

Improving Stormwater Management Advisory Committee

City of Port Phillip (Officer Submission)

July 2018

Executive Summary

This submission for Port Phillip City Council (Council) relates to the the Issues Paper: Improving Stormwater Management Advisory Committee. This is an officer level submission which has been submitted to Council and will be endorsed in due course. In good faith, this submission represents the views of the City of Port Phillip officers on behalf of Council. Once endorsed by Council, the final submission will be forwarded to the Department of Environment, Land, Water and Planning (DELWP).

The City of Port Phillip welcomes the opportunity to make a submission to the Issues Paper: *Improving Stormwater Management Advisory Committee*.

Drainage infrastructure in Port Phillip is currently beyond capacity in many areas, and with the City of Port Phillip facing significant levels of growth in the coming years, it is crucial that new development both mitigates its impact on the stormwater network and contributes to new infrastructure.

Managing all aspects of the water cycle (mains water, stormwater, wastewater and groundwater) in an Integrated Water Management (IWM) approach can limit the impact of these capacity issues while also providing many cobenefits, like reducing potable water demand, improving the quality of stormwater entering the waterways, mitigating flooding and providing for sustainable maintainence of gardens and open space.

Council is supportive of the initiative to improve stormwater management at the State level to ensure Melbourne grows into a more water-sensitive and climate-resilient City.

As a Council with an existing IWM local planning policy (Clause 22.12 - Stormwater Management (Water Sensitive Urban Design)), the City of Port Phillip is very supportive of a new particular provision within the Victorian Planning Provisions (VPP) for IWM.

How this is put together is critical and it is important that the triggers are set at the right threshold and for the right classes of development and that the requirements to be met for each application are robust. It is very important that Council's existing local policy is not superseded by a lesser policy.

In the *We are Port Phillip Council Plan 2017-27*, Council commits to becoming a water sensitive City by 2027. Priorities include the development of a new integrated water plan, increasing permeable land on private property, continuing to deliver water sensitive urban design and developing a Stormwater Management Policy and Guidelines to require onsite detention for new developments. These commitments build on a long history of integrated water management including the ongoing implementation of our Water Plan – Toward a Water Sensitive City (2010).

Discussion Paper Questions

2.1 Key issues

Are there any other key issues or opportunities (that are directly related to the Committee's Terms of Reference) that the Committee should consider?

Catchment-wide planning

Although partially raised as a key issue by the discussion paper, the current planning framework doesn't cater well for place-based or catchment-wide water issues that cross municipal boundaries. Although each Council within a catchment could conceivably alter their planning scheme to address the same issue, there are political and equity implications where a downstream issue is made worse by development in another municipality. This is not easily addressed through municipal planning scheme amendments and should be a key consideration of the Panel, particularly in relation to securing development contributions and whole of catchment controls (see our Elster Creek section on section 2.2 of this submission for further details).

2.1 Opportunities to extend the coverage of stormwater planning requirements

What are your views on the conceptual planning control option?

Support for IWM in infill development

As a council with an existing local policy, CoPP is very supportive of a Victorian Planning Provision for IWM. How this is put together is critical and it is important that the triggers are set at the right threshold (eg. >50sqm new floor area) and for the right classes of development. It is very important that existing policies are not superseded with lesser policies.

It is vital that infill development is sufficiently captured in a new VPP provision. There are two aspects to this. Future growth under Plan Melbourne will result in 70% of development occurring within the existing urban boundary. This will result in a significant loss of permeability, increase in pollutant generation and other impacts if not managed appropriately.

Coupled with increasing densification, there is also an existing legacy issue associated with urban areas which has a significant impact on catchment and Bay health. In order to transition toward a future state which is sustainable (i.e. swimmable lower Yarra, less beach closures, improved ecological condition of waterways etc) it is necessary to shift the performance of existing development. This requires the trigger for an IWM response to be set at a level that deals, not only with new buildings, but also renovations and also that this requirement extends to whole of site. It is only through a comprehensive and state-wide requirement that such a transition is possible.

Overall, we agree that a planning control should be introduced that builds upon Port Phillip's current stormwater policy at Clause 22.12 of the Port Phillip Planning Scheme.

Conceptual planning option

All of the outlined development types on page 17 of the Discussion paper should be required to comply with the BPEM stormwater objectives. The only modification we suggest is that extensions at or over 50m² (rather than over 50% of existing volume) should be included for the following reasons:

- Larger extensions make up a significant level of new development within the City of Port Phillip
- Larger extensions should be subject to stormwater requirements, given the larger-scale nature of the renovations, which could more easily accommodate stormwater requirements,
- The need to transition existing housing stock to reduce legacy stormwater issues, and
- The current high level of compliance experienced in the City of Port Phillip when applying a 50sqm new floor area threshold

The Committee should also consider how at-grade carparks and hard civic or private spaces such as plazas or commercial forecourts could be captured with stormwater requirements in the planning or building system as these comprise large-scale impervious areas.

For developments exempted from the requirement, we agree with the majority of the list but suggest including the following:

- Covered decks or pergolas (that may contribute to impervious buildings over 50m²)
- Outbuildings over (that may contribute to impervious buildings over 50m²)
- Any impervious building / works over 50m².

Confidential draft VPP changes

Draft stormwater policy (CI 19.03-3)

- Suggest this section be renamed to Integrated Water Management to reflect and promote this holistic approach, and link it to the multitude of benefits for society, including flood mitigation, amenity and urban greening which contributes to the community's overall health and wellbeing, liveability and climate resilience.
- Objective 2 drafting is confusing. Suggest adopting following wording:
To ensure development mitigates its detrimental effect on downstream waterways by not unreasonably overloading stormwater infrastructure capacity, improving stormwater flows and reducing volume and nutrient levels through best practice stormwater management and water sensitive urban design.
- Wording of requirement to 'not unreasonably overload' is very subjective and is likely to be debated. Is there a clearer way of wording this requirement – like no net increase in stormwater? At the very least, this term should be defined in a planning practice note.
- Suggest adding benefit of flood mitigation in Strategy 7, alongside the cobenefits already listed.

Draft Particular Provision (CI 52.XX)

Overall, Council officers support the comprehensive drafting of the IWM particular provision in that it largely achieves the coverage and intent of Port Phillip's existing stormwater policy.

However, the draft provision's layout is confusing and repetitive and suggest it be simplified. Council recommends the drafting of the particular provision would benefit from the following:

Purpose

Suggest the last paragraph should recognise IWM's benefit of flood mitigation, alongside the cobenefits already listed.

Scope

Should this section be titled 'Scope' or 'Application'?

The provision should capture all extensions over 50m², given their larger-scale nature where renovations could more easily accommodate stormwater requirements.

Should clarify a covered deck is not included within the list of buildings and works exemptions.

Requirement to be met

Subdivision:

- Define 'Not unreasonably overload / exceed' - what is reasonable is subjective in nature.

Buildings & works:

- Support mandatory wording that applications 'must meet' the requirements. However, the requirements themselves are not too prescriptive and seek performance-based solutions to provide flexibility for exceptional circumstances where alternative measures are more appropriate.
- For example, collecting rainwater may not be the an ideal or useful outcome in some forms of infill development. Could add: 'unless other measures are deemed sufficient by the responsible authority'.
- For example, the need for flexibility to exempt developments where they have access to the third pipe, there are no flood issues and proposed measures are sufficient.

Additions

The provision would be improved with a policy to encourage the green / living walls and roofs and facades and that are sustainably irrigated.

The provision should include application requirements (modelled on Port Phillip's stormwater planning policy) to ensure Councils receive adequate information with planning applications. These should include a stormwater report, design details, site management plan and maintenance program.

The Committee should consider the provision's relationship to any onsite 'detention and retention' requirement. This is highlighted in the proposed wording of draft Clause 65 decision guidelines but not addressed in the draft provision.

Clause 56.07

The residential subdivision provision (Clause 56.07) of the VPPs IWM standard should be expanded to include consideration of IWM for commercial and industrial development with specific consideration for the differing characteristics and risk profiles associated with industrial and commercial land use.

What (complementary) changes to the building and plumbing regulations or guidance, or any other mechanisms, are needed?

The current trade off between energy and water outcomes under the current building regulations doesn't produce a consistent IWM outcome and this should be rectified. Initiatives to reduce energy consumption (e.g. solar hot water option) are critical but should be dealt with separately to water (rainwater tank option).

Council supports extending the IWM requirements to the Victorian building regulations to apply consistent stormwater standards to all single dwellings and extensions over 50m² (where not considered at planning stage).

One option to address this could be to update or replace the STORM tool to include a deemed-to-comply pathway alongside a performance pathway. Deemed-to-comply could be called up in the BCA - a 50m² new floor area trigger could be used to trigger a STORM compliant response. There is already precedent for a deemed to comply tool in NSW (S3QM) triggered through the Development Control Plan (DCP) process. While this is not currently linked to building regulations in NSW, it could be. Linking to building regulations is critical as there is a cohort of development not picked up by planning.

Regardless of any changes to building or plumbing regulations, it is vital that IWM is captured at the earliest possible stage wherever possible, so that it is integrated into planning and design, not retrofitted into advanced projects where opportunities have been lost. When this occurs there are often sub-standard and/or cost outcomes. Planning and building regulations need to mutually support each other to achieve the best outcome.

Industry would benefit from design and practice notes for practitioners to support practical planning and delivery. This remains a weakness in the industry. Currently much of the technical information relating to water sensitive urban design is targetted at larger scales and civil infrastructure. Refining guidance to support technologies at smaller lot and building scales would therefore be usefull. There is a range of information available which individual councils have produced however a consolidated and comprehensive set of statewide guidance would support consistency.

2.2 Opportunities to provide broader benefits

What stormwater planning provisions, or other mechanisms, would help to deliver the broader benefits listed in Section 2.2?

Mitigation of flooding

With updated flow requirements, BPEM can assist in achieving protection of waterway outcomes from a hydrologic regime perspective.

However, for a true IWM approach, it is necessary to also reduce flooding. This can take a different type of catchment-based approach linked to detailed flood modelling.

Integrated Water Management Overlay

Alongside a state-wide IWM provision that captures all development, the State Government should consider developing a new overlay - perhaps an 'Integrated Water Management Overlay'. This would allow Councils to spatially apply stricter IWM requirements (like mandatory on-site retention / detention, increased size of rainwater tanks and increased permeability standards) to address local or catchment-level issues.

Such an overlay could be drafted in a similar way to the Environmental Significance Overlay, which allows Council to apply buildings and works requirements. The ESO's current emphasis on places of ecological value or environmental significance will need to be broadened to also address areas at risk of flooding.

Currently flood planning in built up areas is managed through Special Building Overlays (SBO) with floor level controls. This approach is designed to protect life and property in an at-risk area. It does not however work as a proactive mechanism to reduce flooding from occurring in the first place.

The Committee should consider this tool as a coupling of the SBO with a preventive approach designed to deliver a catchment-based solution to flood risk at source, such as through distributed systems with onsite detention/retention (OSD/R).

CoPP proposes that a new 'Integrated Water Management Overlay' could be used to set OSD/R requirements and link with specific sub-catchment objectives such as water health objectives identified through the water strategies (MW's Healthy Waterways Strategy) and/or local IWM plans. The development of overlays is not without complexity so a more standardised process to draft and apply the tool would be of value.

Alternatively, an IWM particular provision (as proposed in draft form with consultation) could be drafted to allow Councils to 'schedule-in' areas subject to stricter IWM requirements, however this would be a less transparent option for the landowner / developer.

Funding opportunities for necessary flood mitigation and stormwater infrastructure should also be considered for these precincts – see Elster Creek Catchment in Section 2.3 of this report.

Liveability benefits of WSUD

The review should recognise and further promote the liveability co-benefits provided by WSUD treatments in that for practical reasons, they often result in attractive green spaces that are sustainably irrigated and provide increased amenity and a sense of wellbeing within the community along with environmental benefits such as carbon offsets, urban heat island mitigation and increased habitat.

Although often encumbered green spaces, larger WSUD treatment systems can be co-located with public open space or recreation assets (including linear corridors) to provide amenity and ecological value.

It should also be recognised that environmentally sustainable design features such as green roofs can provide a means of reducing stormwater flow and potentially filtration and can be supported by policy - e.g. Germany's State of Baden Württemberg (Water Act 2005) which requires developments to deliver on-site stormwater infiltration. This is further supported by the City of Stuttgart's directly connected imperviousness charge. In tandem, these policy instruments recognise a broad range of multifunctional assets. For example, green roofs can mitigate carbon emissions, the urban heat island effect and, alongside being designed for a stormwater function, can ultimately result in a more climate-resilient City.

The Advisory Committee should consider green roofs as part of the IWM toolkit and recommend stronger mechanisms to facilitate green roofs in high-density environments to enhance IWM outcomes. The STORM tool could be upgraded to include a greater range of WSUD measures.

2.3 Opportunities to provide a 'place based' approach

Should stormwater standards vary spatially and, if so, on what basis and at what scale? How can the planning system be used to guide and implement local IWM related standards?

Yes, Councils should have the opportunity to vary and implement stricter and context-specific stormwater management requirements where addressing a localised issue or catchment-wide solution to a flooding or waterway problem.

This could take the form of a new catchment overlay, or integrated water management overlay (as outlined in section 2.2 of this submission), which allows Councils to vary planning requirements to address a specific issue like flooding or a sensitive receiving waterway.

Examples of areas within the City of Port Phillip where a precinct-based approach to IWM is desired includes the Fishermans Bend Urban Renewal Area and the Elster Creek Catchment.

Elster Creek Catchment

The Ester Creek catchment is approximately 40 square kilometres in area covering the four municipalities of Kingston, Bayside, Port Phillip and Glen Eira. The creek culminates at Elwood Canal, which directs the water into Port Phillip Bay and experiences frequent urban flooding due to the amount of runoff exceeding the capacity of the drainage network. Being at the downstream end of the catchment, Elwood (within Port Phillip City Council boundaries) experiences the worst effects of the flooding, disproportionate to its size within the catchment.

The alliance of Councils within the catchment intends to explore stronger planning requirements within this catchment, including:

- increasing the ResCode permeability standard (above the standard 20%) in residential zone schedules within the catchment to increase resilience in vulnerable or flood prone areas
- adding stronger requirements for on-site detention
- exploring a catchment-wide DCPO that considers the sharing of funds across municipal boundaries and demonstrates a nexus between new development and the need for new infrastructure.

Fishermans Bend

Integrated water management and flood mitigation need to be key drivers of the planning and design of Fishermans Bend. Given the precinct is low lying, and located between the Yarra River and the Bay, it is particularly vulnerable to the impacts of climate change and sea level rise. This presents one of the greatest challenges for successful renewal.

Reliance alone on hard engineering solutions and building design requirements will result in a sub-standard urban design outcome for the precinct. Building in climate resilience to the design of Fishermans Bend, in particular through the design of streets and open spaces, will prove cost effective and create a landscaped solution which contributes to the liveability and identity of the precinct.

Fishermans Bend must embrace the 'sponge city' concept which embeds an ecological response to water and flood management into the planning and design of the place.

A precinct scale landscape solution to flooding and water management must be developed, rather than just a building response, including:

- Development of a strategy to ‘holistically manage drainage and mitigate the impacts of storms and sea level rise’.
- Design of the public realm ‘to make water visible and part of the Fishermans Bend identity through water sensitive urban design’.

Council commissioned a report from Ramboll (Fishermans Bend – Integrated and Innovative Water Management Feb 2018) to explore innovative ways to use integrate Blue Green Infrastructure into precinct design – e.g. Cloudburst Boulevards, Cloudburst Detention, Green Streets, Blue Laneways, Rainwater Tanks and Liveable Levee.

Place-based IWM approach

Overall, Council officers consider being able to implement a catchment-wide or place-based IWM approach to address flooding issues is critical to address problems at their source.

This process should include development of an area-based IWM plan, which informs and provides the evidence base for varied policy and controls (or application of a new overlay) in the planning scheme, including a method for funding infrastructure.

2.4 Opportunities to to link water management and urban planning

How should IWM plans, and or frameworks (Section 1.6), be linked to the planning system?

If an IWM plan establishes relevant planning considerations, it could be incorporated in the Scheme through a number of different ways (e.g. zone or overlay schedules, local policy, etc), with the Plan itself to provide the background information and rationale, becoming a reference document in the planning scheme.

One example may be a future Fishermans Bend Water Sensitive City Strategy. This strategy, once developed, could be given statutory weight through the planning scheme providing a greater level of detail to guide the IWM requirements in local policy or through the schedule to the Capital City Zone.

IWM Plans could also provide the basis for implementing place-based approach to IWM which addresses localised issues – as outlined in section 2.3 of this submission.

IWM opportunities (and constraints) could also be considered and identified in metropolitan / municipal public spaces strategies and in structure planning for infill growth precincts, however guidelines should be provided to support this process.

For local IWM issues to be considered in more detail in strategic planning, IWM plans need to:

- be detailed spatially outlining the water context, localised flood issues or hotspots, pollutant reduction objectives and opportunities in each part of the municipality
- be a more forward thinking or long-term plan, considering the implications of increased development or urban renewal in key areas

- identify mitigating actions – for example, suggest maintaining or reducing imperviousness levels, disconnection of future development from the stormwater system (to the extent possible), retaining excess stormwater on site in key areas
- consider undertaking flood modelling of hard and (cumulative soft) infrastructure interventions
- identify future infrastructure and water servicing requirements which could form the basis for development contributions and develop a business case to secure funds
- contain multi-organisational commitments by water authorities, councils, Vicroads, and so on.
- Include public realm design principles

Once this plan is developed and mitigating actions are anticipated, then they can be more readily identified through strategic plans and the planning scheme. Implementation of this would depend on the context and requires more thought – e.g. potentially using a new IWM Overlay as suggested in section 2.2.

What mechanisms should be used to strengthen the links between water management and public realm planning or the planning system more broadly?

Supporting the role and contribution of other local government initiatives like:

- Embedding a culture of WSUD treatment priority in local infrastructure upgrades, recognising its co-benefits in improving environmental, amenity and liveability outcomes.
- Support rollout by selling WSUD business case to Councils regarding initial investment and ongoing maintenance costs and liability.
- Grants or payback schemes for retrofitting existing developments with WSUD features like rainwater tanks or permeable driveway materials, etc.
- Voluntary stormwater offset funds (only where it can be demonstrated a proposed development cannot meet BPEM).
- Ongoing guidelines and education of the development industry, council officers (assessing applications) and the community.

What guidance material or tools are needed to help implement stormwater management through the planning system?

Revised STORM tool

There is a need for a comprehensive revision of the STORM tool (please see attached discussion paper). This should be a top priority of any reform process as policy implementation requires an assessment tool that is tailored to the policy objectives. Currently the STORM tool is not capable of meeting current needs and if there is any greater flexibility introduced into planning requirements (e.g. place based targets) STORM will not be compatible.

Training and guidance

Development of guidance material on design, construction and maintenance of private realm WSUD assets is important and while there are local government examples, it would be good to develop a very consistent end to end package to support any policy development at the state level.

Supporting Council statutory planners with guidance material and training on new controls – particularly for Councils with no in-house experience and expertise.

Strategic guidelines

Supporting Council officers in their long-term planning with more strategic and process-focused IWM Guidelines.

Such guidelines should outline how and when to consider IWM in the strategic planning process for a number of established urban site contexts including:

- Urban renewal areas
- Catchment-wide planning
- Activity centres (e.g. in structure plans)
- Large strategic redevelopment sites.

2.5 Opportunities to improve compliance and implementation

Where are the weakest links in the chain of compliance and implementation of stormwater management requirements (including design, operation and people related issues)?

The weakest link remains the ultimate asset owner and their understanding of their assets and obligations. This is an especially acute issue with the passage of time and changes of ownership.

Local government planning departments are under significant pressure. There are a range of challenges they face including unprecedented levels of development.

Practitioners have not yet had sufficient exposure to WSUD to be proficient in its application and this is an area where proactive support, compliance and time to adjust are necessary.

Planning permit conditions

Perhaps the most common breach in planning compliance relates to failure of a particular development to satisfy their permit conditions before commencing. The developer has their permit and satisfying the conditions can become an afterthought. One way to address this could be by ensuring all WSUD requirements are marked on the endorsed plans.

The most successful form of compliance is putting the onus on the developer to show they have complied with their conditions rather than Council officers. Conditions that require a suitably qualified person to demonstrate compliance in a final report. An example of such a condition is in our to Environmental Sustainable Design local policy conditions. They are required to provide a report confirming all works are completed prior to the occupation of the land. While our standard WSUD Conditions require compliance with a report before 'occupation of the land', it does not require any confirmation of the works having been completed. This could be addressed by requiring a report showing photos of all works required by the plan.

Port Phillip proactive planning compliance

Port Phillip's Planning Compliance Unit provides a proactive site monitoring service. The trigger for a site to be monitored include:

- any development more than four dwellings on a lot
- any permit that was decided at Council or VCAT
- all Fishermans Bend approvals.

The unit carries out an initial desktop assessment to ensure all reports are submitted prior to commencement. Engagement with the developer occurs and a final inspection is then undertaken when the development is nearing completion. The inspections are automatically triggered when a building surveyor lodges commencement and final permits for the development.

The proactive sites are typically large buildings with project managers and professionals handling each project through to completion – these sites are mainly compliant throughout. However, WSUD is not singled out specifically in smaller developments and 'mum and dad' developers may not always follow up with a WSUD report once the permit is issued. They may be doing the works but planners aren't currently required to actively verify compliance. CoPP is currently working to develop new systems and processes to achieve greater oversight over the compliance of smaller developments.

Legal point of discharge

The legal point of discharge report call for development drainage plans. This can be utilised as a check in point to ensure WSUD and onsite detention/retention requirements have transferred from planning to engineering drawings and are being implemented.

What actions are the most critical to improve compliance and implementation?

Clarification of mechanisms to list assets on title would be of benefit as this could serve to ensure both knowledge of assets and accountability transfer over time.

Onsite wastewater system management provides an example of a more strenuously regulated compliance process. While there are problems with the way this is implemented it provides a demonstrated model which could be potentially be applied to WSUD.

SEPP, BPEM and VPP's could work together to provide the statutory weight for an ongoing compliance regime. Currently the draft SEPP has limited detail on ongoing maintenance of WSUD assets. If compliance was to be the role of council, cost recovery would need to be an essential component.

Policy makers need to ensure that support is provided to deliver on any new requirements. Generally, local government will struggle to implement WSUD policy without support and a structured program and guidelines developed by DELWP to support this.

2.6 Opportunities to support stormwater management in the public realm

What would help responsible authorities to determine and communicate the costs and benefits of public stormwater infrastructure?

Clear plans, targets and reporting frameworks are required in order determine the benefits of public stormwater infrastructure. There is sufficient knowledge in the industry to develop high quality prioritised plans which utilise accepted cost benefit assessments. However, non-monetised

benefits remain very hard to integrate quantitatively. Despite this there is a lot of detailed planning that can be undertaken to support and communicate the opportunities and benefits of public realm stormwater infrastructure. Public realm IWM planning should be an integral part of the SEPP mandated stormwater/IWM plan requirement. This should extend beyond local government with and authorities responsible for assets in the public realm (e.g. Vic Roads, VicTrac) should be required to develop detailed IWM plans.

What mechanisms should councils use to recover the construction and maintenance costs of public stormwater infrastructure?

Council officer consider there are two key funding mechanisms to improve stormwater management which need to be explored in tandem.

Area-based levy

The State Government should consider an easier way for Councils to introduce area-based development contributions requirements, where justified by intensifying development in a localised flooding issue / catchment.

This mechanism would need to transfer funds across municipal boundaries – see our description of Elster Creek catchment issues in Section 2.3.

The Development Contributions Plan Overlay is a complex and cumbersome tool for Council to apply to established urban areas. Further, a DCP relies on Council committing to a long-term plan of infrastructure projects and cannot be relied upon to address drainage problems that were not anticipated by the plan.

State-wide levy

A state-wide levy system should be explored to fund future hard and soft, blue and green infrastructure and interventions in the public realm. Quarantined IWM funding streams for local government are necessary for a step-change uptake. NSW introduced a council applied stormwater levy in the mid 2000's. This provides an example which delivers a dedicated funding stream to local government specifically targetted at stormwater outcomes.

The Waterways and Drainage charge imposed on water bills in Victoria is not accessible to local government. This is despite the fact local government controls over \$10 billion worth of drainage assets in Victoria and manages significant areas of contributing urban catchments on behalf of the community. A dedicated and ongoing portion of this funding stream would be another option to support increased investment and uptake of IWM by local government.

Ultimately competing against all council services for general revenue does not enable an opportunity for sustained uptake of IWM.

Should offsets be used to improve stormwater management? If so, how should they be used?

Voluntary stormwater offsets

~~Offsets can provide benefits however they should not be considered a universally applicable tool.~~

There is potential to pervert outcomes through skewed incentives and also through the practicality of actually providing alternative infrastructure in a relevant location. In the City of Port Phillip, development density and proximity to sea level combine to make it very hard to treat stormwater

once it has reached a stormwater pipe. Thus, once the stormwater 'problem' has transferred from the private realm it becomes much more difficult to manage.

An offset, in the city of Port Phillip could therefore lead to a negative outcome with untreated water flowing to the Bay. From a pure load based perspective this could be offset through catchment actions elsewhere however the range of local water quality issues associated with stormwater discharging directly to Bay beaches would not be managed. This is an issue for any sensitive receiving environment and headwaters are also particularly at risk from inappropriately applied offsets.

Water and pollutant balance work done at the City of Port Phillip has shown that on-lot implementation of IWM is a significant contributor to load reduction in the municipality and is required alongside municipal actions in order to reach adopted targets. Experience with the implementation of the WSUD local policy in the City of Port Phillip has also shown that it is very rare that a developer cannot meet the intent of the policy

In areas with less constraints in the public realm and more favourable catchment characteristics it can be viable to provide offset mechanisms however, this is not a universal solution and needs to be considered in this context.

If offsets are introduced for IWM in Port Phillip, then they would need to be qualified by a strict requirement that the application can demonstrate IWM cannot be provided onsite or alternatively that council has identified a specific downstream opportunity making the use an offset beneficial.