

**Investigation into the potential psychosocial
implications of the return of Redcliffs School
to the Main Road site**

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PREFACE

The purpose of this report is to inform the investigation into the potential psychosocial implications for children (both those attending the school now, and children who will attend the school in future years) if the school returns to the Main Road site with the proposed mitigation measures in place.

As stated in the scoping document, the purpose of this work is to report to the Minister on the potential psychosocial impacts for children by the end of September 2016.

This report is presented in two parts:

1. Synthesis of expert opinion
2. Literature review

1.0 SYNTHESIS OF EXPERT OPINION

1.1 BACKGROUND

In the Education Report that informed the Minister of Education's decision on the next steps for Redcliffs School, the Minister agreed to the Ministry carrying out an in-depth investigation into the potential psychosocial implications for children (both those attending the school now, and children who will attend the school in future years) if the school returns to the Main Road site with the proposed mitigation measures in place.

The purpose of this work is to report to the Minister on the potential psychosocial impacts for children by the end of September 2016. The content of this report will inform the next steps for Redcliffs School.

The Board's submission in response to the Minister's interim decision raised the potential of negative psychosocial effects of closing the school on the wider Redcliffs community. The Board's view was that closure would have a negative psychosocial impact on the resiliency of the community and the ability to fully recover from the effects of the earthquakes.

The Ministry sought advice from an independent expert on that issue and also asked about the potential psychosocial impact on children if the school returned to the Main Road site. The Education Report to the Minister recommended that further investigation was carried out in relation to the possible psychosocial implications in relation to the possible psychosocial implications. This report is the result of that further investigation.

1.2 SCOPE

The investigation involved consideration of relevant literature, and sought opinions from four experts in this area.

As part of the briefing for this investigation, the Ministry of Education technical advisor presented information to the experts including, but not exclusively, the likely frequency and scale of rockfall events adjacent to the site, how the site relates to surrounding land zones, the size and visual effects of the planned mitigation, and how rockfall risk compares to other relevant risks.

Four expert advisors were invited to provide their opinions on the potential psychosocial implications of Redcliffs school returning to the Main Road site with the proposed mitigation measures in place. The advisors were:

Dr Rob Gordon, Consultant Psychologist, Victoria, Australia

Dr Sarb Johal, Ph.D., Associate Professor and Clinical Psychologist,
Joint Centre for Disaster Research, Massey University

Dr Harith Swadi, Consultant Child and Adolescent Psychiatrist and Clinical Director,
Mental Health Service, CCDHB.

Professor David Johnston, Director Joint Centre for Disaster Research,
GNS Science and Massey University

What follows is a synthesis of all four reports. The advisors were asked to consider two key questions; these are addressed in turn.

Question 1: What is the likelihood of any significant negative psychological or psychosocial effects on children of returning Redcliffs School to the Main Road site, having regard to the context of living in the Bays area and the expert technical advice that, while there will be ongoing rockfall, with the mitigation in place, there is no actual physical danger to people on the school grounds?

Prof. Johnston did not offer an opinion on the likelihood of negative psychological or psychosocial effects as this aspect is beyond his particular expertise.

There was general consensus among the remaining advisors that the likelihood of any significant negative psychological or psychosocial effects on children returning to Redcliffs School at the Main Road site is negligible, providing:

- that future rockfalls pose no actual physical threat to those in the school grounds, and
- any perceived threat is managed appropriately by teachers and parents (see question 2).

There was also a shared view that a small number of people may be adversely affected, but that this is likely to be part of a broader pattern of anxiety and/or related to other issues in their lives, and that steps can be taken to mitigate this risk, and to deal with any consequences as necessary.

The overall consensus was, that while the risk cannot be completely eliminated, it can be effectively mitigated through appropriate management (see question 2).

Question 2: If any such (negative psychological or psychosocial) effect is possible, can it be adequately mitigated?

There was a consensus among all four advisors that any negative consequences (e.g. from perceived threat, or more generalised anxiety) could be adequately mitigated.

Several common themes are discernible in the reports with respect to potential risks, factors that might influence children's reactions and possible mitigation actions. These are also closely aligned with the research findings presented in the literature review.

Families and schools are critical in shaping children's psychosocial context and reactions to stressful events.

- Children's responses to traumatic circumstances are strongly determined by the reactions of parents and adult caregivers. Children will take cues from the emotions and behaviour of adults even if problems are not verbalised.
- If parents are anxious or stressed, it is likely that their children will be influenced by this. It is important, therefore, that parents are reassured about the safety of the school site.
- Teachers are seen as trusted sources of information, readily accessible, and in a constant relationship their students. However, care should be taken that they are supported in this task as needed.
- Open, honest and age-appropriate discussion helps children to understand and effectively cope with challenging situations.

Schools have a key role to play in creating resilient, socially connected communities.

- A whole-of-community approach, embracing the entire psychosocial context, will help to reduce the risk of psychological symptoms or reduced wellbeing for students and the communities they live in.
- The continuation of the school in its many roles and functions contributes to community recovery. This includes the school's location, as a place of attachment.
- Place attachment can influence how people deal with environmental hazards and contribute to their disaster resilience.
- A return to the Main Road site would be an important event for staff, pupils and their families, as well as the wider community, providing an opportunity to support the wider community recovery process.
- Maintaining the integrity of the Redcliffs School community following the earthquakes (e.g. bussing from the existing site) has helped maintain and possibly enhance the social capital of both the school and community.

Effective risk communication, for children and parents, can help address issues related to the return to the Main Rd site, including perceived threat from rockfalls.

- This requires open and honest communication between all parties about the school environment, including the cliffs, rockfalls and the mitigation works.
- Effective communication strategies include good processes for listening to, engaging with and empowering the community and acting on community concern. A variety of targeted activities that are relevant to the school and community should be considered (e.g. effective messaging, community meetings, scenario-building, school and work activities, engaging those with concerns, exercises and training). Empowerment is absolutely crucial.
- The school appears to enjoy a high level of trust and be well connected to the community. This will facilitate the task of reassuring the community of the safety of the site.
- Trust (or lack of trust) in authorities and experts (those communicating the messages) has a significant impact on perception of risk.

The visual and auditory impacts of rockfalls are less likely to be perceived as a threat if they are experienced within a controlled and supported environment in which teachers and parents work together to influence the children's understanding of the situation, and encourage them to gain a sense of mastery, confidence and familiarity with the situation.

- There may be some reactive anxiety for the first few rockfalls that children experience, but as the mitigation works prove their effectiveness, a sense of trust and confidence should develop. This will be enhanced if adults model confidence in the engineering solution.
- This would be further enhanced by integrating social and emotional learning about living with rockfall risk into curricula.
- The children and their families are living within this environment on a daily basis.
- Provided children are properly informed, the bund and cliffs area are likely to become normalised aspects of the school environment and routine, as with any "out of bounds area" and thus less likely to be associated with fear or danger.

There is a possibility that a small number of children may be adversely affected regardless of the effectiveness of the reassurance and communication efforts.

- Children who are generally anxious, or who have suffered or are suffering other stresses are only likely to be adversely affected by rockfall if they are not sure of the mitigation measures or if the sudden and intense sounds upset them.
- Such cases this should be regarded as indicators of more general issues and managed as part of a broader assessment of the other ways in which the anxiety or stress is manifest.

In conclusion, this comment by Dr Harith Swadi is a succinct summation of the key themes and opinions expressed in all four of the expert reports:

For the current residents of Redcliffs, and with the mitigation in place, it is highly likely that there will not be a significant amount of psychological stress and/or distress as a result of a return to the old school site. That will be influenced by how confident, engaged and empowered the community feels about the mitigation measures. How this is communicated to the community is the key. Given the level of engagement and trust the School and the School Board has with the community, I believe it is possible for that to be achieved.

2.0 LITERATURE REVIEW

2.1 PURPOSE

To review and summarise literature relevant to the investigation into the potential psychosocial implications of the return of Redcliffs School to the Main Road site.

2.2 METHOD

Given the large body of literature considering the effects of trauma, including disasters, on children and young people, and the extremely short time frame in which to conduct the review, a full systematic review was not feasible. A rapid evidence assessment (REA) of the academic literature was undertaken focusing on the questions raised in the scoping document.

The search strategy focused on English language documents published in the last decade, with a particular interest in review articles. Search terms included (but were not limited to):

- children
- adolescents
- psychosocial
- mental health
- psychological
- individual
- disaster
- rock fall
- land slide
- earthquake
- recovery
- community
- school
- vulnerability
- risk perception
- communication
- social support
- place attachment

Documents were sourced through Massey University Electronic Library resources using a range of web-based databases including Google Scholar, Scopus, and PubMed. A manual search of the reference lists of selected papers was also used to identify studies missed by the initial search. Significant use was also made of the Google Scholar “cited by” and “related articles” features which is an efficient way to rapidly build “families” of related publications.

This literature review was peer-reviewed by Professor Kevin Ronan (School of Human, Health and Social Sciences, CQUniversity, Australia), and Dr Julia Becker (Community Resilience and Hazards Planning, GNS Science, Lower Hutt).

The following is a summary of key themes and discussions identified in the literature.

2.3 ROCK FALLS AND LANDSLIDES

No research was identified that had investigated circumstances similar to those of Redcliffs school, in which children may be faced by the presence of ongoing rock fall. Most of the research found that considered the impacts of landslides or rock falls was related to major events with high levels of human mortality and significant destruction of the natural and built environments. These events differed so greatly from the Redcliffs school circumstances, they were not deemed to be relevant to the purposes of this review.

In a recent a systematic review of the impacts of mass earth movements, only a small proportion of the extensive literature identified related to the health, mental health, or psychosocial impacts (Kennedy et al., 2015). Children or adolescents were the subjects in

only three of the ten papers and these papers reported different aspects of the same small cohort (Kennedy et al., 2015).

2.4 VULNERABILITY AND RISK

Children have distinct vulnerabilities in disaster situations, including unique physiological, psychological and developmental needs (e.g. Osofsky & Osofsky, 2013). The risk to children following disasters is through direct exposure to traumatic events; increased needs for practical and emotional support, and the impact of disasters on their families, schools and communities (e.g. see Felix, You, & Canino, 2013).

A significant body of research has clearly documented children's reactions to disasters and identified a range of factors, including event, exposure, individual, family and social factors, that influence their reactions and recovery (e.g., Houston et al., 2016; Noffsinger et al., 2012; Norris et al., 2002; Pfefferbaum et al., 2015a; 2015b).

Research suggests that in addition to aspects of disaster exposure such as perceived life threat, and being injured, preexisting child characteristics and pre- and post-event life experiences are important determinants of the child's disaster outcomes (Pfefferbaum et al., 2015a). A particularly powerful influence appears to be family characteristics (e.g., a parent who is not coping well her/himself with an incident; see also below).

2.5 ONGOING STRESS

Most conceptualizations of traumatic stress, particularly post- traumatic stress disorder, assume a response picture that develops as a result of prior exposure to a traumatic stressor (Eagle & Kaminer, 2013). The notion of Continuous Traumatic Stress (CTS) assumes a different temporal focus (Eagle & Kaminer, 2013). In the case of people living in contexts of ongoing threat, although they may have experienced prior exposure to traumatic events, the primary preoccupation is with their current and future safety, rather than with past events. When the primary focus of traumatic awareness is upon anticipated danger, it is likely that thinking is dominated by thoughts of what might occur and ways of avoiding this (Diamond et al., 2010).

Much of the CTS research has focused on examining the psychological status of populations exposed to trauma as a result of situations such as war and terrorism. Those studies have focused on comparing groups by type of exposure, ethnicity, geographic proximity and location, (see Nuttman-Shwartz, & Shoval-Zuckerman, 2015). Again, most of this work has been with populations who face highly traumatizing events, well beyond any perceived risk that might exist for students at Redcliffs school in the post-earthquake environment.

2.6 FAMILY

The role of parents and caregivers and the overall family environment cannot be underestimated following a disaster in terms of either increasing vulnerability or protecting children from negative psychological effects (Ronan et al 2008). A parent who is able to provide warmth, support, consistency, predictability, and a "coping model" for their child may decrease a child's vulnerability; conversely a distressed parent can increase a child's vulnerability (Ronan and Johnston 2005).

Children's stress following exposure to a traumatic event has been shown to be strongly influenced by parents' stress (Cadamuro et al., 2016; Norris et al, 2002). Indeed, levels of

parental distress following a disaster may be the most important predictor of a child's longer-term reactions (Garfin et al., 2014; Huzziff & Ronan, 1999; Ronan & Johnston, 2005; Vernberg et al., 1996).

Recent literature reviews have highlighted the potential role of factors such as parental psychopathology, hostile and anxious parenting styles, too much or too little conversation about the disaster, parent-child and/or family conflict, low perceived family connectedness and worry about the family, changed and/or more dysfunctional family environment/functioning, and lack of parental restriction around children's disaster-related media exposure (Cobham, et al., 2016; Lambert et al., 2014; Trickey et al., 2012).

By contrast, as introduced above, family factors that can promote enhanced coping, and resilience, include parental modelling of how to cope with the feelings that arise based on a traumatic event, helping children get back into predictable, consistent routines, warmth and affection, and emphasising coping with events not so much as insurmountable threats that cannot, or should not, be discussed but, rather, solvable challenges that, perhaps while distressing in the first instance, can have solutions through discussion, support and healthy coping behaviours.

2.7 SCHOOLS

Schools provide an important context for restoring familiar roles and routines after disasters, and providing a sense of stability, safety and protection in difficult times (Felix, You, & Canino, 2013; Johnson & Ronan, 2014). Schools can become a vitally important aspect of the community (Kilmer et al., 2010). Their role as the 'glue' that holds a community together through the difficult response and recovery phases is a strong theme in the literature (Mutch, 2014).

Teachers have the potential to play a major role in the disaster recovery and stabilization of children and their families following disasters (Buchanan et al. 2009, 2010; Foote, 2015). There is a growing body of research on the use of school teachers as psychosocial mediators in communities directly impacted by disasters (e.g., Baum et al. 2009; Cohen and Mannarino 2011; Wolmer et al. 2003, 2005; Lazarus et al. 2003; Prinstein et al. 1996; La Greca et al. 1994). Teachers are an accessible and trusted source of information and the relationships formed between teachers and students prior to disasters can be utilised to heal emotional wounds with the use of developmentally appropriate practices (Johnson & Ronan, 2014).

Integration of disaster events into the curriculum and psychosocial intervention from teachers can work to allow students to understand the events in their communities and to process the changes in their lives (Johnson & Ronan, 2014). It also provides students with coping mechanisms to deal with the instability they find themselves surrounded with (Wolmer et al., 2011).

The potential for schools to serve as sources of support is immense, but it must be recognized that they also have the potential to serve as sources of stress for both children and teachers (Skovdal, 2015).

Within some schooling contexts, teachers may struggle to support students emotionally if they feel they do not have adequate training and are therefore hesitant to address the situation for fear of adding to the students' distress (Johnson & Ronan, 2014). Strategies and resources need to be in place for the social, emotional and psychological recovery of

staff and students as schools return to the purpose of teaching and learning (Mutch, 2015). It is important that there are resources available for teachers to help them to deal with their own emotional trauma so they can support their students to the best of their abilities (Seyle et al., 2013).

On the basis of their research in the New Zealand context, Johnson and Ronan (2014), offer three key recommendations on ways to support teachers' important roles in disaster recovery, including: (1) targeting evidence-based guidance and teaching resources to schools enrolling displaced children; (2) dispelling disaster rumors through schools and, (3) facilitating peer mentoring among teachers.

The recommendation pertaining to the dispelling of rumors is particularly relevant to the Redcliffs situation with possible fear and uncertainty surrounding the return to the Main Road site and the potential rock fall hazard.

Disaster rumors and myths are known to thwart well-intended public education efforts, particularly in communities that have low trust in authorities (Thomas 2007) which is a critical component of motivating individuals to prepare for disasters (Maeda & Miyahara, 2003; McIvor et al., 2009; Paton, 2008; Paton, Bajek et al., 2010).

Trust is particularly important when people have to make decisions under conditions of uncertainty (Becker, Paton, & Johnston, 2015). Levels of risk acceptance and people's willingness to take responsibility for their own safety is increased, and decisions to actively manage their risk more likely, if people believe that their relationship with formal agencies is fair and empowering (Lion et al., 2002; Paton & Bishop, 1996; Poortinga & Pidgeon, 2004). Conversely, if this relationship perceived as unfair, the consequence is a loss of trust in the agency (i.e., the source of information) (Becker, Paton, & Johnston, 2015).

Schools have an important role to play in addressing disaster rumors and dispelling the spread of inaccurate information about disasters (Johnson & Ronan, 2014). Schools may constitute an effective setting for public child and family disaster communication (Houston et al., 2016). They serve an audience of children and teachers, but also the wider community when children share what they have learned in school with their households (Ronan et al. 2010, 2012).

2.8 COMMUNITY AND THE ROLE OF SOCIAL SUPPORT AND RESILIENCE

While a child's most immediate context is that of the family, children belong to a range of diverse and interrelated groups, systems and communities that influence development and adaptation in general and with respect to disasters (Noffsinger, et al., 2012). Parents, extended family members, peers, teachers, and others with whom children have significant relationships influence the way in which they react and adapt to a disaster. Strong connections among home, school, peer group, community, and supportive networks and responses within social, community, and governmental agencies, can foster children's resilience and recovery in the face of adversity (e.g. Cadamuro et al., 2016; Noffsinger, et al., 2012).

The importance of studying children's reactions to disaster within the context of their social ecological system is increasingly recognised (Cobham, et al., 2016; Kilmer & Gil-Rivas, 2010).

The individual's environment also plays a significant role in the process of acquiring protective personal factors. On an environmental level, social support has been

recognized as a significant protective factor. The support that individuals receive from family, friends, colleagues, organizations, and community has a profound impact on their psychological health, physical health, and on the ability to deal with adversities and challenges (Sippel et al., 2015).

In general, comprehensive reviews of the research find that community context, even when controlling for family factors, influence child mental health outcomes (Leventhal & Brooks-Gunn, 2000; 2003).

Resilience has emerged as a significant concept in understanding community response to adversity, particularly in the past five years (Price-Roberston & Knight, 2012; Thornley et al., 2013). While community resilience has been variously defined and conceptualised, an important premise is that it signifies success in the context of a changing environment.

Kwok et al. (2016) identified a number of core attributes that serve as a basis for assessing social resilience of communities and to provide actionable strategies and programmes to help guide emergency management agencies concerned with the promotion of social resilience in communities. Overall, the most frequently mentioned social resilience attributes are community gathering place, followed by social support, knowledge of risks and consequences, collective efficacy, and sense of community (Kwok et al, 2016).

Social support and participation are important representations of many facets of community resilience described in the literature. Social support is represented by informal networks within a community such as family and friendship relationships that build support mechanisms (Kaniasty, 2012). Similarly, social participation is based on formal networks at an organisational level that provide community support mechanisms in times of need. Social support and participation are important for community resilience as they provide networks of assistance, caring and support (Cretney 2016). This is as opposed to a model of support that over-protects children. Over-protection is a known risk factor for anxiety-based conditions.

Schools can play an important role in community re-bonding (Gordon, 2007). Because they are often sites of physical and material facilities following disasters and because they build strong networks over time with families and the wider community, they become natural communication and support hubs (Mutch, 2016).

2.9 IMPORTANCE OF PLACE

Psychological ties with places are fundamental to understanding person-environment interactions (Bonaiuto, et al., 2016). These ties are conceptualised with constructs such as place attachment, sense of place, and place identity (Stedman, 2002). Despite the varying conceptualisations, the research illustrates the highly affective and influential relationship between people and their environment, as well as the important distinction people make between space and meaningful place (Silver, 2015.)

The affective–cognitive bond that forms between people and their important places is called place attachment (Low & Altman, 1992; Scannell & Gifford, 2010a) and has been recognized as a key contributor to how people deal with environmental hazards and disaster resilience, exerting different influences on pre- and post-disaster environments (Berkes & Ross, 2013; Cutter et al., 2008; Jakes, et al., 2007; Mishra, Mazumdar & Suar, 2010; Paton, Bürgelt, & Prior, 2008).

Research has focused on understanding how community place attachment relates to social capital, place development and disruption (Mihaylov & Perkins, 2014), or more generally, on how this influences perceptions of disaster resilience (Cutter et al., 2008) or vulnerability to risk (Bonaiuto, Breakwell & Cano, 1996; Gifford et al., 2009) Mihaylov & Perkins, 2014).

Research exploring community recovery in the aftermath of large-scale disasters, such as Hurricane Katrina (Chamlee-Wright & Storr, 2009; Miller & Rivera, 2010) and the 2007 Greensburg, Kansas tornado (Smith & Cartlidge, 2011; White, 2010) demonstrate the important relationship that individuals have with their places of personal significance, even when those familiar landscapes have been rendered all but unrecognizable by disaster (Silver, 2015.). In these circumstances, sense of place may act as an 'anchor' that reinforces and deepens feelings of belonging and personal identity in the face of shared suffering (Chamlee-Wright & Storr, 2009; Smith & Cartlidge, 2011).

Following a disaster, a number of paths through which place attachment contributes to recovery and resilience have been identified, including the ability of important places to assist with psychological need satisfaction and development, the impact of community ties on children's access to resources, the ability of places and memorials to offer continuity and symbolize hope, and the role of the newly formed place attachment bonds in psychological restoration and providing new opportunities (Scannell et al 2016).

Children and youth's experiences of disasters influence, and are influenced by, place attachment phenomena. Prior to a disaster, place attachment can contribute to their resilience through its impacts on their healthy development, hazard detection, and motivation to prepare and communicate preparedness options to families (Scannell et al, 2016). It is also important to note that these strong connections may have negative implications for preparedness and response. During a disaster, disruption of place attachment bonds, whether through displacement, disruption, or damage, can result in grief and other significant emotional, physical, and social outcomes (Scannell et al, 2016).

Displacement is one many consequences of disasters that forces people to leave their homes and take up temporary or permanent residence elsewhere (Pfefferbaum, et al 2016). As Johnson and Ronan (2014) point out, in recent years, both large- and small-scale disasters have instigated temporary and permanent movements of large numbers of children and families (Stuart et al. 2013; Elliott and Pais 2010; Donner and Rodriguez 2008), and many displaced children have been rapidly integrated into new schools that were not necessarily prepared to meet their needs (Jaycox et al. 2007; Reich and Wadsworth 2008; Rowley 2007).

It can take years for affected schools to recover (Kilmer et al., 2010). The psychosocial stress experienced by children their families may exacerbated by the new living arrangements and school environments (Picou and Marshall 2007; Lazarus et al. 2003). This can also place additional stress on school staff and teachers as they deal with changes in the student population, potential overcrowding in remaining schools, increases in learning and social-emotional problems in students, as well as teachers' and administrators' own distress after a disaster (Felix et al., 2010; Jaycox et al., 2007; Kilmer et al., 2010).

Place attachments have significant implications for health and wellbeing, but these are not always positive as emotions associated with meaningful places may sometimes be negative (Manzo, 2005). The concept of "solastalgia", with all its relations to place attachment and place identity, may have important implications for human health, although these implications

have not been systematically addressed by environmental psychology researchers (Bonaiuto, et al., 2016).

2.10 RISK COMMUNICATION

Given natural hazards are infrequent events and their consequences are complex, it is important that people understand the risk and know how to become more resilient. Effective risk communication is key to advising people about risk and facilitating the development of social resilience (Becker, Paton, & Johnston, 2015).

A recent review (Wachinger, et al., 2013) identified personal experience of a natural hazard and trust (or lack of trust) in authorities and experts as having the most substantial impact on risk perception. Other factors, such as cultural and individual factors (such as media coverage, age, gender, education, income, social status) appear to act as mediators or amplifiers of the main causal connections between experience, trust, perception, and preparedness to take protective actions (Wachinger, et al., 2013).

Risk communication research indicates that providing people with clear and specific information that takes into account local conditions can help minimize the inherent uncertainty of a natural hazard and in so doing help minimize potential dissatisfaction (e.g. Steelman, & McCaffrey, 2013). The literature also indicates that schools are a promising system for child and family disaster communication message delivery and campaigns (Houston et al., 2016).

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