



**Victoria State Emergency Service**

**Submission to the**

**Port Phillip & Westernport Region  
Flood Management & Drainage Strategy  
Discussion Paper**

**April 2007**

This submission has been prepared by the Victoria State Emergency Service (VICSES) in response to the release of the Port Phillip and Westernport Region Flood Management and Drainage Strategy.

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# RESPONSE TO THE PORT PHILLIP AND WESTERNPORT REGION FLOOD MANAGEMENT AND DRAINAGE STRATEGY

## EXECUTIVE SUMMARY

The Victoria State Emergency Service (VICSES) submission to the Port Phillip and Westernport Region Flood Management and Drainage Strategy provides the Service's position and a range of suggested recommendations on how to address the challenges highlighted by the discussion paper, community expectations and social environment within the Port Phillip and Westernport Catchment Management Area.

The key aspects of the Service's vision for Flood Management within the area is to :

- build and strengthen community participation and involvement in flood management
- develop strong strategic partnerships between agencies with flood management responsibilities and communities acknowledging the diverse needs of communities
- strengthen the capacity for agencies with flood management responsibilities to provide education and awareness to at risk communities
- encourage innovative approaches to flood management

The VICSES submission to the Port Phillip and Westernport Region Flood Management and Drainage Strategy addresses;

1. responsibilities for flood management
2. development of strategic partnerships
3. development of appropriate community education and awareness programmes

VICSES firmly advocates further development of strategic partnerships between all stakeholders including Emergency Service Organisations, emergency management agencies, Government/government departments, and the private sector. Through the development of a more holistic and inclusive approach to flood management the, Victorian community will receive a more comprehensive delivery of service and ultimately improved understanding of flood management issues and capacity for informed decision making.

VICSES advocates a greater emphasis on community education and awareness as the most efficient and effective manner for engaging communities and ensuring the highest level of preparedness for flood events. VICSES believes that there is an increasing need to improve the community's awareness of and preparedness for both riverine and flash flood activity, given that in a time of sustained state-wide drought community preparedness and experience of such events is diminishing. This loss of knowledge and awareness, particularly in high risk areas, is of urgent concern and requires immediate action.

VICSES believes the Port Phillip and Westernport Region Flood Management and Drainage Strategy highlights the major issues and challenges faced by all stakeholders involved in Flood Management in Victoria and offers the following comments and feedback for consideration.



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## **RESPONSE TO THE PORT PHILLIP AND WESTERNPORT REGION FLOOD MANAGEMENT AND DRAINAGE STRATEGY**

### **BACKGROUND**

The *Victoria State Emergency Service Act 2005* defines the functions of the Victoria State Emergency Service (VICSES) Authority as:

- emergency management planning including auditing of municipal emergency management plans (MEMPs);
- emergency response including;
  - (i) responding to floods, earthquakes and storms and their effects;
- emergency support, and
- other authorised activities, including civil defence,

in accordance with the *Emergency Management Act 1986*.

As well as being the control agency for flood response in Victoria, VICSES also plays a major role in the development of Municipal Emergency Management Plans including risk assessment and mitigation strategies such as community awareness and education.

Feedback on the Port Phillip and Westernport Region Flood Management and Drainage Strategy is based around the above roles and responsibilities .

### **A. RESPONSIBILITIES FOR FLOOD MANAGEMENT**

#### **A.1 EMERGENCY SERVICES**

As per the VFWCC report on Total Flood Warning System in Victoria, VICSES agrees that it is best placed, to take the lead in Community Education and Awareness regarding flood management. However, VICSES also believes that it is imperative for all agencies with responsibilities in regard to flood management, to work together in partnership to develop and implement appropriate education and awareness strategies for communities before, during and post flood activities. VICSES believes that all agencies with flood management responsibilities must work together to ensure the State Government understands and acknowledges the impacts of flooding on the community and provides adequate funding to enable agencies to develop and implement community education and awareness programs.

#### **A.2 LOCAL COMMUNITIES & INDIVIDUALS**

The Port Phillip and Westernport Region Flood Management and Drainage Strategy states that “managing flood risks is a shared responsibility between individuals and communities,



government and non-government agencies and the private sector"<sup>1</sup>. VICSES fully supports this concept of community partnerships. However, further work must be done by agencies and government to review the risk of flood on communities and provide the necessary resources within the community to ensure capacity for shared responsibility.

VICSES argues that at this point in time, communities, even in known flood prone areas are not appropriately aware of either flood risk, nor flood management responsibilities and are therefore, not in a position to share responsibilities. This is particularly relevant when the regularity of flooding within the Victorian context is considered. In Victoria major regional flooding occurs about every 10-20 years and has occurred in 1909, 1916, 1917, 1934, 1956, 1974, 1990, 1993<sup>2</sup> and 1998<sup>3</sup>. The 1993 floods alone caused damages totalling \$320 million<sup>4</sup>. In the intervening period there have been a number of costly severe flash flood events, the most notable in metropolitan Melbourne in December 2003/January 2004 resulting in \$140 million in insurance claims<sup>5</sup>.

In addition, further development of strategic partnerships between all tiers of government and flood management agencies to engage communities consistently and relevantly to ensure parity of messages, foster community ties, build community resilience and improve capacity for communities to prepare for, respond to, and recover from flood activities. All flood management agencies need to take a proactive approach to community engagement and education, ensuring programmes including engagement and education both prior to, during and post the event. The capacity to proactively engage diverse communities needs to be prioritised to ensure community understanding of the roles and responsibilities of flood management agencies within these diverse communities. This will foster and strengthen community ties and improve community resilience.

To address and clarify its role within the Total Flood Warning System in Victoria, VICSES has established a Project Board made up of representatives from Bureau Of Meterology (BOM), Melbourne Water, Municipal Association of Victoria (MAV), Victoria Police (VicPOL) and Department of Human Services (DHS), to oversee the development of a report to be conducted by Molino Stewart by October 2007 to outline the future role of VICSES in flood warning and the resources required to take on this role. If funded this new role for VICSES should assist to alleviate the current gaps in the community's awareness of flood and flood risk thus ensuring that communities are better informed of how to deal with flood.

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<sup>1</sup> Melbourne Water, FMDSDP, P.27

<sup>2</sup> Dept. of Sustainability, *Victorian Flood Management Strategy*, July 1998, Page XIV

<sup>3</sup> Commonwealth Scientific and Industrial Research Organisation, *Floodplain Management in Australia: Best Practice Principles and Guidelines*, 2000

<sup>4</sup> Dept. of Sustainability, 1998, Page XIV

<sup>5</sup> Auditor General Victoria, [http://www.audit.vic.gov.au/reports\\_par/agp10602.html](http://www.audit.vic.gov.au/reports_par/agp10602.html), last accessed 27/8/06

## **B. FLOOD MANAGEMENT ISSUES**

### ***ISSUE 1: AN AGREED APPROACH TO MANAGING EXISTING REGIONAL FLOOD PROBLEMS***

VICSES and Melbourne Water agree that one of the key challenges in flood management is the need to develop a standard regarding tolerable and intolerable flood risk. However, VICSES highlights community perceptions, knowledge and experiences as an inherent problem that must be addressed in developing a standard. Furthermore, it is the belief of VICSES that any such standard must not be a 'black and white' textbook response to the issue. Rather, a 'sliding scale' type approach would be appropriate in establishing levels of tolerance.

VICSES advocates the need for Melbourne Water to work closely with agencies and the community as a whole to develop such a standard, which is appropriate to individual communities. VICSES firmly believes that Melbourne Water as flood plain manager for the region is best placed to lead this research. VICSES encourages Melbourne Water, other agencies, government and the community to work proactively in developing an understanding of tolerable flood risk that is appropriate to varying communities. It is essential that such understanding be fostered in order to ensure Melbourne Water and other agencies with flood management responsibilities engage effectively with differing communities and in doing so reflect diverse community structures, imperatives and motivations.

*Recommendation 1. That Melbourne Water lead research into a sliding scale concept of tolerable V intolerable risk.*

*Recommendation 2. That Melbourne Water ensure proactive community engagement within its area of responsibility regarding defining intolerable flood risk. That such community engagement must be undertaken in partnership with other agencies with flood management responsibilities.*

### ***ISSUE 2: COMPLETING THE KNOWLEDGE BASE***

VICSES agrees there is a need for ongoing, well resourced flood impact research. Furthermore, the research must be strategic, holistic and methodical.

VICSES does not believe that Melbourne Water is best placed to undertake such work. Ongoing strategic research is a national issue and as such that Emergency Management Australia is well placed to co-ordinate and manage such research. VICSES considers the work undertaken and completed by the Bushfire Cooperative Research Centre to be outstanding in developing research and contributing to the understanding of bushfire within the Australian and international context. VICSES believes that despite flood being the most costly emergency to both the state of Victoria and nationally, that flood risk does not receive the same level of strategic, integrated cooperative research. Therefore, it is the view of VICSES that a Flood Cooperative Research Centre coordinated nationally would

be best positioned to provide ongoing well resourced flood preparedness, impact and recovery research.

*Recommendation 3. That Melbourne Water develop relationships with other agencies with flood management responsibilities and Office of the Emergency Services Commissioner to ensure Emergency Management Australia is providing research opportunities regarding flood that meet the needs of the Victorian context.*

*Recommendation 4. That Melbourne Water consider its position regarding the establishment of a Flood Cooperative Research Centre and its capacity to strategically drive the implementation of such a centre.*

### **ISSUE 3: POTENTIAL LONG TERM FUTURE PRESSURES ON EXISTING DRAINAGE SYSTEMS**

#### **ISSUE 3.2: CLIMATE CHANGE**

There is a growing body of evidence that global climate changes are likely to lead to more frequent, intense storm/flood events. In July 2004, the Minister for Environment launched a consultation paper *Adapting to Climate Change Enhancing Victoria's Capacity*. This paper concluded that the intensity of extreme rainfall events had increased in Victoria over the last 90 years and that this trend would continue<sup>6</sup>. *The Economic Cost of Natural Disasters in Australia* report, written for the Council of Australian Governments (COAG) noted that "Scientific research indicates that more extreme weather events, and large-scale single events with more severe cyclones, storms and floods, are expected in the future". However, as aforementioned, the understanding of flood impact by government, agencies and communities alike is a fundamental concern to VICSES. This combined with climate change serves to further compound the issue.

VICSES advocates the need for all agencies with flood management responsibilities to acknowledge and plan for the potential impacts of climate change. Whilst VICSES acknowledges the significant level of uncertainty regarding the impacts of climate change, VICSES encourages Melbourne Water to ensure funding and research is, and continues to be, conducted into the potential impacts of climate change and that risk management planning is undertaken appropriate to outcomes of such research.

*Recommendation 5. That Melbourne Water continue to ensure funding and research is undertaken regarding the possible impacts of climate change.*

*Recommendation 6. That Melbourne Water engages a risk management approach appropriate to research outcomes relevant to climate change.*

### **ISSUE 4: ENHANCED COMMUNITY EDUCATION AND FLOOD AWARENESS AND PREPAREDNESS**

The Port Phillip and Westernport Region Flood Management and Drainage Strategy states that "the risks associated with flooding and urban flash flooding, in particular, are poorly

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<sup>6</sup> *Ibid.*

understood in the community”<sup>7</sup>. VICSES internal research concurs with Melbourne Water’s assertion that such risks are poorly understood. VICSES internal research indicates that community understanding of flood (regardless of type), preparation, response and recovery is far below that for other similar risks such as fire. Similarly, the education and awareness information, resources and material available to the community regarding flood risk, are at best poor in terms of either quality or coordinated availability to the Victorian community. VICSES considers the disparity between other like risks such as fire, a considerable problem as the Victorian community have come to expect a significant capacity for the provision of information, before, during and post emergencies from all agencies with emergency management responsibilities.

VICSES believes engagement and education activities currently being developed in relation to fire could be holistically applied using an ‘all agencies’, whole of government approach, to meet the varied risks within the community. The inclusion of business and industry as key stakeholders within this engagement and education process will serve to further strengthen community resilience and improve community and agency capabilities. To ensure this, flood management agencies must be proactive in the engagement of industry and business, in particular small business, to ensure all elements of the community have the capacity to recover from flood activity. Gissing and Molino argue<sup>8</sup>;

“There is evidence that after receiving sufficient flood warning, well-prepared businesses are able to avoid substantial flood damages... savings of over 80 per cent for commercial properties where owners were informed of their flood problem and took reasonable precautions. Total achievable savings could be extensive considering that 16 percent of Australia’s flood prone buildings have been estimated to be occupied by businesses. [There are] significant social and economic benefits for commercial enterprises to have business continuity plans.”

Flood Management agencies, in partnership with State, local governments and the insurance industry, should ensure a proactive approach to and promotion of business continuity planning, to form integral parts of flood management community engagement strategies. VICSES firmly advocates such strategies as key to ensuring the community is engaged in the flood management process and ultimately prepared for flood events. The fostering of such strategies will ensure communities make informed decisions in relation to flood preparation, response and recovery and are, in the long term, self sustaining with respect to their resilience to flood risk.

VICSES considers the preparation of communities and provision of timely and relevant information before, during and after flood events is a key factor in creating resilient communities. Resilience describes how communities confront and deal with damage, their capacity to bend but not break and return to their former state quicker than would otherwise be the case. A challenge outlined in the Victorian Government *Emergency Management Discussion Paper 2006*<sup>9</sup> for emergency management organisations was to maintain knowledge of and preparedness for potential flood, bushfire or severe storms in rural and regional Victoria. The Country Fire Authority’s community engagement

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<sup>7</sup> Melbourne Water, FMDSDP, P.38

<sup>8</sup> Gissing A, Molino S. *Lessons From The Past Are Not Always Used, Business Flood Preparedness in Two NSW Communities*, Presented at 45th annual conference of the NSW Floodplain Management Authorities, Narooma 22-25 February 2005

<sup>9</sup> Dept. of Justice, *Port Phillip and Westernport Region Flood Management and Drainage Strategy May 2006*, Almar Press Printing, Brunswick, 2006, P. 9

programmes<sup>10</sup> are constantly held up as models that increase community resilience during bush fires, assisting communities in the development and maintenance of bushfire related knowledge and preparedness. VICSES believes it imperative that similar programmes for flood/storm be established to enhance community resilience, particularly in flood prone areas. Furthermore, it is the view of VICSES that considering the current legislative flood response obligations, community perceptions of VICSES, combined with the established relationships, partnerships and expertise within the agency, that VICSES is best placed to lead the development and implementation of such programmes. Similarly, VICSES's market research after the September 2002 Storms, indicated significant demand for specific information which people can use to keep their families and properties safe during such events. Indeed, the *Flood Warning Service Development plan for Victoria, Main Report* argues that "From a flood hazard perspective, improvement in community education, engagement and awareness... [is] the single most important action that could be taken to improve flood warning in Australia..."

*Recommendation 7. That Melbourne Water support the VICSES position in leading the development and implementation of community education and awareness strategies to meet the needs of the community.*

*Recommendation 8. That Melbourne Water and Victoria State Emergency Service develop a Memorandum of Understanding (MoU) regarding roles and responsibilities in the development and maintenance of community preparedness, education and awareness programmes within the Port Phillip & Westernport flood management region.*

Predictions of increased intensity of extreme rainfall events and climate change combined with Victoria's flood history indicate a high probability of large scale flooding occurring in Victoria, possibly within the short term. However, a review of *Flood Warning System Development Priorities within Victoria* issued by the Victorian Flood Warning Consultative Committee in October 2005 concluded that while the technical elements of Victoria's flood warning system are operating reasonably well, there is a significant gap between community and agency flood knowledge and awareness. This review argues that the task of educating the Victorian community about flood risk and of maintaining and/or updating that knowledge is not the clear responsibility of any stakeholder, that it is loosely spread across VICSES, local Government and Catchment Management Authorities (CMA's), none of whom regard it as core business. As a result, flood warning system maintenance and operation within Victoria, whilst involving a range of stakeholders, lacks a clear "champion" or leader - which is essential to drive the on-going processes as roles and responsibilities are not always clear cut. Since that report, VICSES has invested significant funding into engaging a consultant to review state wide flood warning systems and associated education and awareness programmes and develop a recommendation as to the way forward in the development of a Total Flood Warning programme.

VICSES firmly believes that the role of educating the Victorian community about flood risk and of maintaining and/or updating that knowledge should come under its core functions. This is supported by the Victorian Flood Warning Consultative Committee<sup>11</sup> stating that "in view of the emergency management focus to flood awareness raising and the interpretation of flood forecasts, there would appear to be some logic in charging VICSES

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<sup>10</sup> Including the Fire Ready Victoria strategy, Community Fire Guard and Bushfire Blitz

<sup>11</sup> Victorian Flood Warning Consultative Committee, *Development plan for Victoria- Review of Flood Warning System Development Priorities within Victoria – Main Report*, Commonwealth of Australia, 2005, p.65

with these responsibilities and in ensuring that appropriate legislation and policy is amended accordingly”.

VICSES strongly advocates the implementation of an appropriate state wide flood/storm education and awareness programme to address the aforementioned shortfalls, it is expected that this will ultimately increase community resilience across Victoria. VICSES is currently investing significant effort and resources into the development and validation of such a programme in a limited number of municipalities, however; unfortunately no source of funding has been identified to ensure ongoing implementation of such a programme more broadly.

*Recommendation 9. That Melbourne Water work in partnership with Victoria State Emergency Service to provide education and awareness to at risk communities within its area of responsibility.*

#### **ISSUE 4:1 THE ROLE OF PLANNING CONTROLS IN RAISING COMMUNITY AWARENESS**

The Port Phillip and Westernport Region Flood Management and Drainage Strategy considers the “...inclusion of flood maps as overlay controls makes flooding information readily accessible to the community...”<sup>12</sup>. It is VICSES’s position that the incorporation of flood overlay mapping into planning schemes is a positive and effective strategy in addressing flood risks. However, VICSES does not agree that this strategy alone makes flooding information accessible to the community. Rather that in many cases, localised communities may in fact be unable to interpret, understand or engage such mapping in a meaningful and accessible manner; thus, making the inclusion of such mapping of little practical value to significant parts of the community. VICSES therefore encourages Melbourne Water to consider not only flood mapping overlay controls, but methods of educating the community regarding such controls and the provision of ongoing material to complement such a strategy.

VICSES agrees with Melbourne Water’s contention that the introduction of such information into the community must be carefully managed as inappropriate management of such a strategy may result in adverse affects to relationships between authorities, local government or communities. VICSES acknowledges the concerns by both land owners and associated real estate industries regarding the potential impacts of the release of such information. However, VICSES unequivocally asserts that the imperative must be focussed on the implementation of data that creates a better prepared, more informed community, rather than short term economic concerns. VICSES believes that whilst such concerns must not be the imperative, they must be addressed through increased education and awareness.

*Recommendation 10. That Melbourne Water consider the need for an education strategy for the community to complement flood overlay mapping.*

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<sup>12</sup> Melbourne Water, FMDSDP, P.38

## ***ISSUE 5: AGREED RESPONSIBILITIES AND COLLABORATION BETWEEN FLOOD MANAGEMENT AGENCIES***

It is the belief of VICSES that there is a need for greater collaboration between all agencies with flood management responsibilities in Victoria. VICSES believes that in partnership Melbourne Water and VICSES would be well placed to provide leadership within this area. In particular VICSES highlights the following areas as being priorities in terms of VICSES's flood management responsibilities-

- ❑ Community Education and Awareness
- ❑ Inundation Mapping
- ❑ Flood Response Planning
- ❑ Data and Information Sharing

VICSES believes that the MEMP planning process, the focus of which is to take a holistic approach to emergency management within the community, could be a tool used to assist in the co-ordinated of differing flood management authorities that operate under different mandates. However, it is the view of VICSES that the MEMP planning process, at this stage of its development, is not sophisticated enough to fully engage the community and to meet the level of collaboration needed to raise flood management to the level required.

VICSES believes that Melbourne Water should consider the MEMP planning process as one tool in its strategy to improve collaboration and that other collaborative forums should be considered in the short term to facilitate further cooperation between flood management agencies. Over the next two years VICSES will be working with the MAV to strengthen and improve the current MEMP process to ensure more community engagement. And involvement in the development of MEMP including flood plans where appropriate.

*Recommendation 11. That Melbourne Water in partnership with VICSES lead the collaboration process for agencies with a flood management responsibility within the Port Phillip and Westernport Area.*

*Recommendation 12. That Melbourne Water does not rely on the MEMP planning process alone to facilitate collaboration between agencies with a flood management responsibility.*

## APPENDIX – SUMMARY OF RECOMMENDATIONS

### 1.

#### **Recommendation 1.**

That Melbourne Water lead research into a sliding scale concept of tolerable V intolerable risk.

#### **Recommendation 2.**

That Melbourne Water ensure proactive community engagement within its area of responsibility regarding defining intolerable flood risk and that such community engagement must be undertaken in partnership with other agencies with flood management responsibilities.

#### **Recommendation 3.**

That Melbourne Water develop relationships with other agencies with flood management responsibilities and Office of the Emergency Services Commissioner to ensure Emergency Management Australia is providing research opportunities regarding flood that meet the needs of the Victorian context.

#### **Recommendation 4.**

That Melbourne Water consider its position regarding the establishment of a Flood Cooperative Research Centre and its capacity to strategically drive the implementation of such a centre.

#### **Recommendation 5.**

That Melbourne Water continue to ensure funding and research is undertaken regarding the possible impacts of climate change.

#### **Recommendation 6.**

That Melbourne Water engages a risk management approach appropriate to research outcomes relevant to climate change.

#### **Recommendation 7.**

That Melbourne Water support the VICSES position in leading the development and implementation of community education and awareness strategies to meet the needs of the community.

#### **Recommendation 8.**

That Melbourne Water and Victoria State Emergency Service develop a Memorandum of Understanding (MoU) regarding roles and responsibilities in the development and maintenance of community preparedness, education and awareness programmes within the Port Phillip & Westernport flood management region.

#### **Recommendation 9.**

That Melbourne Water work in partnership with Victoria State Emergency Service to provide education and awareness to at risk communities within its area of responsibility.

#### **Recommendation 10.**

That Melbourne Water consider the need for an education strategy for the community to complement flood overlay mapping.

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### **Recommendation 11.**

That Melbourne Water in partnership with VICSES lead the collaboration process for agencies with a flood management responsibility within the Port Phillip and Westernport Area.

### **Recommendation 12.**

That Melbourne Water does not rely on the MEMP planning process alone to facilitate collaboration between agencies with a flood management responsibility.