CITY OF BALLARAT

# Information Sheet

## On Site Detention Systems for Development

**Background**

Requirements for on-site detention (OSD) systems can be found in the Ballarat Planning and Infrastructure Design Manual (IDM), with industry best practice guidance material supporting development of system options. Planning permit applications or subsequent permit conditions may require OSD systems and details of the proposed stormwater management system, including drainage works and retention, detention, and discharges of stormwater to the drainage system.

To ensure that the capacity of existing drainage infrastructure is not exceeded and to manage the potential cumulative impact of developments, the City of Ballarat maintains a preference for consolidated and strategically located public stormwater detention assets such as drainage basins.

However, it is acknowledged in some circumstances that systems utilising private on-site storage in the form of above ground and/or underground tanks for OSD can be effectively maintained by landowners and provide a cost-effective method of meeting these requirements.

For the purpose of meeting OSD requirements, where commonly accepted systems such as rainwater storage tanks, driveways bounded by kerbs, and underground pipes and tanks of various configurations are proposed and are approved, an Agreement pursuant to Section 173 of the *Planning & Environment Act 1987* shall be entered into requiring the landowner to install and maintain the approved OSD system (often along site water sensitive urban design 'WSUD' requirements) in a condition and to a standard that ensures its correct operation and otherwise to the satisfaction of the City of Ballarat.

For subdivision development, the Agreement will be required prior to the issue of Statement of Compliance. For use development, this is required prior to the use and/or occupation, whichever is first. All costs associated with the preparation, signing, lodgement, registration, amending and ending of the Agreement must be borne by the landowner, including all notification costs and legal fees.

**Design Considerations**

Proposals adopting OSD will only be considered and assessed against the specified requirements where any one of the following development scenarios are apparent.

- Multi-unit development in newer residential areas where no specific provision for such development was made in the design of the drainage system for these areas.

- Multi-unit development in older residential areas where the drainage system was designed to handle a peak discharge significantly lower than that predicted by applying the runoff coefficients defined in IDM Clause 16 to a 20% AEP event.
- Industrial development in areas where the drainage system was designed to handle a peak discharge significantly lower than that that predicted by applying the runoff coefficients defined in IDM Clause 16 to a 10% AEP event.
- Major commercial development in areas where the drainage system was designed to handle a peak discharge significantly lower than that predicted by applying the runoff coefficients defined in IDM Clause 16 to a 5% AEP event.
- Low-density residential development within or adjacent to urban or rural township areas.

On-site detention will not usually be required in rural locations when lot sizes exceed 2ha, unless specific measures are required to protect streams or constructed waterways from erosion associated with increased peak flow rates.

Unless flooding problems are already evident, the basic principle should be to limit the peak outflow from any site in a 1% AEP rainfall event to pre-development levels. The volume of on-site storage required to achieve that outcome may be greater than that required to ensure that the capacity of the minor drainage network is not exceeded.

Computations are required to demonstrate how the permissible rate of discharge and the volume of OSD required have been determined and show that the existing drainage system will not be adversely impacted by the Development. Unless the computations demonstrate that other values would be more appropriate, calculations should be based on the following parameters:

- The original design event should be assumed to have been based on a 1EY (1-year) event.
- Annual exceedance probability (AEP) for the current design event refer to IDM Section 16.6.
- Coefficients of runoff refer to IDM Section 16.7.

A suitable overflow system should be provided to cater for AEP events, up to and including 1% AEP events, with appropriate provision made for network blockages. Discharge controlled by an orifice or similar are consider and address the consequences of device blockage and provide for an acceptable overland route conveying surplus flows, installing sufficient storage to retain the flows on-site, or using dual-chamber pits with the controlled flow passing through an internal weir wall.

Assessment and acceptance will require information which confirms compliance with all the following:

- Ballarat Planning Scheme, Precinct Structure Plan and/or Development Plan.
- Infrastructure Design Manual and standard drawings (City of Ballarat standard where appliable).
- The approved Stormwater Management Strategy and/or Plan.
- City of Ballarat Policies, Strategies, and Plans (including information sheets).