for warning, this thesis concluded that this will not often be the case. Instead there is a growing focus on the individualisation of risk and the acknowledgement that individuals need to take at least precautionary measures for their own safety. In terms of protection of an individual's own interests in an emergency, examination of the case law did not provide any degree of certainty of the extent to which individuals ought to seek out warnings. However, when warnings are given, judicial precedent suggests they should at least be heeded and followed. If there is no warning given, yet an individual has some familiarity with an area and knowledge of the historical impact of hazards, an individual ought to make an independent assessment of the potential risk they may face.

Although there will be little explicit legal enforcement of the need for citizens to take care of their own interests, their need to protect their interests is taken into account when allocating legal accountability under the law of negligence. When individuals do not act to protect their own interests, they will instead bear the costs of their own inaction. However, there will be circumstances where no warning is given in an emergency, yet citizens will be expected to bear the cost. At times the requirement to bear their own costs, even when there is a lack of warning, will produce inequities, particularly in the event that insurance is unavailable or premiums are too high. As these findings highlight the precise lines of how responsibility is shared in an emergency, are blurred. It is clear however, that there will be critical interdependencies between government and citizens that ought to be considered.

Findings on the role of hard and soft law instruments

From a legal perspective, the final line of inquiry was the role that the various hard and soft law instruments play in allocating responsibility and determining legal accountability for statutory authorities. In Chapter Five, a diagrammatical representation of the various instruments in the Queensland regulatory system

Figure 6: Hierarchy of Instruments in Queensland's Regulatory system for disaster management¹³³⁰



¹³³⁰ Figure 6 is adapted from, Minister of Community Safety & Correctional Services (Ontario), *Legislation and Regulation* (25 May. 2016) <http://www.emergencymanagementontario.ca/english/insideemo/legislationandregulation/emergency_management_doctrine.html>.

for disaster management were provided. Figure 6, which identified the hierarchy of instruments is provided again above. As can be seen from this diagram, the hierarchy depicts layers of instruments. These instruments outline the voluntary and mandatory steps required to meet overarching objectives which are housed in doctrine. Soft law instruments such as standards, plans and guidelines, provide guidance as to how to achieve any mandatory requirements. In Australia, overarching doctrine in the form of the *National Strategy for Disaster Resilience* takes its place at the top of the hierarchy. The role of the strategy is to put in place core policy objectives which act as statements of intent.

In Australia, further doctrine / policy is evident across each jurisdiction. Working through the hierarchy of Queensland instruments, doctrine is followed by legislation and a mandatory disaster management plan. In terms of warning, with limited exceptions, emergency management legislation across each of the jurisdictions contains minimal reference to warning that would impute a legal obligation to act. Instead the specific responsibilities for dissemination of public information and warning are outlined in the emergency and disaster management plans. Although these activities may be considered mandatory from an operational perspective, as the case law demonstrates, a statutory authority is unlikely to be held legally accountable based on responsibilities within these soft law instruments, when standing on their own.

As depicted in Figure 6, further guidelines, protocols and standards have been developed in the emergency management regulatory system in Queensland. These instruments identify roles and responsibilities related to the dissemination of public information and warning. The instruments usually allow for flexibility in delivery, to cater for regional differences and the different operational response required to manage the various hazards. These soft law instruments are described in Figure 6 as 'how to' instruments, used for guiding action. However, in fact, whether these instruments are purely 'how to'

instruments or whether they have the force of law, and require action,¹³³¹ will depend on the language used in the statute.¹³³² It will also depend on the way in which the instrument is integrated with the primary legislation.¹³³³ This finding highlights that care must be taken not to assume that soft law instruments do not contain requirements to act in law. In some jurisdictions in Australia, the legislation which creates the soft law instrument, or the soft law instruments themselves contain wording which stipulates a degree of compliance, or a requirement to act consistently with the relevant instrument.¹³³⁴ As such, the use of mandatory language might suggest that the soft law instrument in fact identifies a legal requirement for action. In most instances however, the role of a soft law instrument, is to provide a target for action rather than to provide a legal obligation or responsibility against which legal accountability will attach.

As a final note, in consideration of the breach of a duty to warn, and the need to invoke statutory immunities to negate a claim of negligence, soft law instruments may play an important role. Compliance with soft law instruments, such as plans, protocols, standards and procedures, may assist in demonstrating that the authority has acted either without negligence, or demonstrate they have acted good faith.

Avenues for Future Research

There are numerous possibilities for further research which arise out of this thesis. Perhaps the most pressing is the need to investigate current

¹³³¹ *Smoker v Pharmacy Restructuring Authority* (1994) 125 ALR 577, 579.

¹³³² Weeks, above n 551, Chapter Nine.

¹³³³ See, eg, *Warragamba Winery Pty Ltd v State of New South Wales (No 9)* [2012] NSWSC 701, 430, 429; *Sheridan v Borgmeyer* [2006] NSWCA 201, [18]; *Maynard v Rover Mowers Ltd* [2000] QCA 26; [17] (Where protocols and codes were deemed not more than a standard without legal force, however they may prove relevant to determining whether reasonable precautions have been taken) *Matthews v SPI Electricity Pty Ltd (Ruling No 2)* (2011) 34 VR 584, [78]-[79] (An emergency plan does not constitute delegated legislation which would bring about a statutory duty but may assist in the finding of a common law duty); See, also, Encyclopaedic Australian Legal Dictionary – ‘guidelines’ – Administrative Law (13 Sept 2016) (Where a guidelines may be considered policy which ‘does not have the force of law unless the empowering legislation provides it is binding’); Fisher, *Legal Reasoning in Environmental Law*, above n 94, 337.

¹³³⁴ Attorney General’s Department (Cth), *Code of Practice for Warning Republishers* (April 2013), Attorney General’s Department (Cth), *Best Practice Guide for Warning Originators* (June 2013) (These Commonwealth guidelines for example are not intended to impose mandatory requirements but act as complementary guidance for state activities).

accountability mechanisms which are in place for the independent review of warning in the emergency management sector. Whether further accountability mechanisms ought to include external audit procedures, which are perhaps more onerous on organisations with limited resources, or whether they should take the form of internal operational review for example, requires further investigation. In Queensland and Victoria, the Office of the Inspector General for Emergency Management provides an external audit role. In Queensland, for example, the Inspector General of Emergency Management has undertaken a review of the capacity of local government to warn in a disaster.¹³³⁵ This review highlighted that capabilities to meet the outlined responsibilities for warning have still not being developed. This finding is despite the presence of detailed soft law instruments and standards. Research into the effectiveness of this type of review is warranted, to determine whether it is an appropriate measure to put in place in other Australian jurisdictions.

Aside from accountability mechanisms, there are numerous intersections between the integration of social media into emergency management and the law, which could be investigated. These areas of research were identified in Part Two of this Chapter. An important aspect of the ongoing research into risk communication and warning in the context of emergency management, is the contemplation of shared responsibility. The use of social media as a two-way channel of communication in emergencies can increase participation, to reduce the burden on emergency management authorities, to enhance social networks and build mutual trust between citizens and the state. This thesis suggests it is therefore important to undertake further research. Research which can assist in removing barriers to the implementation of social media where it is a technology that is considered relevant to the demographic of specific communities.

¹³³⁵ Inspector General of Emergency Management (Qld), *Review of local governments' emergency warning capability*, above n 11.

Bibliography

Articles / Books / Reports

- Adger, W. Neil, et al, 'Changing social contracts in climate change adaptation' (2013) 3 *Nature Climate Change* 330
- Aldunce, Paulina, et al, 'Framing Disaster resilience: The implications of the diverse conceptualisations of bouncing back' (2014) 23(3) *Disaster Prevention and Management* 252
- Alexander, D.E., 'Resilience and disaster risk reduction: an etymological journey' (2013) 13 *Natural Hazards Earth System Sciences* 2707
- Alexander, David E., 'Communicating earthquake risk to the public: the trial of the "L'Aquila Seven"' (2014) 72(2) *Natural Hazards* 1159
- Alexander, David E., 'Social Media in Disaster Risk Reduction and Crisis Management' (2014) 20 *Science Engineering Ethics* 717
- Althaus, Catherine, Peter Bridgman and Glyn Davis, *Australian Policy Handbook* (Allen & Unwin, 5th Ed, 2013)
- Anada, T, 'The Perfect Storm, an Imperfect Response and a Sovereign Shield: Can Hurricane Katrina Victims Bring Negligence Claims Against the Government?' (2008) 35(2) *Pepperdine Law Review* 279
- Anikeeva, Dr Olga, Dr Malinda Steenkamp and Professor Paul Arbon, 'The future of social media use during emergency in Australia: insights from the 2014 Australian and New Zealand Disaster and Emergency Management Conference social media workshop (2015) 30(1) *Australian Journal of Emergency Management* 22
- Antheunis, Marjolijn L., Mariek M.P Vanden Abeele, and Saskia Kanters, 'The Impact of Facebook Use on Micro-Level Social Capital: A Synthesis' (2015) 5 *Societies* 399
- Armijo, Enrique, 'Communication Law, Technological Change, and the New Normal' (2014) 19(4) *Communication Law and Policy* 401
- Aronson, Mark, 'Government Liability in Negligence' (2008) 32(1) *Melbourne University Law Review* 44
- Aronson, Mark, 'Private Bodies, Public Power and Soft Law in the High Court' (2007) 35 *Federal Law Review* 1
- Arvai, Joseph, 'The end of risk communication as we know it' (2014) 17(10) *Journal of Risk Research* 1245
- Asiata, Lanre-Abass Bolatito, 'Technology, individual rights and the ethical evaluation of risk' (2010) 8(4) *Journal of Information, Communication and Ethics in Society* 308

Australia, 'Connection! 2014 Social Media Masterclass and Forum Outcomes Report' (2014)

Australian Business Roundtable for Disaster Resilience and Safer Communities, 'The economic cost of the social impact of natural disaster' (Deloitte, 2015)

Aven, Terje & Ortwin Renn, *Risk Management and Governance* (Springer, 2010)

Baker & McKenzie, 'Local Council Risk of Liability in the Face of Climate Change—Resolving Uncertainties A Report for the Australian Local Government Association' (2011)

Balkin, R P & J L R Davis, *Law of Torts* (LexisNexis Butterworths, 5th ed, 2013)

Baragic, Mirko and Sharon Erbacher, 'Causation in negligence: From anti-jurisprudence to principle – Individual responsibility as the cornerstone for the attribution of liability' (2011) 18 *Journal of Law and Medicine* 759

Barber, Sotirios A., Clement Fatovic, 'Outside the Law: Emergency and Executive Power' (2011) 73(1) *The Review of Politics* 145

Barker, Kit et al, *The Law of Torts in Australia* (Oxford University Press, 5th ed, 2012)

Beazley, Margaret, 'Damages' in John F Flemings, C Sappideen and Prue Vines (eds), *Fleming's the law of torts* (Thomson Reuters, 10th ed, 2011)

Beck, Ulrich, 'Living in the world risk society: A Hobhouse Memorial Public Lecture given on Wednesday 15 February 2006 at the London School of Economics' (2006) 35(3) *Economy and Society* 329

Beck, Ulrich, *Risk society: towards a new modernity* (Sage Publications, 1992)

Beck, Ulrich, *World at Risk* (Wiley, ebook, 2013)

Beever, Allan, 'Corrective Justice and Personal Responsibility in Tort Law' (2008) 28(3) *Oxford Journal of Legal Studies* 475

Bell, Justine, 'Insurance for Extreme Weather Events in Australia – Current Policy Trends and Future Directions' (2011) 8 *Macquarie Journal of Business Law* 339

Bennett, Simon, *Innovative Thinking in Risk, Crisis and Disaster Management* (Gower Publishing, 2012)

Bertot, John Carlo, Paul T. Jaeger, and Derek Hansen, 'The impact of policies on government social media usage: Issues, challenges, and recommendations' (2012) 29 *Government Information Quarterly* 30

- Bird, Deanne, Megan Ling, and Katharine Haynes, 'Flooding Facebook – the use of social media during the Queensland and Victorian floods' (2012) 27(1) *The Australian Journal of Emergency Management* 27
- Black, Julia, 'The role of Risk in Regulatory Processes' in Robert Baldwin, Martin Cave and Martin Lodge (eds), *The Oxford Handbook of Regulation* (Oxford Handbooks Online, 2010)
- Blackburn, Sophie, 'The politics of scale and disaster risk governance: Barriers to decentralisation in Portland, Jamaica' (2014) 52 *Geoforum* 101
- Block, Richard N, 'Case Study Methodology' in Richard N Block (ed) *Bargaining for Competitiveness : Law, Research, and Case Studies* (W. E. Upjohn Institute for Employment Research, 2003)
- Bolatito Asiata, Lanre-Abass, 'Technology, individual rights and the ethical evaluation of risk' (2010) 8(4) *Journal of Information, Communication and Ethics in Society* 308
- Bottomley, Stephen and Simon Bronitt, *Law in Context* (The Federation Press, 4th ed, 2012)
- Boucher, David and Paul Kelly, (eds), *The social contract from Hobbes to Rawls* (Routledge, 1994)
- Box, Pamela, Frank Thomalla, and Robin van den Honert, 'Flood Risk in Australia: Whose Responsibility is it anyway?' (2013) 5 *Water* 1580
- Boxer, Karin, 'Hart's Sense of "Responsibility"' in Christopher Pulman (ed) *Hart on Responsibility* (Palgrave Macmillan, 2014)
- boyd, danah and Kate Crawford, 'Critical Questions for Big Data' (2012) 15(5) *Information, Communication & Society* 662
- Braendeland, Gyrd and Atle Refsdal, 'Risk factors in emergency response (2013) 9(2) *International Journal of Emergency Management* 127
- Braham, Matthew and Martin van Hees, 'An Anatomy of Moral Responsibility' (2012) 121(483) *Mind* 601
- Brown, Alexander, 'Rawls, Buchanan, and the Legal Doctrine of Legitimate Expectations' (2012) 38(4) *Social Theory and Practice* 617
- Browning, John G., 'Social Media and the Law' (2014) 68 *University of Miami Law Review* 353
- Bruns, Axel & Jean Burgess, 'Crisis Communication in Natural Disasters: The Queensland Floods and Christchurch Earthquakes' in Katrin Weller et al (eds), *Twitter and Society* (Peter Lang, 2014)
- Bruns, Axel et al, '#qldfloods and @QPSMedia: Crisis Communication on Twitter in the 2011 South East Queensland Floods' (2012) ARC Centre of Excellence for Creative Industries and Innovation

- Bruns, Axel, 'Crisis Communication' in Stuart Cunningham and Sue Turnbull (eds), *The Media and Communications in Australia* (Allen & Unwin, 2014)
- Bruns, Axel, 'At times of crisis, Twitter shines brightest' (2012) *Continuity* 16
- Bullock, Jane, Haddow, George and Coppola, Damon P. (eds), *Homeland Security: The Essentials* (Elsevier Inc, 2013)
- Burns, William J., Paul Slovic, 'Risk Perception and Behaviors: Anticipating and Responding to Crises: Risk Perception and Behaviors' (2012) 32(4) *Risk Analysis* 579
- Butler, Des and Sharon Rodrick, *Australian Media Law* (Thomson Reuters, 4th ed, 2012)
- Campbell, Mary, 'Restoring Trust in Government: A Cost-Effective Approach to the Cry for "Accountability"' (2003) 26(3) *The Journal for Quality and Participation* 44
- Canadian Red Cross, 'Social Media During Emergencies' (2012)
- Cane, Peter, 'Tort Law and Public Functions' in John Oberdiek (ed) *Philosophical Foundations of the Law of Torts* (Oxford, 2014)
- Cane, Peter, 'Role responsibilities' (2016) 20 *Journal of Ethics* 279
- Cane, Peter, *Responsibility in Law and Morality* (Hart Publishing, 2003)
- Cardona, Omar-Dario et al, 'Determinants of risk: exposure and vulnerability' in C.B Field et al (eds), *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (2012) (A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press)
- Carreno, Martha Liliana, Omar Dario Cardona, Alex H. Barbat, 'A disaster risk management performance index' (207) 41 *Natural Hazards* 1
- Carter, Rachel Anne, 'Flood risk, insurance and emergency management in Australia' (2012) 27(2) *Australian Journal of Emergency Management* 20
- Carver, Tracey and Malcolm Smith, 'Medical Negligence, Causation and Liability non-disclosure of Risk' (2014) 37(3) *University of New South Wales Law Journal* 972
- Carver, Tracey L., 'Obviously Obvious: Obvious Risks, Policy and Claimant Inadvertence' (2007) 14(1) *eLaw Journal* 66
- Cedervall Lauta, Kristian, 'Legal Scholarship and Disasters' in Rasmus Dahlberg, Oliver Rubin and Morten Thanning Vendel, *Disaster research: multidisciplinary and international perspectives* (Routledge, ebooks, 2016)
- Cedervall Lauta, Kristian, *Disaster Law* (Taylor & Francis ebooks, 2014)
- Chandler, Robert, *Emergency Communication* (2010, ALC-CLIO)

- Chandra, Anita, et al, 'Getting Actionable about Community Resilience: The Los Angeles County Community Disaster Resilience Project' (2013) 103(7) *American Journal of Public Health* 1181
- Chappell, Louise, John Chesterman and Lisa Hill, *The politics of human rights in Australia* (Cambridge University Press, 2009)
- Chatfield, Akemi Takeoka, Scholl, Hans J. (Jochen) and Brajawidagda, Uuf, 'Tsunami early warnings via Twitter in government: Net-Savvy citizens' co-production of time-critical information services' (2013) 30 *Government Information Quarterly* 377
- Chen, Jim, 'Modern Disaster Theory: Evaluating Disaster Law as a Portfolio or Legal Rules' (2011) 25 *Emory International Law Review* 1121
- Christensen, Sharon, Bill Duncan, Amanda Stickley, 'Shifting Paradigms of Government Liability for Inaccurate Information', (2008) 15(2) *Murdoch University Electronic Journal of Law* 185
- Christie, George C, 'The Uneasy place of Principle in Tort Law' in David G Owen (ed) *Philosophical Foundations of Tort Law* (Clarendon Press, 1997)
- Christoplos, Ian, 'Resilience, rights and results in Swedish development cooperation' (2014) 2(2) *Resilience* 88
- Cialdini, Robert and Noah Goldstein, 'Social Influence: Compliance and Conformity' (2004) 55 *Annual Review of Psychology* 591
- Clarke, Andrew, John Deveraux, Julian Werren, *Torts: A practical learning approach* (LexisNexis, 2nd ed, 2011)
- Climate Council of Australia Pty Ltd, 'The Burning Issue: Climate change and the Australian Bushfire Threat' (2015)
- Climate Council of Australia, 'Counting the Costs: Climate change and Coastal Flooding' (2014)
- Coates, Jessica M. et al, 'Legal aspects of Web 2.0 activities: Management of legal risk associated with use of YouTube, MySpace and Second Life' (Queensland University of Technology, 2007)
- Coleman, Jules, Scott Hershovitz and Gabriel Mendlow, 'Theories of the Common Law of Torts' in Edward N. Zalta (ed) *The Stanford Encyclopedia of Philosophy* (Winter 2015 Edition)
<<http://plato.stanford.edu/archives/win2015/entries/tort-theories/>>
- Commonwealth of Australia, 'Grey-Letter Law' (December 1997) Report of the Commonwealth Interdepartmental Committee on Quasi-regulation
- Commonwealth, 'Review of the law of Negligence – Final Report' (Honourable David Ipp, Chairperson) Canberra, September 2002.

- Commonwealth, Department of Defence, 'Review of Social Media and Defence' (2012) (George Patterson)
- Coombs, W. Timothy, *Ongoing Crisis Communication* (Sage Publications, 4th ed, 2015)
- Cooper Jr, Guy Paul et al, 'Twitter as a Potential Disaster Risk Reduction Tool. Part 1: Introduction, Terminology, Research and Operational Applications' (2015) 7(1) *Plos Currents*
- Cottrell, Alison, 'Research Report: a survey of spontaneous volunteers' (2010) *Australian Red Cross*
- Country Fire Authority / Sweeney Research, 'A qualitative research Report on CFA Warnings' (2009) Ref 18942
- Cova et al, Thomas J., 'Warning Triggers in Environmental Hazards: Who Should be warned to do what and when?' (2016) *Risk Analysis* 1
- Covello, Vincent T, 'Risk Communication: An Emerging Area of Health Communication Research' (1992) 15(1) *Annals of the International Communication Association* 359
- Craswell, Richard and John E. Calfee, 'Deterrence and Uncertain Legal Standards' (1986) 2(2) *Journal of Law, Economics & Organization* 279
- Crawford, Kate and Megan Finn, 'The limits of crisis data: analytical and ethical challenges of using social and mobile data to understand disasters' (2014) *GeoJournal*
- Cronstedt, Mal, 'Prevention, Preparedness, Response, Recovery – an outdated concept?' (2002) 17(2) *Australian Journal of Emergency Management* 10
- Crowe, Adam, *Disasters 2.0 The Application of Social Media Systems for Modern Emergency Management* (CRC Press, 2012)
- Crowe, Adam, 'The social media manifesto: A comprehensive review of the impact of social media on emergency management' (2011) 5(1) *Journal of Business Continuity & Emergency Planning* 409
- Cutter, Susan L., Christopher G. Burton, and Christopher T. Emrich, 'Disaster Resilience Indicators for Benchmarking Baseline Conditions' (2010) 7(1) *Journal of Homeland Security and Emergency Management* 1
- Daci, Jordan, 'Legal Principles, Legal Values and Legal Norms: are they the same or different' (2010) 1(2) *Academicus International Scientific Journal* 109
- Dagger, Richard, 'Citizenship as fairness John Rawls Conception of Civic Virtue' in Jon Mandle and David A Reidy (eds), *A companion to Rawls* (John Wiley & Sons, first edition, 2014)

- Dash, N. and H. Gladwin, 'Evacuation Decision Making and Behavioral Responses: Individual and Household' (2007) 8(3) *Natural Hazards Review* 69
- De Vocht, Melanie et al, 'Won't we scare them? The impact of communicating uncontrollable risks on the public's perception' (2016) 19(3) *Journal of Risk Research* 316
- Denniss, Richard, *An introduction to Australian Public Policy: Theory and Practice* (2013, 2nd ed)
- Department of Homeland Security, 'Using Social Media for Enhanced Situational Awareness and Decision Support: Virtual Social Media Working Group and DHS First Responders Group' (June 2014)
- Dewitt, Barry et al, 'Environmental risk perception from visual cues: the psychophysics of tornado risk perception' (2014) 10 (12) *Environmental Research Letters* 1
- Dorfman, Avihay, 'Can tort law be moral?' (2010) 23(2) *RATIO juris* 205
- Douglas, M, *Risk and blame: essays in cultural theory* (Routledge, 1992)
- Drabek, Thomas E & Enrico L. Quarantelli, 'Scapegoats, Villains and Disasters' (1967) 4 *Transaction* 1
- Druzin, Bryan H., 'Social Norms as a Substitute for Law' (2015) 79(1) *Albany Law Review* 67
- Duffy, Neil, 'Using social media to build community disaster resilience' (2012) 27(1) *The Australian Journal of Emergency Management* 40
- Duhart, Olympia, 'Improving the Odds of Government Accountability in the Disaster-Prone Era: Using the 9/11 Funds Factors to remedy the problem of toxic Katrina Trailers' (2008-2009) 24 *Journal of Land Use and Environmental Law* 253
- Duncan, Nigel and Hutchinson, Terry, 'Defining and describing what we do: doctrinal legal research' (2012) 17(1) *Deakin Law Review* 83
- Duncan, W D and Samantha J. Traves, *Due Diligence* (LCB Information Services, 1995)
- Dyson, Andrew, Goudkamp, James and Wilmot-Smith, Frederick, 'Central Issues in the Law of Tort Defences' in Andrew Dyson, James Goudkamp and Frederick Wilmot-Smith (eds), *Defences in Tort* (Hart Publishing, 2015)
- Eburn, Michael and Stephen Dovers, 'Australian Wildfire litigation' (2012) 21 *International Journal of Wildland Fire* 488
- Eburn, Michael and Stephen Dovers, 'Learning Lessons from Disasters: Alternatives to Royal Commissions and Other Quasi-Judicial Inquiries' (2015) 74(4) *Australian Journal of Public Administration* 495

- Eburn, Michael and Stephen Dovers, 'Mainstreaming fire and Emergency Management across legal and policy sectors' (2012) 27(2) *The Australian Journal of Emergency Management* 14
- Eburn, Michael and Stephen Dover, 'Legal Aspects of Risk Management in Australia' (2014) 4(1) *Journal of Integrated Disaster Risk Management* 61
- Eburn, Michael, 'Litigation for failure to warn of natural hazards and community resilience' (2008) 23(2) *The Australian Journal of Emergency Management* 9
- Eburn, Michael, 'Protecting volunteers?' (2003) 18(4) *Australian Journal of Emergency Management* 7
- Eburn, Michael, 'The emerging legal issue of a failure to warn' (2012) 27(1) *The Australian Journal of Emergency Management* 52
- Eburn, Michael, 'Are Fire Brigades Liable for Poor Operational Decisions' (2015) 37(1) *The Bulletin* 8
- Eburn, Michael, *Emergency Law* (Federation Press, 2015)
- Eburn, Michael, 'Managing 'civil contingencies' in Australia' (2014) 18(2) *The International Journal of Human Rights* 143
- Epstein, Lee and Andrew D. Martin, 'Quantitative Approaches to Empirical Legal Research' in Peter Cane and Herbert M. Kritzer (eds), *The Oxford handbook of empirical legal research* (Oxford University Press, 2010)
- Fairbrother, Professor Peter, et al, 'Effective Communication: Communities and bushfire Final Project Report' (2014)
- Falkheimer, Jesper and Mats Heide, 'Strategic communication in Participatory Culture From One- and Two-Way Communication to Participatory Communication through Social Media' in Derina Holtzhausen and Ansgar Zerfass (eds), *The Routledge Handbook of Strategic Communication* (Taylor and Francis, 2014)
- Farber, Daniel A., 'Catastrophic Risk, Climate Change and Disaster Law' (2013) 16 *Asia Pacific Journal of Environmental Law* 37
- Farber, Daniel A., 'Tort Law in the Era of Climate Change, Katrina, and 9/11: Exploring liability for extraordinary risks' (2009) 43(3) *Valparaiso University Law Review* 1075
- Feaver, Donald and Benedict Sheehy, 'Designing effective regulation: a positive theory' (2015) 38(3) *University of New South Wales Law Journal* 961
- Fekete, Alexander, Gabriele Hufschmidt & Sylvia Kruse, 'Benefits and Challenges of Resilience and Vulnerability for Disaster Risk Management' (2014) 5(1) *International Journal of Disaster Risk Science* 3

- Feldman, D et al, 'Communicating flood risk: Looking back and forward at traditional and social media outlets' (2016) 15 *International Journal of Disaster Risk Reduction* 43
- Field, Iain, 'Good Faith Defences in Tort Law' (2016) 38 *Sydney Law Review* 147
- Finn, Jeremy, Ursula Cheer and Sarah Rosanowski, 'Media, Family and Employment' in Jeremy Finn and Elizabeth Toomey (eds), *Legal Responses to Natural Disasters* (Thomson Reuters, 2015)
- Fischhoff, Baruch, 'Comment: Four answers to four questions (about risk communication) (2014) 17(10) *Journal of Risk Research* 1265
- Fisher, D.E, *Australian environmental law: norms, principles and rules* (Thomson Reuters, 3rd ed, 2014)
- Fisher, Douglas, *Legal Reasoning in Environmental Law: A study of Structure, Form and Language* (Edward Elgar, 2013)
- Fitzgerald, B et al, *Internet and E-commerce Law Business and Policy* (Thomson Reuters, 2011)
- Flemings, John F, C. Sappideen and Prue Vines, *Fleming's the law of torts* (Thomson Reuters, 10th ed, 2011)
- Fletcher, George P., 'Fairness and Utility in Tort Theory' (1972) 85(3) *Harvard Law Review* 537
- Flew, Terry et al, 'Support Frameworks for the Use of Social Media by Emergency Management Organisations: Policy Report' (13 November 2015) QUT Digital Media Research Centre, Brisbane.
- Flood Response Review Board, 'Brisbane Flood January 2011: Independent Review of Brisbane City Council's Response 9-11 January 2011' (2011)
- Ford, Stuart, 'Is the Failure to respond appropriately to a Natural Disaster a Crime against Humanity? The Responsibility to Protect and Individual Criminal Responsibility in the aftermath of Cyclone Nargis' (2009-2010) 38 *Denver Journal of International Law & Policy* 227
- Frattaroli, JL, 'A State's Duty to Prepare, Warn, and Mitigate Natural Disaster Damages' (2014) 37(1) *Boston College International and Comparative Law Review* 173
- Frewer, Lynn, 'The public and effective risk communication' (2003) 149 (1-3) *Toxicology Letters* 391
- Frisby, B. N, S.R. Veil and T.L Sellnow, 'Instructional Messages During Health-Related Crises: Essential content for Self-Protection' (2014) 29(4) *Health Commun.* 347

- George, Amiso M., 'The Phases of Crisis Communication' in Amiso M George and Cornelius B Pratt (eds), *Case Studies in Crisis Communications* (Routledge, 1st ed, 2012)
- Gerrard, Gary, *The New Social Contract: beyond liberal democracy* (University Press of America, 2002)
- Giddens, Anthony, 'Risk and Responsibility' (1999) 62(1) *The Modern Law Review* 1
- Gillespie, T, 'The relevance of algorithms' in T Gillredpir, P Boczkowski & K Foot (eds), *Media Technologies: Essays in Communication, Materiality, and Society* (MIT Press, 2014)
- Glik, Deborah C., 'Risk Communication for Public Health Emergencies' (2007) 28 *Annual Review of Public Health* 33
- Glos, George E, 'The Normative Theory of Law' (1969) 11 *William and Mary Law Review* 151
- Godden, Lee et al, 'Law, Governance and Risk: Deconstructing the Public-Private Divide in Climate Change Adaptation' (2013) 36(1) *University of New South Wales Law Journal* 224
- Goldberg, John C.P and Benjamin C. Zipurskey, 'Tort law and Responsibility' in John Oberdiek (ed) *Philosophical Foundations of the law of torts* (Oxford, 2014)
- Goudkamp, James, 'Apportionment of damages for contributory negligence: a fixed or discretionary approach?' (2015) 35(4) *Legal Studies* 621
- Goudkamp, James, 'The Spurious Relationship between Moral Blameworthiness and Liability for Negligence' (2004) 28(2) *Melbourne University Law Review* 343
- Government of Queensland & Risk Frontiers, 'State-wide Natural Hazard Risk Assessment, Report 1: Significant historical natural hazards in Queensland: An overview' (2011)
- Graham, Melissa W., Elizabeth J. Avery, Sejin Park, 'The role of social media in local government crisis communications' (2015) 41 *Public Relations Review* 386
- Grant, Ruth W., *John Locke's Liberalism* (University of Chicago Press, 2010)
- Gross, Peter Z., Reed W. Cearley and Daniel H. Cole, 'Uncertainty, insurance and the Learned Hand formula' (2006) 5 *Law, Probability and Risk* 1
- Haddow, George and Kim S. Haddow, *Disaster communications in a changing media world* (Butterworth-Heinemann, 2013)

- Haddow, George D., Jane A. Bullock and Damon P. Coppola, *Introduction to Emergency Management* (Elsevier, 4th Edition, 2010)
- Haigh, Yvonne, *Public Policy in Australia: Theory and practice* (Oxford University Press, 2012)
- Halliday, Simon, Jonathan Ilan & Colin Scott, 'The Public Management of Liability Risks' (2011) 31(3) *Oxford Journal of Legal Studies* 527
- Hamer, David, "Factual causation' and 'scope of liability': What's the difference>?" (2014) 77(2) *Modern Law Review* 155
- Hamilton, Myra, 'The "new Social Contract" and the Individualisation of Risk in Policy' (2014) 17 *Journal of Risk Research* 453
- Handmer, John, 'Emergency management in Australia: concepts and characteristics' in Dennis Parker and John Handmer (eds), *Hazard Management and Emergency Planning: Perspective in Britain* (Taylor and Francis, 2013)
- Handmer, John, 'Emergency Management Thrives on Uncertainty' in Gabriele Bammer and Michael Smithson (eds), *Uncertainty and Risk: Multidisciplinary Perspectives* (Earthscan, 2008)
- Handmer, John and Stephen Dovers, *Handbook of Disaster Policies and Institutions: Improving emergency management and climate change adaptation* (Earthscan, Routledge, 2nd ed, 2013)
- Harlow, Carol, 'State Liability Tort Law and Beyond' (Oxford University Press, 2004) 51 citing D. Oliver, *Government in the United Kingdom: The Search for Accountability, Effectiveness and Citizenship* (Open University Press, 1991)
- Hart, H.L.A, *Punishment and Responsibility* (Oxford University Press, 1968)
- Hartwig, Robert P. and Claire Wilkinson, 'Social Media, Liability and Insurance' (December 2011) (Insurance Information Institute)
- Hazelwood Mine Fire Inquiry, 'Hazelwood Mine Fire Inquiry Report' (2014)
- Henderson, Jennifer, 'The Boundaries of Free Speech in Social Media' in Daxton Stewart, *Social Media and the Law: A Guidebook for Communication Students and Professionals* (Taylor and Francis, 2013)
- Henderson, M & P & Associates Pty Ltd, '2012 Volunteering Report contemporary practices and research in volunteering: A literature review' (2012) Department of Communities, Child Safety and Disability Services
- Henman, Paul, 'Governmentalities of Gov 2.0' (2013) 16(9) *Information, Communication and Society* 1397
- Hofmann, Sara et al, 'What makes local governments' online communications successful? Insights from a multi-method analysis of Facebook' (2013) 30(4) *Government Information Quarterly* 387

Holling, C.S, 'Resilience and Stability of Ecological Systems' (1973) 4 *Annual Review of Ecological Systems* 1

Hollis, Simon, 'Competing and Complimentary Discourses in Global Disaster Risk Management' (2014) 5(3) *Risk, Hazards & Crisis in Public Policy* 342

Holtzhausen, Derina and Ansgar Zerfass, *The Routledge Handbook of Strategic Commuincation* (Taylor and Francis, 2014)

Hoppner, Corina, et al, 'Linking social capacities and risk communication in Europe: a gap between theory and practice?' (2012) 64 *Natural Hazards* 1753

House of Lords, 'The Regulatory State: Ensuring Its Accountability Volume I' (Report, Select Committee on the Constitution, 6th Report of Session 2003-04, 2004)

Houston, J Brian, et al, 'Social media and disasters: a functional framework for social media use in disaster planning, response and research' (2014) 39(1) *Disasters* 1

Hughes, Amanda L and Leysia Palen, 'The Evolving Role of the Public Information Officer: An examination of Social Media in Emergency Management' (2012) 9(1) *Journal of Homeland Security and Emergency Management* 1547

Hunt, Patrick H., 'Tortious Tweets: A Practical Guide to Applying Traditional Defamation Law to Twibel Claims' (2013) 73 *Louisiana Law Review* 559

Hunter, Nan, *The Law of Emergencies: Public Health and Disaster Management* (Butterworth-Heinemann, 2009)

Hutchinson, Terry and Nigel Duncan, 'Defining and Describing What we Do: Doctrinal Legal Research' (2012) 17(1) *Deakin Law Review* 83

Hutchinson, Terry, *Researching and Writing in Law* (Thomson Reuters, 3rd ed, 2010)

Ibbetson, David, *A Historical Introduction to the Law of Obligations* (Oxford University Press, 2001)

IFRC & UNDP, 'Effective law and regulation for disaster risk reduction: a multi country report' (New York, 2014) (Mary Picard)

Ingles, Owen, 'A linguistic approach to Hazard, risk and Error' in John Handmer et al, *New Perspectives on Uncertainty and Risk* (Centre for Resource and Environmental Studies and Australian Counter Disaster College, 1991)

Inspector General of Emergency Management (Qld), *2015 Callide Creek Flood Review: Volume 1, Report* (June 2015)

- Inspector General of Emergency Management (Qld), *Review of Local Governments' Emergency Warning Capacity*, Report 1 (2015)
- IPCC, 'Summary for Policymakers' (2012) in C.B Field et al (eds), *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (2012) (A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change, Cambridge University Press).
- Jacobs Henderson, Jennifer, 'The Boundaries of Free Speech in Social Media' in Daxton Stewart (ed) *Social Media and the Law: A Guidebook for Communication Students and Professionals* (Taylor and Francis, 2013)
- James, Aaron, 'Contractualism's (Not So) Slippery Slope' (2012) 18(3) *Legal Theory* 263
- Janssen, Marijn & George Kuk, 'The challenges and limits of big data algorithms in technocratic governance' (2016) 33 *Government Information Quarterly* 371
- Jardine, Cynthia G. et al, 'Risk communication and trust in decision-maker action: a case study of the Giant Mine Remediation Plan' (2013) 72 *International Journal of Circumpolar Health* 1
- Joerin, Jonas, et al, 'The adoption of a Climate Disaster Resilience Index in Chennai, India (2014) 38(3) *Disasters* 540
- Jonathan, Joseph, 'Resilience as embedded neoliberalism: a governmentality approach' (2013) 1(1) *Resilience* 38
- Jong, Wouter & Michel L.A. Duckers, 'Self-correcting mechanisms and echo-effects in social media: An analysis of the "gunman in the newsroom crisis"' (2016) 59 *Computers in Human Behaviour* 334
- Joshi, Anuja et al, 'Academic College of Emergency Experts in India's INDO-US Joint Working Group (JWG) White Paper on the Integrated Emergency Communication Response Service in India: Much more than just a number!' (2013) 6(3) *Journal of Emergencies, Trauma and Shock* 216
- Jupp, Victor (ed) *The Sage Dictionary of Social Research Methods* (Sage Publications, 2006)
- Kaminska, Kate, Phil Dawe and Bjorn Rutten, 'Social Media for Emergency Management Expert Roundtable Workshop: Summary of Findings' (December 2013) Defence Research and Development Canada
- Kanarev, Nicholas, 'Assessing the legal liabilities of emergencies' (2001) *Australian Journal of Emergency Management* 18
- Kapucu, Naim and Alpaslan Ozerdem, *Managing Emergencies and Crises* (Jones & Bartlett Learning, 2013)

Kapucu, Naim, 'Collaborative emergency management: better community organising, better public preparedness and response' (2008) 32(2) *Disasters* 239

Kar-Wai Tong, 'Online Legal Risk in Social Media: Lessons from a Few Court cases in Hong Kong' in Allan H.K Yuen et al (eds), *New Media, Knowledge Practices and Multiliteracies* (Springer, 2014)

Kasperson, Jeanne X. et al, 'The social amplification of risk: assessing fifteen years of research and theory' in Nick Pidgeon, Roger E. Kasperson and Paul Slovic (eds), *The Social Amplification of Risk* (Cambridge University Press, 2003)

Katter, Norman, "'Who then in law is my neighbor?'" Reverting to first principles in the High Court of Australia (2004) 12(2) *The Tort Law Review* 85

Kavanaugh, Andrea et al, 'Social media use by government: From the routine to the critical' (2012) 29 *Government Information Quarterly* 480

Keating, Gregory C, 'A social contract conceptions of the Tort Law of Accidents' in Gerald J Postema (ed) *Philosophy and the law of torts* (Cambridge University Press, 2001)

Keifel, The Hon Justice Susan, AC, 'Developments in the Law Relating to Medical Negligence in the last 30 Years' (2016) 19 *International Trade and Business Law Review* 1

Kemshall, Hazel, 'Social policy and Risk' in Gabe Mythen and Sandra Walklane, *Beyond the Risk Society: Critical Reflections on Risk and Human Society* (Open University Press, 2006)

Kepert, Jeffrey D. et al, 'Improved Predictions of Severe Weather to Reduce Community Impact: Annual Project Report 2014-2015' (2015)

Kloby, K, *Citizen 2.0: Public and Governmental Interaction through Web 2.0 Technologies* (IGI Global, 2012)

Koehler, Gustav A., Guenther G. Kress and Randi L. Miller, 'What Disaster Response Management Can Learn from Chaos Theory', in Ali Farazmand (ed), *Crisis and Emergency Management: Theory and Practice* (Taylor and Francis, 2nd ed, 2014)

Kostkova, Patty, Martin Szomszor, Connie St. Louis, '#swineflu: The Use of Twitter as an Early Warning and Risk Communication Tool in the 2009 Swine Flu Pandemic' (2014) 5(2) *ACM Transactions on Management Information Systems* 1

Koussouris, Sotirios et al, 'Accelerating Policy Making 2.0: Innovation directions and research perspectives as distilled from four standout cases' (2015) 32(2) *Government Information Quarterly* 142

- Krippendorff, Klaus, *Content Analysis: an introduction to its methodology* (Sage, 3rd ed, 2013)
- Krolik, Megan, 'Exploring a rights-based approach to disaster management' (2013) 28(4) *Australian Journal of Emergency Management* 44
- Lavell, A.M, et al, 'Climate change: new dimensions in disaster risk, exposure, vulnerability, and resilience' in C.B Field et al (eds.) *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (IPCC) (Cambridge University Press, 2012)
- Lee, Gwanhoo and Young Hoon Kwak, 'An Open Government Maturity Model for social media-based public engagement' (2012) 29(4) *Government Information Quarterly* 492
- Leiboff, Marett and Mark Thomas, *Legal Theories: Contexts and Practice* (Lawbook Co, 2009)
- Leiss, William, 'Three Phases in the Evolution of Risk Communication Practice' (1996) 545 *The Annals of the American Academy of Political and Social Science* 85
- Lenman, James, 'Contractualism and risk imposition' (2008) 7(1) *Politics, Philosophy & Economics* 99
- Lin, Nan, 'Building a Network Theory of Social Capital' (1999) 22(1) *Connections* 28
- Lindell, Michael K and Ronald W. Perry, *Communicating Environmental Risk in Multiethnic Communities* (Sage Publications, 2004)
- Lodge, Martin and Lindsay Stirton, 'Accountability in the Regulatory State' in Robert Baldwin, Martin Cave and Martin Lodge (eds), *The Oxford Handbook of Regulation* (Oxford Handbooks Online, 2010)
- Long, Michael E. et al, 'The relationship between social and hierarchical communication networks in rural emergency response' (2014) 10(2) *International Journal of Emergency Management* 122
- Longstaff et al, Patricia H., 'Building Resilient Communities: A Preliminary Framework for Assessment (2010) VI (3) *Homeland Security Affairs* 1
- Luhmann, Niklas, *Risk: a sociological theory* (Aldine Transaction, 2005, 1st ed)
- Lundgren, Regina E. and Andrea H. McMakin, *Risk Communication: A Handbook for Communicating Environmental, Safety and Health Risks* (John Wiley & Sons Ltd, Inc, 2013)
- Lunney, Mark, 'Personal Responsibility and the "new" volenti' (2005) 13 *Tort Law Review* 76

- Luntz, Harold, 'The use of policy in negligence cases in the High Court of Australia' in Michael Bryan (ed) *Private Law in Theory and Practice* (Taylor and Francis, 2007)
- Lupton, Deborah, *Risk* (Routledge, 1999)
- Madden, Bill & Tina Cockburn, 'What the plaintiff would have done: s 5D(3) of the Civil Liability Act 2002 (NSW) (2006) 3(5&6) *Australian Civil Liability* 47
- Maddison, Sarah and Richard Denniss, *An introduction to Australian Public Policy: Theory and Practice* (Cambridge University Press, 2nd ed, 2013)
- Mahmoudi, Hossein, et al, 'A framework for combining social impact assessment and risk assessment' (2013) 43 *Environmental Impact Assessment Review* 1
- Manuell, Mary-Elise and Jeffrey Cukor, 'Mother Nature versus human nature: public compliance with evacuation and quarantine (2011) 35(2) *Disasters* 417
- Markon, Marie-Pierre L., Joshua Crowe, Louise Lemyre, 'Examining uncertainties in government risk communication: citizens expectations (2013) 15(4) *Health, Risk and Society* 313
- Markon, Marie-Pierre L & Louise Lemyre, 'Public Reactions to Different Sources of Uncertainty' (2013) 19(4) *Human and Ecological Risk Assessment: An International Journal* 102
- Martin, The Hon Wayne, 'The Civil Liability Act: Impact and Effect' (2011) 22 *Insurance Law Journal* 187
- Mason, Justice Keith, 'Fault, causation and responsibility: Is tort law just an instrument of corrective justice?' (2000) (19) 3 *Australian Bar Review* 201
- McClure, John et al, 'Why Do People Take Fewer Damage Mitigation Actions Than Survival Actions? Other Factors Outweigh Cost' (2015) 16(2) *Natural Hazards Review*
- McComas, Katherine A., 'Defining Moments in Risk Communication Research: 1996–2005' (2006) 11(1) *Journal of Health Communication* 75
- McDonald, Jan, 'Compensation for Climate Change Impacts' in Tim Bonyhady, Andrew Macintosh and Jan McDonald (eds), *Adaptation to Climate Change* (The Federation Press, 2010)
- McLennan, Dr Blythe et al, 'Negotiating risk and responsibility through law, policy and planning' (2014) 29(3) *Australian Journal of Emergency Management* 22
- McLennan, Blythe and John Handmer, 'Changing the rules of the game: mechanisms for shaping responsibility sharing from beyond Australian Fire and Emergency Management' (2012) 27(2) *The Australian Journal of Emergency Management* 7

McLennan, Blythe and John Handmer, 'Sharing Responsibility Australian Disaster Management - Final Report For The Sharing Responsibility Project ' (Bushfire CRC, 2014)

Meagher, Dan, 'The Common Law Presumption of Consistency with International Law: Some Observations from Australia (and Comparisons with New Zealand)' (2012) *New Zealand Law Review* 465

Mehta, Amisha M., Axel Bruns and Judith Newton, 'Trust but verify: social media models for disaster management' (2016) *Disasters*

Mendelson, Danuta, *The New Law of Torts* (Oxford University Press, 3rd ed, 2014)

Mergel, Ines, 'The social media innovation challenge in the public sector' (2012) 17 (3-4) *Information polity* 281

Meyerson, Denise, *Essential Jurisprudence* (Routledge Cavandish, 2006)

Miles, Roger, 'Empowering Emergency Responders' in Simon Bennett (ed), *Innovative thinking in risk, Crisis and Disaster Management* (Gower, 2012)

Mileti, Dennis & Paul W. O'Brien, 'Warnings During Disaster: Normalising Communicated Risk' (1992) 39(1) *Social Problems* 40

Mileti, Dennis et al, 'Public Hazards Communication and Education – the State of the Art' (2004) *Informer Issue 2: Public Education for Earthquake Hazards*

Mileti, Dennis S. and Colleen Fitzpatrick, 'The Causal Sequence of Risk Communication in the Parkfield Earthquake Prediction Experiment' (1992) 12(3) *Risk Analysis* 393

Mileti, Dennis, *Disasters by Design* (Joseph Henry Press, 1999).

Moffat, Robert C. L., 'Philosophical Foundations of The Australian Constitutional Tradition' (1965) 5 *Sydney Law Review* 59

Moosavian, Rebecca, "'Keep Calm and Carry On': informing the public under the Civil Contingencies Act 2004' (2014) 18(2) *The International Journal of Human Rights* 178

Moran, Clare and Shona Russell, 'Debate: At a loss – responsibility, accountability and (in)decision after the floods' (2014) *Public Money and Management* 248

Morrow, Betty H et al, 'Improving Storm Surge Risk Communication: Stakeholder Perspectives' (Jan 2015) 96.1 *Bulletin of the American Meteorological Society* 35

Morss, Rebecca E. et al, 'Flash Flood Risks and Warning Decisions: A Mental Models Study of Forecasters, Public Officials and Media Broadcasters in Boulder Colorado' (2015) 35(11) *Risk Analysis* 2009

- Munto, Robert, 'Crowdsourcing and the crisis-affected community: Lessons learned and looking forward from Mission 4636' (2013) 16 *Information Retrieval* 210
- Mythen, Gabe, 'Reframing risk? Citizen journalism and the transformation of news' (2010) 13(1) *Journal of Risk Research* 45
- National Research Council, 'Public Response to Alerts and Warnings using social media: Report of a workshop on current knowledge and research gaps' (2013) (Washington, D.C)
- Neubaum, G et al, 'Psychosocial functions of social media usage in a disaster situation: A multi-methodological approach' (2014) 34 *Computers in Human Behaviour* 28
- NGIS, 'Social Media helping Emergency Management: Final Report' (Government 2.0 Taskforce, 2009)
- Nicholson, William, *Emergency Response and Emergency Management Law: Cases and Materials* (Charles C Thomas, 2013)
- Norris, Fran et al, 'Community Resilience as a Metaphor, Theory, Set of Capacities and Strategy for Disaster Resilience' (2008) 41 *American Journal of Community Psychology* 127
- O'Brien, Karen, Bronwyn Hayward, and Fikret Berkes, 'Rethinking social contracts: Building resilience in a Changing Climate' (2009) 14(2) *Ecology and Society* 13
- Oberdiek, John, 'The Moral Significance of Risking' (2012) 18 *Legal Theory* 339
- Oldham, James, *English Common Law in the Age of Mansfield* (The University of North Carolina Press, 2014)
- O'Malley, Pat, 'Introduction: configurations of risk' (2000) 29(4) *Economy and Society* 457
- O'Sullivan, Jim, 'Report on a Review of Disaster Management Legislation and Policy in Queensland' (The Consultancy Bureau Pty Ltd, 2009)
- Owen, David G, 'Philosophical Foundation of Fault in Tort Law' in David G Owen (ed) *Philosophical Foundations of Tort Law* (Clarendon Press, 1997)
- Parker, D J, S J Priest and S M Tapsell, 'Understanding and enhancing the public's behavioural response to flood warning information' (2009) 16 *Meteorological Applications* 103
- Parker, Dennis J and John W Handmer, 'The role of Unofficial Flood Warnings Systems' (1998) 6(1) *Journal of Contingencies and Crisis Management* 45

- Parsons, Melissa et al, 'The Australian Natural Disaster Resilience Index: Conceptual framework and indicator approach' (2016) (Report No, 157 Bushfire and Natural Hazards Co-operative Research Centre)
- Patapan, Haig, 'Separation of Powers in Australia' (1999) 34(3) *Australian Journal of Political Science* 391
- Paton, Douglas and David Johnston, 'Disasters and communities: vulnerability, resilience and preparedness (2001) 10(4) *Disaster Prevention and Management: An International Journal* 270
- Paton, Douglas, John McClure and Petra T. Burgelt, 'Natural Hazard Resilience: The Role of Individuals and Household Preparedness' in Douglas Paton and David Johnston (eds), *Disaster Resilience: An Integrated Approach* (Charles C Thomas, 2006)
- Paz-Fuchs, Amir, 'The Social Contract Revisited the Modern Welfare State: Overview and Critical Report' (The Foundation for Law, Justice and Society, 2011)
- Pelling, Mark and Kathleen Dill, 'Disaster politics, tipping points for change in the adaptation of socio-political regimes' (2010) 34 (1) *Progress in Human Geography* 21
- Penner, J. E & E. Melissaris, *McCoubrey & White's Textbook on Jurisprudence* (Oxford University Press, 2008, 5th Edition)
- Perloff, Richard M., 'Mass Communication Research at the Crossroads: Definitional Issues and Theoretical Directions for Mass and Political Communication Scholarship in an Age of Online Media' (2014) 18(5) *Mass Communication and Society* 1
- Perry, Ronald W and Michael K. Lindell, 'Preparedness for Emergency Response: Guidelines for Emergency Planning Process' (2003) 27(4) *Disasters* 336
- Perry, Stephen, 'The Moral foundations of Tort Law' (1992) 77 *Iowa Law Review* 449
- Perry, Stephen, 'Torts, Rights and Risk' in John Oberdiek (ed) *Philosophical Foundations of Law: Philosophical Foundations of the Law of Torts* (Oxford University Press, 2014)
- Peters, Richard G, Vincent T. Covello and David B. McCallum, 'The Determinants of Trust and Credibility in Environmental Risk communication' (1997) 17(1) *Risk Analysis* 43
- Petley, David N and Keith Smith, *Environmental Hazards: Assessing Risk and Reducing Disaster* (Taylor and Francis, 2009)
- Pfefferbaum, Rose, et al, 'The Communities Advancing Resilience Toolkit (CART): An Intervention to Build Community Resilience to Disasters' (2013) 19(3) *Journal of Public Health Management and Practice* 250

- Pfefferbaum, Rose. L, 'Advancing Community Resilience to Disasters: considerations for Theory, policy and practices' in Ali Farazmand (ed) *Crisis and Emergency Management: Theory and Practice* (CRC Press, 2nd ed, 2014)
- Picazo-Vela, S, et al, 'Understanding risks, benefits, and strategic alternatives of social media applications in the public sector' (2012) 29 *Government Information Quarterly* 504
- Poblet, Dr Marta, Dr Rebecca Leshinsky and Professor John Zeleznikow, 'Digital neighbours: Even Good Samaritan crisis mappers need strategies for legal liability' (2012) 38(11) *Planning News* 20
- Poortinga, Wouter & Nick F. Pidgeon, 'Exploring the Dimensionality of Trust in Risk Regulation' (2003) 23(5) *Risk Analysis* 961
- Pope, Thomas, *Social Contract Theory in American jurisprudence: Too much liberty and too much authority* (Taylor and Francis, 2013)
- Posner, Eric A. & Adrian Vermeule, 'Accommodating Emergencies' (2003) 56(3) *Stanford Law Review* 605
- Power, Michael, 'Risk, Social Theories and Organisation' in Paul S Adler et al (eds), *Oxford Handbook of Sociology, Social Theory and Organisation Studies Contemporary Currents* (Oxford University Press, 2014)
- Pratt, Cornelius B., 'Theoretical Approaches to and Sociocultural Perspectives in Crisis Communication' in Amiso M George and Cornelius B Pratt (eds), *Case Studies in Crisis Communications* (Routledge, 1st ed, 2012)
- Prichard, Jeremy, et al, 'Detouring Civil Liberties, Drug Driving Laws in Australia' (2010) 19(2) *Griffith Law Review* 330
- Productivity Commission (Cth), *Report on Government Services 2014*, 'Chapter 9 Fire and Ambulance Services' (2014)
- Productivity Commission (Cth), *Report on Government Services 2016*, 'Volume D: Emergency Management' (2016)
- Purdy, Grant, 'Perspective: ISO 31000:2009 – Setting a New Standard for Risk Management' (2010) 30(6) *Risk Analysis* 881
- PytlikZillig, Lisa M. et al, 'The dimensionality of trust-relevant constructs in four institutional domains: results from confirmatory factor analyses' (2016) 6(2) *Journal of Trust Research* 111
- Quarantelli, E.L., 'Problematical aspects of the information/ communication revolution for disaster planning and research: ten non-technical issues and questions' (1997) 6(2) *Disaster Prevention and Management* 94
- Queensland Fire and Emergency Service, 'Queensland Fire and Emergency Service 2013-2014 Annual Report' (2014)

Queensland Floods Commission of Inquiry, 'Queensland Floods Commission of Inquiry: Interim Report' (August 2011)

Queensland Floods Commission of Inquiry, 'Queensland Floods Commission of Inquiry – Final Report' (March 2012)

Raikes, Jonathan, Gordon McBean, 'Responsibility and Liability in Emergency Management to Natural Disasters: A Canadian Example' (2016) 16 *International Journal of Disaster Risk Reduction* 12

Ratnapala, Suri, *Jurisprudence* (Cambridge University Press, 2013)

Rawls, John, *A Theory of Justice* (The Belknap Press of Harvard University Press, 1971)

Rawls, John, *A theory of Justice Revised Edition* (Belknap Press, 1999)

Rawls, John *A theory of Justice Revised Edition* (Oxford University Press, 1999)

Rawls, John, *Political liberalism* (Columbia University Press, 1999)

Reddick, Christopher G, *Web 2.0 Technologies and democratic governance: political, policy and management* (Springer, 2014)

Regan, Aine et al, 'Risk communication and social media during food safety crises: a study of stakeholders' opinions in Ireland' (2014) *Journal of Risk Research* 1

Reinhardt, Gina Yannitell, 'Imagining worse than reality: comparing beliefs and intentions between disaster evacuees and survey respondents' (2015) *Journal of Risk Research* 1

Reisinger, A et al, '2014: Australasia' in V.R Barros et al, *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects* (Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change).

Renn, Ortwin, 'Concepts of Risk: a Classification' in: S. Krimsky and D. Golding (eds), *Social Theories of Risk* (Praeger 1992)

Renn, Ortwin, 'White Paper on Risk Governance' in O. Renn and K Walker (eds), *Global Risk Governance: Concept and Practice Using the IRGC Framework* (Springer, 2008)

Renn, Ortwin, Andreas Klinke, Marjolein van Asselt, 'Coping with Complexity, Uncertainty and Ambiguity in Risk Governance: A Synthesis' (2011) 20 *AMBIO* 231

Renn, Ortwin, 'Concepts of Risk: An Interdisciplinary Review' 200) 17(1) *GAIA* 50

Renn, Ortwin, 'Four questions for risk communication: a response to Roger Kaspersen' (2014) 17(10) *Journal of Risk Research* 1277

- Reynolds, B and M.W Seegar, 'Crisis and Risk Communication as an Integrative Model' (2005) 10 *Journal of Health Communication* 43
- Richard, Bernadette, Melissa De Zwart, Karinne Ludlow, *Tort Law Principles* (Lawbook Co, 2013)
- Ripstein, Arthur, 'As if it never happened' (2007) 48 *William and Mary Law Review* 1957
- Ripstein, Arthur, 'Tort Law in a Liberal State' (2007) (1) 2 *Journal of Tort Law* 1
- Robertson, Andrew, 'On the Function of the Law of Negligence' (2012) 33(1) *Oxford Journal of Legal Studies* 31
- Rochford, Francine, 'The Law of Negligence in a 'Risk Society'' (2007) 16(1) *Griffith Law Review* 172
- Rogers, Peter, 'Development of Resilient Australia: enhancing the PPRR approach with anticipation, assessment and registration of risks' (2011) 26(1) *The Australian Journal of Emergency Management* 54
- Rosa, Eugene, Aaron McCright, Ortwin Renn, *The Risk Society Revisited: Social theory and Risk Governance* (Temple University Press, 2013)
- Row, Andrew, 'Googols of liability and censoring the internet - the liability of Internet intermediaries for defamation: Part II' (2015) 23 *Tort Law Review* 45
- Rutsaert, Pieter, et al, 'Social media as a useful tool in food risk and benefit communication? A strategic orientation approach' (2014) 46 *Food Policy* 84
- Rutsaert, Pieter, et al, 'Consumer interest in receiving information through social media about the risks of pesticide residues' (2013) 34(2) *Food Control* 386
- Rutsaert, Pieter, et al, 'The use of social media in food risk and benefit communication' (2013) 30(1) *Trends in Food Science & Technology* 84
- Ryan, Barbara and Dr Amalia Matheson, 'Significance of communication in emergency management' (2010) 25(1) *The Australian Journal of Emergency Management* 54
- Salter, John, 'Risk Management in the Emergency Management context' (1997) 12(4) *The Australian Journal of Emergency Management* 22
- Sandoval-Almazan, Rodrigo and J Ramon Gil-Garcia, 'Government-Citizen Interactions Using Web 2.0 Tools: The Case of Twitter in Mexico' in Christopher Reddick and Stephen Aikins (eds), *Web 2.0 Technologies and Democratic Governance* (Springer, 2012)
- Sappideen, Carolyn, Prue Vines and Penelope Watson, *Torts: Commentary and Materials* (Lawbook Co, 2012, 11th ed)

- Scanlon, Joseph, Ira Helsloot and Jelle Groenendaal, 'Putting It All Together: Integrating Ordinary People into Emergency Response' (2014) 32(1) *International Journal of Mass Emergencies and Disasters* 43
- Scanlon, T.M., *What we Owe to Each Other* (The Belknap Press of Harvard University, 1998)
- Scanlon, T.M., 'Contractualism and utilitarianism' in Amartya Sen and Bernard Williams (eds), *Utilitarianism and beyond* (Cambridge University Press, 1982)
- Schroeder, Ashley, 'Using Social Media in Times of Crisis' (2013) 30(1-2) *Journal of Travel & Tourism Marketing* 126
- Scolobig, A, 'The dark side of risk and crisis communication' (2015) 3 *Natural Hazards and Earth System Sciences Discussions* 2739
- Seegar, M W, 'Best Practices in Crisis Communication: An expert Panel Process' (2006) 34(3) *Journal of Applied Communication Research* 232
- Sellnow, Timothy L. and Matthew W. Seegar, *Theorizing Crisis Communication* (Wiley, 2013)
- Sensis, *Sensis Social Media Report 2016: How Australian people and businesses are using social media* (1 June 2016)
<https://www.sensis.com.au/assets/PDFdirectory/Sensis_Social_Media_Report_2016.PDF>
- Sheehy, Benedict & Donald Feaver, 'Designing Effective Regulation: A Normative Theory' (2015) 38(1) *University of New South Wales Law Journal* 392
- Shepherd, Jeanette and Kitty van Vurren, 'The Brisbane flood: CALD gatekeepers' risk communication role (2014) 23(4) *Disaster Prevention and Management* 469
- Sheppard, Ben, Melissa Janoske, and Brooke Liu, "Understanding Risk Communication Theory: A Guide for Emergency Managers and Communicators," (2012) (Report to Human Factors/Behavioral Sciences Division, Science and Technology Directorate, U.S. Department of Homeland Security. College Park, MD)
- Sheridan, Patricia, *The Stanford Encyclopedia of Philosophy* (Summer 2014 Edition) 'Locke's Moral Philosophy'
<<http://plato.stanford.edu/archives/sum2014/entries/locke-moral/>>
- Sindelar Jr, Jeffrey C., 'Of form and function: Lockean Political Philosophy and Mass Tort' (2012) 90(4) *Nebraska Law Review* 887
- Singleton, Gwynneth et al, *Australian Political Institutions* (Pearson Australia, 10th ed, 2013)

- Slovic, Paul, 'Perceived Risk, Trust and Democracy' (1993) 13 (6) *Risk Analysis* 675
- Slovic, Paul, 'The Psychology of risk' (2010) 19(4) *Saúde e Sociedade* 731
- Smith, Keith, *Environmental Hazards: Assessing risk and Reducing Disaster* (Routledge, 6th ed, 2013)
- Sommerville, Johann, 'The social contract (Contract of Government)' (2011) *Oxford Handbooks online*
<<http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199238804.01.0001/oxfordhb-9780199238804-e-33>>
- Sorensen, John H, 'Hazard Warning Systems: Review of 20 Years or Progress' (2000) 1(2) *Natural Hazards Review* 119
- Sørensen, Mads Peter and Allan Christiansen, Ulrich Beck: An Introduction to the Theory of Second Modernity and the Risk Society (Routledge, 2013)
- Spiegelman, Hon JJ, 'Negligence: The Last Outpost of the Welfare State' (2002) 76 *Australian Law Journal* 432
- Stapleton, Jane, 'Factual Causation' (2010) 38 *Federal Law Review* 467
- Stapleton, Jane, 'The golden thread at the heart of tort law' (2003) 24(2) *Australian Bar Review* 135
- Stark, Alastair & Monique Taylor, 'Citizen participation, community resilience and crisis-management policy' (2014) 49(2) *Australian Journal of Political Science* 300
- Stark, Sheila and Harry Torrance, 'Case Study' in Bridget Somekh & Cathy Lewin (eds), *Research Methods in the Social Sciences* (Sage Publications, 2005)
- State of Victoria, '2009 Victorian Bushfires Royal Commission: Final Report – Summary' (July 2010) (The Hon. Bernard Teague)
- Stewart, Daxton, *Social Media and the Law: A Guidebook for Communication Students and Professionals* (Taylor and Francis, 2013)
- Stewart, Pam and Anita Schmcke, *Australian Principles of Tort Law* (The Federation Press, 3rd ed, 2012)
- Stewart, Pam and Anita Schmcke, 'High Court Negligence Cases 2000-10' (2014) 36 *The Sydney Law Review* 585
- Stickley, Amanda, 'Australian Torts Law' (LexisNexis Butterworths, 3rd ed, 2013)
- Stickley, Amanda, 'Australian Torts Law' (LexisNexis Butterworths, 4th ed, 2016)

- Su, Yee San, Clarence Wardell III, Zoe Thorkildsen, 'Social Media in the Emergency Management Field: 2012 Survey Results' (CNA, 2013)
- Summers, John, Dennis Woodward and Andrew Parkin, *Government, Politics, Power and Policy in Australia* (Pearson Education Australia, 7th ed, 2002)
- Sun, Lisa Grow, Sabrina McCormick, 'Foreseeable Disaster Mismanagement in a Changing Climate' in Professor Austin Sarat (ed), *Studies in Law, Politics and Society* (Emerald Group Publishing Ltd, 2015)
- Sutton, Jeanette et al, 'Warning tweets: serial transmission of messages during the warning phase of a disaster event' (2014) 17(6) *Information, Communication & Society* 765
- Suzor, Nicolas, 'The Role of the Rule of Law in Virtual Communities' (2010) 25 *Berkeley Technology Law Journal* 1817
- Svedin, Lina, *Routledge Studies in Governance and Public Policy: Accountability in Crises and Public Trust in Governing Institutions* (Routledge, 2012)
- Sweeney Research, 'A qualitative research Report on CFA Warnings' (September 2009) Reference No. 18942
- Tasmania, '2013 Tasmanian Bushfire Inquiry Report', Volume 1 (2013)
- Tavares, Alexandre Liveira and Pedro Pinto dos Santos, 'Re-scaling risk governance using local appraisal and community involvement' (2014) 17(7) *Journal of Risk Research* 923
- Tibbits, Amalie & Josh Whittaker, 'Stay and defend or leave early: Policy problems and experiences during the 2003 Victorian bushfires' (2007) 7(4) *Environmental Hazards* 283
- Tierney, Kathleen, 'Disaster Response: Research Findings and Their Implications For Resilience Measures' (2009) CARRI Research Report
- Tierney, Kathleen, 'From the Margins to the Mainstream? Disaster Research at the Crossroads' (2007) 33(1) *Annual Review of Sociology* 503
- Tierney, Kathleen, 'Towards a Critical Sociology of Risk' (1999) 14(2) *Sociological Forum* 215
- Tippett, Professor Vivienne et al, 'Building Resilient Communities: Effective Multi-Channel Communication in Disasters: Annual Report 2015-2016' (2016) (Queensland University of Technology and Bushfire and Natural Hazards CRC)
- Simon, Tomer, Avishay Goldberg and Bruria Adini, 'Socialising in emergencies – A review of the use of social media emergency situations' (2015) 35(5) *International Journal of Information Management* 609

- Tulloch, John and Deborah Lupton, *Risk and Everyday life* (Sage Publications, 2003)
- Tutt, Andrew, 'The New Speech' (2014) 41 *Hastings Constitutional Law Quarterly* 235
- Utz, Sonja and Nicole Muscanell, 'Social Media and Social Capital: Introduction to the Special Issue' (Editorial) (2015) 5 *Societies* 420
- van Asselt, Marjolein B.A and Ortwin Renn, 'Risk Governance' (2011) *Journal of Risk Research* 431
- Veitch, Scott, Emiliios Christodoulidis, Lindsay Farmer, *Jurisprudence Themes and Concepts* (Routledge, 2nd ed, 2012)
- Victoria, *2009 Victorian Bushfire Royal Commission Final Report*, 'Volume II: Fire Preparation, Response and Recovery' (2010) (The Hon. Bernard Teague AO)
- Vines, Prue, 'The Needle in the Haystack: Principle in the Duty of Care in Negligence' (2000) 23(2) *University of New South Wales Law Journal* 35
- Vivacqua, Adriana S. and Marcos R. S. Borges, 'Taking advantage of collective knowledge in emergency response systems' (2012) 35(1) *Journal of Network and Computer Applications* 189
- Voice, Paul, *Rawls Explained: From Fairness to Utopia* (Open Court, 2011)
- Vromne, Ariadne, Katharine Gelbert, Anika Gauja, *Powerscape: Contemporary Australian politics* (Allen & Unwin, 2009)
- Wachinger, Gisela et al, 'The Risk Perception Paradox' (2013) *Risk Analysis* 1049
- Wacks, Raymond, *Understanding jurisprudence: an introduction to legal theory* (Oxford University Press, 3rd ed, 2012)
- Waghorne, James and Stuart MacIntyre, *Liberty: A history of civil liberties* (University of New South Wales Press, 2011)
- Walker, Clive, 'The governance of emergency arrangements' (2014) 18(2) *The International Journal of Human Rights* 211
- Walker, Denise C, *Mass Notification and Crisis Communication: Planning, Preparedness and Systems* (Taylor and Francis, 2012)
- Warren, Anne Marie, Ainin Sulaiman, Noor Ismawati Jaafar, 'Social media effects on fostering online civic engagement and building citizen trust and trust in institutions' (2014) 31(2) *Government Information Quarterly* 291
- Weeks, Greg, *Soft Law and Public Authorities: Remedies and Reform* (Hart Publishing, 2016)

- Welsh, Marc, 'Resilience and responsibility: governing uncertainty in a complex world' (2014) 180(1) *The Geographical Journal* 15
- Wenar, Leif, 'What we Owe to Distant Others' (2003) (2)3 *Politics, Philosophy & Economics* 283
- Westbrook, Robby et al, 'A Holistic Approach to Evaluating Social Media's Successful Implementation into Emergency Management Operations: Applied Research in an Action Research Study' (2012) 4(3) *International Journal of Information Systems for Crisis Response and Management* 1
- Westbrook, Robby et al, 'A Holistic Approach to Evaluating Social Media's Successful Implementation into Emergency Management Operations: Applied Research in an Action Research Study' (2012) 4(3) *International Journal of Information Systems for Crisis Response and Management* 1
- Wester, Misse, 'Cause and Consequences of Crises: How Perception Can Influence Communication' (2009) 17(2) *Journal of Contingencies and Crisis Management* 118
- Wester, Misse, 'Fight, Flight or Freeze: Assumed Reactions of the Public During a Crisis' (2011) 19(4) *Journal of Contingencies and Crisis Management* 207
- Western Australia, 'A Shared Responsibility: The Report of the Perth Hills Bushfire February 2011 Review' (2011)
- White, Connie and Linda Plotnick, 'A Framework to Identify Best Practices: Social Media and Web 2.0 Technologies in the Emergency Domain' (2010) 2(1) *International Journal of Information Systems for Crisis Response and Management* 37
- White, Connie M, *Social Media, Crisis, Communication and Emergency Management: Leveraging Web 2.0 Technologies* (CRC Press, 2012)
- Wilkinson, Emily, Eva Comba and Katie Peters, 'Disaster Risk Governance: Unlocking Progress and Reducing Risk' (2014) United Nations Development Program
- Williamson, Kirsty, 'The fundamentals of research planning' in Kirsty Williamson and Graeme Johnson (eds), *Research Methods: Information, Systems and Contexts* (Tilde University Press, 2013)
- Winfield, P. H., 'The History of Negligence in Torts' (1926) 42 *The Law Quarterly Review* 184
- Witting, Christian, 'Tort law, policy and the High Court of Australia' (2007) 31(2) *Melbourne University Law Review* 569
- Wotherspoon, Scott, 'Translating the public law "may" into the common law "ought": The case for a unique common law cause of action for statutory negligence' (2009) 83 *Australian Law Journal* 331

Xiao, Yu, Qunying Huang & Kai Wu, 'Understanding social media data for disaster management' (2015) 79 *Natural Hazards* 1663

Yadav, Mayank & Zillur Rahman, 'The social role of social media: the case of Chennai Rains-2015' (2016) 6 *Social Network Analysis and Mining* 1

Yin, Robert K, *Applications of case study research* (Sage Publications, 2011)

Yin, Robert K, *Case Study Research: Design and Methods* (Sage Publications, 3rd ed, 2003)

Yoo, Eunae et al, 'Evaluating information diffusion speed and its determinants in social media networks during humanitarian crises' (2016) *Journal of Operations Management* 1

Zavattaro, Staci M., & Arthur J. Sementelli, 'A critical examination of social media adoption in government: Introducing omnipresence' (2013) 31(2) *Government Information Quarterly* 257

Cases

Adeels Palace Pty Ltd v Moubarak (2009) 239 CLR 420

Alec Finlayson Pty Ltd v Armidale City Council (1997) 98 LGERA 119

Angel v Hawkesbury City Council [2008] NSWCA 130

Anns v London Borough of Merton [1978] AC 728

Ardouin v Board of Fire Commissioners (NSW) (1960) 61 SR (NSW) 910

Astley v Austrust Ltd (1999) 197 CLR 1

Australian Competition and Consumer Commission v Allergy Pathway Pty Ltd (No.2) (2011) 192 FCR 34

Australian Competition and Consumer Commission v Allergy Pathway Pty Ltd [2009] FCA 960

Australian Safeway Stores Pty Ltd v Zaluzna (1987) 162 CLR 479

Bankstown City Council v Alamo Holdings Pty Ltd (2005) 223 CLR 660

Board of Fire Commissioners (NSW) v Ardouin (1961) 109 CLR 105

Brodie v Singleton Shire Council (2001) 206 CLR 512

Brown v Heathcote County Council (1986) NZCA 76

Burke v Forbes Shire Council (1987) 63 LGRA 1

Burnie Port Authority v General Jones Pty Ltd (1994) 179 CLR 520

Caltex Oil (Australia) Pty Ltd v The Dredge "Willemstad" (1976) 136 CLR 529

Caltex Refineries (Queensland) Pty Limited v Stavar (2009) 259 ALR 616
Candler v Crane Christmas & Co [1951] 2 KB 164
Canterbury Municipal Council v Taylor [2002] NSWCA 24
Caparo Industries v Dickman [1992] 2 AC 605
Carey v Lake Macquarie City Council [2007] NSWCA 4
Chambers v Director of Public Prosecutions [2012] EWHC 2157
Chappel v Hart (1998) 195 CLR 232
Collins v Clarence Valley Council [2015] NSWCA 263
Commissioner of Main Roads v Jones (2005) 79 ALRJ 1104
Consolidated Broken Hill Ltd v Edwards [2005] NSWCA 380
Crimmins v Stevedoring Industry Finance Committee (1999) 200 CLR 1
Derry v Peek (1889) 14 App Case 337
Donoghue v Stevenson [1932] AC 562
Electro Optic Systems Pty Ltd v State of New South Wales [2012] ACTSC 184
Electro Optic Systems Pty Ltd v State of New South Wales [2014] 204 LGERA 238
Evans v NSW (1) [2007] NSWSC 955
Fairchild v Glenhaven Funeral Services Ltd [2002] 3 All ER 305
Father Evans v New South Wales (No 2) [2007] NSWSC 1381
Ghantous v Hawkesbury City Council (2001) 206 CLR 512
Gould v Vaggelas (1985) 157 CLR 215
Graham Barclay Oysters Pty Ltd v Ryan (2002) 211 CLR 540
Hamcor Pty Ltd v State of Queensland [2016] 1 Qd R 271
Hargrave v Goldman (1963) 110 CLR 40
Harriton v Stephens (2006) 226 CLR 52
Hedley Byrne & Co Ltd v Heller & Partners Ltd [1964] AC 465
Janesch v Coffey (1984) 155 CLR 549
Kelly v State of Queensland [2013] QSC 106
Livingstone v Rawyards Coal Co (1880) LR 5 App Cas 25
Mahony v J Kruschich (Demolitions) Pty Ltd (1985) 156 CLR 522

March v E & MH Stramare Pty Ltd (1991) 171 CLR 506

Matthews v AusNet Electricity Services Pty Ltd [2014] VSC 663

Matthews v SPI Electricity Pty Ltd (Ruling No 2) (2011) 34 VR 584

Maynard v Rover Mowers Ltd [2000] QCA 26

Mid Density Developments Pty Ltd v Rockdale Municipal Council (1993) 81 LGERA 104

Mulligan v Coffs Harbour City Council (2005) 223 CLR 486

Mulligan v Coffs Harbour City Council [2003] NSWSC 49

Myer Stores Ltd v State Fire Commission [2012] TASSC 54

Nagle v Rottneest Island Authority (1993) 177 CLR 423

O'Shea v The Permanent Trustee Company of New South Wales Limited (1971) Qld R 1

Overseas Tankship (UK) Ltd v Miller SS Co [1967] 1 AC 617

Papatonakis v Australian Telecommunications Commission (1985) 156 CLR 7

Pennington v Norris (1956) 96 CLR 10

Perre v Apand Pty Ltd (1999) 198 CLR 180

Podrebersek v Australian Iron & Steel Pty Ltd (1985) 59 ALR 529

Port Stephens Shire Council v Booth (2005) 148 LGERA 351

Pyrenees Shire Council v Day (1998) 192 CLR 330

Randwick City Council v Muzik [2006] NSWCA 66

Road and Traffic Authority of NSW v Dederer (2007) 234 CLR 330

Rodriguez & Sons Pty Ltd v Queensland Bulk Water Supply Authority (t/as Seqwater) [2014] NSWSC 1565

Rodriguez & Sons Pty Ltd v Queensland Bulk Water Supply Authority (T/As Seqwater) [2015] NSWSC 1771

Rogers v Whitaker (1992) 175 CLR 479

Rootes v Shelton (1967) 116 CLR 383

Rosenberg v Percival (2001) 205 CLR 434

Rowe v AusNet Electricity Services Pty Ltd [2015] VSC 232

San Sebastien Pty Ltd v The Minister (1986) 162 CLR 340

Schultz v McCormack [2015] NSWCA 330

Secretary to the Department of Natural Resources & Energy v Harper (2000)
1 VR 133

Shaddock & Associates Pty Ltd v Parramatta City Council (No.1) (1981) 150
CLR 225

Sharp v Parramatta City Council (2015) 209 LGERA 220

Sheridan v Borgmeyer [2006] NSWCA 201

Sibley v Kais (1967) 118 CLR 424

Smoker v Pharmacy Restructuring Authority (1994) 125 ALR 577

State of Queensland v Kelly [2014] QCA 27

Streller v Albury City Council [2013] NSWCA 348

Strong v Woolworths Ltd (2012) 246 CLR 182

Stuart v Kirkland-Veenstra (2009) 237 CLR 215

Sullivan v Moody (2001) 207 CLR 563

Sutherland Shire Council v Heyman (1985) 157 CLR 424

Swain v Waverley Municipal Council (2005) 220 CLR 517

Tabet v Gett (2010) 240 CLR 537

Tally v Motueka Borough [1939] NZLR 252

Tame v New South Wales (2002) 211 CLR 317

Vairy v Wyong Shire Council (2005) 223 CLR 422

Wallace v Kam (2013) 250 CLR 375

Warragamba Winery Pty Ltd v State of New South Wales (No 9) [2012]
NSWSC 701

Wollongong City Council v Fregnan (1982) 46 LGRA 391

Woodcroft-Brown v Timbercorp Securities Ltd [2011] VSC 427

Woods v Multi-Sport Holdings Pty Ltd (2002) 208 CLR 260

Wyong Shire Council v Shirt (1980) 146 CLR 40

Wyong Shire Council v Vairy [2004] NSWCA 247

Legislation

Australian Capital Territory

Civil Law (Wrongs) Act 2002 (ACT)

Emergencies (Emergency Plan) 2014 (No 1) (ACT)

Emergencies (ESA Social Media Policy) Commissioner's Guidelines 2011 (ACT)

Emergencies Act 2004 (ACT)

Human Rights Act 2004 (ACT)

Commonwealth

Legislation Act 2003 (Cth)

Meteorology Act 1955 (Cth)

Telecommunications (Consumer Protection and Services Standards) Act 1999 (Cth)

New South Wales

Civil Liability Act 2002 (NSW)

Fire Brigades Act 1989 (NSW)

Police Act 1990 (NSW)

Rural Fires Act 1997 (NSW)

State Emergency and Rescue Management Act 1989 (NSW)

State Emergency Service Act 1989 (NSW)

Northern Territory

Bushfires Act (NT)

Emergency Management Act 2013 (NT)

Fire and Emergency Act (NT)

Queensland

Acts Interpretation Act 1954 (Qld)

Civil Liability Act 2003 (Qld)

Civil Liability Bill 2003 (Qld)

Civil Liability Regulation 2014 (Qld)

Disaster Management Act 2003 (Qld)

Fire and Emergency Services Act 1990 (Qld)

Law Reform Act 1995 (Qld)

Legislative Standards Act 1992 (Qld)

Public Safety Preservation Act 1986 (Qld)

South Australia

Civil Liability Act 1936 (SA)

Emergency Management Act 2004 (SA)

Fire and Emergency Services Act 2005 (SA)

Tasmania

Civil Liability Act 2002 (Tas)

Emergency Management Act 2006 (Tas)

Fire and Emergency Services Act 2005 (Tas)

Fire Service Act 1979 (Tas)

Victoria

Charter of Human Rights and Responsibilities Act 2006 (Vic)

Country Fire Authority Act 1958 (Vic)

Emergency Management Act 1986 (Vic)

Emergency Management Act 2013 (Vic)

Forests Act 1958 (Vic)

Interpretation of Legislation Act 1984 (Vic)

Metropolitan Fire Brigades Act 1958 (Vic)

Victoria State Emergency Service Act 2005 (Vic)

Wrongs Act 1958 (Vic)

Western Australia

Bush Fires Act 1954 (WA)

Civil Liability Act 2002 (WA)

Emergency Management Act 2005 (WA)

Fire and Emergency Services Act 1998 (WA)

Fire Brigades Act 1942 (WA)

Treaties

International Covenant on Civil and Political Rights, opened for signature 16 December 1966, 999 UNTS 171 (entered into force 23 March 1976)

United Nations, *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*, Adopted 18-22 January 2005, UN Doc A/CONF.206/6

United Nations, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Adopted 14-18 March 2015, UN Doc A/CONF.224/CRP.1.15

Other

'Tasmanian floods: BOM and SES lashed by farmers over weather warnings amid June deluge', *ABCNews* (online), 5 January 2017, <<http://www.abc.net.au/news/2017-01-05/tasmanian-farmers-lash-bom-and-ses-over-june-floods/8163040>>

United Nations International Strategy for Disaster Reduction (UNISDR), *UNISDR Terminology on Disaster Risk Reduction (2009)* <http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf>

'Twitter Terrorists' face 30 years in jail for inciting mass panic', *The Sydney Morning Herald*, 5 September 2011 <<http://www.smh.com.au/technology/technology-news/twitter-terrorists-face-30-years-in-jail-for-inciting-mass-panic-20110905-1jswu.html>>

'NSW weather: Collaroy swimming pool collapses as giant waves hit beachfront houses', *ABCNews* (online), 6 June 2016 <<http://www.abc.net.au/news/2016-06-06/nsw-weather-large-waves-hit-collaroy-coast/7479846>>

'SA weather" Power 'gradually' returning after blackout plunged state into darkness', *ABCNews* (online), 29 September 2016 <<http://www.abc.net.au/news/2016-09-28/sa-weather-south-australia-without-power-as-storm-hits/7885930>>.

'Social Media and Emergency Management' (Created by Martin Anderson - Country Fire Authority, YouTube, 31 May 2012) <https://www.youtube.com/watch?v=_EPnCdTPwgM>

ABC Editorial Policies, *Guidance Note: Moderating User Generated Content* (19 May 2014) <<http://about.abc.net.au/reports-publications/moderating-user-generated-content-guidance-note/>>

ABC Emergency, *Plan for an emergency: Cyclone* (2016)
<<http://www.abc.net.au/news/emergency/plan-for-an-emergency/cyclone/>>

ACT Government, *ACT Government Social Media Policy Guidelines*, Version 1.0 (March 2012)

Alexander, David, 'Paradoxes and Perceptions: Four Essays on Disaster' (Occasional Paper, UCL Institute for Risk and Disaster Reduction, 2013)

Alvey, Dr James, 'Classical Liberal vs Other Interpretation of John Locke: A Tercentenary Assessment' (Refereed paper presented to the Australasian Political Studies Association Conference, University of Adelaide, 29 September- 1 October 2004)

Anderson, M, 'Integrating social media into traditional emergency management command and control structures: the square peg into the round hole?' (Paper Presented at Emergency Media & Public Affairs Conference, Melbourne, 8 May 2012)

Ashford, Elizabeth and Tim Mulgan, 'Contractualism', *Stanford Encyclopedia of Philosophy* (Fall 2012 Edition), Edward N. Zalta (ed),
<<http://plato.stanford.edu/entries/contractualism>>

Atfield, Cameron, 'A year on from Brisbane's freak hail storm', *The Brisbane Times* (online), 27 November 2015
<<http://www.brisbanetimes.com.au/queensland/a-year-on-from-brisbanes-freak-hail-storm-20151126-gl94so.html>>

Attorney General's Department & Emergency Management Australia, *Emergency Management in Australia Concepts and Principles* (2nd Edition, 2014)

Attorney General's Department (Cth), *About the Emergency Call Service* (15 October 2012)
<<http://www.triplezero.gov.au/pages/abouttheemergencycallservice.aspx>>

Attorney General's Department (Cth), *Australia's Emergency Warning Arrangements* (April 2013)

Attorney General's Department (Cth), *Best Practice Guide for Warning Originators* (June 2013)

Attorney General's Department (Cth), *Code of Practice for Warning Republishers* (April 2013)

Attorney General's Department (Cth), *National Emergency Risk Assessment Guidelines* (Australian Emergency Management Handbook Series: Handbook 10, 2nd Edition, 2015)

Attorney-General's Department (Cth), *National Emergency Management Volunteer Action Plan, 2012: Revised National Action Plan for the Attraction, Support and Retention of Emergency Management Volunteers* (NEMVAP, 2009) (April 2012)

Attorney-General's Department (Cth), *National Strategy for Disaster Resilience Companion Booklet* (2012)

Australian Bureau of Statistics, 'Mobile Handset subscribers', *8153.0 - Internet Activity*, Australia, June 2014
<<http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/8153.0Main%20Features6June%202014?opendocument&tabname=Summary&prodno=8153.0&issue=June%202014&num=&view=>>

Australian Bureau of Statistics, 'Subscriber Sector', *8153.0 - Internet Activity, Australia*, June 2014
<<http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/8153.0Main%20Features4June%202014?opendocument&tabname=Summary&prodno=8153.0&issue=June%202014&num=&view=>>

Australian Bureau of Statistics, *1370.0 – Measure of Australia's Progress*, 2013, November 2013 <<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/1370.0main+features422013>>

Australian Civil-Military Centre & The University of Adelaide, *Australian Government, Social Networking, Social Media and Complex Emergencies* (Issues Paper, June 2014)

Australian Communications and Media Authority (Cth), *Connected citizens: A regulatory strategy for the networked society and information economy* (June 2013)

Australian Emergency Management Committee, *National Emergency Risk Assessment Guidelines* (2010)

Australian Emergency Management Institute, *Australian Emergency Management Knowledge Hub* <<http://www.emknowledge.gov.au/>>

Australian Emergency Management Institute, *Social Media in Emergency Management: Twitter* Australian Emergency Management Institute Knowledge Hub <<http://www.emknowledge.gov.au/news/2012/12/social-media-in-emergency-management-twitter/> >

Australian Government, *Cutting Red Tape*
<<https://www.cuttingredtape.gov.au/>>

Australian Government, *Emergency Warnings choosing your own words* (Edition 2, December 2008)

Australian Institute for Disaster Resilience (Cth), *National Emergency Risk Assessment Guidelines* (Australian Emergency Management Handbook Series, 2nd ed, 2015)

Australian Institute for Disaster Resilience, *Australian Disaster Resilience Knowledge Hub* <<http://www.emknowledge.gov.au/>>

Australian Institute for Disaster Resilience, *Emergency management in Australia: Concepts and Principles*, Manual 1 (2004)

Australian Institute of Disaster Resilience (Cth), *National Emergency Risk Assessment Guidelines: Practice Guide* (Australian Emergency Management Handbook Series, 2015)

Australian Law Reform Commission, *Serious Invasions of Privacy in the Digital Era*, ALRC Issues Paper 43 (2013)

Barlett, Jamie & Carl Miller, *@metpoliceuk how twitter is changing modern policing* (2013)
<https://www.demos.co.uk/files/_metpoliceuk.pdf?1371661838>

Better Regulation Task Force, *Principles of Good Regulation* (2003) Crown Copyright
<<http://webarchive.nationalarchives.gov.uk/20100407162704/http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/principlesleaflet.pdf>>

Blind, Peri K, 'Building Trust in Government in the Twenty-First Century: Review of Literature and Emerging Issues' (7th Global Forum on Reinventing Government, Building Trust in Government, Vienna, 26-29 June 2007)

Boldero, Associate Professor Jennifer, *Improving the role of hazard communications in increasing residents preparedness and response planning* <<http://www.bnhcrc.com.au/research/resilient-people-infrastructure-and-institutions/238>>

Boyd, Danah, Scott Golder and Gilad Lotan, 'Tweet, Tweet and Retweet: Conversational Aspects of Retweeting on Twitter' (43rd Hawaii International Conference on System Sciences (HICSS), Honolulu, 6 January 2010)

Brian, Matt, 'Tweet your emergency: London Fire Brigade plans to accept callouts over Twitter', *The Next Web*, 18 December 2012
<<http://thenextweb.com/uk/2012/12/18/london-fire-brigade-looks-to-set-up-uks-first-emergency-twitter-feed-allowing-you-to-tweet-incidents/>>

Brisbane City Council, *Brisbane Storm and Flood Map*
<<https://bnestorm.crowdmap.com/>>

Brisbane City Council, *Local Disaster Management Plan: Chapter 2: Brisbane CBD Emergency Plan* (July 2014)

Brisbane City Council, *Understanding your flood risk* (7 April 2016)
<<https://www.brisbane.qld.gov.au/community/community-safety/disasters-emergencies/types-disasters/flooding/understand-your-flood-risk>>

Brisbane District Disaster Management Group, *Brisbane District Disaster Management Plan 2014-2015* (September 2014)

British Standards Institution (BSI), *Risk management – vocabulary* (PD ISO Guide 73:2009, 30 September 2013)

Bruneau, Michel and Andrei Reinhorn, 'Overview of Resilience Concept' (Paper presented at Proceedings of the 8th National Conference on Earthquake Engineering, San Francisco, 18-22 April 2006)

Buchbach, Jacinta, 'Social Media Policies and Work: Reconciling Personal Autonomy Interests and Employer Risk' (Postdoctoral thesis, Queensland University of technology, submitted 2016)

Burgess, Eleanor R. and Aaron Shaw, 'Evaluating Open Collaboration Opportunities in the Fire Service with FireCrowd' (Paper presented at the Open Symposium 2016, Berlin, Germany, August 17-19, 2016)

Burns, Kylie, 'Judicial Use and Construction of Social Facts in Negligence cases in the Australian High Court' (Doctor of Philosophy, Griffith Law School, 2011)

Cabinet Office, HM Government, *Emergency Response and Recovery* (October 2013)

<https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253488/Emergency_Response_and_Recovery_5th_edition_October_2013.pdf>

Carter, Lucy, 'Social media defamation cases on the rise, as lawyers tell people to think before they tweet', *ABCNews* (online), 25 August 2015 <<http://www.abc.net.au/news/2015-08-25/social-media-defamation-cases-on-the-rise/6723328>>

Castillo, Carlos, Marcelo Medoza and Barbara Poblete, 'Information credibility on twitter' (Proceedings of the 20th international conference on World wide web, ACM, 2011)

Commonwealth of Australia, *National Disaster Insurance Review – inquiry into flood insurance and related matters* (September 2011) <http://www.ndir.gov.au/content/report/downloads/NDIR_final.pdf>

Council of Australian Governments (COAG), 'Council of Australian Governments' Meeting: Communique' (7 December 2009) Brisbane

Council of Australian Governments (COAG), *National Strategy for Disaster Resilience* (2011)

Cowling, David, 'Social Media Statistics Australia – April 2013', *Social Media News*, 1 May 2013 <<http://www.socialmedianews.com.au/social-media-statistics-australia-april-2013/>>

Crowley, John, 'Connecting Grassroots and Government for Disaster Response' (Policy Series Vol 3, Wilson Centre, October 2013)

Curriculum and Assessment Authority (Vic), *Bushfire Education teaching and learning resources for early childhood settings, primary and secondary schools* (2016) <<http://www.bushfireeducation.vic.edu.au/>>

Cutting Red Tape in Emergency Response with Proper Planning (8 November 2012) Technical Response Planning <<http://www.emergency-response-planning.com/blog/bid/56235/Cutting-Red-Tape-In-Emergency-Response-with-Proper-Planning>>

De Mot, Jef, Michael Faure, 'Public authority liability and chilling effects' (Maastricht European Private Law Institute Seminar, 2014)

Defence Research and Development Canada, *Social Media for Emergency Management Expert Roundtable Workshop: Summary of Findings*, Technical Note (December 2013)

Department of Business and Innovation (Vic), *Government 2.0 Projects in VPS: An introduction to managing risks* (2010)

Department of Communications, Australian Government, *Review of the National Triple Zero (000) Operator* (Discussion Paper, July 2014)

Department of Defence (Cth), *Review of Social Media and Defence* (2011)

Department of Environment and Heritage Protection (Qld), *Coastal Hazards and mapping* (2 July 2015) <<https://www.ehp.qld.gov.au/coastalplan/coastalhazards.html>>

Department of Environment and Heritage Protection (Qld), *Coastal hazard map index* (3 August 2016) <<http://environment.ehp.qld.gov.au/coastal-hazards/>>

Department of Environment (Cth), *Coasts and Climate Change Council advice to Minister Combet* (December 2011) <<http://www.environment.gov.au/climate-change/adaptation/australias-coasts/coasts-climate-change-council-advice>>

Department of Finance (WA), *Social Media Guidelines* (September 2012)

Department of Fire and Emergency Services (WA), *State Hazard Plan for Fire (WESTPLAN - FIRE)* (May 2016)

Department of Fire and Emergency Services (WA), *State Hazard Plan for Flood (WESTPLAN - FLOOD)* (May 2016)

Department of Foreign Affairs and Trade (Cth), *About Australia: The land and its people* <<http://dfat.gov.au/about-australia/land-its-people/Pages/government.aspx>>

Department of Justice (Vic), *Emergency Risks in Victoria, Report of the 2012-2013 State Emergency Risk Assessment* (February 2014)

Department of Police and Emergency Management (Tas), *Tasmanian Emergency Management Plan*, Issue 7.1 (2013)

Department of Police and Emergency Management (Tas), *Tasmanian Emergency Management Plan*, Issue 8 (2015)

Department of Police and Emergency Management, *Tasmania State Emergency Management Committee Strategic Directions Framework* (2013)

Department of Premier and Cabinet (Qld), *7.1 Introduction' Rights and Liberties of Individuals* (18 May 2016)
 <<http://www.premiers.qld.gov.au/publications/categories/policies-and-codes/handbooks/legislation-handbook/fund-principles/introduction.aspx>>

Department of Premier and Cabinet (Qld), *7.2 Rights and Liberties of Individuals* (18 May 2016)
 <<http://www.premiers.qld.gov.au/publications/categories/policies-and-codes/handbooks/legislation-handbook/fund-principles/rights-and-freedoms.aspx>>

Department of Premier and Cabinet (Tas) *2013 Tasmanian Bushfires Inquiry - Recommendations and Response* (October 2013)

Department of Premier and Cabinet (Vic), *Government 2.0 Projects in VPS: an introduction to managing risks* (August 2010)
 <<http://www.vic.gov.au/blog/social-media-guides/government-2-0-projects-vps-introduction-managing-risk/>>

Department of Public Works (Qld), *Official use of social media guidelines Final*, Version 1.0.0 (December 2010)

Department of Science, Information Technology and Innovation (Qld), *Principles for the official use of social media networks and emerging social media* (October 2015) <<http://www.qgcio.qld.gov.au/products/qgea-documents/547-business/3519-principles-for-the-use-of-social-media>>

Department of the Premier and Cabinet (Qld), *The Queensland Legislation Handbook – Governing Queensland* (5th ed, 2014)

Department of the Prime Minister and Cabinet (Cth), *The Australian Government Guide to Regulation* (2014)

Department of Transport and Regional Services (Cth), *Natural Disasters in Australia: Reforming mitigation, relief and recovery arrangements: 2002* (2004) (A report to the Council of Australian Governments by a high-level official's group)

Dewan, Prateek and Ponnurangam Kumaraguru, *It Doesn't Break Just on Twitter, Characterising Facebook content During Real World Events* (2014)
 <<http://arxiv.org/abs/1405.4820>>

Dum, Daisy as, Nick Ralston and Ava Benny-Morrison, 'Sydney storm: Seawall delayed by funding row with Collaroy homes on the brink of

collapse', *The Sydney Morning Herald* (online), 8 June 2016
<<http://www.smh.com.au/nsw/sydney-storm-seawall-delayed-by-funding-row-with-collaroy-homes-on-the-brink-of-collapse-20160607-gpdqsk.html>>

Durrant, Nicola Anna May, 'The role of law in responding to climate change: emerging regulatory, liability and market approaches' (Doctor of Philosophy, Queensland University of Technology, 2008)

Eburn, Michael and Stephen Dovers, 'Sharing responsibility with governments and their agencies' (Paper presented at the Proceedings of the 3rd Human dimensions of Wildland Fire Conference, Seattle, 17-19 April 2012)

Eburn, Michael, 'Warragamba Winery Pty Ltd v State of New South Wales [2012] NSW 701' on *Australian Emergency Law* (19 July 2012)
<<https://emergencylaw.wordpress.com/2012/07/19/warragamba-winery-pty-ltd-v-state-of-new-south-wales-2012-nswsc-701/>>

Eburn, Michael, 'Volunteer liability put to the test' on *Australian Emergency Management* (3 August 2010)
<<http://emergencylaw.wordpress.com/2010/08/03/volunteer-liability-put-to-the-test>>

Edelman, *Trust in Asia Pacific, Middle East & Africa 2015*
<http://issuu.com/edelmanapac/docs/trust_in_apacmea_2015/36?e=71100583/11155664>

Emergency Management (Vic), *Emergency Management Manual Victoria*, 'Emergency Risk Management and Mitigation in Victoria' (2005)

Emergency Management (Vic), *Victorian Emergency Management Strategic Action Plan 2015-2018* (2015)

Emergency Management Australia, *Emergency Management Australia: Concepts and Principles* (Manual 1, 2004)

Emergency Management Australia, *Emergency Risk Management Applications Guide* (Manual 5, 2nd ed, 2004)

Emergency Management Committee (NSW), *New South Wales Public Information Services Functional Area Supporting Plan* (2005)

Emergency Management Committee (WA), *Management of Emergency Risks State Emergency Management Policy No. 2.9* (2014)

Emergency Management Queensland, Department of Community Safety, *Queensland District Disaster Management Guidelines* (2012)

Emergency Management Queensland, *Queensland Local Disaster Management Guidelines* (2012)

Emergency Management Victoria (Vic), *Emergency Management Manual Victoria*, 'Part 3: State Emergency Response Plan' (2014)

Emergency Management Victoria, *Emergency Management Performance Standards* (December 2015)

Emergency Management Victoria, *Emergency Management Performance Standards, Version 2.0* (December 2016)

Emergency Management Victoria, *Joint operating procedure: Incident public information for fire SOP J04.01 10.0* (February 2016)
<<http://files.em.vic.gov.au/JSOP/SOP-J04.01.pdf>>

Emergency Management Victoria, *National Review of Warnings and Information: Final Report* (Victorian Government, Melbourne, Cube Group, 2014)

Emergency Management Victoria, *Victoria's warning system* (28 October 2016) <<https://www.emv.vic.gov.au/responsibilities/victorias-warning-system>>

Emergency Management Victoria, *Victorian Emergency Management Strategic Action Plan 2015 – 2018* (2015)

Explanatory Notes, Civil Liability Bill 2003 (Qld)

Explanatory Notes, Disaster Management Bill 2003 (Qld)

Facebook Business, *How to boost your posts* (2016)
<<https://www.facebook.com/business/a/online-sales/promoted-posts>>

FEMA, 'Crisis Response and Disaster Resilience 2030' (Progress Report Highlighting the 2010-2011 Insights of the Strategic Foresight Initiative, January 2012)

Fire Services Commissioner (Vic), *Reference Architecture Victorian Information Network for Emergencies (VINE)*, Version 1.2 (May 2013)

Fire Services Commissioner (Vic), *Review of community responses to recent bushfires* (12 September 2013)

Flew, Terry et al, 'Social media and its impact on crisis communication: Case studies of Twitter use in emergency management in Australia and New Zealand' (Paper presented at ICA Regional Conference: Communication and Social Transformation, Shanghai, 8-10 November 2013)

Friggeri, Adrien et al, 'Rumour Cascades' (International AAI Conference on Web and Social Media, Eighth International AAI conference on Weblogs and Social Media, North America, May 2014)

Garran, Robert, Sir, *Commentaries on the Constitution of the Commonwealth of Australia (1867-1957)* (2000) (A digital text sponsored by New South Wales Centenary of Federation Committee University of Sydney Library)
<<http://adc.library.usyd.edu.au/data-2/fed0014.pdf>>

Godfrey, Miles, 'Firies use Twitter to fight bushfires', *The Sydney Morning Herald* (online), 24 October 2013 <<http://news.smh.com.au/breaking-news-national/firies-use-twitter-to-fight-bushfires-20131024-2w31x.html>>

Goldfine, Erica, 'Best Practices: The Use of Social Media Throughout Emergency & Disaster Relief' (A Capstone Project for Master of Arts, School of Communication, American University, 28 April 2011)

Government of South Australia, *Social Media: Guidance for Agencies and Staff* (2010)

Government of South Australia, *Social Media: Guidance for Staff and Agencies* (2013)

<http://files.oper.sa.gov.au/files/social_media_guideline_final.pdf>

Government of South Australia, *State Emergency Management Plan*, Version 2.14 (2015)

Government of South Australia, *State Emergency Management Plan*, Version 2.15 (2015)

Government of Western Australian, *State Emergency Management Plan for Fire (Westplan – Fire)* (2013)

Government of Western Australian, *State Emergency Management Plan for Flood' (Westplan - Flood)* (2015)

Granger, Ken, Flo Bridger and Mikila Rosewall, 'Emergency Risk Management in Australia and the Pacific: Information, Policy and Governance' (Paper Presented at the Australian and New Zealand Disaster and Emergency Management Conference Surfers Paradise, Gold Coast (QLD), 5-7 May 2014)

Grazia Busa, Maria et al, 'Trust-building through Social Media Communications in Disaster Management' (Paper presented at WWW 2015 Companion, Florence, Italy, 18-22 May 2015)

Greenberg, Brandon, 'Really, What is Situation Awareness?', *DisasterNet*, 12 May 2014 <<http://www.disasternet.co/blog/2014/05/12/really-what-is-situation-awareness>>

Hallegatte, Stephane, 'The Indirect Cost of Natural Disaster and an Economic Definition of Macroeconomic Resilience' (Policy Research Working Paper 7357, World Bank Group, 2015)

Hannam, Peter, 'Australia singled out as a climate change 'free-rider' by international panel', *The Sydney Morning Herald* (online), 5 June 2015 <<http://www.smh.com.au/environment/climate-change/australia-singled-out-as-a-climate-change-freerider-by-international-panel-20150604-ghgbde.html>>.

Hansen, Derek, Bertot, John Carlo & Jaeger, Paul T, 'Government Policies on the Use of Social Media: Legislating for Change' (Proceedings of the 12th

Annual International Conference on Digital Government Research, College Park, 12-15 June 2011).

Heanue, Siobahn, 'Nepal earthquake: How open data and social media helped the Nepalese to help themselves', *ABCNews* (online), 18 August 2015 <<http://www.abc.net.au/news/2015-08-16/nepal-earthquake-how-open-data-social-media-helped-rebuild/6700410?pfmredir=sm>>.

Hermida, Alfred, 'How rumours about the Sydney siege spread on social media', *The Conversation* (online), 16 December 2014 <<http://theconversation.com/how-rumours-about-the-sydney-siege-spread-on-social-media-35536>>

Hrdinová, Jana, Natalie Helbig and Catherine Stollar Peters, *Designing Social Media Policy for Government: Eight Essential Elements* (Center for Technology in Government, University at Albany, 2010) <<http://assembly.nu.ca/library/Edocs/2010/000957-e.pdf>>

Hughes, Amanda and Leysia Palen, 'Twitter Adoption and Use in Mass Convergence and Emergency Events' (Proceedings of the 6th International ISCRAM Conference – Gothenburg, Sweden, May 2009)

Hughes, Amanda et al, 'Online Public Communications by Police & Fire Services during the 2012 Hurricane Sandy' (CHI 2014, Toronto, 26 April - 1 May 2014)

ICT Policy and Coordination Office (Qld), *Official Use of social media guideline: Final* (December 2010)

Inspector General Emergency Management (Qld), *Emergency Management Assurance in Queensland: Sharing Responsibility, Accepting Accountability and Measuring Performance* <<https://www.igem.qld.gov.au/reports-and-publications/documents/Emergency-Management-Assurance-in-Queensland.pdf>>

Inspector-General Emergency Management (Qld), *Emergency Management Assurance Framework* (2014)

Insurance claims in doubt as superstorm threatens to erode property values', *9Finance*, 7 June 2016 <<http://finance.nine.com.au/2016/10/07/15/18/insurance-claims-in-doubt-as-superstorm-threatens-to-erode-property-values>>

Insurance Council of Australia, *Catastrophe Events and the Community* (2016) <<http://www.insurancecouncil.com.au/issue-submissions/issues/catastrophe-events>>

International Federation of Red Cross and Red Crescent Societies, 'The checklist on law and disaster risk reduction' (Pilot Version, March 2015)

International Federation of Red Cross and Red Crescent Societies, *Social Media guidelines for IFRC staff* (2009) <<http://sm4good.com/wp->

content/uploads/2009/11/Red-Cross-Red-Crescent-SocialMedia-Guidelines.pdf>

International Risk Governance Council, *About IRGC: Mission and Purpose* (2014) <<http://www.irgc.org/about/mission-and-purpose/>>

International Risk Governance Council, 'An introduction to the IRGC Risk Governance Framework' (White Paper No. 1, IRGC, 2008)

Irons, M. et al, 'Social Media, Crisis Communication and Community-Led Response and Recovery: An Australian Case Study' (Proceedings of the Research Forum at the Bushfire and Natural Hazards CRC & AFAC conference, Wellington, 2 September 2014).

Jones, Kate, 'Social media influencers the new marketing darlings', *The Sydney Morning Herald* (online), 22 February 2016 <<http://www.smh.com.au/small-business/smallbiz-marketing/social-media-influencers-the-new-marketing-darlings-20160217-gmx2y2.html>>

Kimery, Anthony, 'Bill to Cut FEMA Contracting Red Tape Stalled in US Senate, Lawmakers Say', *Homeland Security today.us*, 11 March 2012 <<http://www.hstoday.us/briefings/industry-news/single-article/bill-to-cut-fema-contracting-red-tape-stalled-in-us-senate-lawmakers-say/0fac7fbd468343ee59d7e5e356680afd.html>>

Kongthon, Alisa et al, 'The Role of Twitter during a Natural Disaster: Case Study of 2011 Thai Flood' (Paper presented at the 2012 Proceedings of PICMET '12: Technology Management for Emerging Technologies (PICMET), Vancouver, 29 July - 2 August 2012)

Kotsiopoulos, Ioannis, 'Social Media in Crisis Management: Role, Potential and Risk' (2014 IEEE/ACM 7th International Conference on Utility and Cloud Computing, London, 8-11 December 2014).

Lavell, Allan and Andrew Maskrey, 'The Future of Disaster Risk Management: Draft synthesis document, meeting notes, background papers and additional materials from A Scoping Meeting for GAR 2015' (United Nations Office for Disaster Risk Reduction (UNISDR) & Facultad Latinoamericana de Ciencias Sociales (FLACSO))

LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 24 September 2016) 'Administrative Law'

LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 8 October, 2016) 'duty'

Lexis Nexis, *Encyclopaedic Australian Legal Dictionary* (14 September 2016) 'function'

LexisNexis, *Encyclopaedic Australian Legal Dictionary* (at 13 Sept 2016) 'guidelines'

LexisNexis, *Halsbury's Laws of Australia* (at 01 March 2016) 415 Tort

- Lindsay, Bruce R., 'Social Media for Emergencies and Disasters: Overview and Policy Considerations' (CRS Report, 15 June 2016)
- Local Disaster Management Group, *Redland City Council, Redland City Disaster Management Plan* (2016)
- Locke, John, *Two Treatises of Government* (1823)
<<http://socserv2.socsci.mcmaster.ca/econ/ugcm/3ll3/locke/government.pdf>>
- Longstaff, Patricia H., T. G Koslowski and W. Geoghegan, 'Translating resilience: A framework to enhance communication and implementation' (Symposium on Resilience Engineering, 2013)
- Low, Roushi et al, 'Protecting the protectors: legal liabilities for the use of Web 2.0 for Australian Disaster response' (In Proceedings of the 2010 IEEE International Symposium on Technology and Society: Social Implications of Emerging Technologies, 7-9 June 2010, University of Wollongong, New South Wales).
- Mackie, Brenda, 'Warning Fatigue: Insights from the Australian Bushfire Context' (Thesis submitted in fulfilment of Doctor of Philosophy in Media and Communication, University of Canterbury, 2013)
- Mackie, Brenda, *Warning Fatigue is not a myth – Understanding why people do or do not respond to warnings* (March 2014) Fire Note: Issue 122
<http://www.bushfirecrc.com/sites/default/files/managed/resource/fire_note_122_low_res.pdf>
- Macmillan Publishers Group Australia, *Macquarie Dictionary 2003* (online), 'function'
- Mahler, Tobias, 'Defining Legal Risk' (Proceedings of the Conference "Commercial Contracting for Strategic Advantage - Potentials and Prospects", Turku University of Applied Sciences, Turku, 13-16 June 2007)
- Martini, Leila, 'Monitoring and Use of Social Media in Emergency Management in Florida' (Doctor of Public Health, University of South Florida, 2015)
- McComish, Sean, 'Melanie A Facebook friend to fire victims', *The Standard (Victoria)*, 28 May 2013 <<http://www.standard.net.au/story/1530993/melanie-a-facebook-friend-to-fire-victims/>>
- McDougall, Kevin, 'Using Volunteered Information to Map the Queensland Floods' (Proceedings of the Surveying & Spatial Sciences Biennial Conference 2011, Wellington, 21-25 November 2011)
- McNair Ingenuity Research, *Community Radio National Listener Survey 2016 Wave #1: Fact Sheet Australia* (July 2016)
<<https://www.cbaa.org.au/sites/default/files/media/McNair%20Ingenuity%20Research%20-%20NLS%20Fact%20Sheet%20-%20Australia%20-%202016%20-%20Wave%20%231%20-%201605R.pdf>>

McNeill, Dr I.M. & Professor J.M Boldero, 'Improving the role of hazard communications in increasing resident' preparedness and response planning' (Annual Project Report 2014-2015, Bushfire and Natural Hazards CRC)

McSaveney, K et al, 'Social Media for Emergency Management: A good Practice Guide' (Wellington Region CDEM Group: Wellington, 30 June 2014)

Mendoza, Marcelo, Barbara Poblete & Carlos Castillo, 'Twitter Under Crisis: Can we trust what we RT?' (1st Workshop on Social Media Analytics, SOMA '10, 25 July 2010, Washington D.C, U.S.A)

Minister of Community Safety & Correctional Services, Ontario, *Legislation and Regulation* (25 May. 2016)
<http://www.emergencymanagementontario.ca/english/insideemo/legislationandregulation/emergency_management_doctrine.html>

Ministers for the Department of Communications and the Arts, 'Review of the national Triple Zero (000) operator' (Media release, 8 July 2014)
<http://www.minister.communications.gov.au/malcolm_turnbull/news/review_of_the_triple_zero_000_operator#.V_7EIfI96UI>

Ministry for Police & Emergency Services (NSW), *Implementing Emergency Risk Management Through the Integrated Planning and Reporting Framework: A Guideline for Local Government & Emergency Managers* (2012)

Monash Injury Research Centre, *Review of Recent Australian Disaster Inquiries* (2011)
<<http://www.em.gov.au/AboutAGD/Authorityandaccountability/Committeesandcouncils/Documents/Review%20of%20Recent%20Australian%20Disaster%20Inquiries%20-%20final%20report.PDF>>

National Governors' Association, 'Comprehensive Emergency Management – A Governor's Guide' (Centre for Policy Research, 1979)

New South Wales Police Force, *Public Affairs Branch Official Use of Social Media Policy 2013* (2013)

New South Wales, *New South Wales State Emergency Management Plan* (2012)

Newton, Judith, 'Models of Social Media Adoption in Emergency Management Organisations' (Paper presented at the Australian and New Zealand Disaster and Emergency Management Conference, Surfers Paradise, 5-7 May 2014)

Nicholls, Andrew, 'The Challenges and Benefits of Risk-Based Regulation in Achieving Scheme Outcomes' (Paper presented to the Actuaries Institute Injury Schemes Seminar, Adelaide, 8 – 10 November 2015)

Northern Territory Counter Disaster Council, *Northern Territory All Hazards Emergency Management Arrangements* (14 March 2011)

Northern Territory, *Web 2.0 for NT Public Servants (NTPS) Guidelines*, Version 1.2 (2013)

NSW Government, *New South Wales State Emergency Management Plan* (2012)

NSW Government, *NSW Government Social Media Policy and Guidelines*, Version 1 (May 2013)

NSW, *New South Wales State Emergency Management Plan (EMPLAN)* (December 2012)

O'Malley, Nick, 'Australia's climate stance savaged at UN summit', *The Sydney Morning Herald* (online), 27 September 2014
<<http://www.smh.com.au/environment/climate-change/australias-climate-stance-savaged-at-un-summit-20140926-3gsr3.html>>

OECD, *Risk and Regulatory Policy: Improving the Governance of Risk* (OECD Publishing, 2010)

OECD, 'Boosting Resilience through Innovative Risk Governance' (OECD Publishing, 2014)

OECD, 'Applications of Complexity Science: New Tools for Finding Unanticipated Consequences and Unrealized Opportunities' (Report, OECD Publishing, 2009)

OECD, *OECD Reviews of Regulatory Reform: Australia 2010: Towards a Seamless National Economy* (OECD Publishing, 2010)

OECD, *The Governance of Regulators* (OECD Best Practice Principles for Regulatory Policy, 2014)

Office for the Coordination of Humanitarian Affairs, 'Hashtag Standards for Emergencies' (OCHA Policy and Study Series, October 2014)

Office of Queensland Parliament, *Legislative Instruments Handbook 2.1* (2015) <http://www.opc.gov.au/about/docs/LI_Handbook.pdf?v1>

Olteanu, Alexandra, Sarah Vieweg and Carlos Castillo, 'What to Expect When the Unexpected Happens: Social Media Communications Across Crises' (Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing, New York, USA, 2016)

Owen, Christine, et al, 'Politics, Policies and Paradigms, Challenges of Change in Future Emergency Management' (Paper presented at Bushfire CRC – AFAC 13, Melbourne, 2-5 September 2013)

Pierce, David, 'What you need to know about Twitter's algorithmic timelines', *Wired* (online), 10 February 2016 <<https://www.wired.com/2016/02/what-you-need-to-know-about-twitters-algorithmic-timeline/>>

Pikusa, Edward, 'The National Emergency Risk Assessment Guidelines: The Bumpy Road to National Consistency' (Paper presented at the 55th Annual Flood Plain Conference, 'Building a Resilient Australia', Brisbane Convention and Exhibition Centre, 19-22 May 2015)

Pittman, Elaine, 'Twitter Launches an Alert Systems for Emergencies', *Emergency Management* (online), 25 September 2013 <<http://www.emergencymgmt.com/disaster/Twitter-Alert-System-Emergencies.html>>

Poblet, Marta and Pompeu Casanovas, 'Crowdsourced crisis mapping: how it works and why it matters', *The Conversation*, 16 May 2012 <<http://theconversation.com/crowdsourced-crisis-mapping-how-it-works-and-why-it-matters-7014>>

Professional Standards Authority, *The role of risk in regulatory policy: A review of the literature* (October 2015) <<http://www.professionalstandards.org.uk/docs/default-source/publications/research-paper/risk-in-regulatory-policy-2015.pdf?sfvrsn=6>>

Public Affairs Branch, NSW Police Force, *Official Use of Social Media Policy* (3 September 2013)

Public Service Commission (Vic), *Guidance for Use of Social Media in the Victorian Public Sector* (2010)

Quarantelli, E L, 'Peoples reactions to emergency warnings' (University of Delaware Disaster Research Center, Transcript of Dam Safety Conference, Article 170, 1983)

Queensland, *2013–2014 Queensland State Disaster Management Plan* (2013)

Queensland, *Official Use of social media policy* (2012)

Queensland Fire and Emergency Service (Qld), *If it's Flooded, forget it* (11 March 2014) <<https://www.qfes.qld.gov.au/communitysafety/swiftwater/>>

Queensland Government Fire and Emergency Services, *Reminder: how to contact QFES Media* (22 February 2016) <<https://newsroom.psba.qld.gov.au/Content/Local-News/01-ENL/Article/Reminder-how-to-contact-QFES-Media/1017/1071/12066>>

Queensland Government, *If It's Flooded Forget It* (2016) <<http://floodwatersafety.initiatives.qld.gov.au/>>

Queensland Government, *Queensland Government arrangements for coordinating public information in a crisis* (2011)

<http://www.disaster.qld.gov.au/Disaster-Resources/Documents/DPC2739_Crisis_Communication_Document_FINAL.PDF>

Queensland Government, *Queensland State Disaster Management Plan* (May 2015)

Queensland Government, *Queensland State Disaster Management Plan* (September 2016)

Queensland Government, *Queensland Strategy for Disaster Resilience* <<http://www.dilgp.qld.gov.au/resources/plan/local-government/queensland-strategy-for-disaster-resilience.pdf>>

Queensland Government, *RACQ Get Ready Queensland* (2016) <<https://getready.qld.gov.au/>>

Queensland Government, *The Queensland Legislation Handbook: Governing Queensland* (2nd ed, 2004)

Queensland Police Service, Media and Public Affairs Branch, *Queensland Police Service: Disaster Management and Social Media – a case study* (2011)

Queensland Treasury, *Social Media Disclaimer* <<https://www.treasury.qld.gov.au/social-media-disclaimer.php>>

Quodling, Andrew, 'Is social media responsible for your safety during a disaster', *The Conversation*, 10 November 2014 <<https://theconversation.com/is-social-media-responsible-for-your-safety-during-a-disaster-33138>>

RACQ Get Ready Queensland (Qld), *Don't wait until it's too late – get ready now* <<https://getready.qld.gov.au/be-prepared/>>

Redland City Council, *Redland City Disaster Management Plan: Part 1* (2016)

Renn, Ortwin, 'Risk Governance: Towards an integrative framework' (White Paper No, 1, IRGC, 2006)

Renschler, C S, et al, 'Developing the 'PEOPLES' resilience Framework for defining and measuring disaster resilience at the community scale' (Paper presented at Proceedings of the 9th U.S National and 10th Canadian Conference on Earthquake Engineering, Toronto, 25-29 July 2010)

Risk Frontiers, 'Historical analysis of natural hazard building losses and fatalities for Queensland 1900-2011' (State-wide Natural Disaster Risk Assessment and Risk Register Program Prepared by Risk Frontiers for Queensland Department of Community Safety, October 2012)

Risk Management Capability Ltd, *Risk Ownership: Capability Guidance* (2011)

<<http://www.rmcapability.com/resources/Capability+Guidance+Sheet+-+Risk+Ownership.pdf>>

Risk Steering Committee, US Department of Homeland Security, *DHS Risk Lexicon 2010 Edition* (September 2010)

<<https://www.dhs.gov/xlibrary/assets/dhs-risk-lexicon-2010.pdf>>

Robson, Edward S, 'Responding to liability: Evaluating and Reducing Tort Liability for Digital Volunteers' (Woodrow Wilson International Center for Scholars, Washington DC, Policy Series 1, 2013)

Sensis, 'Aussies are getting socially mobile while businesses miss the mark!' (Media Release, 21 May 2013) <<http://about.sensis.com.au/News/Media-Releases/?ItemID=1225&count=1>>

Shklovski, Irina, Leysia Palen and Jeannette Sutton, 'Finding community through information and communication technology in disaster response' (Proceedings of the 2008 ACM conference on Computer supported cooperative work, ACM, 2008)

Silverman, Craig (ed) 'Verification Handbook: A definitive Guide to Verifying Digital Content for Emergency coverage' (European Journalism Centre, 2014)

Skuse, Andrew and Tait Brimacombe, 'Social Networking, Social Media and Complex Emergencies' (Issues Paper, Australian Civil-Military Centre & The University of Adelaide, 2014)

Smith, Bailey, 'Agency Liability Stemming from Citizen-Generated Data', Lea Shanley and Aaron Lovel (eds) (The Wilson Centre, 2014)

Snowdon, Jason TinTom, 'Queenslander must take responsibility for property during storms says local Government Minister David Crisafulli', *The Courier-Mail*, 9 December 2014

<<http://www.couriermail.com.au/news/queensland/queenslanders-must-take-responsibility-for-properties-during-storms-says-local-government-minister-david-crisafulli/story-fnkt21jb-1227149169579>>

St Denis, Lise Ann, Leysia Palen, Kenneth M. Anderson, 'Mastering Social Media: An Analysis of Jefferson Country's Communications during the 2013 Colorado Floods' (Proceedings of the 11th International ISCRAM Conference – University Park, Pennsylvania, May 2014)

Standards Australia, *Communicating and consulting about risk* (HB 327:2010)

Standards Australia, *Risk Management - Principles and guidelines* (AS/NZS ISO 31000:2009)

Standards Australia, *Risk management guidelines - Companion to AS/NZS ISO 31000:2009* (SA/SNZ HB 436:2013)

Standards Australia, *Standards and the Law*
<http://www.standards.org.au/StandardsDevelopment/What_is_a_Standard/Pages/Standards-and-the-Law.aspx>

Starbird, Kate and Leysia Palen, "'Voluntweeters": self-organizing by digital volunteers in times of crisis' (Paper presented at the SIGCHI Conference on Human Factors in Computing Systems, Vancouver, 7-11 May 2012)

State Disaster Management Group (Qld), *Disaster Management Strategic Policy Framework* (November 2010)

State Emergency Management Committee (Tas), *Strategic Directions Framework* (2013-2018)

State Emergency Management Committee (WA), *Western Australian State-level Risk Assessment: Seven Sudden Onset Natural Hazards, Storm, Earthquake, Bushfire, Tsunami, Heatwave, Cyclone and Flood* (December 2013)

State Emergency Management Committee, *New South Wales Public Information Services Functional Area Supporting Plan*, Version 2.4 (2004)

State Emergency Service (Qld), *Get Storm Ready*
<<http://www.stormwise.com.au/step/how-prepare-storm>>

State Emergency Service (Vic), *Risk Assessment*
<<http://www.ses.vic.gov.au/prepare/em-planning/risk-assessment>>

State Government Victoria, *Victorian Warning Protocol*, Version 2.0 (July 2013)

Sutton, Jeanette, Leysia Palen and Irina Shklovski, 'Backchannels on the front lines: Emergent uses of social media in the 2007 southern California wildfires' (Proceedings of the 5th International ISCRAM Conference, Washington, 2008)

Territory Emergency Management Council (NT), *Territory Emergency Plan* (2014)

Territory Emergency Management Council (NT), *Territory Emergency Plan* (February 2016)

Thielman, Sam and Chris Johnston, 'Major cyber attack disrupts internet service across Europe and US', *The Guardian* (online), 22 October 2016
<<https://www.theguardian.com/technology/2016/oct/21/ddos-attack-dyn-internet-denial-service>>

Thomler, Craig, 'Using social media in emergency and disaster management' on *eGov AU* <<http://egovau.blogspot.com.au/2013/03/using-social-media-in-emergency-and.html>>

Tippett, Professor Vivienne, *Connecting communities and resilience: A multi-hazard study on preparedness, response and recover communications*

<<http://www.bnhcrc.com.au/research/resilient-people-infrastructure-and-institutions/239>>

Twenty First Century Communications, *Using Social Media for Emergency Notifications: Seven Questions for Emergency Managers to Consider*

<<http://www.tfccalert.com/media/Social-Media-for-Emergency-Managers.pdf>>

Twitter Inc, *A step-by-step guide to Twitter Alerts* (2016)

<<https://about.twitter.com/products/alerts/how-it-works>>

Twitter Inc, *Guidelines* <<https://about.twitter.com/products/alerts/guidelines-faq>>

Twitter Inc, *Retweeting another Tweet* (2016)

<<https://support.twitter.com/articles/20169873>>

United Nations International Strategy for Disaster Reduction (UNISDR), 'Early Warning as a Matter of Policy' (The Conclusions of the Second International Conference on Early Warning, Bonn, 16-18 October 2003)

Usahidi, *Crowdmap* <<http://www.usahidi.com/product/crowdmap/>>

Victoria Government, *Review of the 2010-11 Flood Warnings and Response* (Final Report by Neil Comrie AO, APM, 1 December 2011)

Victoria Government, *Victorian Emergency Management Reform*, White Paper (December 2012)

Victoria, *VPS Gov 2.0 Risk Register and Management Plan* (2010)

<<http://www.vic.gov.au/blog/social-media-guides/victorian-public-service-government-2-0-risk-register-management-plan/>>

Vieweg, Sarah et al, 'Microblogging During Two Natural Hazards Events: What Twitter May Contribute to Situational Awareness' (Paper presented at CHI 2010: Crisis Informatics, Atlanta, 10-15 April 2010)

Virtual Social Media Working Group and DHS First Responders Group, *Homeland Security, Next steps: Social Media for Emergency Response* (January 2012)

Virtual Social Media Working Group, *Community Engagement and Social Media Best Practices: Virtual Social Media Working Group* (Homeland Security: Science and Technology, 2012)

VOSG, *Virtual Operations Support Group: Implementing VOST SMEM – social media for emergency management* (2016) <<http://vosg.us/>>

VOST Victoria <<http://vostvic.net.au/>>

VOSTAUS (27 April 2016) <<http://vostaus.blogspot.com.au/>>

Wardell III, Clarence & Yee San Su, '2011 Social Media Emergency Management Camp' (CNA Analysis Solutions, 2011)

Wendling, C, J. Radisch and S. Jacobzone, 'The Use of Social Media in Risk and Crisis Communication' (OECD Working Papers on Public Governance, No. 25, OECD Publishing, 2013)

Western Australia, *Reframing Rural Fire Management* (Report of the Special Inquiry into January 2016 Waroona Fire: Volume 1, 2016)

Western Australia, *State Emergency Public Information Plan*, Interim (June 2016)

Western Australia, *State Public Information Emergency Management Support Plan (Westplan Emergency Public Information)* (2012)

Zinn, Jens Oliver, 'The sociology of risk and uncertainty: current state and perspectives' (Conference Proceeding, The Australian Sociological Association (TASA) Annual Conference, Australian National University, 2009)