STORMWATER VICTORIA

VICTORIA State Government
Environment, Land, Water and Planning

2019

Thursday 28th February 2019
Breakfast Seminar - Stormwater Policy Changes

Implications for industry

Practitioner's perspective

Kate Matthews
Stormwater Victoria

VICTORIA State Government | Environment, Land, Water and Planning

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

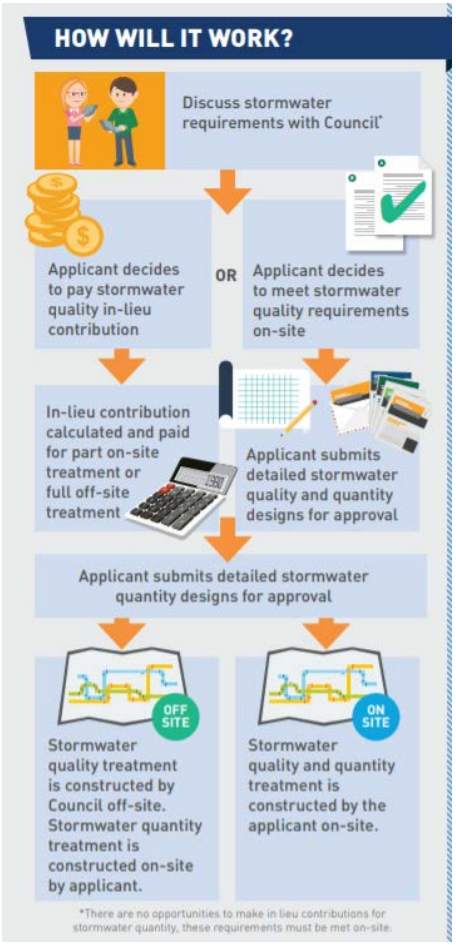
X Not drainage contributions (MWC drainage scheme)

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?

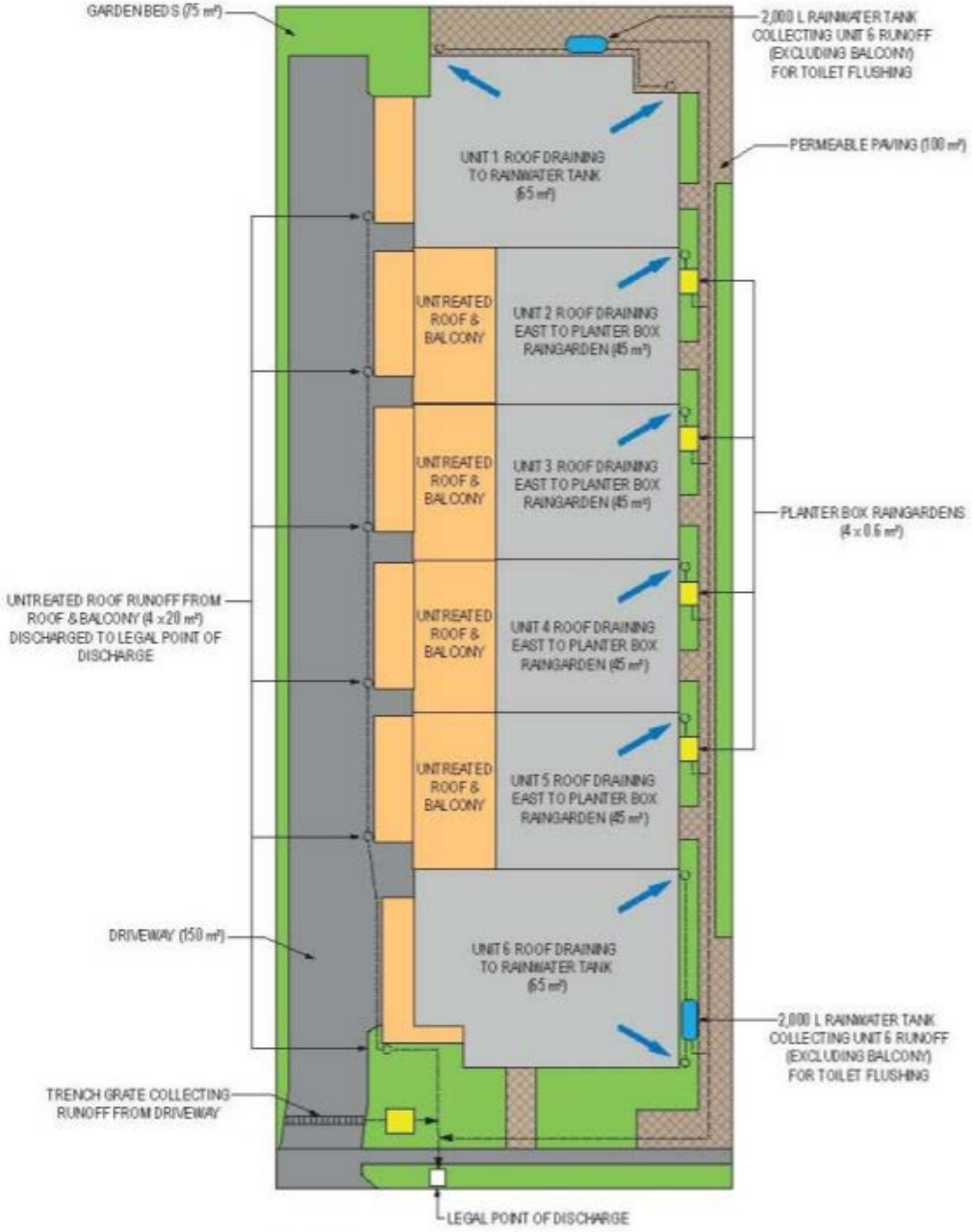
Plans

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)


GARDEN BEDS (75 m²)
2,000 L RAINWATER TANK COLLECTING UNIT 6 RUNOFF (EXCLUDING BALCONY) FOR TOILET FLUSHING
PERMEABLE PAVING (100 m²)
UNIT 1 ROOF DRAINING TO RAINWATER TANK (65 m²)
UNTREATED ROOF & BALCONY
UNIT 2 ROOF DRAINING EAST TO PLANTER BOX RAINGARDEN (45 m²)
UNTREATED ROOF & BALCONY
UNIT 3 ROOF DRAINING EAST TO PLANTER BOX RAINGARDEN (45 m²)
PLANTER BOX RAINGARDENS (4 x 0.6 m²)
UNTREATED ROOF RUNOFF FROM ROOF & BALCONY (4 x 20 m²) DISCHARGED TO LEGAL POINT OF DISCHARGE
UNTREATED ROOF & BALCONY
UNIT 4 ROOF DRAINING EAST TO PLANTER BOX RAINGARDEN (45 m²)
UNTREATED ROOF & BALCONY
UNIT 5 ROOF DRAINING EAST TO PLANTER BOX RAINGARDEN (45 m²)
DRIVEWAY (150 m²)
UNIT 6 ROOF DRAINING TO RAINWATER TANK (65 m²)
2,000 L RAINWATER TANK COLLECTING UNIT 6 RUNOFF (EXCLUDING BALCONY) FOR TOILET FLUSHING
TRENCH GRATE COLLECTING RUNOFF FROM DRIVEWAY
LEGAL POINT OF DISCHARGE

Modelling - SWQ

STORM – Online tool

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

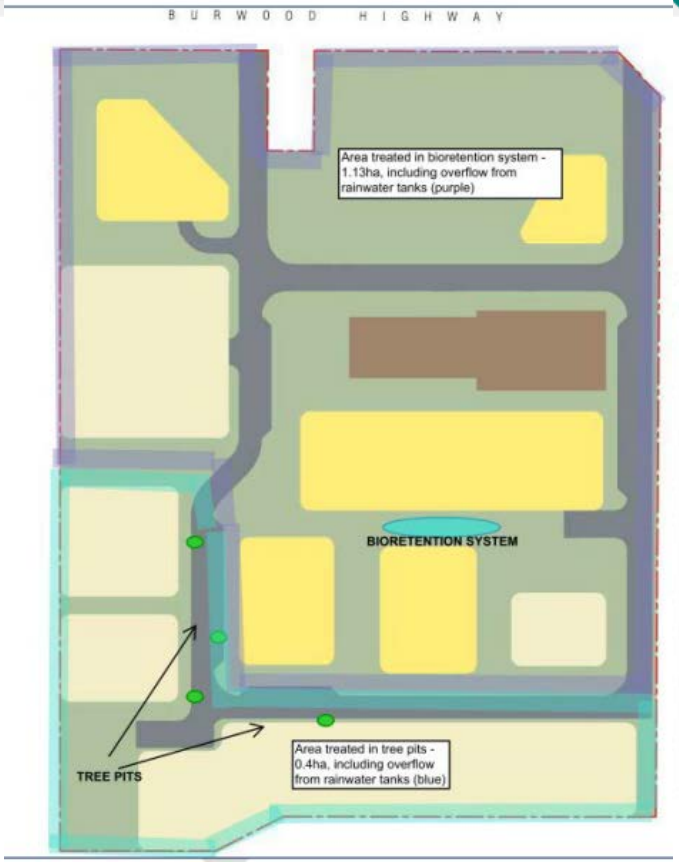
MUSIC – Proprietary software

- 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

<u>Bonus points</u>:

- 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



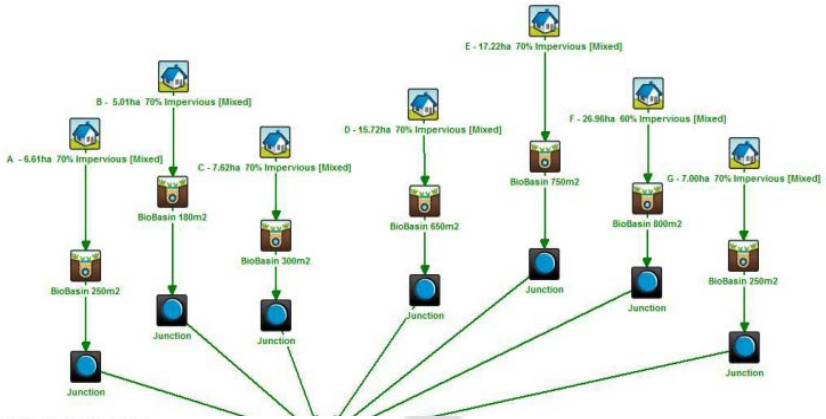


Table 5-5 Bioretention MUSIC Parameters

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

Stormwater/WSUD policies

Bayside
Kingston
Casey
Monash
Melbourne
Yarra
Moonee Valley
Port Philip
Stonnington
Hume
Campaspe
Bass Coast

ESD (including IWM) policies

Greater Bendigo
Greater Dandenong
Hobsons Bay
Whittlesea
Wyndham
Whitehorse
Manningham
Moreland
Darebin
Banyule
Knox
Brimbank

Application resources

DELWP practice note – formal guide to the new controls
Moreland – WSUD application checklists and example plans for a variety of residential developments
Port Philip – WSUD 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