THREE WATERS MANAGEMENT PRACTICE NOTE

HCC 01: Overview

1.1 Purpose

The purpose of the Three Waters Management Practice Notes is to:

- Provide information about how to comply with Rule 25.13.4.2 and 25.13.4.2a in the District Plan.
- Help you to ascertain whether there are additional stormwater management documents (such as a Site-Specific Stormwater Management Plan, Three Water Capacity Assessment, Water Impact Assessment, or Integrated Catchment Management Plan) that may need to be prepared in support of a consent application.

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 managed by 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. Three Waters demand management enables more efficient use of existing infrastructure. Council has identified several initiatives to help respond to these challenges, some of which are outlined below.

1.3 Three Waters management

Council requires Integrated Catchment Management Plans (ICMPs), Water Impact Assessments (WIAs), Three Water Infrastructure Capacity Assessments (TWICAs) or Site-Specific Stormwater Management Plan (SSWMP) depending on development size and land use. Water Efficiency or Water Conservation Measures are required for all new developments. These assessments are nationally emerging approaches to Three Waters demand management and will reflect the unique needs of Hamilton taking into consideration growth, regional and national legislative requirements. By using these approaches we can identify effective public and private water sensitive techniques for catchments and site-specific development. Council has developed this set of practice notes to assist people with understanding and achieving compliance with various Three Waters aspects of the District Plan.

ICMPs are a planning tool that are used to manage natural and physical resources on a catchment-wide basis to support integrated management of land-use, water resources and Three Waters infrastructure. The purpose of ICMPs is to aid decision making and allow a holistic approach to Three Waters management. 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 require specific water efficiency measures that replace those specified within the District Plan. Practice note HCC10 provides guidance on ICMPs.

WIAs are usually required for medium to large sized commercial or industrial 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 complimentary 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 WIAs.

TWICAs are required for residential developments of 4 or more lots/units, or by triggering certain density limits if your site falls within the Three Waters Capacity Overlay[2]. The purpose of a TWICA is to determine if sufficient capacity is available within the three waters networks to service the proposed development. Practice note HCC11 provides guidance on TWICAs.

SSMPs are required for larger residential developments creating more than 1000m^2 of impervious surface. The purpose of the SSMP is to assess the proposed development against stormwater infrastructure requirements in the RITS and other relevant documents such as the Waikato Regional Council Stormwater management guideline. Practice note HCC11 provides guidance on SSMPs. Where you may be required to do both a TWICA and SSMP, these document can be combined into a single document.

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 the RITS (which generally apply to public reticulation) and in addition to 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[3] that have been prepared by Council to inform the implementation of the ICMP, WIA and Water Efficiency Measure rules of the District Plan[4]:

HCC01 – Overview

HCC02 – Rainwater reuse tank (rain tank) (**Updated in support of PC12**)

HCC03 – Soakage (**Updated in support of PC12**)

HCC04 – Bioretention devices (**Updated in support of PC12**)

HCC05 – Rainwater reuse and detention tank

HCC06 – Detention tank

HCC07A – Permeable surfaces (District Plan Rule)

HCC07B – Permeable paving

HCC08 – Automated greywater reuse system

HCC09 – Water Impact Assessments

HCC10 – Integrated Catchment Management Plans

HCC11 – Three Waters Capacity Assessment (**Being developed in support of PC12**)

HCC12 – Site-Specific Stormwater Management Plan (**Being developed in support of PC12**)

1.5 Planning framework for on-site requirements

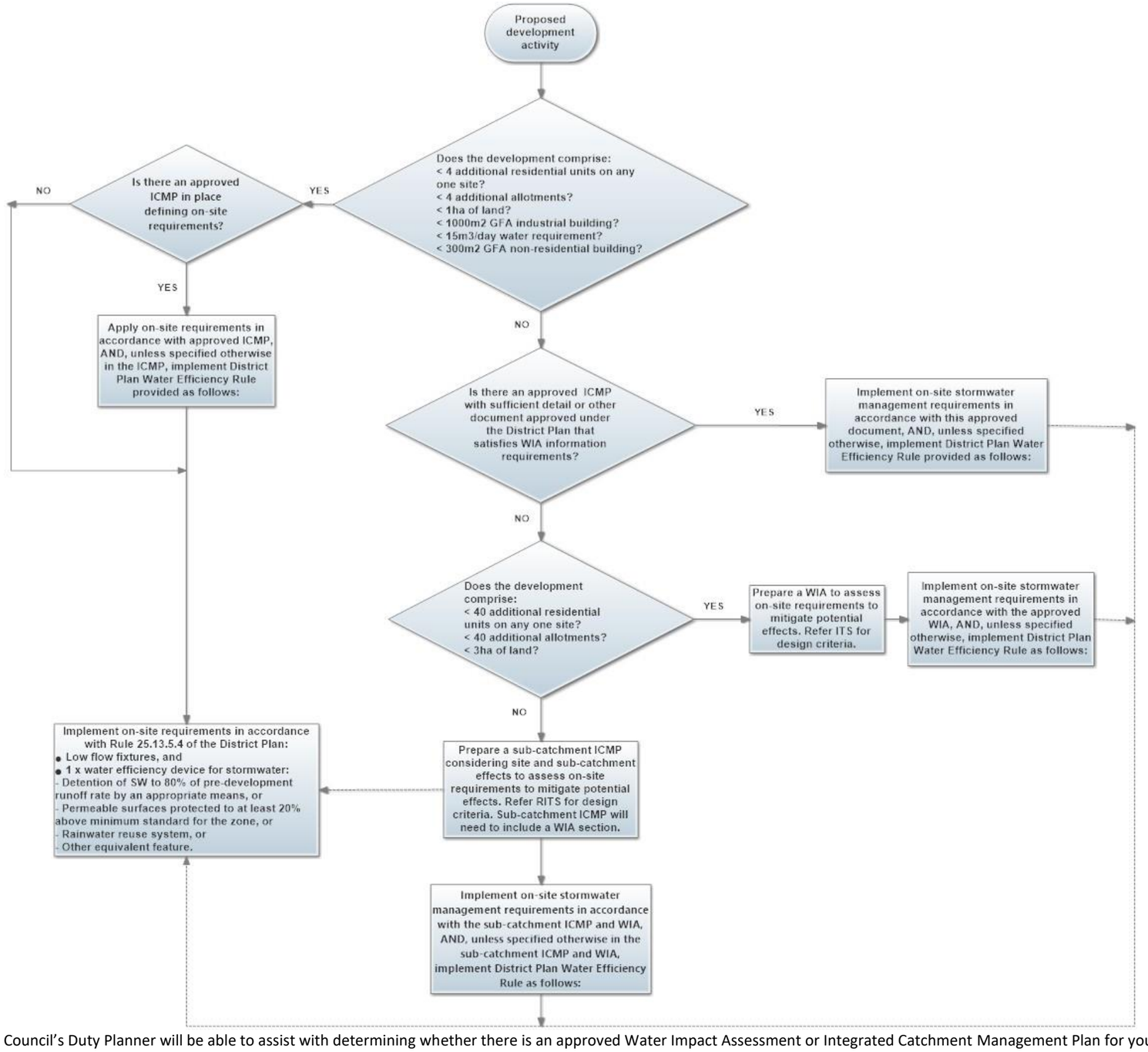
Figures 1 and 2 below is a decision tree clarifying the planning framework for on-site Three Waters management requirements for a proposed development in Hamilton.

[2] Refer to the map in Section 25.13 of the District Plan or District Plan online mapping.

[3] 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

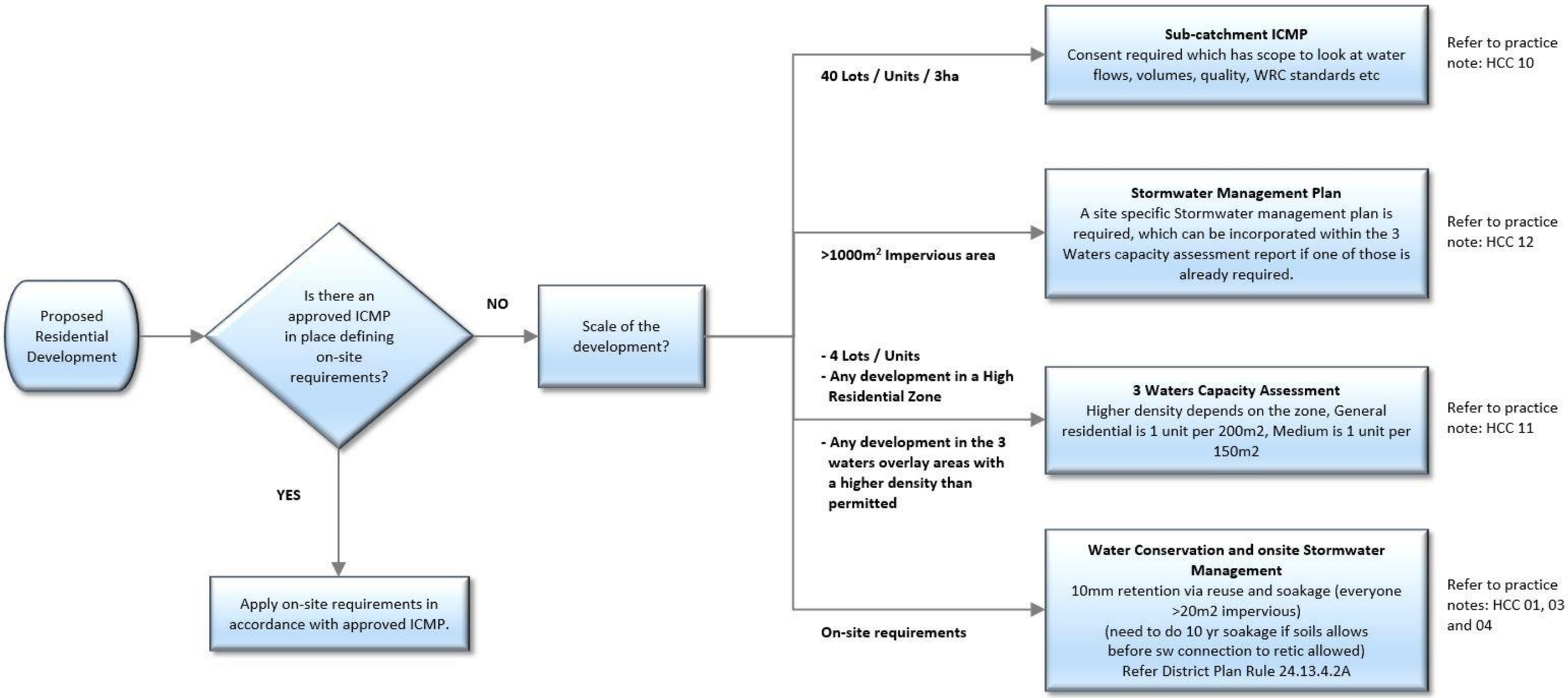
[4] Ibid

Figure 1: Which document provides guidance on your on-site stormwater management requirements (non-residential land use)?



Council's Duty Planner will be able to assist with determining whether there is an approved Water Impact Assessment or Integrated Catchment Management Plan for your area, and if so, whether any on-site requirements are specified in these documents.

Figure 2: Which document provides guidance on your on-site stormwater management requirements (residential land use)?



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[5]. 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:

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[6] and the RITS, 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 site conditions. Site suitability for soakage will need to be assessed for every new building consent application.

1.8 On-site Three Waters management (non-residential)

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)[7].

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

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.

[5] Ibid, Rule 25.13.4 a) and c) Water Efficiency Measures, and Definitions for Low Flow Fixture in Appendix 1.1.2 (Vol 2)
[6] Ibid, Policy 25.13.2.3e.
[7] Ibid, Rule 25.13.4.5 a).

However, the device will only need to be a Reduced At-source Measure (or Reduced Device) 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 Waikato Regional Council and Auckland Council guidance on the benefits of retention of 5mm / the initial abstraction volume at-source. Have used 5mm for initial abstraction to simplify.
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 are in accordance with the District Plan[8].

If there is not an 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 4-3) in RITS.

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 On-site Three Waters management (residential)

The requirements for on-site stormwater management for residential land uses differ from non-residential. On-site stormwater management approaches for residential areas have been updated as part of Plan Change 12 in response to the densification enabled through the MDRS.

Where an approved ICMP or SSMP exists for the site, the on-site provisions within these documents should be followed. Otherwise, the following requirements apply to residential land uses[9]:

- Retain at least 10mm of runoff from the new or re-developed impervious areas through a combination of reuse and soakage techniques; Or
- Where soakage techniques cannot be applied to a site (due to high groundwater or poor soakage), the soakage element of the preferred on-site treatment train can be replaced by a water quality treatment device such as a raingarden sized to treat the Water Quality Volume.

[8] Ibid, Rule 25.13.4.5 a).
[9] Refer to District Plan rule 25.13.4.2A for full details.

Where more than half of the existing impervious surfaces are being redeveloped, retention for at 20% of the residual existing impervious surfaces will also need to be provided.

Table 2 summarizes the reuse tank and soakage sizing requirements based on an equivalent residential lot size. If on-site infrastructure complies with these sizes and you do not trigger the requirements for an ICMP, TWICA or SSMP then this will be deemed as fulfilling your requirements under rule 25.13.4.2A of the District Plan.

Table 2: Sizing requirements

Equivalent Lot Size	Required Rainwater Tank Volume	Additional Soakage Requirement
100 m2	2,000L	370L (can also be achieved through permeable paving)
200 m2	3,000L	735L (can also be achieved through permeable paving)
300 m2	3,000L	1,100L
400 m2	5,000L	1,450L
500 m2	5,000L	1,850L

Figure 3 and Figure 4 demonstrate schematically the preferred on-site treatment train and how this integrates with the overall sub-catchment stormwater management treatment train.

1.10 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.

Figure 3: Preferred stormwater management approach – rain tank and soakage.

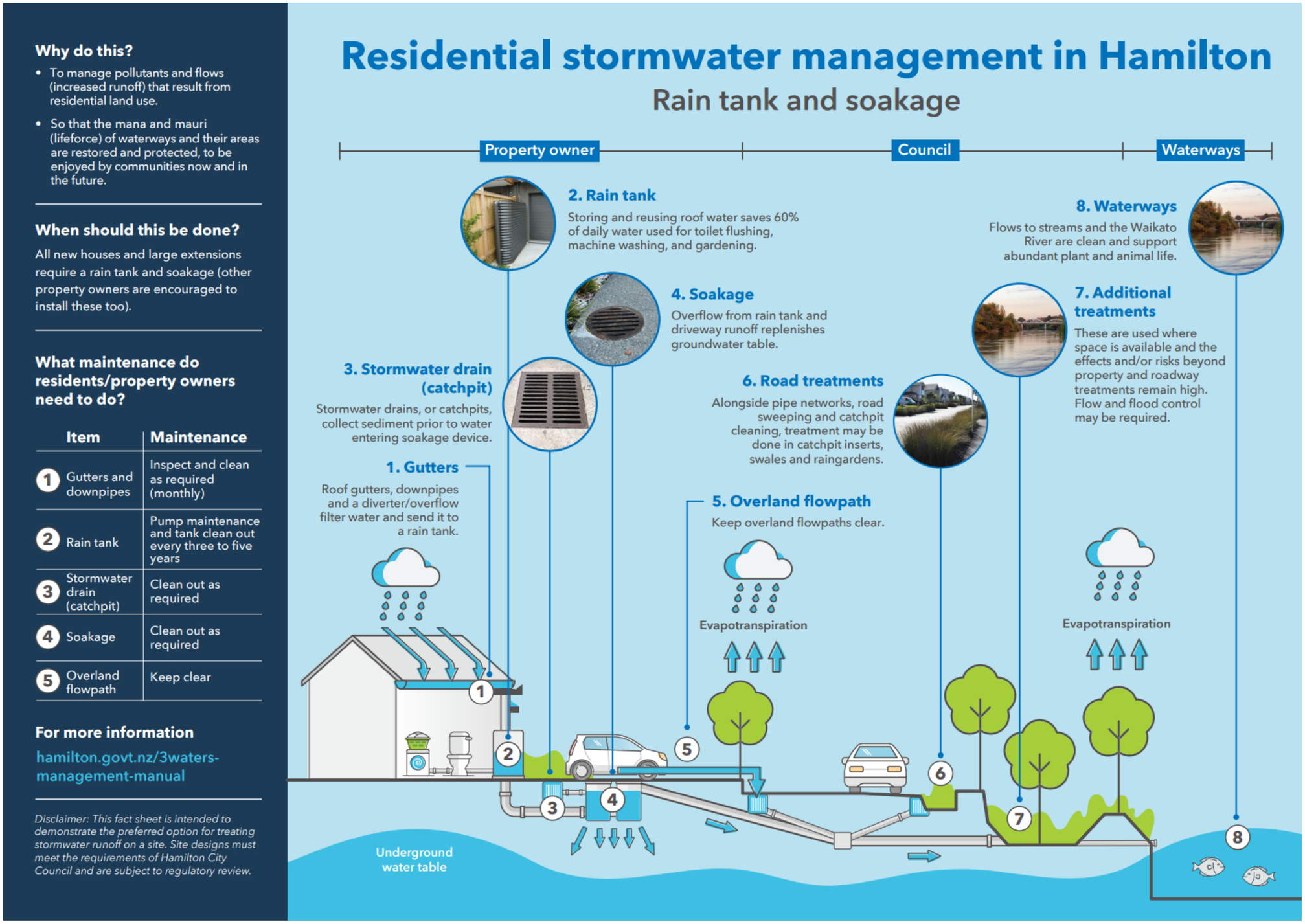


Figure 4: Preferred stormwater management approach – rain tank and raingarden.