

Inquiry into the 2022 Flood Event in Victoria

Submission to Legislative Council Environment and Planning Committee

June 2023



Merri-bek
City Council

This feedback has been prepared by council officers on behalf of Merri-bek City Council ('Merri-bek') and is based on endorsed Council policy.

Introduction

Merri-bek Council welcomes the opportunity to provide input to Victoria's preparedness for, and response to Victoria's major flooding event of October 2022. We acknowledge the Terms of Reference seeking specific feedback¹ and have framed our submission accordingly.

Merri-bek acknowledges that localised flooding has been occurring since before European settlement. Large rainfall events will continue to occur however the impact of urban development has changed forever the way our cities and waterways cope with rainfall and floods.

As land managers it is our responsibility to mitigate the effects of flooding on the now very altered landscape, to protect our environment from the damage caused, to minimise its impact through stormwater management techniques and to accept the need to act and adapt to a changing climate.

There were a range of flooding impacts as a result of the October 2022 flood event visible in Merri-bek. Damage recorded included localised flooding, inundation over our Shared User Paths, damage to assets and erosion of our urban landscapes along the tributaries and creek corridors, including loss of habitat and the visual impact of litter (still) left in the tops of tall shrubs.

With population growth, rapidly increasing development and the challenges of a changing climate, the natural and built environment is no longer equipped to deal with the increased stormwater runoff from storm and flood events. Merri-bek is planning for a changing climate. We are continuing to mitigate the known impacts of storms and large rainfall events and adapting where we can. But more needs to be done at all levels of government to enable change to occur at the speed needed to mitigate the impacts of flooding in the future.

Merri-bek context

Merri-bek is a municipality in the inner north of Melbourne with a diverse and rapidly growing population. The Merri-bek municipality covers an area of approximately 51 square kilometres and comprises of 12 suburbs. The municipality is bounded by Moonee Ponds Creek to the west and the Merri Creek to the east. Merri-bek is a highly urbanised municipality with approximately 174,502 residents. Forecast to reach over 228,000 people by 2036².

Merri-bek Council has a long and proud history as a local government leader on social justice and environmental issues, including 1) One of the first councils in Victoria to have an Environmentally Sustainable Design Policy within its Planning Scheme and 2) Declared a climate emergency in Merri-bek on 12 September 2018.

¹ [Inquiry into the 2022 Flood Event in Victoria \(parliament.vic.gov.au\)](https://parliament.vic.gov.au)

² 2021 census

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TOR 1 - Causes of and Contributors to the Flood Event

Merri-bek acknowledge that flooding and high rainfall events will always occur and have been occurring since before European settlement. However urban development has changed forever the way our city responds to floods. The factors below all contributed to the flood and the magnitude of its impact.

Physical factors

- Significant, ongoing, high rainfall over weeks prior to the flooding resulting in saturation of the ground. Stormwater was not able to infiltrate soil profiles. Instead, it became runoff that flowed into waterways.
- The engineered drainage system in place could not cope with this kind of flood event.
- Many of the Melbourne Water's main drains are inadequate to deal with these larger volumes of stormwater.
- There has been a historic and ongoing lack of understanding in how traditional drainage and pipes assets can combine with other stormwater mitigation approaches resulting in lost opportunities.
- Inadequate mitigation measures in the upper catchment suburbs. The lack of integrated planning approach which considers downstream impacts including best practice retarding basins.
- A pattern of inadequate local scale designs of streetscapes and landscapes across the region, which fail to consider stormwater collection and flood management which also deliver co-benefits of lush, well maintained, and cool urban landscapes.
- Not enough focus on minimising peak flows at the source including in urban developments through such technologies as smart water tanks, leaky hoses, slow release of water harvesting and other innovative technologies.

Lack of Information and Communication of Risk

- A lack of up-to-date data and mapping to inform controls and development planning in adapting for a changing climate has slowed down or prevented investment in the areas where it is needed.
- An absence of a targeted communications to explain to industry, community, government, and decision makers that it will always flood. We need to learn to live with flooding but how will that look and what impacts can we mitigate.
- Flood warnings and roles and responsibilities are ambiguous resulting in confusion around location of event and response needed.

Planning, Institutional Arrangements, and Funding

- The Victorian Flood Management Strategy of 2016 is ineffective due to lack of awareness of its existence and function.
- Lack of a Melbourne Flood masterplan to prioritise investment therefore the delivery and process for any change is ad-hoc and underfunded. There is a lack of masterplans with integrated solutions at a catchment level balancing use of open space, floodplains, engineering structures, early warning, and whole-of-system management across different sectors.

- Lack of coordination and a cross-sector governance model for a whole of catchment system, and the need to consider a prioritised suite of cross boundary Integrated Water Management (IWM) and stormwater initiatives, with ongoing funding and commitment to deliver.
- Lack of clarity or agreement on the lead governing, collaborative body that provides the inter-organisation agency forum.
- Lack of clear roles and responsibilities at all levels of government and industry to promote collaborative decision making.
- Lack of investment in infrastructure to mitigate and adapt to flooding impacts – there is a need to take investments seriously
- We're not caring for our country. We have altered parks, open spaces and undeveloped land across the region. We need to take greater care of these spaces, to enable infiltration, so they can act as sponges throughout our urban landscapes. Need to create healthier open spaces to allow them to act the way they did before urban development stripped them of their natural ecosystem functions.

TOR 2 - Adequacy and effectiveness of early warning systems

There is a lack of awareness and clarity around how Councils vis-à-vis other agencies should support residents and business owners through floods. While mitigation and adaptation measures can help, there is also a level of expectation management that needs to take place at all levels of government and industry. Activities includes:

- Supporting community resilience so that people know what to do when, as well as understand uncertainty and limitations of warning systems.
- Educate community on how to live with the risk of flooding and to adapt to flooding as a new norm. Similar to fire events, there could be targeted communications to clarify is this a 'get out of here' flooding or is this a 'I need to clean my gutters' rainfall.
- Need for timely and accurate flood intelligence and warnings in the lead-up to an event.
- Investigate whether flood event terminology was poorly understood by many local residents causing unnecessary anxiety.
- Need for awareness raising among property owners of the risks and insurance needs.

If adequate warning systems are effectively delivered by the Bureau of Meteorology, typical proactive works undertaken by Merri-bek prior to storms and floods include:

- Culverts inspected for debris; detention basins needed to be mown.
- Street cleansing program altered to mitigate the impacts of floods through blockages.
- Clearing of debris and rubbish on every pits/drain in flood-affected streets.
- Placing "Water Over Road" and "Road Closed" signs as required in known flooding sites.

Council currently encourages businesses to develop private flood evacuation plans by providing the following to business owners in areas known to be affected by flood:

- Information about the benefits of evacuation plans.
- Contact details of relevant council and emergency service personnel for inclusion in evacuation plans.

If funded, Councils could consider the following initiatives:

- Development of locally-specific information for business owners that would assist them to develop evacuation plans for commercial premises.
- Development and implementation of disaster management plans/flood response plans, as part of municipal emergency management plans.
- Maintain and enhance local flood information and monitor significant local flood events.
- Continue to improve early warning systems, investing in preparedness measures.
- Harmonise information systems and communication for stormwater, river, and coastal flooding'

There is a lack of clarity regarding the body responsible for:

- Maintaining and repairing flood mitigation assets. This confusion highlights the need for a state-wide review of mitigation infrastructure, and clarity regarding ownership, maintenance and liability.
- Implementing and maintaining local flood warning systems, including systems for flash flooding.
- Planning more generally in flood event.

TOR 3 - resourcing of the State Emergency Service

Merri-bek currently funds the State Emergency Services (SES) with a yearly grant of between \$10,000-\$15,000 which assists in their operations such as equipment, fuel and vehicle costs, training and community engagement. Council officers assist with requests for sand, traffic management as part of the Emergency Management arrangements. The SES is primarily run with volunteers and need support to recruit, train and attract volunteers.

Merri-bek City Council is serviced by the Fawkner SES Unit. During recent storm events, there has been a heavy reliance from the community for the SES volunteers to respond. The local SES Unit has provided an outstanding service to residents of Merri-bek as well as working collaboratively with council before, during and after an incident.

TOR 4 - 2016 Victorian Floodplain Management Strategy

The Floodplain Management Strategy is listed in the Terms of Reference but little is known or understood about this strategy and how it is used or can be used.

TOR 5 - Merri-bek flood mitigation strategy

While Merri-bek does not have a specific 'mitigation strategy', a number of council plans and strategies combine to provide a combined endorsed approach which for the purposes of this TOR has been used in our response.

Council plans and strategies include:

- Integrated Water Management Strategy 2040
- Climate Risk Strategy
- Drainage Asset Management Strategy
- Open Space Strategy
- Urban Forest Strategy
- Urban Heat Island Effect Action Plan
- Zero Carbon 2040 Framework
- Zero Emergency Action Plan 2020-2025

In all Council engineered structures and stormwater assets, continued maintenance is critical to ensure the stormwater system operates to the full extent of its capacity. A program of upgrades is essential to meet requirements and to serve the current population and level of development.

The inspection and maintenance of the pipe network is often difficult because most of it is located underground. New technology, such as remote-controlled vehicles with cameras, has reduced the need for manual inspection, but remains a slow process. Merri-bek City Council is presently able to inspect a portion of its pipes network each year but is constrained by the cost and the lack of trained personnel.

In light of these resource constraints, Merri-bek City Council targets its upgrade and inspection program on the basis of 1) complaints, 2) observations in the field and 3) a rating system based on the age of those pipes and evidence/indicators from recent storm events which includes localised flooding events.

Merri-bek prioritises local drainage system maintenance in known locations where stormwater runoff most significantly affects the council's drainage network. Doing this helps us manage fresh silt deposits.

Currently there is lack of clarity in the roles and responsibilities for some assets. Councils within metropolitan Melbourne and Melbourne Water have been working on the drainage asset delineation project (MUSIA Project) to identify the asset ownership based on 60ha rule.³ This may result in drainage assets changing ownership between Councils and Melbourne Water and vice versa.

Data collected following the October 2022 flood event plus ongoing customer feedback indicates the following impacts of the event include:

³ [Melbourne Urban Stormwater Institutional Arrangements Review \(MUSIA\)](#)

- The Melbourne Water and Merri-bek outlet pipes were blocked. This is regularly the case during flood events depending on the severity and location of the rainfall.
- The Melbourne Water, Harding Street Main Drain has been noted as having major capacity issue affecting the Coburg Shopping precinct and residential properties within the area. The need to upgrade this drain has been raised with Melbourne Water in the past to mitigate this from reoccurring. No action has yet been taken.
- Significant volumes of litter were lodged in the limbs of trees and shrubs along the waterways. The debris and rubbish remains to be a problem.

This underinvestment in drainage infrastructure has had other direct implications for Council over the past decade in its role as a responsible authority to deliver housing and jobs in major precincts like Coburg. Merri-bek would happily work with Melbourne Water to advocate to State and Federal Governments to fund upgrades of this critical infrastructure where it is holding back the realising of urban consolidation and revitalisation.

Waterways management and maintenance

Merri-bek's Natural Resource management team, in partnership with management committees and Friends groups are responsible for the management of the natural and constructed landscapes along the creek corridors.

Documented flood damage along the waterways in Merri-bek include damage to plantings, erosion of mulch and established garden beds, widespread distribution of debris, litter and weeds. This caused a large-scale clean-up effort which still exist today as well as the long-term impact on weed control. There was also damage documented to physical items such as handrails, concrete paths and signage.

Local government land managers are expected to undertake local emergency recovery support, clean-up, repairs and maintenance. An increase in funding for Councils is needed, so that we can undertake essential waterway management planning, maintenance and repair work as required.

The unclear ownership and management of riparian land and waterways between Catchment Management Authorities, Local Government authorities, Committees of Management, state government, Parks Victoria and private landholders makes flood planning and response difficult. There is a need to identify the entities and individuals who have ownership of waterways and the responsibility for their clearing and their maintenance.

TOR 6 - Flood Event as a whole

Merri-bek is bounded by Moonee Ponds Creek to the west and the Merri Creek to the east and located partially within the Maribyrnong River and Yarra (Birrarung) River Catchments.

There is need for a whole of system hierarchy which accounts for the interplay between catchments. Both surface and sub-surface run-off. This must also consider how green spaces can store water in the landscape and contribute to cooling, thereby also countering the impacts of the urban heat island effect. A region wide prioritisation of public open spaces is required combined with an understanding of whether they can be (sacrificially) inundated or not. This also creates value to uninsurable land.

There is a critical need to support natural ecosystem functions of waterway corridors, floodplains, and broader landscapes in partnership with traditional owners. This includes the natural assets such as sports ovals and parks which can act as sponges but have additional co-benefits through the creation of habitat and cooling, but are not typically seen as flood management. Infiltration into our urban surfaces is critical to protecting downstream landowners and our waterways.

Increasingly councils including Merri-bek are adopting integrated water management⁴ (IMW) or water sensitive urban design (WSUD) across a range of council functions including capital works, land use planning; environmental protection, open space management and urban water resource (conservation) management to contribute to flood management.

We need to better understand the whole of catchment system and the cross boundary and downstream impacts of upstream developments and urbanisation, For Merri-bek, this includes growth areas north of Melbourne to Merri-bek.

⁴ Merri-bek developed Integrated Water Management Strategy 2040 and 5-year Action Plan and was adopted in 2020

TOR 7 - Adequacy of Climate change considerations and Flemington Racecourse flood wall

Merri-bek Council is in the vicinity to the Flemington Racecourse. Merri-bek agrees that flood mapping taking into account climate change data for the Maribyrnong River catchment needs to be carried out.

It is important to factor in climate change in decision making more broadly as it is critical to planning and preparing for floods. Climate change is already impacting the hydrological cycle. We are experiencing more intense rainfall events, more often, facing sea level rise and combining this with other extremes weather events.⁵ Traditional approaches or ad-hoc solutions and investments are no longer sufficient to protect people and nature. We need to learn to understand, plan for, live with, and manage the risk now and well into the future.

Victoria faces increasing risks from the impacts of global climate change. Recent storms, including heavy rain events, demonstrate that the stormwater system is at risk from extreme weather that must be addressed through implementation of integrated climate adaptation interventions.

The Merri-bek [Council Plan 2021 - 2025](#) addresses climate risk through Strategy 3.3, to: 'Strategically invest in Council's community services and assets to increase our resilience and adapt to climate change risks and impacts that are now unavoidable (such as severe heatwaves, flash flooding, unreliable rainfall).'

Merri-bek Council has also been working with expert drainage engineers to prepare 100-year stormwater maps for its local catchments. This work has been informed by national guidelines⁶, which prompts such mapping to factor in increased rainfall intensity – brought on by climate change.

Merri-bek Council has developed a Climate Risk Strategy. This includes actions such as hazard mapping, monitoring of identified at-risk assets, and conducting building vulnerability assessments to develop recommendations to reduce risks. In parallel, other actions to communicate risks include the Special Buildings Overlay (SBO2) process, to develop residents' awareness of risks.

There is a continued need to support community in understanding the service levels of natural and structural infrastructure, understanding nuisance flooding, understanding risks at the property or neighbourhood level, potentially supported by tools such as data visualisation of flood depths.

Awareness of the future impact of climate change and the changing risk of flood is not well understood. We need integrated planning and investment into flood management at the state level which support a catchment scale approach to intervention, supported by the best available, evidence-based information. This includes greater funding to support continued learning and education in Council and in the community.

⁵ Victoria's Climate Science Report 2019

https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0029/442964/Victorias-Climate-Science-Report-2019.pdf

⁶ Australian Rainfall and Runoff 2019, Geoscience Australia.

Merri-bek through council Alliances for Greenhouse Action and Council Alliance for a Sustainable Built Environment have engaged with State Government over their proposed planning reforms; through the ESD Roadmap development; and through consultation on Victoria's Built Environment Adaptation Action Plan.

TOR 8 - Implications for future planning

(a) how the Victorian planning framework can ensure climate mitigation is a consideration in future planning decisions;

Merri-bek flood mapping completed to date

Under the Water Act 1989, councils and Melbourne Water are responsible to find out how far storm events are likely to extend and how high they are likely to rise. However, Melbourne Water has overarching responsibility, arising from its role as metropolitan Melbourne's Floodplain Management Authority.

In the absence of government funding, or any grants program from Melbourne Water, in 2017 Merri-bek City engaged Engeny Water Management (Engeny) to carry out a hydraulic and hydrologic analysis for the city's local drainage catchments, to assess the impact of major storm events.

The analysis included:

- stormwater modelling to produce stormwater maps for the 1, 5, 10, and 20% AEP (Annual Exceedance Probability) storm event, and identify affected areas in Merri-bek. Climate change impacts were factored into the digital model that was created.
- determining and prioritising the mitigation works and associated costs to address stormwater hazards for the 10% AEP event.

Merri-bek's stormwater mapping factors in climate change by increases rainfall intensity in-line with national guidelines. Doing this helps us better understand where there are local stormwater overland flow paths and what this means for future land development.

This study guides Council in the assessment of future developments and ensures the existing flooding 'hot spots' are not adversely impacted by future development. Council has proactively declared its stormwater maps, under the provisions of the Building Regulations. Council is also refreshing these maps with new information, before updated maps are used to inform the introduction of a new Special Building Overlay into the Merri-bek Planning Scheme.

Council has also identified drainage locations in the city's local catchments and assessed 42 flood mitigation options, to help prioritise works and determine the infrastructure necessary to reduce stormwater impacts for the 10 % AEP storm event⁶.

Planning Controls and Flood Mapping for Waterways.

For many years, planning schemes within metropolitan Melbourne have included schedules for Land Subject to Inundation Overlays (LSIO). Melbourne Water is the Floodplain Management Authority and is responsible for the waterway flood mapping that generates the mapped extents for these LSIOs.

The current LSIO planning control in the Merri-bek Planning Scheme was introduced more than two decades ago. It is not known if Melbourne Water has done a review of its flood mapping for Merri-bek's waterways.

⁶ [Stormwater mapping in Merri-bek](#)

It is unclear whether Melbourne Water has checked its waterway flood mapping for climate change implications. Similarly, it is unclear if such review work has been done for other waterways in metropolitan Melbourne.

There is a need to communicate to local government the status of Melbourne Water's flood mapping reviews including timing and scope.

Roles and Responsibilities

Melbourne Water is the Floodplain Management Authority for Merri-bek and all other councils within metropolitan Melbourne. However, Melbourne Water has historically not conducted floodplain management for Melbourne's urbanised local catchments. Instead, local councils have worked to understand where urban stormwater overland flow paths are located, to inform the introduction of the Special Building Overlay planning control for local catchments.

Local councils have had to develop their own in-house methods, establish resources and decision-making guidelines for considering floodplain management issues in local catchments. Melbourne Water, in its role as the region's Floodplain Management Authority, has provided little direct support. It is challenging for councils to expand its service offer, for local floodplain management, in a rate-capping environment. With 31 metropolitan Melbourne councils, this also poses a challenge for consistency and capacity building in the sector. Funding and resources need to be quarantined to complete mapping for metro Melbourne in collaboration with councils and Melbourne Water

Metropolitan Melbourne's Floodplain Management Authority should increase funding, resourcing and have a long-term action plan to lead floodplain management across all of metro Melbourne. If local councils are to assess planning permit applications, in their role as a local drainage authority, tailored guidelines may be required for each local catchment. Therefore, Melbourne Water needs to take an active role in capacity-building across the local government sector and leading the preparation of guidelines for consistent decision-making within its Port Phillip and Western Port areas of responsibility.

Planning Provisions:

There are Merri-bek planning controls in place which apply to new buildings to help adapt to weather extremes and our changing environment and are listed below:

- Councils planning requirements are that the habitable floor level of all developments must be above flood levels
- Council's Building and Subdivision Guidelines require that new developments must not have any negative effect on flooding, either upstream or downstream⁷

Merri-bek's Environmentally Sustainable Development Policy within the planning scheme enables Council officers to require minimum sustainability standards including new developments to better manage water quality, use and collection. On its own, ESD measures in a single development will not impact flooding but if all new developments were to include minimum standards the impact across the region can have a meaningful impact.

⁷ [Stormwater mapping in Merri-bek](#)

Councils, through the Council Alliance for a Sustainable Built Environment of which Merri-bek is a member, have introduced local [Environmentally Sustainable Design \(ESD\) policies](#) to tackle climate change and have submitted a planning scheme amendment to state government on how we can [elevate ESD targets](#) in the Victorian planning scheme to improve our built environment.

Local government in Victoria has identified a disconnect between high level policy positions on climate change, both by State and local government, and the day-to-day decisions that are being made through the planning system. In practice, climate change adaptation has not yet 'trickled down' to inform decision-making through Victoria's planning system.

(b) how corporate interests may influence decision-making at the expense of communities and climate change preparedness;

The role of governments needs to shift to think more about how we can proactively adapt at municipal and state level. Learn from other countries where flooding is more accepted as the norm. Rethinking how we use land that periodically floods and move away from the purely financial or development opportunity.

Consideration of land buy backs / strategic purchasing of land in floodplains and areas affected by river flooding, overland stormwater flows, and coastal inundation for vegetated open space and drainage reserves as a voluntary purchase schemes'. This includes the opportunity as part of a long-term flood risk prevention strategy to consider the acquisition and removal of properties within the primary flow area of the floodplain.

The buy-back of properties often provides the ideal solution to the problem of mitigating the impact of damage to existing buildings in areas particularly exposed to natural hazards such as floods. The benefit to the community of a property buy-back program, and the consequential removal of structures in the floodplain, is the minimisation of the risk posed by flood to life and property. However, there is no scheme or planned program on this and funding is insufficient for the scale of impact expected if flooding continues to increase in severity and frequency.

Recognise private development and minimising at the source catchments (water takes and WSUD within property boundaries play a critical role in minimise flood waters at the source). At the municipal scale, information and modelling is already available and demonstrates how urban development and imperviousness can significantly impact flood risk and to understand if measures under ESD recommendations are sufficiently offsetting any additional flood risk

More incentives are required to activate the role of the private sector and developers. Similar to or aligned with the planning scheme amendment work currently underway and led by CASBE.

It is worth noting that Councils tend to use 10-year flood (structural) to upgrade drainage assets – often due to costs. But for planning, a 100-year flood (non-structural) is used. Scrutiny around this decision is required.

TOR 9 - Other related matters

Integrated Water Management (IWM):

Integrated Water Management (IWM) is a holistic approach to managing water cycle that considers social, economic and environmental benefits for the community through the use of vegetated swales and buffer strips as a substitute for traditional forms of drainage and the use of wetlands, ponds and retarding basins for flood retardation, water storage and to provide amenity. These need to be seen as part of the story in mitigating floods.

Taking an integrated approach ensures that the water cycle is more resilient to the impacts of climate change and a growing population.

One of the key objectives of the IWM Framework for Victoria is to manage water-related risks, including the risk of flooding which aligns with Merri-bek's IWM strategy for 2040.

This strategy is aligned with the Healthy Waterways Strategy and Water for Victoria. There are a significant number of actions which contribute to the mitigation of flooding impacts including the delivery of large-scale water harvesting systems and smaller scale IWM interventions including Water Sensitive Urban Design (WSUD). They help to reduce the volume (and improve the quality) of runoff that reaches our waterways.

Merri-bek is impacted by rains in the upper catchment. This impacts on our drainage pipes by preventing our stormwater drains from discharging into the creeks. We are bounded by two main creeks and we don't have the land to install lots of retarding basins etc. in Hume. We don't have the land to do this so it needs to happen in the upper catchments.

Vegetation and the natural function of the waterway needs to be managed to be resilient against flooding. Erosion and habitat loss through storm flooding has a detrimental impact on the ecosystem waterway habitat. The ecological impact of floods also needs to be considered in any changes to a catchment scale approach to flooding. This means adopting an integrated ecosystem service approach to waterway management, which should also support flood mitigation activities as required.

There is a need to encourage, support, fund and require interventions such as listed below to yield benefits to nature and biodiversity, cultural benefits, supports our connection to nature, support carbon storage for a safe climate (wetlands and trees store carbon):

- Enhancing waterway corridors and floodplain connectivity or urban billabongs where feasible
- Promote daylighting of drains and restoration of healthy waterways to slow down flows and support natural functions
- Ensure Development of retarding basins and wetlands for water storage, sponge city approaches.
- Reforest key watersheds where applicable and where pre-colonial woodlands exist
- Promote Urban greening programs, including in public land owned by the state and other public sector organisations
- Avoid engineering our rivers in ways that may potentially increase flood risk and have adverse outcomes, such as the Victorian Murray River Floodplain Restoration Project

Governance and building on existing industry knowledge

Stormwater management and responding to floods requires a shift in the way we do things. For decades flooding has been managed through localised engineered structures. With climate change and an altered urban landscape, a whole of system approach needs to be considered not just a band-aid fix.

There have been attempts at centralising governance and decision making including the DEECA led IWM forum which approaches our catchments from an IWM lens. The custodianship of the current and future plans for our city when it comes to water management no longer sits with any one land manager. A collaborative approach across water authorities, catchment management authorities, all levels of governments including councils, traditional owners and in partnership with external organisations such as Melbourne Water, state government, Management Committees and Friends of groups (Merri Creek Management Committee, Friends of Merri Creek and Friends of Moonee Ponds Creek) is required.

Continue to fund and promote the Integrated Water Management interventions including the upstream and whole of river catchment to have a positive a ripple effect downstream. This means both a range of interventions, with a range of stakeholders and over a catchment and region wide scale.

Continue the work that DEECA currently leads as part of the Integrated Water Management forum to bring these land managers together continue the development of Catchment Scale Integrated Water Management (CSIWM) Plans for each of the five metro Melbourne IWM Forum Areas: Werribee, Maribyrnong, Yarra, Dandenong and Western Port. Merri-bek led the first trial of these plans as an active member of Yarra and Maribyrnong IWM Forums.

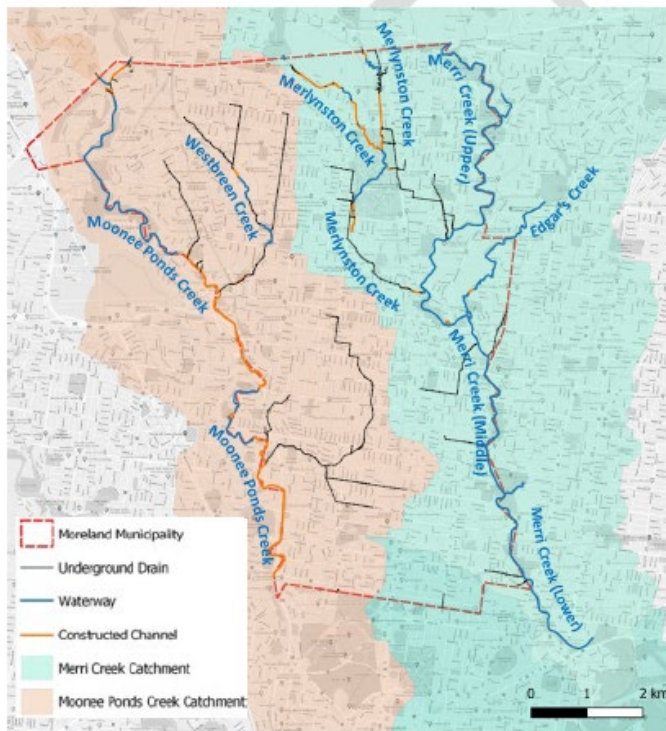
- Listen and respond to the recommendations of the Integrated Water Management Forum
- Listen and integrate to the outcomes of the Melbourne Water Led Stormwater Industry Guidance work.
- Seek advice and listen to the voice of the peak body, Stormwater Victoria.
- Continue to engage with and support recommendations from the Council Alliance for a Sustainable Building Environment (CASBE) and the CASBE led initiatives including support for the Elevating ESD targets in the planning scheme.
- Support further research through grants and scholarships to develop, test and monitor innovative solutions to heavy rainfall and associated physical and societal impacts.
- Clarify and communicate the role of Catchment management authority and VPA.

Recommendations

- 1 Melbourne Water should be better resourced and prompted to allocate funding to:
 - a) creating and reviewing all flood (riverine) maps and stormwater (urban drainage) maps across its Port Phillip and Western Port area of responsibility, as the region's Floodplain Management Authority. This would include all local and region catchments.
 - b) Better enable its role as the region's Floodplain Management Authority, by leading the creation of guidelines and other resources the local government sector can use, to enable consistent consideration of planning and building application proposals, for effective consideration of stormwater risks for property development.
- 2 Melbourne Water's progress for flood and stormwater mapping should be given high priority, so that progress can be completed for all councils as soon as possible.
- 3 Given that flood (LSIO) and urban stormwater (SBO) mapping is linked to the Victoria Planning Provisions, Melbourne Water and the Victorian Government should consider an appropriate planning scheme amendment avenue to ensure the maps are put into planning schemes with minimal delay. For this, Merri-bek believes affected landowners must be informed, before any new or revised maps are introduced.
- 4 Consult with industry, agree on and establish a cross sector, cross catchment all level of governance model similar or linked to the DEECA led IWM Forum, to manage the ongoing prioritisation and decision making through an integrated water management and planning lens
- 5 Fund and endorse a buy-back model for high-hazard properties affected by riverine flooding.
- 6 Agree on roles and responsibilities of flood response Implementing and increased funding to local governments for the maintenance of local flood warning systems, including systems for flash flooding
- 7 Support Councils in the development and delivery of flood emergency response plans by providing funding and resources to enable regular review of local emergency response plans and consequence management planning as an appendix to these plans.
- 8 Through the outcomes of this inquiry, reframe how we in Victoria see flooding. There is need for a whole of system shift and a new hierarchy which accounts for the interplay between catchments. Both surface and sub-surface run-off. This must also consider how green spaces can store water in the landscape and contribute to cooling, thereby (also) countering the impacts of urban heat island effect. A region wide prioritisation of public open spaces is required combined with an understanding of whether they can be (sacrificially) inundated or not. This also creates value to uninsurable land.

Merri-bek Catchment location maps:

Merri-bek boundary showing catchment locations and water infrastructure:



Maribyrnong River Catchment Location in relation to Merri-bek:

