

This checklist is a handy reference guide to support compliance with stormwater management requirements for residential and non-residential subdivisions, under relevant clauses of the Victoria Planning Provisions.

**This includes subdivisions covered by Clause 53.18-4 (stormwater management objectives for subdivision), Clause 53.18-6 (site management objectives), Clause 56.07-4 (stormwater management objectives) and Clause 56.08-1 (site management objectives) of the Victoria Planning Provisions (VPP).**

The subdivision application should consider the information required by your approval authority to satisfy requirements, including but not limited to the items in the checklist below. Please note that the requirements listed below may differ for different development types and from council to council.

Some councils may ask for a site layout plan showing the Water Sensitive Urban Design (WSUD) treatment systems proposed and demonstration that there is space to accommodate such treatment and that it satisfies all VPP objectives and standards. The design detail for each WSUD treatment system may then be a requirement of permit if a planning approval is granted.

Conversely, other councils may require design detail and supporting information as part of the application assessment process (before a decision on the outcome of the application is determined).

It is recommended that you check the requirements with your relevant local council.

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## A: Proposed development description

- A1:** Describe the proposed development: i.e. describe the site context, relevant design considerations and environmental controls, existing and proposed land use, etc.

- A2:** Prepare a site layout plan, including subdivided lots and proposed location of WSUD treatment.
- A3:** Prepare a summary table of land uses, catchment areas and fraction impervious assumptions.
- A4:** Describe the design response and the WSUD rationale.
- A5:** Describe the outfall and management of downstream impacts: i.e. mitigation for downstream flooding and frequent flows, and requirement for affected landowner acceptances.

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## B: Hydraulic calculations

- B1:** Provide a description of the calculation methodology and assumptions.
- B2:** Provide a summary of the design flows used for system design.
- B3:** Describe how the design meets minor drainage system standard of: 'For all storm events up to and including the 20% Average Exceedance Probability (AEP) standard:
  - Stormwater flows should be contained within the drainage system to the requirements of the relevant authority.
  - Ponding on roads should not occur for longer than one hour after the cessation of rainfall.
- B4:** Design response plan showing flow paths and critical infrastructure.

- B5:** The design of the local drainage network should:
  - Ensure stormwater is retarded to a standard required by the responsible drainage authority.
  - Ensure every lot is provided with drainage to a standard acceptable to the relevant drainage authority. Wherever possible, stormwater should be directed to the front of the lot and discharged into the street drainage system or legal point of discharge.
  - Ensure that inlet and outlet structures consider the effects of obstructions and debris build up. Any surcharge drainage pit should discharge into an overland flow in a safe and predetermined manner.
  - Include WSUD features to manage stormwater in streets and public open space. Where such features are provided, an application must describe maintenance responsibilities, requirements and costs.
- B6:** For storm events greater than 20% AEP and up to and including 1% AEP standard:
  - Provision must be made for the safe and effective passage of stormwater flows.
  - All new lots should be free from inundation or to a lesser standard of flood protection where agreed by the relevant floodplain management authority.
  - Ensure that streets, footpaths and cycle paths that are subject to flooding meet the safety criteria  $d_a V_{ave} < 0.35 \text{ m}^2/\text{s}$  (where,  $d_a$  = average depth in metres and  $V_{ave}$  = average velocity in metres per second).
- B7:** Provide a description of design to meet standard requirement: 'Designed to ensure that flows downstream of the subdivision site are restricted to pre-development levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts'. Risk assessment to consider:
  - Flood event management
  - Management of increased annual volume
  - Management of increased frequency of events.
- B8:** Provide a statement of stormwater compliance: 'Designed and managed in accordance with the requirements and to the satisfaction of the relevant drainage authority.'

- B9:** Provide a statement of stormwater re-use compliance: 'Designed and managed in accordance with the requirements and to the satisfaction of the water authority where reuse of stormwater is proposed' (where applicable).

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## C: Cooling and amenity:

- C1:** Describe how the stormwater management design contributes to local cooling, improving local habitat outcomes and providing attractive/enjoyable spaces, and integration with open space and landscape design.

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## D: Design for best practice environmental management (BPEM) for urban stormwater

- D1:** Describe how the design meets the current best practice performance objectives for stormwater quality as contained in the *Urban Stormwater - Best Practice Environmental Management Guidelines* (Victorian Stormwater Committee, 1999).
- D2:** Provide a site plan showing location of WSUD infrastructure.
- D3:** Describe the modelling approach.
- D4:** Provide a table of MUSIC model (or other appropriate model acceptable to Council) inputs.
- D5:** Provide MUSIC model (or other appropriate model acceptable to Council) treatment performance results that meet best practice environmental performance for urban stormwater being:
  - Total suspended solids (TSS): 80% retention of the typical urban annual load
  - Total phosphorus (TP): 45% retention of the typical urban annual load
  - Total nitrogen (TN): 45% retention of the typical urban annual load
  - Litter: 70% retention of the typical urban annual load.
- D6:** Provide tabulated WSUD asset design.

- D7:** Check MUSIC file using the MUSIC Auditor (<https://www.musicauditor.com.au/>) and provide the auditor report.
- D8:** Submit an electronic copy of the MUSIC file (.sqz file). The applicant should submit a copy of the MUSIC file (.sqz) used to generate treatment performance.

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## E: Concept design consideration

*Note: Under Clauses 53.18 and 56.07, all subdivision applications 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.*

*Note: This is not the final functional design report. Concept and functional design details of varying levels will be required by different approval authorities. These may be submitted with the planning application, or else the information is to be provided as a condition of permit. Check with your approval authority for advice on which applies.*

- E1:** A plan showing asset functional detail as required by permit, including: WSUD system elements, relationship between the development, local drainage system, and WSUD system, space requirements (including impact on dedicated open space and landscaping areas).
- E2:** A plan showing hydraulic function; e.g. low flow flow-path and high flow diversion, control and management of velocities and erosion risk to receiving drainage system downstream.
- E3:** A plan to indicate any structural issues (e.g. WSUD impact on nearby roads/buildings), consideration for public safety (e.g. batter slope gradient, step-downs, access to water bodies, etc.); and maintenance requirements (e.g. access for staff/machinery, slope).
- E4:** Levels for each WSUD treatment including surface level, extended detention depth, filter layers and depth, under drain systems, levels of inlet and outlet structures.
- E5:** Plant species and planting densities to be used in any vegetated treatment systems.

## F: Site management plan

- F1:** A statement outlining the interim design solution to protect the stormwater system and any WSUD assets during construction.
- F2:** Interim design measures shown on a plan.
- F3:** Design calculations showing sizing of sediment basins / other large assets.

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## G: Asset maintenance program

*Note: This section may be required by your council. Check with your council for further advice on what is required. A suggested list is provided below.*

- G1:** A clear diagram with labels to identify key elements to be regularly inspected and maintained.
- G2:** A checklist summarising key treatment elements, and inspection and maintenance tasks and frequency.
- G3:** Outline of who is going to own and maintain the WSUD assets and the associated costs.
- G5:** Detail regarding delivery and asset handover arrangements, where appropriate, including defect liability and timeframes.

Assessing appropriateness of ongoing maintenance arrangements is critical in ensuring continued function of stormwater management assets.

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