

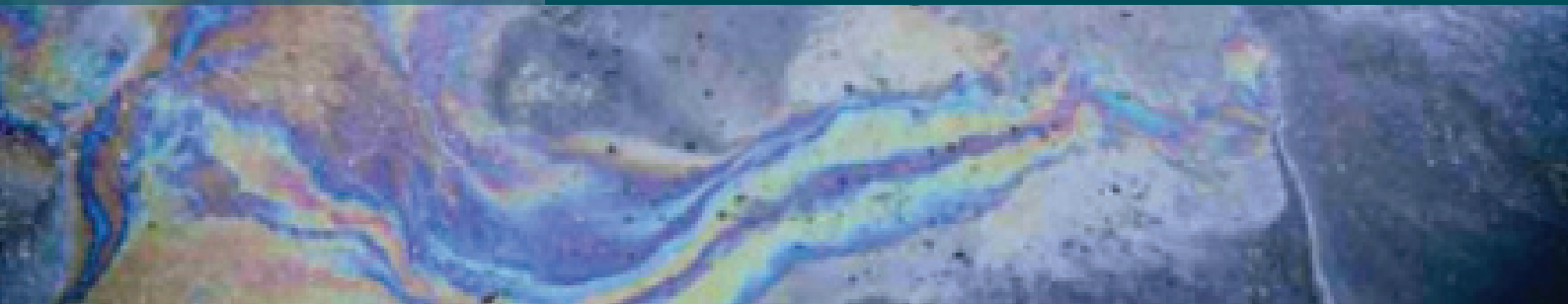


Te Kaunihera o Te Tairāwhiti
GISBORNE
DISTRICT COUNCIL

Stormwater Management Additional Guide

FOR INDUSTRIAL AND TRADE ACTIVITIES

GISBORNE DISTRICT COUNCIL



1. INTRODUCTION

Under the requirements of the Freshwater Plan from 1 May 2020, the Gisborne District Council (GDC) has an obligation to monitor its stormwater networks surface water quality, sediment quality and aquatic ecology objective. As result all trade and industrial sites require a Stormwater Management Plan that outlines their discharges to the stormwater system, due to potentially large and hazardous pollutant volumes, loads and characteristics. To help you a Stormwater Management Plan (SMP) template is available on our website. It is not essential to use this template. Consent holders may produce an SMP in their own format. However the 'Plan' must contain adequate information to enable pollution risks to be adequately managed.

This document provides guidance for trade and industrial premise, to reduce on-site contamination of stormwater. If you're not sure what to do, then the Gisborne District Council is the best place to start. They have people who can provide advice about how to go about achieving compliance with this Rule.

Phone 06 867 2049 or free phone 0800 653 800

Open Monday to Friday 8am to 5pm

Email: service@gdc.govt.nz

1.1. Why is a Stormwater Management Plan required?

From 1 May 2020, all industrial or trade activities (new and existing) require a Stormwater Management Plan to manage adverse effects from stormwater discharges (RuleC 6.2).

Based on the ANZECC Guidelines for Fresh and Marine Water Quality (2000), the stormwater running off your property must not contain hazardous substances, agricultural chemicals or substances that are toxic to aquatic ecosystems.

Stormwater on site shall be treated in accordance with the Stormwater Management Devices: Design Guidelines Manual 2003 Technical Publication 10 of the Auckland Council or by alternative methods with equivalent level of contamination removal.

Businesses that don't have a SMP detailing their current or planned (with timeline) stormwater treatment by May 2020 will need to apply for a Resource Consent to discharge Stormwater into the system.

Penalties may occur for non-compliant businesses in accordance with Resource Management Act enforcement measures.

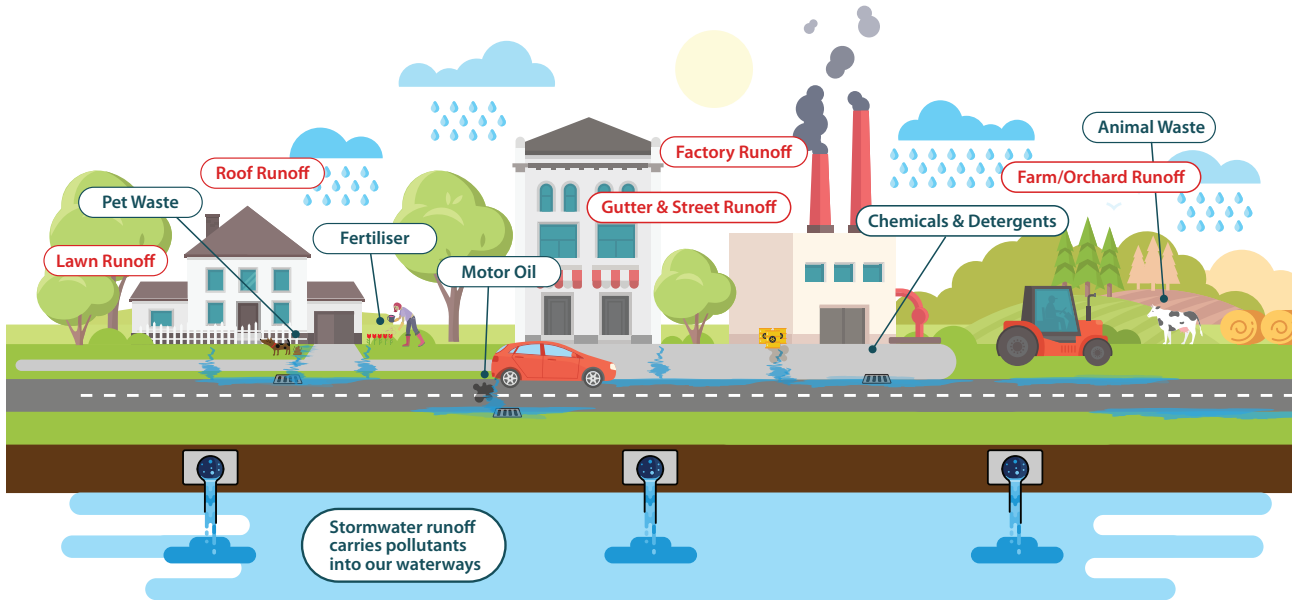
1.2. How does your business benefit from a Stormwater Management Plan?

With a well-designed SMP you can:

- Reduce the risk of expensive clean-ups.
- Reduce the risk of reputation damage and negative media attention.
- Avoid any possibility of litigation.
- Contribute to maintaining clean recreational areas in and around you waterways for our residents.
- Reduce adverse effect of pollution during flooding.

1.3. Stormwater or Wastewater?

Stormwater is the rainfall that runs off hard surfaces such as your roof, driveway, roads, footpaths or industrial yards through a gutter, sump/catchpit, and, untreated, can transport contaminants into the nearest waterway. Contaminated stormwater must be treated prior to discharge. Cooling and condensing water may be accepted into the stormwater network subject to GDC's approval. Other contaminated sources of water from industrial sites including wash-water and process wastewater must be discharged along with sewage to the sewer according to a Trade Waste consent issued under the Gisborne Trade Waste Bylaw 2015.



PART A: COMPANY, SITE AND ENVIRONMENT

1.1. Site Activities and company information

Part A of the Stormwater Management Guide is about gathering information about your business and business operations. Industrial sites can have numerous activities occurring on-site that can generate a wide range of contaminants that are harmful to the environment.

Activities on your site might include:

Materials shipping and receiving includes loading and unloading raw materials, chemicals, and products to/from industrial sites.

Materials handling and processing includes the on-site manufacturing, transfer, and generation of airborne particulates, liquids, and solids.

Materials storage areas include tanks, drums, containers, silos, bins, hoppers, and stockpiles.

Vehicle and equipment maintenance and storage includes the following activities:

- Topping up and replacing hydraulic and automotive fluids including fuel,
- Making mechanical repairs,
- Storing vehicles and equipment (i.e., long- or short-term while waiting for repair or maintenance), and
- Storing related materials (e.g., oil, fuel, batteries, tyres, oil filters).

Stormwater Management Plans can help you eliminate and/or reduce stormwater contamination at the source via tactical site layout, housekeeping, checks and maintenance, spill control and safeguards, and employee training.

At some sites, engineered treatment solutions may also be necessary to remove pollutants and/or mitigate the effects of increased runoff rates and volumes. Pollution prevention measures should be considered foremost since they are generally cheaper and easier to implement compared to treatment solutions.

Common pollution sources at industrial sites have been grouped by activity to identify potential stormwater contaminants (Table 1).

PART B: STORMWATER MANAGEMENT

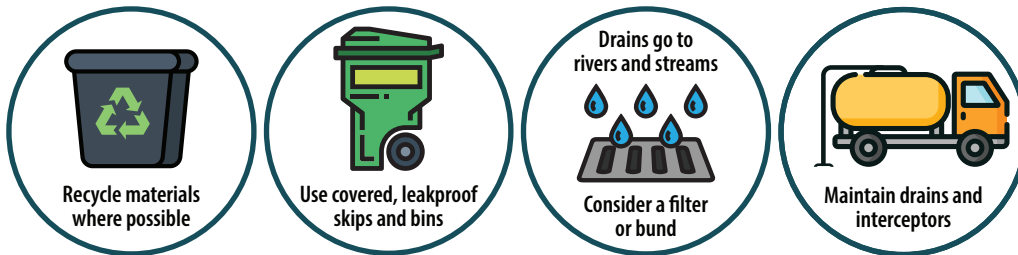
Your Stormwater Management does not need to be expensive, most stormwater contamination can be reduced at the source via tactical site layout, housekeeping, checks and maintenance, spill control and safeguards, and employee training. You can make your storm water treatment system very cost-effective by minimising the extent of contaminated runoff on your site and diverting clean storm water away from your treatment system. This will target your 'hot spots' and treat only contaminated runoff.

The following will provide more detail about good management practices that reduce stormwater contamination at your site.

2.1. Good Housekeeping

Good housekeeping reduces or eliminates pollutants by maintaining a clean, tidy site. These practices include:

- Containing and covering rubbish, waste, and debris;
- Scheduling regular pickup of rubbish and waste;
- Removing redundant containers and equipment from site;
- Inspecting drums, tanks, and containers routinely for leaks and structural integrity;
- Establishing procedures for the proper handling of materials, equipment, and spills; and
- Sweeping or cleaning hardstand routinely.



In particular, skip and material storage areas, vehicle and equipment maintenance areas, and loading bays all benefit from good housekeeping. Training employees in good housekeeping techniques and involving them in routine monitoring of on-site practices has proven to be effective for implementing these measures.

- Cleaning and washdown includes cleaning and rinsing vehicles, transfer or process equipment, surfaces, parts, trailers, structures, and tanks (i.e., interior or exterior).
- Painting and sanding applies to refinishing vehicles, equipment, and any structures. Waste management and disposal includes practices related to the management, disposal, recycling, reuse, and storage of waste, byproducts, and residual materials generated by a site.
- Building and grounds maintenance includes general site upkeep related to sweeping, landscaping, pest management, and stormwater infrastructure (e.g., downpipes, sumps).
- Erosion is sediment transport from exposed stockpiles, un stabilised soils, and haul roads which generally results from vehicle traffic, precipitation, and/or wind. Illicit stormwater discharge is any non-stormwater discharge into the stormwater network occurring from incorrect or faulty piping, intentional dumping, and accidental or unaddressed leaks and spills (i.e., negligence).
- Inspection and training includes conducting regular site inspections and preventive and reactive maintenance to address and prevent contamination issues. This category also includes keeping maintenance records, implementing an environmental management plan with standard operating procedures for site activities (e.g., waste disposal, spill prevention and response, housekeeping), and training employees, contractors, and other site visitors, where appropriate, to minimise environmental risks.



2.2. Exposure Minimisation

Minimising the exposure of stormwater runoff to pollutants reduces the need for treatment measures. It prevents spilled materials and debris from being picked up by runoff and carried into drains and waterways.

Exposure minimisation may include providing temporary cover (e.g., tarps, awnings) or activities under cover (e.g., buildings, silos, sheds). Often, stormwater contamination can be minimised or eliminated with quite simple practices such as keeping skip lids closed, storing chemical drums inside, and bunding polluted or potentially polluted areas.

2.3. Erosion and Sediment Controls

Sediment is one of the most significant contaminants of our streams, lakes and coastal waters. Industrial sites are a major source and sediments are likely to carry other pollutants including, metals and petroleum compounds.

Erosion occurs due to site-specific factors including topography, activities, soils, ground cover, materials, and weather. Once eroded, sediment controls such as wheel and equipment cleaning, silt fences, retention ponds, and stabilised vehicle exits help reduce sediment transport and tracking. The fundamental principles to minimise stormwater contamination from erosion are to

- control run-on water,
- separate 'clean' water from 'dirty' water,
- protect the land surface, and
- prevent sediment from leaving the site.

2.4. Runoff Management

Clean runoff can be discharged to the stormwater network, but contaminated runoff must be reused on-site, treated to reduce the volume and load of pollutants, and/or discharged to Trade Waste.

Effective stormwater management strategies may include stormwater capture and reuse, soakage, and/or full or partial volume treatment systems. Site managers should consult with a stormwater engineer to develop their own tailored, site-specific stormwater management strategies.

2.5. Treatment Controls

Responsible stormwater management may require a combination of pollution prevention and treatment controls to be effective in achieving water quality objectives.

Pollution prevention at the source avoids unnecessary contamination risks and reduces contaminant loads (and, thus, operation and maintenance requirements) on treatment systems. Treatment systems may include oil-water interceptors, detention basins, filters, or constructed wetlands.

PART C: DRAINAGE PLANS

One of the most common reasons for water pollution incidents is a lack of awareness of the purpose of drains.

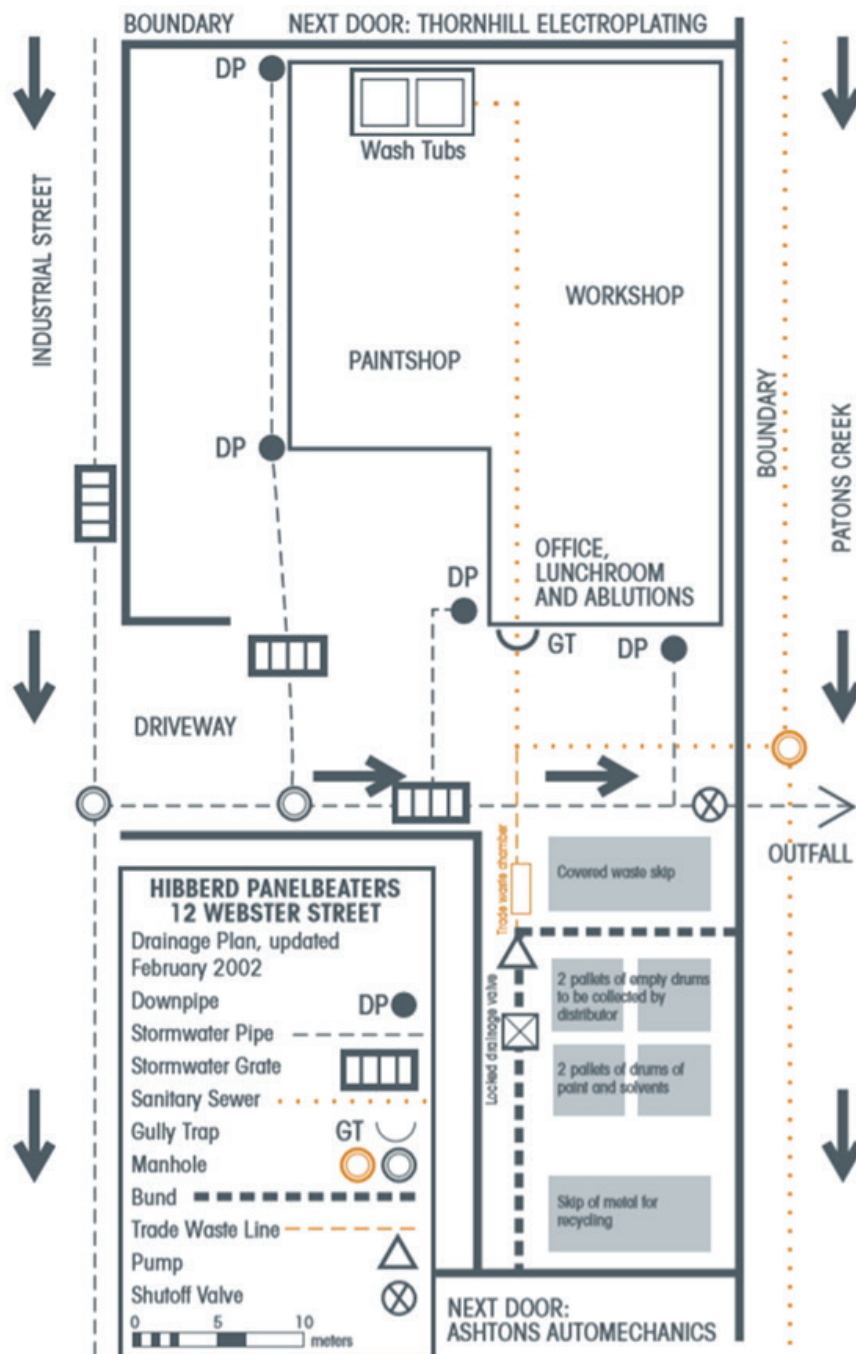
Are workers on your site easily able to tell which drains on your site lead to sewer and which are stormwater drains?

It is important to use each drain for the right purpose. Only uncontaminated rainwater goes down your stormwater drains. Only trade waste, toilet waste and grey water goes into the sewer.

Often drains on industrial or commercial sites are not clearly identified, or may be incorrectly connected to the wrong system (called a cross-connection). It is also common for drainage maps to be incorrect, out of date or incomplete. You may need to employ a drain layer to inspect drainage and either create a drainage map if you don't have one or confirm the accuracy of your map. Do not assume drainage is set up correctly ~ have it checked!

Summarise your site layout and drainage. Also note that you will need to attach and include with your Plan a map of your site identifying your drainage.

3.1 Example for a Drainage Plan



3.2. Common pollution sources at industrial sites

Pollution Sources	Contaminants
MATERIALS SHIPPING AND RECEIVING	
<ul style="list-style-type: none"> Leaks, spills and from unloading, loading, transfer, and distribution of materials and products Leaks from faulty piping connections Erosion and tracking from unstabilised soils and roads 	<ul style="list-style-type: none"> Hydraulic and automotive fluids (e.g., oil, lubricants, transmission fluid, brake fluid, antifreeze, coolant) Sediment Site-specific chemicals
MATERIALS HANDLING, PROCESSING, AND STORAGE	
<ul style="list-style-type: none"> Leaks, spills, and residues from processes Material storage areas (e.g., tanks, drums, bottles, bags, bins, stockpiles) Generation of leachate Particulate and fugitive emissions from furnaces and processing equipment 	<ul style="list-style-type: none"> Hydraulic and automotive fluids Acids, alkalis Metals such as copper, lead, nickel and zinc Oxygen demand Sediment, airborne particulates Site-specific chemicals
VEHICLE AND EQUIPMENT MAINTENANCE AND STORAGE	
<ul style="list-style-type: none"> Leaks, spills and residues from fluid transfer and fuelling Storage areas (e.g., batteries, tyres, air and oil filters) Corroding equipment, chipping paint and galvanized metal 	<ul style="list-style-type: none"> Hydraulic and automotive fluids Fuel (e.g., gasoline, diesel, fuel additives) Acids, alkalis, metals
PAINTING AND SANDING	
<ul style="list-style-type: none"> Paint and thinner spills and overspray Paint application wastes including empty containers Sanding Emission from ventilation systems 	<ul style="list-style-type: none"> Solvents, detergents Sediment, acids, alkalis, metals Site-specific chemicals
CLEANING AND WASH DOWN	
<ul style="list-style-type: none"> Rinse water and washwater from vehicles, equipment, drums and tanks Part cleaning Poorly designed and/ or undersized wash pads Faulty wash pad diversion valves Cleaners, degreasers and process residues 	<ul style="list-style-type: none"> Solvent, detergents Sediment, acids, alkalis, metals Site-specific chemicals
WASTE MANAGEMENT AND DISPOSAL	
<ul style="list-style-type: none"> Leaks, spills, residues and leachate from waste and scrap skips and storage areas Improper waste disposal On-site treatment facility 	<ul style="list-style-type: none"> Acids, alkalis, oxygen demand, metals Pathogens, biocide Site-specific chemicals
BUILDING AND GROUNDS MAINTENANCE	
<ul style="list-style-type: none"> Pest management Landscaping and fertilisers Litter, built up of residues on hardstand Galvanized metal roofs and downpipes Poorly maintained stormwater infrastructure and erosion controls 	<ul style="list-style-type: none"> Pesticides, fertilisers, insecticides, herbicides Oxygen demand, organics Sediment, metals Nutrients (e.g., ammonia, nitrate, phosphorus) Hydraulic and automotive fluids including fuel
ILLICIT STORMWATER, NETWORK CONNECTIONS	
<ul style="list-style-type: none"> Floor, sink, sewage or process wastewater drains connected to stormwater network 	<ul style="list-style-type: none"> Oxygen demand, nutrients, organics Pathogens Site-specific chemicals

Find out more

For further information on Stormwater Management visit our website www.gdc.govt.nz