

# Rainwater Tanks in Urban Areas Policy

## Frequently asked questions



**Harvesting rainwater and using it in and around your home for non-potable uses is an effective way to save water, save you money and save the environment.**

### Terminology

**Potable water** - public drinking water supply.

**Potable water uses** - drinking, washing, cooking.

#### Non-potable water uses

- Toilet flushing.
- Washing machine cold tap.
- Garden taps.
- Residential garden irrigation.
- Washing cars.
- Filling ornamental ponds.
- Topping up swimming pools and spas.

**Bulk water supply** - public drinking water supply.

**Demand management** - Water demand management aims to manage the consumption of water within the community. It is a cyclic process of continual change and improvement. Water demand management involves understanding how much water is used, when it is used and for what purposes within the catchment, now and in the future. It utilises water resources in an integrated way that ensures safe and reliable water services, minimises costs, and reduces effects upon the environment. It aims to achieve efficient water use by all members of the community.

<http://www.tweed.nsw.gov.au/Water/DemandManagement.aspx>

**BASIX** - BASIX is the Building Sustainability Index for new dwellings. BASIX is a regulatory planning requirement in NSW and aims to make residential building construction more water and energy efficient.

**SEPP** - The NSW Government's State Environmental Planning Policy.

**Stormwater runoff**- Stormwater runoff is unfiltered water that reaches streams, lakes, and oceans by means of flowing across impervious surfaces. These surfaces include roads, parking lots, footpaths, driveways, and roofs.

### Questions

1. What is this policy basically about?
2. How does the Rainwater Tanks in Urban Areas Policy affect me?
3. Why do we need rainwater tanks?
4. What size tank should I get?
5. How does the policy relate to BASIX - the Building 6. Sustainability Index for new dwellings?
6. How does the policy fit in with Council's Demand Management Strategy?
7. How can I get the most out of my tank?
8. What can I use the rainwater tank for?
9. What is the approval I need to install a rainwater tank?
10. What do I need to provide if my tank doesn't meet SEPP conditions?

# Rainwater Tanks in Urban Areas Policy

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### 1. What is this policy about?

This policy applies to rainwater tanks installed on residential properties in urban areas of Tweed Shire and connected to the public water supply. Council is encouraging the installation of rainwater tanks to provide an alternative water source for non-potable water uses such as flushing toilets, washing machines and outdoor water uses like watering gardens and filling swimming pools.

#### The policy objectives are:

To facilitate the installation and use of domestic rainwater tanks in Tweed Shire to:

1. Supplement the Tweed Shire bulk water supply.
  - Reduce the consumption of treated potable water for non-potable uses.
  - Reduce the intensity and frequency of stormwater runoff from urban areas.
2. Outline the necessary requirements to protect the public water supply from contamination and ensure public health is not compromised.

### 2. How does the Rainwater Tanks in Urban Areas Policy affect me?

This policy applies to rainwater tanks installed on residential properties in urban areas of the Tweed Shire that are connected to the public water supply.

#### The policy:

- Outlines necessary requirements to protect the public water supply from contamination and ensure public health is not compromised.
1. Provides an alternative to using the Tweed Shire town drinking water supply.
  2. Helps reduce the use of drinking water for non-potable uses including:
    - Toilet flushing.
    - Washing machine cold tap.
    - Garden taps.
    - Residential garden irrigation.
    - Washing cars.
    - Filling ornamental ponds.
    - Topping up swimming pools and spas.
  3. Facilitates the reduction of stormwater runoff from urban areas.

### 3. Why do we need rainwater tanks?

There are three good reasons.

#### 1. Rainwater tanks supplement the mains water supply.

While all mains water is treated to drinking water standards, less than five per cent of domestic water is consumed for drinking. Toilet flushing, laundry and outdoor uses represent a significant portion of domestic water consumption but do not require water to be treated to such a

high standard. Such uses can be satisfactorily supplied from rainwater collected from roofs and stored in tanks.

It is often mistakenly assumed that using rainwater solely for outdoor uses such as watering the garden will produce substantial mains water savings. However mismatches between seasonal rainfall and outdoor water use patterns can result in poor utilisation of rainwater, resulting in long periods when the tanks are either empty or full. To effectively supplement the bulk water supply, rainwater tanks need to be connected to water uses in the home (e.g. toilet, washing machine) so water from the tank is used at a relatively constant rate and there is available space in the tank to capture water from the next rain event.

Utilising rainwater for various uses (e.g. toilet flushing, garden watering and clothes washing) can result in optimum mains water savings and large reductions in stormwater discharges, especially when the area of the roof catchment that supplies the tank(s) is maximised (e.g. between 80 per cent and 100 per cent)

#### 2. Rainwater tanks reduce the consumption of treated drinking water (potable water) for non-drinking (non potable) water uses.

The implementation of Council's Demand Management Strategy has set a short-term residential water consumption target of 180 litres per person per day. One of the ways to achieve this target is to reduce the consumption of treated potable water from the public water supply, for non-potable uses. Council is therefore encouraging the installation of rainwater tanks to provide non-potable water for outdoor uses, flushing toilets and washing machines.

For this approach to be as successful as possible, customers are encouraged to install the largest tank they can, given factors such as initial cost, space and ongoing operating and maintenance costs.

A minimum tank size of 5000 litres with a minimum roof catchment area of 160 square metres is recommended for single dwellings. For duplexes, triplexes, multi-dwellings and other buildings, it is recommended the rainwater tank volume be maximised with 80 per cent to 90 per cent of the roof area connected.

#### 3. Rainwater tanks reduce the intensity and frequency of stormwater runoff from urban areas.

Urban areas increase the amount of impervious surfaces (e.g. driveways, roads, paths, roofs) in a catchment. This impairs the catchment's ability to absorb rainwater and results in larger volumes of runoff.

By retaining rainwater on-site, rainwater tanks reduce the volume of water discharged to creeks and streams in the catchment. This also reduces the velocity or energy of water entering creeks and streams, this in turn, reduces downstream scour, sedimentation and riparian vegetation removal.

By capturing and retaining rainwater, tanks lessen the amount, intensity and frequency of downstream stormwater runoff and thereby partially offset the adverse impacts of urbanisation.

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### 4. What size tank should I get?

Water customers are encouraged to install the largest tank they can, allowing for factors such as purchase cost, available space and ongoing operating and maintenance costs.

A minimum tank size of 5000 litres with a minimum roof catchment area of 160 square metres is recommended for single dwellings. For duplexes, triplexes, multi-dwellings and other buildings, it is recommended that the rainwater tank volume be maximised with 80 per cent to 90 per cent of the roof area connected.

### 5. How does the policy relate to BASIX - the Building Sustainability Index for new dwellings?

The policy is complementary to BASIX, which often requires the installation of a rainwater tank. Council's policy aims to go a step further to reduce water demand in Tweed Shire. While Council's policy does not override the BASIX requirements, it encourages water customers to install the largest tank they can, taking into account factors such as budget, available space and ongoing operating and maintenance costs.

### 6. How does the policy fit in with Council's Demand Management Strategy?

The implementation of Council's Demand Management Strategy has set a short-term residential water consumption target of 180 litres per person per day.

One of the ways to achieve this target is to reduce the consumption of treated potable water, from the public water supply, for non-potable uses. Council is therefore encouraging the installation of rainwater tanks to provide non-potable water for outdoor uses, flushing toilets and washing machines.

For this approach to be as successful as possible, customers are being encouraged to install the largest tank they can, given factors such as initial cost, space and ongoing operating and maintenance costs

### 7. How can I get the most out of my tank?

The following characteristics are desirable to maximise the positive environmental impacts and water supply yield of rainwater tank systems:

- Maximise the volume of the tank(s). A minimum tank volume of 5000 litres is recommended for single dwellings.
- Maximise the area of the roof catchment that is spouted to the tank so the maximum amount of water is captured. A minimum roof catchment area of 160 square metres is recommended for single dwellings.
- Maximise the continuous tank draw down (to make space available to capture water from the next rain event) by connecting toilet cisterns, the

cold water supply to the washing machine and most the of external garden taps.

d) Elevate the tank so its base is at least of one metre above connected internal taps or cisterns so there is adequate operating pressure. This might avoid the need to install a pressure pump on the tank outlet, reducing energy use and the associated costs. If it is not feasible to elevate the tank or if there is insufficient pressure to operate all taps and cisterns, the tank will need to be fitted with a pressure pump.

Water customers are encouraged to install the largest tank they can, given factors such as initial cost, space and ongoing operating and maintenance costs.

It is sometimes difficult to collect rainwater from multiple roof areas (e.g. both sides of the roof catchment). Options to address this include strapping downpipes to the house walls, using an underground (siphon) connection, installing more than one tank, siting the tank underground or installing a rainwater collection system that utilises the roof guttering as the water storage compartment.

### 8. What can I use the rainwater tank for?

Rainwater can provide an alternative source of water for the following:

- Toilet flushing.
- Washing machine cold tap.
- Garden taps.
- Residential garden irrigation.
- Washing cars.
- Filling ornamental ponds.
- Topping up swimming pools and spas.

Where there is a reticulated drinking (potable) water supply available to the property, NSW Health does not recommend the use of rainwater for:

- Drinking.
- Cooking or other kitchen purposes.
- Personal washing such as baths, showers, hand basins and bidets.

Connecting the rainwater tank supply to the household hot water system is not recommended because hot water is generally used for potable uses in the home. Depending on the condition and construction materials of the roof catchment and tank, connection to the hot water system might also increase the likelihood of scaling and fouling of the hot water heater.

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### 9. What approval do I need to install a rainwater tank?

The NSW Government's State Environmental Planning Policy - SEPP (Exempt and Complying Development Codes) 2008 sets out conditions under which rainwater tanks may be installed without the approval of Council.

- Rainwater tanks with a capacity of 10,000 litres or less do not require local council approval provided they meet all the conditions outlined in the SEPP.
- SEPP conditions vary for above-ground and below-ground tanks and also vary depending on the zoning of land where the tank is to be installed.

Different conditions apply for land:

- Zoned rural or environmental.
- Educational establishments and installations in acid sulphate soils.

If in doubt Council's Building and Environmental Health Unit, (02) 6670 2440, should be consulted to ascertain the SEPP and approval requirements.

Refer to Appendix 1 (p17) of the policy for a full list of SEPP conditions for above-ground and below-ground tanks.

One of the important SEPP conditions is that: "If reticulated water is provided to the lot, the development must not be interconnected with any system supplying drinking water to the lot unless it complies with the relevant water authority's requirements."

This refers to rainwater tanks that are:

- Topped up from the town water supply.
- Directly or indirectly cross-connected with the town water supply.

Consequently Council approval to install a rainwater tank in Tweed Shire is required when:

- a) The tank volume is greater than 10,000 litres.
- b) Any of the other SEPP conditions are not met (see Appendix 1).
- c) The tank is to be topped up from the reticulated water supply.
- d) The tank is directly or indirectly cross-connected with the reticulated water supply.

If Council approval is required, Council's Building and Environmental Health Unit should be consulted to ascertain the approval requirements for the specific rainwater tank system. The unit can be contacted on (02) 6670 2440.

Generally, if the tank volume is 10,000 litres or less, all other SEPP conditions are met (see Appendix 1 p 17 of the policy) and the tank is not going to be topped up, connected to the house plumbing or otherwise cross-connected with the reticulated water supply, no approval is required from Council.

If the tank volume is 10,000 litres or less and all other SEPP conditions are met (Appendix 1) but the tank is to be topped up, connected to the house plumbing or cross-connected with the reticulated water supply, Council approval is required. An application for Approval of Plumbing and Drainage Work on Private Land is required (Appendix 2) and the work must be completed by a licensed plumber. The plumber is required to lodge an Application for Permit to do Plumbing/Drainage Work (Appendix 3) before proceeding with the work.

If the tank volume is greater than 10,000 litres or the rainwater tank system does not meet other conditions in the SEPP, a Development Application (DA) might be required. Council's Building and Environmental Health Unit should be consulted to ascertain the specific approval requirements.

### 10. What do I need to provide if my tank doesn't meet SEPP conditions?

For tank installations that do not meet the SEPP conditions (see Appendix 1 p.17 of the policy), Council may require a Development Application (DA) which includes a site plan and associated documentation detailing:

- The position of the tank in relation to other structures and services (including easements).
- Tank dimensions including height, diameter and volume.
- Area (m<sup>2</sup>) of the roof catchment area spouted to the tank(s).
- Location and volume of the first flush diversion device (mandatory).
- Plumbing configurations, including design details for power failure protection.
- Tank top-up technique.
- Backflow prevention.
- Location of the pump (where applicable).
- Depth of the tank below ground and, where applicable, how the excavation for the tank will comply with Council's Acid Sulfate Soil Management Plan for Minor Works.
- Relevant information on how rainwater pipes, taps and tanks will be clearly and permanently identified as 'rainwater'.
- Relevant structural details of the tank and its supports.
- How the installation will comply with the relevant Australian Codes and Standards.

Appendix 4 (p24.) of this policy provides some drawings of plumbing configurations for typical rainwater tank systems.