

Downpipe diversion

What is downpipe diversion?

Downpipe diversion is a great way to keep your garden green, help the environment and keep our rivers, creeks and bays healthy.

The hard surfaces created by urban development have significantly increased stormwater runoff and reduced the volume of water able to infiltrate back into the ground. These urban flows eventually end up in our waterway systems causing damage through erosion and pollution.

By diverting one or more downpipes around your property, you are allowing water to infiltrate naturally back into the ground and creating a new water source for your existing garden. You are also helping to reduce the amount of stormwater that flows into our waterways.

Easily fitted to an existing downpipe or rainwater tank overflow, a downpipe diversion is just one of the many things you can do around your home to help better manage stormwater. You may even consider building a raingarden or swale.

Handy hint – Downpipe diversion is most effective when water from the hose flows over a garden or grassed area and is allowed to infiltrate back into the soil. If the area around the house is primarily paved or concrete, then downpipe diversion is not ideal.

Please note: A licenced plumber must be used for stormwater connections and modifications.



Downpipe diversion

Step 1 – getting started

The first thing to do is identify all the downpipes around the property. A downpipe diversion is most effective when the water can flow over a garden bed or grassed area and infiltrate back into the soil.

You will also need to check the size of the downpipe so that you can advise your local plumber (i.e. 90mm diameter, 100mm diameter, 75mm diameter). For the purpose of this instruction sheet, the downpipe size is assumed to be 90mm diameter.

Step 2 – identifying the right downpipe

The following points need to be considered before diverting a downpipe:

- A) If a downpipe is located where the surrounding ground slopes towards the house then it should not be diverted.
- B) If the property slopes towards the street, then the downpipe of the street side of the house should be diverted. If the property slopes towards the rear of the property then the downpipe on the rear side of the house should be diverted.
- C) A downpipe diversion should not discharge water directly over impervious surfaces.
- D) Downpipe diversion is most effective when the water can flow over garden or grass and penetrate into the soil.

Soil types also need to be considered before diverting a downpipe. See Step 5 for more information.



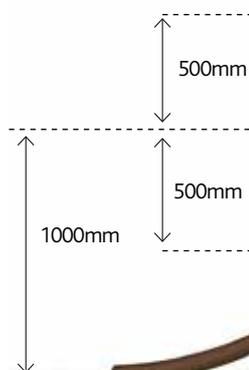
Step 3 – downpipe diversion arrangement

Any modifications to a stormwater pipe or downpipe must be carried out by a licensed plumber.

Downpipes are designed to convey runoff away from a roof and protect the property from water damage in the event of heavy rainfall. It is very important, therefore, that a downpipe is never entirely disconnected from the stormwater system. Instead, a bypass mechanism should be installed to manage the risk of flooding.

The downpipe diversion is fitted into the existing downpipe and includes a water diverter and hose positioned 1000mm above the surrounding ground level. The hose attached to the diverter should be no more than 13mm in diameter and a length of between 1m and 5m – depending on the property's soil types. See Step 5 for further information.

1. LEAF EATER
2. WATER FLOW FROM ROOF.
3. EXISTING STORMWATER DOWNPIPE.
4. BYPASS MECHANISM FOR LARGER STORM EVENTS.
5. EXCESS WATER FLOW IN LARGER STORM EVENTS.
6. WATER DIVERTER AND HOSE.
7. LEVER TO CLOSE OR OPEN DOWNPIPE DIVERSION.*



The 90mm diameter bypass mechanism is connected into the downpipe 500mm above and 500mm below the diverter hose, and is positioned to reconnect with the stormwater downpipe. See diagram below.

A downpipe diversion of this type will redirect approximately 90% of all rainfall onto your garden and away from our precious waterways.

Step 4 – operating the downpipe diversion

When the lever on the water diverter is closed, water will flow through the hose and onto the garden or grassed area. When opened, water from the roof will flow through the downpipe and into the stormwater system. To maximise the benefits of a downpipe diversion, the lever should remain closed.

Step 5 – setback requirements

When determining where to direct the downpipe diversion, consider the location of the house and other buildings on the property, as well as those on neighbouring properties. Check the likely path that the water will travel from the diversion.

For all downpipe diversions, a minimum distance from any building to the point of discharge (i.e. end of the hose) is required.

Table 1 provides a guide to the minimum setbacks depending on soil types (see next page).

Handy hint – It is important to have a leaf eater installed to ensure leaves and debris do not clog the diverter.



*Diverter most effective when level pushed closed

Table 1: Setback requirements – footing distance from hose end.

SOIL TYPE	MINIMUM DISTANCE FROM FOOTINGS (M)
SAND	1
LOAM	2
MEDIUM SAND	4
REACTIVE CLAY	5

If you are unsure of the soil types on the property, your local council may be able to help. Alternatively, you can try the following test.

1. Dig a hole – 100mm diameter x 350mm deep.
2. Place 90mm diameter PVC pipe of at least 300mm long into the hole.
3. Pour 1.3 litres of water into the pipe.
4. Observe how quickly the water infiltrates the soil.

If the water disappears in less than 1 minute, then the soil type is most likely sandy. If the water takes 3 minutes or more, then the property has clay type soils. Repeat this test a few times until the infiltration rate is consistent.

Handy hint – Water infiltration into soil near permanent structures can cause the ground to sink or swell, which can cause cracking, subsidence or foundation failure. Therefore, it is important to ensure that the discharge point from the downpipe diversion meets the setback requirements outlined in Table 1.

If you are still unsure of the soil types on the property, the diverter hose should be set to discharge water 5m away from any building or foundation on the property.

Step 6 – monitoring the diversion

Monitoring the downpipe diversion will ensure that there is no flooding of the property and neighbouring properties, and that water flow is not causing erosion to surrounding areas.

Move the diverter hose around your garden from time to time to maximise water flow and to prevent possible erosion.

Ensure leaf eater is clean from leaves and debris when needed.

Need help?

If you have any questions about downpipe diversion or building a raingarden, your landscape gardener or local plumber may be able to help. For more information visit melbourne.water.com.au/raingardens

Materials List – what you need for a downpipe diversion

Table 2: Details the materials required for a downpipe diversion.

You can purchase the materials yourself, or a licensed plumber will be able to supply them when fitting the downpipe diversion. While prices may vary depending on the materials selected, one downpipe diversion is likely to cost \$150 (plus the cost of a plumber). One basic diversion is likely to take your plumber 1 hour.

QUANTITY	MATERIAL
1 No.	90mm dia. Water Diverter with on/off lever and 13mm dia. outlet
1 No.	Leaf eater
2 No.	uPVC 90mm diameter tee
2 No.	uPVC 90mm diameter 90 degree bend (preferably with inspection cap)
2 l/m	90mm diameter pipe
6 l/m	13mm diameter nylon hose

mm= millimetres l/m = lineal metres dia. = diameter

Note: Lengths are subject to change depending on your downpipe arrangements. The above quantities are based on the downpipes being 90mm diameter.

Melbourne Water
990 La Trobe Street
Docklands VIC 3008
PO Box 4342
Melbourne Victoria 3001
Telephone 131 722
melbournewater.com.au/raingardens
ISBN 978-1-921603-95-2 (print)
ISBN 978-1-921603-96-9 (web)

© Copyright 2012

Version 6, December 2013

Melbourne Water Corporation.
All rights reserved.

Printed on Revive Laser. The recycled pulp is 100% FSC certified Post Consumer under the FSC credit system.

No part of the document may be reproduced, stored in a retrieval system, photocopied or otherwise dealt with without prior written permission of Melbourne Water Corporation.

Disclaimer: This publication may be of assistance to you but Melbourne Water and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.



Certified by the Carbon Reduction Institute

