

Making the Most of Local
Flood Management Planning
 in Melbourne's Municipalities and the Port Phillip and Westernport Region

Phil Hughes Halcrow
 Erin Davie Melbourne Water
 52nd FMA Conference 21-24 Feb 2012



Presentation Outline



- Introduction
- Port Phillip and Westernport Region
- Flood management strategy and flood risk
- Flood Management Plans
- Case studies: Kingston and Brimbank
- Selected benefits and challenges
- Conclusions

Introduction

- Melbourne Water, local councils and VICSES are working together to reduce flood risk across the region
- Flood Management Plans (FMPs) are being developed with each council
- This presentation will
 - explain the FMP process
 - detail the benefits and challenges
 - outline case studies



Port Phillip and Westernport Region & Agencies



Melbourne Water is the designated drainage and floodplain management authority

38 local councils manage ~ 25,000 km of local underground drains and drainage infrastructure

VICSES is responsible for flood emergency planning and community education

Flood Risk in Port Phillip and Westernport

- Flood Risk assessment of 750 catchments - TBL
- 27 assessed extreme risk
- 100,000+ properties at risk of flooding including
 - 82,000 overland flow
 - 40,000 above floor
- AAD \$245M for region



Auditor General's Report

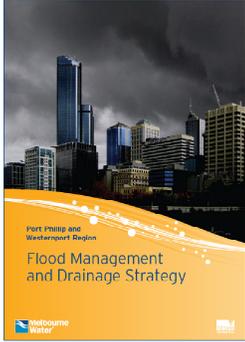
2005 Victorian Auditor General Recommendation

"Melbourne Water and councils to explore opportunities for working collaboratively to address the management of flood risks."



Flood Management Strategy

- Released December 2007
- Developed in consultation with stakeholders
- Highlights significant flood management challenges in the region
- Recognises the need for a more coordinated approach to dealing with flood risk
- Acknowledges it is not possible to make the region free from flooding
- Key objectives include agreed responsibilities and improved collaboration - 'preparation and review of Flood Management Plans'



Flood Management Plan purpose & objectives

- Assist Council and Melbourne Water undertake flood management responsibilities
- Foster preparedness for flood events; enhance ability to respond
- Promote improved collaboration between councils, Melbourne Water and VICSES
- Understand flood risks and identify extreme flood risks and 'hot spot' areas
- Identify gaps and improvement actions that are needed to address these risks and better prepare for and manage floods
- Clarify roles and responsibilities

What is a Flood Management Plan?



- High level description of a Council and Melbourne Water's flood management planning and management activities
- Identifies flood risks (particularly 'hotspots')
- Contains maps of municipality
- Roles and responsibilities
- Key flood management planning and management activities
- An improvement plan outlines actions required to address key gaps

Flood Management Plan Process

- FMPs are prepared through a collaborative process involving Melbourne Water, Council and VICSES (project managed by a consultancy)
- FMPs are developed through a series of meetings, file reviews, site investigations (hot spot tour) and workshops (6 month process)
- Involves drainage engineers, planners, road/drainage maintenance, asset management, GIS, emergency managers
- A gap analysis with review of previous flood studies, GIS mapping and meetings/workshops informs the development of an improvement plan with actions required to address key gaps over a 5 year period
- Develop Flood Management Plan (including improvement plan) from template for 'sign off'
- The focus is on using the process to work together collaboratively and build understanding**

Case Study: City of Kingston

- Many of Kingston's low lying bayside suburbs experience localised shallow flooding during minor storm events
- Council drainage network is reliant on a significant number of stormwater pumping stations
- Council has been proactive with a flood mitigation strategy since 1997
- Council has completed detailed drainage reviews of known problem areas including flood modelling
- Increasing housing densities and basement garages



Case Study: City of Kingston

FMP actions to reduce flood risk

- Melbourne Water and Council to undertake a strategic study of the Centre Swamp (Secondary) Drain
- Council to undertake further local flood mapping and update and extend Kingston Planning Scheme Flood Overlays
- Council to review asset management systems and processes
- VICSES and Council to develop and implement a Community Flood Education Strategy

Issue (continued)	Action	Priority (Low, Med, H)	Responsible agency (Lead agency only, if C)	Due date (if known)	Comments
Further flow paths have to be identified to reduce the loading of pumping stations which have not been captured.	For all urban areas, mapping to be undertaken to include flow paths to include affected area.	High	Melb, VicRoads, WVICSES, MW, WVICSES	31/03/2012	Need to start priority via Resplan process
Flooding of roads managed by the Council.	Melb, VICSES and WVICSES to work with Council to identify flood-prone roads and develop a list of roads or datasets for flood mapping.	High	Melb, VICSES, WVICSES, MW, WVICSES	TBC - 30/06/12	
Boundaries of responsibility are not always clearly defined.	Clearly document boundaries and delegate flood mapping responsibilities.	Medium	Melb, VICSES	30/06/2012	
Mapping of flood-prone areas (e.g. flood-prone roads) where data sets are not available.	Mapping of flood-prone roads (e.g. flood-prone roads) where data sets are not available.	Medium	Melb, VICSES	31/07/2012	
	By 30/06/2012	Medium	Melb, VICSES	30/06/2012	

Improvement Plan

Case Study: City of Brimbank

- Brimbank is located between 11 and 23 km west and north west of the Melbourne CBD
- Mix of established and newer suburbs with redevelopment of older residential and industrial sites
- Brimbank has six major rivers and creeks including the Maribyrnong River and Kororoit Creek
- Important to understand the flood risk associated with existing infrastructure
- Also flood risk from increased runoff from higher density development and climate change

Case Study: City of Brimbank

- FMP actions to reduce flood risk included:
 - Melbourne Water and Council to work together on flood mapping of priority areas
 - Enhancement of planning overlays to reflect flood hot spots and mapping of priority areas
 - Council to review resourcing required to support efficient and effective drainage maintenance
 - VICSES and Council to prepare and implement a Community Flood Education Strategy



Selected Benefits of FMPs

- Improved agency collaboration and coordination
- Increased understanding/awareness of flood risks and roles
- Identifying information gaps
- Assisting council to position for future funding
- Common understanding of flood 'hot spot' areas
- Better flood intelligence - development applications
- Better flood response and community education



Selected Challenges with FMPs

- Multiple purpose and interests in floodplains
- Attracting councils to the program
- Having a "Champion" within council and Melbourne Water
- Ensuring sufficient and cross-organisational engagement
- Require ongoing commitment
- Quality/extent of flood data and ability to locate it
- How to consider climate change impacts
- Agreeing on improvement actions



Conclusions

- Significant benefits from sharing information and working together in a more strategic way to improve flood risk management
- Development of FMPs is bringing about benefits for flood management agencies and the community
 - FMPs are leading to
 - integrated strategic flood studies
 - integrated flood modelling and mapping
- Effective implementation of key improvement actions and ongoing review is required
- This can also identify enhancements to the FMP process



THANK YOU AND QUESTIONS

