

STORMWATER MANAGEMENT

This fact sheet provides advice on how to appropriately manage stormwater flows in trade waste premises. Greater Western Water aims to minimise the amount of rain and uncontaminated water which enters its sewers. Sewer pipes have limited capacity and are not designed to cope with excessive peak flows caused by rainfall events. When rainfall is directed to sewer the system's limited capacity can result in spills to the environment.

What stormwater can be directed to sewer?

In general, sites should aim to produce uncontaminated stormwater which is directed to stormwater drainage systems, subject to Environment Protection Authority (EPA) requirements.

However, Greater Western Water will accept uncontaminated or contaminated stormwater in certain circumstances:

- Uncontaminated stormwater, where flows are from unroofed areas smaller than 20 square metres, discharged under a Trade Waste Agreement;
- The contaminated portion of stormwater, collected/diverted via a stormwater management system, and discharged under a Trade Waste Agreement, and
- All stormwater in the event that the quality of all rainwater run-off is not acceptable for discharge to the stormwater system and/ or EPA has advised that all stormwater must be directed to sewer. The details of such an arrangement need to be discussed with Greater Western Water.

What stormwater management system options are available?

There are a number of options for managing stormwater. The most common is a first flush stormwater system. Others are detailed in Tables 1 and 2 which outline some of the methods and design criteria to consider when dealing with stormwater run-off.

What is a first flush stormwater system?

A first flush stormwater system (commonly referred to as a stormwater diversion system) is designed to capture the first portion of rainwater run-off from a rainfall event so it can be directed away from the stormwater system and the environment it flows into. Pollutants deposited on surface areas can be dislodged, dissolved or entrained by rainfall as it runs over the surface. Rainwater that initially runs off an area during a rainfall event will be more polluted than the rainwater that runs off later. First flush systems are commonly employed at industrial sites that have open areas which are subject to vehicle traffic, manufacturing or processing areas.

What are the considerations when installing a first flush system?

Connection methods of a first flush system vary depending on business activities, unroofed area, sewer capacity constraints and pump availability. For a first flush system _to work it must be properly designed and installed, with captured rainwater being removed quickly so cleaner waters from the source don't become re-contaminated with pollutants.

How should stormwater from construction sites be managed?

Operators of construction sites should minimise stormwater runoff. If stormwater needs to be discharged to sewer, gross solids must be removed from the water prior to discharge. If these conditions are met, Greater Western Water will normally accept stormwater discharges from construction sites. Where Greater Western Water believes the land may have been subject to contamination it may request a soil analy5is or water quality report prior to the issuing of a Trade Waste Agreement.

For more information, call 9313 8366, email <u>tradewaste@gww.com.au</u>or speak to your site's assigned Trade Waste Consultant.



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Table 1: Methods for disposing of stormwater to sewer for unroofed areas under 20m²

Methodology	What is discharged to sewer?	What is discharged to stormwater?	Do Trade Waste charges apply?	Most suitable installations	Equipment and treatment required	Results of equipment or power failure
Gravity Runoff	Total rainwater runoff and all wash water	Nil	Yes	Passenger car wash areas, mechanic workshops and panel	Straining, silt pit and any other treatment deemed necessary for	N/A
				beaters	that specific wastewater	

Table 2: Methods for disposing of stormwater to sewer for unroofed areas over 20m²

Methodology	What is discharged to	What is discharged	Do Trade Waste	Most suitable installations	Equipment and treatment	Results of equipment
	sewer?	to stormwater?	charg,es apply?		required	or power failure
Slow rate pump to sewer with overflow to stormwater drainage	Flow rate specified within trade waste agreements and consents	Rainwater with possible traces of pollutants during high rainfall events	Yes, Trade Waste flow meter to be installed if required	Areas up to 100m ² where minor pollution may occur; bus wash, small loading areas, retail car yard	Pump (limited to 3000 L/hour), silt pit for solids removal and possibly, oil interception	Total flow to stormwater
First flush system - high level overflow; polluted rainwater runoff directed to storage pond or holding facility for possible reuse, offsite disposal, or discharged to sewer at controlled rate at specific time to suit sewer capacity	Polluted rainwater runoff directed to sewer following a rain event when sewer capacity is available (at a flow rate negotiated within agreements and consents)	Nil	Yes, Trade Waste flow meter to be installed if required	Abattoirs and large industrial facilities	Large storage pond or holding facility, or tank, pump, flowmeter	Eventual overflow to sewer or stormwater
Diversion valve operated by flow switch on water supply (for wash down areas)	Polluted wash water directed to sewer only when water supply to area is operating	Rainwater with possible traces of pollutants when wash down is not taking place	Yes, Trade Waste Meter to be installed if required	Relatively clean wash down areas, no limit in size, bus and truck washing and loading areas	Stormwater diversion valve, or first flush valve, compressor, control flow switch, silt pit for solids removal and possibly oil interception	Polluted water to stormwater or unpolluted water to sewer
Diversion operated by rain gauge. Detail of rain gauge to be submitted to Greater Western Water for approval, operation and calibration	Polluted wash water and rainwater runoff when rainfall is less than <i>a</i> pre- determined intensity in relation to size of area	Rainwater with possible traces of pollutants	Yes, Trade Waste Meter to be installed if required	External process and wash areas where pollution of the area is probable and may occur when hoses are not being used, bus washing, semi-trailer washing, transit and storage areas, processing areas	Stormwater diversion valve, or first flush valve, compressor, control flow switch, silt pit for solids removal and possibly oil interception	Polluted water to stormwater drainage or unpolluted water to sewer