Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil



Guidance Note:

Fire Risk Management at Non-Hazardous Waste Transfer Stations

Environmental Protection Agency

The EPA is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

- **Regulation:** Implementing regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.
- **Knowledge:** Providing high-quality, targeted and timely environmental data, information and assessment to inform decision making.
- **Advocacy:** Working with others to advocate for a clean, productive and well-protected environment and for sustainable environmental practices.

Our responsibilities include:

LICENSING

- Large-scale industrial waste and petrol storage activities;
- Urban wastewater discharges;
- The contained use and controlled release of genetically modified organisms;
- Sources of ionising radiation;
- Greenhouse gas emissions from industry and aviation through the EU Emissions Trading Scheme.

NATIONAL ENVIRONMENTAL ENFORCEMENT

- Audit and inspection of EPA-licensed facilities;
- Drive the implementation of best practice in regulated activities and facilities;
- Oversee local authority responsibilities for environmental protection;
- Regulate the quality of public drinking water and enforce urban wastewater discharge authorisations;
- Assess and report on public and private drinking water quality;
- Coordinate a network of public service organisations to support action against environmental crime;
- Prosecute those who flout environmental law and damage the environment.

WASTE MANAGEMENT AND CHEMICALS IN THE ENVIRONMENT

- Implement and enforce waste regulations including national enforcement issues;
- Prepare and publish national waste statistics and the National Hazardous Waste Management Plan;
- Develop and implement the National Waste Prevention Programme;
- Implement and report on legislation on the control of chemicals in the environment.

WATER MANAGEMENT

- Engage with national and regional governance and operational structures to implement the Water Framework Directive;
- Monitor, assess and report on the quality of rivers, lakes, transitional and coastal waters, bathing waters and groundwaters, and measurement of water levels and river flows.

CLIMATE SCIENCE AND CLIMATE CHANGE

- Publish Ireland's greenhouse gas emission inventories and projections;
- Provide the Secretariat to the Climate Change Advisory Council and support to the National Dialogue on Climate Action;
- Support National, EU and UN climate science and policy development activities.

ENVIRONMENTAL MONITORING & ASSESSMENT

- Design and implement national environmental monitoring systems: technology, data management, analysis and forecasting;
- Produce the State of Ireland's Environment and Indicator Reports;
- Monitor air quality and implement the EU Clean Air for Europe Directive, the Convention on Long Range Transboundary Air Pollution and the National Emissions Ceiling Directive;
- Oversee the implementation of the Environmental Noise Directive;
- Assess the impact of proposed plans and programmes on the Irish environment.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

- Coordinate and fund national environmental research activity to identify pressures, inform policy and provide solutions;
- Collaborate with national and EU environmental research activity.

RADIOLOGICAL PROTECTION

- Monitoring radiation levels and assess public exposure to ionising radiation and electromagnetic fields;
- Assist in developing national plans for emergencies arising from nuclear accidents;
- Monitor developments abroad relating to nuclear installations and radiological safety;
- Provide, or oversee the provision of, specialist radiation protection services.

GUIDANCE, AWARENESS RAISING, AND ACCESSIBLE INFORMATION

- Provide independent evidence-based reporting, advice and guidance to government, industry and the public on environmental and radiological protection topics;
- Promote the link between health and wellbeing, the economy and a clean environment;
- Promote environmental awareness including supporting behaviours for resource efficiency and climate transition;
- Promote radon testing in homes and workplaces and encourage remediation where necessary.

PARTNERSHIP AND NETWORKING

- Work with international and national agencies, regional and local authorities, non-governmental organisations, representative bodies and government departments to deliver environmental and radiological protection, research coordination and science-based decision making.

MANAGEMENT AND STRUCTURE OF THE EPA

The EPA is managed by a full-time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by advisory committees who meet regularly to discuss issues of concern and provide advice to the Board.

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ENVIRONMENTAL PROTECTION AGENCY
An Ghníomhaireacht um Chaomhnú Comhshaoil
PO Box 3000, Johnstown Castle, Co. Wexford, Ireland

T +353 53 916 0600 **F** +353 53 916 0699
E info@epa.ie **W** www.epa.ie
LoCall 0818 33 55 99

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Acknowledgements

This Guidance Note is published to replace the *2013 EPA Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations* (ISBN 978-1-84095-534-7) and Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities (EPA 2016).

The Agency would like to acknowledge the contribution from representatives of the National Directorate for Fire and Emergency Management (Department of Housing, Local Government and Heritage), the Fire Service, the Chief Fire Officers' Association, the Health and Safety Authority, Uisce Éireann, the Local Authorities, Andrew Gausden (Chartered Institution of Wastes Management) and various Industry Stakeholders in the preparation of this Guidance Note.

Disclaimer

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ISBN: 978-1-80009-426-0 November/2026/Website

Acronyms

AFFFs	Aqueous Film-Forming Foams
C&D	Construction and Demolition
C&E	Cause and Effect
EPA	Environmental Protection Agency
EDEN	Environmental Data Exchange Network
FRA	Fire Risk Assessment (completed in accordance with an EPA Licence)
FSA	Fire Safety Assessment (completed under Section 18(6) of Fire Services Acts 1981 & 2003)
FSC	Fire Safety Certificate (issued under the Building Control Regulations 1997)
FWRA	Fire Water Risk Assessment
GDPR	General Data Protection Regulation
HSA	Health and Safety Authority
Li-ion	Lithium-ion
MAS	Management Asbestos Survey (required under the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2025 for all non-domestic buildings built before 2004)
PES	Principal Emergency Services
PFAS	PolyFluoroAlkylated Substances
PIP	Pre-Incident Plan
PRA	Principal Response Agency
RIAI	Royal Institute of the Architects of Ireland
SCSI	Society of Chartered Surveyors Ireland
SHEV	Smoke and Heat Exhaust Ventilation System
WEEE	Waste Electrical and Electronic Equipment
W&MSP	Waste & Materials Storage Plan
WTS	Waste Transfer Station

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1. Introduction

Purpose of this guidance

This document provides guidance on the management of fire risk at non-hazardous waste transfer stations (WTSs). Guidance is provided on the following main areas:

- Potential fuel and ignition sources present at WTS sites.
- Fire Risk Assessment: the process and how it should identify and recommend appropriate fire prevention and mitigation measures for each site.
- Fire prevention and preparedness measures, including proactive fire prevention and preparedness actions, stakeholder engagement, and control measures that operators can implement.
- Fire detection/alarm and suppression/control system considerations, outlining available options and sharing industry insights on their suitability.
- Key considerations during and after a fire incident, to support an effective response and return to operation.

Additional guidance is provided on the typical sequence of events during a fire and the post-incident actions specific to WTS sites.

Who is this guidance for?

This Guidance Note is produced by the Environmental Protection Agency (EPA) and is intended to provide guidance to operators of WTS sites licenced by the EPA, regulated under the Environmental Protection Agency Act, 1992 (as amended) and the Waste Management Act 1996 (as amended), requiring the completion of a fire risk assessment. However, the matters and principles covered in this guidance are sufficiently broad in application to have relevance to Local Authority-permitted WTS facilities and other types of waste sites undertaking fire risk assessments who may wish to use this guidance document for reference.

The term WTS is used in this document to describe waste facilities that accept, store and process non-hazardous waste prior to its onward transfer to, either, disposal or further recovery facilities.

Typical waste streams accepted at non-hazardous WTSs include household, commercial, industrial, construction and demolition (C&D) waste. These waste streams can contain a wide variety of waste types including plastic, paper, cardboard, textiles, rubber, timber, food and garden waste, Waste Electrical and Electronic Equipment (WEEE), plasterboard and metals. Waste present at WTS sites can be stored both inside and outside WTS buildings subject to licence conditions. A significant fraction of the waste on WTS sites is combustible material, meaning that it can readily ignite and burn under certain conditions. As the quantities of combustibles held on WTS sites pending transfer are often large, commonly driven by transportation logistics, fires at WTS have the potential to be very serious

events. They can pose a risk to life and present hazards to site and adjacent infrastructure, the local community and the environment.

In recent years, several serious fires have taken place at WTSs in Ireland resulting in a range of impacts including many of those itemised in Section 2.0: Impacts of Fire. Fire-safety management remains a significant challenge for the sector.

Legislative Responsibilities

It is the responsibility of the WTS operator to ensure that all relevant legislation in relation to fire safety is complied with.

Waste disposal and recovery activities in Ireland require authorisation in accordance with the Waste Management Act 1996 as amended. The EPA grants and enforces waste licences for specified waste activities listed in the Third and Fourth Schedule to the Act including waste transfer stations. Further, some waste activities listed in the First Schedule to the EPA Act 1992 as amended require an Industrial Emissions licence. It is an offence to carry on a licensable activity without a Waste or Industrial Emissions licence from the EPA. Where granted, failure to comply with any Condition attached to a licence or revised licence is an offence.

Other relevant legislation in relation to fire safety includes:

- Building Control Acts 1990-2025 and associated Regulations;
- Building Regulations 1997-2024;
- Fire Services Acts 1981 and 2003; and
- Safety, Health and Welfare at Work Act 2005 and associated Regulations.

The competent authorities in Ireland for the above legislation include the Local Authorities (Building Control and Fire Service) and the Health and Safety Authority, who should be consulted in the event of any queries.

General Obligations as set out in The Fire Services Acts 1981 and 2003

Part III, Section 18: General obligations of the Fire Services Act applies to premises or any part thereof and Section 18(2) states that:

It shall be the duty of every person having control over premises to which this section applies to:

(a) take all reasonable measures to guard against the outbreak of fire on such premises,

(b) provide reasonable fire safety measures for such premises and prepare and provide appropriate fire safety procedures for ensuring the safety of persons on such premises,

(c) ensure that the fire safety measures and procedures referred to in paragraph (b) are applied at all times, and

(d) ensure, as far as is reasonably practicable, the safety of persons on the premises in the event of an outbreak of fire whether such outbreak has occurred or not.

It should be noted that under *Section* 5 of the Acts a person who is guilty of an offence under *Section* 18(2), may on conviction face a fine not exceeding €130,000 or imprisonment for a term not exceeding 2 years, or to both.

Under the Acts it is the duty of every person on the premises to conduct himself in such a way as to ensure that, as far as is reasonably practicable, any person on the premises is not exposed to danger from fire as a consequence of any act or omission of his.

A fire authority may give advice in relation to fire safety to the owner or occupier of any premises or to any person having control over any premises.

Limitations

This document sets out actions and control measures that may be implemented by WTS operators at their sites in relation to fire safety. It also describes some of the fire detection and suppression systems available. It is not intended to be exhaustive in regard to either aspect. The completion of a site-specific fire risk assessment and the development of recommendations for any WTS site should have regard to but not be limited by the contents of this report.

Nothing in this guidance should be construed as negating the operator's statutory obligations or requirements under any building, fire, health and safety legislation or other enactments or regulations.

Site operators should obtain advice on their duties as mandated by all relevant legislation and comply with regulatory standards at all times, whether operating under the cover of a licence or not. The advice of relevant competent qualified experts should be sought before implementing any alterations at a WTS site.

This document is not intended as a legal interpretation of the legislation.

Further resources

WTSs vary considerably in terms of size, type of waste stored, location, site facilities and design. Guidance cannot account for every possible risk. The *References and Technical Guidance* section of this guidance provides further sources of information to support site-specific considerations that may arise.

Figure 1.1: EPA Inspector attending a fire incident.



2. Impacts Of Fire

Fires involving combustible materials can cause significant harm to buildings and plant, human health and safety and the environment including:

- Threaten life and/or serious injury and health damage from high thermal energy and smoke inhalation.
- Explosions and projectiles can harm people and spread the fire to adjacent areas.
- Firewater run-off can transport pollutants into drainage systems, rivers and lakes, groundwater and soil, threatening water supplies, public health, wildlife, and recreational use.
- Release of airborne substances, contributing to poor air quality and respiratory illness due to uncontrolled combustion including:
  - Combustion products, even those from non-toxic materials, which can cause both short and long-term effects on human health and the environment.
  - Carcinogenic chemicals, such as polyaromatic hydrocarbons.
  - Greenhouse gases like methane, CO2, and particulate matter which, if in significant quantities, can lead to the formation of acid rain.
- Contaminated or potentially hazardous wastes may be created by the fire and the impacts of firefighting.
- Significant costs can be incurred associated with the immediate response to the fire.
- Property damage to site infrastructure, buildings and/or equipment where the fire occurred can be devastating and costly.
- Disruption to business operations and the operations of third-party businesses due to infrastructural damage and the duration of a rebuild.
- Waste processing capacity impingements can be felt regionally or across the sector placing limitations on the movement of waste, stockpiling, waste build-up at source sites and even, potentially, on the streets and at the kerbside.
- Costs can be incurred for the temporary diversion of waste to alternative facilities.
- Continued expense due to consequent insurance premium increases.

Figure 2.1: Sign communicating closure of a waste transfer station following a fire.

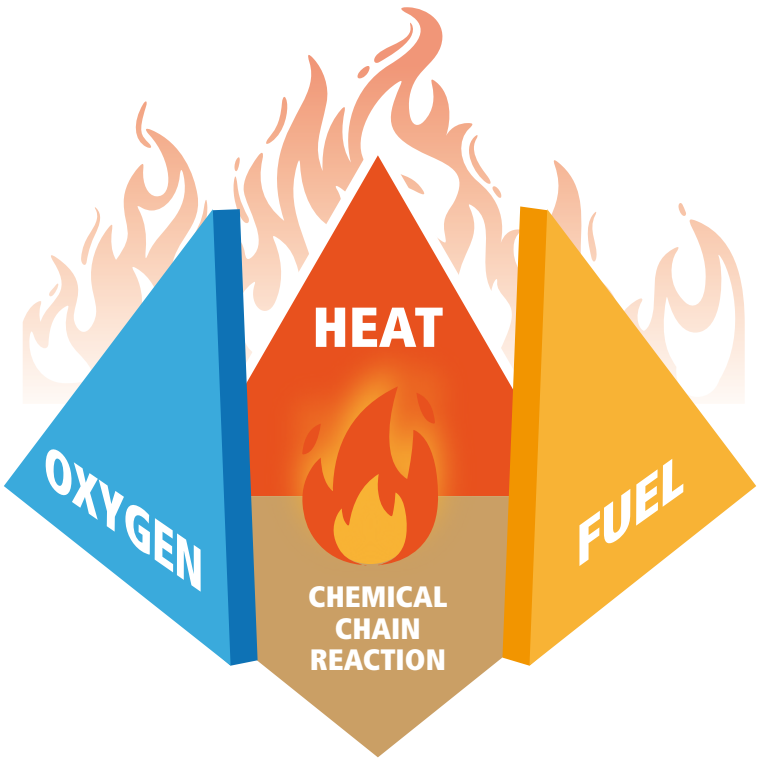


3. The Elements Needed for Fire

For a fire to start it is necessary to have fuel, a source of heat or ignition and oxygen. The relationship between these elements is often referred to as the 'fire triangle' If any one of the components of the fire triangle is missing, a fire cannot start. Taking measures to avoid the three coming together will reduce the chances of a fire occurring. To effectively suppress a fire, at least one element of the fire triangle must be removed.

In addition, to the three elements traditionally described, a fourth element, 'chain reaction', can play a role in maintaining combustion. The four elements are often depicted as the 'tetrahedron of fire'. (see Figure 3.1).

Figure 3.1: The Tetrahedron of Fire.



3.1 Sources of Ignition (Heat) in WTSs

It is important that site operators are aware of the many sources of ignition potentially present in a WTS. Ignition sources can include the following:

Plant and site processes:

- Poorly installed and/or maintained mechanical equipment, such as bearings, can lead to overheating.
- Hot processes/hot work such as welding, soldering, angle-grinding or cutting of concrete, using a power drill on metal.
- Friction-produced heat can occur from the operation of machinery such as waste shredders.
- Static charge from mechanical equipment such as conveyor belts. When friction generates a significant amount of static electricity it may ignite flammable or combustible substances nearby, leading to a fire or explosion if not properly controlled. This risk is particularly high during the routine operation of rubberised drive or machine belts.
- The thermal output from vehicle exhausts can introduce sufficient heat to instigate fires within waste transfer stations by igniting combustible materials;
- Extraction fans on dust and air removal systems can overheat if dust or debris build-up occurs due to a lack of regular cleaning;
- Obstruction of equipment ventilation can lead to heat build-up. Obstructions can occur due to misplaced objects, poor housekeeping or the accumulation of dust.
- Dust build-up on electrical equipment and cabling can have a lagging effect, hindering the normal escape of heat and leading to a rise in temperatures within. (See Figure 3.2)
- Poor electrical installations such as overloads, heating from bunched or damaged cables or faulty or misused electrical equipment;
- Textiles wrapped around bearings, often coated in grease;
- Damaged or exposed electrical cables; and
- Light fittings and lighting equipment sited too close to stored waste.

Figure 3.2: Excessive build-up of dust on electrical cabling at a WTS.





'In-waste' heat generation potential:

Lithium-ion (Li-ion) batteries have emerged as a commonly suspected cause of fires in WTS internationally and in Ireland as evidence of inappropriate battery disposal practices is often observed.

Focus on Lithium-ion batteries

With the increased use of Li-ion batteries (see Figure 3.3) in everyday small rechargeable items such as power tools, laptops, mobile phones, cameras and vapes as well as electric vehicles (EVs) over recent years, there has been an associated increase in the generation of Li-ion battery waste. End-of-life lithium batteries should be taken back by retailers/distributors (in fulfilment of their obligations under the WEEE Directive and WEEE Regulations) or disposed of or recycled at suitable facilities such as civic amenity sites. However, they are often disposed of incorrectly by consumers in the non-hazardous 'general' waste stream, ending up at non-hazardous WTSs, comingled with combustible waste materials.

When used in accordance with manufacturer's instructions, Li-ion batteries are safe in the wide range of applications in which they are intended for use. However, if batteries become damaged or begin to fail, there is a significant risk of fire and release of hazardous substances. (EPA, 2023a)

When batteries are subjected to abuse including electrical abuse (overcharging, short circuits), thermal abuse (exposure to extreme heat) or mechanical abuse either prior to disposal or during its handling as waste the inner battery structure can be triggered to destabilise and degrade, eventually leading to battery failure. Breakdown of a damaged battery's internal components can causes a sharp rise in the internal battery temperature. This can trigger a chemical chain reaction, resulting in rapid further heat generation and the release of flammable and toxic gases through 'off-gassing', either as a precursor to or during an occurrence known as 'thermal runaway'. Batteries are manufactured to contain multiple and various chemical additives which, during battery failure, are released as buoyant vapour clouds of unpredictable chemical exposure risk. Vapour clouds can be mistaken for smoke or steam, increasing the risk of chemical burns to skin and lungs for parties. In addition to the release of a vapour cloud, sudden ignition with jet-like flames and explosion can occur, bringing significant projectile risk.

Furthermore, during thermal runaway, oxygen is released meaning that a fire can start even in the absence of external oxygen in its surrounding environment and can be self-sustaining, self-accelerating and present the potential for re-ignition. Li-ion fires differ significantly from hydrocarbon fires due to their highly dynamic behaviour.

Non-hazardous WTSs are particularly vulnerable to the consequences of inappropriate battery disposal practices as, given the presence of large quantities of combustibles and, given their small size, basic waste inspection practices often do not detect 'rogue' batteries at the waste acceptance stage, prior to mechanical processing. Research has found that municipal solid waste treatment plants are at increased risk from fire caused by lithium-based batteries and that no other substance or material has ever comparably endangered the whole waste industry. (Nigl *et al*, 2020) Fire Risk Assessments for WTS must assess the site-specific risk posed by lithium batteries and make specific fire safety management recommendations to protect critical infrastructure and processes in so far as is practicable. This should take place in tandem with off-site measures by the Licensee around customer behaviour, and wider initiatives by the relevant stakeholders towards appropriate battery waste disposal.

Figure 3.3: Examples of Li-ion batteries removed from battery packs.



- Self-heating is a risk in waste stockpiles (stored accumulations of any form of waste, whether baled, loose/open or otherwise stored) with the occurrence of this phenomenon dependent on waste particle size, stockpile size and storage duration. It involves the centre of the pile heating up and not radiating safely due to the insulated environment created by the waste itself. If ventilation remains insufficient, the internal temperature of the waste pile can rise to a critical point and can ignite, starting an 'Inside-out fire" deep within a stockpile of combustible waste material. Such fires can go undetected for a time and grow without any alarm being activated. Finely divided materials stored in large stockpiles for long durations present the greatest risk. Self-heating can be seen in many waste types at WTS, including organic waste materials, paper and shredded wood that can generate heat through microbial activity and chemical reactions. Self-heating and even spontaneous ignition of waste has been reported for materials such as rubber crumb, paper and other cellulose-based materials.
- 'Tramp' metal that finds its way into moving machinery and causes localised 'hot spots' due to friction.
- Waste reactions can take place when certain types of waste that are incompatible or unstable encounter each other. Such reactions are usually associated with materials that should not be entering a non-hazardous WTS.

Human behaviour:

- Smoking or vaping – Discarded cigarettes or smoking materials such as vapes are a potential ignition source.
- Malicious ignition (arson/vandalism).
- Non-adherence to procedures around plant, processes, waste handling, housekeeping and fire safety as required.

External sources:

- Sunlight itself is not known to start fires at WTSs but it has been reported as a suspected factor. If sunlight entering through rooflights or windows is focussed or magnified by discarded glass or mirror waste it is possible for it to be directed as a beam of heat, potentially heating or igniting dry flammable materials. More generally, sunlight may raise the temperature of waste creating conditions that are conducive to fire.
- Lightning strikes.

The site-specific FRA should take account of all potential heat sources at the WTS and include all recommendations arising from the assessment in the FRA Report.

3.2 Sources of Fuel

There are many fuel sources available in a WTS, both in the waste accepted and in the site facilities itself, including:

'In-waste' fuel sources:

- All stored waste materials awaiting transfer from the site other than metals, glass, or non-combustible construction and demolition waste.
- Plastic and timber storage receptacles (e.g. pallets and waste bins).
- Organic waste.
- Textiles.
- Flammable liquids and liquid-based products, such as paints, varnishes, solvents, and adhesives.
- Liquid petroleum Gas (LPG) canisters, fuel containers, aerosols.
- Metals can be combustible, dependent on the physical characteristics of the waste, the levels of contamination and storage conditions. Finely divided metals (dusts, shavings, turnings) are more flammable, especially when mixed with contaminants such as oily residues or volatile materials.

Plant and facility fuel sources:

- Fuels, oils and flammable liquids stored on-site.
- Conveyor belts, especially rubber conveyor belts.
- Fabric of the waste recovery and transfer buildings including insulation.
- Vehicles.
- Stored plastic wheelie bins.
- Dust build up on site infrastructure.

3.3 Sources of oxygen

The availability of oxygen is usually not a limiting factor in allowing a fire to ignite and burn as it can be readily available from the following sources:

- Naturally occurring in the atmosphere.
- Additional sources of oxygen can sometimes be found in materials used or stored at premises, such as oxygen cylinders used in welding processes.
- Certain waste materials can undergo chemical reactions that release oxygen. Li-ion batteries can release oxygen during thermal-runaway (see above).

3.4 Chain Reaction

Chain reaction refers to chemical processes occurring during a fire which cause the release or production of more elements, such as oxygen or heat, that make the fire self-sustaining and keep the fire going. An example includes heat causing molecules in the fuel to break down into volatile gases that, in turn, burn to generate even more heat.

3.5 How a Fire Spreads

A fire can spread very rapidly from its place of ignition at a WTS through any or all of the following:

- Convection: flames, smoke and hot gases rise, igniting new objects above and spreading horizontally when a ceiling is met.
- Conduction: heat travels through solid objects and materials.
- Radiation: heat waves from the fire heats materials at a distance.
- Direct flame contact: flames and/or fire embers, physically reach and ignite other combustible materials.

4. Fire Risk Assessment

4.1 Fire Risk Assessment Requirements

Where operating under Licence from the EPA, WTS operators are required to complete a **site-specific fire risk assessment (FRA)**, for the facility/installation.

In addition, the Fire Service may require a 'person having control over premises' such as WTSs, to carry out a Fire Safety Assessment (FSA) of the premises under Section 18(6) of the Fire Services Acts 1981 and 2003. The National Directorate for Fire and Emergency Management's Code of Practice for Fire Safety Assessment of Premises and Buildings (DHLGH (NFDEM), 2022) provides guidance on the completion of a FSA.

As employers, WTS operators are required to comply with Section 19 of the Safety, Health and Welfare at Work Act 2005 by identifying hazards, assessing risks and having a written risk assessment in place which includes any unusual or other risks. The Health and Safety Authority website (www.hsa.ie) contains further information on what the fire safety risk assessment should include.

Each of these assessment types aims to identify risks and to assist in making provision for safety of life from fire, as the priority, and for protection of property.

For the purposes of this guidance note, where a FRA is mentioned, it refers to that Fire Risk Assessment prepared in accordance with a licence issued by the EPA. Fire Risk Assessments should be undertaken in accordance with the NDFEM Code of Practice and/or a recognised standard such as PAS 79-1:2020 Fire Risk Assessment – Code of Practice for Premises other than Housing (British Standards Institution, 2020).

In order to comprehensively identify hazards and assess risks associated with the waste activity taking place on a WTS, it is advised that each operator should engage an independent, appropriately qualified and experienced consultant to complete the site-specific FRA whether required by condition of a licence or not.

Appropriately Qualified & Experienced

The FRA of a WTS should be carried out by an independent and appropriately qualified consultant[1]. The consultant must have appropriate qualifications, technical knowledge and experience which should be demonstrated in the subsequent report produced.

For FRAs carried out by a team, the members should have sufficient relevant technical knowledge and experience of the fire safety management considerations associated with waste facilities and premises. Proficiency in the presentation of the risk assessment process, findings and recommendations is also a necessity.

Overall responsibility for the assessment, report preparation, approval and sign-off should be by a person meeting one of the following criteria:

- Chartered Engineer, on the register maintained by Engineers Ireland under section 7 of the Institution of Civil Engineers of Ireland (Charter Amendment) Act 1969
- Registered Architect, on the register maintained by the Royal Institute of the Architects Ireland (RIAI) under Part 3 of the Building Control Act 2007.
- Building Surveyors, on the register maintained by the Society of Chartered Surveyors Ireland (SCSI) under Part 5 of the Building Control Act 2007.
- Member of the Institution of Fire Engineers holding the title of Chartered Engineer.

The FRA Report should contain a clear statement to demonstrate the suitability of the person(s) completing the FRA, preparing and approving or signing off on the report in terms of the following:

- Qualification(s);
- Technical training; and
- Experience.

The purpose of the site-specific FRA is to evaluate actual conditions within a facility, identifying all potential fire hazards and recommending the appropriate prevention, control and mitigation measures to reduce risk.

The FRA must examine all relevant factors on-site that impinge on fire risk and prevention and also have regard to this Guidance Note.

A FRA should be carried out and revised at the following stages:

- within three months of the date of grant of a licence for the facility, if licensed;
- every three years or more frequently if prescribed by the original FRA;
- when any material alterations to the WTS premises take place;
- when there is any significant change in the waste types accepted;
- when there is any significant change to the processing infrastructure on-site;
- when any significant change in fire precautions occurs;

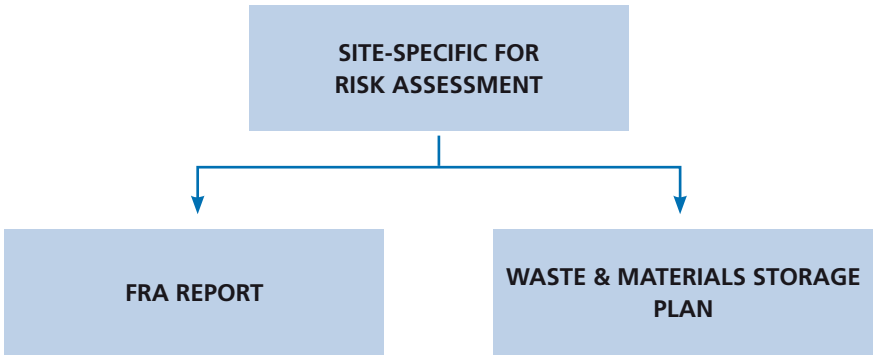
1 A register of approved consultants is not maintained by either the EPA or the National Directorate for Fire and Emergency Management.

- after the occurrence of a fire incident; and
- when there is any reason to consider the original FRA is invalid.

The FRA process should identify hazards or 'risk items' at the WTS site through an information gathering stage, followed by site visual inspection stage. The likelihood and severity of each risk item identified should be evaluated and a risk rating assigned. Control measures should be recommended to mitigate or eliminate each risk item. The recommended control measures should be assigned a priority rating taking account of the overall risk rating and the professional judgement of the independent and appropriately qualified consultant undertaking the assessment.

The output documents of the site-specific FRA process are the **Fire Risk Assessment (FRA) Report** and the **Waste & Materials Storage Plan** (see Figure 4.1). Both documents form part of the management system for a WTS site.

Figure 4.1: Key Deliverables arising from the Fire Risk Assessment.



In addition to the FRA, it is the responsibility of each site operator to evaluate the facility's compliance with the relevant building and fire safety regulations to ensure that the necessary standards to prevent and respond to fire incidents are being met. The FRA and its output documents are for the recommending of interventions specific to the waste activity on the site.

4.2 Fire Risk Assessment Report

Upon completion of the site-specific FRA, a **FRA Report** must be prepared. The FRA Report should follow the template structure provided in Appendix A and provide all of the following:

An Introduction:

- details of the appropriately qualified consultant completing the risk assessment and preparing the report;
- site and licence details, to include site name, operator, licence Register No. and relevant conditions;
- site location and layout to include overall site plan, location, boundary and layout;

Details of the Fire Risk Assessment to include:

- a description of the FRA methodology;
- a schedule of all hazards or risk items identified having regard but not limited to the factors itemised in Section 3 of this guidance;
- schemes and matrices used in the analysis and evaluation of risk;
- details of the likelihood and severity evaluation for each hazard/risk item;
- details of existing control measures, an assessment of them and details of residual risk;
- the risk rating assigned to each risk item;
- risk ranking, identifying those items presenting the highest risk;

Itemised recommendations:

- details of the control measure(s) recommended to mitigate or eliminate each risk item, including procedural, fire prevention, fire preparedness and fire mitigation measures. The measures recommended should include but not be limited to those set out in Sections 5, 6 and 7 of this guidance;
- the priority rating assigned to each control measure taking account of the overall risk rating and ranking, in addition to the professional judgement of the independent and appropriately qualified consultant undertaking the assessment.
- clear identification of any recommendations requiring immediate implementation;
- timelines for the implementation of recommended control measures within each priority rating;
- clear allocation of responsibility for completion of each recommendation, to be indicated by staff name or position name; and
- declaration confirming that control measures recommended by the FRA process regarding waste and materials storage have been incorporated into the W&MSP.

The schedule of recommendations and control measures along with the implementation timelines contained in the FRA Report should be regarded as an action plan by the WTS operator. All recommendations made by the site-specific FRA and contained in the FRA Report must be implemented by the WTS operator.

For WTSs operating under licence from the EPA, the FRA Report must be notified to the Agency through the submission of the FRA Report.

A revised FRA Report should be prepared upon each revision of the site-specific FRA.

4.3 Waste & Materials Storage Plan

Control measures recommended by the FRA process regarding waste and materials storage should be incorporated into a '**Waste and Materials Storage Plan (W&MSP)**' depicting details including all of the following:

- a site map showing the layout of the WTS;
- a drawing or plan of the location of each waste type and the means of storage for each waste type (e.g. as loose waste, baled, in sealed containers);
- the storage arrangements for waste within the building and externally where external storage is allowed;
- a designated Fire Quarantine Area;
- the designated Waste Quarantine Area for unsuitable wastes;
- the maximum, total quantity of waste to be stored at the installation at any one time;
- the maximum quantity of each waste type including maximum stockpile heights;
- maximum stockpile sizes in designated storage areas or vessels including maximum volume, height, length, width and area, and minimum separation distances;
- the maximum storage or holding period for each type of waste in designated storage areas or vessels;
- details of the drainage system super-imposed on the above drawing or plan; and
- any other details as specified under the WTS licence.

Site operators are advised to prepare and maintain an up-to-date W&MSP for their sites whether one is required by a condition of a licence or not. WTS operators must comply with the W&MSP for the site at all times in order to minimise the likelihood of a fire occurring and spreading within the site and to neighbouring sites.

If the WTS operates under licence from the EPA, the W&MSP must comply with the relevant conditions and be to the satisfaction of the Agency at all times.

The W&MSP should be updated upon each revision of the site-specific FRA.

4.4 Firewater Retention Risk Assessment

Where operating under licence from the EPA, most WTS will require the carrying out of a risk assessment to determine the retention requirements for firewater run-off from the installation.

This is discussed further in Section 5.6 under Fire Prevention and Preparedness.

5. Fire Prevention and Preparedness

WTSs are complex and inherently risky sites for fires given the abundance of fuel, several potential heat sources, oxygen and the potential for chemical chain reactions completing the 'tetrahedron of fire'. Accordingly, WTS operators are advised to prioritise fire prevention and preparedness, ensuring that:

- actions to meet all recommendations detailed in the site-specific **FRA Report** are scheduled and implemented as a priority;
- a **Site Fire Response Plan** is prepared for the site, addressing all items set out in Section 5.1 of this report;
- staff fire **training** is scheduled and completed on a regular basis and that fire awareness is maintained at all times;
- fire **drills**, as set out in Section 5.3 are completed regularly;
- all appropriate **control measures** are applied across the site; and
- there is **proactive engagement** with key stakeholders.

5.1 Site Fire Response Plan

Each WTS operator should prepare and maintain a **Site Fire Response Plan** (sometimes referred to as a '*fire routine*'), as part of the site's Emergency Response Procedure. The Site Fire Response Plan should consider the various uses made of spaces around the WTS and the means of giving warning to all staff in all areas in the event of a fire. The engaging of an independent and appropriately qualified fire safety consultant is advised to prepare the plan. The plan should include the following elements to assist in organising the response on-site in the event of a fire:

Descriptions of:

- communication arrangements, e.g. named contacts, key-holders with contact numbers;
- site-specific responsibilities of key staff on-site as relevant to a fire event, especially fire safety officers and wardens. Their names, roles and actions to be undertaken should be clearly set out.
- types, quantities and properties of combustible and other hazardous materials on the site and their likely burn times if possible – inclusion of, or cross-reference to, an up-to-date Waste and Materials Storage Plan is useful.
- number of people working on-site (staff and contractors), including any differences between weekdays/weekends and times of the day.
- means by which actual staff, contractor and visitor numbers present at the site at any time will be recorded and the procedure around accounting for the safety of each person in the event of a fire incident.

- designated assembly points/areas where all staff, contractors and visitors should convene in the event of a fire.
- number and types of heavy plant and machinery and operators on-site to assist with initial fire response if appropriate.
- persons(s) responsible and the procedures for the shutting of valves, if not automatic, to prevent the uncontrolled release of firewater to the environment or to sewer in the event of a fire. If automatic valves are in place, responsibility for verifying they have functioned as intended should be assigned.
- relevant procedures such as 'lock-out-tag-out' systems for accessing areas of the site for the purposes of fire mitigation, including restricted areas and areas associated with waste processing lines.

A site plan showing:

- layout of buildings.
- hazardous areas on-site (location of gas cylinders, process areas, chemicals, stacks of combustible materials, oil and fuel tanks, areas of explosion risk, Waste Quarantine Area, etc.).
- main access routes for fire engines in and any alternative accesses if available.
- access points around the site perimeter to assist firefighting.
- hydrants and water supplies.
- any watercourse, borehole or well located within or near the site.
- areas of unprotected ground.
- the location of plant and pollution prevention equipment and materials, including shut-off valves, firewater retention tanks, ponds and any other related infrastructure.
- drainage systems, including foul and surface water drainage and the direction of flow in these networks.
- the location of drain covers and any pollution control features such as firewater containment systems.
- clearly marked escape routes and exits from buildings. Maps, aligned with direction markers within buildings, are useful.
- locations of escape routes from buildings.
- all assembly points.

Fire procedure:

- the detailed procedures staff, including those with specific responsibilities, should follow if a fire starts. This should cover the period before and after the Fire Services arrive and arrangements during and outside normal working hours.
- post-fire actions to be completed after a fire incident.

Consultations with key stakeholders, as set out in Section 5.4, are advised in the preparation of a Site Fire Response Plan.

5.2 Staff Fire Safety Training and Awareness

All fire safety training should be given by a competent person. All staff, including part-time staff, cleaners and contractors should be trained and instructed in the following matters:

- the actions to be taken and to not be taken upon discovering a fire on-site.
- how to raise the alarm, including the location of alarm indicator/break-glass panels.
- the means by which they will be alerted if a fire occurs.
- the action to be taken upon hearing a fire alarm.
- how the fire and rescue service and any other necessary services will be called and who will be responsible for doing this.
- the location of firefighting equipment.
- how to evacuate safely in the event of a fire, ensuring knowledge of the escape routes, especially those not in regular use, and the importance of placing safety before personal belongings.
- the importance of fire exits, keeping access routes to fire exits clear at all times and the need to close all doors at the time of a fire and on hearing the fire alarm if their closure does not occur automatically.
- the procedures for alerting guests and visitors to the site including, where appropriate directing them towards fire exits.
- any machines/processes/appliances/power supplies that need to be stopped or isolated if there is a fire.
- how the evacuation of the premises should take place.
- where people should assemble after they have left the premises and procedures for checking whether the premises have been evacuated.
- arrangements for fighting the fire directly.
- the duties and identity of staff with specific responsibilities if there is a fire. Specific responsibilities may include:
  - checking that the staff are safely evacuated and that everyone is accounted for.
  - where necessary, making arrangements for the Fire Service vehicles to enter the site.
  - activation of shut-off valves or containment arrangements.
  - liaising with the Fire Service on arrival.
- specific arrangements, if necessary, for high fire-risk areas.
- contingency plans for when life safety systems, such as fire detection and alarm systems, sprinklers, or smoke control systems, are out of order.
- site traffic management including vehicle parking so not to obstruct emergency vehicles attending or delay access to firefighting water sources.
- procedures regarding the information to be communicated to the Fire Service on their arrival on-site.

No degree of site familiarity should be assumed as the first attending Fire Service appliance may not be from the local or nearest station. Information to be communicated should include but not be limited to:

- confirming whether everyone has been accounted for;
- the location of the fire;
- provision of maps of the facility showing locations of different waste types and any hazardous substances;
- notifying them of any special risks including the location of highly flammable or potentially explosive materials, the location of electrical shut off switches (if required) and the presence of any asbestos containing materials on the site as identified during the Management Asbestos Survey (MAS); and
- the location of firefighting water sources such as hydrants.

Training can be supported by the displaying of 'Fire instruction' notices in languages appropriate for staff at conspicuous positions in parts of the building and outdoor yard areas. Notices should state, in concise terms, the essentials of the action to be taken upon discovering a fire and on hearing the fire alarm.

Induction and refresher training:

Induction training for new staff should be given on the first day of their appointment and should include instruction on what to do if fire is discovered, what to do when hearing the fire alarm, and should also involve a walk over the various escape routes.

Thereafter staff should receive sufficient comprehensive training at regular intervals (at least once a year) to make sure that familiarity is maintained with the fire precautions for the workplace and the actions to be taken in an emergency. Training will need to be more frequent where there is a high turnover of staff or where there is a high risk of fire.

Language considerations should be taken into account if an employee's first language is not English. Additional training or the use of an interpreter may be required. The trainer must be assured that the employee has fully understood all of the training given. Where required, hand-outs, leaflets, instructions and safety signage should be provided in the appropriate language for the WTS workforce.

Training for staff with fire-related responsibilities:

Staff with specific responsibilities in the event of fire should receive additional instruction and training appropriate to their role and duties. In larger premises it may be appropriate to train specific staff on the use of firefighting equipment provided. Such staff should receive appropriate refresher training at least once, and preferably twice, in each 12-month period.

All staff having a supervisory role in the event of fire (e.g. departmental heads, fire marshals or wardens, and in some large workplaces, firefighting teams) should receive additional training.

Contractors and Hot Work:

All activities of employees or outside contractors should be carefully supervised and controlled with management ensuring that all necessary precautions against fire are taken. All contractors entering the site, whether for short or prolonged periods, should be provided with induction training prior to work commencing to include all necessary instructions in relation to fire safety. Records of induction training should be retained and signed by the person receiving the training.

Particular attention should be paid to the fire safety training and education of those carrying out hot work such as welding, soldering, cutting, using blow torches or other open flames.

Contractors should be given at least the minimum instruction as recommended for new employees. They should also be trained in the fire safety precautions relating to their special tasks. If they do not have such training, they should be allowed to work only with supervision by an appropriately trained staff member or after suitable training has been given.

Points to be included in such training are:

- the procedure for obtaining a hot work permit.
- preparation of the place of work.
- the need for care, attention and/or a fire watch by a staff member or designated contractor during hot work.
- leaving the workplace clean and safe.
- the need for a check after the job is completed and for a final check at a later time.
- training in the operation of available fire extinguishers.
- precautions needed where there are special risks in the premises.

If the work of any contractor or employee involves the temporary disabling of fire protection infrastructure, alternative arrangements should be made to maintain safety for the duration of the works, with the reenabling of the primary systems ensures at the earliest possible time. A formal protocol for the governance of any enabling and disabling is advised, with an emphasis on appropriate authorisation and record-keeping.

Persons entering the site:

All persons entering the site should be provided with induction training that includes all necessary instructions in relation to fire safety relevant to their time on-site. Access should be restricted to reception areas only to persons not provided with induction training.

Visitor Logs for the purposes of fire safety for all visitors, including external contractors, should be retained in a manner compliant with the General Data Protection Regulation (GDPR) to include name time or arrival and exit from site as a minimum.

Training Records:

Appropriate records of fire safety training must be retained in the site Fire Safety Register and updated as personnel and roles change. Section 5.8 contains further information in relation to the Fire Safety Register. Matters that should be recorded include:

- date of the training, instruction or exercise.
- duration.
- the name of the person giving the instruction.
- names of the persons receiving the instruction.
- the nature of the instruction, training or drill.

Section 5.8 contains further information in relation to the Fire Safety Register and the keeping of records.

5.3 Fire Drills

The Site Fire Response Plan should be practiced through the holding of fire drills. They should be undertaken regularly and be varied to address the range of fires and circumstances that may be encountered on the site. Drills should be completed at minimum once a year and more frequently when this is recommended by the site-specific FRA. If the site involves shift work, then fire drills for each shift should be carried out during that shift timeframe.

During each fire drill, fire wardens and marshals should walk all escape routes and note any issues requiring urgent attention or action. Such issues can include personnel refusing to evacuate or follow fire safety instructions, electric door locks or electromagnetic door holders failing to release properly, fire doors not closing correctly or specific equipment failing to shut down when required. A post fire drill meeting with all fire-trained personnel should be scheduled to take place after each fire drill during which all issues are recorded and a plan devised to rectify them without delay.

In addition to drills, the scheduling of routine test exercises for equipment that will be used in the event of a fire is strongly advised. These exercises should simulate, in full, the shutting off of surface water discharge valves including obtaining valve keys and opening of manhole covers. The exercises can be undertaken in conjunction with fire drills, according to a separate testing schedule or periodically in accordance with manufacturer/supplier instructions.

5.4 Engagement with key Stakeholders

The Fire Service

The Fire Service, as a service provided by the local authorities, is one of the Principal Emergency Services (PESs) in Ireland. It is strongly recommended that WTS operators engage proactively with their local Fire Service. Early engagement can provide valuable, site-specific insights to support both fire prevention and effective emergency response.

Within local authorities, this function is typically delivered through the Fire Service or Fire and Building Control sections, with additional guidance often available through Local Authority websites to assist operators in meeting fire safety requirements.

The Fire Service may assist WTS operators in optimising fire suppression and response arrangements by:

- Arranging reconnaissance site visits to familiarise Fire Service personnel with the site layout and the location of water supplies.
- Assessing site access for fire appliances and identifying routes that must be kept unobstructed at all times.
- Confirming access to rising mains and/or stored water supplies for firefighting purposes.
- Advising on water pressure requirements for fire suppression systems.
- Verifying compatibility between on-site hydrants or water storage systems and Fire Service equipment and recommending any necessary modifications.
- Undertaking a fire officer's audit, which may identify additional risks not captured within the Fire Risk Assessment (FRA)
- Providing input into the site's Fire Response Plan

WTS operators may request the preparation of a Pre-Incident Plan by the Fire Service to support operational readiness. Regular joint familiarisation visits between site operators and the Fire Service may be requested by operators to support effective pre-incident planning.

Consideration should be given by WTS operators to submitting a site information pack to the local Fire Service containing:

- Site plan showing:
  - Location of hydrants and water supplies;
  - locations of different waste types;
  - Identification of any hazardous substances, highly flammable or potential explosive materials; and
  - the location of electrical shut off switches.
- Firewater containment arrangements.
- Management Asbestos Survey (MAS) report.

Ongoing engagement between WTS operators and the Fire Service is essential in enhancing both firefighter safety and operational effectiveness, particularly at larger or higher-risk facilities.

Water supplier

If the WTS site receives its water from an external source, the water supplier for the site should be identified, documented and known to the site operator. It is recommended that the site operator or the consultant completing the FRA engages with the water supplier to ascertain whether the water main serving the site provides sufficient pressures to meet the needs of fire suppressions systems that will be relied upon in the event of a fire. Depending on the suppression system(s) in place or recommended for the site, it may be relevant to request an estimate of the duration a particular water pressure can be sustained for by the water supply as pressure in some supplies may drop at times of sustained high demand. In the case of a site served by a public water supply, Uisce Éireann should be contacted.

Further engagement with Úisce Éireann may be required in regard to the management of retained firewater as detailed in Section 5.6 below.

On sites with a private water supply and fire hydrants, these should be regularly checked. It should be ensured that hydrants are not damaged and that they are cleaned out so they can be used quickly if required. Hydrant marker plates should be reviewed to ensure they are not obscured by any changes on-site such as changes to parking arrangements or the storage of bins.

Insurers

Insurers of WTS are key stakeholders in relation to fire prevention and preparedness. Insurance companies may have in-house fire technical experts and may set their own standards for WTS operators to meet. Proactive consultation with insurers is advised to ascertain their requirements and to seek advice where necessary.

Health and Safety Authority

WTS operators and/or site safety managers should be familiar with the reporting requirements that apply to dangerous occurrences that can take place on their site. The Health and Safety Authority's Guidance on the Safety, Health and Welfare at Work (Reporting of Accidents and Dangerous Occurrences) Regulations 2016 (HSA, 2016) provides assistance in understanding the requirements including why accident and dangerous occurrence reporting is required, what is reportable, what is not reportable, who should make the report and how the report should be made.

5.5 On-site Control Measures

The following fire prevention control measures should be implemented at all waste transfer stations where relevant, or where recommended by the FRA Report:

Fire Prevention through WTS design:

- For new WTSs, it is recommended that operators engage the services of an appropriately qualified fire safety design consultant to evaluate fire risks associated with the proposed activity and provide input to the overall and detailed site design. The facility's design should take account of the fire risk associated with each type of material proposed to be accepted and stored at the site, allowing for control measures to be implemented through site design to mitigate risk. Involvement of a fire safety design consultant at an early stage allows for the incorporation of passive fire protection components or systems into the facility design as the facility layout is being developed, such as fire compartmentation.
- To avoid conveyor belts becoming linear vectors for fire, the feasibility of siting dedicated fire suppression systems, such as sprinklers, overhead conveyors should be examined at the design stage of new WTS or at existing WTS as recommended by the Fire Risk Assessment. In addition, allowing for fire shutters/curtains or sprinkler curtains at any wall or compartment openings through which conveyors convey waste from one space to another may be beneficial.
- An important allocation of space in the design of a WTS is towards a designated Fire Quarantine Area. All WTS sites should provide a Fire Quarantine Area whether required by a condition in the facility licence or not. The Fire Quarantine Area must be available at all times. It can be used for the placement of any hot loads imported to the site or for placing any burning or smouldering waste separated from stockpiles on the site so that the burning or smouldering can be extinguished. It can also be used for the placement of unburnt wastes to prevent them from catching fire. Suitable separation distances from combustible waste, critical infrastructure and the site perimeter should be maintained around the quarantine area.

Figure 5.1: Example of a Fire Quarantine Area at a waste transfer station.



- Designated spaces for vehicle fleet parking, maintenance and refuelling should be separated from stored waste, site assets and the WTS perimeter.
- Clear access routes should be delineated and maintained around the WTS site, particularly to areas where waste is stored or stockpiled to facilitate the application of active fire mitigation measures.
- A notice board should be provided as close as is possible to the entrance to the WTS for ready reference by the Fire Service in the event of a fire. The board should include an emergency 'out-of-hours' contact telephone number, a plan of the site clearly showing the location of each waste storage area and all information as set out in the licence for the site.
- New WTS will require a Fire Safety Certificate (FSC) issued by a Local Authority Building Control Authority, as designated under the Building Control Acts 1990 to 2014. WTS must be constructed in accordance with the plans and specifications submitted during the FSC application process. These plans and specifications should include that:
  - Exit signage will be maintained in accordance with the Safety, Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007) indicating the direction of escape and the location of the fire exit doors.
  - Emergency lighting will be designed, installed commissioned and maintained in accordance with I.S. 3217.

Control measures on ignition (heat) sources:

- All mechanical equipment should be installed by a professional installer and maintained according to manufacturer and installer instructions. The design and installation of electrical equipment must be in accordance with I.S. 10101 of 2020: National Rules for Electrical Installations. The requirements of the standard in terms of certification, periodic inspection and testing and controls for dusty combustible environments must be met.
- All repairs and maintenance should be completed in a timely manner.
- Preventing potentially hazardous waste reactions relies on effective waste inspection after unloading at a WTS and on robust rejection and/or waste quarantining procedures. A dedicated Waste Inspection Area and separate Waste Quarantine Area must be provided and maintained at the WTS for the management of any unsuitable wastes taken out following inspection. These areas must be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required.
- Every effort should be made to detect and remove any form of battery unit or gas cannister from the waste prior to processing. The inclusion of any available detection technology, as may be recommended by the FRA or the line designer, and inspection processes at the earliest possible point in the processing line should be considered a priority.
- Construction and demolition wastes and mixed skips should be thoroughly inspected for the presence of unsuitable waste such as battery packs and gas cannisters with any waste removed for quarantine carefully managed.
- The Waste Quarantine Area should be emptied of waste regularly, with the waste dispatched to appropriate authorised waste facilities by authorised waste carriers.
- A separation distance of at least 6 metres should be maintained between on-site heat or ignition sources and any stored or stockpiled combustible and flammable materials. The implementation and maintenance of this separation distance are important at all times particularly during periods when the site is unattended. Where this separation distance cannot be achieved, it is recommended that other controls are put in place to dissipate heat or mitigate heat transfer and ignition risk. Such controls must not impede access for firefighting.
- Hot processes and hot works should take place a safe distance from combustible materials and maximum vigilance should be exercised during and for a time after completion of such work.
- Fit bucket loaders with rubber strips where practicable to prevent sparks being generated when the bucket encounters hard standing.
- Controls should be put in place to detect and manage the build-up of static charge.
- Install a lightning protection, such as a lightning rod, at the facility.
- All electrical power to plant and other equipment should be shut and locked-off when not in use.
- Flammable materials, such as oils, greases, fuels, paints, etc, should always be stored correctly and put back into appropriate storage after use.
- No combustibles should be stored in electrical rooms.

- Schedule the following actions as a minimum to ensure the early detection of any issues that might compromise fire safety:
  - A regular maintenance and cleaning program for all areas of the site, including site machinery and buildings aimed at keeping levels of dust, loose fibres, textiles, paper and debris in buildings and around machinery to a minimum. It is recommended that general cleaning of such materials occurs at least once a day when a site is operational.
  - Regular inspection programme for all site areas including site machinery for dust accumulation, leaks and any signs of wear and tear.
  - Regular and planned inspections of processing equipment, general electrical systems, including portable electrical appliances and cables for electrical faults and general integrity.
  - Regular maintenance encompassing scheduled checks, and adjustments and the replacement of worn-out parts to maintain the optimal functioning of all plant and equipment.
  - The securing of all plant and equipment at the end of each working day in designated areas that are physically separated from any waste stockpiles.
  - Increased vigilance at certain times, based on site experience such as spring and summer bank holiday weekends when more inappropriate disposal of barbecues can occur.

Figure 5.2: Dust build up on ducting within a WTS building.



Control measures relating to waste (fuel):

- Areas used for the storage of waste, pre- or post-processing, should be situated away from processing plant and critical infrastructure.
- Stockpile sizes and spacings for internally and externally stored wastes should be managed for the prevention of fires and fire spread:
  - Stockpiles should be separated either by a minimum separation distance of 6 metres or by fire-resistant barriers or walls once access to internal and external areas for firefighting is not impeded. The FRA may prescribe greater separation distances based on stockpile dimensions and/or waste type.
  - A maximum stockpile height of maximum stack height of 4 metres is recommended for practical firefighting reasons.
- As a general rule, waste materials should be stored in their largest possible form to prevent self heating and reduce flammability. Shredding waste should take place at the latest possible stage prior to removal from site.
- Shredded wood should not be stockpiled immediately after shredding as the small particle size can lead to heat retention within the stockpile. It should be allowed to cool first.
- Turning stockpiled waste, limits on stockpile size, limits on storage duration, waste rotation and all control measures for the prevention of hot spots in waste should be included in the Waste and Materials Storage Plan aimed at mitigating the risk of 'inside-out' fires.
- If a hot spot is identified in a waste stockpile, digging it out with a loading shovel or grab and its placement in the Fire Quarantine Area is recommended to isolate the issue.
- Facilities should ensure that combustibles are stored appropriately, away from heat sources, and with sufficient ventilation to prevent heat build-up.
- In picking sheds, consider the installation of diversion chutes to direct any batteries to receptacles containing an inert packing material such as vermiculite.
- Bales of paper waste should be stacked with adequate space and proper ventilation to minimise the risk of heat build-up.
- Tramp metal should be prevented from getting into moving machinery by pre-sorting and/or extraction by a magnet/eddy current separator.
- Each waste container should be clearly labelled to ensure its contents and any potential hazards are clear.
- Pushing in and tidying of waste stockpiles should not be undertaken at the very end of a shift before closure of the WTS for night or weekend periods. This practice should take place allowing at least 2 hours of observation time after completion.
- Waste collectors and WTS operators should undertake to raise public awareness around the fire risks associated with incorrect WEEE, battery and small gas cannister disposal. Communications should issue to customers promoting segregation of these waste streams at source.

Control measures relating to human behaviour:

- Apply a no-smoking policy or, preferably, ensure designated smoking areas are provided with fire-safe disposal receptacles for safe disposal of used cigarettes and matches. Both the smoking area and the disposal receptacles should be situated away from combustible materials. Managed smoking is preferrable to a no-smoking policy as a site-wide ban can lead to uncontrolled smoking at hidden locations around the site.
- Ensure all visitors are aware of the correct safety and fire prevention procedures to follow while on-site.
- Ensure staff and any contractors follow safe working practices when undertaking hot working, such as welding and cutting.
- Ensure all staff practice good housekeeping at all times.
- Put site security measures in place, such as security fencing, intruder alarms and CCTV, to deter arson.
- Schedule fire drills including taking account of any different shift work to familiarise staff with the actions necessary in the event of a fire.

5.6 Firewater Management

Water is the primary medium used for fighting fires. Firewater arising from a fire incident can contain high concentrations of substances which are harmful to the aquatic environment. If firewater is allowed to enter into soil, drains or watercourses in an uncontrolled manner it has the potential to cause significant environmental damage. In addition, the uncontrolled release of firewater to sewers has the potential to shock biological processes at the receiving waste water treatment plant if it contains high levels of certain contaminants.

The provision of an effective firewater retention system is key to preventing the uncontrolled release of firewater. Qualifying criteria which, if met, oblige a site licenced by the EPA to provide firewater retention are set out in the *EPA Guidance on Retention Requirements for Firewater Run-off* (EPA, 2019). If a licensed site does not meet the qualifying criteria, then a risk assessment should be completed, in accordance with the Guidance, to determine whether firewater retention is required. For WTS sites operating under licence, completion of a firewater risk assessment is generally a requirement of the licence itself. The EPA's 2019 Guidance Document provides comprehensive guidance on the completion of a firewater risk assessment (FWRA), retention capacity calculation and retention facility design.

Where provided on a site, firewater retention should capture the majority of the water used to control and extinguish a fire. Should any changes take place on-site, WTS operators should reevaluate the firewater retention arrangements, carefully assessing any new potential pathways that firewater could take in the event of a fire incident and taking account of these pathways in their firewater retention arrangements.

It should be ensured that any discharges from storm and foul drainage networks on the site are fitted with shut-off valves for activation in the event of a fire. Automatic activation is preferrable. Where automatic shut-off valve activation is not in place, responsibility for shutting valves should be clearly designated as part of the Site Fire Response Plan procedures, ensuring that manually activating shut-off valves does not lead to a delay in evacuation of staff from the site. WTS operators holding a licence are reminded of the requirement to test the integrity of all firewater retention facilities every three years, or as required by the conditions of their licence. All automated systems must be tested in accordance with manufacturer or supplier's instructions.

Towards planning the management of retained firewater, WTS operators should be familiar with Úisce Éireann's Conditions of Acceptance and procedures for Tankered Waste Water. Information is available at https://www.water.ie/business/tankered-wastewater

5.7 Maintenance and Testing of Fire Safety Systems

Each WTS site operator should establish planned inspection, maintenance and testing procedures to ensure that all fire protection systems can operate effectively when required.

The maintenance requirements and relevant standards for all fire safety equipment and systems should be sought from the equipment and/or system manufacturers, suppliers, their technical advisers and/or specialised contractors. Requirements should be met through the execution of a scheduled programme of work, carried out by competent persons. A clear understanding of how the fire safety equipment and systems operate independently and/or collectively is key to the establishment of the planned routine maintenance programme.

Fire safety equipment requiring ongoing management and routine maintenance may include, but not be limited to, the following:

- emergency lighting systems.
- fire doors and doors on escape routes.
- water supply infrastructure such as fire hydrants and pumps.
- generators.
- fire detection and alarm system.
- fire suppression equipment.
- smoke control systems.
- signposting and way-finding measures to assist firefighting.
- special provisions such as fire/smoke curtains and shutters.

Further Guidance on Maintenance of Fire Safety Systems and indeed on how to assist persons having control of a premises including WTS in discharging their statutory fire safety responsibilities under section 18(2) of the Fire Services Acts 1981 and 2003, can be found in the "Fire Safety Guide for Building Owners and Operators, Guide for persons having control under Section 18(2) of the Fire Services Acts 1981 and 2003," (DHLGH, 2023).

5.8 Management Oversight

Sections 5.1-5.7 set out the measures and actions considered key to fire prevention and preparedness. However, management oversight of all measures is crucial to the sustained fire-safety culture. Personnel, activities and infrastructure around the WTS site should be monitored on an ongoing basis and corrective actions implemented as required.

It is recommended that management maintain a Fire Safety Register to manage and keep track of tests, services, inspections and training. Several Local Authorities provide useful Fire Safety Register templates including lists of inspections to be conducted on a daily, weekly, monthly, quarterly, six-monthly and annual basis, in addition to templates for keeping records related to fire safety and risk management. Consideration should be given to the collation of the Fire Safety Register and all relevant procedures, plans and programmes into a Fire Safety Management System for the site.

6. Fire Detection and Alarm Systems

Fire, heat or smoke detection at the earliest possible time is the first line of defence in ensuring the safety of people present on-site and in preventing a small occurrence of smouldering or fire from leading to the devastation of a WTS facility.

As a matter of procedure, **regular visual checks and patrols,** particularly of known high fire-risk areas should be completed by site operatives, security personnel or designated persons. The following of a fire-watch procedure at the end of the shift (when dust from processing operations can settle onto hot exhausts/engine parts) is considered good practice. It is commonly the case that the smell of burning is detectable by the human nose before fire, smoke or heat detection technology identify an issue, reinforcing the value in regular visits to site areas by staff. Hand-held heat detection devices can be useful tools to support visual checks and patrols.

Beyond visual checks, all WTS should be provided with an **appropriate fire detection and alarm system**. Where fire detection and alarm systems are provided, the system(s) should comply with, as a minimum, the plans and specifications detailed in the fire safety certificate application(s). These systems should be serviced and maintained in accordance with *Irish Standard I.S. 3218: 2024 Fire Detection and Fire Alarm Systems* which covers the planning, design, installation, commissioning, servicing and maintenance of such systems.

It is generally advised that multiple approaches to fire, heat or smoke detection should be considered, particularly in high fire-risk settings.

The selection or design of a detection system for a WTS should consider the following checklist of key requirements:

- The means of detection must ensure a fire is discovered quickly enough for the alarm to be raised in time for an effective response to take place and, critically, for all occupants to escape to a place of safety.
- A multi-layered approach to fire detection, combining technologies, should be considered for robust early detection and risk minimisation rather than reliance on one.
- Transmission of an alarm across the entire facility must be ensured by whatever system is employed or installed. The alarm must be clearly audible and understood by everyone throughout the whole site. As WTS often include noisy processes, strobe lights are often recommended in particularly noisy areas where an alarm sound may be inaudible due to either noise levels or the wearing of ear protection.
- The system installed should consider occupancy patterns during normal operation, weekends, down-times for maintenance, etc.
- Where manual call-points such as break-glass units are included as elements of the system, they should be sited in safely accessible areas close to exits and comply with the relevant standards.

- Combined or integrated fire detection and suppression systems that can both detect the early stages of a fire and instigate an immediate response to mitigate the fire as early as possible are desirable.
- It is recommended that fire alarms and detection systems be connected to plant control systems so that if a fire is detected the plant stops automatically and quickly to prevent burning wastes from being conveyed through the plant.
- For complex WTS facilities, a detailed fire detection and alarm Cause and Effect (C&E) Matrix should be prepared by a competent person knowing the fire safety strategy for the WTS facility. This C&E Matrix should be retained in the fire safety register and should also be displayed beside the fire alarm panel and the plant control system if possible to avoid confusion of actions during maintenance or reprogramming of either panel. The C&E Matrix should be reviewed after each fire drill to ensure all necessary actions are carried out correctly or when issues need to be addressed.
- All equipment and facilities forming part of the system must be adequately maintained and regularly tested and checked, with ready access afforded to allow for this. The advice of a competent person should be sought to verify that the system is being maintained, tested and checked as required.

There are many fire detection approaches and systems available on the market to WTS operators with new systems and technologies emerging all the time. They vary in terms of robustness in the context of waste management sites and speed of response. The include but are not limited to:

Smoke Detection Systems

Considered one of the simplest installed options, 'point', 'aspirating' and 'beam' smoke detectors are available. Point smoke detectors can be limited in application in warehouses with high ceilings. Aspirating systems require the sampling of air, often via a distributed pipe network, for analysis based on threshold alarm levels and are more suited to clean environments. Beam detectors which direct a beam of light to a detector can be useful in large open areas where smoke will interrupt the beam to raise the alarm.

Heat Detection Systems

Both 'fixed temperature' detection and 'rate of rise' detection systems are available which can be useful where smoke detection is not reliable, such as dusty environments. Siting heat detection sensors in locations where risk is high, such as immediately after a shredder, can provide early detection and an opportunity for intervention. Probe monitoring of the internal temperature of stockpiles of decomposing waste is an option but is not commonly undertaken due to the practicalities of monitoring large stockpiles.

Flame Detection

Infra-red/ultraviolet detectors and 'multi-spectrum' flame detectors are available. Such systems can offer fast and location-accurate fire identification and are often accompanied by CCTV camera, monitored on-site or remotely, for verification purposes.

CCTV Video/optical detection

Remote CCTV monitoring of key areas within a WTS by CCTV for flames, heat and/or smoke can be particularly valuable during non-operating hours, and closed periods. Monitoring is commonly outsourced and undertaken remotely by human or by computer where an algorithm to detect smoke and/or flame signatures can be used. CCTV monitoring should be in colour such that the presence of smoke can be observed more readily on screen. Whether fixed or rotating, the directing of camera coverage to risk areas is key to their effectiveness for smoke or fire detection. In planning camera coverage the inclusion of areas at risk from arson should be considered.

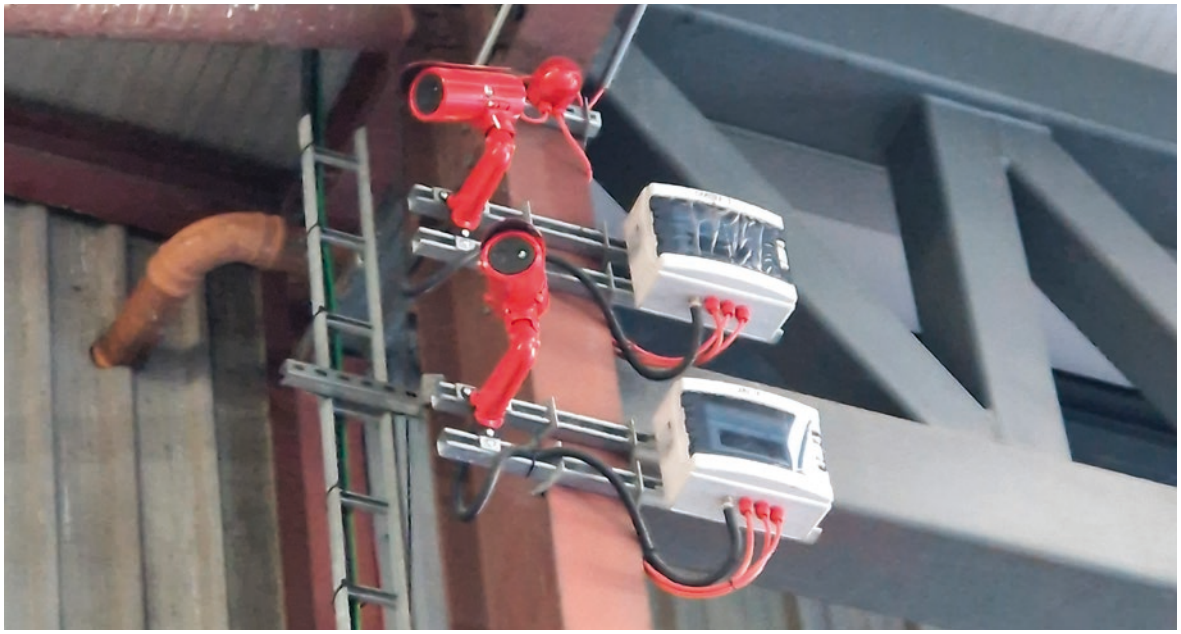
Ultraviolet, Infra-red, Thermal Imaging, and Spark Detection cameras

Ultraviolet, infra-red, thermal imaging, and spark detection cameras are all useful in fire detection as they can detect a fire before flames or even smoke are present allowing for early intervention. Infrared cameras can monitor the heat signature of items and materials in its view and detect increases in material temperatures, providing an advance warning of potential fires before, even smoking is emitted. Limitations lie in the early detection of hotspots within a waste stockpile and the detection of 'inside out' fires.

AI-powered CCTV Video Analytics

AI fire detection systems use machine-learning to undertake computer-based analysis of data from detection systems such as cameras, heat sensors and smoke detectors. This relatively new technology aims to identify smoke and/or fires with accuracy, reducing false alarms by including the capability to distinguish signs of fire from dust or steam.

Figure 6.1: Heat detection cameras installed in a waste transfer station building.



The choice and design of any fire detection and alert system should be informed by the FRA and give effect to its recommendations and, as a minimum, should also comply with the requirements of any relevant Fire Safety Certificates for the premises.

The specification, design, commissioning, servicing and operation of fire detection and suppression systems is a specialist area of varying complexity, depending on the site context. Even the method by which fire detection systems transmit and raise an alarm can be elaborate in WTS sites as they can be noisy and comprise multiple partitioned spaces. WTS operators should engage the services of a reputable fire suppression systems provider to complete this work. In addition, WTS operators should consult with the site's insurer as they may have specific requirements for fire detection and alarm systems.

All fire detection and alarm systems should be underpinned off-site monitoring for out-of-hours monitoring cover and by a robust programme of staff communication, training and drills on fire safety, detection equipment servicing and testing as well as management oversight to optimise their effectiveness. Site operators must ensure that all site occupants understand all alarms on the site, understand their own responsibilities and know the appropriate responses to take in the event of an alarm.

7. Fire Suppression and Control

Fire suppression and control measures that can be recommended by the FRA for implementation at a WTS will belong to one of two categories:

- Passive fire mitigation; or
- Active fire mitigation.

Measures in both categories are important towards protecting buildings and people and, together, form part of a whole system of fire mitigation. The selection or design of passive and active fire suppression measures for a WTS should consider the following checklist of key requirements:

- A multi-layered approach to fire suppression, combining different approaches, should be considered to ensure a timely, appropriate and robust response rather than reliance on one.
- If the fire suppression system is electrically powered, it must function as intended whenever activated, including during a power failure. A back-up power supply may be required.
- Manual activation points for fire suppression systems must be sited away from high-risk areas for fire, as identified through the FRA, in safely and freely accessible locations close to fire exits.
- All equipment and facilities forming part of the fire suppression system must be adequately maintained and regularly tested and checked. The advice of a competent person should be sought to verify that the system is being maintained, tested and checked as required.
- Specific provisions and appropriate design standards should be followed for any fire suppression system installed at a WTS.

7.1 Passive Fire Mitigation

Passive fire mitigation includes provisions and building components, most commonly structural, which slow or impede the spread of the effects of fire or smoke without system activation. They include but are not limited to:

Building or Fire Compartmentation

Compartmentation refers the division of a building into sections or 'fire compartments' using fire-resistant walls, doors or other barriers to limit the potential for fire to spread within the building as well as protecting the escape arrangements for its occupants. The compartment dividers function by containing fire and smoke, providing site occupants with critical time for escape as well as limiting the extent of fire-related damage to site infrastructure.

In a WTS, compartmentation can be difficult to achieve where waste may need to be conveyed from one space to another for processing. Management supervision of any works completed by tradespersons within a WTS site that may inadvertently compromise compartmentation is advised.

More information on compartment size and hazard rating may be found in the Department of Housing, Local Government and Heritage's Technical Guidance Document B – Fire Safety – Volume 1 Buildings other than Dwelling Houses 2024 (TGD-B). However, alterations to compartment layouts or sizes may also require Fire Safety Certificate approval and advice should be sought from a competent person.

Site perimeter Boundary Considerations

The establishment and maintenance of a minimum separation distance between the WTS building or combustible/flammable materials and the site perimeter is recommended to prevent a fire spreading to neighbouring properties, infrastructure or services. A minimum separation zone of 6 metres is generally advised which should be kept clear of any waste. Where this distance cannot be achieved, it is recommended that other controls are put in place to reduce risk such as the installation of a fire protecting wall at the site perimeter.

The FRA should consider any increased risk posed by activities taking place outside of the site boundary

Fire separation

Fire separation involves maintaining a minimum freeboard between the top of a waste stockpile and the top of the bunker/bay dividing walls to limit the spread of fire should one occur within a bay. A minimum freeboard of 1m is often recommended internationally but should be prescribed by the site-specific FRA. The painting of a marker line on the bay diving walls provides a useful guide to site operatives and drivers assisting in maintaining this freeboard.

7.2 Active Fire Mitigation

Active fire mitigation includes provisions or systems which activate or are activated on detection of a fire. They include automatic systems such as fire suppression and smoke control systems, and manual systems such as fire extinguishers and hose reels. Both types should be underpinned by response plans and staff training.

It is important that staff are trained to stop and raise the alarm before commencing any manual interventions to tackle a fire.



Raise the alarm first – only tackle a fire if it is safe!

Most, if not all, site-specific FRAs for WTS (and insurers) will recommend the installation of active fire mitigation systems inside facility buildings. Systems available range from simple, portable hand-held extinguishers to fixed hose reels, sprinklers, to sprinkler or deluge systems with sophisticated directional control connected to fire detection systems. Systems available include but are not limited to:

Portable Fire Suppression Equipment

Portable equipment such as fire extinguishers can reduce the risk of a small fire developing into a large one. They should be designed to European Standard EN 3 series and require proper maintenance and servicing.

The number and siting of portable extinguishing equipment are determined by reference to *I.S. 291: The Use, Siting, Inspection and Maintenance of Portable Fire Extinguishers*. It is necessary to indicate the location of extinguishers by suitable signage. It is sometimes deemed appropriate to have vehicles fitted with fire extinguishers.

While portable fire suppression equipment can be very effective, it can place the user close to a fire and in a place of danger.

Focus on Li-Ion Battery Fires

Combatting fires ignited by Li-ion batteries has proven to be extremely challenging in all settings, particularly in the WTS sector. Due to the characteristics of Li-ion battery fires, conventional fire suppression methods can be ineffective.

It should be noted that Li-ion fires present a particular risk to users of portable fire suppression equipment. Attempting to fight such fires can place the operator in close proximity to a range of hazards including thermal exposure, visibility loss, toxic emissions, gas venting and the potential for deflagration. The potential presence of these well documented hazards must be considered and evaluated before any attempt is made to tackle a fire that is suspected to involve Li-ion cells.

In this context and given the particular characteristics Li-ion fires the current advice is to evacuate the building/area and that no attempt should be made to tackle such fires but to call fire services immediately. Extreme caution should be exercised by any operatives in the vicinity of a suspected Li-ion battery fire, particularly drivers exiting sealed, air-conditioned vehicle cabs, due to the likely release of toxic combustion products.

Further information is available in the EPA guidance note: Guidance on the safe storage of Li-ion batteries at waste handling facilities, 2023.

Water-based Fire Suppression Systems

Installed water-based fire suppression systems remain the most widely used suppression method. Water supply is readily available in most locations and is excellent at extinguishing certain fire types such as those involving paper, wood, textiles, and other solid combustibles. The use of water allows the potential addition of surfactants to water to increase penetration into burning materials which may reduce the volume of water needed. Water-based systems include the following:

- Hose reels
- Sprinkler systems

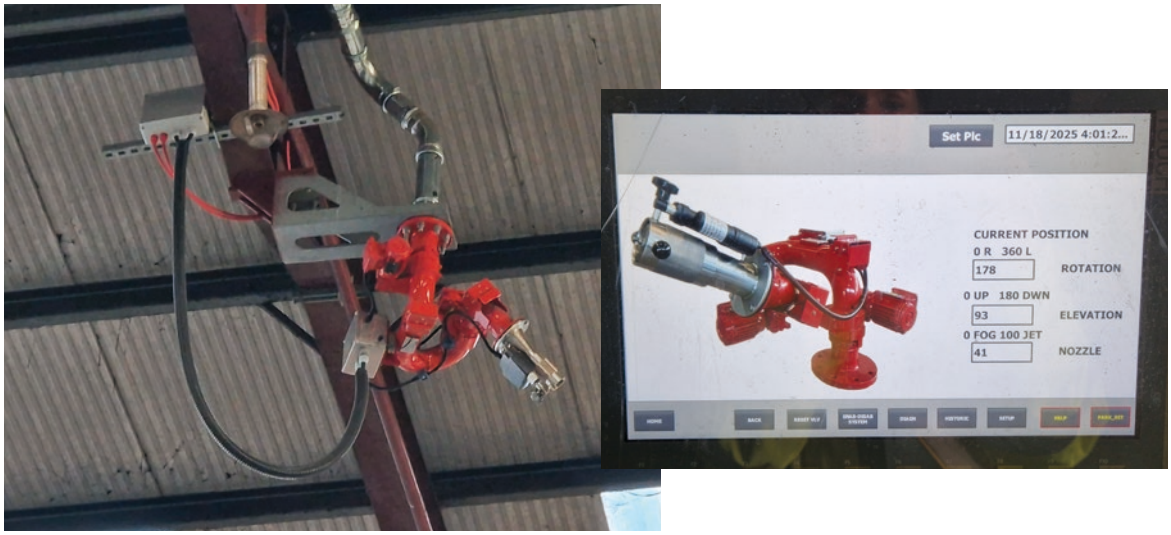
- Canons/water deluge systems
- Deluge systems
- Misting systems

Hose reels can provide a simple and often effective method for tackling a fire at its early stages when limited in extent. It is important that a staff member is assigned the role of standing back to watch the operator of a hose reel ensuring their safety. As with portable equipment, extendable hoses can place the user close to a fire, but in the case of a hose a prolonged effort may ensue and become unsafe.

Sprinkler systems utilise pressurised nozzles to spray water. They are usually triggered by heat sensors and activate when the temperature reaches a certain point. Sprinkler systems should be designed, installed and commissioned in accordance with IS EN 12845. Effectiveness relies on the design of the system which should be based on waste storage arrangements.

Canons and water deluge systems have evolved to reportedly become one of the most effective systems when it comes to suppression of large fires in comparison to sprinkler systems and are increasingly being installed at WTS during suppression system upgrades where sufficient water supply can be afforded. Canon systems usually have sophisticated controls integrated with the fire detection systems to rapidly target a fire soon after it starts with large volumes of water.

Figure 7.1: Canon installed in a WTS and associated display panel.



Foam-based Fire Suppression Systems

Foam-based systems are more specialised than water-based systems. Such systems mix water, carbon dioxide and other chemicals to create a foam which, when applied, forms a blanket to smother a fire of oxygen and cool the area to extinguish a fire. Foam systems are generally recommended for the control of fires involving flammable liquids, such as oil or for chemical fires.

Application of foam to a fire can be more effective than water due to its 'spilling' texture which helps achieve coverage over the fire. Foam systems are considered cost effective to install and maintain but can make the clean-up of treated areas time consuming.

Focus on PFAS

Many Aqueous Film-Forming Foams (AFFFs) used in firefighting in the past contained chemicals from the PolyFluoroAlkylated Substances (PFAS) group. Known as "forever chemicals", they are persistent in the environment and are linked to harmful impacts on the environment and on human health.

The use of substances from this group of chemicals in firefighting foams and other applications has either already been prohibited or is in the process of being prohibited. Many alternative AFFFs that do not contain PFAS are available.

More information is available in EPA Guidance Booklet on The Changing Nature of Firefighting Foams (EPA, 2021).

Gas-based Fire Suppression Systems

Gas systems use inert gases, such as nitrogen to displace oxygen while cooling the fuel source of the fire, thus disrupting the fire tetrahedron. They are designed to be most effective in enclosures. They are not commonly recommended for WTS unless to address a specific hazard or risk.

Smoke and Heat Exhaust Ventilation systems

Smoke and Heat Exhaust Ventilation (or control) systems (SHEVs) are systems aimed at minimising smoke and heat damage in the event of a fire by, through their activation, facilitating the escape of smoke and heat from a building. They can take the form of an active ventilation system or translucent/ frangible roof panels to provide sources of smoke ventilation. Venting smoke not only minimises smoke damage but also assists the Fire Service in seeing and fighting a fire. Frangible roof panels can be effective but introduce additional health and safety risks that must be carefully managed during any roof works.

Active Compartmentation

This engineered approach to fire suppression involves the activation of fire shutters, fire/smoke curtains or dampers to restrict fire-spread within a building or structure. Such systems will require a secure power supply to allow them to work at all times. Some fire curtain systems use gravity to deploy, only requiring power to draw the curtain up.

Separation of burning waste

Site operators are advised to call the fire service even if a very limited portion of smouldering or burning waste is detected. The separation of burning waste by site staff should be avoided due to the risk of explosion if batteries are involved.

The Fire Service in Ireland have informed the Agency that a controlled burn is not an available option in their tackling of fires as they are legally obliged to put out all fires (EPA, 2019). Should WTS operators wish to consider the option of waste separation and controlled burning it must be agreed with the local fire service.

A high level of caution should be exercised by loader operators working within an enclosed vehicle cab as they may be unaware of high temperatures and potentially dangerous gases present outside of the cab environment.

All fire suppression equipment and facilities require maintenance and regular testing. Training must be provided to staff as described in Section 5.2.

Management oversight and control of all fire suppression actions is critical to ensure that human safety in these dynamic circumstances is prioritised, most critically in instructing staff using manual plant or equipment to move back and away from the fire when appropriate.

7.3 Sources of Water for Firefighting

As the most widely used firefighting agent, water can be available to a WTS from several possible sources including:

- Hydrants on external fire mains,
- Water carried on fire appliances (water tenders, water tankers, etc.),
- Static storage tanks or reservoirs. These tanks can be used for a wide range of scenarios but most commonly they are used when an adequate supply of water is not available or reliable. There are many types of tanks that can be used such as elevated 'gravity' tanks which use gravity to provide pressure and 'suction' tanks which are mounted on the ground or below-ground level.
- Other sources such as on-site wells, lagoons, watercourses and ponds (where permitted).

There must be sufficient water available on-site or to the site for firefighting to take place and to manage a worst-case scenario incident. The volume of water that may be needed varies from site to site, with the use of water at volumes as high as 10,000 litres per minute for several hours having been recorded for some very large waste sites. Water requirements should be determined by the FRA or during the specification of the fire suppression systems by a specialist contractor.

Figure 7.2: Static fire water storage tank and pump house at a waste transfer station.



Fire mains are pipes installed in and around a building and equipped so that the Fire Service may connect hoses to on-site hydrants to receive a supply of water to fight fires. The supply for these mains is usually the public water supply.

In areas without adequate public mains, a bulk or static supply is generally required. If this takes the form of a static tank (see Figure 7.2), the required capacity may be determined by reference to BS5588: Part 5. A system of pumps will usually be required to create the necessary water flows and pressure. Connections suitable for Fire Service use should be in place at the base of static tanks installed on WTS sites. Signage and ground markings should be applied instructing that the area around the connections be kept clear at all times for fire service access.

It is generally recommended that firewater retention ponds are not used as a source of firefighting water as they are likely to become contaminated during a fire and contain water that is unsuitable for reapplication on a fire.

8. In the Event of Fire

The following should take place in the event of a fire incident:

- The fire **detection and alarm system** identifies the fire and raises the alarm.
- The **Site Fire Response Plan** is followed by all staff present on-site, as practiced during drills:
  - safe evacuation of staff is prioritised.
  - The Fire Service is contacted and requested to attend the site if deemed necessary.
  - Staff with fire-related responsibilities undertake the actions assigned to them once completing these actions does not delay or prevent the safe evacuation of staff, including themselves. Actions to be completed include closing valves on water discharges, implementing other firewater retention actions, and obtaining site layout maps, etc, as appropriate until the Fire Services arrives.
  - On-site efforts to control and extinguish the fire may take place where it is safe to do so.
- The **Fire Service arrives,** and the Fire Officer in Command, identified as the Incident Commander, takes control of the site.
  - Site personnel cooperate with the Fire Service as requested.
  - Fire Service fights and extinguishes the fire.
- If the WTS holds a licence issued by the EPA, the **Agency should be notified** of the occurrence of the incident at the earliest opportunity through whatever means are practicable at this stage.
- Subject to the permission of the Fire Service, the site manager **facilitates other agencies**, including the EPA, in the completion of their work such as the taking of samples.
- Once the Fire Service releases control of the site, and if a Garda Síochána or HSA investigation is not taking place **post-fire procedures** should be instigated by the WTS manager.

9. Post-Fire Actions

Once control of a site has been released by the Fire Service the considerations set out in this section come into play.

9.1 Notification

Where a site operates under a licence and if not already completed, the WTS manager should formally notify the Agency of the occurrence of the fire incident in accordance with the licence conditions. The incident should be raised via the EDEN portal. The required information should be attached to the notification if available. The absence of full information should not preclude the formal notification of the incident to the Agency as soon as practicable after the occurrence of the incident.

9.2 Fire and Accident Investigation

If injury or death has occurred, or there is any suspicion that the fire may have been started maliciously, then the Fire Service will secure and preserve the site for investigation by An Garda Síochána's Technical Bureau.

Any notifiable accidents or dangerous occurrences must be reported to the Health and Safety Authority in accordance with the requirements of the *Safety, Health and Welfare at Work (Reporting of Accidents and Dangerous Occurrences) Regulations 2016* (S.I. No. 370 of 2016). The Health and Safety Authority may undertake an investigation.

The WTS operator shall take actions as instructed by AGS and/or the HSA and cooperate with all parts of their investigation(s).

Following release of the site by the An Garda Síochána and/or HSA investigation team(s) the site the waste operator should follow the instructions of their insurers or nominated loss-adjuster examine the site.

9.3 Safety Issues

The Fire Service will control the site until satisfied that the fire has been fully extinguished and there is no risk of further fire development. For a major fire, this may take more than a day to achieve.

Following the release of the site by the Fire Service, Gardaí and/or HSA, as relevant, the waste operator must take all necessary measures to ensure that the building is safe to enter before any staff are permitted access to any part of the site. The advice of a specialist engineer employed by the waste operator or insurance company may be appropriate in this regard.

If considerable damage has been done to the site affecting its operation, communications with customers should take place advising of any expected changes to waste services. If temporary closure of the site during clean-up and/or reconstruction, any contingency arrangements or alternative waste outlets should be communicated to customers.

9.4 Firewater Management

After a fire, the WTS operator should gather the following information from the Fire Service, the site itself and any water storage and firewater retention facilities as quickly as possible:

- Volume:
  - approximate volumes of water used to fight the fire if known.
  - an estimate of the volume of retained firewater.
- Contaminants:
  - The use of any chemical agents by the Fire Service should be confirmed.
  - Details of the waste types that came in contact with firewater should be gathered. In particular, it should be clarified whether the fire involved hazardous wastes, any on-site chemical or fuel storage or any wastes held in the Waste Quarantine Area, with details gathered as appropriate.
  - Firewater collected on-site must be sampled, analysed and characterised to assist in determining the options for proper disposal.
- Discharges:
  - It should be confirmed whether there was any uncontrolled release of firewater to the environment and this information provided to the relevant regulatory bodies.

If adequate treatment is available on-site, such as at an on-site waste water treatment plant, final disposal via normal licensed emission points may be permissible.

Engagement with Úisce Éireann by calling 1800 278 278 as early as possible following the fire in relation to retained firewater is recommended to obtain guidance on if and how firewater can be discharged to sewer or tankered to a waste water treatment plant. The early gathering of information on volume and contaminants will assist in this engagement and in identifying the appropriate destination for firewater.

The waste operator must notify the EPA of the outlet identified for the retained firewater and provide evidence of the agreement of its acceptance.

Valves governing all discharges to surface waters or foul water sewers should remain in the closed position, containing the firewater, until sampling has been completed, results received and Agency approval to recommence the discharge has been received.

9.5 Clean-Up of Fire-Damaged Waste

All fire-damaged waste will need to be characterised to determine suitable facilities for the recovery or disposal of the waste. Depending on the type of waste that was burned and how badly damaged the waste is, characterisation may include the following:

- compositional analysis of the waste material;
- waste acceptance criteria testing for landfill; and/or
- waste characterisation by visual sorting.

It is likely that waste subjected to fire damage will not be suitable for its usual recovery route. For example, fire-damaged paper and cardboard may no longer be recyclable.

The WTS manager must engage with the expected destination sites for the waste to inform them of the outcome of the characterisation exercise, verifying whether the waste can be accepted. In the event that the waste cannot be accepted, an alternative appropriately authorised site for the acceptance of waste must be identified. The WTS manager must comply with the conditions of the licence at all times.

Figure 9.1: Quantities of baled, fire-damaged aluminium waste inside a WTS after a major fire.



9.6 Review of FRA & Site Fire Response Plan

After a fire has taken place, it is important that all relevant procedures and plans are reviewed, and amended where necessary, to improve fire prevention and response measures.

Appendix A: Fire Risk Assessment Report Structure

The preparation of a Fire Risk Assessment (FRA) Report should be guided by the following outline structure template which can be utilised as a checklist.

i	**Document/Revision control sheet recording version and date and approvals.**	
ii	**Table of Contents**	

A	**Introduction: To include the following subsections as a minimum.**	
A.1	**Independent and appropriately qualified consultant completing the site-specific FRA**	
	To include: Name and Job Title.	
	Statement to demonstrate the suitability of the person(s) completing the FRA, preparing and approving or signing off the report in terms of the following: Qualification(s) (confirming whether a Chartered Engineer, Registered Architect, registered Building Surveyor or member of Institute of Fire Engineers);	
	Technical training; and	
	Experience.	
A.2	**Site & Licence Details**	
	Site name.	
	Operator.	
	Licence Register No.	
	Licence condition(s) requiring FRA.	
A.3	**Site location and layout**	
	To include:	
	a plan of the overall site showing the site location, the licensed site boundary and general site layout.	
	A more detailed site plan showing all of the elements itemised in Section 5.1 of the guidance note.	
A.4	**Fire Risk Assessment Methodology**	
	Methodology to be described to include: details of the information gathering stage;	
	details of the site-based visual inspection stage; and	
	Date(s) of completion of site-based elements of the assessment.	

B	**Fire Risk Assessment: To include the following subsections as a minimum.**	
B.1	**Hazard identification/identification of Risk Items**	
	The assessment must itemise and examine all relevant factors on-site that impinge on fire risk having regard but not limited to the factors itemised in Section 3 of the guidance note regarding:	
	Sources of heat/ignition	
	Sources of fuel	
	Sources of oxygen	
	Chain reaction	
B.2	**Risk analysis and evaluation**	
	Schemes and matrices: those used in the analysis and evaluation of risk should be clearly presented.	
	Likelihood and severity: should be identified for each hazard/risk item providing rationale where appropriate.	
	Existing control measures: any control measures already in place should be detailed, assessed and residual risk identified.	
	Risk rating: should be identified for each hazard/risk item.	
	Risk ranking may be completed at this stage to group those items presenting the highest risk.	
	Presentation of this information in tabular form is recommended.	
	Sections B.1 and B.2 may be merged if required.	

C	**Recommendations: To include the following subsections as a minimum.**	
C.1	**Recommended control measures and action items**	
	Recommended control measures and action items arising from the site-specific risk assessment should be identified for each risk having regard but not being limited to Sections 5, 6 and 7 of the guidance note.	
	This information may be presented in tabular form.	
C.2	**Fire Risk Action Plan (or Risk Evaluation Action Plan)**	
	Each recommendation and action item should be assigned a priority rating taking account of the overall risk rating and ranking, in addition to the professional judgement of the independent and appropriately qualified consultant undertaking the assessment.	
	All recommendations should be presented in tabular form with a column for the allocation of responsibility for completion, to be indicated by staff name or position name.	
	Any recommendation which, in the opinion of the risk assessor, requires immediate implementation should be clearly identified.	
	A timeframe for completion or date for completion should be provided for each recommendation.	
C.3	**Waste and Materials Storage Plan (W&MSP) – Declaration**	
	A declaration should be included confirming that control measures recommended by the FRA process regarding waste and materials storage have been incorporated into the W&MSP.	
	END	

Appendix B: References And Technical Guidance

Building Control Acts 1990-2025.

Department of Housing, Heritage and Local Government (2024). Technical Guidance Document B 2024 – Fire Safety – Volume 1 Buildings other than Dwelling Houses.

Department of Housing, Local Government and Heritage (2021). Framework for major emergency Management.

Department of Housing, Local Government and Heritage (National Directorate for Fire & Emergency Management) (2022). Code of Practice for Fire Safety Assessment of Premises and Buildings.

Department of Housing, Local Government and Heritage (National Directorate for Fire & Emergency Management) (2023). Fire Safety Guide for Building Owners and Operators.

Environmental Protection Agency (2019). Guidance on Retention Requirements for Firewater Run-off.

Environmental Protection Agency (2016). Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities.

Environmental protection Agency (2017). Guidance for the Management of Household Hazardous Waste at Civic Amenity Sites.

Environmental protection Agency (2021). EPA Guidance Booklet: The Changing Nature of Firefighting Foams.

Environmental Protection Agency and Clean Technology Centre (2022). Guidance booklet: The Changing Nature of FireFighting Foams.

Environmental Protection Agency (2023a). Guidance on the Safe Storage of Lithium-ion Batteries at Waste Handling Facilities, ISBN 978-1-80009-149-8. Environmental Protection Agency (2023b).

Fire Services Acts 1981 and 2003

Health and Safety Authority, 2016. Guidance on the Safety, Health and Welfare at Work (Reporting of Accidents and Dangerous Occurrences) Regulations 2016.

Health and Safety Authority website www.hsa.ie/eng/topics/fire

Nigl *et al.* **(2020).** Lithium-Ion Batteries as Ignition Sources in Waste Treatment Processes – A Semi-Quantitate Risk Analysis and Assessment of Battery-Caused Waste Fires. Processes – Advanced Technology of Waste Treatment (ISSN 2227-9717).

NSAI Standards – Irish Standard (I.S.):

- I.S. 291: The Use, Siting, Inspection and Maintenance of Portable Fire Extinguishers.
- I.S. 3217: Emergency Lighting. Dublin, National Standards Authority of Ireland.
- I.S. 3218: Fire Detection and Fire Alarm Systems.

- I.S. EN 3: 3-10: Portable Fire Extinguishers.
- I.S. EN 671-1: Fixed Firefighting Systems: Part 1: Hose Reels with Semi-rigid Hose.
- I.S. 10101 of 2020: National Rules for Electrical Installations.
- I.S. EN 12845: Fixed Firefighting Systems: Automatic Sprinkler Systems – Design, Installation and Maintenance.

UK Guidance

British Metal Recyclers Association (BMRA) (2025). Metals Recycling – Fire Prevention Sector Specific Guidance.

British Standards Institution (2020). PAS 79-1:2020 Fire Risk Assessment – Code of Practice for Premises other than Housing.

Confederation of Paper Industries (CPI). Fire Prevention Plan: A Paper Sector Guide.

UK Environment Agency (2021). Fire prevention plans: environmental permits, as amended 3

Environment Agency (2021). Guidance: Fire prevention plans: environmental permits and Fire Prevention Plan Template.

Environment Agency (2013). Reducing Fire Risk at Sites Storing Combustible Materials: Technical Guidance Note (TGN7.01).

Tyre Recovery Association (2019). Writing Waste Tyre & Tyre-derived Materials FPP. Available at https://tyrerecovery.org.uk/

Refuse Derived Fuel (RDF) Industry Group (2019). Residual Waste Fire Prevention Plan (FPP) Guidance.

UK Department for Communities and Local Government (2006). Fire Safety Risk Assessment: Factories and Warehouses.

UK Health and Safety Executive (1997). Successful Health and Safety Management, HSG65 (second edition).

UK Health and Safety Executive (2009). Chemical Warehousing: The Storage of Packaged Dangerous Substances: HSG71.

UK Health and Safety Executive. Spontaneous Heating of Piled Tyre Shred and Rubber Crumb – Briefing Note. http://www.hse.gov.uk/rubber/spontaneous.htm

Waste Industry Safety and Health (WISH) Forum (2020). Waste 28: Reducing Fire Risk at Waste Management Sites, Version 3.

Waste Industry Safety and Health (WISH) Forum (2019). Fire Risk and Lithium Batteries at Waste Transfer, Recycling and Recovery Operations.

Wood Recyclers Association (WRA) (2025). Updated Fire Prevention Plan (FPP) Guidance for Waste Wood Storage Sites.

An Ghníomhaireacht um Chaomhnú Comhshaoil

Tá an GCC freagrach as an gcomhshaol a chosaint agus a fheabhsú, mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ar thionchar díobhálach na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

- Rialáil: Rialáil agus córais chomhlíonta comhshaoil éifeachtacha a chur i bhfeidhm, chun dea-thorthaí comhshaoil a bhaint amach agus díriú orthu siúd nach mbíonn ag cloí leo.
- Eolas: Sonraí, eolas agus measúnú ardchaighdeáin, spriocdhírithe agus tráthúil a chur ar fáil i leith an chomhshaoil chun bonn eolais a chur faoin gcinnteoireacht.
- Abhcóideacht: Ag obair le daoine eile ar son timpeallachta glaine, táirgiúla agus dea-chosanta agus ar son cleachtas inbhuanaithe i dtaobh an chomhshaoil.

I measc ár gcuid freagrachtaí tá:

CEADÚNÚ

- Gníomhaíochtaí tionscail, dramhaíola agus stórála peitril ar scála mór;
- Sceitheadh fuíolluisce uirbigh;
- Úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe;
- Foinsí radaíochta ianúcháin;
- Astaíochtaí gás ceaptha teasa ó thionscal agus ón eitlíocht trí Scéim an AE um Thrádáil Astaíochtaí.

FORFHEIDHMIÚ NÁISIÚNTA I LEITH CÚRSAÍ COMHSHAOIL

- Iniúchadh agus cigireacht ar shaoráidí a bhfuil ceadúnas acu ón GCC;
- Cur i bhfeidhm an dea-chleachtais a stiúradh i ngníomhaíochtaí agus i saoráidí rialáilte;
- Maoirseacht a dhéanamh ar fhreagrachtaí an údaráis áitiúil as cosaint an chomhshaoil;
- Caighdeán an uisce óil phoiblí a rialáil agus údaruithe um sceitheadh fuíolluisce uirbigh a fhorfheidhmiú
- Caighdeán an uisce óil phoiblí agus phríobháidigh a mheasúnú agus tuairisciú air;
- Comhordú a dhéanamh ar líonra d'eagraíochtaí seirbhíse poiblí chun tacú le gníomhú i gcoinne coireachta comhshaoil;
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

BAINISTÍOCHT DRAMHAÍOLA AGUS CEIMICEÁIN SA CHOMHSHAOL

- Rialacháin dramhaíola a chur i bhfeidhm agus a fhorfheidhmiú lena n-áirítear saincheisteanna forfheidhmithe náisiúnta;
- Staitisticí dramhaíola náisiúnta a ullmhú agus a fhoilsiú chomh maith leis an bPlean Náisiúnta um Bainistíocht Dramhaíola Guaisí;
- An Clár Náisiúnta um Chosc Dramhaíola a fhorbairt agus a chur i bhfeidhm;
- Reachtaíocht ar rialú ceimiceán sa timpeallacht a chur i bhfeidhm agus tuairisciú ar an reachtaíocht sin.

BAINISTÍOCHT UISCE

- Plé le struchtúir náisiúnta agus réigiúnacha rialachais agus oibriúcháin chun an Chreat-treoir Uisce a chur i bhfeidhm;
- Monatóireacht, measúnú agus tuairisciú a dhéanamh ar chaighdeán aibhneacha, lochanna, uiscí idirchreasa agus cósta, uiscí snámha agus screamhuisce chomh maith le tomhas ar leibhéil uisce agus sreabhadh abhann.

EOLAÍOCHT AERÁIDE & ATHRÚ AERÁIDE

- Fardail agus réamh-mheastacháin a fhoilsiú um astaíochtaí gás ceaptha teasa na hÉireann;
- Rúnaíocht a chur ar fáil don Chomhairle Chomhairleach ar Athrú Aeráide agus tacaíocht a thabhairt don Idirphlé Náisiúnta ar Ghníomhú ar son na hAeráide;
- Tacú le gníomhaíochtaí forbartha Náisiúnta, AE agus NA um Eolaíocht agus Beartas Aeráide.

MONATÓIREACHT AGUS MEASÚNÚ AR AN GCOMHSHAOL

- Córais náisiúnta um monatóireacht an chomhshaoil a cheapadh agus a chur i bhfeidhm: teicneolaíocht, bainistíocht sonraí, anailís agus réamhaisnéisiú;
- Tuairiscí ar Staid Thimpeallacht na hÉireann agus ar Tháscairí a chur ar fáil;
- Monatóireacht a dhéanamh ar chaighdeán an aeir agus Treoir an AE i leith Aeir Ghlain don Eoraip a chur i bhfeidhm chomh maith leis an gCoinbhinsiún ar Aerthruailliú Fadraoin Trasteorann, agus an Treoir i leith na Teorann Náisiúnta Astaíochtaí;
- Maoirseacht a dhéanamh ar chur i bhfeidhm na Treorach i leith Torainn Timpeallachta;
- Measúnú a dhéanamh ar thionchar pleananna agus clár beartaithe ar chomhshaol na hÉireann.

TAIGHDE AGUS FORBAIRT COMHSHAOIL

- Comhordú a dhéanamh ar ghníomhaíochtaí taighde comhshaoil agus iad a mhaoiniú chun brú a aithint, bonn eolais a chur faoin mbeartas agus réitigh a chur ar fáil;
- Comhoibriú le gníomhaíocht náisiúnta agus AE um thaighde comhshaoil.

COSAINT RAIDEOLAÍOCH

- Monatóireacht a dhéanamh ar leibhéil radaíochta agus nochtadh an phobail do radaíocht ianúcháin agus do réimsí leictreamaighnéadacha a mheas;
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha;
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta;
- Sainseirbhísí um chosaint ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

TREOIR, ARDÚ FEASACHTA AGUS FAISNÉIS INROCHTANA

- Tuairisciú, comhairle agus treoir neamhspleách, fianaise-bhunaithe a chur ar fáil don Rialtas, don tionscal agus don phobal ar ábhair maidir le cosaint comhshaoil agus raideolaíoch;
- An nasc idir sláinte agus folláine, an geilleagar agus timpeallacht ghlan a chur chun cinn;
- Feasacht comhshaoil a chur chun cinn lena n-áirítear tacú le hiompraíocht um éifeachtúlacht acmhainní agus aistriú aeráide;
- Tástáil radóin a chur chun cinn i dtithe agus in ionaid oibre agus feabhsúchán a mholadh áit is gá.

COMHPHÁIRTÍOCHT AGUS LÍONRÚ

Oibriú le gníomhaireachtaí idirnáisiúnta agus náisiúnta, údaráis réigiúnacha agus áitiúla, eagraíochtaí neamhrialtais, comhlachtaí ionadaíocha agus ranna rialtais chun cosaint chomhshaoil agus raideolaíoch a chur ar fáil, chomh maith le taighde, comhordú agus cinnteoireacht bunaithe ar an eolaíocht.

BAINISTÍOCHT AGUS STRUCHTÚR NA GNÍOMHAIREACHTA UM CHAOMHNÚ COMHSHAOIL

Tá an GCC á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóir. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inbhunaitheacht i leith Cúrsaí Comhshaoil
- An Oifig Forfheidhmithe i leith Cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint ar Radaíocht agus Monatóireacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tugann coistí comhairleacha cabhair don Ghníomhaireacht agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters

PO Box 3000,
Johnstown Castle Estate,
County Wexford, Ireland

T: +353 53 916 0600
F: +353 53 916 0699
E: info@epa.ie
W: www.epa.ie
LoCall: 0818 33 55 99

Regional Inspectorate

McCumiskey House,
Richview, Clonskeagh Road,
Dublin 14, Ireland

T: +353 1 268 0100
F: +353 1 268 0199

Regional Inspectorate

Inniscarra, Co. Cork,
Ireland

T: +353 21 487 5540
F: +353 21 487 5545

Regional Inspectorate

Seville Lodge, Callan Road,
Kilkenny, Ireland

T: +353 56 779 6700
F: +353 56 779 6798

Regional Inspectorate

John Moore Road, Castlebar,
Co. Mayo, Ireland

T: +353 94 904 8400
F: +353 94 902 1934

Regional Inspectorate

The Glen, Monaghan,
Ireland

T: +353 47 77600
F: +353 47 84987

Regional Offices

The Civic Centre,
Church St, Athlone,
Co. Westmeath, Ireland

T: +353 906 475722