INDUSTRY ENVIRONMENTAL GUIDE FOR

MOTOR VEHICLE SMASH REPAIR

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That's why I make environmentally sound decisions.

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Dedicated to a better Brisbane

Acknowledgments

Brisbane City Council would like to acknowledge the New South Wales Office of Environment and Heritage for their technical assistance in the development of this guide.

Please note

This guide provides information relevant at the time of publication. While reasonable efforts have been made to ensure the contents are factually correct, Brisbane City Council does not accept responsibility for the accuracy or completeness of the contents and is not liable for any loss or damage that may occur directly or indirectly through the use of, or reliance on, the contents of this guide.

Contents

Abbreviations

DEHP
Department of Environment and Heritage Protection

EMS
Environmental management system

HEPA
High Efficiency Particulate

HVLP
High-volume, low-pressure (spray gun)

NPI
National Pollutant Inventory

QUU
Queensland Urban Utilities

SDS
Safety data sheet/s

TEP
Transitional Environmental Program

VOCs
Volatile organic compounds

WH&S
Workplace health and safety

WMP
Waste management plan

1 About this guide

This guide is part of a series prepared by Brisbane City Council. Similar guides for other business sectors are available from Council's website www.brisbane.qld.gov.au or by calling Council's Contact Centre on (07) 3403 8888.

What is the purpose of this guide?

This industry environmental guide is not a statutory document and is not law. Instead, it offers advice to assist the motor vehicle smash repair industry in Brisbane to:

- meet the requirements of *Brisbane City Plan 2014* (City Plan) when building, upgrading, extending or altering a motor vehicle smash repair workshop
- meet the requirements of the *Environmental Protection Act 1994*, administered by Brisbane City Council, when operating a smash repair workshop.

Motor vehicle smash repair workshops restore and repair vehicles damaged through accidents or general wear and tear. Workshops can be located close to customers so noise, odours and other workshop pollutants must be carefully managed to protect the health and wellbeing of surrounding communities and the natural environment.

Each section of this guide addresses a separate aspect of the smash repair process, from storing damaged vehicles to dismantling, panel beating and refinishing. It also offers advice for designing new workshops or upgrading existing workshops.

Businesses using this guide can be confident they are doing what is required to protect the environment and prevent an environmental incident.

Who are the intended users of this guide?

- Businesses and individuals involved in building, upgrading, extending, altering or operating a motor vehicle smash repair workshop in Brisbane.
- Brisbane City Council officers involved in assessing development applications and conditioning development approvals under City Plan.
- Brisbane City Council officers involved in investigating environmental nuisance and minor water offences under the *Environmental Protection Act 1994* (the Act).

What are the business benefits?

Good environmental management practices do more than preserve the natural environment – they can save businesses money. Minimising waste, increasing resource efficiency and recovery and adopting cleaner production methods have been shown to reduce operating costs.

Businesses with high environmental standards enjoy:

- an enhanced reputation
- the opportunity to be a supplier of choice to corporate and government clients who may consider the environmental performance of suppliers and products as part of green procurement policies
- a high level of employee satisfaction, retention and productivity.

Other benefits of a high level of environmental management include:

- reduced loss of materials
- reduced waste disposal costs
- reduced water and electricity costs
- a level playing field for pollution control across the industry, providing fairer competition for all companies in the market
- lower spill clean-up costs
- fewer disruptions to business operations
- reduced costs associated with complaints from the community
- reduced potential for litigation arising from pollution incidents.

Building, upgrading, extending or altering a motor vehicle smash repair workshop

Building, upgrading, extending or altering a motor vehicle smash repair workshop may trigger the need for a development approval from Brisbane City Council under City Plan.

Call Council's Contact Centre on (07) 3403 8888 for advice on whether a proposed development requires approval.

City Plan regulates development in the city. It requires industrial development to comply with performance-based assessment criteria contained in its 'codes'. One of the main codes that new industrial development must comply with is the Industry Code.

Overlays, also contained in City Plan (e.g. Flood Overlay) or neighbourhood plans, which direct development in local communities, may add additional requirements depending on the development's location.

The Industry Code includes assessment criteria for:

- air quality
- surface water and groundwater
- storing chemicals and fuels (technological hazards)
- noise.

An air quality impact report, prepared in accordance with the *Air Quality Planning Scheme Policy*, or a noise impact report, prepared in accordance with the *Noise Impact Assessment Planning Scheme Policy*, can assist in demonstrating achievement of the air quality (planning) criteria and the noise (planning) criteria of the Industry Code.

Read the section on **Designing new or upgraded smash repair workshops**, contained in this guide, for advice on ways to reduce environmental risks through good design and layout.

Operating a motor vehicle smash repair workshop

Operators of motor vehicle smash repair workshops must comply with the *Environmental Protection Act 1994* (the Act). This law places a general environmental duty on individuals and companies to protect the environment and to take all reasonable and practical measures to prevent or minimise environmental harm and nuisance. Council regulates environmental nuisance and minor water offences from Brisbane businesses not licenced by the Queensland Government.

The Minister for Environment and Heritage Protection (DEHP) has approved an environmental code of practice for motor vehicle workshops to provide guidance to operators to help them comply with the Act by meeting their general environmental duty.

This guide does not replace the environmental code of practice but contains additional advice that Brisbane City Council considers reasonable and practical pollution control measures to prevent or minimise environmental nuisance and minor water offences under the Act. Council officers will reference these measures when investigating environmental nuisance and minor water offences under the Act.

Environmental nuisance includes an unreasonable interference or likely interference with an environmental value caused by aerosols, fumes, light, noise, odour, particles or smoke.

The environmental nuisance provisions of the Act can be viewed at the Queensland legislation website **www.legislation.qld.gov.au**

Minor water offences include unlawfully depositing a prescribed water contaminant in a waterway, roadside gutter or a stormwater drain or in a place and in a way so that the contaminant could be reasonably expected to wash, blow or fall into a waterway, roadside gutter or stormwater drain.

Prescribed water contaminants include chemicals, sediment, cement, concrete, acids, alkalis, building materials, oil, petrol, radiator and engine coolant and paint. A complete list is contained in Schedule 9 of the *Environmental Protection Regulation 2008*, which can be viewed at **www.legislation.qld.gov.au**

If a business' infrastructure is not sufficient to prevent or minimise water pollution or environmental nuisance, well-developed and documented environmental protection practices and procedures can help it demonstrate compliance with the general environmental duty. If practices and procedures cannot adequately demonstrate compliance with the general environmental duty of the Act, the facilities may need upgrading.

Penalties for environmental offences

Environmental offences can lead to fines of up to $500,000 and ruin a business' reputation.

Everyone involved in the business is responsible for adhering to environmental laws, from managers through to supervisors and subcontractors. Managers and directors can be directly prosecuted for an offence and even face jail. Lack of knowledge is no defence – they must either demonstrate due diligence was exercised to prevent the offence or that they could not influence the conduct of their company.

In court, the prosecutor may not have to prove that an individual or organisation intended to cause the environmental nuisance or harm. Even accidents caused by negligence can result in fines and prosecution.

Penalties include:

- on-the-spot fines of more than $1000 for an individual or several thousand dollars for a company for minor noise, air or water breaches of the *Environmental Protection Act 1994*
- up to $70,000 or more for individuals found guilty of causing environmental harm and $250,000 or more for companies guilty of the same offence
- up to $500,000 and/or up to five years' jail for the most serious offences such as wilful breaches of the law that harm or are likely to harm the environment.

Other issues to consider

Reporting incidents that may harm the environment

If a pollution incident occurs and it causes or threatens harm to the environment, by law the appropriate regulatory authority must be notified as soon as the incident is made known. This duty to notify pollution incidents extends to employers, the person carrying out the activity, employees, occupiers, contractors and agents.

For more information call Brisbane City Council on (07) 3403 8888 or visit **www.brisbane.qld.gov.au**

Reporting land contamination

The Department of Environment and Heritage Protection must be notified if a business causes land contamination. This duty to notify falls on the owner of the property and on the person whose activities have caused the contamination.

For more information call the Department of Environment and Heritage Protection on 1300 130 372 or refer to **www.ehp.qld.gov.au**

Notifiable activities

Some industrial activities that have the potential to contaminate land are defined as notifiable activities under the *Environmental Protection Act 1994*. The owner or the occupier of the notifiable activity must notify the Department of Environment and Heritage Protection of the location. The Department records notifiable activities on the Queensland Environmental Management Register.

For more information call the Department of Environment and Heritage Protection on 1300 130 372 or refer to **www.ehp.qld.gov.au**

National Pollutant Inventory (NPI)

The *National Environment Protection (National Pollution Inventory) Measure 1998* requires certain industries to report their emissions via the National Pollutant Inventory (NPI).

For more information call the Department of Environment and Heritage Protection on 1300 130 372 or refer to **www.ehp.qld.gov.au**

Regulated wastes

Some wastes removed from a business such as oil, chemicals or contaminated water are defined as regulated waste under the *Environmental Protection Act 1994*. Regulated waste must be removed by a licensed waste transporter and records of removal kept on site.

For more information call the Department of Environment and Heritage Protection on 1300 130 372 or refer to **www.ehp.qld.gov.au**

Trade waste

The release of waste by a business in Brisbane into the sewerage system may require a permit from Queensland Urban Utilities.

For more information call Queensland Urban Utilities on 13 26 57 or refer to **www.urbanutilities.com.au**

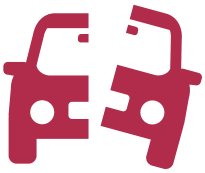

ENVIRONMENTAL

2 Priority actions for motor vehicle smash repair workshops

The short summary below outlines the most important actions businesses can take at each stage of the smash repair process to protect the environment and surrounding community. These are explored in greater detail within individual chapters.

Designing new or upgraded smash repair workshops

- Design workshops to contain odours, airborne particles, noise, chemicals, contaminated water and solid wastes.
- Stop spills, drips and wastewater leaking out of workshop doors and entrances.
- Use a spray booth and measures such as filters, taller exhaust stacks and ducted extraction systems to control overspray, odour and toxic gases.
- Buy quiet, energy-efficient equipment.

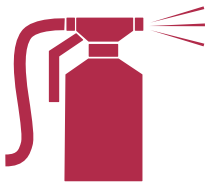


Vehicle dismantling

- Keep radiator coolant, fuels, oils, nuts, bolts and other waste out of the soil, stormwater drains and waterways.
- Dismantle vehicles and remove automotive liquids in a roofed, concrete area.
- Use spill trays under vehicles and clean up spills as soon as possible.
- Use only licensed operators to collect air-conditioning refrigerant gas or dispose of regulated waste.

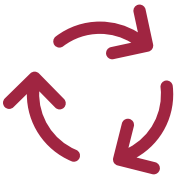
Vehicle body repair

- Use extraction equipment for activities that generate dust.
- Clean the workshop regularly to stop dust building up.
- Bag dust before placing it in bins so it does not blow away.
- Control odours using equipment such as mobile welding fume extractors.



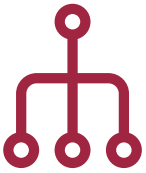
Vehicle refinishing

- Only spray paint vehicles in a spray booth.
- Maintain and regularly replace spray booth filters.
- Ensure filters are tight-fitting with no gaps.
- Use water-based paints, where possible.



Waste management, resource recovery and resource efficiency

- Reduce waste to maximise cost savings.
- Prepare a waste management plan.
- Segregate wastes to make recycling easy.
- Use a licensed waste transporter to dispose of regulated waste. Keep all collection paperwork.



Environmental management systems

- Develop an environmental policy to guide business operations.
- Create an environmental action plan outlining ways to manage risks.
- Conduct risk assessments of possible hazards.
- Document pollution prevention procedures including staff training.

Storage of chemicals

- Order and store chemicals in the smallest quantities possible.
- Store chemicals within a bunded, covered and signed area.
- Ensure spill clean-up equipment is located close to chemical storage areas.
- Keep the chemical storage area free from potential sources of ignition such as naked flames, electrical power points and switchboards, and away from grinding and welding.

Noise management

- Limit noise at night, in the early morning and on Sundays and public holidays.
- Compare noise levels when buying new equipment and choose the quietest option.
- Enclose stationary noise sources such as compressors, motors and pumps.
- Use moveable acoustic screens around noise sources such as grinding, hammering or sanding.

3 Designing new or upgraded smash repair workshops

Workshop design and construction

Smash repair workshops must be designed to prevent pollutants from being blown, swept, hosed or left to be washed by rain into the stormwater system and to seep into groundwater.

Design workshops to minimise the release of odours and noise. Use concrete or masonry walls rather than sheet metal, which offers less acoustic insulation.

Pay particular attention to the position of doors and windows. Simply facing them away from nearby homes and businesses can stop noise annoying neighbours.

Think carefully about the flow of vehicles through a workshop when designing the layout. Less movements reduces the risk of transferring contaminants from one location to another or being released to the environment.

The layout of smash repair workshops can be broadly divided into four areas (see Figure 1), namely the:

- storage area
- panel shop
- paint shop
- detailing area.

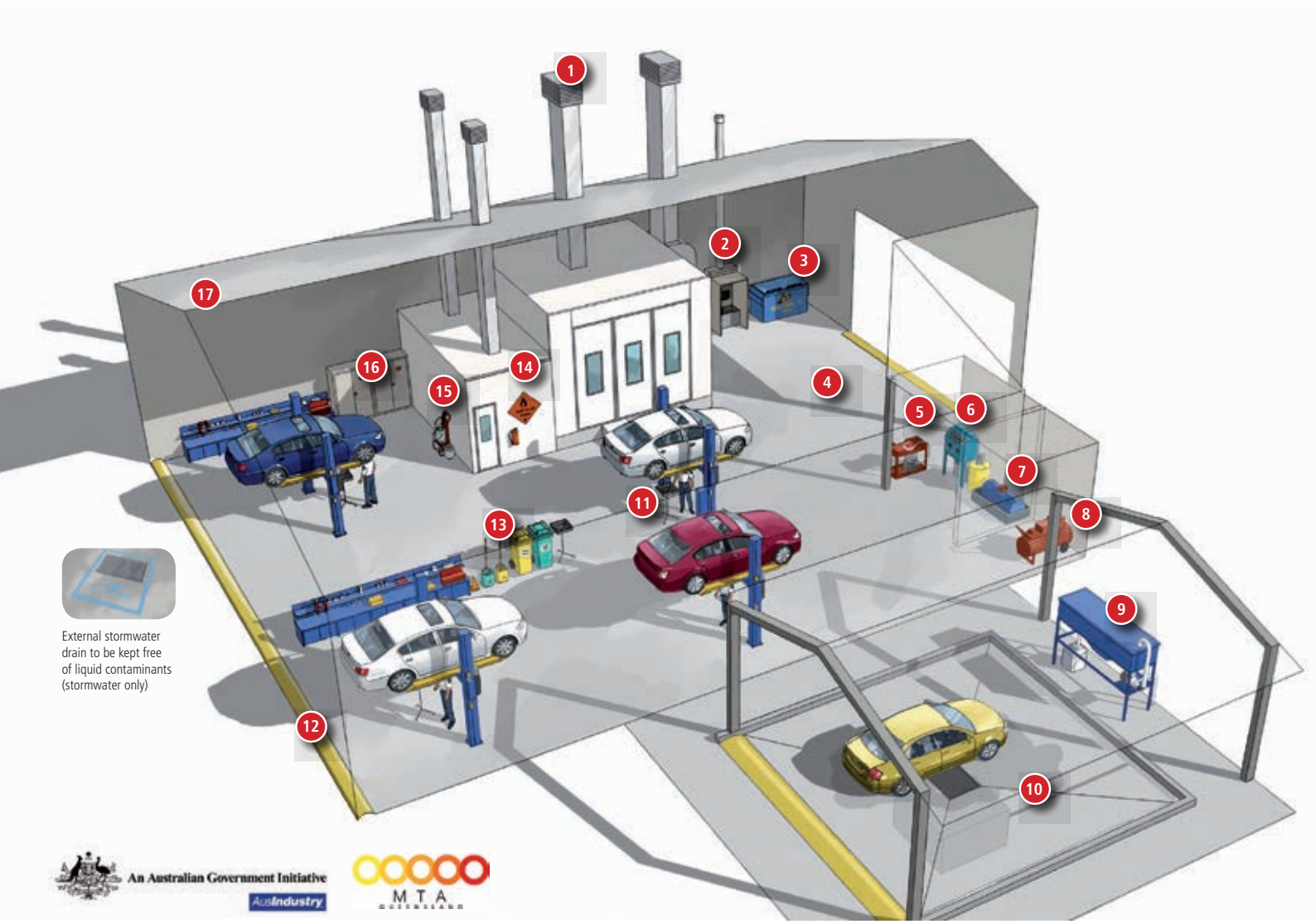
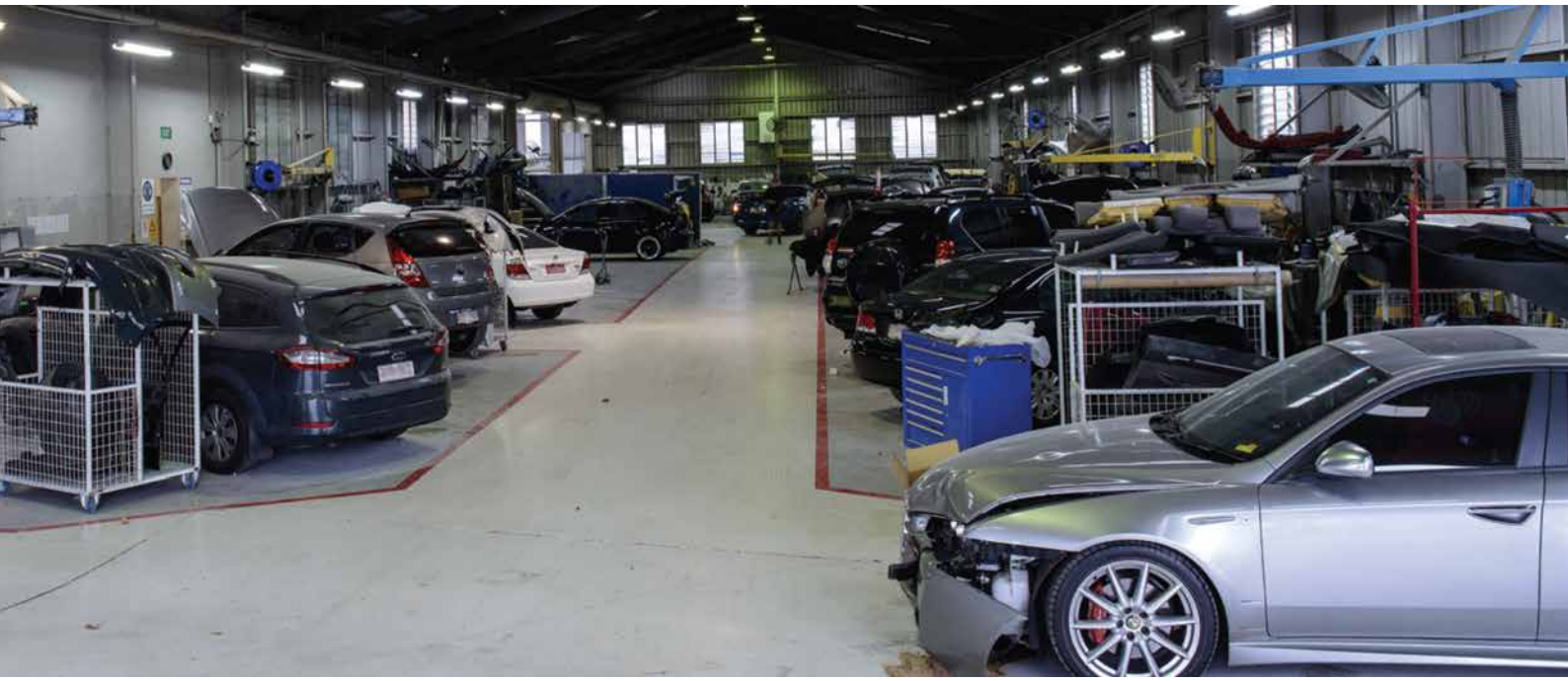


Figure 1: Artist impression – standards for the operation of a motor vehicle workshop

(image supplied by Gold Coast City Council)

1. Exhaust and ventilation stacks to spray booth, see over.
2. Radiator repair spray booth.
3. Industrial waste bin with lid and with sealed drainage holes. Stored inside workshop (optional). For regulated wastes, see over.
4. Workshop floor sealed and impervious.
5. Dry rubbing vacuum sander, see over.
6. Abrasive blasting unit, see over.
7. Liquid waste storage, see over.
8. Air compressor separated/enclosed to prevent noise nuisance.
9. Oil separator, see over.
10. Vehicle wash down bay, see over.
11. Drip tray used under vehicles to catch oil and other liquid contaminants.
12. All workshop entrances bunded to prevent contaminants escaping workshop and entering stormwater system.
13. Emergency spill kit, see over.
14. Fire safety equipment and signage to comply with relevant legislation and standards.
15. Air conditioning charge/recovery unit, see over.
16. Storage of flammable and combustible liquids to comply with relevant legislation and standards. Material Safety Data Sheet (MSDS) documentation stored onsite for certain chemicals and other liquids.
17. All works undertaken in covered workshop.

    Development approval from Council is required for carrying out a motor vehicle workshop activity.



Storage area

Damaged vehicles are kept in the storage area before repairs begin. This area should be large enough to avoid the need to store damaged vehicles on forecourts, driveways, footpaths or streets.

Damaged vehicles can leak automotive liquids such as radiator coolant, fuels and oils that can contaminate the soil, and ground and surface waters, onsite and offsite. Automotive liquids contain toxic heavy metals and chemicals such as petroleum hydrocarbons, glycols and surfactants. If these prescribed water contaminants enter waterways, they can kill aquatic life and be passed up the food chain to humans. Broken glass and plastics can also pollute stormwater systems.

Storage areas should be designed to capture and contain leaking fluids and broken parts. For example, store vehicles with damaged engines, radiators and cooling systems, on a concrete surface with a roof.

Panel shop

Vehicles are dismantled and their bodies repaired in the panel shop before being repainted.

Automotive liquids can leak, spill and drip on to the ground as vehicles are moved and taken apart. Repairing vehicles also generates solid wastes such as dust, sealers, sandpaper, body fillers, metal filings, nuts, bolts, clips and screws.

Panel shops should be designed to prevent spilt liquids, contaminated water, solid wastes and dust from escaping the workshop, seeping into the ground beneath and entering the stormwater system.

The floor should be sealed concrete, free of cracks and crevices. Design the external perimeter to contain spilt liquids and allow for easy clean-up. Use drive-over bunding, kerbing and drainage channels to keep liquids leaking out of doors and entrances.

Panel shops should have a designated place to store all liquid chemicals used or generated in the shop such as new and used oils, engine coolants and brake fluids. Many of these chemicals are flammable, so the chemical storage area should be safely away from welding and grinding activities.

Paint shop

Vehicles are painted in the paint shop. New parts and panels are primed, sanded and refinished, while surfaces are buffed and polished.

Potential pollutants from a paint shop include:

- odour and toxic gases from paints and thinners
- paint overspray (causing damage to offsite property)
- wastewater from wet sanding of primer
- harmful dust from dry sanding
- litter such as sandpaper, masking paper and masking tape
- solid wastes.

The floor should be sealed concrete, free of cracks and crevices, to prevent pollutants contaminating the soil and groundwater beneath the business. Design the external perimeter to contain spilt liquids and allow for easy clean-up. Use drive-over bunding, kerbing and drainage channels to keep liquids leaking out of doors and entrances.

Spray painting booths

Spray painting booths and designated spray painting areas should be designed, built and installed in accordance with:

- *Australian Standard AS4114.1: Spray painting booths, designated spray painting areas and paint mixing rooms – Design, construction and testing.*
- *Australian Standard AS4114.2: Spray painting booths, designated spray painting areas and paint mixing rooms – Installation and maintenance.*
- Brisbane City Council's requirements for filters and exhaust air outlets.

Australian Standards require spray painting booth filters and exhaust air outlets to meet the requirements of local authorities such as Brisbane City Council.

New workshops, extensions or other modifications to workshops (requiring new or upgraded spray booths) in Brisbane must comply with the development requirements of City Plan.

New or upgraded spray booths that do not require a development application (for example, 'self–assessable' development or where booths are replaced in existing workshops) should incorporate filtration, stack height and flue velocity measures to protect community health and prevent environmental nuisance.

Spray booth overspray filters should:

- remove at least 98% of overspray particles generated inside the booth[1]
- be either wet filters or dry fibre filters such as corrugated cardboard or fibreglass
- be tightly fitted to stop particles bypassing the filter.

Overspray filters do not stop toxic gases and chemical odours from entering the environment. New or upgraded spray booths located near 'sensitive uses' (e.g. within 250 metres of a home, childcare centre, hospital or school) should use other odour and gas control measures such as activated carbon filters or specialised exhaust vents.

- Overspray can quickly clog activated carbon filters, so combine them with efficient overspray particle filters. Filtration systems should be designed and installed by a suitably experienced supplier.
- Seek the advice of an air quality consultant early in the design stage and before submitting a development application to Council. Read the **Building, upgrading, extending or altering a motor vehicle smash repair workshop** section of this guide for more information.
- Increase the stack height or flue velocity to reduce offsite impacts of chemical odours and toxic gases. While these measures will not reduce the pollution released, they will help disperse and dilute pollutants from the stack. Appropriate stack heights and flue velocities vary between sites so engage an air quality consultant to advise on the best design.

[1] US EPA, *National Emission Standards for Hazardous Air Pollutants – Paint stripping and Miscellaneous Surface Coating Operations at Area Sources*, 9 January 2008, **http://www.epa.gov/fedrgstr/EPA-AIR/2008/January/Day-09/a24718.htm**

Paint mixing rooms

Rooms used to store paints, thinners, primers, gun wash and other liquid chemicals can create odours and release pollution into local waterways. Paint mixing rooms need to be designed, constructed and installed in accordance with *Australian Standards AS4114.1* and *AS4114.2*. They should also reflect advice contained in the **Storage of chemicals** section of this guide.

The mixing room's air exhaust system may need to be connected to the spray booth filtration system to reduce chemical odours if the workshop is near sensitive uses (e.g. within 250 metres).

Detailing area

Vehicles are washed to remove all dust and dirt, ready for customer collection, in the detailing area.

Detailing generates wastewater contaminated with dust and chemicals, which should be prevented from entering stormwater drains and waterways.

The detailing area should be roofed, with a concrete floor. Design the external perimeter to contain washing water and allow for easy clean-up. Use drive-over bunding, kerbing and drainage channels to keep wastewater from flowing out doors and entrances.

The detailing areas of new and upgraded smash repair workshops should be large enough so that vehicles are never washed or detailed on forecourts, driveways, footpaths or streets.

Other design considerations

Location of noisy equipment

Carefully consider where to place noisy equipment such as air compressors and dust extraction systems when designing a smash repair workshop. Ideally, noisy equipment should be inside the workshop or within an acoustic enclosure.

Check the manufacturer's noise label, fixed to the equipment (see Figure 2), to find out how much sound it makes (in decibels). Compare labels and buy the quietest item. Screw-type compressors, for example, are generally the quietest.

Read the **Noise Management** section of this guide for more advice.

Dust extraction equipment

Smash repair workshops should have dust extraction equipment. A fixed system, such as ducted extraction with a cyclone filter, may be a cost-effective option for a new workshop. Alternatively, mobile dust extraction equipment can be used, provided there are sufficient items for the workshop.

Waste storage

New smash repair workshops should have sufficient space to segregate solid and liquid wastes and to store them securely. Read the **Waste management** section of this guide for more information.

Energy efficiency

Build in ongoing cost savings by incorporating energy-efficient design and equipment into new and upgraded workshops such as:

- wall and ceiling insulation
- skylights
- LED or fluorescent lights
- solar hot water systems and air-conditioners
- variable-speed air compressors.

Stormwater

Keep stormwater that flows across the site free from dust, litter, vehicle parts and chemicals. Install litter traps in places where stormwater drains may become contaminated and divert 'clean' stormwater directly into drains.

Figure 2: Example noise label

OUTSIDE SOUND POWER LEVEL	60 dBA
(LOWER LEVELS MEAN LOWER OUTSIDE NOISE) THE LEVEL SHOWN ABOVE MAY BE USED TO ESTIMATE WHETHER THE OUTSIDE NOISE FROM THE PROPOSED INSTALLATION OF THIS UNIT WILL BE WITHIN ACCEPTABLE LIMITS CONSULT YOUR SUPPLIER BEFORE INSTALLATION	
(MANUFACTURER)	(MODEL NO.)

4 Vehicle dismantling

Environmental impacts

Dismantling and stripping a vehicle of parts can release contaminants into the air, water and soil. Oil, brake fluid, battery acid, corrosion inhibitors, glycol and engine coolant and other automotive liquids contain heavy metals and chemicals. These substances can contaminate the soil, kill aquatic plants and animals, degrade local creeks and Moreton Bay, impact on recreational fishing and swimming and pass up the food chain to humans.

Solid wastes such as car parts, tyres, nuts, bolts, screws, plastics and glass are also prescribed water contaminants that should be prevented from entering stormwater drains and waterways.

Air-conditioning gases can deplete the ozone layer so controlling them is an international concern.

Pollution control measures

Vehicles should be dismantled in a way that prevents stormwater contamination, water pollution, soil contamination or the release of refrigerant gases.

Dismantle vehicles and remove automotive liquids in a roofed, concrete area such as a panel shop, not in the storage yard or on driveways, forecourts, footpaths or streets. Read the **Designing new or upgraded smash repair workshops** section in this guide for information on how work areas should be designed.

Use spill trays under vehicles to catch liquids and prevent accidental spills.

Spills should be cleaned up as soon as possible to reduce the risk of water or soil contamination. This should be documented in spill clean-up procedures for the workshop.

It is important to provide proper equipment at all dismantling locations to enable the fast and effective clean–up of spilt liquids. The equipment needs to be accessible and unobstructed at all times.

Parts containing oil, automotive liquids or other contaminants should be stored in a roofed, concrete area once they have been removed from a vehicle. Engines, suspension parts, fuel tanks or even body panels could all contain potential pollutants.

Air-conditioning gases

Under Australian law, any person who handles refrigerant or works on refrigerant air-conditioning equipment must hold a refrigerant handling licence. For more information, research the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995* or visit **www.environment.gov.au**

All refrigerant gases contained within air-conditioning systems must be recovered and prevented from being released.

Smash repair workshops should be equipped with gas recovery and/or recycling equipment in keeping with the following Australian Standards:

- *Australian Standard AS 4211.1: Gas recovery or combined recovery and recycling equipment – Fluorocarbon refrigerants from automotive air-conditioning systems*
- *Australian Standard AS 4211.3: Gas recovery or combined recovery and recycling equipment – Fluorocarbon refrigerants from commercial/domestic refrigeration and air-conditioning systems.*

Engine coolant, oils and batteries

Used engine coolant, waste oils such as automatic transmission fluid and used lead or acid batteries are classed as regulated waste under the *Environmental Protection Act 1994*. They must be removed from the workshop by a licensed waste transporter for disposal, recycling or treatment. It is important to retain the paperwork as proof of proper disposal.

Waste oils and engine coolant need to be segregated and stored in sealed, labelled containers. Spent batteries should be stored in a roofed, concrete area to prevent leaks or spills contaminating stormwater or soil. Read the **Storage of chemicals** section of this guide for more information.

Engine coolant and other automotive liquids must not be disposed of in the sewer unless the business has a **trade waste permit from Queensland Urban Utilities** specifically authorising disposal to sewer.

Solid waste recycling

Damaged parts removed from vehicles should be recovered and stored separately for recycling. Most parts can be recycled, from plastic items such as bumper bars and headlights to metal components such as radiators, exhausts and brake discs.

Further information

Queensland Urban Utilities – disposal-to-sewer and trade waste permits – phone 13 26 57 or visit **www.urbanutilities.com.au**

Department of Environment and Heritage Protection (DEHP) Hotline – regulated waste transport and disposal – phone 1300 130 372 or visit **www.ehp.qld.gov.au**

Australian Government Department of the Environment – air-conditioning refrigerant gases – **www.environment.gov.au**

5 Vehicle body repair

Environmental impacts

Panel beating, welding, grinding, filling and sanding all generate dust, odour and noise that can adversely affect nearby residents and businesses and Brisbane's air quality.

Dust, sediment and even solid waste such as nuts, bolts and screws can pollute waterways if swept, hosed or left to be washed by rain into stormwater drains. Dust in the water can starve fish and other aquatic life of oxygen and carry harmful oils and heavy metals into the environment.

Automotive liquids that leak or drip from vehicles as they are moved around the workshop can contaminate the soil, and ground and surface waters, onsite and offsite.

Pollution control measures

Vehicles should be repaired in a way that prevents dust pollution, stormwater contamination, water pollution, soil contamination and noise pollution.

Vehicles should be repaired on a roofed, concrete area such as a panel shop, not in the storage yard or on driveways, forecourts, footpaths or streets.

Read the **Designing new or upgraded smash repair workshops** section in this guide for information.

Dust

Use dust extraction equipment for activities, such as sanding body filler, that generate dust. Workshops may have a fixed, ducting system through all work areas or use mobile units. Both ducting systems and mobile units should use high-efficiency particulate air filters (HEPA filter) to remove fine dust particles.

Clean the workshop regularly and maintain all dust extraction according to the manufacturer's instructions. All workshop maintenance procedures and schedules should be documented.

Sweep up dust not collected by extraction equipment, bag it and dispose of it in a bin. This will stop dust from blowing across nearby homes and businesses or being tracked out of the workshop on tyres and on to the street, where it can wash into drains. Workshop clean-up procedures should be documented.

Noise and odour

Grinders, rattle guns, compressors, hammers and impact tools are all noisy. Read the **Noise Management** section of this guide for advice.

Welding, using spray cans and other repairs cans can emit odours that annoy neighbours. Control odours by using mobile welding fume extractors and only using spray cans in designated spray painting areas.

6 Vehicle refinishing

Environmental impacts

Vehicle refinishing can generate significant odours, toxic gases, dust and noise that can adversely affect nearby residents and businesses and Brisbane's air quality.

Many of the paints, primers and solvents used in vehicle refinishing contain volatile organic compounds (VOCs). These compounds vaporise at room temperature, are flammable, often odorous and can damage people's health. VOCs also contribute to the hazy air pollution known as photochemical smog.

VOCs are the main culprit behind chemical odour complaints by residents and other businesses. Spray painting, leaving lids off paint and solvent containers and cleaning equipment with solvents all generate these chemical odours.

Some two-pack paints contain isocyanates, which also cause health problems such as eye and skin irritation and breathing difficulties. Many isocyanates contain chemicals classified as potential carcinogens.

Fine paint and chemical particles carried by overspray can damage homes, cars and buildings and contaminate waterways.

Paint (and water contaminated with paint) needs to be kept out of stormwater drains, creeks and other waterways as it is a prescribed water contaminant that can kill aquatic plants and animals.

Paints contaminate waterways and, ultimately, damage the health of Moreton Bay, by:

- dissolving in water and clouding it, stopping sunlight from penetrating to the creek bed
- forming a film on the water and preventing oxygen from dissolving
- carrying toxic heavy metals into the water
- creating a fine, suffocating layer on the banks or beds of waterways.

Surface preparation

Surface preparation includes filling and sanding. Use dust extraction equipment for activities that generate dust. Workshops may have a fixed, ducting system through all work areas or use mobile units. Both ducting systems and mobile units should use high-efficiency particulate air filters (HEPA filter) to remove fine dust particles.

Maintain all dust extraction equipment according to the manufacturer's instructions. All maintenance procedures and schedules should be documented.

Sweep up dust not collected by extraction equipment, bag it and dispose of it in a bin. This will stop dust from blowing across nearby homes and businesses or being tracked out of the workshop on tyres and on to the street, where it can wash into drains. Workshop clean-up procedures should be documented.

Priming

Spraying of primer can release odours and cause overspray. Priming should be conducted inside a spray booth or a designated spray painting area. The **Designing new or upgraded smash repair workshops** section in this guide outlines environmental protection measures for booths and painting areas.

Wet flatting

Wet flatting should be conducted on a sealed, concrete floor in a covered, bunded area to prevent contaminants escaping into the stormwater system. Reduce water consumption costs by installing a wastewater recycling system.

Spray painting

Spraying paint and primer should be conducted in a manner that prevents toxic gases, odours and overspray particles escaping from the workshop.

All spray painting and priming should be conducted inside a spray booth. The **Designing new or upgraded smash repair workshops** section in this guide outlines environmental protection measures for booths.

Maintain or replace spray booth filters regularly to ensure their effectiveness. Maintenance procedures for spray booths and filters should be documented.

Choosing spray guns

Spray guns with a high transfer efficiency offer numerous environmental and cost benefits. For example, they:

- use less paint, which cuts costs
- reduce the need to change spray booth filters as frequently
- reduce VOC emissions
- reduce odours.

A spray gun with a transfer efficiency of at least 65%, such as a high-volume, low-pressure (HVLP) spray gun, will reduce odour emissions.

Cleaning spray guns

Water-based paints can be cleaned with water, which eliminates the need for a solvent. Installing a gun wash machine with recycling capabilities can reduce the amount of solvent used when cleaning guns used for traditional paints, cutting purchasing and disposal costs.

Solvent recycling systems remove the suspended solids from the gun wash solvent and separate the clean solvent from the waste solids. The waste paint can be collected for easy disposal while the recovered solvent can be recycled through the gun wash machine.

Conducting priming and touch-up work

Small priming or touch-up jobs may be done outside of the spray booth, provided:

- the paint or primer does not contain isocyanates
- the application rate for the paint is less than one litre per hour
- the area to be painted requires a maximum of 0.1 litre of surface coating material
- the work is undertaken in a designated spray painting area.

The **Designing new or upgraded smash repair workshops** section in this guide outlines environmental protection measures for designated spray painting areas.

If spray painting (including priming and paint touch-ups) is conducted outside a spray booth, the business must ensure overspray and odours do not leave the workshop boundary.

Choosing paints

Paint odours can be reduced substantially by using high-solid, water-based paints. Water-based paints generally contain around 6% VOCs by weight, compared to traditional solvent-based paints, which contain 30-70% VOCs.

High-solid, water-based paint has many other advantages, including the below.

- It needs fewer coats to produce the same coverage as non high-solid paints. This saves money and means less paint must be stored in the workshop.
- The lower VOC content reduces odours and fire risk.

Storing paints and solvents

All products used in surface coating such as paints, thinners, primers and preparation solvents should be stored securely. Spills, leaks and drips should be prevented from entering the soil, stormwater drains and waterways.

Chemicals need to be stored in:

- a paint mixing room that is designed and built in accordance with *Australian Standards AS4114.1* and *AS4114.2* (read the **Designing new or upgraded smash repair workshops** section for further information)
- an area that meets the requirements outlined in the **Storage of chemicals** section
- an area protected from vehicle traffic and accidental damage
- closed containers to prevent the release of fumes and odour.

It is important to provide spill clean-up equipment within easy reach of the paint storage area to enable the fast and effective clean up of spilt liquids. The equipment needs to be accessible and unobstructed at all times.

Any paint, gun wash or solvent spills should be cleaned up and disposed of as soon as they are detected to reduce the risk of water or soil contamination. This should be documented in spill clean-up procedures for the workshop.

The maximum quantity of flammable liquids that should be stored in a workshop is indicated in *Australian Standard AS1940: Storage and handling of flammable and combustible liquids*. See the **Storage of chemicals** section for further information.

7 Vehicle reassembly and detailing

Environmental impacts

Reassembling and detailing vehicles can release environmental pollutants into the soil, water and air. Refrigerant gas from air-conditioning systems, overspray from rust-proofing, detailing sprays and dust, for example, can contaminate the soil, erode water quality in creeks, rivers and Moreton Bay, damage people's health and pollute the air.

Liquids such as engine coolant, oils and rust-proofers need to be kept out of stormwater drains, creeks and other waterways as they are prescribed water contaminants that can kill aquatic life and degrade waterways.

Chemicals such as oils and coolant can contaminate waterways by:

- dissolving in water and clouding it, stopping sunlight from penetrating to the creek bed
- forming a film on the water and preventing oxygen from dissolving
- carrying toxic heavy metals into the water
- creating a fine, suffocating layer of sediment on the banks or beds of waterways.

Noise from the workshop can also disturb nearby residents and workers.

Vehicle wash bay.

Vehicle reassembly

Reassemble vehicles on a roofed, concrete floor that is sealed and bunded to contain spilt oils, coolants and other automotive liquids.

To reduce the chance of spills and drips during reassembly undertake the below.

- Use pumps to transfer liquids into vehicles, where possible.
- When pouring automotive liquids into vehicles, use a funnel.
- Place drip trays under vehicles to catch any spills or leaks.

Air-conditioning systems must be re-gassed by licensed refrigerant handler. Read the **Vehicle dismantling** section in this guide for more information on handling air-conditioning refrigerant gases.

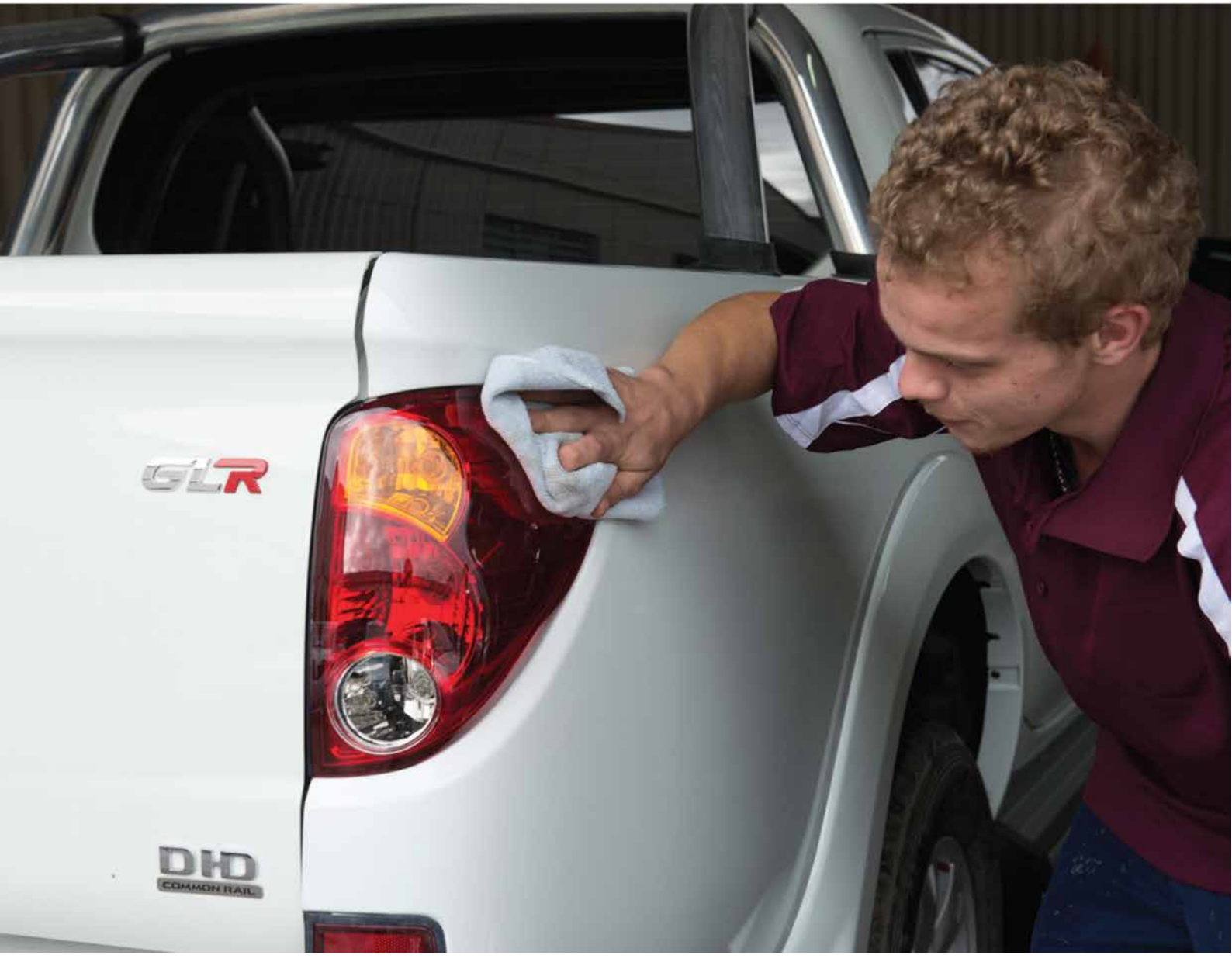
Vehicle detailing

Numerous chemicals and large volumes of water are normally used to clean and detail vehicles. Chemicals such as tyre shine and interior cleaners may contain volatile organic compounds (VOCs). Try to use chemicals without VOCs, if they are available.

All vehicle detailing and washing should be conducted on a roofed, concrete floor that is sealed and bunded to prevent pollutants directly entering stormwater drains or leaking to another area where they can enter the stormwater system.

Reduce the environmental impacts of vehicle detailing by:

- using environmentally friendly automotive shampoo and wax
- converting to waterless car wash
- using rainwater from a tank
- recycling water
- using low-VOC chemicals
- taking measures to prevent potential contaminants, such as cutting or polishing compound, from escaping the detailing bay and entering stormwater drains.



8 Storage of chemicals

Environmental impacts

Hazardous chemicals used by, or generated in, smash repair workshops can damage the environment and harm people if poorly stored, used or disposed of.

Oils, paints, thinners and other liquid chemicals that enter stormwater drains can kill aquatic plants and animals, degrade local creeks and Moreton Bay, impact on recreational fishing and swimming, accumulate in the environment and be passed up the food chain to humans. Persistent chemicals become widely distributed and are recirculated throughout the environment. Gases and fumes from volatile solvents can pollute the air, increase photochemical smog and also damage people's health.

Flammable vapours from fuels and solvents are a fire risk. If they accumulate in voids, they can explode. Fires involving chemicals release toxic smoke into the air and toxic firewater into waterways, making them one of the most significant potential causes of environmental harm.

Chemicals that leak into soils can accumulate and seep into waterways or groundwater. Contamination of soil or water caused by poor storage or handling practices, or a chemical fire, can result in prosecution and fines. Contaminated land can limit future development options of the site, affect property values and is generally very expensive to remediate.

Workplace health and safety considerations

People who are directly exposed to hazardous chemicals or come in contact with contaminated soil or water can become very sick. Smash repair workshops must comply with the storage and handling requirements of the *Work Health and Safety Act 2011*.

Fire prevention and worker safety are important considerations that need to be integrated into the storage, use and disposal of chemicals.

Workplace Health and Safety Queensland publish a range of useful guides to assist in addressing these issues. Go to **www.deir.qld.gov.au/workplace**

Storage quantities

Chemicals should be ordered in the smallest practical quantity for the application and within all regulated storage quantity limitations. Do not let surplus chemicals accumulate indefinitely. If there is no likelihood of their use, they should be scheduled for disposal.

This guide primarily focuses on ways to store and handle small quantities of chemicals. Storing larger quantities may require additional precautions in order to comply with the *Environmental Protection Act 1994* and the *Work Health and Safety Act 2011*. For example, chemicals may need to be stored in approved cabinets or package stores constructed in compliance with Australian Standards for specific classes of dangerous goods. Check the requirements at **www.worksafe.qld.gov.au**

Table 1: Minor storage quantities for common classes of hazardous chemicals

CHEMICAL TYPE	INSIDE WORKSHOP	OUTSIDE WORKSHOP
CLASS 3: FLAMMABLE LIQUIDS AND COMBUSTIBLE LIQUIDS		
Flammable liquid Packing Group II: • petrol • methanol • ethanol.	1 L per 2 m^2 floor space with maximum of 250 L	Attached shed: 250 L Outside or in detached shed: 1 L per 2 m^2 floor space with maximum of 250 L
Flammable liquid Packing Group III: • kerosene • turpentine.	1 L per 1 m^2 floor space with maximum of 500 L	Attached shed: 1 L per 1 m^2 floor space with maximum of 500 L Outside or in detached shed: 1400 L in tanks not over 700 L each or in packages
Combustible liquids C1, C2: • diesel.	4 L per 1 m^2 floor space with maximum of 2000 L	Attached shed: 2500 L Outside or in detached shed: 5000 L
CLASS 5: OXIDISING SUBSTANCES		
Packing Group I	50 kg or L	Not applicable
Packing Group II	250 kg or L	Not applicable
Packing Group III	1000 kg or L	Not applicable
CLASS 6: TOXIC SUBSTANCES		
Packing Group I	10 kg or L	Not applicable
Packing Group II	100 kg or L	Not applicable
Packing Group III	1000 kg or L	Not applicable
CLASS 8: CORROSIVE SUBSTANCES		
Packing Group I	50 kg or L	Not applicable
Packing Group II	250 kg or L	Not applicable
Packing Group III	1000 kg or L	Not applicable
MIXED CLASSES OF DANGEROUS GOODS (total quantity of all dangerous goods)		
Packing Group I	50 kg or L	Not applicable
Packing Group II	250 kg or L	Not applicable
Packing Group III	1000 kg or L	Not applicable

Storage areas for chemicals

Chemicals, including waste chemicals, should be stored in a dedicated, bunded area or compound that is capable of retaining any spilt liquids. These storage areas should be labelled with details of what can be stored in them. Fit relevant warning signs at access points to dedicated stores.

Structurally, a good chemical storage area should have:

- good ventilation, such as vents in the walls and ceiling, or open windows to keep the store cool and prevent the build-up of fumes or gases that may affect the health of workers or cause a risk of explosion
- solid walls and roof to protect the contents of the store from wind and rain
- good lighting
- separate shelving or individual cabinets for storing items that should not be stored together
- a lock on the door.

The bunding should incorporate the design features listed below.

- It should be liquid-tight and chemically-resistant for the type of liquid contained (some chemicals can permeate concrete and brick and dissolve seals and joints). Bunding is commonly built from solid concrete or brick walls treated to be liquid-tight.
- While bunding can generally be constructed in position, commercial pallet bunding units can be used for minor chemical storage needs.
- Bunded areas need to be large enough to hold the contents of the largest container stored inside the bund plus 25% of its volume[2].
- If workshop walls and floor are well sealed, the storage area can be bunded with a small concrete lip across all doorways. Ensure the bund is marked well so it does not become a trip hazard.
- All bunds need to be regularly maintained, checked for cracks and leaks, and kept free of unnecessary materials.
- Drain and pump-out valves need to be locked in the closed position.
- Outdoor bunded areas need to be roofed and isolated from stormwater runoff to prevent rain entering the area and causing pollutants to overflow or metal drums to rust.

Handling of chemicals

Good chemical management and handling practices reduce the risk of a spill or contamination. Essential practices include those listed below.

- Keep an up-to-date list of the types and volumes of chemicals being stored. All chemicals should be quickly identifiable.
- Ensure all containers of hazardous chemicals are clearly labelled with details of what they contain and any hazard they pose. Containers need to be properly labelled from the time they come on to the premises to when they are removed for disposal.

  Labels on chemical products help to identify the product, its ingredients, and hazards or dangers. They also contain important health and safety information. Most manufactured chemicals come labelled with details on:
  - the name of the chemical
  - ingredients and their concentration (strength)
  - information about hazards associated with the chemical
  - emergency information (safety and environmental advice)
  - name of the manufacturer
  - date of manufacture.
- Make sure staff read the labels on all the chemical products they use and are adequately trained in their use.

Safety data sheets (SDS)

A SDS is an information sheet about the safe handling, storage, transport and disposal of a material. Refer to a chemical's SDS to find out:

- the name of the chemical and its product code
- key ingredients
- physical description and properties
- hazard information
- how to store the chemical
- how to handle the chemical and what personal protective equipment may be required
- what to do in case of an emergency such as a spill.

The information on the SDS can save lives in an emergency. When chemicals are received, complete the following steps.

- Check that every chemical product purchased or used comes with an SDS. If the SDS is missing, source it from the supplier.
- Make the SDS register readily accessible and up-to-date.
- Train staff on the safe use of all chemicals and ensure they read the labels of all chemical products they use.

The Workplace Health and Safety Queensland website also has some useful publications on managing chemical hazards in the workplace. See **www.worksafe.qld.gov.au**

[2] *Australian Standard AS1940: The storage and handling of flammable and combustible liquids*

Segregation of chemicals

Chemicals belong to specific categories and must be stored, segregated or separated according to their compatibility. This ensures they cannot accidentally come into contact with each other and cause a reaction such as a fire, explosion or release of toxic or flammable gases or vapours. Always check the label or refer to the SDS to confirm which category a chemical belongs to and its compatibility. There are several common categories, outlined below.

Australian Standard AS3833 contains information about storing mixed classes of dangerous goods. Always consult this standard when mixed classes of dangerous goods are kept on site.

Flammable chemicals

Chemicals such as petrol, turpentine, paints, thinners and many solvents are highly volatile and flammable, and need to be kept away from heat and substances that might cause them to ignite or explode. Small quantities of paints and thinners are best stored in a designated paint mixing room, designed in accordance with *Australian Standard AS4114*. Small quantities of other flammable liquids are best stored in a specially designed cabinet. See *Australian Standard AS1940: The storage and handling of flammable and combustible liquids* for specific requirements.

Oxidising substances

Oxidising chemicals quickly and easily react with other chemicals. They should only be stored with other oxidising chemicals. Examples are calcium hypochlorite (swimming pool chlorine), sodium peroxide and methyl ethyl ketone peroxides (MEKP). See *Australian Standard AS4326: The storage and handling of oxidising agents* for specific storage and handling requirements.

Corrosive chemicals

Chemicals such as acids can corrode substances including inappropriate containers and temporary bunding. They can also react violently and explosively if they come into contact with other types of chemicals. See *Australian Standard AS3780: The storage and handling of corrosive substances* for specific storage and handling requirements.

Toxic chemicals

Toxic chemicals are poisonous to people and ecosystems. Chemical fires involving toxic substances pose a particularly high risk. Toxic chemicals should be separated from other classes of fire-risk chemicals. See *Australian Standard AS4452: The storage and handling of toxic substances* for specific requirements.

Good storage and handling practices

When dealing with hazardous materials, all activities, repairs, servicing etc. should be carried out under cover. Always wear the recommended protective gear such as gloves, eyewear and a mask when handling chemicals. Access to storage areas should be kept clear and stores need to be kept free of extraneous materials.

Containers need to be routinely inspected. If signs of a spill, leak or deterioration are observed, the suspect package needs to be examined and made safe.

Minimise the movement of chemicals as much as possible. Containers should be handled with care to minimise the risk of leaks. Examine chemical packaging immediately before handling. Look for leaking containers, loose lids and torn cartons. Do not transport open or leaking containers. Care needs to be taken when decanting or transferring chemicals. Hand-pouring should be avoided. Dispensing pumps or self-closing metal taps should be used in order to reduce the hazards of splash, spillage or escape of vapours. Funnels can be used where hand-pouring is unavoidable.

Paint mixing rooms

Paint mixing rooms can be used to store all paints, thinners, hardeners, gun wash and all other similar liquid chemicals. The paint mixing room must be designed, built and installed in accordance with *Australian Standard AS4114.1*. It should also be bunded and ventilated to contain any potential spills.

The below items will help reduce environmental risks.

- Store liquids in a bunded and covered area, isolated from stormwater run-off.
- Store all chemicals, and liquid waste awaiting collection, offsite in a bunded and covered area well away from onsite vehicles.
- Seal all drums and containers, store them upright and remove them as soon as possible.
- Inspect storage containers regularly and replace rusted and damaged containers.
- Make it easy to access and inspect stored chemicals.
- Store different chemical types in separate containers, with adequate separation between non-compatible chemicals or materials.
- Clearly label containers with the name of the chemical it contains.
- Keep an up-to-date register of all chemicals onsite, including safety data sheets for each chemical.
- Where chemicals are in constant use, place drip trays beneath the container to catch any leakage.
- Prevent leaks and spills by regularly maintaining equipment and handling it carefully.
- Place spill kits in areas where chemicals are stored or handled.
- Ensure spill kits contain the appropriate materials for the chemicals they may be used to contain.
- Make sure all staff are aware of the potential hazards posed by chemicals on site.

Vapour hazards

Solvents and volatile chemicals such as paint, thinners and gun wash evaporate into the atmosphere. Chemical gases harmful to human health and Brisbane's air quality are released in the process.

Minimise evaporation by:

- storing solvents away from heat, naked flames and direct sunlight
- only decanting and dispensing volatile chemicals where there is adequate ventilation
- storing solvents in a sealed container with a tap to avoid the need to pour
- keeping containers closed when they are not in use
- replacing more volatile chemicals with water-based or biodegradable options, wherever possible

- wearing the personal protective equipment recommended on the SDS, such as gloves, protective eyewear and respiratory gear, when handling solvents
- cleaning up all spills quickly.

Emergency preparation and planning

Developing a chemical management/spill response plan reduces the risk of committing an environmental offence. It may also reduce liability if an offence does occur by providing evidence of responsible operational practices.

This document can be small and simple, and sit as part of workplace health and safety materials. All procedures should be documented, from the clean-up of leaks and spills to the disposal of waste.

Prepare and practise the spill clean-up plan. Staff should know what to do, where to find emergency equipment and how to use it. Make sure staff members are aware of emergency telephone numbers to call in the case of a spill. A template of emergency contacts is included in this guide. Clear signs outlining spill clean-up procedures and emergency contact numbers should be prominently displayed onsite.

Keep spill response materials (for example, a spill kit) on hand at all times. The contents may include some or all of the following:

- booms to contain liquid
- material to block drains
- material to absorb spills
- broom and shovel
- pans, buckets and containers
- personal protective equipment such as a mask, chemically-resistant boots, gloves and a simple respirator.

Basic response to spills

The following steps can be used to form the basis of an emergency response plan.

1. Address the source of the spill immediately ONLY if safe to do so. Consider the risks to personal safety and the environment (e.g. volatility, flammability, toxicity). For major spills, or where public safety matters are involved, call the Queensland Fire and Rescue Service on 000.
2. Where safe to do so, proceed with clean-up as directed by workshop procedures. It is important to clean up all spills quickly – even small ones – as they can easily flow or be washed into waterways or stormwater drains.
3. Use the materials in the spill kit to contain the spill and control its flow. If necessary, stop the spill from entering drains and waterways by using absorbent booms, plastic drain covers or blocking the stormwater drain inlets through other means. Under no circumstances should the chemical spill be hosed down a drain.
4. Smaller quantities of spilt or leaked materials can be absorbed and swept up into containers ready for disposal. Larger quantities of contained liquid waste may be pumped out or drained by a licensed regulated waste transporter. All regulated wastes must be removed from site by a licensed waste transporter. Keep waste transport dockets onsite as future evidence of disposal.
5. If a spill that causes or threatens harm to the environment occurs, notify Brisbane City Council or the Department of Environment and Heritage Protection as soon as possible. This is a legal requirement of the *Environmental Protection Act 1994*.

Disposal of waste chemicals

Please refer to the **Waste management resource recovery and resource efficiency** section of this guide.

Further information

Department of Environment and Heritage Protection Hotline – phone 1300 130 372 or visit **www.ehp.qld.gov.au**

Standards Australia – phone 131 242 or visit **www.standards.org.au** for copies of relevant Australian Standards

Yellow Pages – **www.yellowpages.com.au** look under 'Chemical Spill Equipment', 'Waste Reduction and Disposal Services' and 'Environmental and Pollution Consultants'

Queensland Fire and Rescue Service **www.fire.qld.gov.au**

Fire Protection Association Australia **www.fpaa.com.au**

9 Waste management, resource recovery and resource efficiency

Environmental impacts

Smash repair workshops generate solid waste such as car parts, broken glass, sandpaper, empty paint and solvent containers, used spray-booth filter media, plastics, paper, cardboard, metal fillings and sanding dust. Liquid wastes include automotive liquids such as oil and engine coolant, used cleaning solvents and wastewater from cleaning activities.

If not carefully disposed of, solid and liquid waste can enter stormwater drains and contaminate soil, groundwater and waterways.

Contamination of local waterways can harm aquatic life and reduce recreational fishing, swimming and amenity values of local creeks, the Brisbane River and Moreton Bay.

Managing wastes

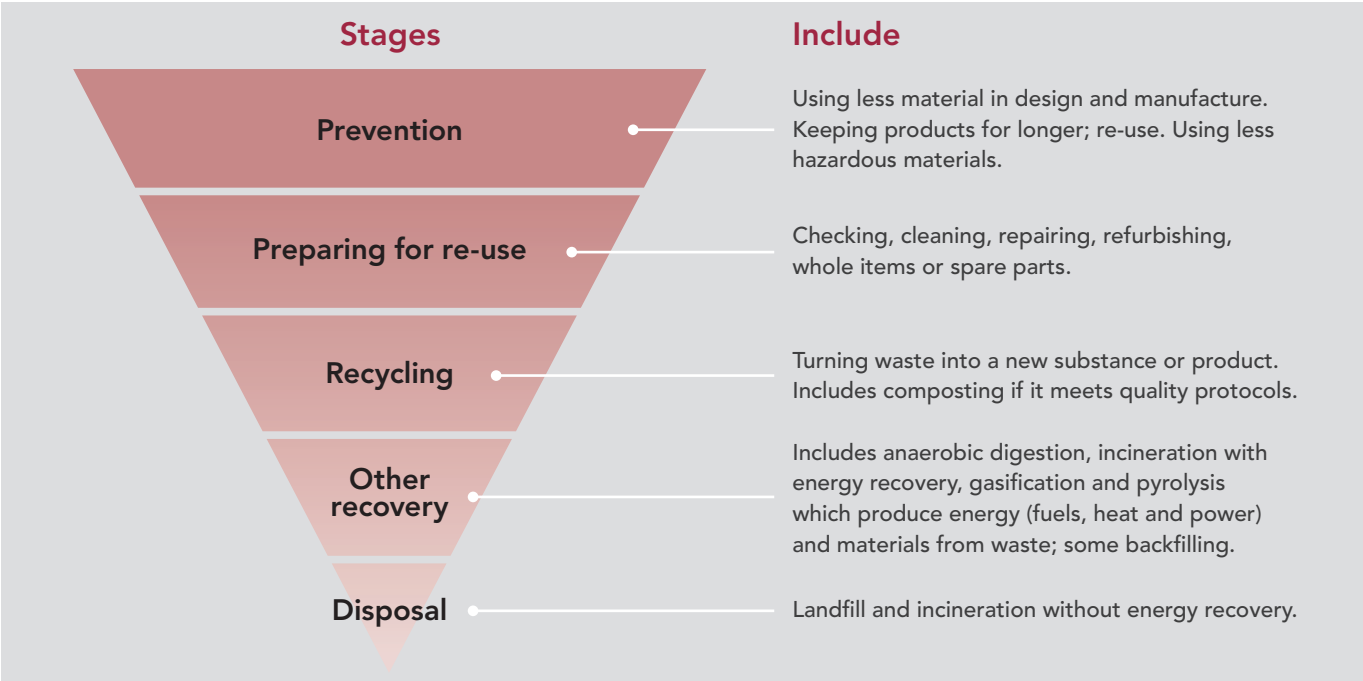
Waste disposal can be expensive. Poor waste management reduces the efficient use of material resources, further increasing costs. Businesses able to reduce their waste can enjoy considerable cost benefits.

The priority waste management activities are listed below.

1. Prevent or avoid the waste.
2. Reuse the waste.
3. Recycle the waste.
4. Dispose of the waste.

Refer to Figure 3.

Figure 3: Waste hierarchy



Implementing waste minimisation

Businesses can save money by minimising waste. Keep costs down by considering waste disposal as a last resort.

A useful starting point for a minimisation program is to prepare a Waste Management Plan (WMP). A WMP is a fundamental part of a company's approach to environmental management (see **Environmental management systems** section).

Begin preparing a WMP by undertaking a waste audit to:

- identify all waste streams
- quantify and characterise these waste streams
- establish how each waste stream is generated.

Next, conduct an assessment to identify ways to minimise each waste stream. A technical and economic feasibility analysis can help decide which option to adopt.

A WMP normally contains an implementation timetable outlining the methods selected, anticipated costs and likely environmental benefits. Periodic review will ensure the plan is being followed and help spot new opportunities.

Dealing with specific waste streams

Segregate waste to make recycling easy. Set aside designated recycling areas for metals, plastics, paper, cardboard and other materials. This will help reduce waste and removal costs. Be careful what material is placed in general waste bins. These go to landfill.

Place general waste such as used sandpaper, broken glass, dust and broken clips in covered bins or skips so it does not blow away on windy days. Dust should also be bagged so it does not escape when transferred to the garbage truck.

Consider establishing a recycling program for aluminium cans, glass bottles, packaging materials, cardboard and office paper. Place recycling bins in easily accessible places in the office, staffroom and workshop – inside, or on the way to, the car park, next to the general waste bin or close to where people eat.

Place only dry, solid, inert wastes in industrial waste bins. Do not put liquids or hazardous materials in these bins.

Some solid wastes such as spray-booth filters, waste paints, chemical containers and rags contaminated with chemicals (such as paint) may be classified as regulated waste under the *Environmental Protection Act 1994*. These must be collected and disposed of by a licensed waste transporter. Keep records of all regulated wastes collected and disposed of.

Resource efficiency

An efficient business is a profitable business. Efficiency requires reducing the use of resources (raw materials, water and energy) and lowering the volume and toxicity of waste and other emissions. This efficiency is often referred to as lean manufacturing, cleaner production or resource efficiency. It involves finding ways to reduce costs and environmental impacts along the entire production or service delivery process, from the supply of raw materials to operations and distribution.

Identifying and implementing resource efficiency measures is possible for managers who know their business and are prepared to have a close, systematic look at inefficiencies.

It offers opportunities to profit from:

- reducing the use of energy, water and raw materials
- avoiding waste, reusing and recycling materials
- minimising waste volumes and reducing its toxicity to lower the cost of treatment and disposal
- implementing process changes to increase production and reduce spoilage
- reducing the use of hazardous and dangerous materials to minimise dangerous goods storage and environmental liability risks
- providing a safe, clean and pleasant work environment that leads to increased productivity.

Uncovering resource efficiency measures

Follow the below five steps to identify the best ways of making a business more efficient.

1. Plan and organise

A team approach to resource efficiency produces the best outcomes. With management's support, an environment team should be established that includes staff from different areas of the business. Appoint a champion or team leader and consider inviting suppliers or customers to join the team occasionally. Ideally, the environmental champion will have the full support of management and other staff. If the business is too small for an environment team, just use one or two staff members.

Identify ways to integrate resource efficiency into business planning and staff responsibilities.

2. Assess and measure

The environment team needs to assess processes, material flows and costs within the business and identify internal barriers to more efficient practices.

The team should start by collecting baseline data on resource use and waste – what gets measured, what gets considered. The team should also complete an initial business and process assessment, which could include brainstorming sessions, a facility walk-through or a more formal audit. It is wise to involve an outside person with technical expertise who can provide a fresh pair of eyes and ideas from other companies.

The initial assessment and data will provide a benchmark against which to measure ongoing improvement.

3. Identify opportunities and implement priority actions

The resource assessment will almost certainly identify immediate opportunities for cost savings. These should be implemented as quickly as possible. Small wins help maintain a team's enthusiasm. Other ideas might need further research and assessment, and take longer to implement.

The team should record ideas and options, and prepare a simple action plan outlining opportunities, issues requiring further investigation, priorities, timeframes and staff responsibility for actions.

4. Document results and evaluate success

Record any financial investment in resource efficiency projects and the time taken to recover these costs – this is known as the payback period. Set up simple spreadsheets or other tools to document project results in terms of their financial, environmental and other outcomes. Take the time to note qualitative results such as staff enthusiasm, improved working relationships with suppliers and comments from customers. These records help to justify further resource efficiency projects.

5. Reward and revisit

Encourage and reward the environment team. Consider refreshing the group by alternating leaders and inviting new team members. Efficiency is a continuous process and the resource efficiency plan should be regularly revisited.

Possible industry opportunities

Cost-effective resource efficiency opportunities can be found in several areas.

Saving water, efficient use and recycling

- Install wastewater recycling equipment in wet areas such as car washing and detailing areas.
- Install rainwater tanks where possible and use rainwater for washing vehicles. Rainwater can also be used to supply toilets and for other non-potable requirements.

- Check taps, toilets and showers for leaks and drips and repair them promptly. Ensure all taps are turned off when not in use.
- Fit water-minimising controls where possible. For example spray nozzles on hoses, AAA-rated low-flow taps or tap aerators, water-efficient showerheads that save energy by reducing hot water use, low-flush toilets and sensors for urinal flushing.
- Keep water supply equipment well maintained and check it periodically for leaks. Make sure staff are encouraged to report leaks and repair them promptly.
- Use water meter data to identify leaks.

Reducing hazardous materials and waste

- Avoid generating excess waste paint by mixing only enough colour coat for each job.
- Reuse any leftover paint, wherever possible.
- Install gun wash machines with solvent recycling capabilities.
- Reduce the use of hazardous materials. Conduct an inventory of all chemicals used and assess if all are needed.
- Consider replacing some chemicals with less toxic alternatives.
- Organise the chemical storage area so that older chemicals are readily accessible and used before they become out-of-date.
- Isolate recyclable liquids for collection by a licensed waste regulated transporter.

Working with suppliers, staff and customers

- Encourage suppliers to provide materials in bulk, collect empty containers and take packages back for reuse or recycling.
- Ask chemical suppliers for less toxic alternatives.
- Promote the benefits of being an environmentally responsible business to staff, suppliers and customers.
- Provide recycling bins that are easily accessible to staff and customers.
- Regularly communicate resource-saving successes to industry partners and associations, staff, customers and suppliers.

Saving energy and technology upgrades

- Use sensor-activated lighting in buildings and areas where permanent lighting is not required.

Waste storage and disposal requirements

The storage of waste chemicals should be in accordance with the general storage requirements for hazardous chemicals as outlined in the **Storage of chemicals** section of this guide.

All waste should be stored in properly labelled, suitable containers and kept closed (except when additional waste is being added). The label should contain the date, type of waste and any other relevant information required by the disposal company.

Do not mix wastes together except for compatible flammable solvents or other clearly compatible wastes. Different classes of waste should be segregated to avoid unwanted reactions with other hazardous chemicals. This practice also facilitates cost-effective disposal.

Disposing of waste chemicals

Smash repair workshops unavoidably produce chemical waste. Disposing chemical waste is expensive so it makes good business sense to minimise the amount produced. Businesses are responsible for disposing chemical waste in a way that does not cause environmental harm.

Adopting the following suggestions can lead to significant savings and reduced environmental risks.

1. Avoid using hazardous chemicals where possible.
2. Substitute with safe or less harmful options wherever practicable.
3. Minimise the storage and use of hazardous chemicals by ordering smaller quantities more frequently or by using them more efficiently and producing less waste.
4. Reuse and recycle chemicals where safe to do so.
5. Disposal is the last option and generally the most costly and wasteful in terms of resources.

Only engage a licensed regulated waste transporter. Keep accurate records of all contracts and the receipts for all chemical pickups, transport and disposals. Liability for contamination may be mitigated by accurate record-keeping.

Find out if other local businesses can reuse or recycle your waste. Investigate working with other companies in the area to share waste disposal costs. Communicate with other companies in the same industry to find out how they handle waste materials.

Select a key employee to manage the hazardous waste and make sure this person receives the support they need. A smash repair workshop may still be liable if someone outside of the workshop improperly disposes of their chemicals.

- Do not pour hazardous waste on to the ground, into the sewer or into wheelie bins or bulk waste bins.
- Do not burn any waste onsite.
- Do not accept samples of chemicals that will not be used.
- Do not give away surplus chemicals unless they are going to someone who will actually use them.

Note. In this guide, 'hazardous waste' refers to materials classified as 'a hazardous contaminant' under the *Environmental Protection Act 1994*.

Regulated waste

Many waste chemicals such as fuels, oils, lubricants, paint residues, lead/acid batteries and used oil filters may be classified as regulated waste under the *Environmental Protection Act 1994*. Specific regulatory requirements are placed on the management and disposal of regulated wastes.

For a full list of regulated wastes, refer to Schedule 7 of the *Environmental Protection Regulation 2008*.

Some regulated wastes include:

- acidic solutions and acids in solid form
- containers contaminated with a regulated waste
- halogenated organic solvents
- highly odorous organic chemicals, including mercaptans and acrylates
- hydrocarbons and water mixtures or emulsions, including oil and water mixtures or emulsions
- lead and lead compounds, including lead-acid batteries
- mineral oils
- organic solvents, other than halogenated solvents, including ethanol
- oxidising agents
- reactive chemicals
- tyres.

Specific laws apply to handling and disposing of regulated wastes. Contact the Department of Environment and Heritage Protection for further information.

Further information

Department of Environment and Heritage Protection (DEHP) Hotline – phone 1300 130 372 or visit **www.ehp.qld.gov.au**

Look in the Yellow Pages under 'Recycling' or 'Waste Reduction and Disposal' – **www.yellowpages.com.au**

Comprehensive directory of recycling services for business – phone 1300 763 768 or visit **www.businessrecycling.com.au**

TechCollect – e-waste recycling – **www.techcollect.com.au**

Queensland Legislation – **www.legislation.qld.gov.au**

10 Noise management

Environmental impacts

Noise is a form of pollution and a common source of conflict between smash repair workshops and the local community. In simple terms, unwanted noise, particularly at night or the early morning, can cause annoyance and sleep disturbance.

People can become annoyed when noise affects their sleep or ability to study, relax or have a conversation. Good sleep is a prerequisite for good physical and mental functioning.

Noise control is a critical issue for smash repair workshops and needs to be managed as carefully as other environmental emissions.

Noise criteria

Proposed smash repair workshop development needs to demonstrate that it can comply with the noise criteria contained in the Industry Code of City Plan. A noise impact assessment report, prepared in accordance with the *Noise Impact Assessment Planning Scheme Policy*, can assist in demonstrating achievement of these criteria.

Noise criteria in the code are planning and design criteria, they are not the operating criteria for a smash repair workshop. The noise management requirements for a new smash repair workshop may be specified in a development permit issued by Brisbane City Council. The noise management requirements are generally based on the control measures recommended in the noise impact assessment report for the development.

A noise impact assessment report is not required where the development implements the acceptable outcomes for noise listed in the Industry Code of City Plan. Refer to the *Guideline for industrial development* for more information.

If noise is not authorised by a development permit, the environmental nuisance provisions of the *Environmental Protection Act 1994* apply.

These provisions consider whether all reasonable and practical measures have been taken by the smash repair workshop to prevent or minimise any impact by noise on people's ability to sleep, study, learn, relax or have a conversation. It also considers the impact of the noise on the amenity of the community.

Where noise requires a detailed analysis or control, an acoustic consultant should be engaged to assess the smash repair workshop's operations and recommend noise control measures.

Noise sources at smash repair workshops

The main sources of noise from smash repair workshops are:

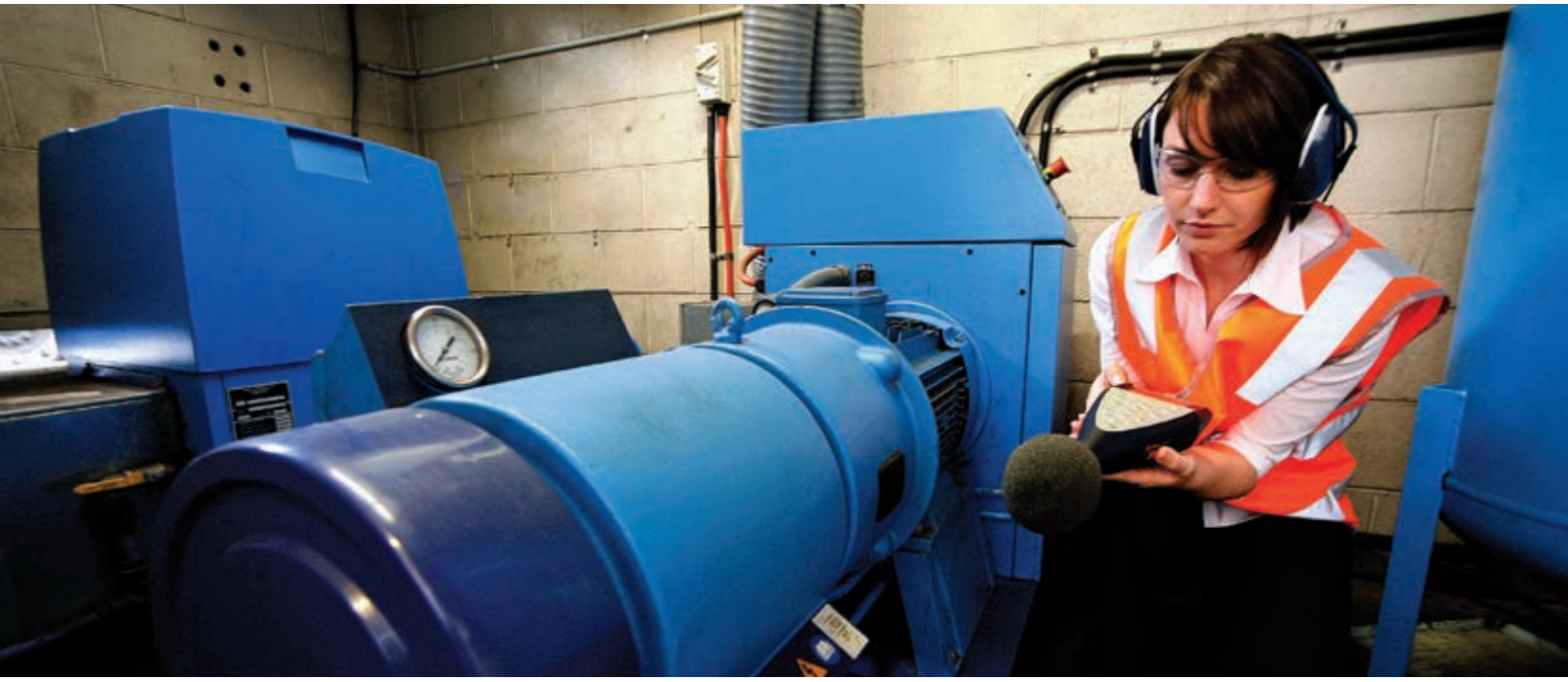
- trucks delivering vehicles (reversing alarms, air brakes and banging and clanging)
- spray-booth filter systems
- audible alarms
- amplified telephones
- public address systems
- compressors
- impact tools such as rattle guns
- sanding and grinding equipment
- vacuum-cleaning and dust-extraction equipment
- hammering and chiselling
- radios.

Noise control measures

Noises that cause the greatest annoyance are those that occur at night or the early morning (i.e. before 7am); short, sharp impact noises (such as banging steel or impact tools); or noise that is tonal (such as some reversing alarms on vehicles, compressors, motors or pumps).

All reasonable and practical measures need to be taken to prevent or minimise environmental (noise) nuisance. Measures to consider include:

- working on vehicles during daytime business hours only, not on Sundays or public holidays when background noise is lower and workshop noise is more intrusive



- repairing vehicles inside the workshop only
- locating windows and doors away from nearby residences when building a new workshop
- limiting deliveries to daytime business hours
- designing the flow of work to reduce the amount of reversing required by delivery vehicles
- using low-intrusion or broadband reversing alarms on trucks and other vehicles
- locating air compressors, motors and pumps inside the workshop or acoustically enclosing those located outside
- fitting air compressors with inlet and exhaust silencers
- surrounding noisy activities such as grinding, hammering or sanding with moveable acoustic screens (screens must be directly next to the noise source to be effective)
- using visual alarms instead of audible alarms such as sirens, where safe
- using alternative methods of notifying staff instead of public address systems
- selecting the lowest noise option available when buying equipment
- keeping plant and equipment well maintained
- minimising the volume of radios used by staff
- locating radios close to work areas but as far as possible from neighbours
- providing information and training to all staff outlining their responsibility to prevent or minimise noise nuisance to neighbours.

Sometimes noise abatement requires more detailed analysis and control, for example, when the usual measures such as enclosures are not sufficient, resulting in complaints. In these situations, engage an acoustic consultant to conduct a site-specific assessment. Simple, inexpensive solutions recommended by experts can often solve problems quickly.

It is usually necessary for damaged vehicles to be delivered during the night or early morning. As this is the time when the impact on residents is greatest, and vehicles may be unloaded outdoors, vehicle storage yards of new smash repair workshops should be separated from sensitive uses such as residential areas by as much distance as possible (for example 250 metres).

Establishing a good relationship with the local community through open and timely communication can help reduce the chance of conflicts over noise.
If there is an exceptional circumstance that means working outside normal business hours cannot be avoided, tell neighbouring homes and businesses. Let them know what is planned and how long it will take. If it is a rare occurrence and neighbours know what is happening and that they have been considered, they are less likely to make a complaint.

Businesses that hold a development permit from Brisbane City Council must operate in accordance with the permit conditions.

Regularly walking around the workshop and the neighbouring area is one way to monitor the type and amount of noise coming from the business, especially hums or rattles from activities and machinery located outside.

11 Environmental management systems

Reducing environmental risks

An environmental management system (EMS) helps businesses examine their practices and find ways to manage environmental impacts. It is not prescriptive; rather, it encourages creative, tailored solutions.

Implementing an EMS is voluntary. It is often adopted by businesses to:

- prevent and minimise pollution
- comply with environmental laws
- demonstrate due diligence
- maximise the efficient use of resources
- reduce waste
- demonstrate a good corporate image
- build awareness of environmental responsibilities among employees
- gain a better understanding of the environmental impacts of business activities
- increase profit through more efficient operations.

About environmental management systems

An EMS provides a structured approach to planning, implementing and routinely checking an organisation's environmental protection measures. It is a tool to manage impacts on the community and the environment.

An EMS integrates environmental management into a company's daily operations, long-term planning and other management systems. It does not have to be a large document and could be part of, or be linked to, existing workplace health and safety documentation.

Depending on the circumstances of the business, it may be beneficial to certify the EMS under International Standard: *AS/NZS ISO 14001:2004 Environmental management systems – Requirements with guidance for use*. Even if the EMS is not certified, this standard provides good guidance.

Key elements of an EMS

Developing an EMS involves documenting environmental risks and their potential impacts, identifying control measures and assigning management and staff responsibility. It also includes documenting procedures, training, waste disposal, maintenance, inspections and audits.

Documenting business policies and processes to prevent and minimise pollution offers several advantages such as it:

- ensures every person involved in a business understands the roles they play in preventing and minimising pollution
- acts as evidence of due diligence by the management team, which may be a defence in the event of an environmental pollution incident or an environmental nuisance (if an incident occurs onsite, providing documentation that shows responsible management and active measures to avoid such incidents could provide a defence)
- demonstrates sound environmental management to customers
- offers a systematic method of improving and monitoring environmental performance.

Key elements of a successful EMS include:

- management commitment
- hazard identification and risk analysis
- monitoring and review
- community liaison.

EMS documents may include:

- environmental policy
- environmental action plan
- staff training records
- staff induction procedures
- standard operating procedures
- environmental incidents and complaints register
- waste disposal receipts
- maintenance and inspection schedules.

Management commitment

A key component of an EMS is an environmental policy. This could be as simple as one paragraph or a one-page statement outlining the organisation's commitment to complying with environmental laws and implementing best practice environmental management. The policy should contain clear objectives detailing what it aims to achieve.

Management should evaluate and review the policy regularly (e.g. annually) and communicate it to all staff. Resourcing environmental commitments should also be considered. Staff should be given the time and resources needed to deliver the policy.

Environmental action plan

Review the environmental risks, hazards and impacts of business operations and create an environmental action plan. This plan should include specific objectives and targets for managing each risk or hazard and for reducing identified impacts.

This plan can be small and simple, for example, a one-page table. It can also form part of, or be linked to, existing workplace health and safety documentation.

Hazard identification

To identify hazards that an environmental action plan should consider, assess the following:

- activities that generate or present a risk of emissions, including smoke, fumes, dust and odour
- activities that involve prescribed water contaminants and the risk of spills or leaks, including fuels, chemicals, dust and sediment
- activities that generate high noise levels
- plant, machines, equipment, tools or appliances
- chemical hazards such as storing and working with hazardous chemicals
- legal requirements.

Hazards can be identified by the following actions:

- conducting a walk-through site inspection
- listing all the tasks and work activities carried out
- looking at the ways different tasks or activities could interact and cause a hazard
- reviewing past incidents
- considering information from manufacturers or suppliers and relevant safety and storage instructions
- quantifying the amount of hazardous substances stored onsite
- talking to staff and other businesses.

All hazards need to be documented once identified.

For a hazard to pose a risk to environmental or human health, three components must be present: source, pathway and receptor.

The source is what generates the pollution (e.g. a machine). The pathway is the path or media that the pollution could travel through to access a receptor (e.g. air or stormwater system). The receptor is what could be potentially affected by the pollution (e.g. occupants of a house or waterway).
Refer to Figure 4.

Figure 4: Example of source-pathway-receptor

If one component is missing, the hazard is unlikely to become a risk. The hazard identification process should consider all possible sources, pathways and receptors. It is helpful to consider the hazard in relation to sensitive receptors such as stormwater drain inlets, creeks, houses, schools and neighbouring businesses and work backwards.

A risk assessment can then be used to develop strategies that break the source-pathway-receptor link.

Risk analysis

Risk analysis involves assessing the likelihood and consequence of harmful effects due to each hazard identified. Refer to Table 2.

- Gather information about each hazard identified.
- Work out how likely it is that an incident will happen.
- Identify the consequences of an incident from each hazard. For example, if the incident could result in long-term environmental contamination, health impacts or annoyance to residents, degradation of waterways and other natural habitats, damage to property and the need to rehabilitate or decontaminate land or waterways.
- Take into account different situations or conditions that could increase the risk such as the effects of rainfall, floods or a change to a process, operating hours or storage volumes.

The following is a risk analysis matrix that can be used to assign a risk level (negligible, low, medium, high, very high or extreme) to a hazard based on its likelihood and consequence. Refer to Table 3.

Table 2: Risk analysis matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	Low +	Medium +	High	Very High	Extreme
Likely	Low -	Medium -	Medium +	High	Very High
Possible	Negligible	Low +	Medium -	Medium +	High
Unlikely	Negligible	Low -	Low +	Medium -	Medium +
Rare	Negligible	Negligible	Negligible	Low -	Low +

Once a risk level has been assigned to each hazard, use the following matrix to prioritise and identify the level of action required for each hazard. For example, if a hazard is assigned a medium risk, consider additional control measures to reduce it as far as practicable. Then, reassess the risk level to see if it has been reduced.

Table 3: Risk level action matrix

Assessed Risk Level	Environmental Impact	Action
Negligible	No impact on the environment.	Undertake the activity with the existing controls in place.
Low	Environmental incident comprising of environmental nuisance, caused by off-site release or harmful onsite release with minor short-term and negligible cumulative environmental impacts.	Undertake the activity with the existing controls in place.
Medium	Environmental incident comprising of material environmental harm. Environmental damage is managed with site resources and procedures.	Additional controls may be needed.
High	Environmental incident comprising of serious environmental harm. Environmental damage (major, short-term or cumulative) will require outside assistance.	Controls will need to be in place before the activity is undertaken.
Very High / Extreme	Environmental incident comprising of serious environmental harm of an extensive area where the core environmental values or attributes are threatened. Long-term damage, requiring long-term recovery (years). Environmental damage (major, short-term or cumulative) will require outside assistance.	Consider alternatives to doing the activity. Significant control measures will need to be implemented to ensure compliance.

The risk assessment should not be seen as a one-off process. Risks should be reassessed at regular intervals (e.g. annually) to take into account significant changes to the site infrastructure, plant, equipment, operations and newly identified issues.

Pollution prevention procedures

Documenting procedures to prevent pollution is one way to demonstrate sound environmental management. Procedures suitable to include in an EMS include:

- undertaking activities and tasks that present a risk of environmental pollution or nuisance
- operating pollution control equipment
- inspecting and maintaining pollution control infrastructure and equipment
- cleaning up spills and responding to pollution incidents.

Procedures should clearly outline roles and responsibilities for undertaking environmental protection tasks. For example, a procedure for cleaning out silt traps should say who is responsible for making sure the silt traps are cleaned out (e.g. site manager). This provides clarity as to who needs to do what and when.

Systems should also be in place to routinely check that staff are following the procedures.

Training and environmental incidents register

An EMS should include a training register documenting staff induction and training (i.e. who, what and when) and an environmental incidents register.

All staff should be trained to use pollution control equipment, undertake clean up and report incidents and undertake their duties in a way that prevents or minimises pollution impacts.

The environmental incidents register records incidents that occur, rectification actions to address the incident and steps to prevent future incidents.

Monitoring and reviewing performance

Use the systems and documentation in the EMS to regularly monitor, review and report on the environmental performance of a business. Regular environmental audits of all activities onsite can help verify performance and identify areas for improvement.

The below are questions to ask during a review.

- Are the pollution control measures effective in minimising the level of risk?
- Have there been any changes to the measures?
- Are further measures required?
- Are pollution control procedures and training adequate?

It is good practice to give staff the opportunity to easily communicate environmental impact and risk issues, as well as solutions, to senior management.

Community liaison

Smash repair workshops need systems to help maintain good community relationships and to respond to community complaints.

All complaints should be recorded in a register, which forms part of the EMS, and includes:

- the name and address of the complainant
- the time and date of the incident
- a clear statement about the problem or complaint
- details on the outcome of the resulting investigation and solutions to the problem
- name of the person dealing with the complaint.

Being a good neighbour is good for business.

Appendix 1
Definitions

Bund

An impervious embankment or wall of brick, stone, concrete, or other approved material that forms the perimeter, or part of the perimeter, of a compound (e.g. a bund may be used to contain spills from acids, fuels or admixtures).

Environmental harm

As defined in the *Environmental Protection Act 1994* and includes an adverse effect (whether temporary or permanent, and of whatever magnitude, duration or frequency) on an environmental value and includes environmental nuisance.

Environmental nuisance

As defined in the *Environmental Protection Act 1994* and includes any unreasonable interference or likely interference with an environmental value that is caused by noise, dust, odour, light, an unhealthy, offensive or unsightly condition because of contamination, or another way prescribed by regulation.

Environmental value

As defined in the *Environmental Protection Act 1994* and includes a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or another quality of the environmental identified and declared to be of environmental value under an environmental protection policy or regulation.

General environmental duty

As defined in the *Environmental Protection Act 1994*, i.e. a person must not carry out an activity that causes, or is likely to cause, environmental harm, unless the person takes all reasonable and practicable measures to prevent or minimise the harm.

Petroleum/petroleum product

Any fuel that consists predominantly of a mixture of hydrocarbons derived from crude oil, whether or not the fuel includes additives such as ethanol. Examples include petrol, diesel, engine oil, lubricating oil and aviation fuel.

Regulated liquid wastes

Wastes that have been identified as unsafe for sewer disposal due to their chemical, biological or physical nature (e.g. flammable). These wastes are outlined in Schedule 7 of the *Environmental Protection Regulation 1998*. Regulated liquid wastes include:

- acids and acid solutions
- dyes
- organic solvents
- electroplating effluent
- caustic solutions
- pesticides
- vehicle wash down waters
- grease trap wastes
- hydrocarbon and water mixtures or emulsions, including oil and water mixtures or emulsions
- isocyanate compounds
- oils.

Regulated solid wastes

Wastes that have been identified as unsafe for landfill disposal. These wastes are outlined in Schedule 7 of the *Environmental Protection Regulation 2008*.

Regulated solid wastes include:

- arsenic
- asbestos
- lead-acid batteries
- biocides
- grease interceptor trap effluent and residues
- paint sludge
- resins.

Regulatory authority

Brisbane City Council and/or the Queensland Department of Environment and Heritage Protection.

Safety data sheets (SDS)

Information sheets on products that manufacturers are required to provide. They outline the composition, applications and precautions that need to be taken in using such products.

Stormwater

Rainfall that runs off hard surfaces such as roofs, roads and car parks, or off ground that has become saturated. Stormwater flows untreated to local creeks and eventually, in Brisbane, to the Brisbane River and Moreton Bay.

Trade waste

Liquid wastes from any business, industry, trade or manufacturing process approved for sewer disposal, other than domestic sewage.

Transitional Environmental Program (TEP)

A specific program that, when approved, achieves compliance with the *Environmental Protection Act 1994* for the matters dealt with by the program by:

- reducing environmental harm
- detailing the transition to an environmental standard.

VOCs (volatile organic compounds)

Evaporated organic solvents (e.g. hydrocarbons, alcohols or unburnt liquid fuels) that are known (or suspected) to have environmental or health effects. Examples of chemicals that include VOCs include solvents, thinners, acrylic lacquers and fuels.

Water

Includes all Queensland waters defined in the *Environmental Protection (Water) Policy 1997* and 'coastal waters' defined in the *Transport Operations (Marine Pollution) Act 1995*.

Appendix 2
Guidelines for a Transitional Environmental Program (TEP)

Introduction

The *Environmental Protection Act 1994 (the Act)* was developed to protect Queensland's environment while allowing for sustainable development.

As *the Act* encourages continual improvement of industrial activities, there might be instances where some activities may not be able to comply immediately with its requirements. There are allowances for businesses in this position to develop a Transitional Environmental Program (TEP). A TEP is an action plan that is negotiated between the operator of an activity and the administering authority, for example, the Department of Environment and Heritage Protection (DEHP) or Brisbane City Council. This action plan outlines how the operator of the activity intends to achieve compliance with the provisions of *the Act* and the timeframe in which compliance is to be achieved.

The TEP offers the operator of the activity some degree of short-term protection against fines or prosecution for non-compliance with *the Act*. Heavy penalties apply for non-compliance with the TEP.

The guidelines below have been developed to assist operators in the preparation of a draft TEP in accordance with *the Act*. The draft TEP must be submitted to the administering authority for review and approval.

While these guidelines provide a step-by-step process for developing a draft TEP, each activity is different and operators of activities are expected to develop site-specific management actions.

Components of a TEP

The main elements that must be included in a TEP include:

- a statement on which activities or approval conditions (if applicable) are to be addressed under the TEP
- a statement of the objectives to be achieved and maintained under the TEP
- a statement on how the objectives are to be achieved and the proposed timetable for achieving the objectives
- a schedule of milestones and performance indicators at intervals of no longer than six months
- a schedule of monitoring and reporting compliance with the TEP.

Submission of a TEP

Any operator can voluntarily submit a draft TEP at any time, provided the appropriate fee is paid at the time of the submission. Voluntary submission of a TEP can occur when an operator has identified a work process that does not comply with *the Act* or approval conditions (if applicable), or is concerned that the activity may not comply with an Environmental Protection Regulation.

Brisbane City Council can require the submission of a TEP where an inspection has identified a non-compliance issue. The timeframe for submission of a draft TEP may depend on the severity of the non-compliance or the risk of environmental harm from the non-compliance.

All draft TEPs must be submitted in a form approved by Brisbane City Council or DEHP, together with the appropriate fee. Please check boxes below.

☐	Identify activities that do not comply with *the Act*.
☐	Develop a statement of environmental objectives to be achieved and maintained under the TEP.
☐	Detail how the environmental objectives will be achieved and a timetable for achievement of each of the objectives.
☐	Detail appropriate milestones and performance indicators at intervals of no more than six months.
☐	Detail appropriate monitoring and reporting of compliance with the TEP.

References

Australian Standard AS1940: The storage and handling of flammable and combustible liquids.

Australian Standard AS4114.1: Spray painting booths, designated spray painting areas and paint mixing rooms – Design, construction and testing.

Australian Standard AS4114.2: Spray painting booths, designated spray painting areas and paint mixing rooms – Installation and maintenance.

Australian Standard AS4211.1: Gas recovery or combined recovery and recycling equipment – Fluorocarbon refrigerants from automotive air-conditioning systems.

Australian Standard AS4211.3: Gas recovery or combined recovery and recycling equipment – Fluorocarbon refrigerants from commercial/domestic refrigeration and air-conditioning systems.

ISO 14001, *Environmental Management Systems – Specification with Guidance for Use.*

US Environmental Protection Agency, *National Emission Standards for Hazardous Air Pollutants – Paint stripping and Miscellaneous Surface Coating Operations at Area Sources*, 9 January 2008.

NSW Environmental Protection Authority, *Environmental Action for Smash Repairers*, Department of Environment and Climate Change NSW, April 2008.

Healthy Waterways (partnership for the health of Moreton Bay and south-east Queensland waterways), **www.healthywaterways.org**

The Motor Trades Association of QLD (MTA Queensland), *Green Stamp Environmental Accreditation Program, Self-assessment check-list*, 2005
www.mtaq.com.au/green-stamp-program

Commonwealth legislation

National Environmental Protection (National Pollution Inventory) Measure 1998

Queensland State legislation

Environmental Protection Act 1994

Environmental Protection Regulation 2008

Environmental Protection (Noise) Policy 2008

Environmental Protection (Air) Policy 2008

Environmental Protection (Water) Policy 2009

Environmental Protection (Waste Management) Policy 2000

Environmental Protection (Waste Management) Regulation 2000

Transport Operation (Marine Pollution) Act 1995

Sustainable Planning Act 2009

Work Health and Safety Act 2011

Brisbane City Council legislation

Brisbane City Plan 2014

Notes

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