



Waste facility risk management guide

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PURPOSE AND SCOPE

This document provides guidance on asset and liability risk management for public sector facilities that receive, handle, store or dispose of waste material. It addresses managing fire risks on site, and risks associated with potential interactions with members of the public and third parties.

The advice and technical information provided is not designed to supersede the requirements of Australian Standards, National Construction Codes or local legislation and regulations. It is intended to align with and compliment the context of these requirements with additional controls and considerations identified by the risk/insurance industry.

THIS GUIDE COVERS THREE KEY AREAS:



Identifying, assessing and controlling risk



Fire protection systems



Emergency planning

A WASTE FACILITY MAY INCLUDE (BUT IS NOT LIMITED TO), THE FOLLOWING:



Landfill



Material Recovery Facility (MRF)



Recycling collection centre



Transfer station



Recycling centres



Household hazardous waste facility

The waste management sector is an essential part of society. However, inherently it has higher risks than many other industries, and in recent years there have been major incidents and losses associated with the operation of waste facilities.

Major incidents such as fires, property damage and personal injury can occur at any point in the waste process, including collection, transportation, transfer, recycling and disposal. These major incidents pose a risk to people's safety and in many cases, have wider detrimental impacts on the local community and the waste industry itself. It can also have a negative impact on the ability to handle and process waste as intended and result in financial costs to the owners and operators.

Research has shown the cost of risk mitigation can in most cases be less expensive than the cost of an incident. Make sure you do regular assessments of how property and liability risks are managed at waste sites.

This document aims to guide waste facility owners, operators and users in identifying, assessing and controlling the property and liability risks. It does not intend to cover all areas of risk that may be present at a site such as safety, environmental or financial risks.

The information within these guidelines may not be applicable to all facilities, but it is recommended that each control measure is investigated and where practical implemented to manage risks at waste facilities.

Costs associated with waste facility incidents, notably fires and third party injuries

- ▶ Disruption to waste management activities
- ▶ Property damage
- ▶ Facility downtime
- ▶ Environmental clean-up
- ▶ Fire fighters personnel time
- ▶ Fire fighting consumables and equipment
- ▶ Contaminated water supplies
- ▶ Long term health effects
- ▶ Personal Injury, with potential of fatalities
- ▶ Legal fees, claims and cost of legal defence



- ▶ Traffic disruption
- ▶ Public transport delays
- ▶ Lower real estate values
- ▶ Disruption to site operations / daily work schedules
- ▶ Disruption to community services
- ▶ Adverse media / damage to Local government's reputation
- ▶ Loss of biodiversity
- ▶ Grief and suffering of community
- ▶ Diversion of resources and budget from improvement projects



IDENTIFYING, ASSESSING AND CONTROLLING THE RISK

Operators and owners of waste facilities must be able to measure and understand the risks their operation is exposed to and the risks that waste facilities potentially expose third parties to (please refer to Appendix D for an outline of the Civil Liability Act framework). This can be uncovered through a risk management process. A risk assessment should be conducted systematically, iteratively and collaboratively, drawing on the knowledge and views of stakeholders. It should use the best information available, supplemented by further enquiry if necessary. The purpose of risk identification is to find, recognise and describe risks that might prevent a facility from achieving its objectives. The facility should identify risks whether or not the source is under their control.

The risk management process includes:



Risk analysis involves a detailed consideration of uncertainties, risk sources, events and scenarios, likelihoods and consequences. An event can have multiple consequences and can affect multiple objectives.

Risk analysis should consider factors such as:

- Likelihood of events and consequences
- Nature and magnitude of consequences
- Timeframes and volatility
- Effectiveness of existing controls
- Sensitivity and confidence levels

The purpose of risk evaluation is to make decisions on prioritisation and treatment of risk. Risk evaluation involves comparing the results of the risk analysis with established risk criteria. The risk evaluation should lead to one or more of the following actions; consideration of risk treatment options, undertaking further analysis, maintenance of existing controls, or a reconsideration of objectives.







A site specific risk register should be documented and retained following the risk assessment.

This risk register should be reviewed and updated every 12 months, or following a major incident on site or at a similar waste facility, or following identification of new risks, or work environment changes.



Risk treatment for specific hazards or risks may be determined as part of statutory or regulatory requirements. Controls may also be outlined in other guidance documents: for example, *WorkSafe publications, operating manuals, Australian Standards or safety data sheets*. In addition to meeting these requirements, developing and implementing a site management plan can help ensure a methodical approach that includes staff involvement and aligns with obligations.

According to ISO 31000:2018, when considering risk treatment and selecting options based on data collected in the communication, consultation and risk identification stages, it is important to consider costs, perception and involvement of others. Risk treatments should also be monitored and reviewed to understand and measure their effectiveness.

Priority	Risk treatment options	Description
	 Avoid risk	Deciding not to start or continue with the activity that gives rise to risk. For example: <ul style="list-style-type: none"> ▶ Closing a landfill where uncontrolled fires are an ongoing problem, and operating a transfer station for offsite disposal.
	 Removing risk source	Remove the risk by removing the source of the risk. For example: <ul style="list-style-type: none"> ▶ Separating heavy mobile equipment from areas where members of the public operate.
	 Changing consequences	Reducing the consequence of an event. For example: <ul style="list-style-type: none"> ▶ Lowering the speed limit, of vehicles onsite to reduce the potential for injury or damage.
	 Reduce the likelihood of occurrence	Reducing the likelihood of an event. For example: <ul style="list-style-type: none"> ▶ Using risk controls such as screening of waste to remove flares, batteries etc. that are fire ignition sources.
	 Sharing risk	Share the risk. For example: <ul style="list-style-type: none"> ▶ Transferring the risk to a third party, contractual sharing with contractors.
	 Retaining the risk	Tolerating the risk where the risk is fully understood and it is acceptable.

GUIDELINES TO CONTROL RISK

SITE DESIGN AND DEVELOPMENT

The design and development stage of a facility should consider the potential risks and controls. The most effective means of controlling risks at a waste site are typically physical separation, achieved by the site layout. The cost of retrofitting these type of controls is significantly higher than addressing the risk at the design stage.

The most effective means of preventing third party property or injury, as well as limiting the overall damage of a fire, is to implement passive physical controls. Passive controls require no human intervention and provide protection regardless of actions taken, or not taken. For instance, physical separation of assets and construction materials, and isolation of heavy equipment from members of the public should be considered.

Hazard	Guidance	Compliant
Construction Materials	<ul style="list-style-type: none"> ▶ Combustible materials such as timber, expanded polystyrene-cored panels, and fibreglass or poly cladding are to be avoided, even in temporary or transportable structures. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
High ignition risks equipment	<ul style="list-style-type: none"> ▶ High risk equipment such as balers, shredders, hydraulic equipment or electrical infrastructure should be stored in dedicated fire rated buildings, or compartments, or physically distanced from other buildings. ▶ Where possible waste storage buildings, should be located at a sufficient distance from all other buildings, stockpiles and mobile plant. ▶ For advice on adequate separation distances contact LGIS for risk engineering advice as each facility poses unique considerations. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Electrical installations	<ul style="list-style-type: none"> ▶ Protections to prevent fire spread from motor control centres, switchboards or transformers to other areas of the facility should be provided. These protections include sealing of fire compartment penetrations, transformer blast walls, cable coating. ▶ For advice on fire protection of electrical installations contact LGIS for risk engineering advice as each facility poses unique considerations. ▶ Electrical isolation points should be clearly identified in emergency response plans. ▶ Electrical equipment should be secured from access by unauthorised personnel, to prevent electrical shock risks. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Heavy vehicle Movements	<ul style="list-style-type: none"> ▶ Paths of travel and areas of operations for heavy vehicles (dozers, loaders etc.) should be permanently isolated from waste facility users (members of the public, commercial contractors etc.). Shared roads should be avoided, and spaces such as transfer stations should be separated by physical barriers such as concrete curbing, walls, fencing, railings, or differing elevations. ▶ At no times should a heavy vehicle operate in the same area as members of the public. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>

Hazard	Guidance	Compliant
Traffic Management	<ul style="list-style-type: none"> ▶ Site layout should be designed to minimise vehicle/vehicle, vehicle/structures, and vehicle/people interactions. ▶ A traffic management plan should be created for all facilities at least every five (5) years, or ideally more often, or whenever a change to site layout, paths of travel or roadways change. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Site access	<ul style="list-style-type: none"> ▶ Access to the facility entrance should be via a sealed road, with onsite roads around permanent infrastructure sealed. Unsealed roads around landfills should be frequently graded to allow ease of access for emergency vehicles. ▶ An alternative site entry / exit road should be established to provide means of escape if the primary exit is blocked by a fire, bushfire or hazardous material spill. ▶ Alternative access roads should be clearly identified in emergency management plans. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
High ignition risks equipment	<ul style="list-style-type: none"> ▶ High risk equipment such as balers, shredders, hydraulic equipment or electrical infrastructure should be stored in dedicated fire rated buildings, or compartments, or physically distanced from other buildings. ▶ Where possible waste storage buildings, should be located at a sufficient distance from all other buildings, stockpiles and mobile plant. ▶ For advice on adequate separation distances contact LGIS for risk engineering advice as each facility poses unique considerations. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Landfill leachate	<ul style="list-style-type: none"> ▶ All waste storage cells regardless of whether regulated or licensed waste disposal facilities should contain a non-permeable lining to prevent ground water contamination even in instances where environmental licenses do not require linings. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Firewater run off containment	<ul style="list-style-type: none"> ▶ All areas where combustible waste material is stored should be designed to contain water run-off from fire water or stormwater. Waste contaminated water should be stored in a pond, dam or similar that is of appropriate size for the expected fire water discharge plus additional capacity for local rainfall conditions, plus freeboard requirements. ▶ Areas designed for water catchment includes hardstands, structures and above ground recycling storage areas such as green waste, tyres etc. Fire water run off of waste fires can be detrimental to the environment and persons. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>



WASTE AND COMBUSTIBLE MATERIALS HANDLING

The management of combustible waste can have a direct influence on the size, duration and intensity of a fire. The shape and size of surface piles can create difficulties in accessing the burning material for rehandling to control the fire, or application of fire water.

Underground fires can also occur in landfills deep below the surface and involve materials that are days, months or even years old. A hazard associated with underground fires is the potential to cause voids resulting in surface cave-ins. This can pose a hazard to staff and operator owned equipment, as well as a liability risk to commercial contractors or other approved external parties that have access to the area. Underground fires can result in incomplete combustion that releases flammable and toxic gases. It also has the potential for damage to occur to leachate containment liners and landfill gas collection systems. Issues to consider when assessing controls to waste storage should include (but not be limited to) the following:

Hazard	Guidance	Compliant
Internal waste storage	<p>According to the Department of Fire & Emergency Services Guide Note 04 (DFES-GNo4). Internal waste storage requirements should be (but are not limited) to the following:</p> <ul style="list-style-type: none"> ▶ Buildings containing total stockpiles greater than 200m³ to be protected by automatic fire sprinklers. ▶ The maximum total size of a fire compartment containing waste stockpiles is to be 1,000 m³ ▶ The maximum stockpile height is of 4m and face angle should recede on a slope no greater than 45° to minimise the risk of collapse and fire spread. ▶ Internal stockpiles in a building fitted with an automatic fire sprinkler system should have a minimum of 6m unobstructed separation for accessible side, and 10m in a building not fitted with an automatic fire sprinkler system. ▶ A building not fitted with an automatic fire sprinkler system should have a dedicated external quarantine area not less than four times the floor area of the largest internal stockpile to receive and break down and extinguish that stockpile. ▶ The internal stockpile of a building not fitted with an automatic fire sprinkler system should be limited in size to be able to be moved to the dedicated external quarantine area using on-site resources only, within one hour or less. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Waste screening	<ul style="list-style-type: none"> ▶ Where possible, all mixed waste is screened to ensure removal of hazardous materials such as flammable liquids, flammable aerosols, flares, batteries and gas canisters. ▶ Staff training should be undertaken on identifying items or materials that require removal if observed on a landfill face, or within mixed waste stockpiles. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Hazardous material storage	<ul style="list-style-type: none"> ▶ Hazardous materials such as flammable liquids, flares, batteries, gas canisters are stored in a dedicated location, physically separated from combustible materials and stored according to the hazardous goods segregation table. ▶ Where appropriate storage of these materials is not possible on site, such as a household hazardous waste facility, these materials should not be accepted. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
High risk operations (crusher, shredder, bag openers etc.)	<ul style="list-style-type: none"> ▶ High risk mechanical equipment such as bag openers, shredders, balers that handle waste have undergone a plant specific risk assessment, and are appropriately protected from fire or personal injury. Protections may include, blast protection, fire isolation, safety interlocks with fire equipment, rotating equipment guarding etc. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
External waste stockpiling	<ul style="list-style-type: none"> ▶ The maximum width of a combustible waste stockpiles (internal or external) should be 20m if fire brigade vehicle access is provided down both sides of the stockpile, and 10m if access is provided down one side of the stockpile. ▶ The maximum length of an external stockpile should be 50m, or less dependent on separation requirements outlined in Figure 4 and Figure 5. External stockpiles should be protected from high or unnecessary external risks (e.g. bushfire, adjacent property fire, arson or spontaneous). 	Y: <input type="checkbox"/> N: <input type="checkbox"/>

Hazard	Guidance	Compliant
Bulk fuel storage	<ul style="list-style-type: none"> ▶ Bulk fuel storage used for mobile equipment is located within a non-porous leak capture bund capable of holding 110% of the vessels maximum volume in the event of a leak, and if required, storage vessel is protected from vehicle impact protection; ▶ Fuel storage is not to be stored in close proximity to unnecessary external risks (e.g. bushfire, adjacent property fire, arson or spontaneous). ▶ Below ground storage tanks should be avoided. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Detection of subterranean fire	<ul style="list-style-type: none"> ▶ A procedure should be in place to detect and respond to an underground fire, including knowledge of the response plan, including required emergency equipment such as excavators or where to source equipment. ▶ Training in detection of subterranean fire should be undertaken, such as how to identify ground movement, cracking, subsidence or smoke evolution that results from an underground fire. ▶ Where underground fires are a common reoccurrence, gas monitoring wells should be installed, and additional controls such as aerial thermal drone scanning to provide earliest possible detection of a reignition. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Storage of quarantined materials	<ul style="list-style-type: none"> ▶ Quarantine and safe storage of hazardous building materials such as asbestos, medical waste, or radioactive waste is recorded in an onsite register, including GPS coordinates and appropriate onsite signage. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Asbestos waste	<p>Asbestos is only accepted where environmental licenses permit with the following procedures in place for managing asbestos wastes:</p> <ul style="list-style-type: none"> ▶ Asbestos material is wrapped in heavy duty plastic before entry to the premises; ▶ The disposal area shall be defined by GPS system or grid references; ▶ Asbestos disposal premises plan location should be kept as a permanent record; ▶ The burial of asbestos should be witnessed by a licensee representative, under 150mm of fill or putrescible waste as soon as practical after placement in the landfill and sign a bound, numbered register, a numbered file register or record keeping equivalent within 2 hours of the burial to attest that it has been buried in accordance with these procedures. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Cover material	<p>Suitable levels of cover material are to be available at all times, consistent with the sites environmental licensing requirements. If the waste disposal site is not bound by environmental requirements, cover material is applied as if it is such as:</p> <ul style="list-style-type: none"> ▶ Daily cover: Minimum depth of 15cm over all landfill waste prior to ceasing operations each day. ▶ Intermediate cover: Virgin excavated natural material (VENM) to a depth of 30cm over landfill waste which are exposed for more than 90 days. ▶ Cover material stockpile: Two weeks cover material must be available at the premises. ▶ Reliance on spray on cover materials, or tarps are to be avoided. Spray on materials can reduce available fire water and tarps provide an additional combustible fuel source. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Methane collection	<ul style="list-style-type: none"> ▶ Where methane collection is located on site, storage and combustion of methane gas is well separated from waste material, structures and external exposures. ▶ An automatic flaring facility should be provided to prevent creeping methane gas when combustion is shut down. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>



Improper flammable liquids storage



Poor housekeeping of baler mechanical equipment



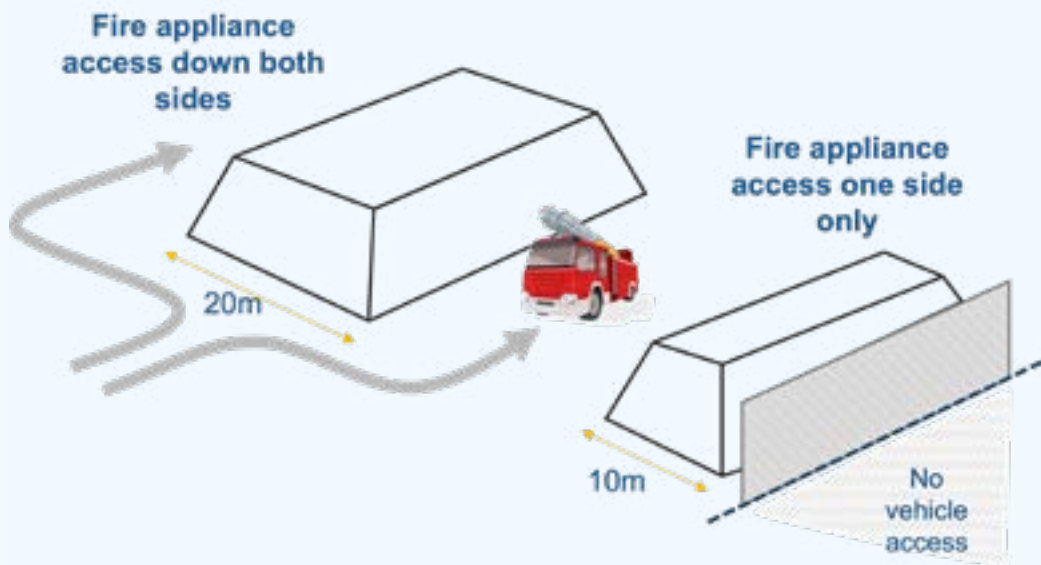
Unsuitable internal waste storage arrangement



Acceptable hazardous material storage

STOCKPILE / WASTE STORAGE DESIGN AND LAYOUT

The storage design and layout of waste on site can have a big impact on minimising risk. It should be designed and managed to minimise hazards to the environment, fire risks and potential injury to landfill operators and the public.



Maximum stockpile sizes and separation (Source: Fire and Rescue NSW, 2020)

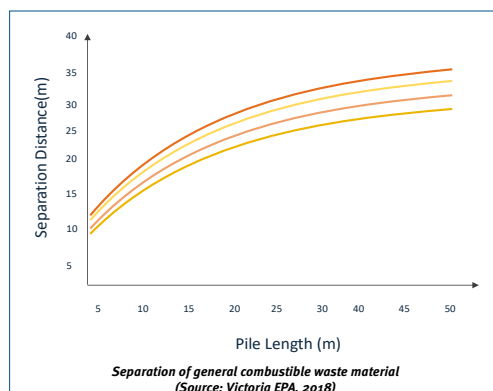
To reduce the risk of fire spreading between stockpiles or throughout waste storage, the following should be considered (but not limited to):

- ▶ Set out the piles in a way to reduce heat transferred from emitter to receptor
- ▶ Consider the effect of pile slope on heat transfer and pile stability
- ▶ Separate piles by sufficient free-air gaps (separation) or physical barriers made from non-combustible materials (bunker walls)
- ▶ Arrange any baled storage in a way that restricts the growth of a fire burning within baled stacks



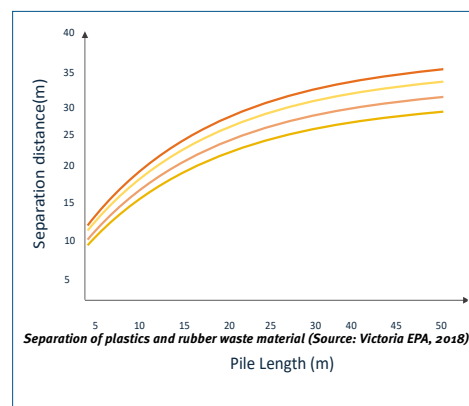
To determine separation distances of general combustible waste material (excluding plastic or rubber) from each other, and buildings the following minimum separation distances should be applied:

	Pile length (m)	Storage Type			
		Loose pile to loose pile	Loose pile to building	Baled pile to baled pile	Baled pile to building
		Separation distance (m)			
5	5	7	9	8	
10	7	9	13	11	
15	9	11	15	13	
20	10	13	17	15	
30	11	15	20	17	
50	12	17	23	20	



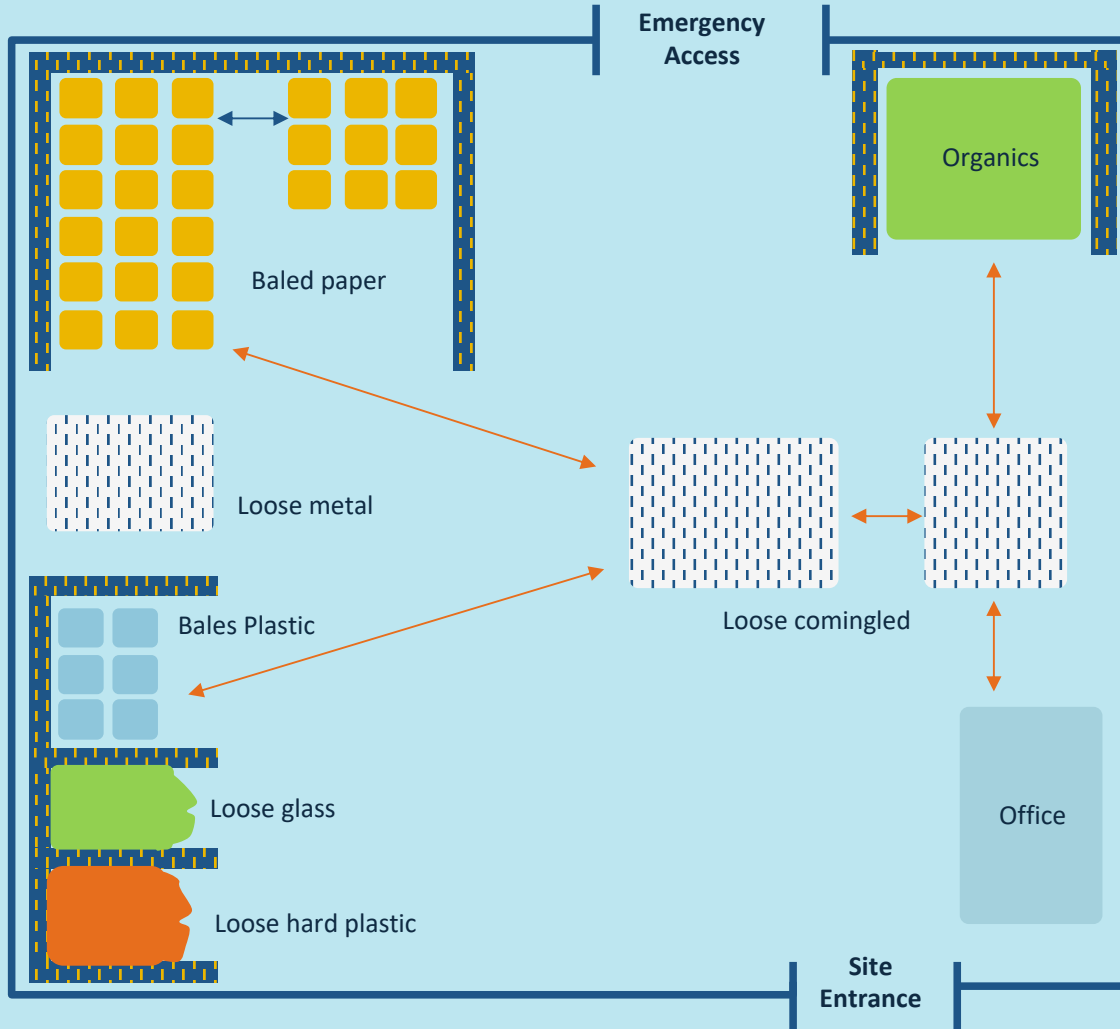
To determine separation distances of waste material containing rubber and plastics from each other, and buildings the following minimum separation distances should be applied:

	Pile length (m)	Storage Type			
		Loose pile to loose pile	Loose pile to building	Baled pile to baled pile	Baled pile to building
		Separation distance (m)			
5	10	13	14	13	
10	15	18	19	18	
15	18	22	24	21	
20	23	25	27	23	
30	25	30	34	28	
50	31	38	40	25	

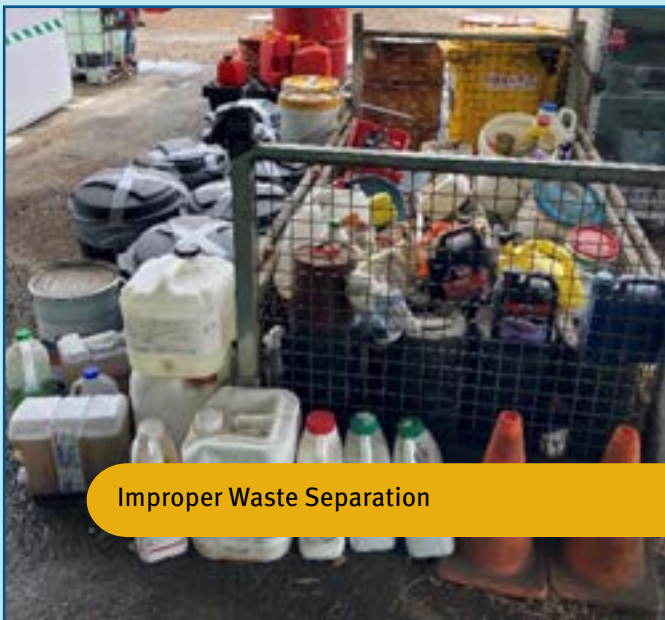


The combination or arrangement of materials stored in a waste facility can increase the risk of combustion or facilitate the spread of fire throughout storage and stockpiles. If waste materials are stored separated by type, it is important to consider the placement of materials to reduce the risk of fire spreading from one material type to another. Materials may have a low risk of spontaneous combustion when stored separately but become combustible when mixed.

It is not recommended to store highly combustible materials, such as plastics, next to materials with a high risk of self-combustion such as organic materials, due to the risk of a self-igniting fire spreading quickly. Consider storing non-combustible material such as loose glass or non-reactive metals between combustible materials to reduce the spread of fire.



Example of materials separation (Source: Victoria EPA, 2018)



FIRE RISK MANAGEMENT

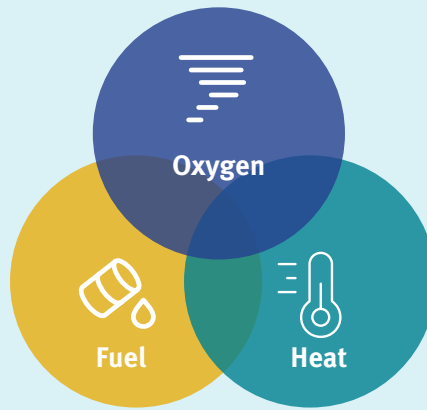
When implementing a fire risk management strategy, there are some important steps that need to be followed. For a fire to occur three elements are required, oxygen, fuel and heat, controlling these elements is the most effective way to manage fire risks, however in cases where these cannot be eliminated, fire protection is required.

Oxygen Source

- ▶ Oxidising chemicals such as oxy-acetylene sets, bleach, hydrogen peroxide, nitrates
- ▶ Physical introduction of oxygen through unbaling or turning loose piles

Fuel Source

- ▶ Flammable liquids, gases and solids
- ▶ Combustible goods and waste materials
- ▶ Contamination in CRWM storage
- ▶ Poorly managed, high volumes of CRWM
- ▶ Dry and unmanaged vegetation



Ignition Heat Source

- ▶ Hot work operations
- ▶ Arson
- ▶ Lightning
- ▶ Fires from neighboring activities
- ▶ Faulty electrical wires
- ▶ Poorly maintained equipment

Fire Elements and Their Potential Source



FIRE PROTECTION SYSTEMS

Understanding the consequences of fire:

After identifying these hazards it is not only important to implement controls to isolate them, it is also crucial to understand the possibility of harm that they could cause. Some questions to be asked are:

Where are the potential fuel sources onsite and where are they relative to other flammable items?

- ▶ Co-mingled recyclables
- ▶ Household waste collection
- ▶ Flammable gases produced by the waste stored in the facility
- ▶ Combustible liquids
- ▶ Flammable Gases

What could happen to those fuel sources which could create a hazard? Are they handled or managed in a way that increases the hazard?

- ▶ Storage of combustible materials in buildings
- ▶ Inadequate management of stockpiles
- ▶ Inadequate separation of stockpiles

What activities are occurring around these fuel sources that might ignite the fuel?

- ▶ Spontaneous combustion of stored materials
- ▶ Hot works
- ▶ Vehicle movements, (hot exhausts, turbo etc)
- ▶ Bushfire

Main Consequences of Fire in a Waste Facility



People

Direct harm to human life and health impacts, as employees, visitors, contractors, emergency personnel, fire-fighters and others on site are exposed to smoke, gases and heat.



Property

Damages to the site, to neighbours properties and to nearby infrastructures.



Community

Smoke containing hazardous chemicals or other reactive dust can be particularly dangerous, as it can be inhaled by members of the community relatively far from the incident. A waste fire can also result in a loss of trust or confidence in government authorities when they are responsible for the facility.



Environment

The immediate environment around the waste site can also be contaminated. Fire spread to neighbouring bushland as well as, air and water pollution due to eminence of toxic smoke and particles, need to be carefully monitored after a fire has occurred.



Business

The damage and clean-up costs associated with waste fires can be particularly significant, resulting in business interruption or inability to receive waste and provide necessary services to the community. Harm to the reputation of the facility and operations can be ongoing.

An effective fire protection system for a waste facility aims to protect life, property and the environment from fire. If a fire occurs, the fire safety provisions should be able to assist safe firefighting intervention, reduce property and environmental damage, and minimise harm to human health. The requirements for a fire protection system often go beyond those listed in the National Construction Code (NCC). Issues to consider should include (but not be limited to) the following:

CONTROL	GUIDANCE	COMPLIANT
Fire detection installation	<ul style="list-style-type: none"> ▶ The facility is to have an appropriate fire detection and alarm system based on the site's risk assessment. Detection needs should be considered beyond life safety with buildings containing internal waste storage protected by smoke detection. ▶ All fire detection and alarms should be fitted with a direct to fire brigade connection. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Fire sprinkler system	<ul style="list-style-type: none"> ▶ The waste facility is to have a fire sprinkler/suppression system in all fire compartments containing combustible waste with a fire compartment size greater than 1000 m², appropriate to the hazard class of storage as per Australian Standards AS2118.1.2017. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Fire hydrant system	<ul style="list-style-type: none"> ▶ In consultation with an appropriately licensed / experienced fire contractor, a fire hydrant should be installed to the requirements of Australian Standards AS2419.1-2005 to provide fire suppression to buildings, mobile plant storage, open yards storages and stockpiles. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Fire water supplies	<ul style="list-style-type: none"> ▶ All fire systems should be supplied with sufficient onsite water storage and pumping capability to meet the needs of Australian Standards requirements. Typically this water supply should provide the maximum hydraulic demand for both sprinklers and hydrants for not less than 2 hours. ▶ Where fire equipment such as hydrants or sprinklers are not present on fire, dedicated fire water supplies should be maintained to match the expected water demand of emergency vehicles responding to the largest possible fire on site. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Mobile equipment protection	<ul style="list-style-type: none"> ▶ Mobile equipment that is deemed either critical to operations, high value, long replacement time, or interacts with waste stockpiles is to contain automatic on-board fire suppression such as foam suppression. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Maintenance of fire systems	<ul style="list-style-type: none"> ▶ All fire systems should be maintained to the requirements as outlined in Australian Standards AS1851.2012. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>

These fire protection systems should be determined in consultation with an appropriately skilled property risk engineer or experienced fire contractor with a view of protecting the asset, not just meeting NCC requirements. Management of fire risks also goes beyond the physical systems and infrastructure installed, with human element playing a critical role in managing a fire.

CONTROL	GUIDANCE	COMPLIANT
Fire Impairment management	<ul style="list-style-type: none"> ▶ A fire impairment permit and procedure should be developed, that provides guidance on the additional controls required to manage fire risks when fire systems are impaired or isolated. ▶ The impairment management procedure should be communicated to 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
ERT and onsite fire response	<ul style="list-style-type: none"> ▶ All on-site staff are to undertake emergency response training, including how to identify a stockpile or underground fire, fire extinguisher use (including selection of the right type of fire extinguisher) and mechanical handling of smouldering waste materials. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Fire and emergency services	<ul style="list-style-type: none"> ▶ Provide the local DFES or volunteer fire brigade (if relevant) with a complete a tour and review of site. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>

PREVENTION AND MITIGATION OF FIRE

Once started, landfill fires are difficult to extinguish, so the primary objective should be to prevent a fire from starting. Fire prevention procedures offer the best defence against the risk of injury, death, property damage, environmental degradation and economic loss. Effective measures for:

- ▶ Includes site map(s), including key features (i.e. roads, office, fuel stores, water storage etc.) and location of hazardous material by material type (e.g. demark zones containing paper, aerosols, batteries etc.)
- ▶ Contact information for key staff out of hours;
- ▶ Contains current, concise information about the site's operation, infrastructure, hazards and emergency resources.
- ▶ Contains credible emergency scenarios and clear procedures to manage them, including notification and escalation procedures.
- ▶ Identifies all likely emissions and their impacts in the event of a fire (e.g. products of combustion and contaminants of firefighting run off)
- ▶ Determines all credible off-site impacts such as smoke and firefighting run off water (including drainage layout maps and outflows.)
- ▶ Determines emergency waste actions to be taken and resources required (e.g. drain blocking, waste water tankers)
- ▶ Specifies how assistance will be provided to firefighters using equipment and personnel such as to break apart waste stockpiles.
- ▶ Identifies specific personnel roles and/or a warden structure so that personnel are clear on the notification and escalation procedures during an emergency.
- ▶ Contains a clear emergency management communication plan to internal staff and external

Fires may occur even when taking all reasonably practicable prevention steps. When this happens, it is important to identify management controls that will detect and suppress the fire. Controls to

- ▶ Staff training, including awareness of procedures in the event of a fire and awareness of the procedures for ongoing maintenance of firefighting equipment, including inspections by accredited persons
- ▶ Liquid run-off management including bunding, drainage basins / catchment pits, contingency plans to divert from storm water drains, use of booms, extinguishing fires with cover material instead of foam/water, adductor pumps to pump firewater off site for disposal, and/or monitoring of waterways.
- ▶ Using bunker fire walls or separation / free air gaps to create barriers between piles.

Fire walls separation



Inaccurate tyre waste storage



Mobile plant foam suppression



EMERGENCY PLANNING

EMERGENCY RESPONSE PLAN

A site specific Emergency Response Plan (ERP) should be developed outlining what facility owners, operators, employees, contractors and visitors should do in any type of emergency. An effective ERP addresses all hazards that may occur on site, including fire, chemical spill, weather event, vehicle impact, medical incident, etc.

When developing a site specific plan for your ERP, ensure that it:

- ▶ Includes site map/s, including key features (i.e. roads, office, fuel stores, water storage etc.) and location of hazardous material by material type (e.g. demark zones containing paper, aerosols, batteries etc.)
- ▶ Contact information for key staff out of hours;
- ▶ Contains current, concise information about the site's operation, infrastructure, hazards and emergency resources.
- ▶ Contains credible emergency scenarios and clear procedures to manage them, including notification and escalation procedures.
- ▶ Identifies all likely emissions and their impacts in the event of a fire (e.g. products of combustion and contaminants of firefighting run off)
- ▶ Determines all credible off-site impacts such as smoke and firefighting run off water (including drainage layout maps and outflows.)
- ▶ Determines emergency waste actions to be taken and resources required (e.g. drain blocking, waste water tankers)
- ▶ Specifies how assistance will be provided to firefighters using equipment and personnel such as to break apart waste stockpiles.
- ▶ Identifies specific personnel roles and/or a warden structure so that personnel are clear on the notification and escalation procedures during an emergency.
- ▶ Contains a clear emergency management communication plan to internal staff and external emergency responders.
- ▶ Contains a schedule and process for reviewing, updating and testing (exercising) the emergency management plan.

Simply having an emergency response plan is not sufficient to provide an effective response. In conjunction with the ERP the following actions are required:

- ▶ Performing a practical assessment of hazards associated with waste facility activities and the possible consequences of an emergency occurring because of those hazards.
- ▶ Providing emergency procedure training for all personnel who may be involved in evacuation and/or are required to alert colleagues and personal involved in emergency response teams.
- ▶ Providing emergency information in a clearly-identifiable container.
- ▶ Implementing a schedule and process for reviewing, updating and testing the emergency management plan.
- ▶ Conducting drills to test and improve the emergency management plan.

EMERGENCY SERVICES INFORMATION CONTAINER

An emergency services information container should be provided at the entrance of the facility providing all relevant information to emergency services if the site is unattended.

An emergency services information folder should provide fire response crews with site specific information to assist in firefighting intervention, including:

- ▶ Facility Emergency Response Plan including all the requirements as stated above such as available equipment, run off containment etc.
- ▶ A summary of operations occurring on site
- ▶ Facility processes and systems including emergency shutdown procedures
- ▶ Facility evacuation plan including ward areas and safe assembly areas
- ▶ Fire safety systems including on-site fixed fire monitors, deluge or drenchers static water supplies, special extinguishing agents or systems
- ▶ Firewater containment system including secondary / tertiary facilities
- ▶ Pollution control equipment including location and procedures
- ▶ Machinery available for waste removal (e.g. waste movers) and location of designated quarantine area(s)
- ▶ After hours emergency contact information
- ▶ Site map with layout of drainage on site, to prevent fire water escaping from the site



RISK REDUCTION PROCEDURES

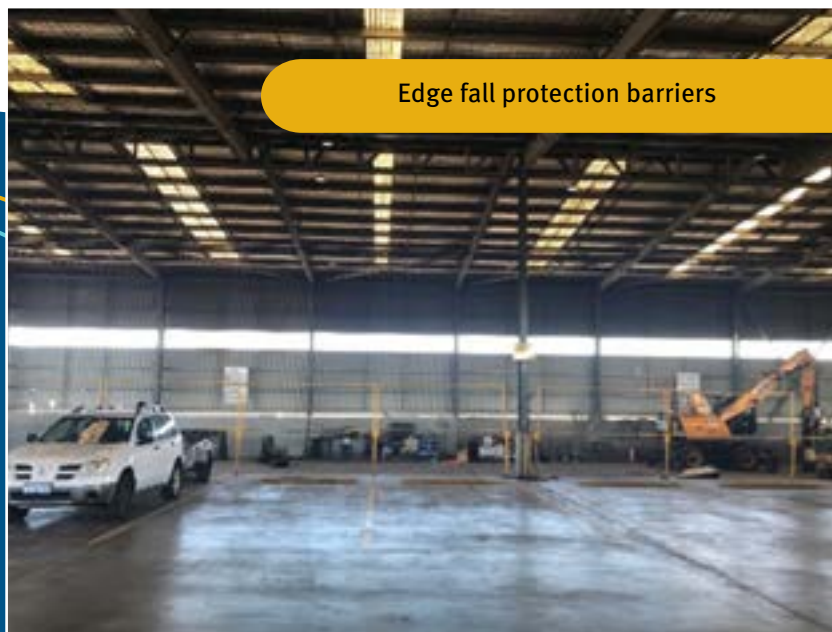
Operations undertaken at waste facilities are inherently high risk due to the mixed material handling, interactions with visitors and members of the public. In order to maintain a safe operation, the last level of risk reduction is to implement procedures and controls that will eliminate unacceptable risks or minimise risk to an acceptable level.

Risk reduction procedures and practices ensure the frequency and severity of risks at landfill sites are minimised. These procedures should be used to reduce threats and potential hazards, and implement controls to identify areas for continuous improvement. Issues to consider should include (but not be limited to) the following:

CONTROL	GUIDANCE	COMPLIANT
Risk register	<ul style="list-style-type: none"> ▶ A site specific risk register has been developed for the site based on the risk assessment guidelines provided at the beginning of this document. The risk register should be reviewed on an annual basis to capture changes to the site and emerging or changing risks. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Emergency response plan	<ul style="list-style-type: none"> ▶ An emergency response plan fulfilling the requirements above has been developed and is available on site. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Emergency services information container	<ul style="list-style-type: none"> ▶ An emergency services information container has been established fulfilling the requirements above has been developed and is available on site. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Fall protection at transfers	<ul style="list-style-type: none"> ▶ Edge protection should be provided on all areas such as transfer stations where there is a risk of a person falling, when disposing of waste or recyclables. The following control measures may reduce exposure to the hazard of falling from one level to another at waste transfer stations: ▶ Provide waste disposal at ground level where possible (if this introduces mobile plant hazards, appropriate control measures must be used to minimise the risk to workers and customers) ▶ Install and maintain appropriate edge protection, such as a solid railing or wall ▶ Install wheel stops to keep vehicles away from the edge ▶ Designate and implement customer exclusion zones to prevent falls and customer interaction with mobile plant ▶ Provide employees to supervise waste disposal, assist members of the public and administer controls ▶ Train employees in fall prevention and traffic management ▶ Provide safety information to customers and display safety signs ▶ Install customer assistance devices, such as chutes and slides, that allow customers to dispose of waste away from the edge of the pit ▶ Provide a designated ground-level set-down area for heavy or bulky items ▶ Consider using modular flat-floor open-faced bin systems. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Tip face access induction	<ul style="list-style-type: none"> ▶ Hazard awareness notification and an induction is required for approved high frequency / recurring commercial operators who access the tip face. ▶ The induction should include but not be limited to traffic management on site, navigating ground conditions on site, stand off limits for tip face, heavy vehicle interactions and communication, PPE requirements, and waste disposal processes. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Limit public access to tip face	<ul style="list-style-type: none"> ▶ Members of the public are not to be permitted access to the tip face, with access restricted to approved high frequency / recurring commercial operators who have undergone an induction and made aware of the hazards. Where there is free access there is often the temptation to interact and scavenging amongst disposed items, some of which contain multiple hazards. People may also encounter risks associated with excavated areas (e.g. asbestos and animal disposal pits, and sewage/ liquid waste ponds). 	Y: <input type="checkbox"/> N: <input type="checkbox"/>

CONTROL	GUIDANCE	COMPLIANT
Hot works	<ul style="list-style-type: none"> ▶ All hot works should be managed by a documented hot works permit to ensure that all hot works are conducted to better practice standards. ▶ A hot works permit is provided in the latter stages of this document. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Self-inspection	<ul style="list-style-type: none"> ▶ A formal, documented self-inspection and hazard identification process is to be conducted by site owners, addressing the issues listed in this guide. Where operation of a facility is contracted out, inspections should still be completed by the asset owner, to ensure compliance by operators. ▶ See Appendix A - Self-Inspections Checklist for more information. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Electrical thermal imaging	<ul style="list-style-type: none"> ▶ An electrical condition monitoring program is completed on a 12 monthly basis - including thermal imaging of all switchboards and distribution boards. Thermal imaging is a non-invasive condition monitoring program that can identify potential electrical failures or ignition sources before they occur. The program should also include RCD checks, and testing and tagging of portable electrical items as required in local legislation and Australian Standards. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Security	<ul style="list-style-type: none"> ▶ Based on the outcomes of the site-wide risk assessment, consideration should be given to routine security or ranger patrols after hours. Considerations should include physical site security controls, potential for theft, arson and likelihood of an after-hours fire being identified without external patrols. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Smoking	<ul style="list-style-type: none"> ▶ Waste sites should be designated as non-smoking sites for employees, contractors and visitors. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Traffic management	<ul style="list-style-type: none"> ▶ A formal traffic management plan is to be undertaken on a 5-yearly basis, or when major changes occur to the site's road system. A formal traffic management plan should consider how to minimise vehicle - vehicle interactions and vehicle - people interactions. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Contractor management	<ul style="list-style-type: none"> ▶ Approved contractors should be engaged through a commercial tendering process which assesses a contractor's suitability based on experience, references, skill and qualifications and insurance certificate of currency audit. ▶ Contractors are to be required to complete site specific induction upon first arrival and follow sign in and out procedures each visit. ▶ Contractors should adhere to the site operators / owners procedures and permits unless procedures and permits have been audited through the tendering process and confirmed to meet or exceed the requirement risk management standards. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Business continuity plan	<ul style="list-style-type: none"> ▶ Consideration should be given to developing a Business Continuity Plan (BCP) focused on recovery, in addition to the Emergency Response and Crisis Management strategies. ▶ A BCP should contain an initial Business Impact Analysis (BIA) to be undertaken to prioritise key processes / functions that are essential to the business, maximum allowable outage periods before contingencies need to be activated, identify key dependencies and resources, and determine a business continuity team responsible for managing the recovery. ▶ Following this, the BCP is to be developed to document contingency plans for critical processes / functions. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>

CONTROL	GUIDANCE	COMPLIANT
Re-sale / recycle shop	<ul style="list-style-type: none"> ▶ Certain items come with safety obligations that apply in circumstances of re-supply. Some of these items, particularly if defective could pose a risk of harm to the end user exposing you to liability risk, or at least reputational risk as the supplier. ▶ Electrical safety standards apply to electrical goods including requirements under the Electricity Act 1945 (WA) and the Electricity Act Regulations 1947 (WA), along with guidelines and standards adopted by this legislation. Standards Australia publish specific standards in relation to ensuring the safety of second hand electrical equipment such as AS/ NZS 5761:2011 In-service inspection and testing-Second-hand equipment prior to sale, this specifies – “Prior to sale, the vendor shall confirm that the electrical equipment is operationally safe to use by determining that the equipment is free of obvious defects which may cause harm to the person or property when properly installed, maintained and used in applications for which it was made. “ Compliance with additional standards requires testing and inspection by competent persons to ensure electrical safety. Further information relating to the importing selling and hiring of electrical appliances can also be found on the Department of Mines, Industry, Regulation and Safety website. ▶ There are other items that could present a high risk in a resale or re-use situation including products that may attract scrutiny from the Australian Competition and Consumer Commission (ACCC) regarding safety (refer Product Safety Australia: http://www.productsafety.gov.au/). Many local governments have adopted an approach in relation to restricting items accepted for resale at waste facility recycling shops. If you are uncertain about the type of items to accept and offer at recycling shops, seek advice from the Department of Mines, Industry Regulation and Safety – Consumer Protection. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>



Edge fall protection barriers

EXTERNAL RISK EXPOSURES

Waste facilities are often located in remote areas with exposures to wildfires that have potential to facilitate fire spread from a site to the environment, or ignite on-site assets from a nearby wildfire. Contaminated water escaping from site also poses a risk to the nearby environment. Practical risk improvement recommendations are designed to reduce the external risk exposure to the landfill site. Issues to consider should include (but not be limited to) the following:

CONTROL	GUIDANCE	COMPLIANT
Buffer zoning (The site's risk to external properties)	<ul style="list-style-type: none"> ▶ External storage buffer zones are provided between waste storage and boundary edges as per distances required in Figure 4 and Figure 5. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Fire breaks	<p>According to Western Australian Legislation (Bush Fire Act 1964) Boundary fire breaks and access roads are to be created and maintained to facilitate defensive firefighting of the site. In order to create and manage an effective fire break. The following must be considered (But are not limited to) :</p> <ul style="list-style-type: none"> ▶ A 3 metre wide trafficable fire break as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year; ▶ Ensure a minimum vertical clearance of 4 metres is maintained along the fire breaks to enable vehicles to drive along the fire breaks without access being obstructed; ▶ A fire break cannot terminate or lead to a dead end; <p>FIREBREAKS MUST BE IN PLACE BY 1 NOVEMBER EACH YEAR AND MAINTAINED UNTIL 30 APRIL THE FOLLOWING YEAR.</p>	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Boundary fencing	<ul style="list-style-type: none"> ▶ Security fencing is provided around the boundary of the site as a protective barrier for both windblown waste and intruder access. It shall be 1.8 metres high topped with three barbed wire strands. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Windblown waste	<ul style="list-style-type: none"> ▶ Windblown waste should be contained within the boundaries of the premises by maintaining fences, installing litter screens and regularly compacting waste 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Lightning protection	<ul style="list-style-type: none"> ▶ Subject to the location risk, lightning protection in the form of lightning arrestors are erected to reduce the risk of lightning strike ignition of landfill, or stockpiles. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Bore monitoring	<ul style="list-style-type: none"> ▶ Water monitoring is conducted at all sites regardless of whether environmental licensing requires it or not. ▶ Monitoring should occur in all water bodies, both surface and groundwater that may be impacted by the landfill. The number of monitoring bores should be commensurate with the size of the facility, the risk of contamination and the nature of the groundwater environment. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Leachate containment	<ul style="list-style-type: none"> ▶ All waste contaminated water should be retained for managed on site. ▶ Leachate must be stored and managed in a manner such that it will not escape into surface water or groundwater, not causing offensive odours and minimising human contact with the leachate ▶ The sizing of the management/disposal system should be such that it has sufficient capacity to handle all leachate generated over the life of the landfill until it has stabilised. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Wind monitoring	<ul style="list-style-type: none"> ▶ On-site wind monitoring is provided to assist in defensive firefighting efforts, allowing on-site responders to react to wind direction changes, and identifying potential at risk population of hazardous smoke. 	Y: <input type="checkbox"/> N: <input type="checkbox"/>
Vegetation management	<p>Annually vegetation on site should be managed prior to the bushfire season (before November 1). The removal of dead or dense vegetation can reduce the fuel load, and rate of spread for a fire. The following is required:</p> <ul style="list-style-type: none"> ▶ Removal of unwanted plants and vegetation from site, such as overhanging limbs and branches over building roofs ▶ Dead vegetation, or ground material ▶ If the property is less than 4,000m², all grasses need to be maintained at less than 50mm for the duration of the firebreak season (1 November to 1 April) 	Y: <input type="checkbox"/> N: <input type="checkbox"/>

Appendices



APPENDIX A – EXAMPLE LANDFILL SELF INSPECTION LIST

FACILITY		INSPECTED BY	
DATE		TIME	
LOCATION OF INSPECTION			

ITEM	COMPLIANT		COMMENTS
	YES	NO	
Structural & mechanical integrity			
Building construction does not show damage, or severe corrosion			
Plant and equipment show no physical damage, or leaking fluids			
Electrical cabinets are locked and secured from access			
Fuel storage tanks are undamaged and spill bunding is free from liquid build up			
Waste handling and stored materials			
Internal waste storage is in accordance to storage requirementsW			
External Waste stockpiling is in accordance to storage requirements			
Hazardous materials such as flammable liquids, flares, batteries, gas canisters are			
Hazardous materials are signposted, stored according to segregation requirements, and			
No evidence of underground fire is observed			
Asbestos disposal location appropriately			
End of day - waste cover requirements met?			

ITEM	COMPLIANT		COMMENTS
	YES	NO	
Safety site spaces			
Smoking was not observed in the enclosed workplace or in vehicles			
Exits and walkways clear & unobstructed.			
Walkways are clean & not slippery.			
Lighting is adequate & operational			
Warning labels/signage are in place & clearly visible where appropriate.			
Security fence around the perimeter of the premises have no damages and are in clean conditions			
Fall protection barriers are undamaged and not missing			
Mechanical equipment is clear of debris and waste.			
Emergency procedures and fire control systems			
Evacuation procedures and a diagram of the workplace are available, displayed and practiced.			
Emergency response plan is present and available including in ESIC.			
Exit signs are provided and clearly visible.			
Portable fire extinguishers are present and not obstructed.			
Hose reels are not leaking.			
Access to fire hose reels and extinguishers are kept clear.			
Fire panel and other fire systems such as pumps, are clear of faults and isolations.			
Environmental management			
Leachate containment is intact, and has is not losing liquid at an excessive rate indicating damage to lining			
Sufficient stormwater freeboard is being maintained			

SIGNATURE:

(Person who completed inspection) _____ DATE: _____

SITE MANAGER: (Confirming issues noted have been actioned) _____

APPENDIX B - FIRE PROTECTION IMPAIRMENT FORM

NOTE: Notification of impairment is necessary where an impairment extends beyond 8 hours, after hours, or over a change of shift.

Persons/contractor carrying out the impairment:		Notification Received:	
From:		Date:	
Site/location:		Time:	
		By:	

Describe nature of fire protection impairment: (sprinklers/hydrants/fire pumps/fire mains) and area affected	
Area or section impaired (valve number):	
Date impairment to occur:	
Estimated duration of impairment:	
Reason for impairment:	
Name of Contractor:	

PRECAUTIONS TO BE TAKEN (Y/N as APPROPRIATE)

<input type="checkbox"/> Use shut off tag	<input type="checkbox"/> Fire hose reel/extinguisher available
<input type="checkbox"/> Cease hazardous operations	<input type="checkbox"/> Emergency connection planned
<input type="checkbox"/> Notified local fire brigade	<input type="checkbox"/> Ongoing patrol of area
<input type="checkbox"/> Welding/cutting/hot work prohibited	<input type="checkbox"/> Notify fire alarm company
<input type="checkbox"/> Smoking Prohibited	<input type="checkbox"/> Surveillance
<input type="checkbox"/> Continuous Work Authorised	<input type="checkbox"/> Other

Property management authorisation

Name: _____

Title: _____

Signature: _____

Date: / /

PROTECTION RESTORED:	Date:	Time:
SPRINKLERS:	Valve locked/sealed open?	
Signed:		

APPENDIX C - HOT WORK PERMIT

There is to be no welding, cutting, grinding or the use of spark/arc/naked flame generating equipment within the building or outside without the issuing of the following Hot Work Permit. The only exception to this is when the work is carried out in a designated hot work area.

SECTION 1

Name of person/s doing the work:	
Date of Issue:	
Location/Department of the work:	

SECTION 2

Pre-caution checklist	Yes	N/A
Has the Chief Fire Warden been notified of the impending work?		
Have affected departments/persons of work area been notified?		
Have any draught creating devices such as fans, blowers, wind etc. been isolated?		
Is ventilation adequate?		
Have barriers been installed to prevent long travel distance of sparks and flashing i.e. welding screens/curtains		
Has appropriate machinery been locked and tagged?		

Fire watch	Yes/No
Name of fire watch person	
Suitable fire extinguisher, hose or hose reel available?	
Trained in use of equipment and in raising/sounding the alarm	

Pre-caution checklist	Yes	N/A
Sprinkler protection and hydrant system in service		
Cutting and welding equipment in good repair (check hoses, regulators, power leads etc.)		
If work conducted on enclosed equipment a confined space entry permit is required		
Area smoke detection isolated where appropriate		

Pre-caution checklist	Yes	N/A
Within 15m of work area:	Yes	N/A
Floor swept clean of all combustibles Combustible floors wet down or covered with damp sand, metal or other non-combustible shields All ordinary combustible and flammable/combustible liquids removed Covers suspended beneath elevated work to collect sparks All hazardous operations discontinued		
Work on walls or ceilings	Yes	N/A
Construction non-combustible and without combustible covering. If construction contains combustibles (insulation panel, Aluminium composite panel ACP, timber), hot work is not be conducted and cold cutting techniques only Exposed combustible ceiling and wall insulation covered or removed Combustibles moved away from opposite side of wall		
Work on enclosed equipment (Tanks, containers, ducts, dust collectors)		
Equipment cleared and purged of all combustibles or flammable vapours		

SECTION 3: Work acceptance

I have checked the permit and I understand the nature, extent of the work & precautions to be in place before starting.

I/my crew have completed a General Work Permit

Name: _____ Signature: _____

Authorisation for work to commence:

I have checked the above is accurate and adequate and I authorise the work to commence

Authorised Issuer Name: _____ Signature: _____

Date: _____

SECTION 4: Completion of work and fire watch

I/my crew have checked the work area and adjacent areas to which sparks and heat may have spread (including floors above and below and on opposite sides of walls) have been continuously occupied and inspected for 60 minutes after the work was completed and were found fire safe.

Name: _____ Signature: _____

Permit final sign off by authorised Issuer:

I have had a final check of the work area and adjacent areas and were found fire safe. Area smoke detection re-instated where appropriate after work completed.

Authorised Issuer Name: _____ Signature: _____

APPENDIX D – CIVIL LIABILITY ACT FRAMEWORK (OVERVIEW)

Duty of care overview

- ▶ The first question to ask is to whom does the local government owe a duty of care?
- ▶ The local government's duty of care arises from the common law and specific legislation, but will often depend on individual circumstances. The critical aspect being the relationship between the local government and the individuals to whom it allegedly owes a duty of care.

Legislation and decision making

- ▶ The specific legislation referred to includes the Occupiers Liability Act 1985 WA (OLA) and the Civil Liability Act 2002 WA (CLA).
- ▶ Where the local government exercises management, care and control of the land or property (premises), it fits the definition of occupier^[1] pursuant to the OLA. That is (OLA, s.2) where an occupier of premises means person occupying or having control of land and other premises. Section 5 of the OLA delineates the Occupier's duty towards a person entering the premises in respect of any danger arising from the condition of the premises. In some instances, the occupier may also be responsible for controlling third parties.

The following aspects of the OLA concerning duty of care are relevant for the Shire's contemplation in managing risk

- a Severity and likelihood of the risk
- b Circumstances involving the entry onto the premises
- c Age of the person entering the premises
- d Ability of the person entering the premises to appreciate the danger
- e Nature of the premises
- f Knowledge the Shire has or ought to have of the likelihood of persons being on the premises
- g The burden on the local government of eliminating or mitigating the danger compared to the risk of danger to that person

Consideration of these points is required when determining if an occupier has discharged their duty of care. Some of these points are aligned to duty of care principles and considerations relevant to the taking of reasonable precautions found within the CLA.

Section 5B of the Civil Liability Act 2002 (CLA) outlines the General Principles applicable to duty of care, they are:

- a The foreseeability of the risk;
- b Whether the risks were not insignificant; and
- c In the circumstances, whether a reasonable person (reasonable local government in the Member's position) would have taken reasonable precautions to prevent or mitigate the risks once they are known.

Further considerations that are taken into account when determining if a reasonable person would have taken precautions against a risk of harm include:



The prior part of the CLA essentially sets down a formula and methodology for assessing liability risk and should help inform decision-making. However, there are other important considerations, which should help with deliberations when it comes to weighing up the best approach to ensuring an environment where the risk of harm is reasonably managed.

Section 5W of the CLA specifically deals with public bodies, such as local governments, and addresses duty of care and breach of duty of care.

It provides:

- a The functions required to be exercised by the local government are limited by the financial and other resources that are reasonably available for the purpose of exercising its functions;
- b The general allocation of those resources by the local government is not open to challenge (this means that how the local government chooses to spend its money, e.g. whether or not to commit resources to one recommendation or another, or to other and competing priorities within the local government, is not open to challenge as a way of demonstrating liability);
- c The functions required to be exercised by the local government are to be determined by reference to the broad range of its activities;
- d The local government's decision-makers may rely on evidence of their compliance with the general procedures and applicable standards for the exercise of their functions as evidence of the proper exercise of their functions in regard to management and control of injury risk at the premises in question.
- e There are further provisions within the CLA applying to public bodies such as local governments that may modify liability where there is a reasonable policy in place or a reasonable decision is made that stems from that policy.
- f There are also provisions that consider a reduction in an award of damages where the party who has suffered harm has also been contributorily negligent in failing to take precautions against that risk of harm.

STANDARDS AND DOCUMENTS REFERENCED / SOURCED

- ▶ **EPA Victoria** - Management and storage of combustible recyclable and waste materials – guideline - Publication 1667 (3 July 2021)
- ▶ **Environmental services and regulation QLD - Guideline** – Prevention of fires in waste stockpiles 2020, Version 1.00
- ▶ **DFES Guidance Note: GNo4** - Fire prevention and management in a materials recycling facility Version 1. 2021
- ▶ **Sustainability Victoria** - Managing combustible recyclable and waste materials at resource recovery centres
- ▶ **Fire and Rescue NSW** - Fire safety in waste recycling facilities, buildings with unique hazards (20 June 2018)
- ▶ **Fire Services Commissioner Victoria** – Towards improved fire management in landfill sites, July 2012
- ▶ **Marsh UK, Marsh Project Risk Insights**. What's the problem with waste?
- ▶ **UTS Institute for Sustainable futures** - Waste fires in Australia: cause for concern? 2016
- ▶ **ISO31000-2019** – Risk management guidelines
- ▶ **AS 1670.1-2004** **Fire detection**, warning, control and intercom systems - System design, installation and commissioning (Part 1 - Fire)
- ▶ **AS 1851-2012** Routine service of fire protection systems and equipment
- ▶ **AS 1940-2004** The storage and handling of flammable and combustible liquids
- ▶ **AS 2118.1-2017** Automatic fire sprinkler systems (Part 1 - General requirements)
- ▶ **AS 2304-2011** **Water storage** tanks for fire protection systems
- ▶ **AS 2419.1-2005** Fire hydrant installations (Part 1 - System design, installation and commissioning)
- ▶ **AS 2941-2013** Fixed fire protection installations - Pump set systems
- ▶ **AS 3745-2002** Emergency control organization and procedures for buildings, structures and workplaces
- ▶ Select **FM Global** property loss prevention data sheets

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