

2019

Thursday 28th February 2019
Breakfast Seminar - Stormwater Policy Changes

Stormwater Planning Policy Changes

Breakfast Seminar



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Background to reforms



Chris Chesterfield
CRC for Water Sensitive Cities

Hi

Victorian
Stormwater
Committee

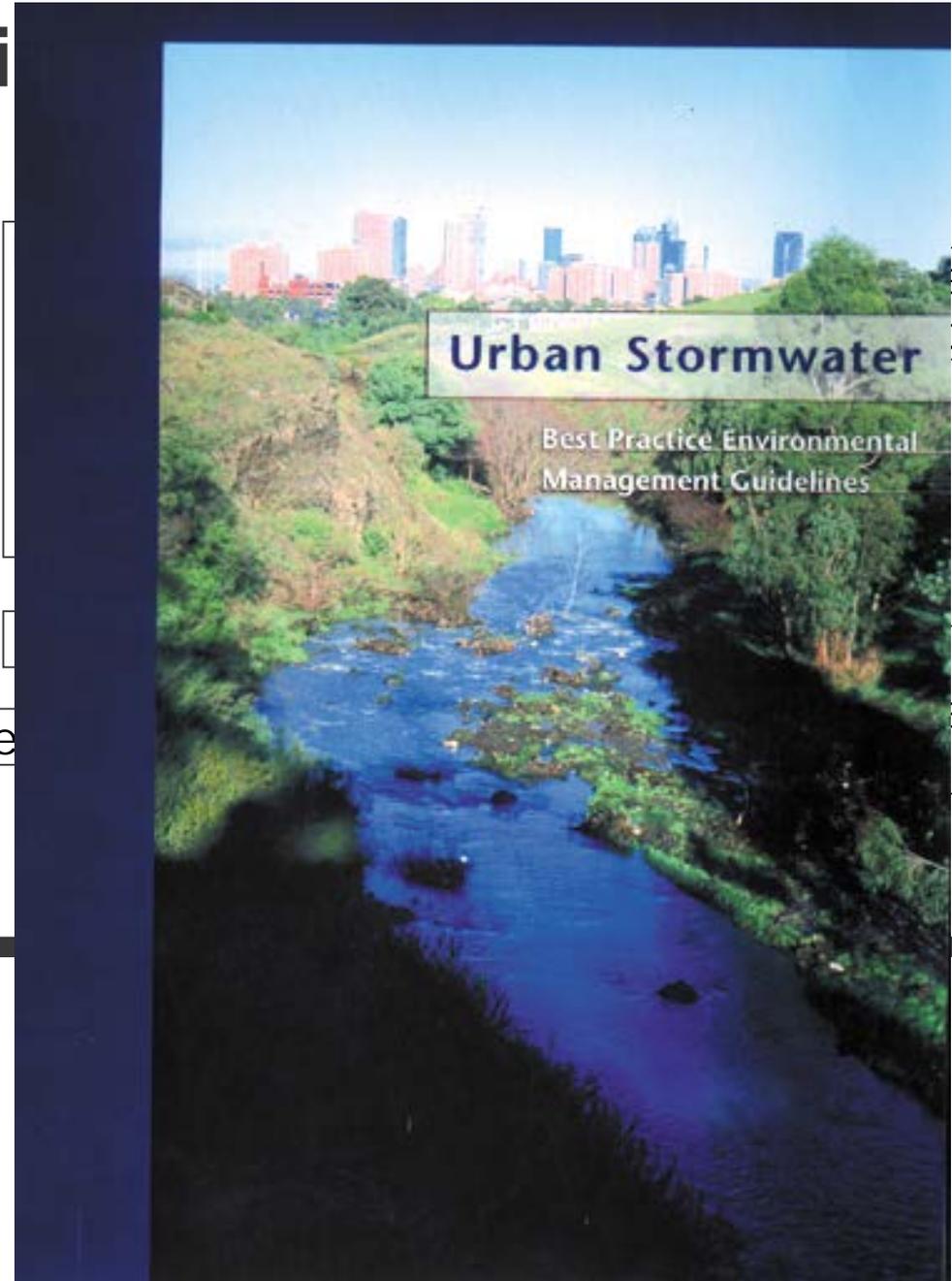
CSIRO Study

BPEM Guidelines

VSAP/SMPs

Clearwater

1997 1999 2000 2002



Urban Stormwater

Best Practice Environmental
Management Guidelines

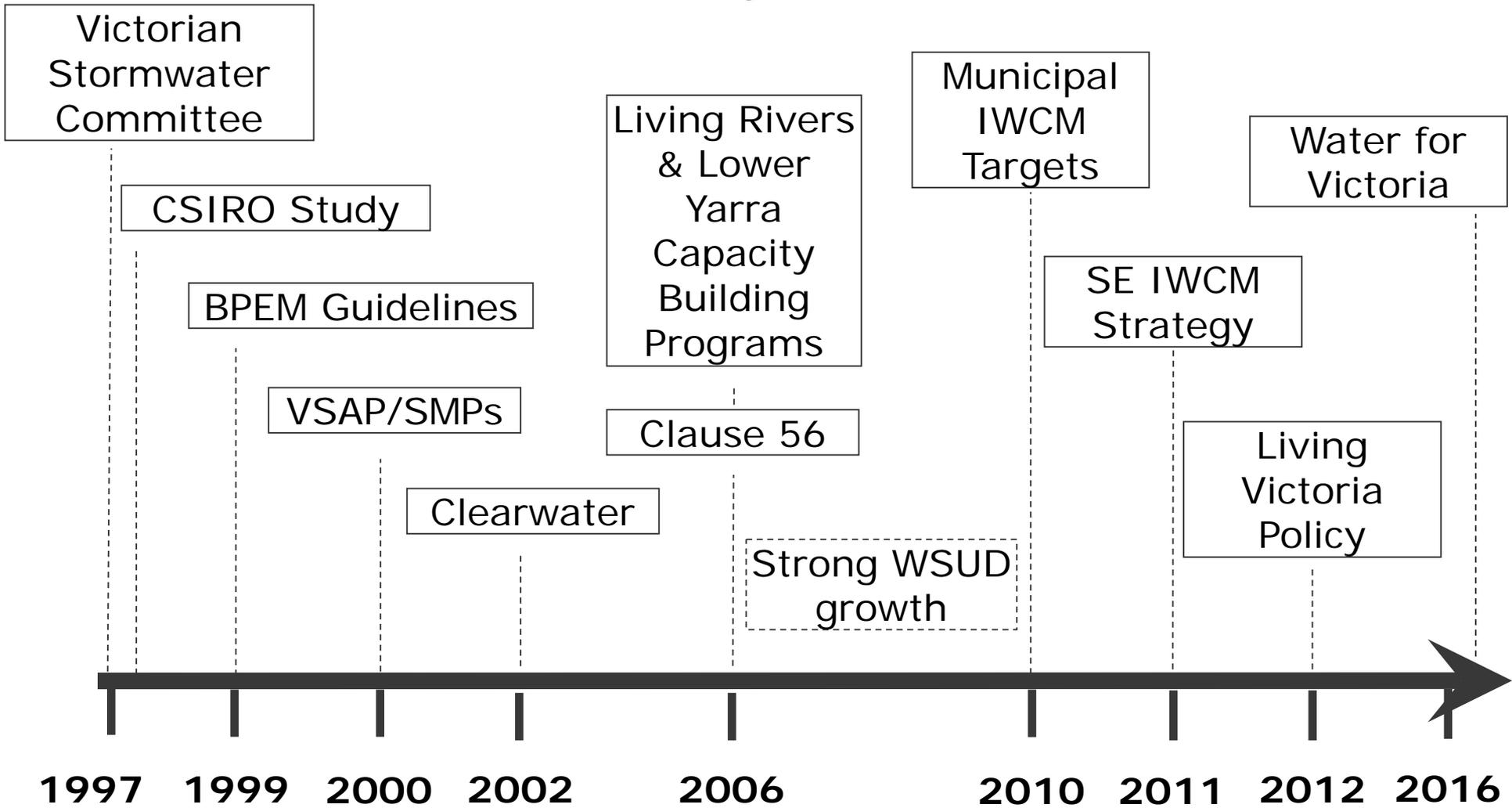
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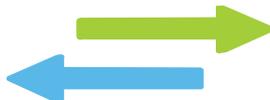
2016



History of WSUD



Transformational change in urban water

Separate water, sewerage, drainage systems  Integrated planning and management

Public Health
1890s

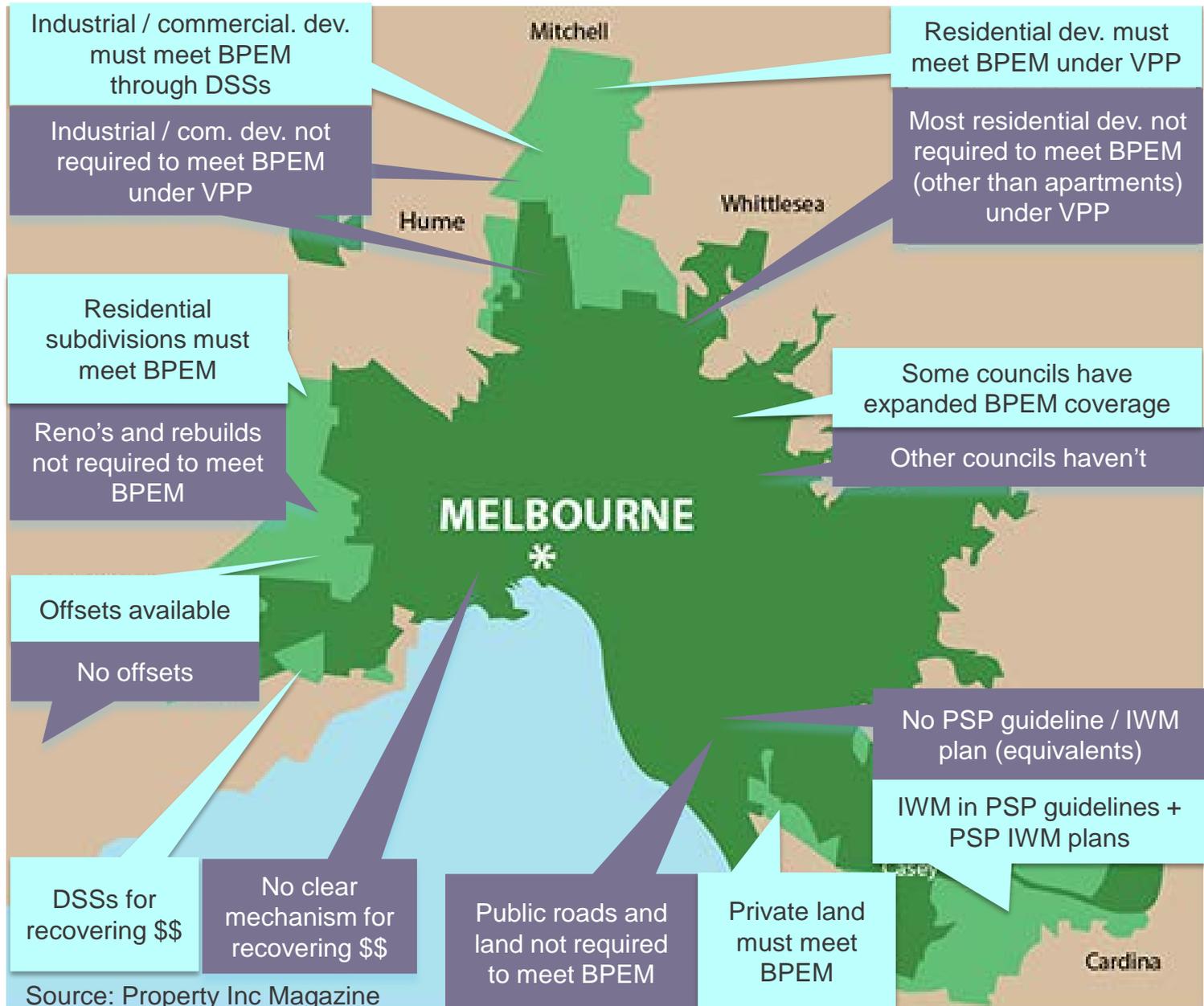
Growth
Post WWII

Efficiency
1990s

TODAY:
*Liveability,
Sustainability,
Resilience*

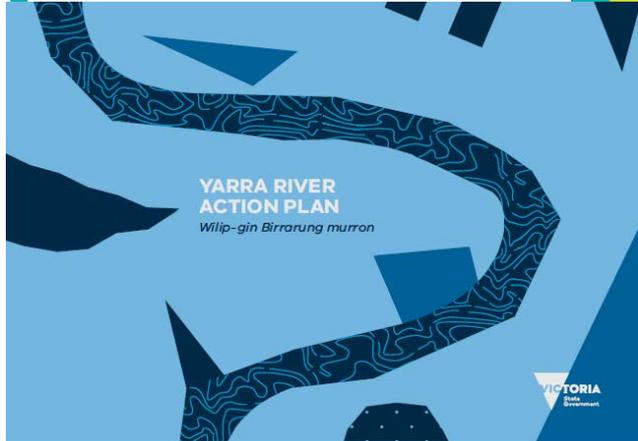
Inconsistencies and inequities in our approach to stormwater management

VPP = Victoria Planning Provisions
 BPEM = the stormwater management standards
 DSS = Development Services Schemes
 PSP = Precinct Structure Plans
 IWM = Integrated Water Management



Source: Property Inc Magazine

Government commits to improve stormwater management through planning system reforms



Part A (core)

Specific advice on which types of development, of those currently not subject to the State's urban runoff management objectives, should be required to manage their stormwater and the associated reforms

Part B (future directions)

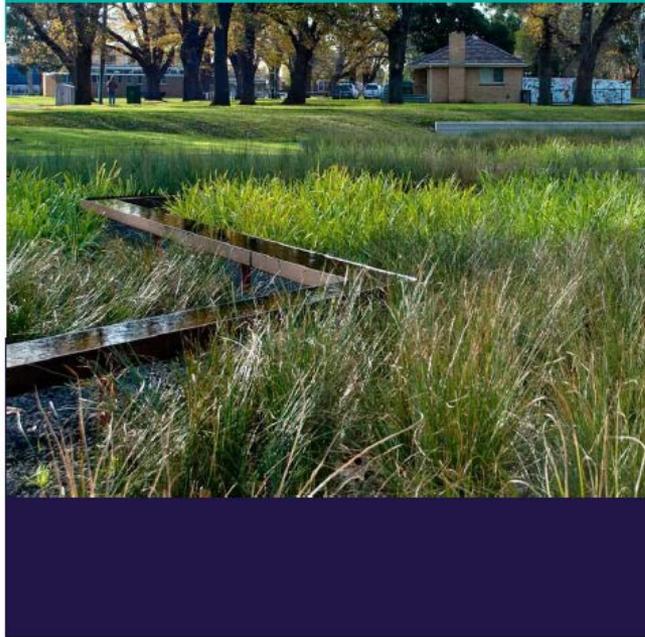
Future policy directions for improving stormwater management and strengthening the links between urban water management and the planning and development system more broadly

Improving Stormwater Management Advisory Committee



Dr Jeremy Cheesman, Julie Katz, Chris Chesterfield (chair), Sue Porter

Wide consultation



6 committee meetings
6 stakeholder workshops
46 submissions
7 one on ones

- Consultation indicated widespread support for application of stormwater standards across all development types.
- Raised a number of implementation issues
- Planning system only part of the response

Other feedback:

- Offsets are useful if they can be designed to provide net benefits and protect sensitive areas.
- Councils struggle with funding stormwater infrastructure costs
- Roles/accountabilities not well defined
- Skills, tools and guidance need investment
- Community awareness low
- Support for linking IWM plans to planning system

Committee submitted its report in September 2018



The Committee's 18 recommendations include:

- **Planning reforms (3)** – immediate reforms, satisfying Part A of the Terms of Reference (ToR);
- **Future policy directions (7)** – longer term policy directions, satisfying Part B of the ToR;
- **Supporting actions (8)** – actions to ensure successful implementation of the (Part A) planning reforms, satisfying Part B of the ToR.

Rec 1 – Expand the stormwater planning provisions (phase 1): That the Victorian Government amend the VPPs to expand the current stormwater management requirements to:

- commercial subdivisions and developments
- industrial subdivisions and developments
- public-use developments
- multi-dwelling residential subdivisions and developments.

Rec 2 – Expand the stormwater planning provisions (phase 2): That, subject to further consultation, the development of deemed-to-satisfy solutions (rec. 12), adequate guidance and tools (recs 13, 14 and 15) and offset processes (rec. 5), the Victorian Government amend the VPPs to expand the current stormwater management requirements to:

- single-dwelling developments
- extensions over 50 m².

Rec 3 – Insert an IWM clause into the Planning Policy Framework (PPF): That the Victorian Government amend the PPF to embed the concepts of IWM objectives and strategies.

Rec. 4 – Amend the building and plumbing controls

Rec. 5 – Establish effective offsetting arrangements

Rec. 6 – Clarify local governments' roles and responsibilities

Rec. 7 – Strengthen compliance requirements

Rec. 8 – Determine funding sources for public stormwater infrastructure

Rec. 9 – Link water management with urban planning

Rec. 10 – Set stronger, place-based BPEM stormwater performance objectives

Rec. 11 – Strengthen enforcement of stormwater construction requirements

Rec. 12 – Prepare deemed-to-satisfy solutions

Rec. 13 – Review the STORM and MUSIC tools

Rec. 14 – Build technical expertise

Rec. 15 – Improve guidance

Rec. 16 – Improve awareness of the VPP changes

Rec. 17 – Investigate options for rainwater tank maintenance and operation

Rec. 18 – Broaden rating systems to include IWM



The new stormwater provisions



Emma Stewart, DELWP

Planning and Environment Act 1987
VICTORIA PLANNING PROVISIONS
Notice of Approval of Amendment
Amendment VC154

The Minister for Planning has approved Amendment VC154 to the Victoria Planning Provisions (VPP) and all planning schemes in Victoria.

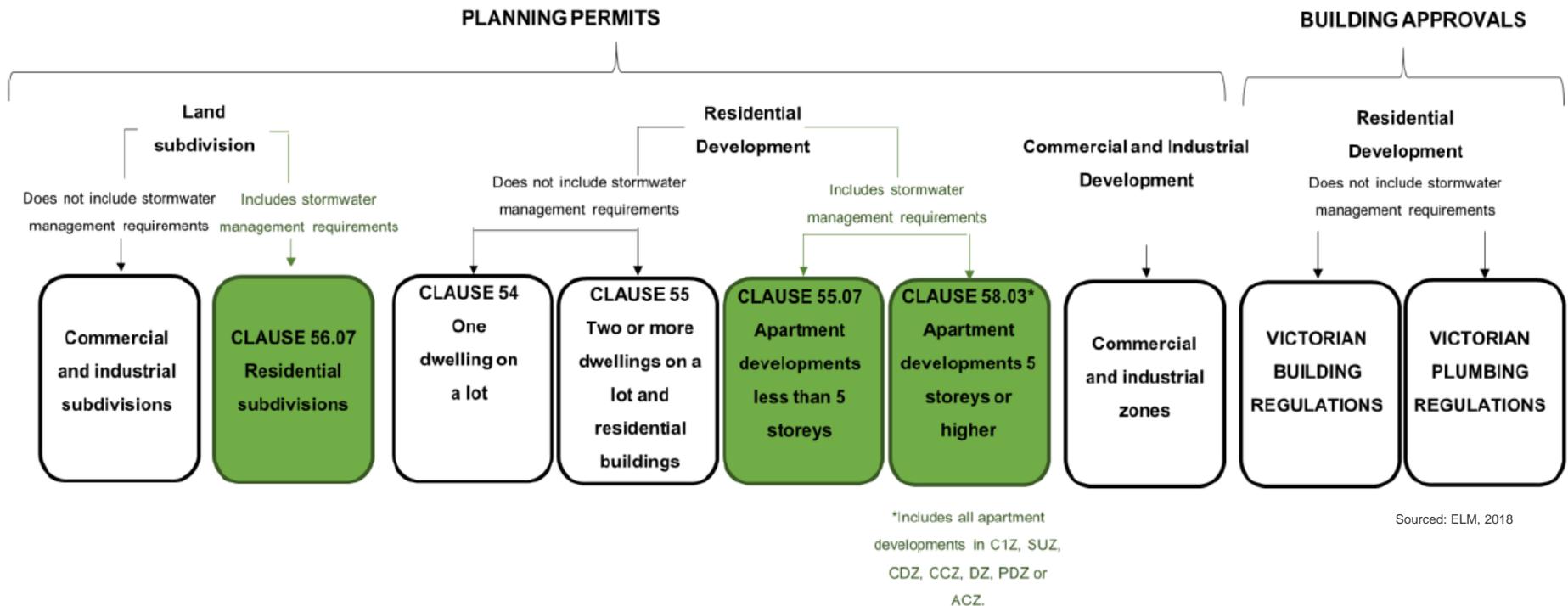
The Amendment comes into operation on the date this notice is published in the Government Gazette.

The Amendment changes the Victoria Planning Provisions and all planning schemes in Victoria by:

- deleting Clause 14.02-3S (Water conservation) and integrating these policy statements into a new Clause 19.03-3S (Integrated water management);
- amending Clause 19.03-3S (Water supply, sewerage and drainage) to update and broaden water, drainage and stormwater policies to integrated water management policies;
- deleting Clause 19.03-4S (Stormwater) and integrating this policy into the new Clause 19.03-3S (Integrated water management), with consequential renumbering throughout Clause 19.03;
- inserting a new particular provision at Clause 53.18 for 'Stormwater management in urban development';

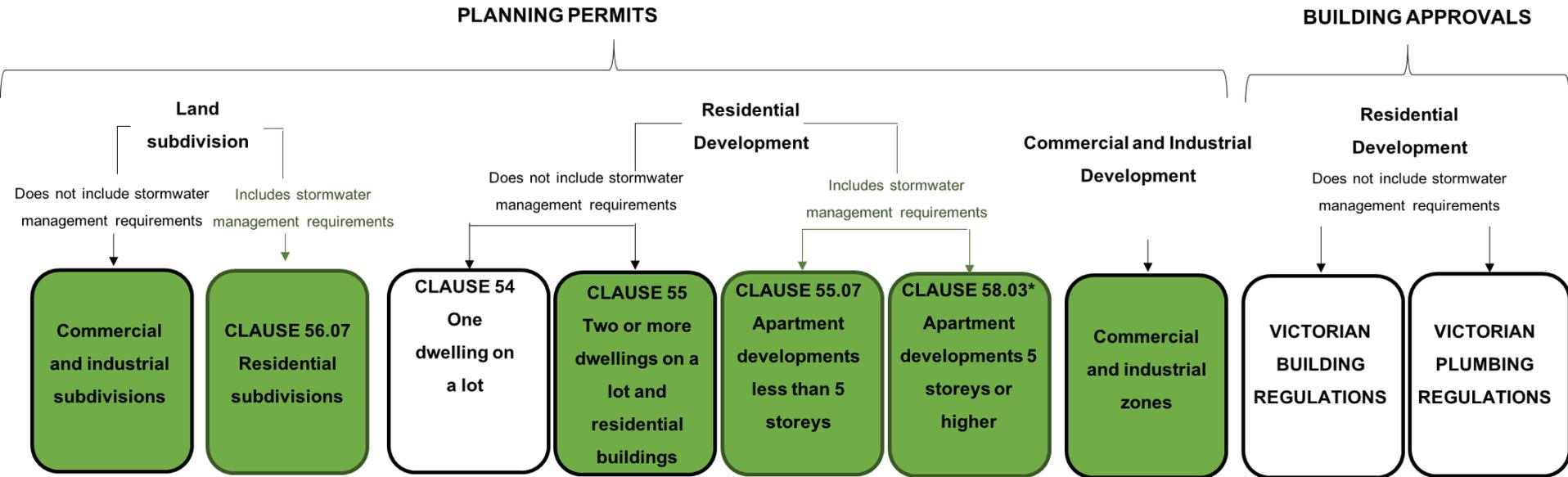
Government is currently considering the committee's longer-term recommendations and is working with key stakeholders, to determine the most effective response and pathways for implementation.

State-based planning requirements ('before')



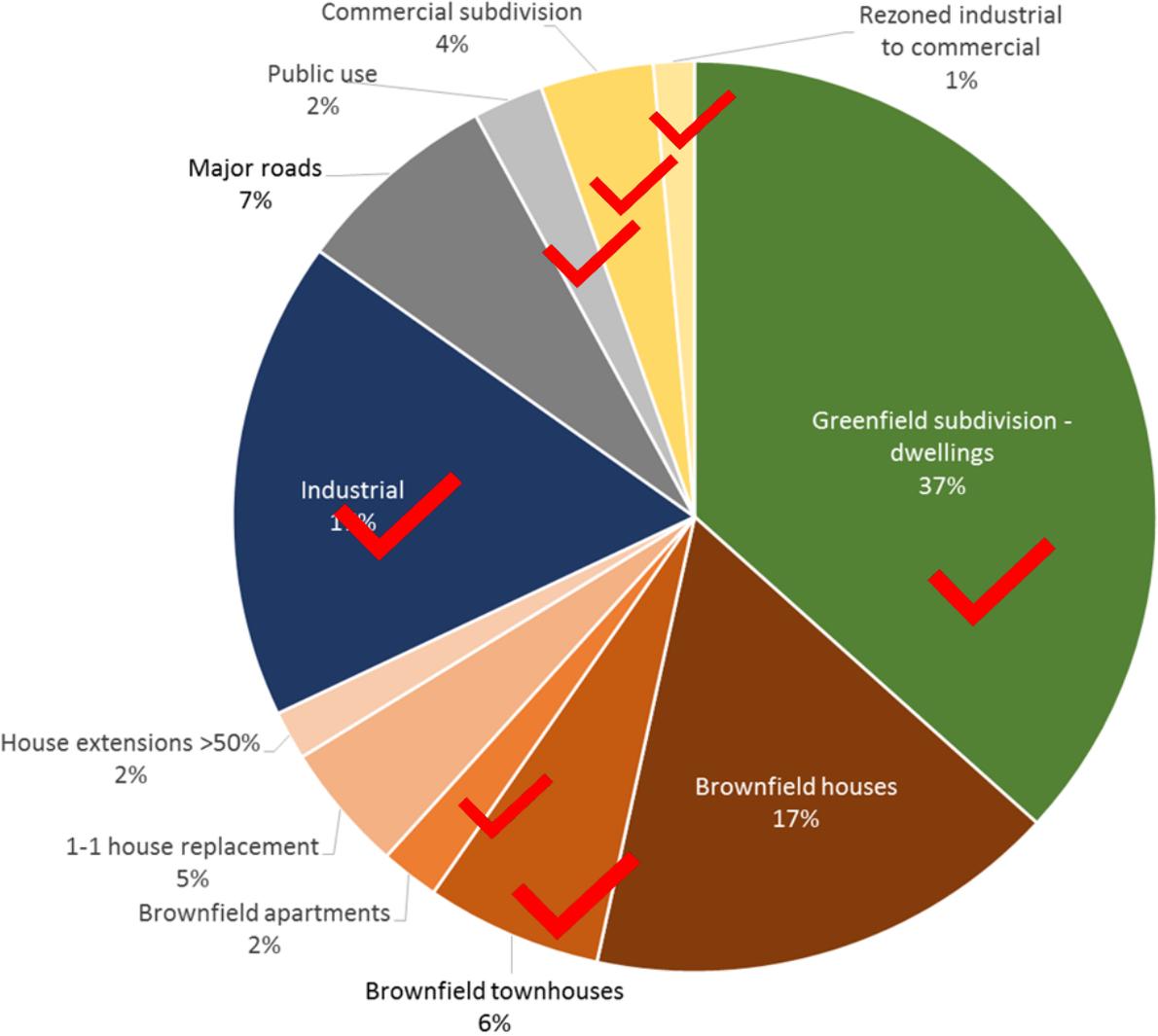
Sourced: ELM, 2018

State-based planning requirements ('after')



*Includes all apartment developments in C1Z, SUZ, CDZ, CCZ, DZ, PDZ or ACZ.

Development types (volume)



Future development: estimated impervious area 2020-2050

The nitty gritty....



Victoria Planning Provision changes:

- New clause (53.18) and changes to an existing clause (55.03) to expand the stormwater requirements to more development types
- New objectives to manage toxicants and encourage broader benefits of stormwater management

What's in?

Applies to an application to:

- subdivide land ✓
- construct a building ✓
- construct or carry out works ✓

In both

Clause 53.18:

- commercial zones ✓
- industrial zones ✓
- public-use zones ✓

Clause 55.18:

- Construct townhouses ✓



What's out of clause 53.18 ?

- Developments and subdivisions approved or lodged prior to the amendment 
- Developments which do not require planning permission 
- Vicsmart applications 
- Applications for land within development or incorporated plans approved before the amendment 
- Extensions and works < 50m² 
- Applications, after the amendment, to amend existing planning permits. 

If in doubt, ask a planner!

Key elements of clauses

Industrial / commercial applications (Clause 53.18)

to:

- subdivide land
- construct a building
- construct or carry out works

Stormwater management objectives + standard (W1)

Stormwater management objectives + standard (W2)
+
Site management objectives
+ standard (W3)

Decision guidelines

Same for Clause 55.03 (townhouses)

Stormwater management standard W1

The stormwater management system should be:

- Designed and managed in accordance with the requirements and to the satisfaction of the relevant drainage authority.
- Designed and managed in accordance with the requirements and to the satisfaction of the water authority where reuse of stormwater is proposed.
- Designed to meet the best practice performance objectives for stormwater quality as contained in the BPEM.
- Designed to ensure that flows downstream of the subdivision site are restored to pre-development levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts.
- **Designed to contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.**

As per the previous Clause 56

Standard W2

The stormwater management system should be designed to:

- Meet the current best practice performance objectives for stormwater quality as contained in the BPEM.
- Contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.
- **Minimise the impact of chemical pollutants and other toxicants including by, but not limited to, bunding and covering of roofing of storage, loading and work areas.**

Clause 55.03 – Permeability and stormwater management objectives and standard B9

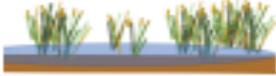
Objectives:

- Similar to 53.18 (including the cooling / liveability objective)
- >20% perviousness objective (unchanged)

Standard

- NEW - cooling / liveability objective
- NEW – requirement to meet BPEM

What does this all mean?

Development type	WSUD assets required to achieve standards		
Greenfield residential subdivision 10 ha catchment area	Surface area 3.4% of catchment area  Wetland		
Greenfield industrial subdivision 10 ha catchment area	Surface area 5.2% of catchment area  Wetland		
Infill townhouses (per townhouse) Site area per townhouse: 210 m ²	 2kL Rainwater harvesting for non-potable uses	 1.5 m ² Raingarden	
Commercial precinct 4.35 ha catchment area	 100 m ² Sediment basin	 400 m ² Raingarden	
Office block Site area 1100 m ²	 6kL Rainwater harvesting for non-potable uses	 x1 Sediment trap	 2 m ² Raingarden

Clause 53.18 - What's in ?



Urban cooling

Reduce heat radiation from buildings and hard surfaces through:

- Shade trees in car parks or over driveways
- More open space and trees
- Green roofs
- Green walls



Infiltration, habitat, amenity



Options

- Passive irrigation
- Integrate assets into communal open space
- Tree pits and permeable paving (driveways and carpark)
- Stormwater harvesting (major developments only)



Control harmful chemicals

Options

- Careful layout
- Consider alternative less harmful substances
- Roofed, designated storage area
- Internal drainage design to sewer or a treatment device
- Bunding



Standard W3

Standard W3 requires that application describe how the site will be managed prior to and during the construction period. The application should set out requirements for managing:

- Erosion and sediment
- Stormwater
- Litter, concrete and other construction wastes
- Chemical contamination.



Amendment VC154 - Stormwater management

Planning Advisory Note 75

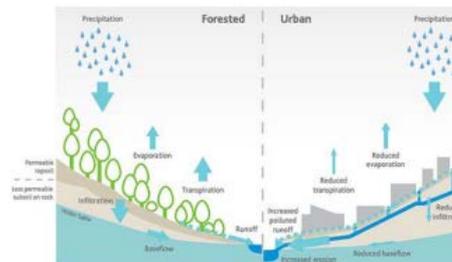
OCTOBER 2018

This advisory note provides information about the changes made to the *Victoria Planning Provisions (VPP)* and all planning schemes by Amendment VC154 to introduce new stormwater management provisions for urban development and amend State planning policies related to integrated water management.

Why is stormwater management important?

The increase in stormwater from urban development can impact the health and amenity of our waterways. Large volumes of stormwater entering our waterways can cause flooding that damages both natural and built environments.

Traditional stormwater management practices direct stormwater into drainage systems that are directly connected to urban waterways, carrying pollutants to our rivers and bays. Stormwater flows also impact waterways by scouring creek and riverbeds and degrading aquatic habitat.



Impact of development on the urban water cycle (adapted from Walsh et al. 2004)

Why have new stormwater management provisions been introduced?

The new provisions ensure that stormwater generated from all forms of urban development, not just residential subdivision and apartment developments, is managed in an integrated way to mitigate the impacts of stormwater runoff on the environment, property and public safety, and to provide cooling, local habitat and amenity benefits.

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Implications for industry



Kate Matthews
Stormwater Victoria

Who's affected?

1. Development proponents

- Developers
- Consultants (engineers, stormwater specialists and planners)
- Council (when developing public land <\$1 million)

2. Development assessors

- Council statutory planners
- Council internal referrals (engineering, assets, ESD, stormwater officers)

3. Strategy

- Council strategic planners

4. Melbourne Water

Development Proponents

- BPEM - It's not just subdivisions any more
- Cost – offset or asset
- Early planning and integration – more work up front
- Not just engineering
- Varying Council skills and experience



Development Assessors



If already have a local policy for WSUD/ESD no real change

If not:

- Workload and resourcing
- Increased detail and technical content
- Administrative arrangements – referrals, permit conditions – make sure you make 60 stat days
- Applicant pressure – what do you want?
- Assets

Strategy

- Structure plans and rezoning – opportunities for local/regional approach
- IWM and Stormwater Management Plans – opportunities for these to be implemented through the controls; spatial opportunities
- Opportunities for development of Council offset strategies



Offsets

What are stormwater quality offsets?

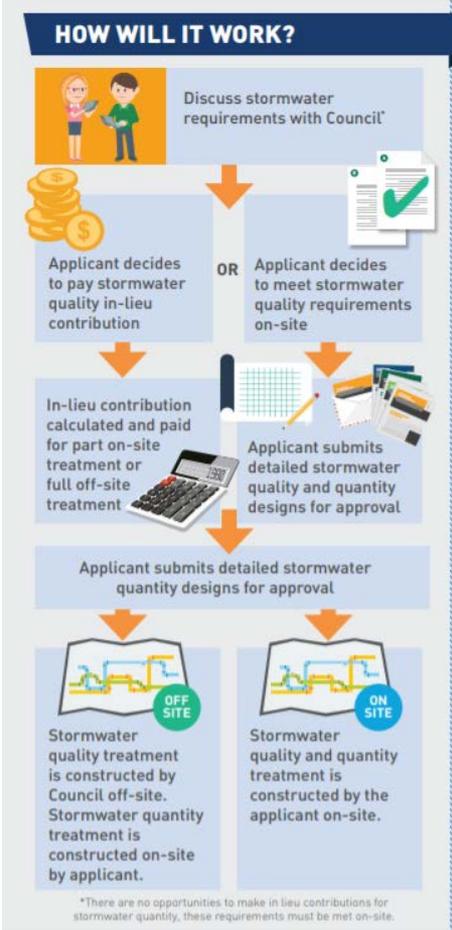
- Developer enters into an agreement with relevant drainage authority to financially contribute to off-site stormwater management in lieu of providing on-site treatment.
 - Already available for residential subdivisions in Melbourne (Clause 56) through MWCs Stormwater Quality Offset scheme
- X** Not drainage contributions (MWC drainage scheme)
- X** Not development contributions (DCP/ICP)

When to use?

- Not in MW DSS or growth area where there's an existing framework for funding SW treatment
- Onsite treatment not practical or desirable
- To fund planned local/regional stormwater treatment works in that catchment, via an existing offset scheme
- Council and developer both agree to it.



Example – Kingston Offset Scheme



Asset ownership and maintenance

- Who's going to own it?
- Who's going to maintain it?
- How do you maintain it?
- How much will it cost?



- Where is it?
- Is maintenance burden practical for likely future owners?
- Who's going to monitor compliance and how?

The detail is in the permit conditions!

Application requirements

What does the planning scheme require?

“An application must be accompanied by details of the proposed stormwater management system, including drainage works and retention, detention and discharges of stormwater to the drainage system” – Clause 53.18

But also...

Need to provide sufficient information to Council which demonstrates that you comply, and how you comply, with all the other standards – eg urban cooling/habitat/etc, BPEM, site management, pollutant control, infiltration (as relevant to development type).



1. Plans

What are you doing, where is it going, and does it fit?

2. Modelling

Do you (or can you) meet BPEM requirements?

3. Written response to standards

How does your proposal comply with the requirements?



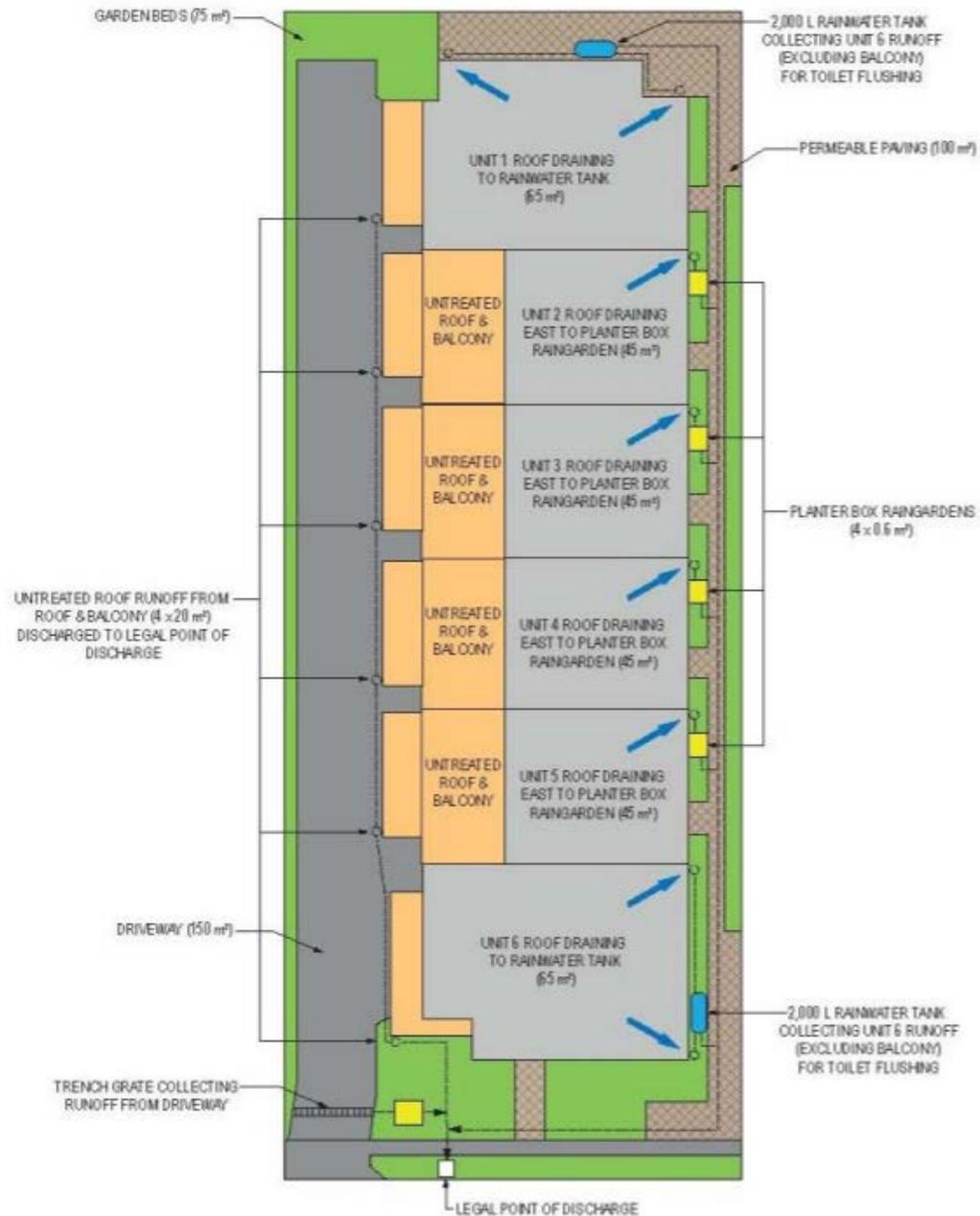
Plans

Application

- **Site plan** – show all assets/WSUD treatments and any IWM features on the site layout plan with everything else
- **Landscape plan** – if planting design, passive irrigation, etc forms part of response to requirements, show
- **Site management plan** (depending on Council)
- **Separate WSUD/IWM plan** showing all features on a stripped back background
- **Concept WSUD asset design** – larger assets only (wetlands, bioretention basins, sed basin, etc) – sufficient design detail to confirm spatial requirements

Permit conditions

- Detailed engineering design
- Site Management Plan (final)
- Asset maintenance plan (final)
- Handover arrangements (if public)



Modelling - SWQ



STORM – Online tool

- Print out of STORM report
- Make sure meets 100% or more
- Make sure report inputs and results match plan



MUSIC – Proprietary software

- Provide a copy of the model file
- Print out the modelling results
- Provide summary of your model inputs for each treatment train (ie catchment size, % impervious, treatment area, etc)
- Provide a print out of the model schematic

Bonus points:

- Provide details of model parameters
- Provide results of MUSIC auditor run (if using Melbourne Water MUSIC Guidelines)

	Sources	Residual Load	% Reduction
Flow (ML/yr)	67.9	38.2	43.8
Total Suspended Solids (kg/yr)	9270	1830	80.3
Total Phosphorus (kg/yr)	20.2	6.79	66.4
Total Nitrogen (kg/yr)	154	74.3	51.7
Gross Pollutants (kg/yr)	2570	5.97	99.8

BURWOOD HIGHWAY

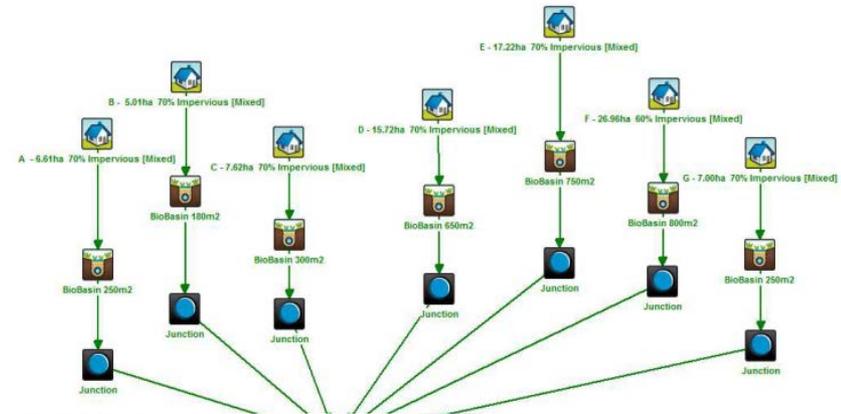
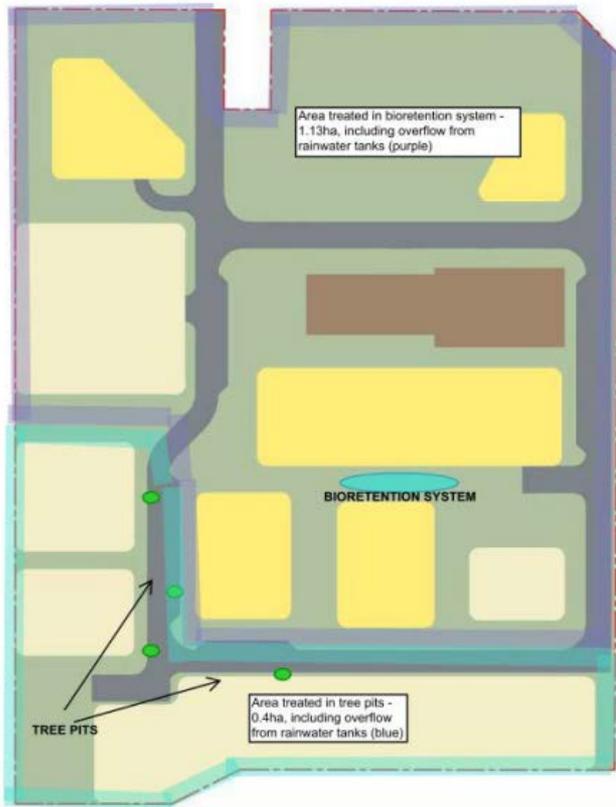


Table 5-5 Bioretention MUSIC Parameters

Parameter	Source Node
Low Flow By-pass (m ³ /s)	0.00
High Flow By-pass (m ³ /s)	0.06
Extended Detention Depth (m)	0.30
Unlined Filter Media Perimeter (m)	1.00
Saturated Hydraulic Conductivity (mm/hr)	180.00
Filter Depth (m)	0.50
TN Content of Filter Media (mg/kg)	600
Orthophosphate Content of Filter Media (mg/kg)	55.0
Based Lined	Yes
Underdrain Present	Yes
Submerged Zone with Carbon Present	0.4



Assessment against standards

- Say what you have done (or will do) to meet each standard.
 - Don't forget (if WSUD) details of maintenance and asset ownership
- Where applicable, be explicit why you've chosen (or not chosen) to respond the way you have. Eg:
 - Opportunities
 - Site constraints
 - Practical/operational issues
 - Brief dot point summary of options analysis if complex
- Make sure if it doesn't meet the standard, it meets the objective
- Make sure shown on plan and consistent with modelling and rest of documentation.

53.18-5

26/10/2018
VC154

Stormwater management objectives for buildings and works

To encourage stormwater management that maximises the retention and reuse of stormwater.

To encourage development that reduces the impact of stormwater on the drainage system and filters sediment and waste from stormwater prior to discharge from the site.

To encourage stormwater management that contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.

To ensure that industrial and commercial chemical pollutants and other toxicants do not enter the stormwater system.

Standard W2

The stormwater management system should be designed to:

- Meet the current best practice performance objectives for stormwater quality as contained in the *Urban Stormwater - Best Practice Environmental Management Guidelines* (Victorian Stormwater Committee, 1999).
- Minimise the impact of chemical pollutants and other toxicants including by, but not limited to, bunding and covering or roofing of storage, loading and work areas.
- Contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.

Resources

Council planning resources

Local stormwater/WSUD policies

[Bayside](#)
[Kingston](#)
[Casey](#)
[Monash](#)
[Melbourne](#)
[Yarra](#)
[Moonee Valley](#)
[Port Philip](#)
[Stonnington](#)
[Hume](#)
[Campaspe](#)
[Bass Coast](#)

Local ESD (including IWM) policies

[Greater Bendigo](#)
[Greater Dandenong](#)
[Hobsons Bay](#)
[Whittlesea](#)
[Wyndham](#)
[Whitehorse](#)
[Manningham](#)
[Moreland](#)
[Darebin](#)
[Banyule](#)
[Knox](#)
[Brimbank](#)

Application resources – examples

[DELWP Practice Note](#) – formal guide to the new controls
[Moreland](#) – application checklists and example plans for a variety of residential developments
[Port Philip](#) – compliance guidelines, checklist and examples
[Moonee Valley](#) – checklists and example plans, including site management plans
[Greater Bendigo](#) – WSUD kit
[Bayside](#) – application guidelines and example plans

Technical guidelines (modelling, design, construction)

Melbourne Water

[STORM calculator](#)
[MUSIC auditor](#) - 'how to' video [here](#)

Melbourne Water technical guidelines page:

- WSUD asset life cycle costings and model maintenance guidelines
- MUSIC guidelines
- Stormwater harvesting guidelines
- WSUD life cycle costings and maintenance guidelines
- Design and construction guidelines for variety of assets

<https://www.melbournewater.com.au/planning-and-building/developer-guides-and-resources/guidelines-drawings-and-checklists/guidelines>

Council

[South-Eastern Growth Council WSUD guidelines](#) – note that some individual Councils have their own addendums

[Melbourne](#)

[Port Philip](#)

[North-West Growth Council WSUD guidelines](#) - note that some individual Councils have their own addendums

[Greater Bendigo](#)

[Mildura](#)

[Ballarat](#)

[Baw Baw](#)

[Wyndham](#)

[Moreland](#) – tree pits and raingardens



IWM

Example Council IWM strategies:

[Melbourne](#)

[Casey](#)

[Monash](#)

[Kingston](#)

[Resilient Melbourne](#) – IWM information ‘hub’

[Clearwater](#) – capacity building and case studies

[Melbourne Water](#) – funding opportunities for IWM projects

Stormwater offset schemes

[Kingston](#)

[Greater Geelong](#)

[Melbourne Water](#) – non scheme contributions

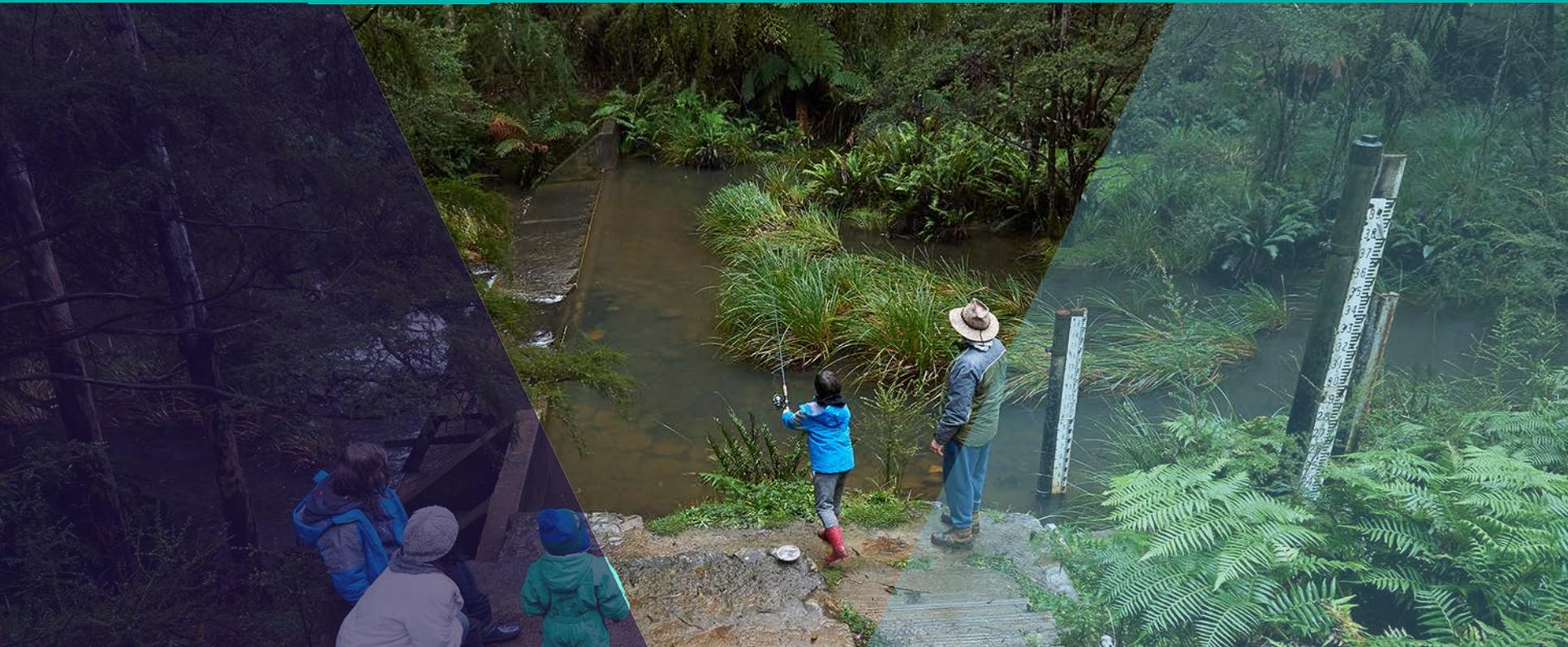
Site management

[EPA guidelines- management of erosion and sediment](#)

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Next steps and other stormwater initiatives



Emma Stewart, DELWP

Next steps

- **Training**
- **The EPA's BPEM Review**
- **Offsets policy**
- **Review of STORM**
- **Building controls**



State Stormwater policies



Thank you

