



The 3Vs Final Report: Uncovering the hidden value

March 2020

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Emergency Management Victoria (EMV) acknowledges Aboriginal and Torres Strait Islander people as the Traditional Custodians of the land. EMV also acknowledges and pays respect to the Elders, past and present and is committed to working with Aboriginal and Torres Strait Islander communities to achieve a shared vision of safer and more resilient communities.

**Safer and more resilient
communities, businesses
and organisations working
together to build a safer,
fairer and stronger Victoria**



Executive Summary

The Volunteer Consultative Forum (VCF), with support from Emergency Management Victoria (EMV), has developed *The 3Vs Final Report: Uncovering the hidden value*.

A Reference Group, with representation from the VCF and EMV, worked with Lateral Economics which has considerable experience in dealing with complex, innovative valuation projects that have not been delivered before. This has produced a fresh and original perspective to this unique task using fit for purpose logic, structure and evidence.

The report builds on the 3Vs Interim Report released in August 2017, and provides further evidence of the value generated by Victoria's emergency management volunteers, volunteering and volunteerism (the 3Vs).

It discusses the 'hidden value' that arises incidentally from the 3Vs that might not otherwise be known, captured and hence appreciated. It aims to bring this value to life through a new way of talking about volunteers, their activities and impact on society, while being accurate and credible.

The 3Vs Final Report presents a simple logic for how the 3Vs generate value to Victorians. Volunteers undertake activities which have positive outcomes or 'value', and value can be described in different ways. The report also provides a framework and model that identifies three layers of value:

- volunteer personal value;
- emergency management value; and
- community strengthening value.

Preliminary analysis shows that in economic terms the value of the 3Vs is significant and widely distributed across Victorian communities with a conservative indicative valuation of \$1.9 to \$2.5 billion annually. However, value to society is not just something that shows up in economic transactions, and this analysis explores the significant contribution of non-market impacts. It demonstrates that the 3Vs value to society is much broader than just economic, and provides an evolved narrative around other types of value created.

Describing value in its diversity allows the State to recognise and build on the value accrued by Victorian communities from the 3Vs. In this way, the 3Vs can be conceived not only as an emergency management workforce and a mechanism for building emergency-related community resilience, but also as a way to strengthen communities.

***The 3Vs Final Report:
Uncovering the hidden
value brings to life
the value of volunteers,
volunteering and
volunteerism.***

Figure 1: Overview of value creation from Victoria's emergency volunteers, volunteering and volunteerism (3Vs)



The Three Layers of Value

Volunteer Personal Value

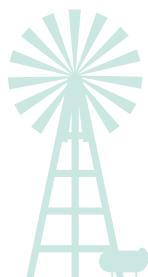
The personal value of volunteering to volunteers themselves.

- Being a volunteer can generate both tangible and intangible personal benefits such as developing specific skills and human capital.
- Studies also point to improved mental and physical health benefits through team camaraderie, feelings of inclusion and group identity.
- The most significant self-reported reasons for being an emergency management volunteer relate to an intangible sense of satisfaction from reducing consequences for, or strengthening, their community.
- Using research to place a dollar value on increased subjective wellbeing associated with regular volunteering suggests an annual personal value of around \$175 million based on Victoria's approximately 100,000 volunteers.

Emergency Management Value

The contribution of volunteers to reducing the adverse consequences of emergencies from prevention through to recovery.

- Emergency management incorporates a wide range of decision making processes and actions to reduce adverse emergency consequences faced by different parts of the Victorian community, and fosters resilience. These consequences can span a complex physical and emotional terrain, and are not always easy to see (for example, mental trauma or feelings of dislocation).
- Volunteers clearly generate value when their actions, from prevention through to recovery, reduce consequences on people, property and the environment. But how much is understood across the breadth of emergencies and the wide diversity of emergency management activities?
- Based on a form of replacement cost approach, a conservative estimate for the emergency management value of the 3Vs is at least \$800 million annually. This takes into account operational activities and the need for some volunteers to be on-call. Alternative ways of treating the on-call component could raise this estimate to well over a billion each year.
- Outcome-based estimations of emergency management value are the next frontier. Using subjective wellbeing data about the dollar value of feeling safe and Reference Group estimates of attribution, a rough annual emergency management value of \$1.4 billion is derived. More precise outcome based estimates will require outcome based performance information that is not available at this time.



Community Strengthening Value

The 3Vs' broader value to our community beyond reducing emergency consequences and volunteer personal value.

- Volunteerism contributes to the social capital and networks of relationships among people in communities. It encourages qualitative value through feelings of security, community spirit, local trust, sharing of skills and reducing social harms.
- Volunteerism contributes not only to a community's resilience to emergencies, but also its resilience to a range of social challenges and the ability to take advantage of opportunities.
- Communities across Victoria differ, as does the presence of 3Vs, resulting in varying community strengthening value.
- Using subjective wellbeing data about neighbourhoods where people help each other out as a proxy for strong communities, along with informed assumptions of the Reference Group, a quantitative estimate of the value of the 3Vs to community strengthening is around \$900 million annually.

Exploring the three layers of value reinforces the significant contribution volunteers, volunteering and volunteerism provides to agencies, government and community.



**There are
100,000
Emergency
Management
Volunteers from
across Victoria –
in Melbourne, in
regional centres
and in rural
locations.**

**Country
Fire Authority
(CFA)**

Red Cross

**Salvation
Army**

**Volunteer
Fire Brigades
Victoria**

**Life Saving
Victoria**

**Ambulance
Victoria**

**Victoria State
Emergency
Service Volunteer
Association**

**Victoria State
Emergency
Service (VICSES)**

**Marine Search
and Rescue**

**St John
Ambulance**

**Victorian
Council of
Churches
Emergencies
Ministry**

The Report

Introduction

Volunteers, volunteering and volunteerism (the 3Vs) are critical to achieving Victoria's shared emergency management vision of safer and more resilient communities.

Approximately 100,000 Victorians contribute their time, skills and resources to ongoing volunteer work in local communities before, during and after emergencies. These volunteers take on diverse roles, in both front line and other broader leadership roles, across a range of organisations.

EMV has previously noted that simple process driven measures of the volunteer workforce give no real insight, evidence or facts about the value created by the 3Vs. It contends that a better understanding of value is important to sustainability, effective investment, strategy and modelling of capability, capacity and associated costs.

The 3Vs project is intended to contribute to an evidence base to demonstrate the value generated by Victoria's 3Vs including 'hidden value' that arises incidentally that might not otherwise be appreciated. *The 3Vs Final Report: Uncovering the hidden value* aims to bring the value of the 3Vs to life.

Background

The 2015 Strategic Priorities for Emergency Management Volunteering in Victoria identified a need to "enhance community, government and business knowledge, understanding and respect for emergency management volunteers while strengthening Victoria's culture of emergency volunteering and community service"¹.

In this context EMV, in collaboration with a Volunteer Consultative Forum (VCF) endorsed Reference Group, commenced a project to create a broader understanding of the 3Vs.

In August 2017, EMV released *The 3Vs Interim Report: The value hidden in plain sight* that took some first steps to address this difficult challenge. The interim report captured the first iteration of the 3Vs project, the complexity of the task and the absolute importance of this work. This earlier work provided a broader understanding of the 3Vs and a foundation to begin to further explore, understand and communicate the scale of value.

Objectives

The objectives of the 3Vs project were developed by the VCF in consultation with EMV to:

- Identify and explain the complex value of volunteers, volunteering and volunteerism;
- Develop an accurate and compelling way to describe the value of 3Vs which can be universally understood;
- Design and develop an innovative, useful and meaningful tool and methods to capture, quantify, validate and communicate the social, economic, environmental and cultural value of Victoria's emergency management volunteers; and
- Enable innovative, sophisticated and powerful ways to showcase the value of the 3Vs for government, agencies, business and the community.

Purpose and scope

EMV worked with Lateral Economics and the Reference Group to design an approach to describe and quantify the value of Victoria's 3Vs effort across the emergency management cycle (before, during, after), and model indicative estimates of value.

The intent is to communicate the findings transparently and accessibly to a broad audience across EMV, the Victorian Government, communities and emergency management stakeholders—which includes, critically, volunteers themselves.

The project was approached as an exercise of building bridges of concepts and terminology between different areas of practice. In particular, between groups that work with volunteers and the volunteers themselves, along with parts of the public sector that influence difficult decisions about government policies and priorities.

¹ Strategic Priorities for Emergency Management Volunteering in Victoria, Oct 2015

Uncovering the value

Defining value

Value is defined as some sort of outcome that is considered by someone to have significant worth or usefulness. Value can be described qualitatively or quantitatively. People's preferences in this regard will often reflect their context and background.

Individuals might express the value of saving farm stock from flood or fire in quantitative economic terms expressed in dollars and cents, but it could also be expressed as a desire for animal welfare. Saving a school might be expressed in similar economic quantitative terms, but could also be expressed with greater reference to the sentiments of the community and their care for their young.

While government might sometimes be forced to quantify the dollar value of a life so that they can make difficult decisions about priorities with limited budgets and resources, the community will generally regard such approaches as inadequate to the task of understanding what is at stake.

Figure 2 presents a simple logic of how 3Vs generate value for the Victorian community.

There are resources and inputs associated with 3Vs such as time, established working relationships, local knowledge, accrued skills and physical capability.

Volunteers apply these to undertake activities and outputs. They can be expressed in the language of emergency management (e.g. training sessions, encouraging local preparedness, community meetings, reducing fire hazards, responding to incidents, cleaning away debris). They can also be expressed in more general ways (e.g. bringing diverse people together for a collective goal).

Activities and outputs have a positive outcome on someone or something which embodies value, for example through making the consequences of an emergency less severe or making a change in society. Value can vary significantly in size, depending on what would otherwise have happened.

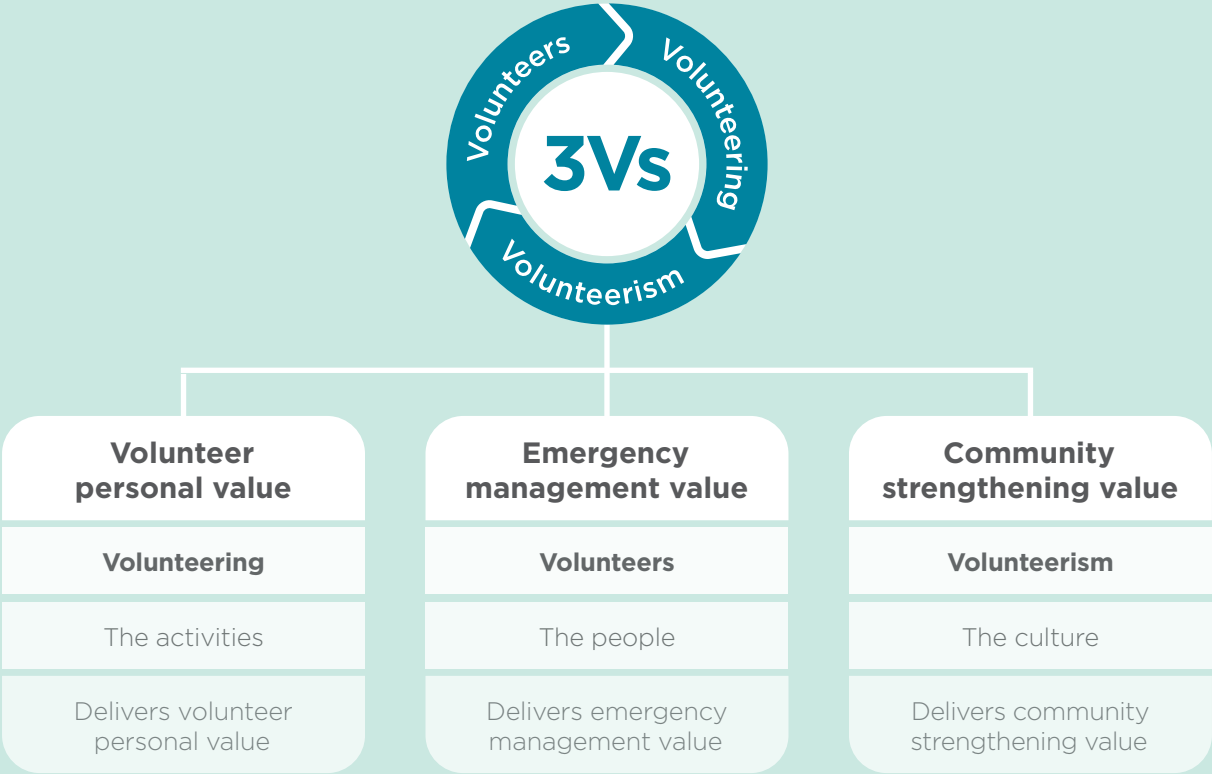
The 3Vs Interim Report identified six types of value that span a wide range of beneficiaries and contributions to community resilience, as outlined in Table 1 on page 12. Collectively this begins to signal the diversity of value that often goes unnoticed in many traditional discussions about the value that the 3Vs create; the 'hidden value'.

This is a useful starting point. However, a detailed examination (see the 3Vs Interim Report Appendix 1) suggests that the values can overlap and influence each other. This points to how inter-connected many outcomes of the 3Vs are. Therefore, when seeking to quantify value, there is a need to be careful not to double-count. With this in mind, a simple over-arching framework of three layers of value was established.

Figure 2: Simple logic of generating value



Figure 3: Mapping value types to value layers



Three layers of value

There are concurrent layers of value from volunteering. We have defined three layers, in no particular hierarchy of importance:

- volunteer personal value—the personal value of volunteering to volunteers themselves;
- emergency management value—the contribution of volunteers to reducing the adverse consequences of emergencies (from prevention through to recovery); and
- community strengthening value—the 3Vs’ broader value to our community beyond reducing emergency consequences and volunteer personal value—i.e. how the 3Vs help to strengthen communities through social capital.

While not a perfect fit, in broad terms the 3Vs can be thought of as mapping onto these three areas of value.

However, volunteers through their work reduce emergency consequences and strengthen their communities. Community strengthening is wider than just a culture of volunteering. In the final analysis, the 3Vs are all inter-related and impact on the three value layers.

Each of the six value types aligns within one or more of the above layers, as illustrated in Figure 3. Table 2 on page 13 demonstrates this in more depth, using examples from the more detailed value definitions used in Appendix 1 of the Interim Report.

Table 1: Value type definitions

Value type	Stated definition
Physical	The protection of lives, buildings, homes, infrastructure, assets, property, livestock and transport.
Social	The social cohesion, community connectedness and relationships between people who live and work together.
Economic	The direct and indirect financial benefit of programs, people, services, labour, products delivered and avoided costs.
Cultural	The core principles, ideals and customs upon which a community exists.
Human	The personal/individual contribution of people through their knowledge, beliefs, experience, competencies, skills, abilities, motivation, attitudes and personalities.
Environmental	The protection of the natural environment such as forests, grasslands and fauna.



Volunteers build local networks within their communities

Table 2: Examples of values and value types generated from value layers

Layer	Examples of value and value type
Volunteer Personal	<ul style="list-style-type: none"> • Making new friends, increasing connections, building local networks, sense of inclusion and belonging (Social) • Improved physical/mental health and wellbeing (Social) • Increased sense of purpose, ingenuity, self-worth and pride (Human) • Improved individual confidence, trust, skills and resilience (Human) • Increased contribution to employer/workforce (Human)
Emergency Management	<ul style="list-style-type: none"> • Protecting lives and preventing injury (Economic) • Protecting lives, buildings, homes, infrastructure, assets, property, livestock and transport (Physical) • Protecting and mitigating damage to natural environment such as forests, grasslands, flora and fauna (Environmental) • Preventing and decreasing impact/consequence of emergency events on communities, contributing to business continuity, decreasing insurance claims, replacement and repairs of building and assets etc. (Economic) • Decreasing cost and demand on public and private services during and after emergency (Economic) • Building local knowledge among community members about emergencies including history, repercussions and learnings (Cultural/Human) • Connecting people to the required service providers, before, during and after emergency events (Social)
Community Strengthening	<ul style="list-style-type: none"> • Fostering a collective sense of identity, pride, togetherness, purpose and shared values (Cultural) • Increasing a sense of safety, self-reliance and independence in communities (Social) • Building community confidence, trust, skills and resilience (Cultural) • Establishing traditions and behaviours, knowledge, esteem, purpose and recognition (Cultural)

Source: EMV 2017, The 3Vs: Volunteers Volunteering Volunteerism Interim Report (pg.14-15)

The value of each layer—in detail

The three layers of value are discussed in more detail in the following sections. Using the general approach described when defining value, each subsequent section:

- identifies and describes the sort of value most in scope for that layer, who accrues that value, and the size of value ('identifying and describing value'); and
- provides indicative estimates on the size of value in dollars terms, based on available information ('expressing value in dollar terms').

Volunteer personal value

This layer focuses on the value of volunteering to volunteers themselves².

~\$175m annually

Figure 4.



Identifying and describing value

Overview

A wide range of people are formal emergency management volunteers. Volunteers differ in age, employment status, and have many other unique characteristics. They are found all across Victoria—in Melbourne, in regional centres and in rural locations.

Individual experiences of being a volunteer vary. Many people may not think too deeply about their motivation to participate, or to their larger volunteer contribution. While it is hard to be definitive, we know that volunteers experience a range of tangible or intangible personal benefits. We categorise this personal value as:

- a sense of satisfaction from helping their local community;
- improvements to their own mental wellbeing particularly through purpose and social belonging;
- improvements to their own physical wellbeing; and
- improvements to their own skills and human capital.

Figure 4 summarises key types of value for volunteers themselves, noting the strong inter-relationships between these. These are further explored below.

Intangible sense of satisfaction in helping local community

A key value for many volunteers is the sense of satisfaction they get from their emergency volunteer work. Volunteers, in general, are happier because they perceive others in their local community are better-off as a result of their actions and those of their emergency volunteer colleagues.

Victorian volunteer surveys indicate that by far the most significant self-reported reasons for being an emergency volunteer are ‘to help protect the community I live in’ and ‘a sense of fulfilment in supporting my community in a meaningful way’. Approximately nine of 10 emergency volunteer respondents report one or the other as their primary reason, in roughly equal numbers³.

Improvements to own mental and physical wellbeing

Value is also generated through effects on volunteers' mental and physical wellbeing, with the potential to:

- improve a volunteer's mental wellbeing (e.g. increase social exclusion, decrease depression);
- maintain good mental wellbeing—due to factors like a greater sense of belonging, purpose and worth; and
- improve a volunteer's physical fitness from poor/average to good levels, or maintain their existing good physical fitness.

Various studies demonstrate the mental and physical health benefits of volunteering⁴. For example, research points to more active forms of leisure such as exercising and volunteering being linked to greater daily positive mood compared to more passive leisure activities⁵. This has particular resonance in a social context where experts often call for a greater focus on social engagement and active ageing.

Notably, teamwork is a key feature of much emergency volunteering, although this varies across different activities (e.g. CFA and VICSES units are highly team-based with perhaps as many as 100 people per unit, whereas Ambulance Victoria volunteers may work as pairs). The camaraderie of a team working through collective action for a common purpose is a strong contributor to feelings of inclusion and group identity. This supports mental wellbeing, even if volunteers are not consciously aware of this.

At the same time, there is a risk that confronting experiences while volunteering might contribute negatively to mental wellbeing, or reduce productivity in the workplace due to time away.⁶

No data was found that could quantify the specific extent to which Victoria's emergency volunteers improve their physical or mental wellbeing. The Reference Group considered that most people have the potential to benefit in some way. They may find social connections or become fitter as they are encouraged by others to participate in training, for example.

Improvements to skills and human capital

Emergency volunteering can also help volunteers build specific skills and their human capital, which they can apply to current or potential future employment⁷.

This is significant for volunteers in fields that also have paid roles, or where other workplaces value the skills and experience that emergency volunteers develop. For example, younger volunteers with St John Ambulance and Ambulance Victoria often move to professional paramedicine roles or generate experience that assists them in nursing, medicine or ancillary health fields. Generic skills, like working effectively in a team, can be transferred to a range of careers.

The personal value of volunteering has many benefits including building knowledge, skills and an increased sense of purpose.

² Volunteers are members of the community—so this value is a sub-set of community value as well—so long as we avoid double counting it in any quantitative summation.

³ Data from 2017 Volunteer Welfare and Efficiency Survey of Victorian emergency management volunteers, unweighted average of results from eight organisations. Choice of six responses: 'To help protect the community I live in', 'A sense of fulfilment in supporting my community in a meaningful way', 'To learn new skills', 'To meet new people', 'To enjoy social contact with other volunteers', 'Other'.

⁴ See for example the studies mentioned in VicHealth (Victorian Health Promotion Foundation) 2012, <https://tinyurl.com/yd5n4e6q>

⁵ Mogilner, C, Whillans, A & Norton, M 2018, "Time, money, and subjective wellbeing", in E. Diener, S. Oishi, & L. Tay (eds.), *Handbook of Well-Being*. Noba Scholar Handbook series: Subjective well-being. DEF Publishers, Salt Lake City, DEF publishers, see <https://tinyurl.com/yaqax364>

⁶ Emergency volunteering can be highly demanding, for example through being often on-call and with regular training taking up considerable time. Conceivably, some volunteers may have feelings of obligation to continue volunteering even if, at times, these demands feel overwhelming, which may negatively influence their mental wellbeing.

⁷ We consider skills which people can apply in other community contexts as part of Community Strengthening value.

Expressing value in dollar terms

Main estimate using subjective wellbeing

The personal value described in this report affects a volunteer's wellbeing. Subjective (self-reported) wellbeing is measured by asking people how they feel at that moment, or more generally, about how they feel their lives are progressing.

In general, there is little literature to draw from in expressing the wellbeing value of volunteering in dollars. One approach asks how much more income a regular volunteer would need to have in order to have the same level of wellbeing as is provided by their volunteering.

Recent statistical analysis of data from the University of Melbourne's *Household, Income and Labour Dynamics in Australia (HILDA) survey* by the Australian Social Value Bank reveals that regular volunteering (once a week) does have a significant wellbeing dollar value equivalent. The Australian Social Value Bank considers its specific results to be commercial-in-confidence so they are not reported in this document⁸.

Applying that dollar value equivalent across Victoria's approximately 100,000 emergency volunteers suggests an annual personal value of around \$175 million. The Australian Social Value Bank's per-volunteer value used in Lateral Economics' analysis is a general figure for Australians volunteering once a week and is not specific to Victoria's emergency volunteering⁹. Using it as an input helps to give a general order of magnitude for the personal value of the 3Vs.

Sensitivities and comparisons

A best estimate of around \$175 million annually for personal value appears to be conservative when compared to other available information.

Similar measurement in the United Kingdom (UK) of the unit value of regular volunteering (at least once per month for at least two months) could suggest a personal value approaching \$500 million annually if applied to Victoria's emergency volunteers¹⁰.

A unit value from a 2015 Western Australian contingent valuation study of volunteers suggests a 3Vs personal value of around \$400 million annually, if that unit value is applied to Victoria's emergency volunteers¹¹. The Reference Group did not use this as the main estimate given its discomfort with this study's method of asking people about willingness-to-pay for their volunteering.

Another way of quantifying personal value might be to look at specific aspects, for example mental health. The Organisation for Economic Co-operation and Development (OECD) reports that the direct and indirect costs of mental ill health can exceed four per cent of gross domestic product in OECD countries¹². This would be equivalent to a loss of around \$16 billion annually in Victoria. Around two per cent of Victorians aged 15 and above are emergency management volunteers, and we assume emergency volunteers have the same propensity to mental health issues as the general community. If we assume group membership and social identification of emergency volunteering helps those volunteers, who would otherwise be at risk, to avoid potential anxiety, depression or other mental ill health, then the avoided GDP loss would be around \$320 million (i.e. two per cent of \$16 billion¹³). This high-level estimate for the value of volunteering to maintaining good mental health seems broadly in line with the estimates above.

⁸ Intellectual property notice: "The values used in these calculations, provided by the Australian Social Value Bank, are owned by Alliance Social Enterprises (www.asvb.com.au). They have been produced by Simetrica, using best practice methodology for policy evaluation. These values are used under Licence # bmNQpY with expiry date 31 January 2020." Further information in Australian Social Value Bank - A User's Guide is available at: <https://tinyurl.com/yadod7p5>

⁹ The value is also that for an average Australian in the HILDA sample, noting that the value for specific individuals varies above and below this average.

¹⁰ Andrew G Haldane: In giving, how much do we receive? The social value of volunteering, speech by Mr Andrew G Haldane, Executive Director and Chief Economist of the Bank of England, at a Pro Bono Economics lecture to the Society of Business Economists, London, 9 September 2014, (<https://www.bankofengland.co.uk/speech/2014/in-giving-how-much-do-we-receive-the-social-value-of-volunteering>) reports around £2,400 on average per volunteer per year, or roughly \$4,350. More recent UK measurement suggests an even higher income equivalent, as per the value for 'regular volunteering' at: <http://socialvaluebank.org/the-bank/>

¹¹ Institute of Project Management and Volunteering WA 2015, *The Economic, Social and Cultural Value of Volunteering to Western Australia*. This estimated that an average volunteer would be willing to pay \$3,983 annually (2014 prices) for the value they derive from being a volunteer.

¹² OECD 2014, *Making Mental Health Count: The Social and Economic Costs of Neglecting Mental Health Care*, OECD Health Policy Studies, OECD Publishing, Paris.

¹³ This draws from the method in Bachner G and Seebauer S 2016, "Assessing the benefits of organized voluntary emergency services: concepts and evidence from flood protection in Austria", *Disaster Prevention and Management*, vol. 25 no. 3, pp. 298-313

A dollar value equivalent across Victoria's 100,000 emergency management volunteers suggests an annual personal value of around \$175 million.



Emergency management value

This layer refers to the contribution of volunteers to the direct outcomes achieved by emergency management before, during and after emergencies.

It looks at the value provided through volunteers undertaking various activities to help minimise the adverse consequences of emergencies on the Victorian community.

~\$800m
to \$1.4b
annually

Figure 5.



Identifying and describing value

Overview

Emergency management incorporates a wide range of decision making and actions, broadly grouped as prevention/mitigation, preparedness, response and recovery. Emergency management reduces adverse emergency consequences faced by different parts of the Victorian community, and fosters resilience.

Obvious volunteer-based examples include firefighters putting out a fire threatening a home, or first responders assisting at a road accident. Also volunteers working at relief centres providing food, accommodation and psychological first aid to displaced families, or cleaning up after a flood. For instance, in 2017/18, VICSES volunteers responded to nearly 30,000 incidents.

Just as important are the activities which prevent emergencies, inform more effective planning, or help at-risk segments of the community to become more resilient, which are sometimes less obvious to the general public.

In all of these situations, value spans complex physical and emotional terrain. If volunteer firefighters put out a fire threatening a home, their actions could save property, avert trauma and, quite possibly, save lives.

In this way, value can also be thought about—more technically—in terms of reducing:

- Tangible consequences visible to the economy, either government or personal in nature (e.g. damage to public assets, damage to private property); and
- Intangible consequences that are not visible to the economy (e.g. stress, harm to human health, environmental harm).

In Figure 5, the complex range of outcomes achieved by volunteers reducing emergency consequences is simplified to five areas of value. Table 3 further illustrates some examples of different volunteer activities contributing to emergency management value that supports the safety and wellbeing of Victorians.

Table 3: Examples of emergency volunteer activities contributing to emergency management value

Emergency management value	What volunteer activities contribute to this? (examples)
Lives saved and physical injuries minimised	<ul style="list-style-type: none"> • Advice and information to assist community resilience and prevention • Landscape and property fire response • Paramedic response to trauma • Drowning rescues
Reduced mental stress and trauma	<ul style="list-style-type: none"> • Advice and information to assist community resilience and prevention • Assist with essential material aid • Psychological first aid and emotional spiritual care
Reduced damage to public and private property	<ul style="list-style-type: none"> • Advice and information to assist community resilience and prevention • Landscape fire prevention and response • Flood prevention and response • Property fire response
Reduced damage to natural environment	<ul style="list-style-type: none"> • Advice and information to assist community resilience and prevention • Landscape fire prevention and response
Faster and more effective recovery for people and businesses	<ul style="list-style-type: none"> • Advice and information to assist community resilience • Making sites safe, clearing damage.

Scale and distribution of value

The various kinds of value that the 3Vs generate is self-evident. For example:

- Volunteers provide local capacity. In many situations this allows emergency events to be addressed more quickly than would otherwise be possible.
- Volunteers also provide surge capacity that may greatly exceed the capacities of salaried responders. This includes, but is not limited to, allowing other emergency personnel to focus on specialised tasks (e.g. volunteers manning roadblocks to free up police in major fire emergencies).
- In addition, local volunteers can provide local knowledge, helping to make emergency management more effective, and thus reduce the severity of negative impacts. For example, local knowledge and intelligence help identify and compare trade-offs that are made when assessing how best to limit consequences in a response, or provide local connections which can broaden the range of resources applied to manage response and recovery.

However it is harder to assess how much of each kind of value is generated by the 3Vs, or even by emergency management organisations in general¹⁴.

Information on the considerable consequences of emergencies in Victoria has been generated. For example, in one estimate natural disasters alone cost Victoria an average \$2.7 billion annually, based on tangible and intangible costs over the period 2007 to 2016¹⁵.

This does not take into account or describe the consequences that did not occur or were less significant than they would otherwise have been, as a result of the contribution of emergency management organisations. (See Appendix C for further discussion.)

It is speculated that the State's emergency management work, services and programs reduce the consequences of emergencies by half, or even more. Some limited evidence points towards this for some emergency activities. For example:

- Around 14 people drown at Victorian beaches in Victoria every year, on average¹⁶.
- Around 56 lives were presumed to be saved through surf lifesaving rescues in Victoria in 2009/10 (as well as 34 permanent incapacitations avoided and many minor injuries), based on over a thousand rescues and a special national survey of life savers conducted to estimate likelihood of consequences without surf lifesaving¹⁷.
- 28 prevented drownings (or half of the 56 above) are conservatively contributed to surf lifesaving, taking into account swimmers are probably more cautious where beaches lack lifesavers.
- In a rough analysis where 14 people drown but 28 drownings are prevented, surf lifesaving could reduce Victorian beach drownings by 67 per cent, in addition to additional benefits offered by volunteers to communities.

However, across different types of emergencies and the wide diversity of emergency management activities, the evidence is too thin to arrive at conclusions on a state-wide basis. Similarly, the expert Reference Group did not feel it was able to make reliable estimates with respect to individual emergency scenarios like bushfires, accidents or floods.

Due to a lack of evidence, there isn't a state-wide estimate of emergency management value in general, let alone the share that can be attributed to the 3Vs. A reasonable assessment would suggest that the value of emergency management organisations, and the 3Vs, is considerable.

¹⁴ One way of proceeding is firstly assessing the value generated by emergency management organisations as a whole, then attributing a share of that value to the 3Vs. Another way of thinking about this is assessing what would have happened with and without the contribution of emergency volunteers, or with fewer volunteers.

¹⁵ This period takes into account the 2008 windstorm, the 2010-11 floods, the 2009 Black Saturday bushfires, the 2012 floods, the 2014 Hazelwood mine fires and the 2015 south-west fires.

¹⁶ Royal Life Saving Australia 2018, Royal Life Saving National Drowning Report 2018. Based on 35% of the 40 drowning deaths in Victoria being at beaches (p.52)

¹⁷ Described in PwC 2011, What is the economic contribution of Surf Life Saving in Victoria, July. Based on 1,128 surf lifesaving rescues in Vic (2009/10) with expected consequences without Surf Life Saving: 5% of rescues—drowning, 3% of rescues—permanent incapacitation, 14% of rescues—minor injury needing first aid, 78% of total rescues—no injury.

Expressing value in dollar terms

Introduction

Three broad valuation approaches were used in an attempt to value volunteering activities (summarised in Table 4). These alternative methods are generic to any kind of volunteering, not just emergency volunteering.

Across different sectors, the general conclusion is that ‘replacement cost’ is the most appropriate and feasible for valuing

the service offered by volunteers at state or national levels, with current information limitations¹⁸. This provides a conservative baseline of emergency management value, on the basis that the value of volunteering services to the community is at least the cost of providing a comparable level of service.

For comparison to this main method, another approach to determining an outcome-based estimate of emergency management value drawing on subjective wellbeing data was also explored.

Table 4: Alternative approaches to assessing the value of volunteers

Approach	Description	Comment
Outcome approach—sometimes called ‘social benefits approach’	Estimating the value to the community of the services produced by volunteers, given that the outcomes are ultimately borne by and made use of by the community, i.e. households and businesses.	Focused on outcomes, but has significant data/measurement constraints.
Replacement cost approach—full or partial replacement	<p>Cost of replacing the volunteer workforce with paid workers providing for an identified service level (or the same service level). Applies proxy wage rates to time spent volunteering, and possibly other costs.</p> <p>Note: It is not necessarily a given that the service level requires full replacement of all volunteer time, given different methods of service provision. Nor is it a given that the service level would remain the same under a fully paid model, given trade-offs between service levels and government budget constraints (with government budget constraints reflecting what costs are acceptable to the community).</p> <p>There are therefore two kinds of replacement cost: full replacement of volunteer labour with paid labour, and partial replacement under alternative service delivery levels or mechanisms.</p>	Focused on services/outputs, with the assumption that the cost is acceptable to the community. Some data/measurement constraints.
Opportunity cost approach	Value of volunteers’ best alternative use of time if they were not volunteering. Applies proxy wage rates to time spent volunteering.	Focused on inputs rather than services/outputs or outcomes.

Source: Original analysis, and drawing from Salamon LM, Sokolowski SW and Haddock MA 2011, “Measuring the Economic Value of Volunteer Work Globally: concepts, estimates and a roadmap to the future”, *Annals of Public and Cooperative Economics*, vol 82 no 3, pp. 217–252.

¹⁸ Salamon LM, Sokolowski SW and Haddock MA 2011, “Measuring the Economic Value of Volunteer Work Globally: concepts, estimates and a roadmap to the future”, *Annals of Public and Cooperative Economics*, vol 82 no 3, pp. 217–252. Salamon et al 2011 states that, given other method’s limitations, “the replacement cost approach through observed market proxies seems to be the optimal method for estimating the aggregate value of volunteering at the national level on a global scale at the present time.”

Applying a partial replacement cost approach

For this approach, available information is used to develop a conservative estimate of dollar value of the 3Vs' emergency management, using a partial replacement cost approach¹⁹. The estimate uses proxy wage rates to take account of:

- the time volunteers spend in active volunteering (e.g. response, training, unit management and community education); and
- the time volunteers spend being on-call or standby, given standby arrangements are a distinctive feature of most emergency management services (e.g. road crash rescue).

A recent analysis of Victoria's volunteering, based on 2006 ABS data, describes 'emergency services' as covering 39,500 volunteers and 4 million volunteer hours (or roughly 100 hours a year per volunteer). This resulted in an annual value of publicly-oriented emergency services volunteering of about \$145 million in today's dollars, using a defined standard wage for volunteer hours^{20 21}.

If the broader definition of Victoria's emergency management (as opposed to emergency services) volunteers is used, with the number of volunteers around 100,000, then in proportional terms the value is potentially closer to \$300 million.

A previous analysis of VICSES volunteering looked at various tasks undertaken by VICSES volunteers and determined comparable market wage rates for these activities, some of which were above and some below average

Australian wages. The total value using this approach was about one third higher than the valuation using average Australian wages²². We assume this factor can be applied to Victorian emergency management organisations generally, which takes the estimate of value to around \$400 million.

However, the analysis has not yet taken into account being on-call or standby. A key issue is how standby time should be valued. It has been argued that, at least for some emergency service activities, standby time should be valued at the same market wage as active volunteering time (e.g. analogous to having paid ambulance or firefighters standing by at their station). However, like recent similar analyses, we conservatively note some potential for less costly ways to deliver standby services than fully paid staff throughout their 'standing by'. We therefore take into account a unit value of time (i.e. hourly rate) for being on-call which is considerably less than the unit value of time for active volunteering²³.

Using this approach, an analysis of VICSES volunteering considered the total value of time for being on-call at least as much as the value of time for operational activities including response, training, unit management and community education programs²⁴.

Therefore, a replacement cost for emergency management volunteering is likely to be around double the estimate above—suggesting a total replacement cost of around \$800 million annually²⁵. The following section discusses further sensitivities and comparisons, and reaches an overall conclusion about replacement cost.

¹⁹ It is partial replacement cost due to how on-call time is treated.

²⁰ Victorian Government 2012, *The Economic Value of Volunteering in Victoria*, commissioned by the Department of Planning and Community Development (Duncan Ironmonger, The University of Melbourne), December. The total value of 'emergency services' was estimated to be \$110 million in 2006 dollars, which Lateral Economics inflated to about \$145 million in today's dollars using 2.4 per cent annual inflation.

²¹ Victorian Government 2012 valued volunteer time "based on the gross opportunity cost wage rates for volunteer and community work published by the ABS in their report on Unpaid Work and the Australian Economy", or \$24.09 an hour in 2006 dollars. This is slightly less than but similar to the average Australian hourly wage of "just under \$24" in 2004 dollars in Ganewatta and Handmer, below. We apply the rate from Victorian Government 2012, to be conservative. Some might argue for a further adjustment to wages or hours to account for differences between paid staff and volunteers, for example that paid staff may be managed within a budget constraint so that activities take less time or are focused on highest priority. On balance we have not done this due to insufficient evidence about relative efficiencies of paid and volunteer personal that can be applied across the sector, and given emergency management volunteering generally occurs within a structured environment.

²² Ganewatta G & Handmer J 2009, "The Value of Volunteers in State Emergency Services", *The Australian Journal of Emergency Management*, Vol. 24 No. 2, May, which draws on Ganewatta G, Bennett J & Handmer J 2008, *The value of volunteers in State Emergency Services*, prepared for ACSES (Australian Council of State/Territory Emergency Services), AFAC (Australian Council of Fire and Emergency Services Authorities) and the Bushfire Cooperative Research Centre. The value of Victorian SES volunteers using 'task-specific substitution' was \$19.0 million compared to \$14.2 million using 'global substitution' (2004 dollars), or 34% higher.

²³ Hourigan's preferred valuation approach taking into account alternative service delivery models (which is called 'value of output', but follows a partial replacement cost approach) explicitly does not have a fully paid standby for rural services, and Ganewatta and Handmer note 'a clear distinction between opportunity costs incurred on standby time spent at a place of work (such as a fire station) and standby time carried out at a location of the volunteer's choosing.'

²⁴ Ganewatta and Handmer estimated a \$41 million annual value of SES volunteering in Victoria (2004 dollars)—which is around \$60 million in today's dollars. This \$41 million consisted of \$19 million for operational activities and \$22 million for the value of standby time (based on \$1.68 per hour on-call allowance). That is, the total with standby is 2.2 times the total without standby.

Sensitivities and comparisons

The high-level analysis offered previously is very sensitive to the assumed time that volunteers contribute, and different assumptions would yield different results.

Lateral Economics' central estimate uses 100 hours per average emergency services volunteer. This figure is drawn from ABS surveying as previously described.

This seems broadly consistent with data from VICSES, Victoria's only emergency management organisation that officially reports volunteer hours²⁶.

However, one CFA survey from 1992 estimated that its members contributed an average of 308 hours annually²⁷. If it was assumed that emergency management volunteers contributed 300 instead of 100 hours, on average, then the emergency management value using this partial replacement value approach could be more than \$2 billion.

If a less conservative assumption for value of standby time was taken, the emergency management value of volunteers would increase considerably. The estimate essentially assumes that sufficient labour services would be available through an 'at call' service delivery model at assumed wages. If not, wage rates might need to be higher to attract the necessary paid labour, or alternatively some activities could be covered by full time employees with a likely higher cost for non-operational activities than the on-call allocation. The analysis also assumes no loadings (e.g. overtime) or on-costs to emergency management organisations. In this context, \$800 million looks conservative as a replacement cost value.

As a comparison, another assessment from 2001 estimated a value of the CFA's volunteer contribution to services at roughly \$600 million in today's dollars. This was also based on a form of replacement cost with a defined all-paid service provision model of 70 funded brigades for urban areas, a retained brigade model for urban-rural areas (1,000 brigades with 20-25 members per brigade), a combination of self-protection costs (e.g. training, some equipment) and a mobile fire protection force for rural areas²⁸. The CFA (with over 55,000 volunteers in 2017/18²⁹) accounts for roughly two-thirds of Victoria's emergency management volunteers. Applying this value proportionally would provide for an overall sector value of roughly \$900 million.

These comparisons suggest that, while our approximation of at least \$800 million annually for the replacement value of the 3Vs is to some degree speculative and based on significant assumptions, it appears reasonable as a lower estimate.

However, this kind of analysis is still a stand-in for an outcome-based approach to valuation. As described earlier, the annual cost of emergencies to the Victorian community is well into the billions of dollars. If, as speculated earlier, the 3Vs can reduce the consequences of emergencies by half or even more, then the annual emergency management value of the 3Vs using an outcome approach could also be well into the billions of dollars. The following section provides some additional perspectives in this regard.

²⁵ Analysis could take into account cost savings from not incurring labour or other costs to attract, retain, coordinate and/or equip volunteers, which could reduce the overall replacement cost. But there could also be roughly similar costs in a paid workforce model.

²⁶ VICSES recorded roughly 75 hours per volunteer (around 300,000 volunteer hours and around 4,000 volunteers) in its 2016/17 Annual Report. We note the Reference Group's anecdotal input that official records may under-estimate VICSES volunteers' actual time.

²⁷ Berenyi J 1993 CFA Volunteer Attitude Study, A Market Research Report, prepared for the CFA, February, as reported in Hourigan 2001 (see below).

²⁸ Hourigan M 2001, Country Fire Authority: Value of the Volunteer Contribution. This estimated \$370 million (or the range \$261 million to \$371 million) in 1998-99 dollars for the CFA only using what it called a 'value of output' method, which defines a service provision model for paid services and estimating the additional costs involved. Hourigan also included an alternative estimate (which was not her preferred approach) that had an upper bound of \$621 million in 1999 dollars (or roughly a billion in today's dollars), based on an average 308 hours annually at \$25 an hour for an upper bound 80,000 volunteers.

²⁹ CFA Annual Report 2017/18

Applying an outcome-based approach using subjective wellbeing

Australian subjective wellbeing research by the Australian Social Value Bank has placed a unit average value on the outcome of an 'increased sense of personal safety'.³⁰

Being safe—protected from or not exposed to danger, or not likely to be harmed—is the fundamental objective of emergency management.

But how much do the 3Vs contribute to a state of overall safety? They are only one of many factors that lead people to feel safe in their daily lives. Crime, for example, is potentially much more significant.

There is no authoritative evidence about relative factors, but we can make some rough estimates based on general understandings and Reference Group insights.

It is reasonable to assume that the emergency management value has more impact on feelings of safety for regional Victorians than for metropolitan residents, given the nature of fire and flood.

Emergency management incorporates a wide range of decisions and actions to reduce the adverse impacts and consequences from events such as fires, floods and storms.

The Reference Group suggested a five per cent attribution in regional Victoria to the 3Vs' impact and one per cent in metropolitan Melbourne³¹. This means, for example, that the 3Vs account for five per cent of the factors that lead to people in regional Victoria to feel safe.

Conservatively, it is assumed 80 per cent of the Victorian community feels safe in their lives³², and also assumed that the wellbeing value of this feeling only applies to Victorians aged 15 and over.

Using these inputs and the average unit wellbeing value of feeling safe from the Australian Social Value Bank, the 3Vs' total value to Victoria of feeling safe can be estimated as over \$1.4 billion annually or around \$275 each year for each Victorian aged 15 or over.

These results carry a significant degree of uncertainty, given the lack of authoritative evidence about the 3Vs' relative impact. Alternative assumptions about the 3Vs' relative impact would lead to very different results: for example, \$720 million annually if a one per cent attribution to the 3Vs was assumed across Victoria, or over \$3.6 billion annually if a five per cent attribution was assumed across Victoria.

(See Appendix B for calculations and outputs, including for the two other scenarios with lesser and greater value than the \$1.4 billion estimate described above.)

³⁰ Intellectual property notice: "The values used in these calculations, provided by the Australian Social Value Bank, are owned by Alliance Social Enterprises (www.asvb.com.au). They have been produced by Simetrica, using best practice methodology for policy evaluation. These values are used under Licence # bmNQpY with expiry date 31 January 2020."

³¹ We did not encounter evidence that, nor do we consider that, these guestimates were systematically optimistic or biased by any consideration to 'game' the figures.

³² As an indirect comparison to inform this assumption, roughly 80% of Victorians report that they feel safe at home after dark. See Bureau of Transport and Regional Economics 2005, Focus on Regions—No. 4 Social Capital, Information Paper 55, tables 9.4 and 9.5.

Minimising the adverse impacts and consequences of emergencies in communities is not always seen or recognised, including support for people to cope with mental trauma, isolation or feelings of dislocation.



Community strengthening value

This layer relates to the 3Vs' broader value to society, or segments of society, beyond the personal value for volunteers and the value of emergency management.

It focuses on broader and sometimes indirect ways which emergency management volunteering helps to strengthen communities.

~\$900m annually

Figure 6.



Identifying and describing value

Overview

Visible, active, positive emergency volunteerism in a community can make a difference to society as a whole. This difference has both tangible and intangible aspects: through activities that support various kinds of community experience, and the influence on people who live and work in that community.

We define five overarching aspects of value to community as shown in Figure 6. Table 5 provides more detail and examples. These contribute, in different ways, to the social capital of communities. Social capital can be thought about as the networks of relationships among people who live and work in a particular society, enabling that society to function more effectively³³.

Communities with strong social capital can generate further value. For example, providing a safe and welcoming place for locals and tourists.

Table 5: Describing community strengthening value

Value	Description
Feelings of security	Community members feeling a greater sense of safety and security from knowing that emergency volunteers are ready and able to assist when needed.
Community spirit	<p>Community members perceiving emergency volunteers as a symbol of their community and reciprocity that gives them a sense of civic pride, positive sentiment or community spirit.</p> <p>For example, visible emergency volunteers at community events such as local festivals or family fun days (e.g. giving children an opportunity to see a fire truck up close, or providing volunteer labour for a BBQ).</p> <p>Without overstating the relationship, communities with strong social capital can lead to further value like giving a place a reputation as a welcoming or safe place for tourists or potential new locals.</p>
Local trust	Emergency volunteers are a trusted and credible source of knowledge in the community, particularly about preventing or mitigating emergency consequences, and possibly as a conduit to other services. A clear 'go to' reduces the cost of information search for community members.
Sharing skills through the community	<p>Emergency volunteers gaining skills (including generic skills not specific to emergency management) that they then apply for community benefit through jobs, community roles or other contexts. For example, a community organisation that a former emergency volunteer contributes to is more effective because that volunteer has developed leadership skills, networks and a sense of social responsibility in previous emergency volunteer roles.</p> <p>This also includes indirect diffusion of skills—for example, emergency volunteers providing information or training to school students from immigrant backgrounds, who can then transmit knowledge to their family who may not have experience in these topics.</p>
Reducing social harms	<p>Emergency volunteer organisations giving positive experiences to some people who might otherwise be imposing costs or harm on society. This benefits the individuals involved and the community more broadly.</p> <p>For example, a volunteer-based organisation offering special programs to engage young people from marginalised communities that may be over-represented in certain areas of social harm.</p>

³³ Social capital is defined by the OECD as “networks together with shared norms, values and understandings that facilitate co-operation within or among groups”.

Scale and distribution of value

Comprehensive data that reflects directly on the 3Vs' contribution to the community strengthening value previously described was not found. However, there is informal anecdotal evidence from the Reference Group that, in their experience, these kinds of value and the 3Vs' contribution are significant.

Community strengthening value is pre-dominantly experienced locally. Communities differ, as does the presence of the 3Vs across communities, so we would naturally expect the value in different places to vary.

For example, people in the general public will differ in how they think about the 3Vs in their community—some will be indifferent, some will care a lot. This affects the overall value perceived by the community, particularly for elements like feelings of security, trust and pride.

Similarly, the significance of the 3Vs may vary, depending on what emergency organisations do compared to other local contributors to social capital or social good. A large, active, visible, well-known and positively perceived 3Vs presence in a place with few other community institutions would be likely to have a larger community strengthening value than a 3Vs presence that is small, less active or not well-known and where there are many other community institutions. That said, the brand of a strong state-wide 3Vs force contributes positively to value in all locations.

In general, emergency volunteering organisations will be more visible in rural and regional communities.

In these locations, natural disasters including fire and flood are typically more prominent, and emergency volunteers are probably a higher proportion of the community. Metropolitan communities can also sustain more and different kinds of community institutions, given their higher population³⁴.

In this context, the community strengthening value of the 3Vs is probably higher in rural and regional communities. But this is not to say there is no value in metropolitan communities—particularly in relation to sharing skills.

Volunteers change over time, with people coming in and out of volunteering roles. Even when overall volunteer numbers stay reasonably stable, there can be different people making up those numbers. With this turnover, there are well over 100,000 people in the Victorian community with emergency volunteering experience and training. Those with emergency management skills and awareness contribute to building community resilience. This is a powerful legacy of emergency management volunteering.

Expressing value in dollar terms

Introduction

Expressing the community strengthening value quantitatively is highly challenging. It is uncertain exactly how 'strong' different communities are, let alone how much the 3Vs contribute to community strengthening, or under what conditions. This value therefore lends itself to qualitative descriptions, given the lack of specific data.

Any quantitative estimates of value can only be regarded as indicative. Nevertheless, we have provided what we regard as conservative guestimates to help begin a discussion about the possible quantitative value of the 3Vs in this regard.

Community members may feel a greater sense of safety and security knowing that volunteers are ready and able to assist.

³⁴ There are of course counter-examples to this general point about rural and regional communities, such as a high-profile life-saving volunteer presence within a metropolitan beach community.

³⁵ Intellectual property notice: "The values used in these calculations, provided by the Australian Social Value Bank, are owned by Alliance Social Enterprises (www.asvb.com.au). They have been produced by Simerica, using best practice methodology for policy evaluation. These values are used under Licence # bmNQpY with expiry date 31 January 2020."

Estimating the value of community strengthening based on subjective wellbeing

Subjective wellbeing research by the Australian Social Value Bank (discussed in previous sections) has also quantified the value for an average Australian living in a neighbourhood where neighbours commonly help each other³⁵. We use this wellbeing dollar equivalent as a proxy for a 'strong' community.

It's assumed that roughly 65 per cent of Victorians agree with the proposition that neighbours help each other out where they live, with closer to 60 per cent in metropolitan areas and closer to 70 per cent in regional areas³⁶.

So how much does the 3Vs contribute to this situation?

It is likely only one of many factors that lead people to feel they live in a good neighbourhood where people help each other. As with the previous section, we make some rough estimates based on general understandings and Reference Group insights.

It is reasonable to assume that the 3Vs have relatively more impact in regional Victoria than in metropolitan Melbourne on community strengthening, as discussed earlier. The Reference Group suggested an eight per cent attribution in regional Victoria to the 3Vs' impact and two per cent in metropolitan Melbourne³⁷. This means, for example, that the 3Vs account for eight per cent of the factors that lead to people in regional Victoria to feel like they live in a good neighbourhood where people help each other. Some Reference Group members considered these attributions to be quite conservative, particularly for regional areas, however they thought it prudent to under- rather than over-estimate.

Applying these inputs to Victorians aged 15 and over, the value to Victoria of community strengthening from the 3Vs would be around \$900 million annually—or around \$175 for each Victorian.

These results carry a significant degree of uncertainty, given the lack of authoritative evidence about the 3Vs' relative impact. (See Appendix B for calculations, including for two other scenarios with lesser and greater value than the estimate described previously.)

Some of the 3Vs' outputs generating this kind of community strengthening value might be conjoined with those generating emergency management value. For example, the actions of a volunteer first responder in an emergency situation could be counted as contributing to both 'feeling safe' and 'neighbours helping each other out'.

While the two effects can be thought about separately and many 3Vs outputs do not have a direct emergency management outcome (e.g. training, a visible community presence outside of emergencies), we recognise some potential for double-counting if the two values were to be simply added up.

Estimating the value of community strengthening based on relationship between social capital and GDP

One alternative way of considering the value of community strengthening is to look at the relationships between the 3Vs, social capital and economic activity or GDP, at a national level.

For example, one study³⁸ looks at the difference in Austria's annual GDP between a system with and without volunteers in fire brigades, taking into account estimates of how responsive GDP growth is to increases in social capital indices. It concludes an annual GDP value of about \$7,000 per volunteer (or ~\$11,000), albeit with a very high degree of uncertainty given widely diverging estimates of the relationship between social capital and GDP.

Applying this value-per-volunteer figure to the number of Victorian emergency management volunteers suggests a social capital-related value approaching \$1 billion per year. This is in the same order of magnitude as the first method. We do not use it as the main estimate given the degree of uncertainty.

³⁶ See for example Bureau of Transport and Regional Economics 2005, Focus on Regions—No. 4 Social Capital, Information Paper 55, tables 9.4 and 9.5

³⁷ We did not encounter evidence that, nor do we consider that these estimates were systematically optimistic or biased by any consideration to 'game' the figures to be unrealistically high.

³⁸ Bachner G, Seebauer S, Pfurtscheller C, Brucker A 2016, "Assessing the benefits of organized voluntary emergency services: concepts and evidence from flood protection in Austria", Disaster Prevention and Management, vol 25 no 3

Conclusion

Summary

The 3Vs project has involved exploring additional ways to analyse the value of Victoria's emergency management volunteers, volunteering and volunteerism. It has provided a framework and model that illustrates various layers of value, and explores the breadth of that value at the local community level.

Emergency management and the activities of the 3Vs are tremendously diverse. This analysis has focused on some of the more material and significant contributors to value. Value to society is not simply something that shows up in economic transactions, and this analysis has explored the significant contributions beyond market impacts.

Expressing value in dollar terms is highly challenging, in large part because so few of the important outcomes of the 3Vs tend to be quantified. There is much good and useful data on activity and performance, but this does not always illuminate what has changed for the community as a result. As such, quantitative estimates of value are only indicative.

Nevertheless, by drawing out the logic, assumptions are made clear. It helps inform volunteers and policy stakeholders and provides a way to discuss the 3Vs. It can also help stakeholders identify knowledge gaps and future data needs.

This report has estimated an indicative valuation in annual terms of roughly:

- \$175 million in personal value generated by volunteers;
- \$800 million to \$1.4 billion (and possibly more) in the value of reducing emergency consequences for the community; and
- \$900 million in the value of strengthening community bonds and functioning.

Even a preliminary analysis of this kind shows that the value of volunteers is large, and widely distributed across the community.

Discussing the size of the 3Vs' value puts in stark contrast the flip-side of the issue: the possible losses and risk to Victoria from lower 3Vs activity.

Describing value in its diversity also looks towards how the State can maximise the

value accrued by the Victorian community arising from the 3Vs. In this way, the 3Vs can be conceived not only as an emergency management workforce or a mechanism for building emergency-related community resilience, but also as a way to strengthen communities from a range of perspectives.

A lack of evidence specific to the 3Vs in Victoria constrains more specific analysis of these issues. There is a real opportunity, through concerted efforts across the sector or with an agency, to explore data that could be used to further test the model. There are opportunities for additional tailored work, including action research with community members, to help build a more complete picture of the 3Vs' value. These insights can be used to inform decisions about strategy and resourcing. Some possible areas of work could include:

- engage with specific community members (e.g. citizens' juries) to further explore and estimate relevant values, and to better understand their deep knowledge and perspectives;
- conduct pilots to evaluate counterfactuals of Victorian emergency management programs or organisations to improve effectiveness (but not to accountability);
- estimate the extent of risk, loss and/or cost to the State from fewer 3Vs resources over the longer-term, and the best interventions to mitigate this risk;
- explore how the 3Vs can be used locally to support stronger communities from a range of perspectives such as social participation, active ageing and community harmony;
- conduct objective research to validate the proposition that the 3Vs have positive effects on physical and/or mental wellbeing, the factors affecting this, and how Victorian emergency volunteer organisations can best contribute; and
- develop expanded cross-sector data regarding emergency volunteering and volunteers in Victoria, to identify trends over time and across regions, and to help inform whole-of-sector planning.

There is much to be proud of when presenting the value of 100,000 emergency management volunteers, the activities they provide and the spirit in which they work with and on behalf of Victorian communities.

A reflection by Nicholas Gruen: Lateral Economics

How can we define the relationship between social and individual value, and between more or less tangible values?

Thinkers and philosophers have deliberated through the eons over the question of which is more important—the individual or society? The discipline of economics is built on ‘methodological individualism’ in which the wellbeing and functioning of groups is seen as no more than the sum of their individual constituents. Nevertheless economics’ ‘founding father’, Adam Smith, had a different view, building his economics around a view of humanity set out in his first book, *The Theory of Moral Sentiments* in which individuals became individuals as we know them through the process of being socialised into the values of their family and, beyond that, their community.

The value of saving a house from being engulfed in a bushfire is clear to all conceptually, and, at least in principle, it is easy to measure its economic value.

It is not necessary to decide the question definitively for our purposes. What we can say is that certain outcomes of the 3Vs are far more concrete than others. The value of saving a house from being engulfed in a bushfire is clear to all conceptually, and, at least in principle, it is easy to measure its economic value.

This is far less true of the value individuals get from volunteering and even less true of the value communities gain from individuals within them volunteering. In this regard those close to volunteering—volunteers themselves and many who help organise them—are anxious that the value creation that is easiest to measure not crowd out that which is no less real for being difficult to measure. This report seeks to measure the value of the 3Vs on a ‘level playing field’ as it were, regardless of how tangible and easily discerned the value created is.



Appendix

Appendix A—Reference Group members

Dr Faye Bendrups,
**Victoria State Emergency
Service Volunteer Association**

Ms Bianca Brown,
Ambulance Victoria

Mr Paul Davis,
Emergency Management Victoria

Mr Andrew Ford,
**Volunteer Fire Brigades
Victoria (VFBV)**

Ms Julie McLean,
Emergency Management Victoria

Mr Rob McManus,
St John Ambulance

Mr Stuart Stuart,
**Victorian Council of Churches
Emergencies Ministry**

Appendix B—Background information and calculations

Table 1: Victorian statistics

Region	Metropolitan Melbourne	Regional Victoria	Victoria
Population (2017)	4,776,440	1,547,166	6,323,606
% of population aged 15 or over (2017)	81.63%	81.29%	81.55%
Households (2016)	1,537,642	575,064	2,112,706
Gross Regional Product (2017)	\$326,722 million	\$74,208 million	\$400,930 million

Source: Regional Snapshots, Regional Development Victoria, <http://www.rdvvic.gov.au/information-portal/regional-snapshot>

Table 2: Reasons for being a volunteer, Victoria

Reasons for being a volunteer	Percentage
Help others / community	65.8 %
Personal satisfaction	62.1 %
To do something worthwhile	55.9 %
Personal / family involvement	43.5 %
Social contact	40.7 %
To be active	34.3 %
Use skills / experience	31.6 %
To learn new skills	22.7 %
Religious beliefs	17.0 %
Gain work experience	11.4 %
Just happened	10.5 %
Felt obliged	10.4 %

Source: ABS 2015, General Social Survey, Summary Results, Australia, 2014, cat. no. 4159.0, Table 23.1 Persons who volunteered in the last 12 months, Selected characteristics of voluntary work-By state/territory, released 17 Sep 2015. Note: all volunteers, not just emergency volunteering. Respondents may have chosen more than one reason for volunteering.

Table 3: Results from emergency management value calculations based on subjective wellbeing

Scenario	Relative Contribution	Metropolitan Melbourne	Regional Victoria	Victoria
Scenario 1	1% all Victoria	\$545 m	\$176 m	\$720 m
Scenario 2 (best estimate)	1% Metro Melbourne, 5% Regional Victoria	\$545 m	\$878 m	\$1,423 m
Scenario 3	5% all Victoria	\$2,723 m	\$878 m	\$3,601 m

Table 4: Results from community strengthening value calculations based on subjective wellbeing

Scenario	Relative Contribution	Metropolitan Melbourne	Regional Victoria	Victoria
Scenario 1	2% all Victoria	\$392 m	\$126 m	\$518 m
Scenario 2 (best estimate)	2% Metro Melbourne, 8% Regional Victoria	\$392 m	\$506 m	\$898 m
Scenario 3	8% all Victoria	\$1,568 m	\$506 m	\$2,073 m

Appendix C—Further on outcomes of emergency organisations and the community-wide cost of emergencies

Emergency management organisations tend to focus their reporting on outputs such as activity levels or intermediate outcomes such as meeting performance standards or similar. In general, they are reluctant to, or unable to, estimate the impacts (or final outcomes) achieved through their activities/outputs, for example lives saved or damage avoided³⁹. This is for various reasons including the sensitive emotional context, the range of factors affecting final outcomes, the degree of control they have, and in some cases the difficulty of defining a reasonable counterfactual^{40 41}.

Consequently, there is no reliable estimate of emergency management outcomes in general, let alone the share of that which can be reasonably attributed to the 3Vs.

One estimate of the tangible and intangible cost of natural disasters in Victoria is \$2.7 billion annually, on average over the period 2007 to 2016⁴². This takes into account hail and floods (which can have large consequences for the built environment), as well as bushfire, storm and other disasters with minor consequences in Victoria such as earthquakes.

It incorporates estimates of direct tangible costs (costs incurred as a result of the hazard event and have a market value such as damage to private properties and infrastructure), indirect tangible costs (flow-on effects that are not directly caused by the disaster but are consequences such as business and network disruptions) and intangible costs (that cannot be easily priced such as death and injury, impacts on health and wellbeing).

³⁹ For example, VICSES BP3 measures relate to the number of members (staff and volunteers), the number of units and personnel trained and accredited for road rescue and Level 3 Incident Controller, and the time it takes units to respond to road rescues. Other reported performance information includes events of different types responded to and operational hours.

⁴⁰ This is not a criticism of emergency management organisations. It simply observes the significant challenges in assessing attributed outcomes of activities which occur in a complex environment with various intervening factors. These challenges are by no means exclusive to the emergency management sector. However, some sectors such as preventative health and hospitals have nevertheless developed methods of estimating indicative outcomes of their activities.

⁴¹ Another issue is the 'lumpiness' of impacts over time, for at least some types of emergencies like bushfires.

⁴² This period takes into account the 2008 windstorm, the 2010-11 floods, the 2009 Black Saturday bushfires, the 2012 floods, the 2014 Hazelwood mine fires and the 2015 south-west fires.

Table 5: Average annual economic cost of natural disasters in Victoria, period 2007 to 2016

Natural disaster	Approx. cost	% of total
Hail	\$970 million	36%
Flood	\$730 million	27%
Bushfire	\$700 million	26%
Storm	\$300 million	11%
Other	\$5 million	0.2%
Total	\$2.7 billion	100%

Source: Adapted from Australian Business Roundtable for Disaster Resilience & Safer Communities 2017, Building resilience to natural disasters in our states and territories, report by Deloitte Access Economics

As a separate example, in an average year of the period 2007 to 2016, there were eight deaths per million Victorians resulting from fire (including landscape fire), 57 from road accidents and 1.9 from exposure to forces of nature. With the current population, this is equivalent to 51 deaths resulting from fire, 359 from road, and 12 from forces of nature annually.

The social cost of these deaths, using health research data on the value of a statistical life, would be around \$220 million for fire, \$1.5 billion for road, and \$52 million for forces of nature.

Such estimates of costs incurred provides a foundation, but do not go directly to the key issue of consequences (and associated social costs) avoided or minimised through emergency management activities.

Moving to an outcome approach (where, in this context, we measure the value of the consequences avoided) would require the development of further specific evidence. Salamon et al considers that while outcome-based approaches are not currently feasible for country-wide analysis, they could be feasible “for pilot inquiries at the organisational level” which still “can make important contributions”.

Table 6: Fatalities associated with emergency-type events, Victoria

Deaths per million people (Vic)	Fire (including landscape fire)	Landscape fire	Road traffic	Exposure to forces of nature
2016	4.0	-	50.9	0.7
2015	4.2	-	50.0	0.2
2014	5.5	-	55.8	4.5
2013	4.0	0.2	41.7	1.6
2012	3.7	0.9	51.2	1.2
2011	4.3	0.2	58.1	1.4
2010	4.8	-	63.7	1.3
2009	36.7	33.5	62.2	5.6
2008	6.7	0.4	67.3	1.3
2007	5.8	0.2	66.2	1.4
10-year average	8.0	3.5	56.7	1.9

Source: Adapted from Productivity Commission, Report on Government Services

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