

# THREE WATERS MANAGEMENT PRACTICE NOTE

## HCC 01: Overview

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### 1.1 Purpose

These Three Waters Management Practice Notes:

- Provide information about how to comply with the water efficiency measure rule<sup>1</sup> in the Hamilton Proposed District Plan.
- Explain how a Water Impact Assessment or Integrated Catchment Management Plan may be relevant for determining the stormwater management requirements for your site, and
- Clarify other stormwater management requirements for your site (i.e. additional to the requirements of Rule 25.13.4.5). For example if there is no approved stormwater management device for your site, you will need to manage your stormwater in accordance with the 'Minimum Device Design Summary' table in Council's Infrastructure Technical Specification.

### 1.2 Background

Nationally and regionally there is a significant focus on issues relating to declining water quality and the increasing complexity of managing and allocating water, wastewater collection and treatment, and stormwater management (Three Waters management). Pressure on water resources in the region is increasing due to a growing population and the associated concentration of activities and industry. In Hamilton, this affects demand for water resources and Three Waters infrastructure, which is principally managed by Hamilton City Council (Council).

As a municipal water provider, Council has three significant resource consents from the Regional Council for the taking of water for municipal purposes and discharging of wastewater and stormwater. In complying with these consent conditions, and as a responsible water manager, Council must impose standards and conditions on development within the City. Council is also responsible for providing infrastructure capable of delivering sustained levels of services now and in the future. The management of Three Waters demand enables more efficient use of existing infrastructure. Council has a range of initiatives to help respond to these challenges, some of these are outlined below.

### 1.3 Three Waters management

The District Plan requires:

- Full Integrated Catchment Management Plans (ICMPs) for new structure plans
- Sub-catchment ICMP's and/or Water Impact Assessments (WIAs) for larger developments
- Water Efficiency Measures for all new developments<sup>2</sup>.

ICMPs and WIAs are considered to be a nationally emerging approach to effective Three Waters demand management. They reflect the unique needs of Hamilton taking into consideration growth, regional and national legislative requirements. By using ICMPs and WIAs we can identify effective public and private water sensitive techniques for catchments and site specific development. This set of practice notes will help with understanding and achieving compliance with various Three Waters requirements of the District Plan.

ICMPs are a planning tool used to guide the management of natural and physical resources on a catchment-wide basis to achieve integrated management of land-use, water resources and Three Waters infrastructure. ICMPs will aid decision making and support a holistic approach to Three Waters management. In particular,

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<sup>1</sup> Rule 25.13.4.5

<sup>2</sup> Refer Proposed District Plan (2014 Decision Version) - Rules 25.13.4.1 Integrated Catchment Management Plans, 25.13.4.5 Water Efficiency Measures, and 25.13.4.6 Water Impact Assessments

ICMPs are important when dealing with large scale land use changes or intensification of land uses with the potential to negatively impact on infrastructure capacity and the receiving environment. Each ICMP may also specify catchment appropriate water efficiency measures to replace generic measures identified within the District Plan. Practice note HCC10 provides guidance on ICMPs.

WIAs are usually required for medium to large sized developments. WIAs take into consideration the needs of the catchment as indicated by the relevant ICMP (if any) and provide site specific, private solutions to Three Waters demand management. WIAs are another complementary tool that will be used to assess and ensure Three Waters integration at a more detailed, site specific level. Practice note HCC09 provides guidance on WIA's.

Water efficiency measures include a variety of methods to encourage effective stormwater management. A primary aim is to maximise multiple benefits rather than a single engineering measure. These new water efficiency requirements promote the management of stormwater on individual sites and are in addition to the Three Water management requirements outlined in Council's Infrastructure Technical Specification (which generally apply to public reticulation) and any Waikato Regional Plan requirements. You are advised to check the Regional Council's requirements and obtain any required consent from them for your proposed activity if required.

## 1.4 List of Practice Notes

The following provides a list of the practice notes<sup>3</sup> that have been prepared by Council to inform the implementation of the ICMP, WIA and Water Efficiency Measure rules of the District Plan<sup>4</sup>:

- HCC01 – Overview
- HCC02 – Rainwater reuse system (Rain tank)
- HCC03 – Soakage
- HCC04 – Bioretention systems (Raingardens)
- HCC05 – Rainwater reuse and detention system
- HCC06 – Detention tank
- HCC07A – Permeable surfaces (PDP Rule)
- HCC07B – Permeable paving
- HCC08 – Automated greywater reuse system
- HCC09 – Water Impact Assessments
- HCC10 – Integrated Catchment Management Plans

## 1.5 Planning framework for on-site requirements

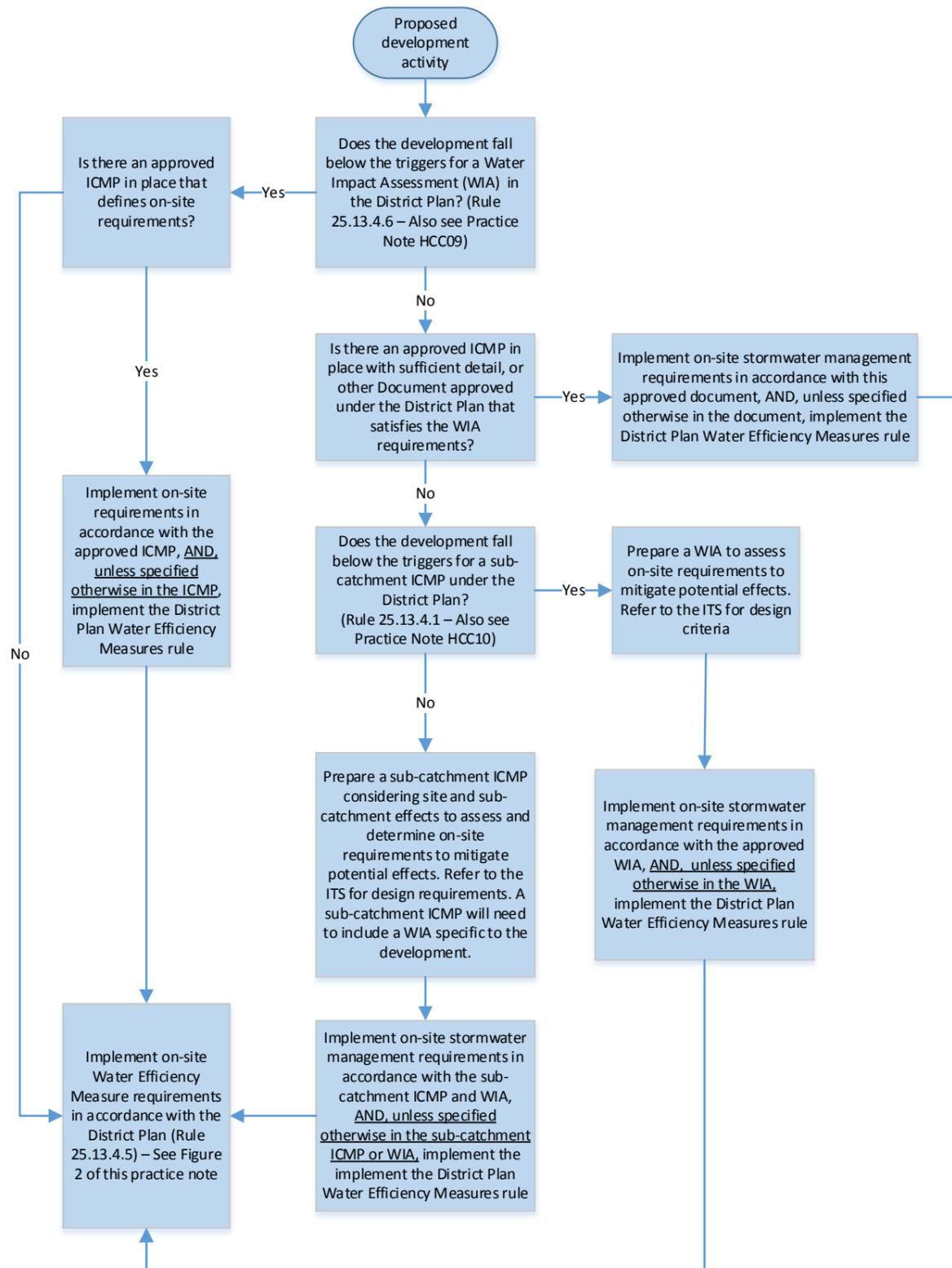
Figure 1 below is a decision tree clarifying the planning framework for on-site Three Waters management requirements for a proposed development in Hamilton.

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<sup>3</sup> Three Waters Management Practice Notes are Hamilton City Council controlled documents and will be subject to ongoing review. The latest version can be downloaded from the Hamilton City Council website: <http://www.hamilton.govt.nz/our-council/council-publications/manuals/Pages/Three-Waters-Management-Practice-Notes.aspx>

<sup>4</sup> Ibid  
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Figure 1: Which document provides guidance on your on-site stormwater management requirements?



Council’s Duty Planner will be able to assist with determining whether there is an approved Integrated Catchment Management Plan for your area, and/or whether a Water Impact Assessment was included in a consent for your site (including whether it is applicable), and if so, whether any on-site requirements are specified in these documents.

## 1.6 Low Flow Fixtures

All new residential units and other new buildings containing a kitchen, laundry or bathroom must use Low Flow Fixtures for showers, tap equipment and toilets<sup>5</sup>. Low Flow Fixtures with a minimum 3 star rating are an acceptable means of demonstrating compliance. Approved ICMPs or consent conditions arising out of a WIA may require a higher star rating.

Otherwise, Low Flow Fixtures means the following<sup>6</sup>:

- a) Showers using not more than 9 litres of water per minute. Being the nominal flow rate measured in accordance with AS/NZS 3662: 2005 Performance of showers for bathing.
- b) Tap equipment using not more than 9 litres of water per minute. Being the nominal flow rate measured in accordance with AS/NZS 3718: 2005 Water supply - Tap ware (excludes outdoor tap equipment).
- c) Toilets using not more than 4 litres on average per flush:
  - I. For single-flush cisterns – the discharge flush volume, determined in accordance with AS 1172.2 Water closet (WC) pans of 6/3 L capacity or proven equivalent – Cisterns.
  - II. For dual-flush cisterns – the average flush of one full-flush discharge and four reduced-flush discharge volumes, with the full-flush discharge flush volume and reduced-flush discharge volumes determined in accordance with AS 1172.2 Water closet (WC) pans of 6/3 L capacity or proven equivalent – Cisterns.

## 1.7 Drainage disposal hierarchy

In accordance with the District Plan<sup>7</sup> and Council's ITS, and in the absence of an approved ICMP that states otherwise, Three Waters infrastructure shall be designed and constructed to ensure that surface water runoff is appropriately managed in accordance with the following drainage hierarchy:

Priority 1 – Retention for reuse

Priority 2 – Soakage

Priority 3 – Detention and gradual release to a water course

Priority 4 – Detention and gradual release to stormwater reticulation

Proposed activities will need to demonstrate that they have worked through the hierarchy and have used the higher priority disposal options where possible. The third and fourth priority disposal options should only be considered if the first two priority options have been utilised to their maximum potential, or in the case of soakage, has been found not to be appropriate for the particular site conditions. Site suitability for soakage will need to be assessed for new building consent applications.

## 1.8 On-site Three Waters management

In addition to Low Flow Fixtures, the District Plan states that at least one water sensitive technique for stormwater shall be incorporated, connected to, achieved or maintained as part of any new development (new residential units or other buildings with kitchen, laundry or toilet facilities)<sup>8</sup>.

The application of water sensitive techniques needs to be in accordance with Council's drainage disposal hierarchy provided in Section 1.7 above.

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<sup>5</sup> Ibid, Rule 25.13.4 a) and c) Water Efficiency Measures, and Definitions for Low Flow Fixture in Appendix 1.1.2 (Vol 2)

<sup>6</sup> Ibid, Volume 2, 1.1.2 Definitions Used in the District Plan – “Low flow fixtures”

<sup>7</sup> Ibid, Policy 25.13.2.3e.

<sup>8</sup> Ibid, Rule 25.13.4.5 a).

If there is an approved stormwater management device downstream of your site that has been designed to attenuate flows from your property, you will still need to provide a stormwater management device at your site. However the device will only need to be a Reduced At-source Measure that targets water quality treatment and volume reduction. Acceptable Reduced At-source Measures are outlined in the table below.

Table 1: Reduced At-source Measures

Reduced At-source Measure	Practice Note	Design basis
Permeable surfaces protected to achieve at least 20% above the minimum standard for the zone your site is within.	HCC07A and HCC07B	In accordance with District Plan
Rainwater reuse system	HCC02	The minimum sizing for a rainwater reuse system is provided in HCC02. This sizing ensures that the reuse system can be plumbed back into a house for reuse and will provide a functional volume for reuse purposes.
Soakage designed to receive and soak 5mm of runoff from contributing impermeable areas.	HCC03	Based on Auckland Council guidance on the benefits of retention of 5mm at-source.
Bioretention sized to have an area equivalent to 2% of the contributing impermeable areas (excluding roof areas).	HCC04	Minimum sizing for bioretention is 2% of contributing catchment area based on Auckland Council and international guidance. Roof water is considered clean hence it is acceptable for roof water to bypass the bioretention device.

These devices have been selected as they target water quality treatment and volume reduction, they are not space hungry and they give effect to the District Plan<sup>9</sup>.

If there is no approved stormwater management device downstream of your site, you will need to provide stormwater management on your site that meets the requirements of the 'Minimum Device Design Summary' table in Council's Infrastructure Technical Specification.

The following decision tree provides a framework for determining what on-site stormwater management devices to use on your site depending on site conditions. Further details about how to design the devices are provided in the relevant practice notes referred to in the decision tree. Site solutions will need to be developed on a case by case basis to suit the site by a suitably qualified and experienced stormwater engineer.

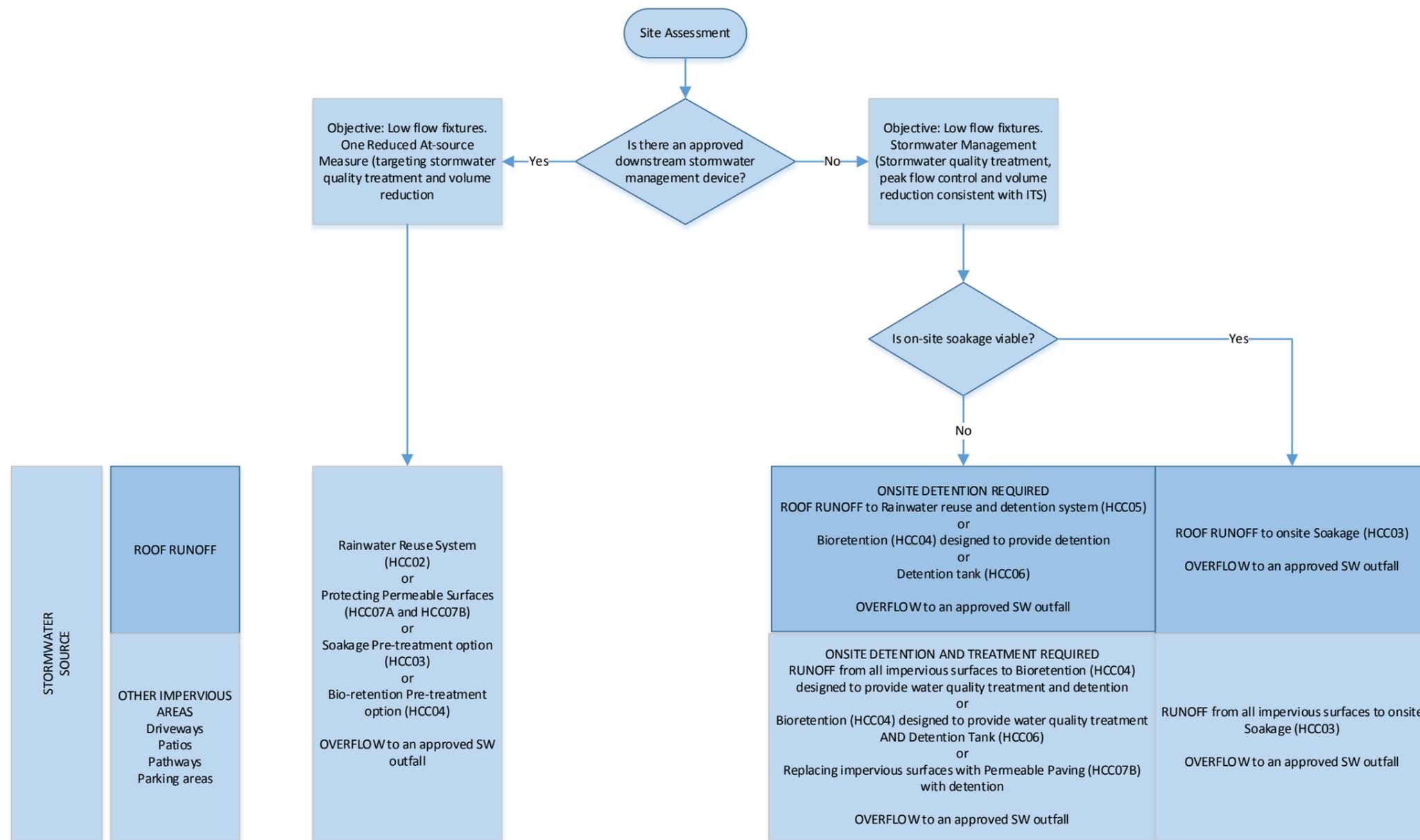
## 1.9 Need help?

If you need help working through the Three Waters management requirements in relation to your proposal please contact Council's Duty Planner (07) 838 6699 in the first instance, they will connect you with the relevant technical staff in Council that can help you with your needs.

Council's Development Engineers will be able to assist with most technical queries and help work through the decision tree for on-site stormwater management devices.

<sup>9</sup> Ibid, Rule 25.13.4.5 a).  
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Figure 2: Which on-site stormwater management device/s are suitable for your site?



Notes:

1. Soakage sized for the 10 year ARI event (soakage/detention). Unless Reduced At-source Measure then sized for 5mm of contributing impervious area.
2. Bioretention shall be sized for 2% of all contributing impervious areas if there is no approved downstream device and is providing water quality treatment only, or 5% if providing extended detention as well. Bioretention shall be sized for 2% of contributing trafficked area if there is an approved downstream stormwater management device (Reduced At-source Measure). Other approved methodology may be used for the design.
3. Rainwater reuse system to be 5,000L, unless dwelling less than 60m<sup>2</sup> and single level then reuse system can be 3,000L. Reuse system to be plumbed back into the dwelling for reuse. Reduced At-source Measure is the same.
4. Detention calculations may be based on the methodology provided in HCC06, NWWERF Methodology, TP10, or hydraulic modelling using programmes such as HEC HMS.
5. If the property does not drain to the road, then Council's ITS recommends that stormwater from all impervious areas on the lot shall be mitigated on site to ensure that total runoff, volumes and peak flow rates up to the 50 year ARI event are mitigated to as close to the pre-development levels as possible.