

## Rainwater Tanks – what size should I get?

Rainwater tanks are available in a range of shapes and sizes from the small 600 litre slimline tanks to the very large tanks for rural use (eg 45,000 litre). The size that will suit your circumstances will depend upon a number of factors including:

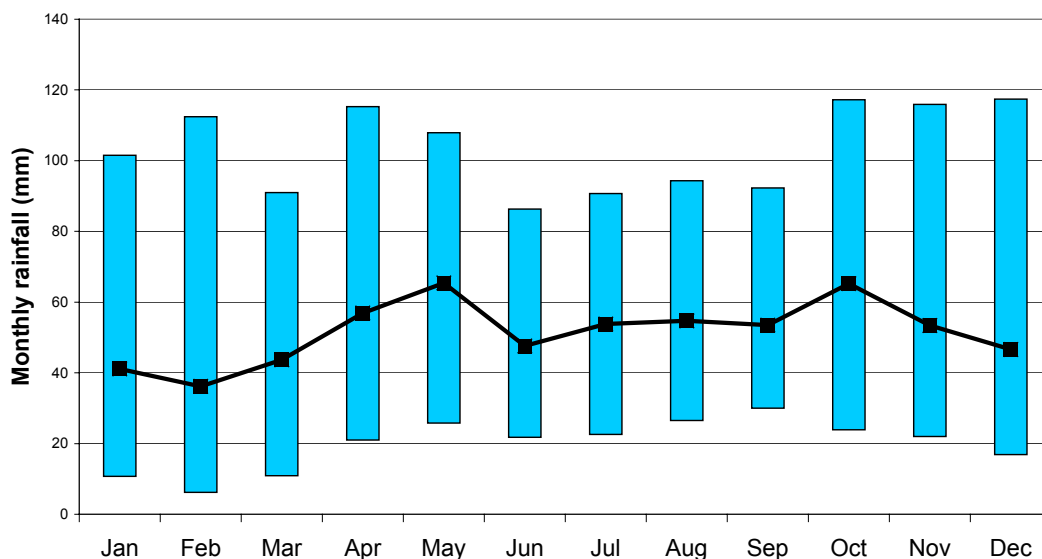
- The “footprint” space available for the tank.
- The roof “catchment” area feeding the tank – how much water will you collect?.
- Your expected use of the water collected.

### *How much water will I collect?*

The amount of water collected is a function of rainfall and catchment area. With rainfall, both the intensity (eg mm of rainfall) and the frequency (how often it rains) need to be taken into account. As seen by the current drought conditions rainfall intensity and frequency are both highly variable from one year to the next.

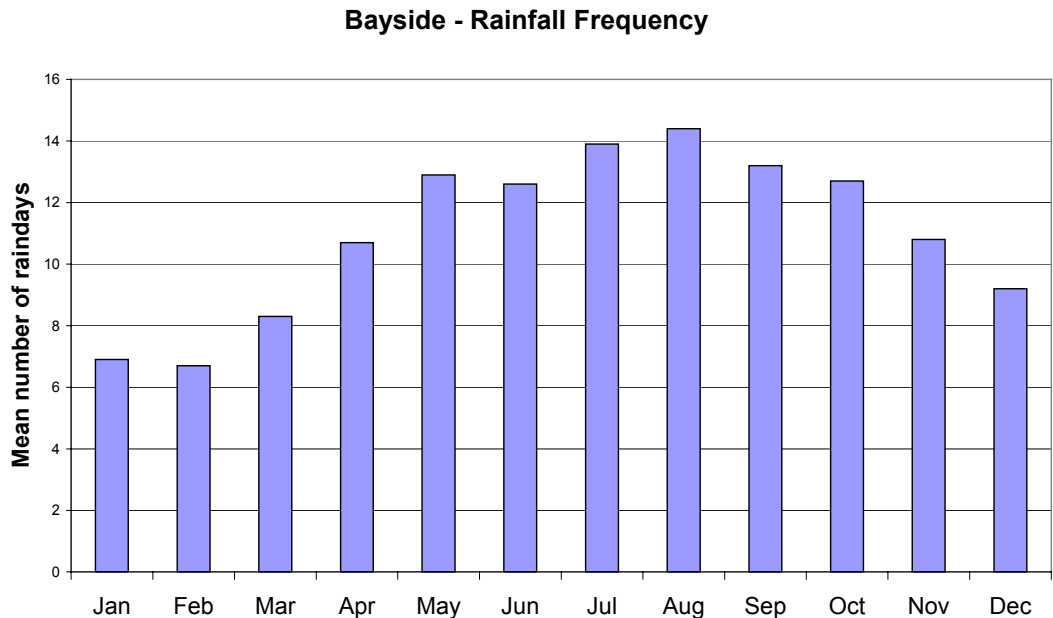
The following chart shows some of the key rainfall statistics (based on over 70 years of Bureau of Meteorology data collected from the Brighton Bowling Club). The vertical bars show the range of monthly records from the tenth to the ninetieth percentiles (ie the “typical range” of rainfall), while the solid line depicts the long term median value (ie the “typical expected” rainfall).

**Bayside - Long Term Rainfall**



This data shows that, for most years, Bayside will experience between 40mm and 60mm of rain per month, but that anything between 10mm and 110mm is not exceptional.

The frequency of rainfall also varies, as shown in the following chart of average number of rain days (days with more than 1mm of rain recorded).



As a rough guide, dividing the monthly rainfall by the number of raindays gives an indication of the size of a typical “rain event” that helps in planning the size of rainwater tank. For example, January has a median rainfall of **41mm** and **7 raindays** – therefore a typical January rain event would deliver approximately **6mm** of rainfall.

Every **1mm of rainfall** across a square meter of roof amounts to **1 litre** of water (1 litre = 100mm x 100mm x 100mm). For a roof that is 100 square metres (eg 10m x 10m), each 1mm of rainfall will deliver 100 litres of water.

6mm of rain, falling on a 100 square metre roof will, therefore, give **600 litres** of water. You could expect to add this amount of water to your tank on a typical wet January day.

### ***How much water do I need?***

If the 7 average raindays were evenly spread across the month they would be 4.5 days apart. So, for our “typical” January, the 600 litres collected would need to provide your needs for, say, 5 days (without using any longer term stored water). What can you do with 600 litres of water?

- A garden hose, running at 15 litres/minute, will take 40 minutes to use 600 litres. Our example above will give you 8 minutes of garden hose use per day.

- Confining your water application to particular plants, through a bucket or watering can (of say 10 litre capacity), gives 60 buckets of water. Over 5 days that is 12 ten litre buckets per day.
- With a 3/6 litre dual flush toilet each person in a house will use approximately 20 litres per day on toilet flushing. 600 litres would provide the toilet flushing water for 6 people over a 5 day period.

### **Calculating a reasonable tank size**

Of course raindays do not occur at evenly spaced intervals and the amount of rain received in an event will vary considerably. It is not unusual to have two or three wet days in a row followed by weeks of dry conditions. In addition, you need to factor in how much long term storage you could use – rainwater collected in the cooler winter and spring months but not used until the drier summer.

<b>Rainwater available</b>
Roof area that can be directed to a rainwater tank = _____ square metres [a]
Roof area (square metres) [a] x 6 mm rainfall = _____ litres collected on a typical wet day in January [b]
Volume of water [b] x 2 (or 3) days of summer wet events to capture = _____ litres collection volume [c]
[c] + _____ litres long term storage = _____ litre rainwater tank [d]
<b>Potential water use</b>
_____ minutes of garden hose use per day x 15 litres/min = _____ litres per day [e]
_____ ten litre buckets or watering cans per day x 10 = _____ litres per day [f]
_____ people x 20 litres = _____ litres for toilet flushing [g]
other uses? _____ litres per day [h]
Total water use [e] + [f] + [g] + [h] = _____ litres per day [i]
At this rate your tank will give you [d] / [i] = _____ days of water

### *Example*

#### **Rainwater available**

Roof area that can be directed to a rainwater tank =   100   square metres [a]

Roof area (square metres) [a] x 6 mm rainfall =   600   litres collected on a typical wet day in January [b]

Volume of water [b] x 2 (or 3) days of summer wet events to capture =  1200   
(2 days)    litres collection volume [c]

[c] + **800 litres** long term storage =  2000  litre rainwater tank [d]

#### **Potential water use**

 15  minutes of garden hose use per day x 15 litres/min =  225  litres per day [e]

  5  ten litre buckets or watering cans per day x 10 =   50  litres per day [f]

  0  people x 20 litres =   0  litres for toilet flushing [g]

other uses?   0  litres per day [g]

Total water use [e] + [f] + [g] + [h] =  275  litres per day [i]

At this rate your tank will give you [d] / [i] =   7  days of water

#### **Corporate Centre**

Royal Avenue, Sandringham

Postal: PO Box 27, Sandringham Victoria 3191

Phone 9599 4444 • Fax 9598 4474

Website: <http://www.bayside.vic.gov.au>

Email: [enquiries@bayside.vic.gov.au](mailto:enquiries@bayside.vic.gov.au)

Hours of business 8.30am – 5.00pm

Monday – Friday (except public holidays)