

Integrated recovery management: A new way of looking at a delicate process

“If Winter comes, can Spring be far behind?”
Percy Bysshe Shelley (1792–1822) English lyric poet

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This paper considers the factors that relate to the recovery of a community affected by emergency. In particular, principles of recovery, the process of recovery, the reactions of people affected by emergencies, and the means by which recovery needs might be addressed are considered. An approach to recovery that is not strictly sequential, but is flexible, community-centric and which is integrated with other elements of the emergency management process is advanced.

On 20 May 2002 the Republic of East Timor was acknowledged by the United Nations as a country in its own right. When interviewed, citizens of the new country expressed relief at no longer having to live in fear of violent militia attacks. They did however express new concerns; concerns more characteristic of the aftermath of a less insidious, yet equally destructive calamity. These concerns included the need for employment, long-term accommodation, and economic viability. The above, in addition to the psychological sequelae, represent some of the more typical needs of a recovering community. Indeed, the recovery of a community, whether from war or cyclone, rates as one of the more complex and lengthy challenges to confront both those affected by the event and those called to assist the affected. This paper considers the process of recovery. In particular, several key principals of recovery are considered along with the process by which the recovery of a community occurs. In addition to the aforementioned fundamentals of recovery management, several other recovery issues will be considered, including the diverse reactions to emergencies. The question of meeting the needs of a recovering community in terms of what is required

and who accepts responsibility for its provision will also be addressed. Importantly, a number of conclusions will be drawn with respect to factors that affect recovery.

Part 1: Definition of recovery

It is important, when discussing recovery management, that a working definition of what actually constitutes recovery be explored. Recovery has been defined a number of ways, including:

“the coordinated process of supporting disaster-affected communities in reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical well-being.” (EMA, 1996)

The State of Victoria State Emergency Response Unit (VSERU) (2000) offers an alternative definition:

“an enabling and supportive process which allows individuals, families and communities to attain a proper level of functioning through the provision of information, specialist services and resources.”

These two definitions highlight a number of important aspects of what constitutes recovery. However, principal amongst these is the notion of recovery as a supportive process; that is, a process in which the affected community plays a central role. This notion is fundamental to the recovery process and will be reinforced ad nauseam throughout this paper.

Part 2: Principles of recovery

Recovery has been described by a number of sources, including Carter (1991), VSERU (2000), and Kates & Pijawka (1977) as a protracted, dynamic and complex process. The myriad interrelationships and fundamental considerations required of the recovery manager necessitate a carefully crafted approach to the recovery process. Such concerns, as described by VSERU (2000), include physical rehabilitation, personal rehabilitation, community development, economic concerns and environmental considerations. Consequently, the adherence to a set of recovery management guiding

principles can greatly increase the chance of a smooth recovery.

Since 1979, recovery management in Australia has been set against a background of eight guiding principles, endorsed by the Standing Committee of Community Services and Income Security Administrators. These guiding principles are outlined and discussed below. The principles themselves are taken from Emergency Management Australia's *Disaster Recovery Manual* (1996, para. 1.03) (Hence the continued reference to 'disaster' rather than 'emergency').

Principle 1: Recovery defined

"Recovery from disaster is an enabling and supportive process which allows individuals, families and communities to attain a proper level of functioning through the provision of information, specialist services and resources."

This principle is, for all intents and purposes, one of the more widely endorsed definitions of recovery. Nevertheless, it does stand to highlight some important aspects of recovery management.

First, and arguably foremost, is that recovery is a supportive process. Implicit in this element is the ever-present emergency management fundamental of a community-centric or even community-driven process. The rationale being that the community itself is best placed to identify the community's needs. Hence, rather than playing the role of juggernaut, the recovery manager must instead support the community in its recovery.

The second key element of Principle 1 is the proposed end-state; that is, that those affected are allowed to attain a proper level of functioning, the operative word in this case being 'proper'. Lunn (2001) rephrases this a little more accurately through the use of the word 'appropriate'. In practice, this suggests that the community be assisted to a level of functioning where they are able to sustain themselves in the absence of further external intervention. It does not imply a better level of functioning, nor does it imply a level of functioning similar to that formerly enjoyed. The reasons for this are simple in that a better level of functioning may not be feasible, whereas the former level of functioning may not be desirable. Moreover, there comes a time where external support needs to leave the community to its own devices, and this may be at a time well before the community can claim to be better off than it was previously.

Notwithstanding, current initiatives in the wake of the present Council of Australian Governments (COAG) review of disaster mitigation are redefining the landscape in terms of 'recovery' funding such as the Natural Disaster Relief Arrangements (NDRA). Consequently, there is a growing need to consider assisting the community to a better level of functioning through the

implementation of mitigation measures during the recovery process.

Principle 2: Planning and management

"Effective recovery from disaster requires the establishment of planning and management arrangements which are accepted and understood by recovery agencies, combat agencies and the community."

Again, Lunn (2001) couches this principle in more appropriate terms with respect to those that are expected to accept and understand the aforementioned arrangements. Specifically, he writes in terms of 'all interested and affected parties'. Granted, all interested and affected parties will encompass recovery agencies, combat agencies and the community, but it is still prudent, as Lunn (2001) has done, to consider this principle in the context of all potential stakeholders.

Nevertheless, the crux of Principle 2 is the establishment of agreed and understood planning and management arrangements for which there is widespread commitment. This essentially requires the development, in consultation, of arrangements that not only outline how recovery will be prepared for, but how the recovery process will actually be conducted. As alluded to, and similar to planning for response operations, recovery planning and management arrangements need to be developed in partnership with all parties who are either likely to be affected by an emergency or who have a role to play in the recovery of those affected. Each of these stakeholders need to play an active part in the planning process in order that their understanding of and commitment to the agreed arrangements is encouraged. Clearly, the broadest consultation would be impractical and unwieldy. Therefore, the means by which stakeholders are involved must be carefully considered. This, however is outside the scope of this paper, suffice to say that a recovery committee similar to that which would operate during an actual event should form the core of this planning committee.

The development of recovery planning and management arrangements, in addition to being a fundamental aspect of effective recovery management, is also in many cases a legal requirement. For example, under the *Emergency Management Act (Vic) 1986*, Victorian municipalities are required to prepare an Emergency Recovery Plan as part of their Municipal Emergency Management Plan. Similar, though less specific requirements also apply at Regional levels. This requirement is testament to the high importance placed on recovery and recovery planning by many jurisdictions.

Principle 3: Recognition of changing needs and complex nature

"Recovery management arrangements are most effective when they recognise the complex, dynamic and protracted nature of recovery processes and the changing needs of

affected individuals, families and groups within the community over time.”

Perhaps more so than at any other stage of an emergency, recovery deals with people in need. Moreover, owing to the infinite complexity of communities and the unprecedented change that is characteristic of a recovering community, these needs and the context within which they develop is dynamic. For these reasons, recovery management arrangements need to be flexible. Indeed, flexibility lies at the heart of Principle 3.

Notwithstanding, flexibility is for nought if not for the means by which the need for flexibility can be identified. In other words, mechanisms must be in place to identify the extent to which recovery processes, as well as the needs of individuals, families and communities, are changing. Therefore, communication is fundamental to the extent to which Principle 3 can be followed. Carter (1991) supports this proposition, albeit principally within the context of response operations. Nevertheless, his ideas are equally applicable to the identification of recovery needs. In fact, the manner by which some needs may be addressed are already outlined for the reader and include such things as means by which information can be obtained, and appropriate actions that the community can take. These equate to addressing one Kates' (1977) principal community needs during recovery – that of 'reducing the uncertainty'. However, other more tangible needs will require voicing and addressing, and it is these that will be continually changing. Accordingly, means by which the community can communicate their changing needs will need to feature prominently in any recovery strategy. Such means should be both active and passive. Specifically, communication with those affected should be active in terms of seeking out the needs of those affected, but also passive in terms of being receptive to changing needs as expressed by individuals, families and communities.

In considering changing needs during recovery, it is prudent not to overlook the likelihood of greed and avarice creeping into the minds of those who are expressing their needs. Many, including Carter (1991) have drawn attention to the possibility of individuals and groups seeking to advance their own interests during recovery to the extent that their wants are expressed as needs. Whilst it is important to do the greatest good with the available recovery resources, and therefore not address these wants, the way in which this distinction can be drawn is problematic. Such a distinction is likely to be highly subjective and will vary on a case by case basis. Distinctions between needs and wants therefore should be made with utmost care, the rationale formally recorded for future reference and accountability.

Principle 4: Community development approach

“The management of disaster recovery is best approached from a community development perspective and is most effective when conducted at the local level with active participation of the affected community and a maximum reliance on local capacities and expertise.”

There are three key aspects to this principle. Firstly, that disaster recovery is best approached from a community development perspective; secondly, that disaster recovery is most effective when conducted at the local level with active participation of the community, and finally, that maximum reliance should be placed on local capacities and expertise. Yet, despite this distinction, a common theme prevails – that of a community-centric approach, previously discussed under principle 1.

Again, the importance of this theme cannot be overemphasised. In the context of Principle 4, such an approach acts to empower a disenfranchised community and is therefore central to their future healthful functioning. Clearly, the community development approach is logical. The opportunities manifested in a community that has been fundamentally altered by calamity present significant room for change. This opportunity ought to be capitalised upon in order that the potential for community betterment in areas such as hazard mitigation and enhanced preparedness can be realised.

The importance of involving and empowering the community during this process also cannot be overstated. As has been stated many times thus far, involvement of the community in managing the recovery process is central to the success of key recovery initiatives. Moreover, involvement of the community alters their status from passive pawns in the process, to once again active and contributing directors of their own destiny. This is a very important element in terms of a positive psychological outlook (Raphael, 1986).

Finally, it is important to place as much reliance as is sensibly possible upon local capacities and resources. The value in this approach is essentially twofold. Firstly, the more that recovery relies on local resources, the quicker that the community will be able to move towards self-sustainability, thus move away from recovery and towards relative normalcy. Secondly, but more subtly, a reliance on external resources has the tendency to take business away from those resource providers who are still capable of providing goods and services. Hence, the recovery process is unnecessarily prolonged. The reason for this is clearly articulated by Haas, et. al. (1977) who state that a central element in the speed of a community's recovery is the speed with which the economic sector can re-establish itself. Sinclair (1990) provides a good example of where this approach was adopted in his report on the recovery

subsequent to the Nyngan floods. In this instance, the utilisation of donated goods was carefully managed in such a way as to minimise the detrimental effect on local retail clothing and homeware outlets. In addition, much reliance was placed on locally sourced volunteer assistance.

Principle 5: Involvement of human service agencies

“Recovery management is most effective when human service agencies play a major role in all levels of key decision making which may influence the well being and recovery of the affected community.”

On first impressions, this principle may appear to be at odds with the important role of the community in the decision-making process. This conflict is without merit. Rather, the important role of the human service agencies works in concert with the community in determining needs and informing decisions, one not taking precedence over the other. Indeed the very early stages of recovery, during which times many keystone decisions are made, represent a period of significant psychological distress (Raphael, 1986). It is during this time of diminished psychological capacity that health service agencies can play a crucial role in identifying the needs of the community, perhaps in extreme circumstances effectively acting as the community’s proxy.

Nevertheless, it is clearly impractical for the community or even a community representative to play a role in decision making at all levels. This is where human service agencies play a particularly useful role, having the capacity and the knowledge to represent the community’s interests at all levels. The value in this advocacy function being performed by the human service agencies lies in their intimate knowledge of community needs during times of crisis, this being their core day to day function. This rationale is reminiscent of emergency planning principles, where agencies are allocated roles and responsibilities that reflect as closely as possible those which they engage in on an everyday basis. However, the role and importance of the community must never be ignored.

Principle 6: Recovery begins at impact

“Recovery from disaster is best achieved where the recovery process begins from the moment of disaster impact.”

There is a tendency in the part of some to think of comprehensive emergency management in terms of four separate and distinct phases of emergency management, which include prevention/mitigation, preparedness, response and recovery. This approach is fundamentally flawed and is something that Principle 6 seeks to redress.

Recovery actions must and do begin from the moment of impact. Not only are there some critical actions that can take place, which will facilitate a more rapid recovery, but individuals, agencies and organisations that have a major role during response operations also may have a key role in recovery. A very small, but fitting example can be seen in the fire service’s response to a house fire. A critical element in any firefighting strategy is ‘salvage’. Salvage refers to actions taken to minimise further damage to property during and after firefighting operations, in effect facilitating a more rapid recovery.

However, this principle could be taken further, particularly when considered in parallel with Principle 2. Specifically, recovery should be a consideration during prevention/mitigation, preparedness *and* response activities. For example, during the recovery of a community, initiatives should be taking place to prevent or mitigate future occurrences. Similarly, while activities are taking place to prevent or mitigate future impact, consideration should be given to how this will bear on recovery needs and processes.

Preparedness activities, on the other hand, place much emphasis on formulating plans, training and exercising. It would be remiss not to devote a significant amount of preparedness effort toward recovery considerations so that in addition to being prepared for the impact of a hazard, all parties are prepared for what must be done once the proverbial dust has settled. The events of September 11 2001 serve to further highlight the link between preparedness and recovery. It was demonstrated that organisations that had prepared by maintaining appropriate business recovery arrangements, such as back-up data storage and information processing repositories, were able to conduct business as usual on September 12 2001 (Meredith, 2002).

Accordingly, while Principle 6 ostensibly relates to response considerations of recovery, much benefit can be cultivated from a more comprehensive consideration of recovery management well before an event actually occurs.

Principle 7: Training and exercising of recovery arrangements

“Recovery planning and management arrangements are most effective when they are supported by training programs and exercises which ensure that recovery agencies and personnel are properly prepared for their role.”

Training and exercising forms a central link between these principles, particularly Principle 2, and the efficient and effective management of the recovery process. Carter (1991) reinforces this point on a number of occasions, stating that training and exercising are crucial to maintaining the viability of plans, as well as

being a key element in preparedness. However, Carter (1991) is not unique in his emphasis on the importance of training and exercising. Rather, such sentiment can be found reflected in many contemporary training and emergency management texts, including those published by Emergency Management Australia.

While training and exercising have been mentioned above in the same vein, it is important that they are distinguished in terms of their benefit to recovery management.

Training is crucial to ensuring that all those with a responsibility under the extant recovery management arrangements are familiar with and capable of carrying out their designated roles and responsibilities. Moreover, training provides an opportunity for the participants to build a concept of how the process fits together and what command, control, coordination and communication arrangements are in place and what authority is in place to support these arrangements.

In comparison, exercising brings all the elements together to test the recovery management plans and arrangements. This is the generally agreed role of exercising. However, there exist a number of collateral benefits. These include the determination of the continued appropriateness of extant roles and responsibilities; the highlighting of impracticalities inherent in existing arrangements; deficiencies in training; and an awareness of the real potential resource demands.

Of course, a full-scale exercise of recovery management arrangements would not be feasible, hence underlining the importance of effective training and extremely carefully crafted desktop (or similar) exercises.

Principle 8: Comprehensive, integrated, timely, equitable, fair and flexible arrangements

“Recovery from disaster is most effective where recovery management arrangements provide a comprehensive and integrated framework for managing all potential emergencies and disasters and where assistance measures are provided in a timely, fair, equitable manner and are sufficiently flexible to respond to a diversity of community needs.”

This principle describes two quite separate considerations, one pertaining to recovery management arrangements, the second pertaining to assistance measures. Accordingly, each will be described in turn.

Principle 8 recommends in the first instance that arrangements provide a comprehensive and integrated framework for managing all potential emergencies and disasters. This holds a number of implications. Firstly, the use of the word framework suggests that arrangements are a starting point for recovery management; a ‘straw man’. Clearly, this would encourage flexibility and enhance the practicality of any

such arrangements. Secondly, this framework should be comprehensive and integrated. This implies thoroughness, broad consultation and, most importantly, a well prepared, multi-level, all-agency recovery plan where all stakeholders are appropriately involved and interact in a seamless, coordinated, effective and efficient manner. Finally, the first part of Principle 8 makes reference to ‘managing all potential emergencies and disasters’. This is consistent with the widely accepted ‘all hazards’ approach to emergency management, thus ensuring arrangements aren’t concerned with the minutiae of specific emergencies thereby losing any trace of practicality, applicability and flexibility. In other words, truly pragmatic recovery management arrangements would not reflect the specifics of the recovery process. Rather, they would be more general in nature, consistent with the framework concept discussed above.

As mentioned, the second part of Principle 8 relates to assistance measures; that is, those contingencies established or maintained to meet the needs of the affected community. Specifically, Principle 8 recommends that these measures are provided in a timely, fair, equitable manner and are sufficiently flexible to meet a diversity of community needs. In other words, assistance measures need to meet four requirements. Firstly, assistance measures should be made available to the affected community in time for such measures to achieve their desired outcomes.

Secondly, assistance measures should be made available on an equal basis to elements of the affected community, with the following caveat: while availability should be on an equal basis, this should also be fair to all involved. For example, equal may mean two bags of rice for each family. It would not be fair to provide two bags of rice to families that have an existing large storage of rice. An interesting challenge to this concept often arises in the wake of bushfire, where debate centres on the provision of appeal funding and other monetary assistance to uninsured homeowners to the exclusion of insured home owners, leaving the insured questioning the sense of paying years of premiums.

Finally, assistance measures should be flexible enough to meet a wide variety of community needs. This requires careful forethought, thus again bearing heavily on Principle 2. Measures not only need to exhibit diversity, but within themselves need to be flexible. This flexibility also reflects the sentiments of Principle 3.

Overview

Each of these eight principles represents an important recovery management consideration in its own right. However, as highlighted a number of times during their discussion, these principles are also closely interrelated, each one complementing and supporting the other.

While not considered in the above discussion, there are also 11 'Recovery Concepts', which reinforce and provide additional substance to these eight overarching principles. Unfortunately, a discussion of these concepts is outside the scope of this paper. However, the reader is referred to Emergency Management Australia's Disaster Recovery manual (1996, paras 1.04–1.15) for a detailed discussion of these concepts.

Part 3: The recovery process

Emergency managers, hence recovery managers, work particularly well when there is a clearly described process from which ideas can be generated. It is important to note that the mere outline of a recovery process, no matter how inspired, cannot take the place of proper planning. Rather, as alluded to above, the description of a recovery process acts as a tool of evaluation and comparison of planned and actual recovery efforts, as well as a springboard for further work.

The recovery process in the broader context of emergency management

Recovery is an integral part of the comprehensive emergency management process. Thus, to truly consider the recovery management process properly, it must be considered in light of this broader context.

In consideration of any process, it can be tempting to fall into the trap of 'sequencing' the myriad steps and sub-processes. This is particularly unwise in the field of emergency management, where the emergency manager must take care to be mindful of the entire process at all stages. For example, recovery must be considered during preparedness activities, whereas it is also prudent to consider prevention or mitigation measures during recovery. An attempt has been made in Figure 1, to represent this concept graphically.

As shown, comprehensive emergency management requires interaction between each of Prevention, Preparedness, Response and Recovery at any point in the process. The large circular arrow represents the general tendency, however, of the process to approximate a sequence. Notwithstanding, the most important point is represented by the blurred transition between each element in the process – that these elements are not 'stages', where one begins and the other ends, but rather elements in a continuum.

Spotlight on the recovery process

An underlying concept

Just as the process described above should not be assumed to represent a number of discreet stages, so too does this principle apply to the recovery process. This approach is strongly supported by the Victorian SERU (2000). In their recovery Planning Guidelines, a key concept is the consideration of the recovery process as

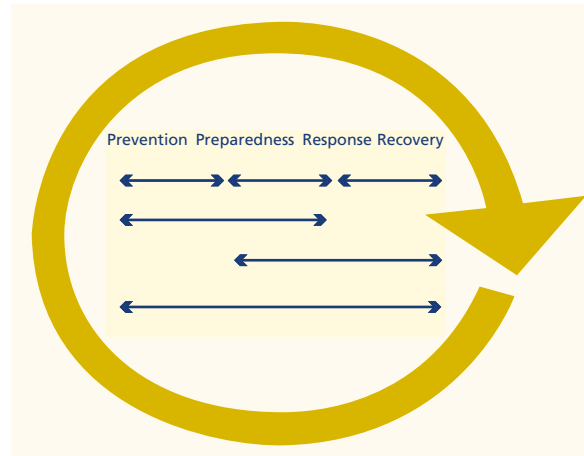


Figure 1. The Integrated Emergency Management Process

a set of activities as opposed to a chronological sequence of events. This is the first principle upon which the recovery process should be based.

A recovery process framework

It is one thing to view the process as a set of activities and still another to define exactly what these activities are. Yet, despite the veritable dearth of literature describing the myriad tasks comprising the recovery process, there is little in the way of broadly endorsed recovery process frameworks. Notwithstanding, there are a number of theories in existence upon which to base an accurate description of the recovery process. Prominent among these the four-level process outlined by Kates & Pijawka (1977).

Described as a sequential model, Kates & Pijawka's (1977) recovery process outlines four principle periods encompassed by the recovery process. These include:

1. The Emergency Period;
2. The Restoration Period;
3. The Replacement Reconstruction Period; and
4. The Commemorative, Betterment and Developmental Reconstruction Period.

These periods are defined by Kates & Pijawka (1977) in reasonably unambiguous terms. The Emergency, or perhaps more appropriately Post-Impact Period is characterised by activities required by those affected to handle the drastic changes that have been wrought upon them. In comparison, the Restoration Period is a 'patching' period characterised by a progressive return to relatively normal socio-economic functioning. The Replacement Reconstruction Period is represented by a full return to pre-emergency functioning, whereas the Commemorative, Betterment and Developmental Reconstruction Period is characterised by projects to memorialise, improve on or further develop the affected community. Kates & Pijawka (1977) also observe that each of these periods have historically taken about ten times as long as that which occurred prior. An outline of

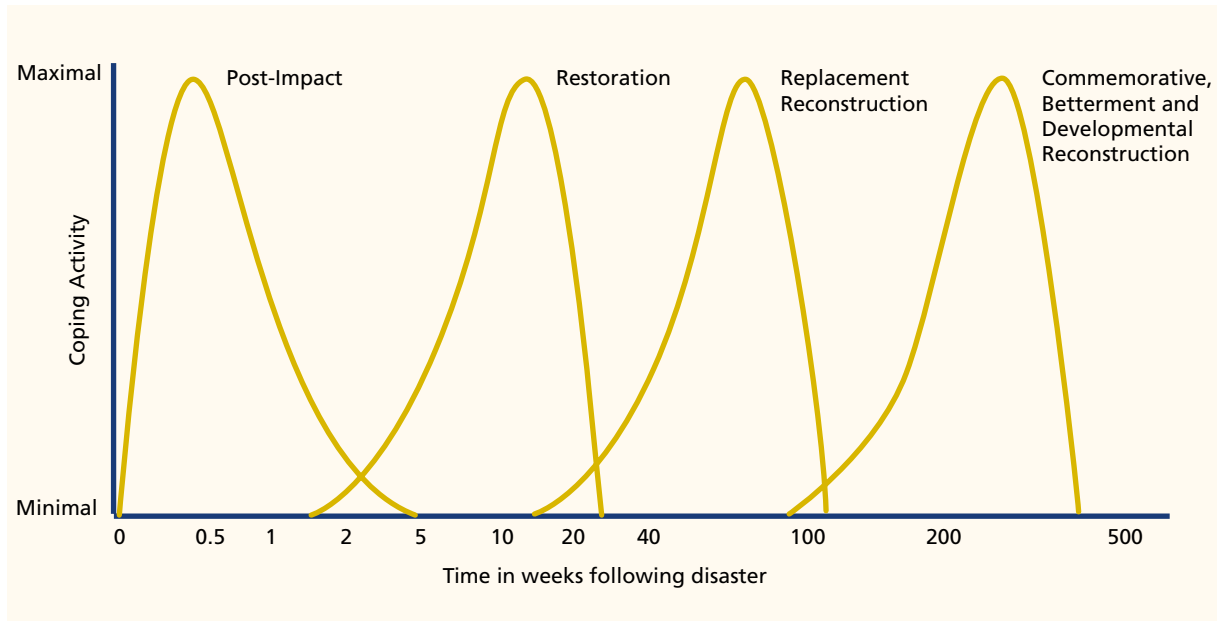


Figure 2. The Recovery Process. Source: Kates (1977)

the how these periods represent a process, adapted from Kates (1977) is outlined in Figure 2.

The rate of recovery, according to Kates & Pijawka (1977), do note that could be greatly enhanced by encouraging as much simultaneous activity as possible, thus reducing the peak and troughs, as demonstrated by figure 3.

Integration with the emergency management process

While Kates & Pijawka's (1977) and Kates' (1977) theories and observations hold a great deal of merit, the means by which they can be integrated with the broader emergency management process are more suited to a

sequential model, which is not supported by this paper. Accordingly, this paper proposes an augmentation to the process advocated by Kates & Pijawka (1977) that is more suited to the emergency management process described earlier. While it is noted that the emergency management process generally conforms to an approximate sequence of events, the interaction between all elements of the process cannot be ignored. Examples of this interaction are not hard to bring to mind with a little applied thought. Figure 4, 'Charlotte's Doughnut' (Charlotte being a cryptic reference to web between each element of the process) represents the concepts described above; that is the tendency for the process to approximate a 'sequential continuum', whilst maintaining constant interaction between all elements.

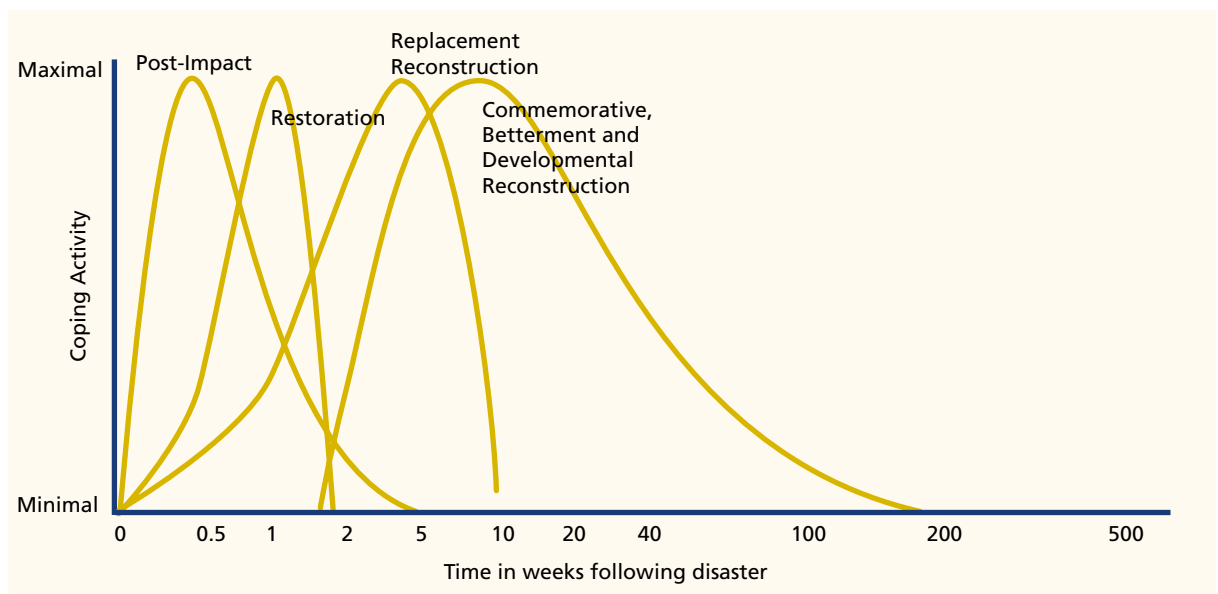


Figure 3. An enhanced Recovery Process Adapted from Kates & Pijawka (1977)

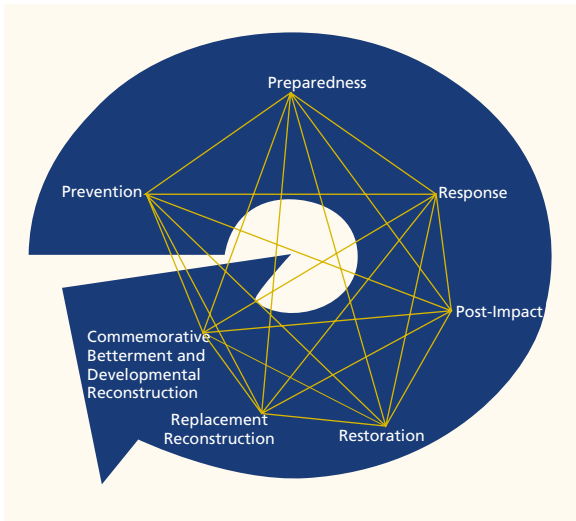


Figure 4. Charlotte's Doughnut

Charlotte's Doughnut reinforces the fact that, while recovery may not in fact be taking place, all elements of the emergency management process continue to contribute to the pace and effectiveness of recovery for when it does finally begin.

The questions now remain as to, firstly, what it is that is contributed to the recovery process from each element of the broader emergency management process, and secondly, what it is that is comprised by each of the element in the recovery process.

Recovery process specifics

There are essentially seven elements of relevance, either directly or indirectly, to the recovery process. Three of these, the 'extra-recovery' elements are the partner elements of recovery within the emergency management process. These elements are either dependent on the recovery process or vice versa.

The remaining elements, the intra-recovery elements, are those that directly comprise the recovery process and are based on the recovery process advanced by Kates and Pijawka (1977).

Not surprisingly, a narrative description of the interactions and actions that relate to each of these elements would be quite tortuous and potentially confusing. Therefore, in the interest of clarity and pragmatism, a description of these elements is presented in the tables in the following pages.

As may be observed in Table 1, extra-recovery elements are principally concerned with building on previous recovery, planning for future recovery and bringing recovery arrangements on-line. Table 2, now brings recovery management into the limelight, focusing on the activities and considerations that comprise recovery proper.

Recovery process key points

Tables 1 and 2 show that recovery is a complex, protracted and dynamic process, which occurs at many levels of the community. It is important to remain continuously mindful that recovery is a community-centric process, and one that is not strictly sequential, but with each of its elements often operating in concert. Moreover, it is important to remain cognisant that recovery is an integral element of the Comprehensive approach to emergency management and therefore must consider and be considered by its partner elements. Thus, the process of recovery cannot be considered without reference to these elements, for what affects one also affects others.

Part 4: Diverse reactions to emergencies

When the infinite combination of hazards and individuals are taken into account, the potential reactions to emergencies are expectably diverse. Further compounding these diverse reactions are the equally diverse reactions prevalent at other levels of society, including family, peer-group and community.

Clearly, a complete exposition of all reactions by all individuals and groups would be a monumental task and is thus outside the scope of this paper. However, the more prevalent reactions to emergencies will be outlined, from which it may be possible for the reader to gain an appreciation of the likely reactions that may be observed in a community following an emergency.

Nevertheless, an understanding of reactions to emergencies is arguably the most central of mental health considerations to the recovery process. The reason being that it is these diverse reactions of individuals and groups to emergencies highlights the needs of those impacted, thereby facilitating a more informed and realistic approach to both the management of the recovery process as well as recovery planning.

Reactions to emergencies: Community, family and individual

Community

Raphael (1986) paints an extremely accurate, yet poignant picture of a community's response to emergencies. She outlines the community response in parallel with the individual response, that is, confusion and change followed by adaptation, management of the situation, reorganisation, and recovery. What effectively happens is that the emergency serves to fundamentally alter the myriad interactions within the community, or as Gordon (1990) suggests, destroy all bonds that come into its contact. However, what is discussed here is merely an aspect of the psychosocial ramifications of the emergency. There is also a physical aspect in the sense that the community can be physically broken up, such

Table 1: Extra-recovery elements.

ELEMENT	PRINCIPLE FOCUS OF ELEMENT	RELATIONSHIP TO RECOVERY	RECOVERY-RELATED ACTIONS	
			INDIVIDUAL	COMMUNITY
Prevention and Mitigation	Prevent or mitigate against the impact of a hazard	Recovery actions incorporate prevention or mitigation measures; Implications for recovery are considered during prevention and mitigation activities	Incorporate prevention or mitigation strategies during recovery; Take out insurance (home, belongings and income)	Incorporate prevention or mitigation strategies during recovery; Take out insurance
Preparedness	Ensure the community is prepared for the impact of a hazard	Recovery plans are developed; Recovery considerations are incorporated into emergency plans	Take actions to ensure post-impact sustainability; Identify contingencies for accommodation, schooling, work, etc.; Ensure awareness of potential effects, needs and available resources post-impact	Develop plans; Conduct of vulnerability studies; Incorporate recovery considerations into emergency plans; Training in recovery management and arrangements; Exercising of recovery arrangements; Take actions to ensure post-impact community sustainability; Identify contingencies for accommodation, schooling, work, etc.
Response	Respond to the impact of a hazard upon a community	Implications for recovery are considered during response activities; Actions are taken to initiate or enhance recovery processes	Secure valuables, especially documents; Tie into community information networks; Maintain contact with family and friends	Activate recovery plan and keep stakeholders informed, including the community; Identify potential recovery resource needs from the earliest; Identify resources

as was the case in the Hobart Bridge Disaster, which in itself can have psychosocial implications (Raphael, 1986).

Nevertheless, according to Raphael (1986), leaders quickly emerge from the confusion and coordinate what is essentially a process driven by post-impact altruism. This stage is sustained to a point at which former power structures reassert themselves and altruism gives way to former patterns of conflict and bureaucracy, sometimes even manifesting in turf wars between aid and recovery agencies. Further, SERU (2000) state that

an unquestionable consequence of emergencies is a degree of community division. The degree to which this division affects the community will depend on a number of factors, including the level of social capital, isolation and resilience.

As one looks closer at what happens to communities in emergencies the real impact of emergencies on communities emerges. For example, uncertainty and complexity are cited by SERU (2000) as significant aspects of the earliest phases of recovery. This accords with Raphael's (1986) description of the '2nd Disaster',

Table 2: Intra-recovery elements.

ELEMENT	PRINCIPLE FOCUS OF ELEMENT	RELATIONSHIP TO THE BROADER EM PROCESS	RECOVERY-RELATED ACTIONS	
			INDIVIDUAL	COMMUNITY
Post-impact	Implementation of strategies to cope with damage, dislocation, death and injury	<p>Strongly linked with response, but also to other elements;</p> <p>Should commence from the moment of impact;</p> <p>Effectiveness is associated with effectiveness of preparedness activities</p>	<p>Satisfaction of basic needs: physiological, safety & security, limited belonging and love needs;</p> <p>Account for family and friends;</p> <p>Seek and gather information;</p> <p>Attend to psychological needs as best and as early as possible</p>	<p>Establishment of recovery committee;</p> <p>Establishment of recovery centre;</p> <p>Conduct of damage and needs assessment;</p> <p>Suspend normal activities where necessary;</p> <p>Activate recovery systems in accordance with recovery plan;</p> <p>Search and Rescue;</p> <p>Establishment of emergency relief measures, including feeding, shelter and clothing;</p> <p>Establishment of public information dissemination systems;</p> <p>Begin clearing debris;</p> <p>Provision of mental health services;</p>
Restoration	Progressive return to relatively normal economic and social functioning – patching up	<p>Still linked with all elements;</p> <p>Effectiveness is associated with effectiveness of preparedness activities;</p> <p>Some restoration activities will have a strong bearing on future prevention and mitigation</p>	<p>Restoration of social structure;</p> <p>Manifestations of grief and loss;</p> <p>Possible relocation on a permanent or semi-permanent basis for some;</p> <p>Progressive return of evacuees;</p> <p>Clean-up of home and personal property;</p> <p>Schooling resumed;</p> <p>Financial assistance sought;</p> <p>Insurance claimed;</p> <p>Counselling</p>	<p>Cessation of search and rescue;</p> <p>Restoration of economic base;</p> <p>Restoration of physical infrastructure and utilities, including transportation systems, water, sewerage, etc.;</p> <p>Closure of relief operations, including feeding, shelter and clothing;</p> <p>Provision of psychological support services;</p> <p>Financial assistance sought and provided;</p> <p>Appeals established and managed</p> <p>Most debris removed</p>

Table 2 continues on the next page

Table 2: Intra-recovery elements – continued.

ELEMENT	PRINCIPLE FOCUS OF ELEMENT	RELATIONSHIP TO THE BROADER EM PROCESS	RECOVERY-RELATED ACTIONS	
			INDIVIDUAL	COMMUNITY
Replacement Reconstruction	Progressive return to relatively normal economic and social functioning – patching up	<p>Strongly linked with prevention and mitigation, but also to other elements;</p> <p>Much activity relates to implementation of prevention and mitigation measures as well as review of recovery arrangements;</p> <p>Effectiveness is associated with effectiveness of preparedness activities</p>	<p>Homes rebuilt and personal property replaced;</p> <p>Employment resumed;</p> <p>Social network restored;</p> <p>Reduced demand for psychological assistance;</p> <p>Possible continued heightened demand for health services;</p> <p>Long-term psychological sequelae becomes manifest</p>	<p>Employment recovers to relatively normal levels;</p> <p>Physical infrastructure fully reconstructed;</p> <p>Service industry fully operational;</p> <p>Return to normal economic functioning;</p> <p>Large developmental projects commenced;</p> <p>Litigation commences</p>
Commemorative, Betterment and Developmental Reconstruction	Memorialise the event, encourage community growth and building of social capital, and encourage continued community development	<p>Again, strongly linked with prevention and mitigation, but also to other elements;</p> <p>Much activity also relates to implementation of prevention and mitigation measures as well as review of recovery arrangements;</p> <p>Effectiveness is associated with effectiveness of preparedness activities</p>	<p>Anniversaries of the event and/or loss of family and friends;</p> <p>Planning for the future and focus on the future;</p> <p>Increased birthrate;</p> <p>Some instances of permanent relocation</p>	<p>Building of memorials and monuments;</p> <p>Commemoration days;</p> <p>Public holidays;</p> <p>Efforts to expand and further develop the community;</p> <p>Large-scale community developments;</p> <p>Further implementation of prevention and mitigation measures;</p> <p>Increased efforts to improve community sustainability;</p> <p>Settlement of litigation;</p> <p>Normalised demography;</p> <p>Return to preparatory rather than recovery mindset and political agenda</p>

where confusion reigns supreme as a consequence of damaged communications and information dissemination mechanisms and infrastructure. This uncertainty, complexity and resulting confusion no doubt compounds the already burdensome stressors upon a community.

Another significant stressor bearing down on the recovering community is the loss of autonomy, which according to SERU (2000) can only be mitigated by encouraging a community-driven recovery process. However, as stated by Raphael (1986), the loss of dignity that goes with asking for help is also a significant

stressor. It seems therefore inevitable that no matter which way the recovery of a community is managed, there is going to be some inherent conflict and resulting stress.

Family

Just as family is important in daily life, so too are they important during emergencies, but to a degree unimaginable during times of peace and calm. This importance of family has been highlighted by Raphael (1986), who suggests that the family, operating as a system, goes through some important changes in order to support and protect its members. This accords with the kin input mode as advanced by Haas, et. al. (1977). The kin input mode is a mechanism of coping used by families as a single autonomous unit. This contrasts with the institutionalised and autonomous modes put forward by the same authors, where the institutionalised mode refers to heavy reliance on public support systems, and the autonomous mode placing little or no reliance on public support systems.

Principal reactions of families to emergencies center on protection of its members and provision of support.

In describing the reactions of families to emergencies, Raphael (1986) outlines 5 key observations:

1. Bereavements of family or close friends were likely to be associated with a lower level of recovery;
2. A majority of family ties were strengthened following emergencies;
3. Larger families were more vulnerable to the stress aspects of the experience;
4. Higher income was associated with better family coping;
5. Economic recovery had the highest causal effect on emotional recovery.

In addition, Haas, et. al. (1977) observe that families seem to recover faster than cities reconstruct.

From the above, it may be observed that the family plays a pivotal role in the emotional, hence overall, recovery of a community and therefore should be a prime concern in recovery planning and management.

Individual

It is perhaps the individual reactions to emergencies that are the most diverse. Not only are differences apparent between individuals, but there is also variations between particular demographics; principally the very young and very old. Therefore, against the background of group-based differences outlined above, it is important to consider the diverse reactions of individuals and some of the implications this holds for recovery management.

Generally observable reactions

Raphael (1986) outlines three discreet categories of reaction to the stressors inherent during and after

emergencies. These include post-traumatic stress syndrome (also referred to as post-traumatic stress disorder, or PTSD), survivor syndrome, and disaster bereavement syndrome. In addition, other reactions may be observed, including anxiety disorders, depressive disorders and psychic numbing.

An alternate, though not conflicting perspective is presented by Malt (1994), who highlights four broad categories of psychological reaction to traumatic events. These include mood disorders, anxiety disorders (including posttraumatic stress disorder), somatoform autonomic dysfunction and organic mental disorders as a consequence of injury. This range of disorders is reflected in a wide range of traumatic events, including disasters such as earthquake (Sharan, et al., 1996) and volcanic eruptions (Shore, 1986); urban terrorism (Trappler, 1996) and interpersonal violence (Pynoos, et al., 1993). The root of these disorders and their symptoms is beyond the scope of this paper, although Malt (1994) offers a sound and comprehensive analysis, particularly in the case of non-organic psychological sequelae. Nevertheless, it is conceivable, albeit somewhat simplistic to posit that at the root of many of these problems is a set of destroyed constructs, or in the words of Janoff-Bulman (1992) a collection of 'Shattered Assumptions'.

Psychological response to traumatic events has been described as a normal reaction to an abnormal event (Tunnecliffe, 1999). Moreover, this notion of abnormality is further expanded by Janoff-Bulman (1992) when he describes traumatic events as those that are out of the ordinary and threatening to one's existence. In stating that such events are a threat to one's existence, it follows that such events would present a significant risk of personal injury. U.F. Malt (1994) offers a reasonably comprehensive list of traumatic events that could foreseeably lead to such a risk, including the injuries that would likely arise. It is questionable, however, whether or not it is appropriate to pigeonhole injuries in this way. Nevertheless, he impresses upon the reader that a significant consequence of such injury is psychological trauma. No doubt, any such reference to injury would conceivably apply equally to emotional injury as well as physical injury. Moreover, as posited by Raphael (1986), there appears to be a direct association between the severity of the stressor and the resulting reaction or pathology.

In addition, Raphael (1986) has suggested that there are a number of individual factors that bear on individuals' vulnerability to psychological stressors in emergencies. Figure 5 provides an overview. Put simply, the presence or level of certain compounding or mitigating factors bears heavily on an individual's psychological prognosis. One of these, age, will be discussed in greater detail later. Notwithstanding, an appreciation of some of these vulnerability factors is potentially of great benefit when

attempts are being made to identify elements of the community at heightened risk of psychological trauma.

Figure 5 goes some way toward demonstrating the complexity of the human condition with respect to reactions to emergencies. Clearly, the many combinations of vulnerability factors equate to a great diversity in the potential reactions and severity of reactions to emergencies.

Other elements of Figure 5 that are of interest are those of age, religion and cultural factors. While cultural issues and religion are fairly straightforward in that they may correlate with either high or low vulnerability,

depending on the individual and the religion, age is slightly more complex and requires further discussion.

Children

Many emergency management texts draw attention to some of the myths associated with the reaction of children to emergencies. However, while their reactions are different to that of adults, children are not immune from the psychological impact of emergencies. Indeed, Raphael (1986) states that children respond directly and appropriately to emergencies. In other words, they are not afforded the protection of the proverbial rose-tinted glasses of youth. Rather, they are affected in a very real and tangible way.

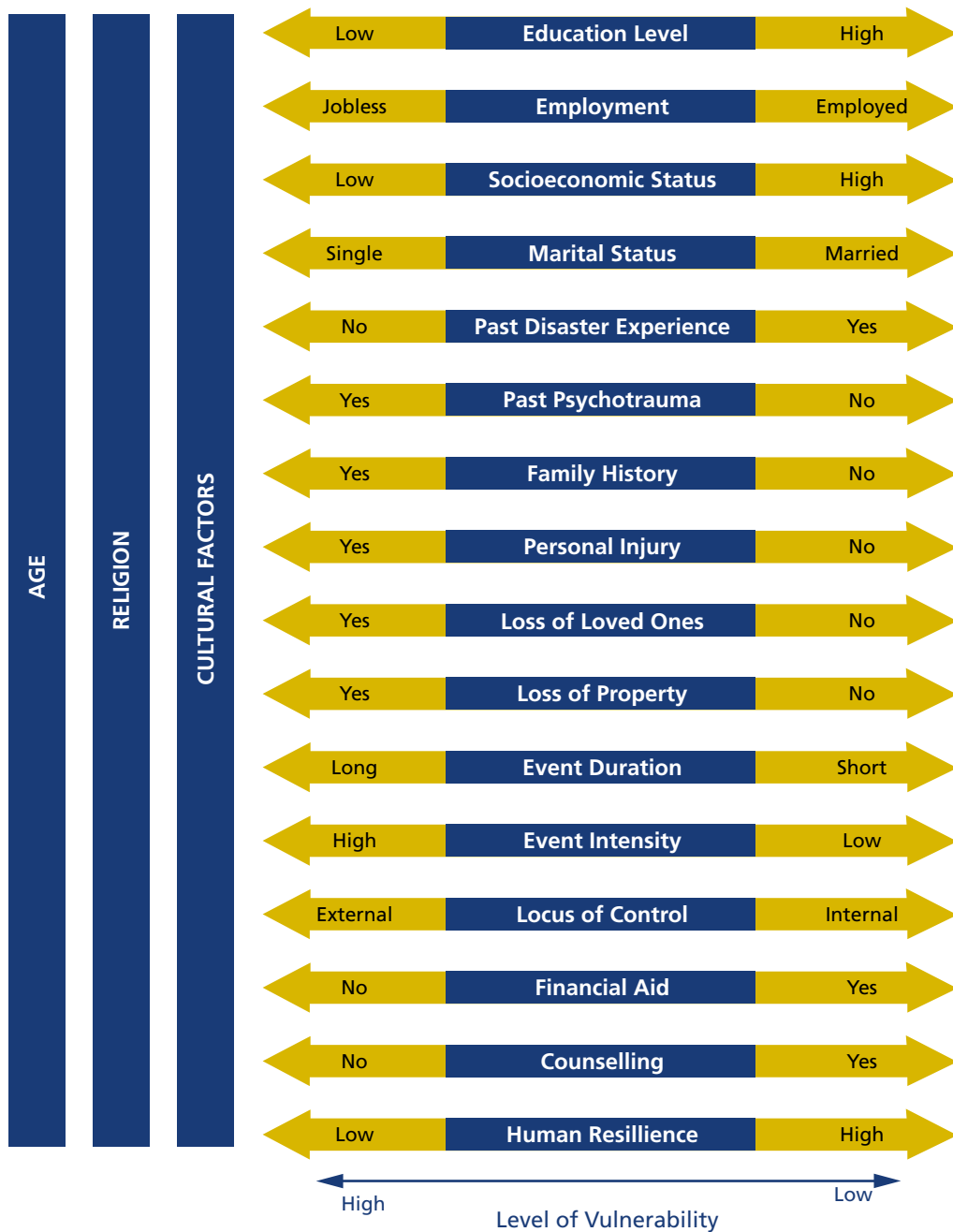


Figure 5. Vulnerability Indicators Based on Raphael (1986)

Some of the more typical reactions include fear, a need to re-establish family links, separation anxiety, sleep disturbances, emergency-related play, and behavioural problems (EMA, 1996). In addition, Raphael (1996) points out some additional reactions typical of children.

Children tend to be less inclined to use denial as a defence mechanism. Further, while children can and do experience symptoms indicative of PTSD, Terr (1983) did not observe evidence of numbing, amnesia or flashbacks in children, but noted a distinctly limited future perspective in child survivors of emergencies. This is supported by Raphael (1986) who observed a sense of 'loss of childhood' in such individuals.

Finally, as shown in Figure 6, while children acknowledge death and grieve as a consequence, the finality of death is difficult for the very young to grasp.

In most texts dealing with the childhood experience of emergencies, a recurrent theme is the need for reassurance and maintenance where possible of family bonds. Children should also be given as many opportunities as practicable to master the experience. This is a critical function of play, school and home life.

Elderly

There has been and will continue to be concerted debate as to the reactions of elderly to emergencies. Regardless, some general themes have emerged upon which the needs of the elderly can be based. Principal among these is that, while the elderly do tend to experience greater mortality rates than those of younger demographics, elderly survivors tend to be more resilient. This is supported by Haas, et. al. (1977) in their discussion of the autonomous recovery mode; a mode representative of the means by which elderly potentially cope with emergencies. There is also the proposition of Raphael (1986) which implies that the elderly are reluctant to see themselves as burdens upon younger generations. Notwithstanding, owing to their oftentimes less favourable financial situation, the elderly tend to recover slower economically, thus emotionally and therefore warrant serious consideration in terms of recovery arrangements.

Key points of diverse reactions to emergencies

In light of the wide range of variables relevant to the manifested reactions of individuals and groups to emergencies, the reactions to emergencies are, not surprisingly, diverse. While reactions within demographics and within categories of groups can be roughly surmised, the reactions of individuals are a little more difficult to predict. Nevertheless, it is without doubt that planning for the psychological aspects of recovery is in all cases warranted. Moreover, the careful and considered deployment of mental health services should feature as an element of any recovery operation. With respect to each of these propositions, it is

important that appropriate mental health professionals be consulted from the outset and form part of the recovery management process.

Part 5: Recovery resources

As with any aspect of emergency management, resources feature as an ever-present challenge to planners and managers. These needs will be outlined firstly in terms of what is required and how the required resources are provided. A final consideration, that of who accepts responsibility for provision of resources, is an equally important challenge and will be addressed in the subsequent section.

Some important considerations, highlighted by Carter (1991), should be taken into account when considering the resource requirements of recovery. Firstly, the time pressures of response tend not to apply to recovery, although time is still a factor. Secondly, recovery tends to take place in more stable conditions, except in particularly politically unstable or hazard-prone areas.

Recovery resource requirements

A thorough identification of resource requirements for recovery is particularly problematic, given that recovery needs vary from event to event and no two events are the same. Nevertheless there are indeed some general requirements that need to be provided in order to facilitate recovery. In order to identify some of these needs it has been necessary to examine extant recovery plans, recovery texts and a number of recovery case studies, including that of the Nyngan and East Gippsland floods of 1989 and 1998, respectively, and those described by Haas, et. al. (1977). Of these, extant plans provided the least assistance hence are not referred to in the bibliography, with case studies providing the clearest insight.

The results of these investigations have been distilled into a list of recovery needs, presented in Table 3. Each of these needs are expanded upon to enhance clarity. It should be noted that the categorisation of these needs is not based on any documented methodology and is thus open to debate. Further, some needs apply equally to a number of categories, such as expert advice.

There exists the question of what it is that triggers the need to be fulfilled. In a truly community-focused recovery process, the trigger will be the voicing of the need by the person or group of people in need. However, in an ideal situation, the human service agencies will be a key element in recovery management and may therefore also be in a position to identify needs for which the community is yet unaware. Furthermore, those burdened with particular recovery tasks, such as infrastructure restoration, will also be aware of particular needs for which the broader community is again unaware. This highlights the

Table 3: Recovery needs.

Table 3: Recovery needs.		
GENERAL DESCRIPTION	DETAILS OF NEED	MEANS OF PROVISION
Recovery management structure	Task force or committee structure to coordinate the recovery process. This structure must engage the community.	Pre-planned and activated on impact.
Government	Government services and political operations are required to provide top-cover and recovery support.	Efforts to reinstate government functioning should begin as soon as possible after impact
Staff	A variety of staff are required for numerous functions, including clerical support, field staff and management staff. These will be required across organisations and functions.	Potential sources should be earmarked during planning. However, efforts should concentrate on utilisation of local workforce.
Expert advice	Expert advice will be required across a number of organisations and functions, including medical, engineering, public health, disease, planning, communications, public information and policy.	Organisations and agencies should have identified potential sources of expertise. This information should also have been catalogued in planning.
Volunteer labour forces	There will likely be a large demand for volunteer labour during recovery operations, especially clean-up.	Most volunteers will offer their services without prompting. Efforts need to be directed at managing this resource effectively as well as targeting local labour.
Communications	Effective communications are essential to the smooth control and coordination of recovery efforts. Where communications infrastructure has been damaged, efforts need to be directed at immediate restoration.	Carriers and carriage service providers have arrangements in place to bring communications on line. There is also an industry guideline on the coordination of additional ad hoc communications.
Finances	The entire recovery process rests on access to sufficient recovery funds.	There are a number of sources of funding. However, existing 'local' sources of funding should be investigated in the first instance.
Public information systems	The need to reduce public uncertainty has already been highlighted. Public information is central to achieving this objective thus facilitating a smoother recovery.	Mechanisms of public information should have been pre-planned and be capable of activation at the earliest.
Insurance needs	Almost immediately, the need to process insurance claims will arise. The effective management of this need is central to facilitating the economic recovery of the community.	The Insurance Emergency Service and the Insurance Council of Australia exist to, amongst other things, facilitate the proper management of insurance concerns subsequent to emergencies.
Legal aid	Just as insurance issues will arise in the very early stages of recovery, so too will legal issues. Legal advice will need to be tendered to both individuals, groups and organisations.	Legal Aid would be able to provide a limited service, but every effort should be made to encourage the identification in planning of sources of legal advice.
Administration consumables	A large number of administration will be generated during the recovery process, which will need to be supported by forms, records and good information management – all requiring large quantities of consumables.	Existing stock should be such that operations are supported in the early stages. Suppliers should also be identified in planning.

OVERALL RECOVERY MANAGEMENT NEEDS

Table 3: Recovery needs – continued.

	GENERAL DESCRIPTION	DETAILS OF NEED	MEANS OF PROVISION
HEALTH NEEDS	Sanitation	Subsequent to an emergency, it is likely that sanitation services will have been compromised and will therefore require restoration urgently.	Primary and redundant sanitation maintenance and provision should have been outlined in planning.
	Medical Facilities	Medical services and facilities are likely to be subjected to high demand, though they may have themselves been impacted.	Primary and redundant medical facilities should have been identified in planning. Available medical expertise should also have been identified.
	Hazardous waste management	The need to identify, contain and dispose of hazardous waste is of great importance to ward off risk of a secondary emergency.	Conventional hazard management agencies are likely to be overwhelmed, so secondary sources should have been identified.
	Waste management	There is likely to be a great deal of waste subsequent to an emergency. In addition, further waste will continue to be generated.	The waste management system and a back-up should have plans in place to ensure a rapid return to service.
	Mortuary	There is potential for large numbers of dead. Long-term mortuary facilities may be required to receive the potential large number of bodies.	Identification of appropriate mortuary facilities should be outlined in planning.
	Infectious disease control	In the wake of an emergency, there is a large potential for health problems due to ineffective disease control. This aspect must be managed as early as possible.	Arrangements for relevant expertise in this area should be in place as well as identification of alternatives.
	Vermin and vector control	See Infectious disease control	See Infectious disease control
	Animal disposal facilities	In some emergencies there are large numbers of dead animals which need to be disposed of appropriately in order to protect humans and the agriculture industry from disease.	There are national industry guidelines in place for disposal of animals. This activity may be undertaken by the animal owners or contract/volunteer labour.
	Dry food storage	While conventional food storage is being restored, there is a need to maintain adequate dry food storage.	The provision of such storage should be planned, but may be the responsibility of food owners or providers.
	Refrigeration	See Dry Food Storage	See Dry Food Storage
UTILITY NEEDS	Electricity Water Telephone Gas	Utilities are critical infrastructure elements and require a very high priority of restoration in order to give the community means by which they can recover other elements.	The utilities themselves maintain recovery plans and will restore their services as a matter of priority.
PHYSICAL INFRASTRUCTURE NEEDS	Plant and Equipment	Central to the requirement to restore the built infrastructure is availability of the tools to do the job.	Plans should identify potential sources of such equipment. Also, given that the current trend is to outsource these services, the contractor may maintain some sort of business recovery plan or may not even be affected.
	Maintenance facilities	Maintenance facilities will be required to maintain the plant and equipment used in recovery.	While sources of plant and equipment are being confirmed, the same providers should be queried on maintenance facilities.
	Generators	The demand for electricity in the early stages of recovery will be high, despite the potential that none is available. Generators should therefore be obtained to support critical infrastructure such as medical facilities.	See Plant and Equipment

Table 3: Recovery needs – continued.

	GENERAL DESCRIPTION	DETAILS OF NEED	MEANS OF PROVISION
BASIC COMMUNITY NEEDS	Food	People need to eat.	These resources represent some of the most basic human needs during the recovery process and therefore should form an important element of planning and earmarking.
	Cooking facilities	People need to prepare cooked food.	
	Accommodation	People need shelter.	
	Clothing	People need to be clothed.	
	Bedding	People need to be able to sleep.	
	Counselling	People need psychological support.	
	Transport	The large number of resources, including the human resource will require transportation, especially where existing methods are destroyed or inoperable.	With damaged transportation infrastructure, it is important that alternate means are identified in planning.
	Fuel	Fuel will be required for generators, heaters, plant, equipment and transport.	If fuel suppliers cannot re-supply depleted fuel reserves before transportation infrastructure is restored, innovative and pre-planned arrangements will need to be implemented.
	Childcare	Adults may need to go to work or to assist in the recovery process. Children will require care. This may also have some positive psychological effects in terms of socialisation.	Children will ideally be cared for by parents. Where this is not the case, pre-planned and ad hoc childcare arrangements should be established.
	School facilities	It is important for the mental health of children for them to return to normal routine and socialisation as early as possible. Parents may also be required to be absent from home and unable to care for the children.	Alternate schooling arrangements should have been identified in the planning stages or be capable of being readily identified and implemented quickly.
	Animal welfare	The large numbers of domestic animals affected by the emergency will need to be cared for.	A number of sources of advice are available on care of domestic animals during recovery. This information should be readily available and have been prepared/identified in advance where possible.
	Heating/Cooling	In locations where extremes of climate prevail, heating or cooling will be required.	Resource lists outlined in recovery plans should identify how these needs can be satisfied, including sources of heating/cooling supplies.
	Storage	Large storage facilities will be required for the substantial quantities of donated and recovered goods.	During the damage assessment, potential storage facilities should be noted. In addition, unaffected nearby resources should be identified.
Recreation and cultural activities	It is important for the mental health of the community for them to return to normal routine and socialisation as early as possible.	Efforts should be made as soon as practicable to engage the community in recreational and cultural activities.	
PUBLIC SAFETY NEEDS	Law and Order Firefighting Ambulance	Despite the heavy demands likely upon public safety agencies, there will be a need to maintain at least a skeleton force to attend to the daily, 'routine' demands of the recovering community, as people will still have heart attacks, break the law and light fires.	These agencies would more than likely be quite well positioned to recover a reasonable level of functioning from very early on in the emergency.

requirement for higher-level coordination by a representative recovery committee or task force.

From Table 3 it becomes apparent that comprehensive and effective planning is an integral element in the unfettered addressing of recovery needs. Planning acts to identify potential needs, potential resource shortfalls and surpluses and means of dealing with these shortfalls and surpluses. Comprehensive preparedness is thus an integral element in the ultimate effectiveness of recovery efforts.

Responsibility for resource provision

Clearly, there are a great number of needs that must be met in order to facilitate recovery. However, there remains the important issue of who is responsible for the provision of these resources. Table 4 provides some suggestions as to who might take such responsibility. However, while not emphasised in Table 4, the use of local resources in the first instance should be a recurring theme whenever considering the provision of resources. The importance of this notion lies in the proposition that the speed of recovery will be greatly enhanced where community self-help is encouraged from the outset. In this respect the community will be guided and supported by all levels of government, with relevant input from key organisations and agencies. Table 4 elaborates.

From Table 4 it becomes clear that the number of stakeholders in recovery is potentially very large, further highlighting the importance of training and exercising in addition to planning. This will encourage each stakeholder to be aware of their role and that of others in the recovery process, and more importantly, that these roles and responsibilities all work together in a controlled and coordinated fashion and are agreed by all involved. Again, the importance of community involvement in these processes cannot be overemphasised.

Part 6: Conclusions on factors that affect recovery

This paper has presented a substantial amount of theory and information on the factors that affect recovery. However, it is important that some practical conclusions are distilled from this material. Such conclusions may then serve as a guide to subsequent evaluations of recovery capabilities of communities, as well as a framework around which actual recoveries may be assessed. Therefore, the true pragmatism of this paper lies not so much in the preceding pages, but in the sections that follow – the conclusions on the factors presented in these preceding pages that affect recovery.

Principles of recovery

In all, eight principles of recovery were outlined. Throughout this paper, many of these principles have been continually alluded to, and while not explicitly expressed, these principles have formed the basis of much of this paper's discussion. Adherence to these guiding principles will undoubtedly facilitate the effective and efficient conduct of a smooth recovery process.

Principle 1: Recovery defined

Based on this principle, recovery has at its core the community. The community must be involved at all points in the recovery process, supported rather than directed by external stakeholders.

Secondly, the desired end-state, in terms of recovery management, is to allow the community to attain a level of functioning that is sustainable and where lessons are incorporated into the broader emergency management process.

Principle 2: Planning and management

Recovery should be planned and prepared for in wide consultation with all stakeholders, including the community. This planning is fundamental to the effectiveness of recovery and was a recurrent theme in the previous outline of recovery needs in Part 5.

A recovery committee is an appropriate means by which consultative planning can take place. Such recovery committees are a legislative requirement within many Australian States and Territories.

Principle 3: Recognition of changing needs and complex nature

Recovery arrangements must be flexible. Moreover, there must be mechanisms in place whereby the need for flexibility can be established, hence means through which the community can communicate their needs are an important element of recovery. Importantly, communication and information media should be both active and passive.

Many wants will be expressed as needs. The manner by which this problem is addressed must be carefully thought out, with auditable and transparent decision criteria.

Principle 4: Community development approach

Again, the community-centric approach to recovery is emphasised, with emphasis on the utilisation of local resources and expertise. This is again a recurrent theme throughout this paper and an underlying theme in Part 5.

The involvement of the affected community and its resources where possible has a positive effect on the psychological functioning of the community through

Table 4: Responsibility for resources.

	GENERAL DESCRIPTION	PRIMARY AGENCY (ALL LEVELS OF GOVERNMENT)	POTENTIAL RESPONSIBLE PARTIES
OVERALL RECOVERY MANAGEMENT NEEDS	Recovery management structure	Department of Prime Minister and Cabinet;	Recovery manager; Most senior public official
	Government	Attorney General's Department;	Departmental responsibility
	Staff	Department of Emergency Services; Mayor's office.	Government; Council; Temp agencies; Volunteers (community)
	Expert advice		Government; Academia; Industry; Community
	Volunteer labour forces		Community; Neighbouring communities
	Communications		Telecommunications providers; Government
	Finances		Appeals; Donations; Government
	Public information systems		Media; Emergency Service Organisations; Community; Government
	Insurance needs		Insurance Council of Australia; Insurance Emergency Service; Individual Insurers
	Legal aid		Legal Aid; Private firms
Administration consumables		Donations; Commercial sources; Government; Existing stocks	
HEALTH NEEDS	Sanitation	Department of Health and Aging; State Health;	Waste management authority; Engineers; Commercial sources
	Medical Facilities	Urban Services; Council Engineers; Hospital	Local and nearby hospitals; Private practice; Government (Defence)
	Hazardous waste management		Fire brigade; Work cover; Dangerous goods unit; Hospitals; Universities
	Waste management		Urban services; Community; Contractors
	Mortuary		Local and nearby facilities; Contractors (eg. Kenyons)
	Infectious disease control		Health; Hospitals; Community; Government (Defence)
	Vermin and vector control		Department of agriculture; Contractors; Community

Table 4: Responsibility for resources – continued.

	GENERAL DESCRIPTION	PRIMARY AGENCY (ALL LEVELS OF GOVERNMENT)	POTENTIAL RESPONSIBLE PARTIES
BASIC COMMUNITY NEEDS	Animal disposal facilities		Department of agriculture; Animal Health Australia; Industry; Contractors; Community
	Dry food storage		Supermarkets;
	Refrigeration		Airports; Transport hubs; Community
UTILITY NEEDS	Electricity	Utility companies	Electricity Authority; Contractors (generators)
	Water		Water Authority; Contractors; Government (Defence)
	Telephone		Carriers and Carriage Service Providers;
	Gas		Gas Authority; Contractors
PHYSICAL INFRASTRUCTURE NEEDS	Plant and Equipment	Department of urban services; Engineering department	Engineering department; Contractors; Community
	Maintenance facilities		Engineering department; Contractors; Community
	Generators		Engineering department; Contractors; Community
BASIC COMMUNITY NEEDS	Food	Department of Health and Aging; Centrelink; Department of Community Services	Donations; Non government organisations, eg. Red Cross; Contractors; Neighbouring communities
	Cooking facilities		Contractors; Commercial supplies; Non government organisations, eg. Red Cross; Government (Defence)
	Accommodation		Neighbouring communities; Non government organisations, eg. Adracare; Government; Existing facilities; Commercial sources
	Clothing		Donations; Non government organisations, eg. St Vincent de Paul; Commercial sources;
	Bedding		Donations; Non government organisations, eg. St Vincent de Paul; Commercial sources;
	Counselling		Hospitals; Mental health service; Private practice; Emergency service organisations; Volunteers

Table 4 continues on the next page

Table 4: Responsibility for resources – continued.

GENERAL DESCRIPTION		PRIMARY AGENCY (ALL LEVELS OF GOVERNMENT)	POTENTIAL RESPONSIBLE PARTIES
BASIC COMMUNITY NEEDS	Transport		Contractors; Local industry; Government (Defence); Community
	Fuel		Fuel Companies; see also transport
	Child care		Existing facilities: Schools; Volunteers; Community; Contractors
	School facilities		Existing local and neighbouring facilities
	Animal welfare		RSPCA; Veterinary practices; Community; WIRES; Volunteers
	Heating/Cooling		Commercial sources; Contractors Existing facilities
	Storage		Supermarkets; Airports; Transport hubs; Warehouses; Community
	Recreation and cultural activities		Donated services; Commercial ventures; Community
PUBLIC SAFETY NEEDS	Law and Order	Attorney General's Department; Department of Emergency Services; Health; Police service	Police; Security contractors
	Firefighting		Fire brigade; Volunteers
	Ambulance		Health/Ambulance; Volunteers, eg. St John's Ambulance

mastery. It also has a positive effect on the economic recovery, providing local business and industry with a reason to recover as quickly as possible.

Recovery also presents an opportunity for betterment through community development activity, which should be a feature of all recovery processes.

Principle 5: Involvement of human service agencies

Human service agencies possess an in-depth knowledge of community needs and therefore are key stakeholders in the recovery process, able to accurately represent the needs of the affected community, especially in the early stages of recovery. The human service agencies can also play the role of community advocate in forums where it is neither possible nor appropriate for the community

to be involved, but where community interests should be represented.

Principle 6: Recovery begins at impact

This is yet another principle that features prominently throughout this paper. There is a wealth of evidence to support the fact that recovery is more effective and often less protracted when conducted from the moment of impact.

However, this principle was expanded upon to also advance the notion of recovery arrangements that are completely integrated with other elements of the comprehensive emergency management process. This concept was expanded upon in Part 3.

Principle 7: Training and exercising of recovery arrangements

As also discussed in Part 6, training and exercising is central to the effectiveness and endorsement of recovery arrangements, where training inculcates the required knowledge and exercising tests and refines the arrangements. Training and exercising are the glue that binds preparedness activities to actual recovery operations.

Principle 8: Comprehensive, integrated, timely, equitable, fair and flexible arrangements

Recovery arrangements should represent guidelines to be adapted depending on the situation, thus encouraging flexibility and practicality. Recovery arrangements should also be thorough, developed in broad consultation and, most importantly, well prepared, multi-level, and all-agency. Truly pragmatic recovery management arrangements would not reflect the specifics of the recovery process. Rather, they would be more general in nature.

Recovery assistance measures need to meet several requirements:

1. Assistance measures should be made available to the affected community in time for such measures to achieve their desired outcomes;
2. Assistance measures should be made available on an equal and fair basis to elements of the affected community;
3. Assistance measures should be flexible enough to meet a wide variety of community needs. Measures not only need to exhibit diversity, but within themselves need to be flexible.

The recovery process

The recovery process is an integral element of the broader emergency management process and cannot operate in isolation from other elements of the emergency management process. Much has been said about the link between recovery and response, however, equally vital links apply to prevention and preparedness.

Recovery is not strictly a sequential process, although it does tend to approximate one at times. Rather, recovery comprises a number of activities that can be categorised and can also occur in concert. Indeed the simultaneous conduct of appropriate recovery activities can greatly enhance the pace at which recovery occurs.

A four-stage process was considered comprising the following elements:

1. Emergency or Post-impact;
2. Restoration;
3. Replacement Reconstruction; and
4. Commemorative, Betterment and Developmental Reconstruction.

These four elements are accurate but have a tendency to be strictly sequential and marginally difficult to integrate with the comprehensive emergency management process. Accordingly, a model recovery process was advanced, affectionately titled 'Charlotte's Doughnut'. Charlotte's Doughnut is an attempt to reconcile the four-stage process with both the principle of a continuum approach and the elements of comprehensive emergency management.

Therefore it is suggested that an ideal recovery process would approximate Charlotte's Doughnut, displaying the elements of a continuum that approximates a sequence and which is integrated with the broader elements of emergency management.

The specifics of the proposed recovery process include extra-recovery elements, which operate outside the context of the actual recovery and intra-recovery elements that are integral to the actual recovery. However all are interlinked and have at their core the community.

Diverse reactions to emergencies

The reactions to emergencies are diverse and range across individuals, families and communities. An understanding of these reactions is central to planning the likely psychological and support needs of the affected people during recovery. The diversity of these reactions is yet another justification of the need for flexibility described in the recovery principles.

Community reactions

The principal impacts on communities include the destruction of bonds and forming of new ones, uncertainty, stress and conflict. Thus, recovery arrangements must be structured in such a way as to rebuild social capital, remove uncertainty, and reduce stress and conflict. This is one of the justifications for the community-centric approach, where the community is empowered and bonds are re-formed. Uncertainty, hence stress and conflict, are also reduced.

Family reactions

The family is a key element to the recovery of a community, playing a pivotal role in the emotional, hence overall, recovery of a community. Family therefore should be a prime concern in recovery planning and management. While many family bonds are strengthened in the wake of emergencies, specific attention should be given to families who have experienced bereavement, low income families and larger families, as these are less likely to recover quickly.

Individual reactions

General

Individual reactions to emergencies are quite varied and include anxiety disorders (including posttraumatic stress

disorder), mood disorders such as survivor syndrome and disaster bereavement syndrome, somatoform autonomic dysfunction, and organic mental disorders as a consequence of injury. There are at least 19 factors that contribute to an individual's psychological outlook following an emergency (See Figure 5) and these should be kept in mind when considering the reactions of individuals to emergencies.

Children

Children are not immune from the psychological impact of emergencies and are affected in a very real and tangible way. Some of the more typical reactions include fear, a need to re-establish family links, separation anxiety, sleep disturbances, emergency-related play, and behavioural problems. Children tend to be less inclined to use denial as a defence mechanism and do experience, albeit slightly different, symptoms indicative of PTSD. Further, while children acknowledge death and grieve as a consequence, the finality of death is difficult for the very young to grasp.

Accordingly, contrary to the myth that children are not effected by the psychological sequelae of emergencies, recovery arrangements should give serious consideration to the mental health needs of children affected by emergencies.

Elderly

Elderly survivors tend to be more psychologically resilient to the psychological effects of emergencies. Moreover, the elderly are reluctant to see themselves as burdens upon younger generations and therefore tend to avoid seeking help. Notwithstanding, owing to their oftentimes less favourable financial situation, the elderly tend to recover slower economically, thus emotionally and therefore warrant serious consideration in terms of recovery arrangements. Also, with respect to their reluctance to seek out assistance, the elderly may need to be proactively provided support.

Recovery resources

The conclusions that may be drawn from the discussion in Part 5 on recovery resources are fairly straightforward. The recovery demands arising during recovery are significant. Furthermore, the range of individuals, companies, agencies, organisations and departments is equally extensive.

All this points to nine key elements in facilitating a successful recovery from the perspective of addressing recovery needs:

1. Planning, planning and planning;
2. Training, training and training; and
3. Exercising, exercising and exercising.

This may sound a little trite, but in effect goes right to the heart of adequately meeting the recovery needs of

the community. Moreover, as has been constantly reinforced, these 'nine' elements need to take place in wide consultation with stakeholders, the most important of which is the community.

Overall conclusions

The eight principles that have served as the foundation of this paper have repeatedly appeared as key elements in the effective recovery of a community effected by community. However, if emphasis were to be placed on three general recovery philosophies, based on the previous pages these would be:

1. The importance of placing the community at the centre of recovery management;
2. The importance of consultative and comprehensive planning, including the training in and exercising of such plans;
3. The importance of flexibility.

With this in mind, one can be confident that, when operating in line with agreed recovery principles according to a pragmatic recovery process, mindful of the diverse reactions to emergencies, and with adequate and agreed means of satisfying recovery needs, that the recovery of a community impacted by a hazard has the best opportunity to serve as an exemplar of successful recovery.

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