



Department for  
Communities and  
Local Government

# Site Clearance Capability

A guide for effective local planning, response and recovery



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# Chapter 1: Introduction

## What is Site Clearance?

- 1.1 Site clearance can be defined as the process of removing rubble, debris and, in some cases, other materials which have been deposited due to an incident or event making an area unsafe or unusable. There are a wide variety of events which can create the conditions that require responders to undertake site clearance such as a fire, explosion, flood, earthquake or an event causing structural collapse (whether naturally occurring or the result of a malicious attack). Extreme events in recent history include the attack on the World Trade Centre in New York in 2001 (9/11), the 2011 Tohoku Earthquake and tsunami (also known as the Fukushima Earthquake) and the 2010 and 2011 earthquakes in Christchurch, New Zealand. Notable UK examples include the petrochemical fire at Buncefield in 2005, the bombings in Manchester and London in 1996 and 2007, the hugely destructive flooding in Boscastle, Cornwall in 2004 and the widespread flooding of 2007, 2013/14 and 2015/16.
- 1.2 Site clearance can be required within a tightly defined area, such as the footprint of a collapsed building, or over a large geographic area, notably following incidents of flooding or major aircraft incidents such as in Lockerbie in 1988.

## What is the aim of Site Clearance?

- 1.3 During the response phase the aim of site clearance can range from the facilitation of casualty rescue or the location and removal of fatalities, to the securing of evidence to support an investigation. The ultimate aim of site clearance, moving from response into recovery is, in the majority of cases, to facilitate the return of the site or area to its former condition or use prior to the incident.
- 1.4 In some cases this aim may be modified due to the nature of the incident, the level or nature of residual contamination, and/ or community requirements or preferences. This is often referred to as the state of “new normal”. This may mean the levelling and decontamination (where necessary) of the site for future regeneration or, in more extreme cases of contamination or instability (e.g. in coastal locations or where major subsidence has occurred), securing the site or area through screening, sealing or restricted access to protect the surrounding community and environment.

## Objectives of Site Clearance

1.5 The objectives of any site clearance operation should be:

- Enabling:
  - rescue of trapped and injured persons;
  - recovery of fatalities and/ or human remains;
  - criminal and other investigations;
  - recovery of personal and other items of value;
- Safe removal and disposal of rubble and other debris;
- Decontamination of rubble and debris and returning the area to an agreed level of safety;
- Ensuring environmental impacts from site clearance are appropriately controlled;
- Facilitating the recovery process, to restore to a “new normal”;
- Maintaining normal services at an appropriate level, so far as is practicable.

1.6 Achievement of these objectives depends on delivery of a robust multi-agency site clearance capability. All Category 1 and 2 responder organisations will have a role to play. They should be fully engaged from the outset in contingency planning, exercising, validation and revising of plans. They should all have a clear understanding, supported by training and experience, of their own role as well as that of others.

## Why is Site Clearance Planning Important?

1.7 As with all key capabilities, planning for site clearance is important because it ensures there is a consistent and overarching strategy which brings together the contribution of all agencies involved when site clearance is required, both in the response and recovery phases.

1.8 Site clearance features in the Government’s [National Resilience Capabilities Programme](#), co-ordinated by the Cabinet Office. [The Department for Communities and Local Government \(DCLG\)](#) is the Lead Government Department for site clearance capability and holds responsibility for providing guidance on this issue and for setting (in consultation with the Cabinet Office) National Planning Assumptions for this capability. These form part of the



National Resilience Planning Assumptions (NRPAs) based on the 2014 National Risk Assessment and can be viewed using Resilience Direct<sup>1 2</sup>.

- 1.9 There are clear National Planning Assumptions for site clearance for both major metropolitan areas and smaller urbanised areas. However, it is important that all local resilience partners consider the likely site clearance requirements for their area and what mutual aid might be requested by others across their borders. Planning should be undertaken to ensure site clearance considerations linked to the risks within the local area can be effectively tackled. It is important to identify capability thresholds at which mutual aid or support from central government would be required.

1.10 The site clearance capability within a local resilience forum area should form part of the development of local planning assumptions as site clearance can be a consequence of a wide range of risks, both hazards and threats. Mutual aid, cross border arrangements and sharing resources should also be considered in developing plans requiring site clearance capability.

## Purpose of this guidance

- 1.11 In order to support local resilience forum partners in developing their site clearance plans and frameworks, this document has been developed to replace Guidance on the *Development of a Site Clearance Capability in England and Wales* issued by the then Office of the Deputy Prime Minister in October 2005. This revised guidance has been developed by the Department for Communities and Local Government in close consultation with local responders, other government departments and a wide range of partners with a role or interest in site clearance activity.
- 1.12 This guidance seeks to encourage responders to think more broadly about the range and type of incidents which may produce site clearance challenges and the breadth of capabilities, and resources, which may be required to successfully remediate the effects of these events. This guide therefore provides examples and lessons learned from incidents over recent years to help responders to identify the key issues that they will need to tackle, and both plan for, and exercise against.

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<sup>1</sup> Resilience Direct provides a browser based tool to enable secure exchange of information during planning and responses to emergencies. For more information on how to subscribe contact [ResilienceDirect@cabinet-office.x.gsi.gov.uk](mailto:ResilienceDirect@cabinet-office.x.gsi.gov.uk)

<sup>2</sup> The link to the NRPAs (pages 65-70) is on Resilience Direct under CCS-Risk-Documents-Group

1.13 [Annex A](#) provides key findings from local practitioners drawn from a range of site clearance events. [Annex B](#) provides case studies of a range of different incidents which have involved site clearance elements. The examples include both those aspects of site clearance which may occur in response as well as in recovery. This guidance also reflects the changes in role for a number of organisations and legislative requirements since 2005 that are specific to site clearance activity.

## Scope of the guidance

1.14 This guidance deals, in the main, with site clearance in connection with the built environment – cities, towns and villages and their environs. Issues relating to clearance of rural areas such as farmland, heathland and forests, (where for instance animal carcass clearance or soil decontamination may be an issue), are subject to guidance produced by other organisations, notably the Department for Environment, Food and Rural Affairs and the Environment Agency (see [Chapter 5](#) for further information on the guidance they provide). This guidance does, however, include examples relating to coastal site clearance as this often has a direct impact upon the local community and may become the concern of the relevant local authority.

1.15 This guidance focuses on a range of materials – rubble (solid building materials and rock), debris (waste materials either from buildings or the natural environment) and chemicals that have accumulated or been deposited as a result of an emergency or incident. It also provides reference to issues of decontamination and waste disposal of chemical, biological and radiological, contaminants. More in-depth guidance on decontamination issues, and specific guidance on the disposal of contaminated waste, is available from the Department for Environment, Food and Rural Affairs, the Environment Agency and Public Health England. [Chapter 5](#) provides details of the support provided by these organisations and lists guidance which may be of help to those undertaking a range of site clearance activities from decontamination to waste disposal.

1.16 The site clearance challenges from major incidents such as the collapse of the World Trade Centre following the terrorist attack in 2001 or, closer to home, the Manchester bombing in 1996, are fairly obvious. Such large scale events, in the majority of cases, overwhelm local planning and response and require mutual aid together with a national or even international response. However, during the development of this guidance local practitioners have stressed<sup>3</sup> that smaller scale incidents, such as maritime debris and the aftermath of flooding, still

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<sup>3</sup> Practitioner workshops were facilitated by DCLG in June and July 2013 and November 2014

present particular challenges to local responders. It has become clear that guidance and examples of such incidents would prove helpful.

- 1.17 In addition there are issues associated with site clearance which can have long term impacts on health, both physical and mental, and can leave a significant emotional legacy. Dealing with personal possessions during site clearance is one such issue and a section on this has been included in this guidance to help responders to develop site clearance plans which include these less obvious considerations (see paragraph [9](#)). The Cabinet Office is in the process of producing guidance on wider humanitarian assistance issues.
- 1.18 This document is hosted on Gov.uk and linked to Resilience Direct to provide ease of access for all who may need to refer to it. It will be kept under review and updated as new information and relevant cases studies are presented to us. Comments and suggestions for relevant case studies are welcomed. If you feel a particular issue of relevance has been overlooked please email [Resilience-Central@communities.gsi.gov.uk](mailto:Resilience-Central@communities.gsi.gov.uk). Other comments and contributions should also be sent to this e-mail address.

# Chapter 2: Command and Control for Site Clearance

## Principles of Incident Management

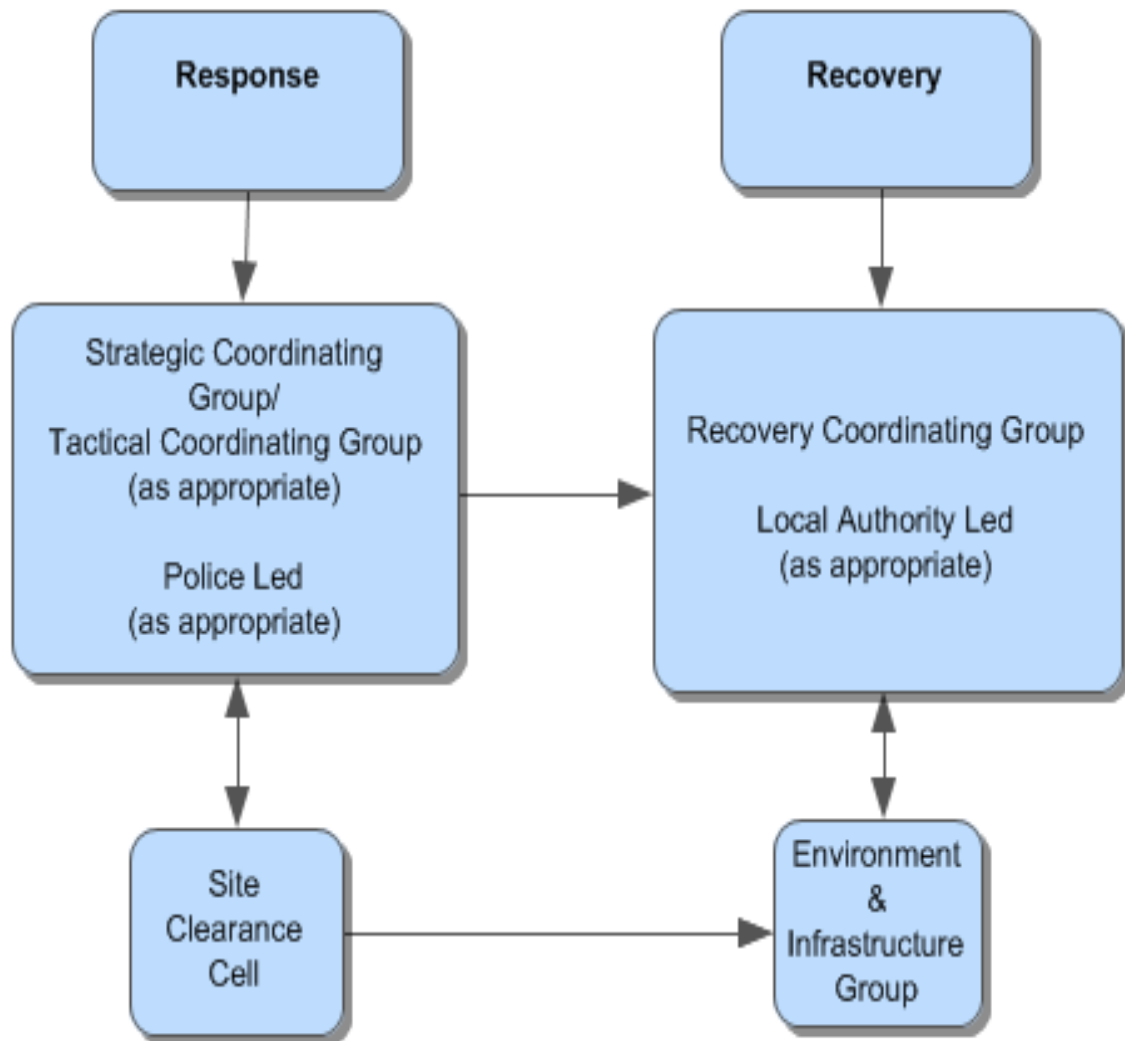
- 2.1 [The Civil Contingencies Act 2004](#) and accompanying non-statutory guidance [Emergency Recovery and Response](#) advocate an integrated emergency management model providing for a multi-agency approach to an emergency based on primacy at the local level. All local resilience forums will have developed generic major incident response and recovery plans designed along these lines.
- 2.2 Site clearance is likely to be only one aspect of an incident. The following command and control provisions need to be considered within the context of the overall management of the incident at the local level in both the response and recovery phases.
- 2.3 Decision making regarding site clearance activity will potentially feature as an element of all three layers of command – Operational, Tactical and Strategic. Assessing the issues, making the decisions and organising the required activity can most easily be achieved by setting up a Site Clearance Cell reporting to the Tactical Co-ordination Group (TCG) and Strategic Co-ordination Group (SCG). This cell can be transferred to the Recovery Co-ordination Group (RCG) when activity enters the recovery phase. The cell would sit most effectively with the Environment and Infrastructure Sub Group<sup>4</sup> of the RCG, when the formal handover from Response to Recovery occurs (see Figure 1 overleaf).

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<sup>4</sup> For full suggested structure see the Government Emergency Response and Recovery guidance document which can be found at:

<https://www.gov.uk/government/publications/emergency-response-and-recovery>

Figure 1: Suggested reporting structure of the site clearance cell.



## Thinking about Recovery

- 2.4 In some incidents, particularly those involving building collapse, there may be site clearance activity during the response phase. This can include the removal or movement of debris to facilitate the release of trapped people, or fatalities, or the sifting of debris as part of the Disaster Victim Identification (DVI) process or for forensic investigation. This activity will be undertaken by those organisations involved in the response (see [Chapter 3](#)) and will have very specific aims and objectives which will be agreed by the Strategic/ Tactical Coordinating Group (as appropriate).
- 2.5 The majority of site clearance activity is likely to take place during the recovery phase. At an early stage, and ideally from the outset of an incident, a Recovery Coordination Group (RCG) and its subordinate site clearance cell should be

established to start planning recovery arrangements and address any recovery issues reported to the TCG/ SCG during the response phase. It is important that the site clearance cell should have clear aims and objectives agreed with the Recovery Coordinating Group. Suggested terms of reference for the site clearance cell/ working group and a meeting agenda can be found at [Annex C](#).

- 2.6 More detailed guidance can be found in the [Central Government's Concept of Operations](#) which sets out the arrangements for responding to and recovering from emergencies, irrespective of cause or location, requiring co-ordinated UK central government action. Guidance on recovery activity more generally can be found in the [National Recovery Guidance](#).

## Stand-Down Procedures

2.7 The work of the site clearance cell comes to an end when it has met its objectives, or when there are clearly accountable organisations or individuals in place to complete the remaining tasks as 'business as usual'.

- 2.8 An example of this is when contractors have been engaged to remove or decontaminate rubble to an agreed specification. The remaining task would be to monitor the contract, which is the role of the site owner or the appropriate local authority. At this point the site clearance cell should submit a report to the Recovery Coordinating Group which should:

- set out how they have met their objectives, and
- list any outstanding actions, providing details of how these will be completed and which organisation or individual now holds responsibility for their completion.

- 2.9 The maintenance of clear records is vital to ensure a clear audit trail for action and responsibility for the activity undertaken or required. This is particularly important if there is a phased approach to the handover to recovery, i.e. of part of a site, whilst an investigation is on-going. Care must be taken to ensure any ongoing investigation is not compromised by the recovery activity following the handover.

## Debriefing and Record Keeping

- 2.10 Debriefing and good record keeping allow areas for improvement, or good practice, to be identified and captured for the benefit of planners and responders involved in future emergencies. This is as true for the site clearance element of an incident as any other aspect. Debriefs and incident records will

be required to be disclosed in any legal proceedings or Public Inquiry. They may also be required to support any criminal investigation following an incident. Plans need to be clear on the arrangements for providing robust audit trails of decisions made, actions taken, expenditure incurred, and to ensure that these are in place from the onset of an incident.

# Chapter 3: Roles and Responsibilities of Key Responders involved in Site Clearance

## Fire and Rescue Authorities

- 3.1 During the response phase to an incident, fire and rescue authorities will take on a vital aspect of initial site clearance activities, where this is needed, to facilitate search and rescue of those who are trapped and/or injured. The primary roles of each fire and rescue authority are set out in legislation<sup>5</sup> and include the identification of hazards and risks, initiating safety procedures, protecting life and property from fire, rescuing and protecting people from serious harm, and the protection of the environment. In addition, fire and rescue authorities have specific duties related to the rescue of people who may be trapped as a result of the collapse of a building or other structures, and incidents involving heavy transportation specifically aircraft, trains and trams.
- 3.2 All firefighters have an awareness of basic building construction and the hazards associated with structural collapse incidents. In addition, the fire and rescue service has developed Urban Search and Rescue (USAR) teams that are able to respond to incidents involving unstable and collapsed structures arising from deliberate or accidental origins. They were primarily established to respond to catastrophic level incidents to search, detect, locate and rescue entrapped/ entombed casualties and to assist in the recovery of the deceased. See [Annex D](#) for further information on the UK Urban Search and Rescue Capability.
- 3.3 During the response phase of a large scale structural collapse incident the fire and rescue service, in liaison with local authority building control, will take responsibility for managing both the stabilisation of the structure and any further controlled structural collapse required. They will also undertake any immediate clearance of debris from parts of the site. This stage of clearance is done to aid the search and rescue operation for people who are trapped or injured.

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<sup>5</sup> See The Fire and Rescue Services Act 2004 ([www.legislation.gov.uk/ukpga/2004/21/contents](http://www.legislation.gov.uk/ukpga/2004/21/contents)), The Fire and Rescue Services (Emergencies) (England) Order 2007 ([www.legislation.gov.uk/uksi/2007/735/made](http://www.legislation.gov.uk/uksi/2007/735/made)) and The Fire and Rescue Services (Emergencies) (Wales) Order 2007/3193 ([www.legislation.gov.uk/wsi/2007/3193/made](http://www.legislation.gov.uk/wsi/2007/3193/made)).



- 3.4 If the event is believed to be deliberate, or related to terrorist acts, the fire and rescue service will liaise closely with the police, particularly in the initial response phase, and will provide the following support and response:
- if required, provide a mass decontamination facility (on behalf of the NHS), for on-site workers and members of the public; containing, for a reasonable period, any water used in the decontamination process.
  - if necessary, assist with the detection, identification, monitoring and management of hazardous materials in order to protect people and the environment;
  - in consultation with the Strategic Co-ordinating Group, act as the initial conduit for scientific advice in relation to hazardous materials incidents, for those at the scene;
  - in consultation with the police and the local authority assist in the determination of evacuation, building safety and road closures;
  - assist with salvage and damage control;
  - responsible, with the exception of terrorist incidents, for the health and safety of all responders in the inner cordon during the initial response.

## Police Service

- 3.5 At the response stage the underlying principle for an incident with an identifiable land-based scene where there has been a crime or life is at risk, is that the police normally assume the management of overall co-ordination. This approach ensures that resources are used to best effect and avoids situations where resources may be called upon simultaneously by different agencies.
- 3.6 The police will undertake the following activities as part of the wider incident and in respect of the site clearance aspect where appropriate:
- In consultation with other responders, take measures to protect the public. This may be achieved by external evacuation or internal sheltering;
  - Secure, protect and preserve potential scenes of crime until they are established as otherwise, and control sightseers;
  - Where terrorist action is suspected as the cause of an incident, take additional measures to protect the incident site and carry out searches for secondary devices;
  - Where the incident is suspected to be of a terrorist nature, the National Co-ordinator for Counterterrorism will play a lead role in the strategic management of the potential scene of crime and deployment of special investigative resources;
  - Where crime is suspected, following the response phase, manage and co-ordinate the evidential/ forensic examination at both scene and bulk debris examination site. (If the incident involves air, rail or marine transport and there are no clear signs of criminality, the respective Accident

Investigation Branch will assume primacy of the investigation - see paragraphs 3.25 to 3.41). In the majority of cases establish the Strategic Co-ordinating Group or Tactical Co-ordinating Group and chair it as appropriate;

- If decontamination of people is required during the response phase the police will assist the ambulance and fire and rescue authorities;
- On behalf of Her Majesty's Coroner, lead the disaster victim identification process of the dead; in consultation with the local authority, Environment Agency and Health and Safety Executive,
- Have responsibility for the establishment, management and security of the forensic area at the selected sifting site (in consultation with other departments or agencies as necessary);
- Control all access and exit points to the outer cordon during the incident response;
- Control the release of vehicles and other items of value, when safe and appropriate to do so, on presentation of acceptable proof of ownership; and
- Be responsible for co-ordinating the response to media enquiries and arrangements at the scene of an incident in line with the media handling protocols agreed through the local resilience forum as appropriate.

## NHS Ambulance Service

- 3.7 The ambulance service provides medical support at the scene of any site clearance operation to which ever agency is undertaking the task. Hazardous Area Response Teams (HART) are trained to work in a USAR environment with the fire and rescue service to undertake operations in confined spaces and offer clinical intervention to casualties found or being rescued. These teams also provide medical support in these cases. The ambulance service will provide triage and treatment to those rescued if required during site clearance.
- 3.8 In any situation requiring decontamination of people, the NHS ambulance service have a statutory responsibility to decontaminate the public. It may well be that the fire and rescue service will undertake that task for ambulatory patients; however, the ambulance service would still be present.

## Site Owners

- 3.9 During the very earliest stages of an incident it is important to identify who has legal responsibility for the site as the owner/ occupier, and their insurers, will have a key role in the process of site clearance. In the case of commercial and domestic properties, the site or building owner is responsible for arranging and

meeting the costs of site clearance following an incident either directly or through their insurers. Where there is no obvious owner, the person responsible for the site management holds the responsibility for a site clearance operation. Where no site owner has been identified, and the site is not being managed, the relevant local authority would take responsibility for site clearance activity if it is required to ensure the safety of the local community or environment.

3.10 Site owners and their insurers will be expected to work in close conjunction with and, wherever appropriate, under the direction of the responsible local authority, to facilitate the site clearance arrangements and the recovery process.

3.11 In particular it is expected that site/ building owners will:

- Co-operate with multi-agency partners in fulfilling their responsibilities;
- Provide facts about the history of the building or site being cleared;
- Provide information about the presence of oil or gas stores, chemicals or presence of asbestos or contaminants; inform their insurers and co-operate with loss adjusters;
- Be responsible for maintaining site security after responsibility has been relinquished by the police and the local authority;
- Be responsible for commissioning contractors to carry out detailed site evaluation (including further sampling) and subsequent decontamination (if required) of building, systems and contents, demolition and removal of waste;
- Be responsible for establishing that the building is safe; and
- Maintain a communication strategy to inform employees and key stakeholders and the public of developing information.

## Local Authorities

3.12 Local Authorities that cover the incident area as Category 1 responders have a key role to play in planning for, and co-ordinating, the site clearance process in close conjunction with site/building owners or occupiers and their insurers. Where there is an immediate threat to life, and site/ building owners cannot be identified or located or are unwilling to take responsibility, the local authority will take a lead role in:

- Assessing the structural stability of affected buildings;
- Considering the risk to the public and liaising with the building owner/ occupiers regarding site clearance arrangements.

3.13 Whilst the precise nature and range of inputs required may be affected by the type and scale of incident, all incidents will make significant demands on local authority staff and resources.

3.14 Determining the lead/ responsible local authority is crucial to ensure that a range of site clearance issues are effectively addressed. This is usually based on the local authority area within which the incident takes place. However, responsibility can also be dependent on the political structure and any agreements between relevant local authorities. The table below provides a guide to local authority responsibilities. There may be some variation across different parts of the country so this should be used to inform local discussion and is not definitive.

<b>Generic Local Authority Services – Two Tier System</b>	
<b><i>County Services</i></b>	<b><i>District Services</i></b>
Community Engagement/ Media	Animal Control
Coroner	Building conservation
Emergency Planning	Building Control
Minerals and Waste Planning	Cemetery and Crematorium
Public and Community Transport	Community Engagement/ Media
Public Health	Emergency Planning
Registrar services	Environmental
Schools and early years settings	Housing
Social Care	Parking
Waste Management and Recycling	Regeneration
	Street Care
	Town and County Planning
	Waste Collection

3.15 Local authorities also have to take into consideration historic areas, buildings and monuments, and consult with appropriate designated agencies in considering plans for site clearance.

## Site Controller

3.16 If the local authority takes the lead it will need to appoint a Site Controller with responsibility for the overall management of the site including site safety operations and removal of debris or any other materials. This is likely to be a Building Control Inspector, architect or senior member of staff appointed under

general powers outlined in section 111 of the Local Government Act 1972 and section 2 of the Local Government Act 2000. In looking to appoint a Site Controller the following skills or experience would be appropriate for the role:

- Previous experience as a site controller;
- Previous employment as a senior surveyor or building control inspector;
- Project Management experience/ qualifications;
- Experience of managing people;
- Experience of working in an operational environment.

## Incident Surveyors

3.17 In the response phase of an incident senior surveyors will be appointed by the Site Controller and will play a lead role in determining or advising on:

- Assessing the size and nature of the problem and priorities;
- Risk assessment of affected structures and whether these present a particular threat to the safety of responding personnel;
- Recommending the demolition or shoring up of dangerous structures;
- Commissioning equipment and personnel needed to secure the safe and effective timeline of recovery/ phased reopening of sectors and/ or public highways;
- Measures needed for the continued protection of public safety;
- Possible materials shortages.

(NB there may be some variations to this depending on the agency which is managing the examination of the site e.g. in the case of a railway accident scene the site controller will liaise with the respective agencies involved e.g. Rail Accident Investigation Branch)

3.18 In the early stages of site clearance (both during response and recovery) in incidents where the integrity and stability of buildings is heavily compromised, the lead authority may also need to consider obtaining support from experts with greater knowledge of the methodology around the demolition of damaged structures.

## Other Partners

3.19 In Chapter 1 we stressed the importance of involving a wide range of partners in the planning process to ensure site clearance plans are robust and can be applied to a wide range of incidents with differing consequences. In addition to the above key organisations the following may also be involved in some stage

of the site clearance process and should be involved both in the planning process and, where appropriate to the incident, in the site clearance cell.

**3.20 The Environment Agency (EA)** will consider and advise on impacts on the environment and the community connected to the site clearance process. Further information on their role and the support and guidance they can provide is set out in [Chapter 5](#).

**3.21 Public Health England (PHE)** are an important health partner with a wide remit covering human and environmental health impacts. Further information on their role and the support and guidance they can provide is set out in [Chapter 5](#).

**3.22 The Director of Public Health (DPH)** (now embedded within local authorities) will have a close interest in the impact of site clearance work on the health and wellbeing of the surrounding community.

**3.23 [The Health and Safety Executive \(HSE\)](#)** is responsible for the regulation of most of the serious risks to health and safety arising from work activity in Great Britain and has an investigative role in a range of incidents involving site clearance. The Health and Safety Executive will be able to contribute to the work of the site clearance cell in a number of ways including:

- providing specialist advice on the risks to workers and others at the incident site;
- advising on decontamination plans and systems of work proposed to carry out decontamination;
- taking, together with the Department for Transport, any necessary action regarding relaxation from, disapplication of, or enforcement of, health and safety legislation at an incident site, during the waste transportation phase and at end point/ landfill; and
- advising on safe systems of work for testing whether decontamination is successful.

**3.24** HSE and other regulators involved in investigating any work-related death want to work together as effectively and efficiently as possible. To help to do this protocols and liaison arrangements between the various organisations have been agreed and recorded in [Work-related Death Protocols \(WRDP\)](#). The WRDP sets out the principles for effective liaison during criminal investigations of work-related deaths in England and Wales. There are nine signatories to the WRDP, and these include: the Health and Safety Executive; Office of Rail and Road; Police (through the Association of Chief Police Officers); Crown

Prosecution Service; Local Government Association and the Welsh Local Government Association; British Transport Police; Maritime and Coastguard Agency; and the Fire and Rescue Services (through the Chief Fire Officers Association).

3.25 [The Air Accident Investigation Branch](#) (AAIB) is an operationally independent organisation within the Department for Transport, and is completely separate from the Civil Aviation Authority. The AAIB is responsible for the investigation of civil aircraft accidents and serious incidents within the UK and its territorial waters. The Chief Inspector of Air Accidents is responsible directly to the Secretary of State for Transport. Under current legislation and in conformity with international convention, the AAIB conducts investigations in accordance with:

- Annex 13 to the International Civil Aviation Organisation convention;
- The European Union Council Directive 94/56/EC; and
- The Civil Aviation (Investigation of Air Accidents) Regulations 1996, SI 2798.

3.26 The AAIB headquarters are at Farnborough in Hampshire, and personnel are deployed either from there or from their home (out of office hours). Following the completion of emergency response activities, the AAIB will work closely with the police and other authorities to determine whether a crime has been committed. Where there is no evidence requiring a criminal investigation, the AAIB will lead technical accident investigation operations and will produce and publish a report.

3.27 On-site activities will involve examination and seizure of items/ material that is deemed to be evidence. This may include all or part of the aircraft involved, parts of structures, materials and other items. AAIB personnel will work closely with Emergency Services, Local Authorities, insurers and others to enable planning for the return to normality to begin as early as possible following completion of site operations. The AAIB has good links with aviation insurers and can assist with providing points of contact where required.

3.28 AAIB inspectors have wide-ranging powers which allow them:

- Access to the site of the accident/ incident as well as to the aircraft, its contents, or its wreckage;
- To ensure a complete listing of evidence and controlled removal of debris or components for examination or analysis purpose;
- To take such measures for the preservation of evidence as is considered appropriate; and
- To take statements from all such persons as he/ she thinks fit.



- 3.29 [The Defence Air Investigation Branch](#) (Defence AIB) is part of the Ministry of Defence and provides a dedicated, independent accident investigation capability for military accidents and serious incidents. The Defence AIB conducts impartial and expert no-blame safety investigations across all domains (air, sea and land) to ensure that causal factors are identified and understood as quickly as possible, and recommendations made to prevent any recurrence and to enhance safety, whilst preserving operational capability.
- 3.30 The Defence AIB sits alongside the Department for Transport Air, Rail and Marine Accident Investigation Branches (AAIB, RAIB and MAIB) and works closely with them whenever there are civil and military aspects to an accident. The Defence AIB is made up of specialist teams, fully trained like their civilian counterparts to be professional investigators, investigating accidents and other serious incidents.
- 3.31 Serious incidents will be notified to the Deputy Chief of the Defence Staffs Duty Officer. Following an aviation incident, Defence will activate a Post-Crash Management (PCM) plan which includes a local, trained PCM incident officer, and the ability to deploy or call on the services of a permanently on-call hazardous material team and aircraft recovery capability. The PCM will work closely with local responders on the ground in order to gain safe access to the incident site and carry out the investigation. The Defence AIB investigation team includes highly experienced operators and engineers, with access to a wide network of other subject matter experts as required. The objective of any Defence AIB investigation into an accident or incident is the prevention of further accidents and incidents. It is not the purpose of such an investigation to apportion blame or liability.
- 3.32 After receiving notification of a serious occurrence, the Defence AIB will attend the scene as soon as possible and will engage at strategic and tactical level to secure perishable evidence and conduct a preliminary assessment of the situation. For the most serious accidents and incidents a statutory Service Inquiry may be required. Alternatively, for less serious occurrences, a (non-statutory) Defence AIB investigation may be conducted. Whichever route is followed, a thorough evidence-based investigation will be conducted, independent of the Chain of Command, leading to a formal report of the findings and a set of appropriately targeted recommendations to prevent recurrence and enhance safety. Remediation of the site, once evidence is removed, is part of the PCM process.
- 3.33 [The Marine Accident Investigation Branch](#) (MAIB) is an independent branch of the Department for Transport, based in Southampton. The MAIB's role is to contribute to safety at sea by investigating marine accidents to determine the



causes and work with others to reduce the likelihood of such accidents recurring in the future. The Branch does not apportion blame, establish liability, enforce laws or carry out prosecutions.

- 3.34 Owners, operators, Harbour Authorities and Inland Waterway Authorities are required to report accidents to the MAIB directly. Following a marine accident the MAIB will normally assume primacy of the investigation (site, witnesses, evidence etc.), unless there are clear signs of serious criminality. MAIB Inspectors have legal powers to enter any premises or board any ship in the UK to examine, investigate and seize evidence as required.
- 3.35 There is a requirement to preserve evidence following an accident and inspectors may need to examine the site and recover evidence prior to any clearance work being started. The MAIB have a duty co-ordinator, available at all times on +44 (0)23 8023 2527, who can discuss these requirements. Notwithstanding any immediate activity required to ensure public safety, the MAIB duty co-ordinator must be contacted when planning any site clearance that includes vessels or debris from vessels involved in a marine accident.
- 3.36 [The Rail Accident Investigation Branch](#) (RAIB) is an independent unit with the Department for Transport which investigates accidents to improve railway safety, and inform the industry and the public. RAIB have operational centres in Derby and Farnborough. Railway industry bodies (railway infrastructure managers, railway operators, or maintainers) involved in an accident or incident are required to notify RAIB direct. If a rail incident is the cause/ involved in an incident any site clearance activity will need to take account of the needs of the investigators to determine the cause.
- 3.37 Where there is perishable evidence or evidence that needs to be recorded or secured before releasing the site back to the industry, owner or public use, inspectors are deployed to the site to conduct a preliminary examination. The purpose of a preliminary examination is to gather sufficient details and evidence to enable RAIB to make an informed decision about the accident or incident and whether or not to conduct a full investigation.
- 3.38 Evidence about the cause of the accident may come from a number of different sources including the trains and the track, the signalling system and other infrastructure management. It may also be in different forms, including damaged equipment, data from monitoring equipment on trains and in the signalling system. The need to gather or preserve this evidence may have an impact on any site clearance process and appropriate measures need to be taken to ensure relevant evidence is not affected. The RAIB have a memorandum of understanding with the Chief Fire Officers Association (CFOA) stating that, in rail related incidents, when the scene has been declared safe by

the fire and rescue service, unless there are signs of clear serious criminality, the RAIB will assume primacy of the investigation (site, witnesses, evidence etc.)

3.39 RAIB Inspectors have the power to:

- enter railway property, land or vehicles;
- seize anything relating to the accident and make records;
- require access to and disclosure of records and information; and
- require people to answer questions and provide information about anything relevant to the investigation.

3.40 All three of the Accident Investigation Branches of the Department for Transport can be contacted out of hours through the Department's duty office on **0207 944 5999**. During office hours the three branches have Duty Coordinators available to deal with notifications.

3.41 There are a number of memoranda of understanding between the Accident Investigation Branches (AIBs) and other investigative bodies to ensure effective investigation and decision making processes. The aim is to maintain the independence of all parties and reinforce the role of the AIBs as the guardians of public safety when investigating transport accidents and incidents. These include Memoranda of Understanding with:

- [The Crown Prosecution Service](#)
- [The Coroners' Society](#)
- [Chief Fire and Rescue Officers' Association](#)

3.42 **Utility Companies** can play a significant role in incidents where site clearance is involved. Understanding the impacts on, and controlling, gas, water, drainage and sewerage, telecommunications and electrical supplies, both in the response and recovery phases, is both vital to safety and to the reduction of impact on an affected site or area.

3.43 **Historic Building and Natural Environment organisations.** A wide range of organisations have an interest in, and key skills relating to, the natural environment and historic and national monuments, building and landscapes. Each local resilience forum should be aware of the organisations which undertake activity in their area, and should ensure they are consulted as part of the planning process and are engaged as part of the site clearance cell where

the site clearance activity is relevant to their area of expertise. The following are high profile examples of these organisations but this list is not exhaustive.

- [Historic England](#) are the public body that looks after England's historic environment by identifying and protecting our heritage, supporting change, understanding historic places and providing expertise at a local level. They manage the National Heritage List for England which current contains over 400,000 items ranging from prehistoric monuments to office blocks, battlefields and parks. They can provide a wide range of advice on dealing with historic buildings, e.g. their guidance for those who live in, manage or advise on historic buildings which have been, or may be, affected by flooding: [Flooding and Historic Buildings](#). Local resilience forums which have sites or buildings on the National Heritage List in their area should engage with Historic England when developing their site clearance plans, or in the event of an incident which impacts on any of the listed structures.
- [The National Trust](#) When developing site clearance plans, the local resilience forum should ensure they are aware of the National Trust sites/ properties in their area, in particular those which may be affected by the activation of the local site clearance plan (e.g. properties which are within a town setting which could be impacted by other structures not owned by the National Trust). In developing site clearance plans the local resilience forum should make contact with the National Trust to discuss the plans and how they impact on these properties or sites. The National Trust can also be a source of advice regarding the treatment of historic buildings not in their ownership which have been damaged and where site clearance may need to be considered.
- [English Heritage](#) The local resilience forum should ensure they are aware of English Heritage sites/ properties in their area and should make contact with English Heritage to discuss the site clearance plans and how they impact on these properties or sites. The National Trust can also be a source of advice regarding the treatment of historic buildings, including those not in their ownership, which have been damaged and where site clearance may need to be considered.
- [Natural England](#) is the government's adviser for the natural environment in England, helping to protect England's nature and landscapes (with responsibility for Sites of Special Scientific Interest and European Sites e.g. Special Areas of Conservation, Areas of Outstanding National Beauty etc.). Local resilience forums need to be aware of the range of specially protected natural areas within the area. In an incident which may impact on these

areas, Natural England should be involved in the Site Clearance Cell to insure impact on these areas is kept to a minimum.

- **Historic Royal Palaces/** Department of Culture, Media and Sport (for damage to Historic Palaces), Historic Royal Palaces is contracted by the [Secretary of State for Culture, Media and Sport](#) to manage the palaces on behalf of Her Majesty The Queen. Those local resilience forums with historic royal palaces in their area will be aware of the locations and will wish to have good engagement with those managing the palaces regarding the full range of resilience issues.
  
- [National Parks](#) There are 10 national parks in England: the Broads, Dartmoor, Exmoor, Lake District, New Forest, Northumberland, North York Moors, Peak District, Yorkshire Dales, and South Downs. Each one is looked after by its own authority. Together they work together as National Parks UK. Those local resilience forums which have all, or part, of a national park within their boundaries will, no doubt, already be engaged with them regarding a wide range of resilience issues. Consideration should be given, when developing site clearance plans, to how site clearance activity might impact on the parks if the incident were to be within or in close proximity to them. Engagement with the parks on this issue during the development of plans will help to ensure the plans are flexible enough to accommodate the particular needs/ special status of the parks.

# Chapter 4: Planning for Site Clearance - Response and Investigation

## Introduction

4.1 This Chapter together with [5](#) and [6](#) provide a chronological guide to the various stages of the site clearance process. The phases in the process of site clearance are set out below, however, it depends on the nature of the incident as to which will be required. (See [Annex E](#)). The key phases are:

### Emergency response:

- Access considerations
- Identification of contamination (prior to main response phase to ensure safety of responders entering the site).
- Decontamination (where necessary to facilitate response).
- Stabilisation (to facilitate search and rescue activity, for the removal of casualties or fatalities and to secure access).

### Investigation:

- Investigation of site and required sifting processes (by e.g. police (DVI), Air or Rail Accident Investigation Branches)

### Recovery:

- Decontamination (where this has not already been carried out during the response phase)
- Transportation
- Storage
- Disposal
- Recovery (including recycling).

A flow chart showing the various elements of the site clearance process from response through recovery can be found at [Annex E](#).

# Emergency Response

## Identification of contaminants and decontamination

- 4.2 If the presence of hazardous substances is suspected due to circumstances of the incident (for instance a terrorist attack involving CBRN materials), or the nature of the site involved e.g. [COMAH](#), an immediate priority should be to assess whether there is chemical, biological, or radiological contamination, or potential explosives on or around the site prior to undertaking site clearance activities.
- 4.3 Detection and identification of any contamination will be undertaken initially either by the fire and rescue service using their Detection, Identification and Monitoring (DIM) capability, or other specialist agencies such as Public Health England, in consultation with the police. Checks must be conducted by suitably qualified personnel with appropriate skills, knowledge and personal protective equipment. It is essential to determine the type of contamination, both to ensure suitable protection is available for personnel entering the site, and to avoid any unnecessary and preventable further contamination. This step may identify that some initial decontamination is required before it is safe for emergency responders to enter the site or that very specific personal protective equipment is required for entry into the affected area. This may need to be followed by decontamination (according to the initial operational response (IOR) model) for both responders and victims. These checks, and the need for forensic evidence, may have an effect on the conduct and timing of the clearance process. Information on organisations which can help with identification and monitoring of contaminants as well as decontamination can be found in [Chapter 5](#).

## Airborne Dust

- 4.4 Part of the initial evaluation and scene management will involve assessing the health risk of airborne dust. This may potentially lead to air monitoring being implemented as part of the initial response, and ongoing during the wider site clearance during recovery to ensure responders, victims and the public are not being exposed to harmful airborne substances. For example, concerns were raised in the immediate aftermath of the terrorist attacks in New York, September 11<sup>th</sup> 2001 about the dust generated from the collapse of both the North and South Towers of the World Trade Centre. Several of the compounds within the dust were known carcinogens and the dust included a dangerous mix of chemicals released from the building materials themselves but also from office equipment, computer parts, printer ink etc. The World Trade Centre

Health Programme was established to review the longitudinal effects of exposure to the dust:

- 4.5 The World Trade Center (WTC) Health Programme provides medical monitoring and treatment for responders at the World Trade Centre and related sites in New York City, Pentagon, and Shanksville, PA, and survivors who were in the New York City disaster area.<sup>6</sup> (For further information visit <http://www.cdc.gov/wtc/index.html>).
- 4.6 Guidance on assessing and dealing with airborne contaminants should be sought from Public Health England.

Consideration should be given to the appropriate respiratory protective wear (e.g. dust masks, full respirator), for responders working during response or recovery phases in situations where there may be dust particulates present.

## Stabilisation - Search and Rescue

- 4.7 Fire and rescue authorities will play the lead role in site clearance activity where this is needed to facilitate the search and rescue phase. They will take initial responsibility for the rescue of those injured, undertaking a dynamic risk assessment to inform their activity and, in particular, to avoid exposing personnel to unnecessary risks such as highly unstable structures or carcinogenic dust from debris.
- 4.8 During this phase the fire and rescue service, working in close cooperation with the local authority senior surveyor and other specialist advisors such as demolition experts, will assess whether the structure or area is safe to enter. They will consider how it might be made safe, and whether heavy or specialist equipment is required to help clear debris to facilitate the rescue of trapped people, safely. The fire and rescue service have their own specialist urban search and rescue (USAR) capability which operates within specific working protocols regulated by the service. [Annex D](#) provides more detail about how the USAR activity fits with site clearance operations in the response phase.

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<sup>6</sup> Dr. Lucy Easthope, Senior Fellow and Recovery Lead, Cabinet Office Emergency Planning College, November 2015

# Investigation

## Disaster Victim Identification (DVI)

- 4.9 In the event of fatalities, the removal of human remains is a key consideration early in the site clearance process. UK Disaster Victim Identification (UK DVI) is a Home Office funded national police unit that coordinates the capability of the police service and other agencies to respond to incidents involving multiple fatalities. National training standards ensure the effective and dignified removal of human remains and reliable scientific identification to the recognised international standards. UK DVI coordinates a national cadre of trained police personnel, together with a variety of forensic specialists from other organisations, to support the local or regional police service capability. Fire and rescue service urban search and rescue teams are also trained to work alongside Police DVI teams to recover fatalities.
- 4.10 This resource is used widely to respond to both domestic and international mass fatality incidents requiring such support. Depending on the nature of the incident, the requirement to ensure that all victims have been identified can have a significant impact on the timescales for commencement of site clearance. Issues such as fragmented human remains may have an impact on the pace of an operation. There may also be the need to provide a suitable, separate site, where this activity can be conducted along with the collection of other relevant evidence contained among the debris from the incident. During the planning phase suitable sites for undertaking these processes should be identified (See [Annex G](#) for advice on identifying suitable sifting sites).
- 4.11 The Scene Evidence Recovery Manager (SERM) is the police co-ordinator responsible for the recovery of the deceased and any human remains on behalf of the Coroner. A Scene Evidence Recovery Group (SERG) is also convened at or near the scene and is responsible for implementing the deceased victim and human remains recovery strategy which will be established by the Coroner and the police Senior Identification Manager (SIM).
- 4.12 Most local resilience forums will have developed their own plans for mass fatalities and temporary mortuary arrangements in which the police and Coroner play a key role. Detailed guidance on these issues is contained in Home Office Guidance on [Dealing with Fatalities in Emergencies](#).

## Preserving evidence and recording keeping

- 4.13 There is the potential for many incidents to be the subject of at least one investigation or inquiry, whether for HM Coroner, a public inquiry, or civil or



criminal court proceedings. As a result evidence collection is a very important part of the on-site activity. All responders need to be aware of the need to accommodate those responsible for undertaking evidence identification and retrieval both during the response and recovery phases of an incident. The police, in the first instance, will often attend the incident site and treat it as a potential scene of crime from which evidence will need to be collected.

Appropriate care is needed in handling the debris in order to retain the integrity of any evidence. Continuity and integrity of the scene and anything collected from it is critical. Prevention of forensic contamination/ cross-contamination is very important.

- 4.14 The extent of forensic investigation and evidence required will be influenced by the nature of the incident. It is likely to be minimal in the case of natural disasters, of variable extent for man-made disasters and at its most significant in the case of terrorist incidents. In the first two cases it certainly has to be considered initially, before clearance is commenced. It is unlikely to hinder the onset of clearance where an incident is caused by natural events. Clearance may take longer to start in the case of man-made incidents but it should normally be relatively easy to identify those elements that need to be removed to an off-site examination area.
- 4.15 Several different agencies may carry out investigations to meet their particular needs. Most of these agencies will conduct their investigations under agreements which cover co-ordination and procedures for evidence preservation. The [Air Accident Investigation Branch](#) (AAIB), [Marine Accident Investigation Branch](#) (MAIB) and the [Rail Accident Investigation Branch](#) (RAIB) will attend incidents involving air, shipping or rail or at a very early stage. They have clear protocols about the collection of evidence and the recovery/ removal of aircraft/ shipping wreckage/ trains. In incidents involving rail, marine or air transport accidents it is important for the relevant Accident Investigation Branch to be consulted before the DVI process begins. Actions to extract human remains may damage or contaminate evidence relating to the reasons for, or the ability to withstand, the impact (e.g. the design of the internal infrastructure) in order to understand how passengers were injured or fatalities occurred.
- 4.16 The Health and Safety Executive will wish to investigate incidents involving building/ structural collapse or possible breaches of the regulations surrounding safe working (e.g. COMAH 15) because of their remit as regulators of most of the serious risks to health and safety arising from work activity in the UK. For further information on these organisations, their role and their investigative powers see [Chapter 3](#).

## Sifting for Evidence and the Establishment of Off Site Temporary Storage

4.17 As mentioned in above recovery of human remains, personal possessions and items of value may have to be carried out at an off-site location, rather than at the incident site. This may be because there is insufficient space at the site; particular sensitivities surrounding the incident that are best addressed by moving material offsite or for other reasons. It is important that the multi-agency partners have given consideration during site clearance planning activity to the location and effectiveness of off-site facilities for this purpose. The Environment Agency may be able to help with identification of suitable sites. Further information on site identification can be found at [Annex G](#). AAIB, MAIB and RAIB will usually have their own designated sites to which air, shipping and train wreckage may be taken for examination.

## Removal of Personal Items

4.18 The removal of personal property will be led by the police who will in some circumstances use other specialist organisations to assist given this areas will be crucial to any investigation and victim identification. All property is individually labelled and either released back to the owner or kept in storage (subject to the terms of the police Property Act 1897). Public transport carriers assume responsibility for incidents involving vehicles and aeroplanes after handover from the police. Further guidance on dealing with personal possessions and the importance of this aspect of activity to ensure the effective compassionate support of those affected by the incident can be found at [Annex E](#).

## Phased Release of Site for Recovery

4.19 Whilst many parts of an incident site may still be the subject of on-going response activities or investigative procedures, it is possible that in some areas of the site this activity has been completed. A high priority should be to manage a progressive reduction in the size of the part(s) of the site still subject to response or investigation in the shortest time possible to allow for entry by residents, building owners, private contractors and workers into the areas affected. This can be carried out via appropriate zoning of the site.

4.20 Once any relevant investigation has been completed and, where appropriate, the incident site is no longer deemed a crime scene, general clearance can commence. This may be phased as different sectors are cleared of evidence or bulk debris is removed to an examination site. Authority to initiate general

clearance will normally be given by the investigating authority once they are satisfied that they have removed all the evidence or debris they need. Those areas of the site can then be moved to the recovery phase of site clearance by the owner or local authority (as appropriate) led by the site controller. Other key considerations include selecting a contractor, employing a waste strategy and cost considerations. Further information on these issues are included in [Chapter 6](#).

# Chapter 5: Planning for Site Clearance - Dealing with Contamination - Specialist Support

## Introduction

- 5.1 This chapter provides information on the help and guidance available to responders (Category 1 and Category 2) when decontamination, remediation and recovery of the environment is necessary due to the presence of contaminants. In addition the chapter provides information and signposting to a range of organisations and government agencies that can provide relevant specialist help and support, which is often unavailable locally.

## National Decontamination Guidance

**CBRN** – a deliberate act involving Chemical, Biological, Radioactive or Nuclear materials.

**HAZMAT** – an accident, regardless of scale, involving Chemical, Biological, Radioactive or Nuclear materials

- 5.2 The majority of local resilience forums will have within their risk register a range of incidents which could involve Chemical, Biological, Radiological or Nuclear materials, following a terrorist attack (CBRN), or accidental releases (HAZMAT). It is therefore important to include the requirement to undertake decontamination and recovery activities within the site clearance planning process for both response and recovery.
- 5.3 Guidance on decontamination has been produced and is available for the response and recovery arrangements as shown below:
- the [National Recovery Guidance](#) - Provides a one-stop shop to signpost users to relevant information and guidance, including other parts of the National Recovery Guidance on recovering from a CBRN incident.
  - [Strategic National Guidance](#) – The decontamination of buildings, infrastructure and open environment exposed to chemical, biological, radiological or nuclear materials.

## UK Government Decontamination Service

5.4 The Government Decontamination Service (GDS) is part of the Department for Environment, Food and Rural Affairs (Defra). GDS provides practical support to those organisations responsible for managing the recovery of the built and open environment following a chemical, biological, radiological or nuclear (CBRN) incident or major HazMat incident.

5.5 GDS's primary functions are:

- To provide advice, guidance and assistance on decontamination related issues to responsible authorities in their contingency planning for, and response to, chemical, biological, radiological and nuclear (CBRN) and major HazMat incidents;
- To maintain and build on the GDS framework of specialist suppliers and ensure that responsible authorities have access to these services if the need arises;
- To advise central Government on the national capability for the decontamination of buildings, infrastructure, transport and open environment, and be a source of expertise in the event of a CBRN incident or major release of HazMat materials.

5.6 GDS's operational capability includes:

- Facilitation of the rapid decontamination of CBRN releases using private-sector capability;
- Being on call 24/7 to provide rapid access to GDS expertise and Framework services;

General Enquiries (Office Hours) – 0300 1000 315  
24/7 Emergency Number – 0300 1000 316

- Provision of expert scientific and technical advice to relevant groups, including any Science and Technical Advice Cell (STAC) and Recovery Co-ordination Group (RCG), on the most appropriate decontamination methods.

5.7 Useful [case studies of Hazmat and CBRN incidents](#) have been produced by GDS.

# Using the GDS Specialist Suppliers Framework (2012-16)

5.8 As mentioned above, the GDS team has established a Framework of specialist suppliers to provide decontamination and related services for chemical, biological, radiological and nuclear contamination. Further information on the Framework and how to access the specialist suppliers can be found in the GDS [External Support Directory](#).<sup>7</sup>

## The scope of the Framework

5.9 The services delivered by Framework Suppliers include the supply, transport, deployment and implementation of the decontamination and/ or related service(s) for use by the Contracting Authority in a CBRN or HAZMAT incident.

5.10 The Framework supports the National Arrangements for Incidents involving Radioactivity (NAIR) and allows the Environment Agency to access specialist services through the Framework to deal with this type of incident. In addition, the Framework allows the Environment Agency access to the specialist services needed to intervene under the Environmental Permitting Regulations (EPR) 2010.

5.11 There may be a need for immediate advice, preparation and/ or action by the Framework Suppliers in an incident. GDS and all Framework Suppliers are therefore contactable on a 24/7 basis.

## Who can use the Framework?

5.12 The GDS Framework has been procured in line with EU Procurement Regulations. The Framework was established to simplify and speed up the award of contracts for decontamination and related services following an incident. Using the GDS Framework removes the need for a Contracting Authority to conduct any further procurement under EU rules.

5.13 Publicly funded UK organisations can call-off from the GDS Framework in two ways; either by direct ordering or mini-competition. The Contracting Authority for CBRN incident recovery is usually the local authority, however other organisations within government can also contract under the Framework. The GDS team will provide further advice on this process at the time of an incident.

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<sup>7</sup> The GDS External Support Directory is located on ResilienceDirect and can only be accessed by those registered to use ResilienceDirect.

## Framework Terms and Conditions

5.14 Terms and conditions, and pre-agreed incident rates, are set out in the Framework Agreements. These will be shared with the Contracting Authority, along with information on supplier capability and the call-off process when use of a GDS Framework Supplier is required.

## The role of the GDS Team

5.15 The GDS team manages the Framework on behalf of Defra (Department for Environment, Food and Rural Affairs). As well as providing decontamination-related advice and guidance for multi-agency recovery, GDS will facilitate access to the Framework Suppliers and maintain information on capability and resources.

5.16 The GDS team has produced a Framework User Guide available upon request and to use in the event of an incident. The guide contains a breakdown of the lots covered by the framework, specification and relevant templates and links to other useful documents.

## Directory of Suppliers

5.17 In addition to the supplier framework GDS has also developed an off framework directory of suppliers who may be able to support the GDS Framework in the recovery from a CBRN or Hazmat incident. This [External Support Directory](#) also details the companies who are part of the GDS Framework and provides details of how to contact them. Information on the framework suppliers' specific capabilities and the work that has been done by GDS to assure these capabilities can be accessed by contacting GDS directly.

5.18 Alongside these suppliers, in the course of normal activities, GDS comes across other suppliers who could potentially provide services to support the framework suppliers. These suppliers are also listed within the [External Support Directory](#) for convenience and to help local responders who are looking for contractors who can provide this kind of service, however, it should be noted that no recommendation or assurance can be made based on the presence (or absence) of a supplier from this list. This list purely represents companies GDS has become aware of. No assurance work with company outside of the framework has been carried out and so knowledge of their capabilities is limited. These suppliers have not been accredited in the same way as those within the framework. [The External Support Directory](#) has been placed on [ResilienceDirect](#).

# The Environment Agency

5.19 The Environment Agency has three main roles: an environmental regulator, an environmental operator and an environmental adviser. As a regulator they target efforts on the highest risks and the poorest performers to maintain and improve environmental standards. At the core of the environmental operator role is to respond to incidents that have caused, or have the potential to cause, harm to people, property and the natural environment. They provide technical information and advice to national and local government to support policy and decision making and provide the following advice:

- [Environment Agency and DCLG environmental handbook](#). A handbook co-produced by the Environment Agency and DCLG containing all aspects of the fire and rescue services' environmental impact assessment.
- NPPG (National Pollution Prevention Guidelines). Pollution incident response planning; [Guidelines to help manage environmental responsibilities to prevent pollution and comply with the law](#).
- Waste: temporary secure storage: [regulatory position statement 060](#); The requirements needed to be met to temporarily store fly-tipped, trash screen clearance and public litter bin waste, without an environmental permit.
- Waste management in marine incidents. [MCA STOP notices](#) have been prepared in relation to oily waste, but the principles should also be applied to the management of hazardous and noxious substances and large quantities of non-polluting waste. This note provides information on the operation of the waste management group. (For further information on marine pollution issues see paragraph 5.25.)
- [Waste legislation and regulations](#); provide guidance for businesses and organisations on how waste disposal is regulated and what they need to do to comply.
- Hazardous waste premises notification: [regulatory position statement 025](#) explaining when certain places are exempt from registering as premises under the Hazardous Waste Regulations.

5.20 The Environment Agency is a strategic member of local resilience forums and works with partners to pre-determine locations for decontamination sites through LRF incident planning committees. Use of these sites is managed by the Strategic/ Tactical Coordinating Group (as appropriate) during incidents. The Environment Agency local Area Environment Management teams will advise on current permit status and permit exceptions of sites during incident response and recovery.



Environment Agency  
General enquiry line 03708 506506  
Environment incident hotline 0800 80 70 60

## Public Health England

- 5.21 Public Health England (PHE) exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health. Responsibilities include playing a key role in preventing harm when hazards involving chemicals, poisons or radiation occur and in preparing for new and emerging threats. PHE will be a key part of advice and support as part of any command and control arrangements for both response and recovery.
- 5.22 PHE has 4 regions: London, North of England, South of England, Midlands and East of England which are further split into 15 centres (excluding London which is an integrated region and centre). The centres are further split into individual health protection teams which provide the local link to local authorities. Within each centre there are a number of local health protection teams which act as a gateway into PHE for specific local authorities.
- 5.23 In addition to PHE's role in reducing the dangers to health from infections, chemical and radiation hazards, it also provides support to, and works in partnership with, others who also have health protection responsibilities and advises, through the Department of Health, all government departments and devolved governments throughout the United Kingdom. PHE will provide specialist advice and guidance on the public health implications of an incident and the public health aspects of recovery at both the local and national level.
- 5.24 PHE have developed the UK Recovery Handbooks and interactive support tools to help with the decision-making process for developing a recovery strategy following a Chemical, Biological or Radiation incident. PHE have also published guidance and templates for recording and reporting decisions on recovery. These resources enable the user to evaluate recovery options (remediation techniques) that are likely to be the most appropriate, applicable and effective on a site and incident specific basis. Recovery options are remediation techniques that may be applicable to facilitate the return to normal. PHE have grouped options into the following categories;

- **Protection** - actions to protect human health and the environment,
- **Remediation** - actions to get the affected environment back to normal and,
- **Fate of affected produce or waste disposal** - actions to manage waste produced, including appropriate disposal and treatment.

5.25 The recovery resources developed by PHE are primarily aimed at national and local authorities, central government departments and agencies, environmental and health protection experts. They are available to download from the [gov.uk](https://www.gov.uk) website. Please check the website for the latest versions of PHE tools and guidance for recovery, including the:

- [UK Recovery Handbook for Biological Incidents](#)
- [UK Recovery Guidance for Chemical Incidents](#)
- [UK Recovery Handbook for Radiation Incidents](#)
- [chemical recovery navigation tool](#)
- [chemical recovery record form](#)
- radiation recovery navigation tool ([Inhabited areas](#); [Food](#); [Drinking water](#))
- [radiation recovery record form](#)
- [e-learning module: principles of recovery and remediation](#)
- [guidance on recovery from flooding: essential information for frontline responders](#)

5.26 Further information on how PHE works on a local basis and how they can be contacted can be found at <https://www.gov.uk/guidance/emergency-contacts-public-health>.

## Maritime Pollution

5.27 The [National Contingency Plan](#) for Maritime Pollution from Shipping and Offshore Installations produced by the Maritime and Coastguard Agency (MCA) has been in place for a number of years. This sets out processes involved in a pollution response and has been updated in recent years to meet recommendations and lessons identified from such incidents as the Deep Water Horizon in the Gulf of Mexico. It seeks to provide guidance on incident management and resources (including national assets) that may be brought into play. This includes sections on all aspects of clean-up. In addition MCA have produced a project report: [Planning the Processing of Waste arising from a Marine Oil Spill: Guide and Decision-making Tool](#).

5.28 This guidance needs to be read alongside a series of advice known as [Shoreline Technical and Operational Advice Notices \(STOp\)](#).

## Incidents Involving Military Aircraft

- 5.29 If an incident involves military aircraft, the ministry of Defence will activate a Post-Crash Management (PCM) plan which includes a local, trained PCM incident officer. They have capability to deploy permanently on-call hazardous materials, and aircraft recovery, teams. PCM will work closely with local responders on the ground in order to gain safe access to the incident site to carry out the air accident investigation. They will also deal with the clearance and remediation of the crash site.
- 5.30 Advice on hazardous materials, radiation protection and environmental protection following a military aircraft incident can be obtained from the duty Hazmat & Environmental Protection Officer (HEPO) at the Institute of Naval Medicine (INM). This includes assistance with interpretation of the information contained in the MoD Aircraft Hazard Database (ACHaz). The INM duty HEPO can be reached 24/7 via Deputy Chief of Defence Staff Duty Officer (DCDSDO) in Whitehall or the Defence Fire Risk Management Organisation (DFRMO) duty officer.

# Chapter 6: Planning for Site Clearance to Enable Recovery

## Ensuring preparedness through local planning considerations

6.1 As for other capabilities, effectiveness in response and recovery is, to a large extent, based on planning for incidents and testing those plans through exercising. Site clearance is no exception. The purpose of this section is to provide detail on the areas that will need to be considered in developing plans locally or making revisions to existing plans. Key findings from local practitioners drawn from a range of site clearance events can be found at [Annex A](#).

## Site Security

6.2 To protect the incident site against looting and vandalism, the police, in consultation with the local authority, and site owners/ occupiers (as appropriate), must ensure arrangements are made at the earliest opportunity to secure the incident site.

6.3 This is essential to control and, where necessary, prevent unauthorised personnel obtaining access, or material being brought into, or removed, from the site. Action taken during the planning phase should have identified suitable fencing or hoarding contractors to facilitate this process where necessary.

6.4 It is recommended that the responsible local authority or building owner establish a temporary office at a safe and suitable location, on or as close as possible to the incident site, for use to co-ordinate activity. Where practicable, this should be co-located with any office established for other related purposes including management of the decontamination process, and could be used for:

- recording and reporting of personnel movement and collection of passes for access to the incident site;
- a rendezvous point for those requiring transport/ reporting for duty to the incident site; and
- storage of equipment and resources not required immediately.

6.5 It is important at this stage to identify a suitable site controller to manage day to day activities on site and report back to the site clearance cell. More information can be found on this role at paragraph 3.16.

6.6 In the case of domestic properties, being part of an incident site, residents are often naturally uncomfortable with the idea of 'strangers' in their home. Therefore it is essential to reassure them that the names and details of everyone who entered or operated in their homes is recorded meticulously.

## Equipment and Contractors

6.7 For many site clearance incidents it may be clear from the onset that the responding organisations will be overwhelmed and are unable to provide the services and equipment required for all phases of site clearance as set out in [Chapter 3](#). In some cases responders will have contracts in place, or have the ability to identify (including call-off contracts) a number of service providers. Where these do not exist already, the identification and development of pre-planned contracts are recommended as they may help speed the clear-up process in the event of an incident and avoid later contractual disputes over issues that should have been addressed pre-incident.

6.8 As a minimum, when developing or reviewing local site clearance plans, those involved should ensure that they have identified appropriate service providers, established appropriate contact and call-out arrangements, and, wherever possible, involved them in developing and testing plans.

6.9 Types of services will typically include the following, although the list is not exhaustive.

- A range of engineering and demolition specialists
- Plant Hire including scaffolding and skips
- Transport operators
- Portable buildings (toilets and offices)

6.10 Previous incidents have also demonstrated the considerable speed at which, if required, PPE is used up. Local authorities need to understand in advance what is needed and how to get hold of large amounts at relatively short notice.

## Selecting Contractors

6.11 In selecting contractors relevant agencies will need to consider both experience and track record in dealing with incidents. Also whether the company or

organisation is suitably qualified or registered with an authority representing the industry. The majority of local authorities will already have procurement departments which can provide advice on generic contracting considerations. Consideration can also be given to using contractors from the UK Government Decontamination Service Framework (see Chapter 5).

6.12 It is also important that local authorities, and local resilience forum partners more broadly, are aware of the contractors being used by their colleagues across local authority or local resilience forum boundaries. Should there be a large scale, or cross border, event it is important that the designated contractor is able to deal with the demands placed upon it and a small or medium sized company may struggle if called upon by more than one organisation. Cross border discussions on plans is good practice and can identify weaknesses which could impede the response or recovery efforts.

6.13 When engaging contractors there are three main types of contract that are suitable for debris clean-up operations:

- **Time and Material Contract** is extremely flexible and not scope dependent. However, it requires extensive documentation and close monitoring by designated staff. Previous experience indicates that because of the physical unknowns of the debris, as well as frequent interruptions for recovery of fatalities, work is best done on the basis of open-ended “time and materials” agreements, as opposed to the standard packaged bids.
- **Unit Price Contract** is suitable for debris removal and disposal operations when the exact quantity of debris is not known. The Unit Price contract requires accurate accounting of actual quantities of debris transported, measured in either cubic yards or tons. All trucks must be accurately measured and numbered. Trained full-time contract monitors are required to eliminate the possibility of contractor fraud; and
- **Lump Sum Contract** is easy to monitor when the scope of work is well defined. This type of contract is not well suited to scattered debris. It is more suitable for debris removal from a temporary debris management site to landfill, since the scope of work must be well defined. Monitoring is likely to be less resource intensive. There should also be provisions for time and material due to work stoppage.

6.14 A number of key issues need to be addressed when developing or letting a contract. These include:

- Responsibility for claims arising in connection with the operation of the plant and operator;
- Terms and conditions covering stoppages through causes outside the owner's control, including bad weather or ground conditions;
- Terms and conditions covering contractor operators in the event of illness/ injury arising from site clearance which may form part of a risk assessment process;
- Terms and conditions for contract termination;
- Ensuring they are appropriately qualified and insured;
- Arrangements covering travelling time and fares for contracted personnel, working night shifts; and arrangements for the monitoring of work carried out.

## Selection of Temporary Sites for Storage or Sifting of Debris

6.15 Experience has shown that, in the event of a major incident, there may be a need to identify and establish an intermediate temporary site, or sites, between the site of the incident itself and the ultimate final destination(s) of debris. Such sites may be required to aid forensic investigation as well as sorting and sieving of materials away from the incident. In selecting an appropriate site it is important to bear in mind that the debris may include human remains or property to help identify victims. The pre identification of appropriate sites in the local resilience forum area as part of the planning process is strongly recommended.

6.16 When developing site clearance arrangements, local authorities should work with their local Environment Agency representatives and others as necessary, to identify possible suitable sites e.g. sites which have been properly constructed to prevent leakage of material into the surrounding area (bunded sites). The Environment Agency should also be able to provide guidance on obtaining any permissions that may be required to use the identified site for this purpose. In some locations, there may be sufficient suitable unused land available at an existing landfill site that, with the permission of the site owner, can be "designated" for this purpose. [Annex G](#) offers guidance on the key issues to be considered in selecting appropriate sites.

6.17 In some incidents there may be damaged vehicles. These should be taken to a secure location (e.g. a local authority depot) whilst ownership is established and insurance issues are dealt with.

## Transportation of Debris

6.18 Consideration needs to take account of the full range of transport modes that might be required to facilitate the removal of debris from incident site(s) to another location such as an investigation site or final destination (end points). Much of the transportation equipment (vehicles) will need to be procured but stakeholders will need to consider during the planning phase the availability of additional facilities such as:

- loading equipment;
- space for parking;
- maintenance and fuelling; and
- arrangements for ensuring units are clean (i.e. will not contaminate any waste).

6.19 In considering transport options during planning the following checklist will help responders in identifying effective solutions:

- Is the means of transport both safe and legal?
- Does the transport need to be secure in relation to liquid leaking and/ or airborne contaminants to the staff and members of the public?
- Route selection criteria, e.g. road width and construction?
- Does any authority/ public need to be made aware of the route(s)?
- Is a permit required to transport the material?
- Is the person transporting the waste registered as a waste carrier by the Environment Agency?
- Does the site destined to receive the material have a suitable permit if required?
- Has suitable consideration been given to any additional costs in relation to environmental legislation requirements?

## Recovered Materials – Recycling

6.20 Pre-planning should include consideration of possible markets and other use for the range of materials that may be generated by site clearance. This should include identification of waste treatment operations and waste brokers who can divert the designated materials (concrete, brick, asphalt, dirt, steel) and the volumes they can handle. Reducing the quantity of waste debris, by utilising the



full range of methods available will help conserve raw materials, keep down disposal costs and reduce demand for landfill capacity. Waste can be treated using a number of methods provided the appropriate authorisations are held or obtained from the Environment Agency. See Guidance on [Defining Waste Recovery: Permanent Deposit of waste on land](#).

- 6.21 Materials removed from a building or site remains the property of the owner. In accordance with the provisions of [Section 100 of the Building Act 1984](#), the owner has 3 days within which to claim them after which they may be disposed of to a landfill site or sold by the responsible authority. In these circumstances, the responsible authority should, on receipt of any proceeds, deduct its necessary costs and pay the balance to the owner or, where appropriate, their insurer. Payment to insurers is likely to be appropriate where a claim is progressing towards reinstatement, and under subrogation rights the proceeds belong to the insurer.
- 6.22 In some cases site or building owners themselves, or insurers acting on their behalf, may commission recycling or other related activity. In these circumstances any revenue generated will be a matter for settlement between them and is likely to be reflected in the overall level of insurance settlement. In other cases rates quoted/ charged by contractors may reflect an expectation that they will receive the proceeds from waste recycling activity. A careful and difficult balance may sometimes need to be drawn between possible savings on contract costs and likely revenue from recovered materials.

## Disposal of Waste Material

- 6.23 There are strict regulations relating to the disposal of waste. Information on waste disposal can be found in the Government's [Waste Strategy](#) produced by the Department for the Environment, Food and Rural Affairs.
- 6.24 Information on currently permitted landfill sites, including details of the different types of waste they are permitted to take and their capacity can be accessed on the through the Environment Agency. Local authorities are also encouraged to liaise with their local Environment Agency representatives regarding local arrangements, requirements and the latest information on available landfill. The Environment Agency can also advise on the handling, on-site storage, treatment and disposal of materials, including contaminated material, and can help to identify facilities for the storage, transport and disposal of waste materials. Consideration must also be given to alternatives to the use of landfills for disposal of debris produced by site clearance. The Environment

agency has developed a range of guidance documents relating to the disposal of waste which can be found in [Chapter 5](#).

## Chemical, biological, radiological or nuclear (CBRN) incidents

6.25 If an incident involves CBRN materials, special considerations are likely to apply. For example, extra precautions will be required to protect people and the environment, and specific legal rules apply to the collection, storage, transport and disposal of wastes contaminated by radioactivity and chemical/ biological agents.

6.26 Specific guidance is available, or being developed, to help Local Authorities oversee decontamination and waste management following CBRN incidents:

- [Strategic National Guidance](#) on the decontamination of buildings, infrastructure and open environment exposed to chemical, biological, radiological substances or nuclear (CBRN) materials (Defra, 2015).
- Strategic National Guidance: managing radioactive waste after major incidents (expected to be available in mid-2016)
- Strategic National Guidance: managing chemically and biologically contaminated wastes after major incidents (expected to be available in mid-2016)

# Chapter 7: The Cost of Site Clearance

- 7.1 In the case of accidental or malicious damage, the costs would fall on the party responsible for causing the damage. Whereas, in the case of damage through natural causes, responsibility would normally be expected to rest with the owner or occupier, or insurer of a property.
- 7.2 The public sector, central and local government bears its own risks or arranges insurance as appropriate. In the private sector, owners or occupiers will want to consider with their advisers what insurance is available. Many household insurance policies will cover the cost of removing debris caused, for example, by fire, explosion, lightning or earthquake. However, many policies now exclude terrorism damages caused by nuclear, chemical, biological or radiological means. In these circumstances, local authorities would normally take the lead in arranging decontamination of private property.

## Polluter Pays Principle

- 7.3 The Environment Agency has specific powers to require remediation to prevent or remedy pollution. The powers are set out in the [Environmental Permitting Regulations](#) (England and Wales) 2010.

## Pool Re Scheme

- 7.4 The Pool Re scheme was set up in 1993 by the insurance industry in cooperation with the UK Government in the wake of the IRA bombing campaign on the UK Mainland. Pool Re is a mutual reinsurer whose members comprise the vast majority of insurers and Lloyd's Syndicates which offer commercial property insurance in the UK, with membership of the scheme affording them a guarantee which ensures that they can provide cover for losses resulting from acts of terrorism, regardless of the scale of the claims.
- 7.5 Members have agreed to offer terrorism cover, as defined under the scheme, to any client or prospective client who requests it as part of the relevant commercial policy they issue.
- 7.6 On request by a policyholder, an insurer participating in the Pool Re scheme will quote a premium for the inclusion of terrorism cover. If accepted, it will then become part of their commercial property (or other relevant) policy. Alternatively, the insurer may simply include terrorism cover within its standard

policy without the need for separate consideration by the insured. The cover provided is for losses resulting from damage to property caused by an act or acts of terrorism.

- 7.7 Pool Re has arrangements with all its members to reimburse them the cost of claims they pay under the terrorism cover they provide, subject to a loss retention which they must pay themselves. Insurers pay a premium to Pool Re for this cover. The retention varies between insurers depending upon the size of their terrorism insurance portfolio.
- 7.8 If losses ever became so large as to exhaust its reserves, Pool Re would draw funds from the UK government to meet its obligations. Pool Re, in turn, pays a premium to government for this cover and would be required to repay any funds drawn down in this way from its future income.

## Multiple Insurers

- 7.12 In the event of a major incident affecting numerous properties in the same area, a large number of insurers are likely to be involved. Experience shows that opening and maintaining from the outset regular communication with insurers and those they represent can help speed the recovery process and avoid later misunderstandings over the allocation of costs.
- 7.13 An effective approach adopted by Manchester City Council in respect of the Manchester bomb (1996) was to secure agreement that, using powers provided by the Building Act 1984 (see [Annex H](#)) it would commission contractors, operating under their supervision, to render safe the worst affected buildings and keep a detailed log of hours worked on each building. This facilitated the City's subsequent recovery of costs incurred from the building owners that would become part of their insurance claims. In circumstances where the responsible local authority is unable to recover its costs from building owners or their insurers, section 107 of the Building Act 1984 provides a power to register the unrecovered monies as a charge on the land affected that can be recovered, with interest, when the land is next sold.

## Expenditure by Local Authorities as Responders – The Bellwin Scheme

- 7.14 Assistance towards costs incurred by local authorities during an incident may be available in some circumstances. Re-imbusement of qualifying expenditure may be made through the Bellwin Scheme run by Department of Communities and Local Government under powers provided by section 155 of the Local

Government and Housing Act 1989. This scheme provides for re-imbusement of expenditure above a defined threshold incurred by a local authority in meeting the costs of immediate action to safeguard life and property following an incident or emergency. The scheme is predominately used as a response to severe weather incidents. Bellwin does not cover general recovery costs.

7.15 The Bellwin Scheme rules require incidents to be reported to the Department of Communities and Local Government within a defined period (normally one month); and all expenditure must have been completed within a limited defined period of the disaster (usually one month). The expenditure must be above a threshold level (0.2% of the local authority's calculated annual revenue budget). Above this threshold, grant is paid at 100% of eligible costs.

7.16 Subject to meeting the scheme's requirements, examples of expenditure likely to qualify for Bellwin grant include the hire of additional vehicles, plant and machinery that are not those already in use by the local authority, and emergency works to safeguard dangerous structures, including making them secure (where not insurable). Expenditure that a local authority would normally expect to incur in an area for which there is already a government expenditure programme is not eligible for reimbursement, and most capital expenditure is likely to be excluded from the Bellwin Scheme on the basis that it is not usually relevant for immediate costs.

## Expenditure by Local Authorities in Recovery

7.17 Assistance with certain categories of expenditure not covered by the Bellwin scheme may be available through other funding means. Often this would be affected through a section 31 grant from the relevant Department.

7.18 Applications for assistance will be considered on their individual merits within the parameters of the relevant powers and scheme provisions. The availability and extent of any assistance that might be offered should neither be assumed nor is it guaranteed.

# Annex A: Key considerations identified by local practitioners from a range of Site Clearance events<sup>8</sup>.

## 1. Health and Safety – consideration needs to be given to the following:

- Access for responders to the site of the incident – is this hindered by rubble or debris (which may be contaminated) or other possible barriers e.g.: tides (in the event of coastal or marine pollution events); topography e.g. cliffs, mountains etc.; and vegetation, for instance woodland?
- How to ensure the safety of responders and investigators whilst working on or near the site (e.g. CBRN or HazMat contamination, glass, slate, sharp objects etc.).
- How to ensure the safety of responder teams and volunteers working near flood water, on cliffs, in tidal areas etc.
- The likely impact upon live casualties of moving rubble/ debris.
- The impact of debris on infrastructure e.g. river bridges. Hazardous materials or pollutants may be present e.g. asbestos, chemicals, sewage etc.
- The safety of the public e.g. 'Flood' tourists - are they in danger and will they impact on the site clearance operations?
- Can the debris be cordoned off so that it does not pose a threat the public?
- How will you organise the safe transition from emergency response to the investigative and recovery phases, particularly where parts of the site may still be in the response phase?

An example of a checklist for a site clearance operation involving hazardous materials is given below. This could be applied to a wide range of incidents from, for instance, the dismantling of a “meth lab” in a residential house to a large scale industrial contamination.

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<sup>8</sup> Information submitted by a Department for Communities and Local Government Site Clearance Reference Group. This group met in November 2014 to scope nature and format of this guidance and subsequently provided the information in this chapter.

1. Confirm what chemical(s) are involved including what is on site and what may have changed as a result of the incident (heat, mixing of two substances etc.)
2. Obtain an estimate as to quantity of chemicals on site
3. Are the chemicals currently stored in containers suitable for the substances and are those containers unaffected by the incident (e.g. has the container damaged by heat?)
4. Has a suitable contractor been identified to deal with the chemicals for removal/ storage, disposal?
5. Are the containers suitably labelled for removal?
6. Are there any Control of Substances Hazardous to Health (COSHH) risks?
  - Are there specific PPE requirements for people removing the substances – if so how will this be managed/ achieved?
  - Are there specific requirements relating to the containers themselves how will this be managed/ ensured?
7. Are there any manual handling risks to be managed both in terms of size of containers and their location (taking into account surface of the ground and accessibility of manual handling equipment)?
8. Are there any training needs for those required to handle them?

## 2. Health Impacts – consider the following

- Ensure the public are aware of the health and environmental impact of any site clearance activity.
- Consider how best to address community concerns regarding air or water quality and other residual effects of an incident requiring site clearance activities.

**Example** – During 1980s & 90s Corby in Northamptonshire carried out a remediation project involving the removal of three quarters of a million cubic metres of contaminated soil from the former steel works. In 2009 the High Court decided that the Council was negligent in the way the clearance was carried out which resulted in airborne contaminants. 18 claims for child defects resulting from the site clearance work were upheld with a further 43 being submitted. The findings by the court were:

- Appointing inexperienced and unqualified project managers
- Not commissioning adequate ground, site and chemical investigations
- Inadequate soil sampling
- Breaching waste management permits

- Poor site security
- Very poor cost control and overseeing of the contractors.
- A full site and transport risk assessment will need to be completed and recorded.

### 3. The Natural Environment – consider the following:

- Will site clearance activity impact on the local wildlife, areas of natural beauty or scientific interest and biodiversity.
- Might there be specific impacts on farmland or fisheries?
- Are airborne contaminants or waste products within runoff water likely to enter the soil or enter local water courses? (e.g. nitrogen etc. from farm slurry).

**Example** – A fire at a nut processing factory in Weedon, Northamptonshire, in September 2013. The water runoff from the firefighting activity entered a nearby balancing pond which had been used by the local community as a nature reserve for many years. The water turned green and the fish in the pond died as a consequence. This caused far greater use of resources for the Environment Agency in clean up than the fire itself because the long term consequences lasted for several months. Advice and lessons learnt:

- Controlling and managing the run off to prevent further issues developing is required at a very early stage.
- Identify potential future environmental issues as a result of the contaminated water entering water courses (e.g. removal of oxygen or causing chemical reactions).
- Effective communication and consultation with the local community about the clear up process and the expected outcome is essential.

### 4. Transportation of material from the clearance site — consider the following

- Is the means of transport both safe and legal?
- Does any material need a specific form of containment for transportation?
- Does the transport need to be secure in relation to liquid leaking and/ or airborne contaminants to staff and members of the public?
- Does any authority/ the public need to be made aware of the route(s)?
- Is a permit required to transport the material?



- Does the site destined to receive the material have a suitable permit if required?
- Has suitable consideration been given to any additional costs in relation to environmental legislation requirements?

**Example** – In 2001 a large waste fire of tyres and tyre crumb in Fforestfach in Swansea resulted in the production of 5,000 tonnes of hazardous waste. The c1,000 lorry loads of waste cost approximately £1million to remove. Swansea Council worked closely with Environment Agency Wales and TATA Steel to arrange temporary storage at a land fill site based at TATA in Neath. Following this further environmental issues were considered by agencies to enable the necessary permits for the waste to be stored at that site on a permanent basis. Working closely with these partners meant that further removal and disposal costs were avoided.

## 5. Community and Business Impacts – consider the following

Have you assessed the impact on nearby communities and businesses (especially vulnerable people e.g. nursing and care homes).

- Assess and communicate the timescale for site clearance activities to the public to manage expectations.
- Consider immediate impact on communities and business from associated road closures, and the long term impact on the local economy.
- Identify vulnerable people and uninsured property owners that may need particular assistance.
- Do agencies need to visit affected communities and properties to offer help and support to achieve effective clearance e.g. the provision of skips, removal of sandbags?
- How can you encourage communities to participate in site clearance activity (e.g. waving charges at recycling centres).

**Example** - Cumbria flooding 2009 - The issues which were of greatest concern are listed below. These were taken from the Cumbria debrief report:

1. The removal of animal carcasses.
2. Closure of the Port of Workington until sediment deposit had been dredged.
3. An Increase in damaged and bulky domestic waste items requiring additional local authority removal and storage.

4. Removal of commercial waste including food waste.
5. Removal of debris from the road system and gravel and other debris from farmland.
6. Expert advice in relation to the inspection and removal of material from locations with historical significance/ sensitivity in relation to inspection and removal of material including cemeteries and church yards.
7. Removal of street furniture that has either been contaminated or damaged (street lighting and benches).

# Annex B: Site Clearance Case Studies

These case studies have been provided by stakeholders in order to highlight the diversity of site clearance activities. They also provide examples of recent problems partners have faced, some of the solutions and lessons learnt.

The following case studies are included:

1. [Gas explosion causing collapse of residential terrace in London 2013](#)
2. [Wreck of cargo vessel carrying containers and fuel oil in the English Channel 2007](#)
3. [Fire at a waste recycling site in Kidderminster 2013](#)
4. [Flooding of the River Severn 2014](#)
5. [Aftermath of the Canterbury \(New Zealand\) earthquake 2010](#)
6. [Site Clearance following the Lockerbie Air Crash 1988](#)

# Case Study 1: Gas explosion causing collapse of a residential terrace in London 2013

*On 28th October 2013, in Bath Road, London Borough of Hounslow, the Storm St Jude gales caused a tree to collapse (one of over 280 across the borough) rupturing a 3 inch gas main.*

The resulting build-up of gas ignited and caused the collapse and partial collapse of five terraced buildings, causing two fatalities and several casualties. A substantial amount of debris was scattered across the local area. A casualty clearing station (ambulance and police managed) and a rest centre (local authority managed and supported by the British Red Cross) were established. More than 25 people were evacuated and Bath Road remained closed for over 48 hours. The incident attracted significant media attention (with international, national and local media agencies on scene).

## **Action and response**

- On scene emergency response vehicles were hindered by rubble around the site which included glass, slate and sharp objects, which could have punctured tyres. A forward control point, rendezvous point and large cordon were established impacting upon local traffic.
- Traffic management measures, street cleansing teams, Health and Safety Executive, utilities representatives and contractors were all deployed quickly by Borough of Hounslow.
- Six fire engines, over 30 fire fighters (including 4 Urban Search and Rescue modules), police officers, an ambulance and crew, the Hazardous Area Response Team and over 48 council staff (including local authority building surveyors, structural engineers, highways staff and local authority liaison officers) responded to the incident. Utility services were lost within the area as a result of the incident impacting on care and nursing homes.
- The scene was jointly investigated by the police and the Health and Safety Executive and handed over to the local authority on the 1st November 2013. The coordination of recovery, restoration of normality (including demolition and rebuilding options) and further investigation into the cause lasted over a year.

## Lessons Identified

- Ensure expectations and options on making structures safe are clearly discussed and agreed in any strategy early on at Tactical Co-ordination Group meetings.
- Need for an effective partnership approach to ensure that on site priorities, particularly in the event of a fatality, are clearly agreed.
- The importance of existing links with specialist contractors e.g.- Grundon Waste Management and Clean Safe had been deployed in response to chemical suicides, bleach spillages, infected and hazardous animal products such as illegally butchered meat and oil on roads prior to this incident and were known to have an agreed 3 hour response time.
- The Hounslow Hazardous Sites Working Group now meets twice yearly to share information, assess risk and identify hazardous sites in the borough and use collective powers, legislation and enforcement to discourage or end practices that could lead to a site clearance response.
- Examples of sites where clearance may be required include; illegal waste sites (tyres/ cars/ rubbish), chemical stores, wood storage sites (usually bio fuel) and waste processing.

For more information contact: [tom.brady@london-fire.gov.uk](mailto:tom.brady@london-fire.gov.uk)

## Case Study 2: Wreck of cargo vessel carrying containers and fuel oil in the English Channel 2007

*On 18 January 2007 the MSC Napoli carrying 3.5k tonnes of heavy fuel oil, 1.5k tonnes diesel and a mixed cargo in 2,318 containers. broke up in the English Channel and was abandoned.*

The vessel was taken under tow towards Portland Harbour where its condition deteriorated and so it was deliberately beached off Branscombe, Lyme Bay. 119 containers and more than 200 tonnes of oil spilled into the sea. Some containers washed up onto shore causing pollution, looting and a protracted salvage operation.

### Action and response

- Portland port was identified as 'waste' reception, storage and removal site with specialist contractors appointed to manage the various operations.
- A disused football pitch was used as container reception, inspection and sorting area for those recovered from the beach and sea.
- 2,200 containers remained on the ship which was eventually brought to Portland harbour.
- A separate bunded area was established for container cleaning, contents inspection, repackaging and removal. Damaged containers were broken up on site for disposal.
- A further bunded area was set up for dealing with dangerous goods and 45,560 tonnes of recovered material was processed there. The processing was completed by September 2007.
- All containers handling and processing was regulated and overseen by the Environment Agency. The ship itself was cut in two, half towed to Belfast, and the rest cut up on site and removed. The process was completed in July 2009.

### Lessons Identified

- Early liaison and co-operation between Maritime and Coastguard Agency, the ship and cargo owners and insurers resulted in rapid commencement of clean up.
- Early involvement of [HM Receiver of Wreck](#) was required concerning legal issues regarding the removal of items washed ashore.

- Activation of a Strategic Co-ordinating Group was required to ensure effective command and control of the scene and local infrastructure as well as support for the clearance operation.
- Major media interest in the story needed management and co-ordination at every stage.
- This kind of incident produces a very protracted clean up period.

For more information contact Martin Rawling: [mrawling@cornwall.gov.uk](mailto:mrawling@cornwall.gov.uk)

## Case Study 3: Fire at Waste Recycling Site

*On 16th June 2013, a large fire broke out at a privately owned waste recycling site in Stourport Road, Kidderminster. At its peak over 80 fire fighters fought to bring the fire under control. This was the second large fire at this site in six months with the first taking three weeks to fully extinguish.*

Fire was deep seated amongst plastics and bio-degradable waste bales, designed to burn with high calorific value. The waste site was situated in a predominantly industrial business area. A number of business were affected by the fire and a number that were without insurance were forced to go into administration.

Initial responders included police, fire, ambulance, local authority (County and District), Environment Agency and Public Health England. No evacuation was required although immediate road closures were put in place with health advice to go in, stay in, close doors and windows and keep out of the smoke.

There were major environmental considerations e.g.:

- The direction and content of the smoke plume and subsequent air quality.
- A canal located at rear of site where fire water runoff was headed.
- A major water treatment works in close proximity.

The incident attracted significant media attention. The fire took almost 8 weeks to extinguish due to the difficulties involved in reaching the its core.

### Lessons Identified

- The fire was at height of summer and health messages to stay out of smoke and keep windows and doors closed were not really practical.
- The operators were found to have no insurance and entered administration during the fire which had an impact on financing the site clearance operation.
- There was a need to consider the development of a multi-agency financial strategy in situations where a business responsible for a site requiring clearance is uninsured and therefore unable to fulfil its responsibilities.
- Ensure that expectations on making structures safe and the firefighting strategy are clearly stated and agreed in the overall strategy early on at Tactical and Strategic meetings.



- Ensure the public and business communities are informed regularly about progress. For example, establish a web page with FAQ's and ensure this is updated daily with all agencies contributions. Consider releasing all the data, e.g. air quality data, as a way of ensuring transparency.
- Employing demolition contractors to manage and carry out the process was an effective way of handling the clearance.
- Be prepared for environmental organisations and concerned residents requesting all of your information and correspondence through Freedom of Information requests. Ensure you have the resources/ mechanisms in place to deal with them.

For further information contact: [rebecca.pritchett@wyreforestdc.gov.uk](mailto:rebecca.pritchett@wyreforestdc.gov.uk)

## Case Study 4: Flooding of the River Severn 2014

*Fluvial flooding across Worcestershire from the River Severn during February 2014 caused localised significant impact on the Worcester City area and in particular at the local sewage treatment works. This resulted in 60 properties being affected by sewage and flood water along with high volumes of debris carried by the river.*

### Key issues:

- There was a build-up of debris against the river bridge. A decision was made to temporarily close the main river bridge to remove approximately 500 tonnes of debris, mainly trees, using heavy lifting equipment.
- Sewage contaminated public areas, private businesses and homes. Public areas requiring cleaning were identified alongside the agency responsible and the equipment necessary.
- Support Teams were deployed to identify vulnerable people and provide support on an individual householder and business basis.
- There was significant deposition of debris on riverside land. Volunteers were used to assist and support local farms to clear land, clean and clear public access routes and infrastructure.

### Lessons Identified

- Important to identifying and map where clean up equipment can be sourced.
- Site clearance coordination plans need to include methodology for ensuring consistency of the approach to response as identifying and developing cross boundary mutual aid provision and managing expectations of Councillors and the public as well.
- Need to advertise and encourage up-take of national funding schemes e.g. the national flood debris recovery scheme.
- There is a need to establish a process to utilise emergency volunteers from large businesses like Tesco who volunteered man power and cleaning items, in order to make best use of them to carry out site clearance activities.
- Establish a Site Clearance Sub Group as soon as possible.
- Identify land owners and home owners who have been affected and of any polluting materials at an early stage.

For more information contact: [rebecca.pritchett@wyreforestdc.gov.uk](mailto:rebecca.pritchett@wyreforestdc.gov.uk)

## Case Study 5: Aftermath of the Canterbury Earthquakes, New Zealand 2010 and 2011

*Earthquakes hit Canterbury, New Zealand in September 2010 and then again during February 2011. In the second of the earthquakes 188 people died.*

Site management issues were identified at a very early stage as part of the recovery management process. Recovery as a holistic programme was managed through several strands including site clearance and waste management. Of the 185,000 properties in the region, 170,000 reported damage and 20,000 homes needed to be completely rebuilt.

### Site Clearance Issues

It was immediately obvious from the scale of devastation that there would be a number of site clearance and waste management issues to contend with across multiple locations. An initial estimate of the properties undertaken by the Civil Defense Management Group, showed that there were 773 in the Four Avenues area, with approximately 485 requiring immediate demolitions, and another 150 buildings damaged in the suburban shopping areas (business zones). The buildings ranged from residential through to large multi-story buildings with an estimated total of between 1 and 1.5 million tonnes of building demolition debris. Landfill sites did not have the capacity to handle the anticipated tonnages so in order to facilitate the initial clean-up a central facility was established to process all waste.

The Waste and Debris team determined that an efficient and controlled process for debris removal was required, and used the following principles:

- Sensitivity in handling material associated with known fatalities.
- Minimise potential generation of legacy issues from waste removal and disposal.
- Maintain a continuously safe operating environment.
- Safety and security for the community during recovery.
- Manage and minimise all recovery costs.

At the initial waste management facility meeting a decision was made to establish the Burwood Resource Recovery Park as a joint venture operation between the private sector and Christchurch City Council. The tender stated:

The Burwood closed landfill was to be leased for 5 years. Estimated to be 15,000 tonnes per day with one truck arriving every 30 seconds. The site was expected to be operational for acceptance of material by March 2011.

### **New Zealand as a recycling nation**

As a nation New Zealand was very environmentally aware with strict management and re-use of materials. Arrangements were put in place and 2.5 million dollars was invested in machinery to ensure that aggregate, concrete, metal, plastic and other rubble from the site could be recycled.

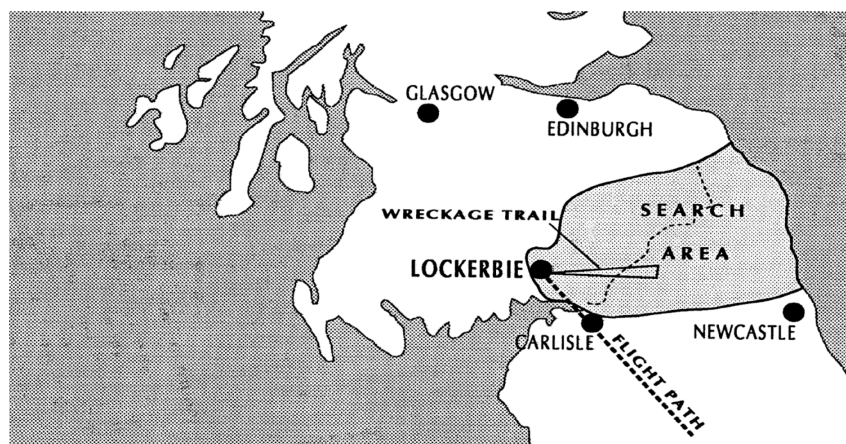
### **Multiple challenges**

Such a complex scenario meant that there were many challenges to address including the management of large amounts of asbestos. A number of older, heritage sites were much less able to withstand the earthquake and this led to difficult challenges when managing public safety against maintaining heritage values. There were particular difficulties around decision making over the future of Christchurch's famous cathedral.

For more information contact: Dr. Lucy Easthope LLB MSc FHEA FRAI  
[leasthope@lincoln.ac.uk](mailto:leasthope@lincoln.ac.uk)

## Case Study 6: Site Clearance across a Community – Lockerbie 1988

On 21<sup>st</sup> December 1988, Lockerbie a small market town part of Dumfries and Galloway, was scene of the crash of a Pan American 747 flight bound for New York from Heathrow. Killing all 259 crew and passengers, the crash also took the lives of 11 residents and destroyed 21 homes and provided an unprecedented challenge to emergency services. The information provided here highlights some of the challenges, key issues and decisions required to achieve the clearance of wreckage and debris whilst working with the community in dealing with the tragedy itself.



The site clearance operation was undertaken in a number of stages

### Clear up

By daylight on 22<sup>nd</sup> December, teams from the local authority began clearing roads and footpaths to allow safe access for pedestrians and vehicles. By the 28<sup>th</sup> December, a volunteer scheme had been developed, co-ordinated by the local Rotary and Round Table Clubs and supported by Army Cadets, which involved searching homes to be demolished for personal items, clearing gardens and gutters of debris and clearing up children's play areas. School children were also engaged in cleaning windows for New Year, a time by tradition in Scotland when houses are cleaned for festivities.

## Restoring Services

Throughout 22<sup>nd</sup> December, water and sewage services were restored with additional chlorination provided as a precaution against possible aircraft fuel contamination. Radiological tests were also carried out as uranium was used as ballast in the aircraft's wings. Monitoring on both these issues fortunately proved negative. A BT cable was also rerouted to take it away from the crash site.

## Property works

Local authority property services began repairs to property to make them both wind and water tight as soon as possible after the incident, assisted by local contractors and some volunteers. Extensive repairs were needed to the crater at Sherwood Crescent. Accounts from these works were passed on to Pan American's insurers. Some properties were completely re-roofed to avoid a patchwork effect of repairs providing an unwelcome reminder of the event. Specialist Engineers were commissioned to undertake a more detailed survey of damage to property from 13<sup>th</sup> January, this was supplemented by a report on damage to gardens, lawns, shrubs and trees.

## Restoration of the environment

The impact of the major proportion of the aircraft had totally destroyed a number of properties on Sherwood Crescent and had formed a massive crater, which quickly became symbolic of the disaster. There was also damage to the A47 Trunk Road. The investigation required restricted access to the area for some time. There was also considerable resentment within the community at the extent of the media intrusion.

Whilst the operational investigation commenced, the general principles of restoration were agreed through a Community Liaison Steering group. This was based on infilling the crater and other damaged areas as soon as possible and every effort being made to reduce media intrusion. Temporary fencing was erected along the A47 to screen the crater and improve road safety to meet the wishes of the community. On 26<sup>th</sup> January 1989 a ceremony of remembrance was held, followed by the commencement of the infill work.

## Long Term Recovery

The initial rebuild of properties and repair to damage was developed over subsequent years into a programme of work to enhance the local economy and environment. This programme was instigated as a means of offering some compensation to the community for the terrible tragedy. The programme was based on a framework for development and restoration supported by an appropriate financial support package.

For more information contact: Rob Willis, Department for Communities and Local Government [rob.willis@communities.gsi.gov.uk](mailto:rob.willis@communities.gsi.gov.uk)

# Annex C (i): Suggested Site Clearance Cell Terms of Reference

## 1. Purpose

- To propose a strategy and set key achievement objectives of viable options for site clearance including the coordination of all multi-agency site clearance activities.
- To support any remaining response activities and pertinent investigations, and any additional recovery (non-site clearance) objectives.

## 2. Role

- To develop a site clearance strategy for submission to, and agreement by, the Strategic Co-ordination Group or Recovery Co-ordination Group, including the approach towards clearance, storage and disposal of materials affecting infrastructure and/ or the natural environment to return it to an agreed state.
- To manage the impacts of multi-agency activities on the agreed strategy.
- To establish a clear coordinating body for agency liaison.

## 3. Chair and Secretariat

Chaired by the appropriate local authority. Secretariat to be provided as appropriate but may be drawn from the local authority, local resilience forum or other organisations as agreed.

## 4. Membership

Representatives (as appropriate) from:

- District/ County/City – representatives as appropriate, e.g.:
  - Principal Environment Health Officer
  - Waste Disposal Officer
  - Transport and Highways
  - Neighbourhood Management
  - Building Structural Engineer
- Environment Agency
- Public Health England
- Clinical Commissioning Group



- Police (if issues around security of sites or crime scenes)
- Health and Safety Executive
- Air/ Marine or Rail Accident Investigation Branch (AAIB, MAIB, RAIB) or Defence Accident Investigation Branch (DAIB) (as appropriate to the investigation of the incident) Fire and Rescue Service (for Urban Search and Rescue, mass decontamination and hazardous materials detection, identification and monitoring (DIM) considerations)
- Utility and Transport organisations
- Food Standards Agency
- Animal Health
- National Trust/ English Heritage/ Natural England (if historic sites or protected areas are affected)
- Other agencies such as the Government Decontamination Service, Probation Service etc.
- Representative from Scientific Technical Advisory Cell
- Insurers or Representative from Association of British Insurers (ABI) if multiple insurers involved.

## **5. Aide memoire and issues to be considered by the Site Clearance Cell meetings**

### ***Site considerations and security***

- Are there on-going emergency services activities in or around the affected area e.g. decontamination and rescue?
- Who is in charge of the site? Which organisation has primacy of command and has this been devolved in any part to control by another organisation (e.g. police handing over part of site to local authority)?
- Who owns the property?
- Is there a clear understanding on site security and access arrangements?
- Has ownership of land, premises and infrastructure been identified?
- Is there a need for any isolation zone, security restrictions or containment of material?
- What remedial work needs to be commissioned (e.g. building to make safe, demolition, decontamination and clear up of waste and debris)?
- For essential services, assets, buildings, transport, and health and educational infrastructure, consider:
  - Temporary structures
  - Redesign
  - Repair
  - Rebuilding

### ***Infrastructure and services***

- What structural and safety assessments have been carried out on:
  - Essential services such as electricity, gas, water, sewerage and telecommunications?
  - Council properties (including educational facilities, sports centres, leisure facilities, community facilities?)
  - Residential properties?
  - Commercial premises?
  - Health infrastructure (hospitals, health centres and GP Surgeries)?
  - Religious buildings?
- Have any flood defences been affected?
- Has a strategy been decided on dealing with waste?
- Have relevant public utilities been informed of damage to infrastructure and risk of contamination?

### ***Environment and decontamination***

- Are any environmental assessments and evaluations required?
- What animal health surveillance processes have been put in place?
- Are there any issues with disposal of dead, diseased or maimed animals, including stock?
- Are there any hygiene issues with sanitation, clean water or food?
- Is there a need for decontamination?
- Is any advice on decontamination standards needed? How clean is safe?
- Have decontamination priorities been identified and agreed in liaison with a science and technical advice cell (STAC)?
- Does the emergency involve hazardous material?
- Have all regulatory impacts on decontamination and site clearance been identified?
- Have post decontamination monitoring regimes and associated responsibilities been identified and agreed?

### ***Finance and procurement***

- What are the financial and resource costs to responders?
- Has it been agreed how costs will be managed, approved and paid for?
- Have resources and plant required been identified?
- Have planning permission for new build, repairs to listed and graded buildings been considered?

- Has it been identified whether compulsory purchase orders are required?

***Developing a legacy***

- Identify use of local capacities and expertise so as to: reduce reliance on external sources; switch community perspective from passive to active: help to promote a positive psychological outlook.
- Develop a strategy on how the community will be involved in physical rehabilitation.
- Identify any potential future prevention and risk mitigation aspects.
- Consider location and reconstruction requirements for any memorial structure(s).

# Annex C (ii): Agenda for Site Clearance Group

Date:

Time:

Venue:

Meeting No.[1]

1. Membership, Representation and Introduction
2. Statement of Purpose and alignment with Recovery Impact Assessment
3. Agree Objectives
  - Short-term
  - Long-term
4. Incident status report
5. Matters/ actions requiring urgent attention
6. Key risks
7. Agency requirements- Investigations etc.
8. Co-ordination of scientific advice including sampling and monitoring
9. Recovery cost management arrangement
10. Formulation of remediation strategy
11. Date and time of next meeting

Name:

.....

Position: ..... Date: .....

# Annex D: Urban Search and Rescue (USAR) Operations Phase: General Debris Removal

During the rescue phase of a major structural collapse incident, FRS USAR teams will retain primacy within the inner cordon, However, the incident will reach a point in time when the probability of further rescues become remote and the focus of the Coordinating Authority starts to move towards recovery operations. At this stage a decision may be taken to transfer responsibility for the inner cordon to the police. USAR teams will still be required to assist with further search and potential delamination of the building to confirm the non-existence of survivors and to expose and remove the deceased. This phase of the incident is known as the “Termination of Operations by General Debris Removal”.

This phase is usually conducted after all known casualties have been removed and operations are entering the ‘recovery phase’. It can still take place during the response phase, but the decision to transition must be given serious consideration, especially if there remains any possibility that live victims might survive in the debris.

Typically, general debris removal entails the extensive use of heavy machinery and transport to lift and/ or move large elements of the debris pile, and working with contractors to achieve access to expose voids and remove the debris off site.

Only limited numbers of rescue personnel need to maintain a presence at the scene, as the risks of injury are high and the potential for rescue low as the heavy machinery removes the debris. If rescue personnel need to be committed onto the debris pile to perform specific actions, then heavy machinery should be stopped whilst these operations are being completed.

In general terms, USAR teams will be:

- a) Searching or making access into every possible survivable void; using all possible search techniques and equipment. This is often repeated as the teams move forward;
- b) Working with live scent and cadaver dogs;
- c) Carrying out heavy and repeated breaking and breaching of the full range of structural elements;
- d) Lifting and/ or moving of large elements of the debris pile and working with heavy machinery e.g. cranes and demolition equipment, to achieve this access;

- e) Working in confined spaces, sometimes deep inside structures;
- f) Delaying of large elements of the debris pile to allow access to all parts of the structure;
- g) Working closely with both structural engineers and demolition contractors to develop detailed recovery strategies and plans;
- h) Using developed relationships to work closely with police DVI, other investigating bodies e.g. AAIB, RAIB etc. and Hazardous Area Response Teams (HART);
- i) Recovering personal and high value items;
- j) Maintaining a strict cordon control and safety sector; and
- k) Carrying out decontamination activities

## Recovery of the Deceased

Though the primary incident objective for FRS USAR teams is the search for and rescue of entrapped/ entombed survivors, the retrieval of the deceased must also be planned for, in close cooperation with other agencies. The recovery of deceased victims should not normally commence until all survivors of the collapse have been extricated from the site. USAR personnel are usually instructed to leave bodies and body parts in situ, although they may be justifiably moved during attempts to effect rescues. On these occasions, USAR team members may be the ones to have seen the body or evidence in situ, and any information that can be recorded will be of benefit to the DVI process at a later stage.

During the rescue phase of an incident, once a casualty has been located and declared life extinct by a suitably qualified person, the task of recovering the body falls under the responsibility of the police. USAR teams, however, may be required to remove rubble and debris in order to clear the immediate area around the body.

Following the rescue phase and in any incident where there is a police investigation into the cause and/ or fatalities, the police will co-ordinate activities at the scene to recover the deceased and evidence as part of a criminal investigation. Where relevant, this will also be done in conjunction with other statutory investigative bodies e.g. the Health and Safety Executive (HSE).

The police may appoint a Scene Evidence Recovery Manager to facilitate this purpose. This officer will (on behalf of the Senior Investigation Officer (SIO) and the Senior Identification Manager (SIM)) develop a plan for the site to recover human remains and evidence (including property). This will normally involve the formation of a Scene Evidence Recovery Group, involving specialist police staff, health and safety advisors, contractors and other relevant organisations including FRS USAR teams.

The police will normally make a request to the host fire and rescue/ police force/ authority for the support of USAR teams. This group will determine priorities,

protocols for operating and ensuring safe operating practices.

The main objectives to be achieved when recovering the deceased include:

- a) Maintaining the safety of personnel involved in the removal of the deceased;
- b) Provision of expert advice and technical assistance when immediate recovery of the deceased is hampered by unstable structural elements;
- c) Coordination/ integration of efforts between USAR teams and other agencies responsible for processing the deceased (HART/ DVI/ police);
- d) Ensuring appropriate record keeping of the recovery is recorded using standardised police DVI forms (e.g. time, specific location; Global Positioning System (GPS) co-ordinates; who the deceased was handed over to on site);
- e) Be aware of, and, if possible, address any cultural concerns regarding handling of the deceased.

## Recovery of the Deceased - Considerations

- a) It is assumed that all processes have been undertaken to confirm death;
- b) In most cases USAR teams will carry out operations to locate, identify and expose the deceased, with the physical packaging and management of the body undertaken by HART personnel;
- c) There may be certain situations in which the recovery of the deceased is deemed of such high risk to USAR responders that it will not be undertaken until the hazard can be mitigated and the body may be required to be left in situ;
- d) The temperature, type of hazard impact, types of structures involved, and availability of heavy lifting equipment are all important considerations in the approach to recovery of the deceased;
- e) Exposure to the deceased poses less of a medical risk to USAR personnel than exposure to body fluids of the living, although consideration should be given to the use of additional protection to mitigate body fluid contamination of PPE (e.g. disposable, waterproof, impermeable coveralls);
- f) Handling of the deceased poses a potential to trigger an acute stress reaction in the personnel involved in the recovery activities. Any team member not wishing to participate directly in the extrication or transfer of the deceased should not be forced to do so;
- g) Due to ambient conditions, or when the deceased has been left in situ for a prolonged period, the body may be in a state of decay, may be bloated, and may break apart easily when handled;
- h) Recovery activities should be undertaken in day-light hours or with sufficient illumination;

# Recovery of the Deceased – USAR Team Protocols

USAR teams tasked with the removal of the deceased will follow these protocols:

- a) Mark the structure according to the building.
- b) Where possible, establish GPS coordinates for the location of the deceased.
- c) Record the location of the deceased, any human remains and any access considerations.
- d) Record the time the deceased was discovered, the time life extinct was declared and the individual making the declaration.
- e) Record the hazards and risks associated with the area of operations.
- f) Record the personnel and equipment required to facilitate removal of the deceased.
- g) Whenever it is necessary on the grounds of safety for USAR teams to recover fatalities on behalf of police DVI, bodies should be located and photographed in situ. They should then have DVI labels attached, placed into a bag and be removed to an audit holding area.
- h) Wherever possible, a digital photograph should be taken, as this may be used as evidence at a later date.
- i) On the direction of the senior police officer present, remove fatalities or body parts from the immediate disaster/ incident area.
- j) Utilise identification tags as directed by the DVI Team Leader.
- k) Ensure appropriate documentation accompanies the deceased on handover.
- l) When planning a safe extrication strategy, the following should be considered:
  - All activities to expose the deceased (debris removal, shoring, etc.) should be conducted in a manner that minimises body-part or body-fluid exposure to personnel. Use standard personal protection precautions (face masks, eye protection, and medical gloves (2 pairs) under rescue gloves). All gloves should be disposed of as clinical waste.
  - Consider barrier methods to minimize contact with body fluids (e.g. plastic salvage sheeting, disposable water- impermeable/ resistant coveralls for rescuers).
  - Consider a stand-off approach when the use of heavy equipment (e.g. cranes or other similar equipment) is required.
  - Consider briefing team members on potential hazards (physical and psychological).
- m) Where appropriate, team members should attempt to slide the deceased into a suitable body bag (as opposed to lifting which may cause the body to break apart). The body bag should provide protection to the deceased as well as those who will be handling it. This will assist with keeping the deceased intact. Sliding of

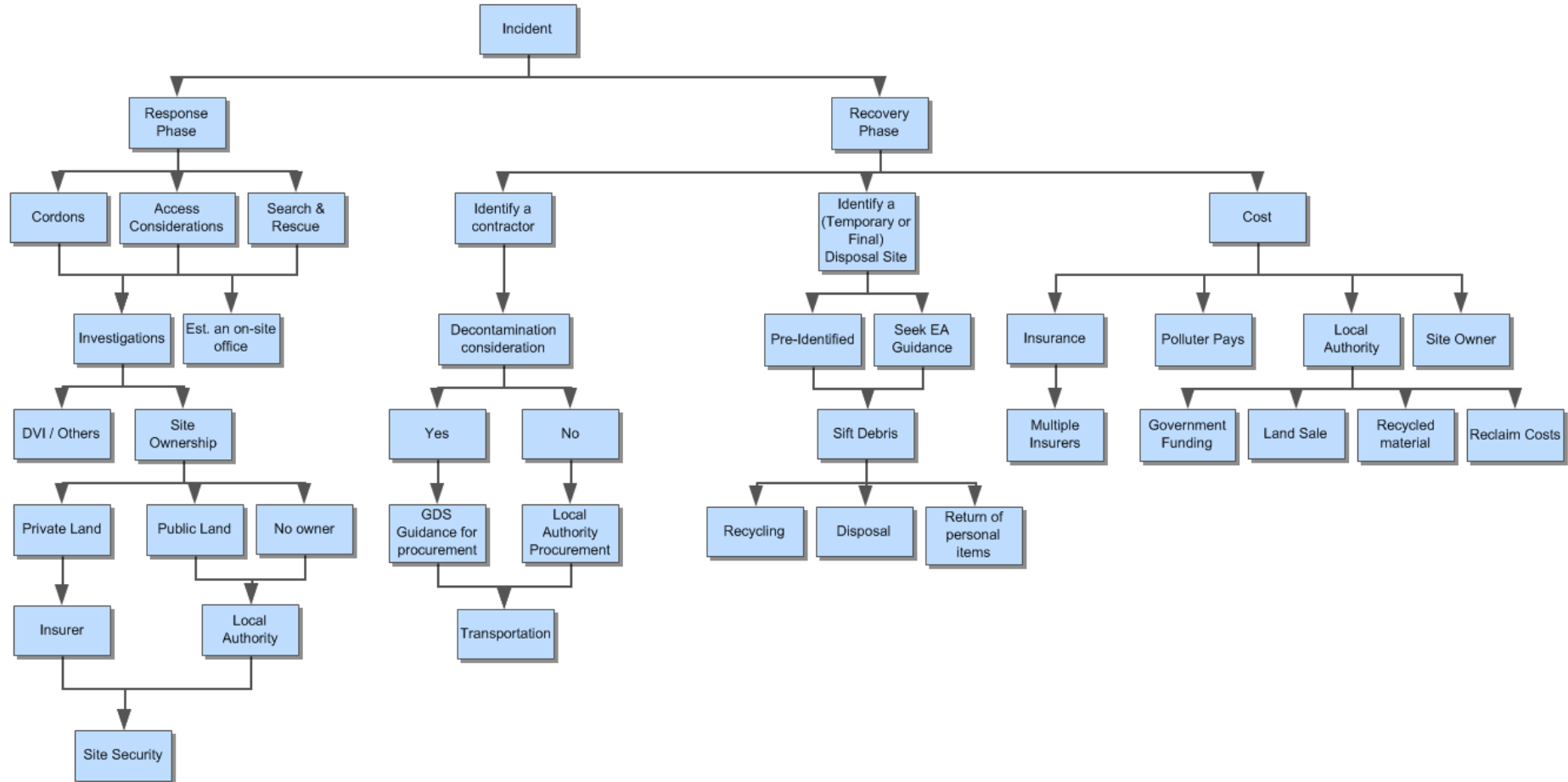


the deceased can be made easier through the use of plastic sheeting, aluminum foil blankets, or other material placed under the deceased prior to moving.

- n) Any personal effects on the deceased should be retained in the body bag.
- o) Disarticulation and dismemberment of the deceased may need to be considered as a method of retrieval/ extrication.

Information provided by Sean Moore: USAR Capability Advisor, UK ISAR National Coordinator; CFOA National Resilience & Assurance Team

# Annex E: Flow Chart Showing the Various Elements of the Site Clearance process



# Annex F: Site Clearance and Personal Possessions

The careful management of the thousands of items of personal property that can be recovered after an incident has proved to be a particular challenge in recent years. Aviation incidents, in particular, generate a large number of personal effects (often over 40,000 individual items). It is likely that personal property found could belong to the deceased, casualties, survivors or those attending the scene to respond to the emergency or another person entirely. Assumptions about who “owns” personal property can be problematic.

Personal effects can usually only be released to the legally identified owner or next of kin. Coroners’ Officers and police Family Liaison Officers, alongside hospital personnel and funeral directors, manage the return of personal effects in their everyday work and in some areas appropriate protocols are already in place.

Items of property also form part of the evidence gathered in the response and fall under the jurisdiction of the Coroner. They also provide vital information for the investigating agencies such as the police and Air Accident Investigation Branch. In any incident the police senior investigation officer (SIO) and senior identification manager (SIM) will work closely to ensure that the strategies for recovering evidence reflect this.

However, personal effects may have significant meaning for those affected by the emergency and this needs to be considered as well. For example, survivors who have had to abandon their items when evacuating may be pleased to be reunited with them but may also feel that items are a constant reminder of any fear or confusion they felt on the day.

**Personal items will also often have great significance for those family and friends who have lost a loved one.**

*“The return of personal property after death and disaster is all about things; things that are important to people, that represent the last link to their loved one. These items are not necessarily of any financial value, and it’s important to remember that this process is not about money or recompense or insurance (although insurers will sometimes help to pay for the process.) It might be a t-shirt, a pair of jeans, a cheap watch, one*

*earring, a credit card, a teddy bear, a receipt or, very occasionally, a love letter”<sup>9</sup>*

## **Consultation and choice are key considerations in the management of personal effects after an incident.**

### **Locations for storage**

Planning ahead for the careful storage of items recovered is recommended. In recent incidents, police forces and local authorities have collaborated to identify secure, vacant warehouses that can be used. Ideally, this facility will include large areas for racking as storage and large open spaces for storage. It will also need facilities for staff such as toilets, kitchen and shower facilities.

Advice can be provided on arrangements for storage by specialists supporting the UK DVI co-ordinator.

Items that are damp and particularly those contaminated with fuel should not be sealed in air tight containers like plastic zipped bags or plastic storage boxes. Wet items will usually be collected in plastic bags and then opened and air dried in a drying cabinet. Generally storing items in freezers should be avoided as this causes further damage.

The meaning of personal effects for families, and the importance of careful storage is specifically addressed by the National Audit Office in their review of the experiences of UK nationals after the Indian Ocean Tsunami in 2004. In a response where thousands of people have died, personal effects may seem a low priority but it is important to remember that decisions that are taken at an early stage (such as not storing them appropriately) may have irreversible consequences later on.

For further information see the full review at [www.nao.org.uk](http://www.nao.org.uk) and search on Tsunami Review.

### **Returning the items: choice for those affected**

Property may have been badly damaged in the incident in some way, for example it may have been burnt and may be contaminated with body fluids or fuel. However, it is important that responders do not make judgements about the items that families and friends will want to have returned.

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<sup>9</sup> Easthope, L. (2008). “Returning property after death and disaster”. *An Anthology: Making sense of death and dying*. MK: Open University Publishing. November, p180-182.

Items should not be repaired or cleaned without the consent of the next of kin. The item should be made 'safe to handle' but no more than that unless requested by the family. There are many examples of well-meaning responders cleaning or repairing items which meant that they removed attributes that were already there and were important to the family (e.g. a stain on the clothing that the family had always joked about and a cracked watch face that the person had lived with for many years).

## **Communicating with families and friends**

It may be some time before such items can be returned to families if they are needed as evidence for police or other investigations.

However, it should be noted that there may be some incidents where public health issues are a factor .e.g. contamination or infection; and these may prevent the return of personal property to families. In such cases a decision will need to be made as to whether items can be cleaned or decontaminated, or if the only option is to safely dispose of them. All decisions should be recorded and justifiable. Many contaminants can be managed, and agencies should avoid a blanket response.

Other property may belong to companies or businesses. Every day office items may be recovered from, or taken to be, debris and wreckage. It will be the responsibility of companies or businesses affected by the incident to liaise with the police about the collection of property. The police may request the support of appropriately trained private sector providers to assist with the recovery of such items; this may be at the business or company's own expense.

This work is labour intensive hence the need for pre-planning. Planners may need to seek support from specialist companies who need be briefed and will have to sign confidentiality documents. Recent examples include:

- IT and Data specialists
- Security companies (to secure premises in which items were stored)
- Specialist jewellers
- Dry cleaners
- Couriers
- Funeral Directing firms
- Specialist document restoration

### **Further advice**

A number of private sector companies offer support with the processing of personal effects. The specialist funeral advisors contactable through the UK DVI co-ordinator are also able to advise on the care and management of personal effects.

**Dr. Lucy Easthope LLB MSc FHEA FRA**

# Annex G: Guidance on selecting suitable intermediate/ temporary sites for storage or sifting of debris

Where an authorised site is unavailable, the following issues should be considered when selecting or establishing a temporary or intermediate site for the storage or sifting of rubble and debris:

## **Sensitive environmental receptors**

Select a site away from sensitive environmental features, e.g. watercourses, groundwater source protection zones, conservation sites (Sites of Special Scientific Interest (SSIs) etc.).

## **Buildings**

Where possible, store waste inside covered buildings which incorporate aerial emission containment or dust suppression. Consideration should also be given to the possible need to install a form of protective barrier on the site surface for environmental and/ or health and safety reasons. If the building is close to the site of the incident it is worth considering whether this may cause a stigma to be attached to that building which may affect its future use for other purposes.

## **Drainage**

Store waste on impermeable pavements with sealed drainage systems to trap surface water to ensure the underlying ground cannot become contaminated.

## **Segregate wastes**

A fire prevention plan is required from the local fire and rescue service in order to manage and reduce the possible fire risk.

## **Nuisance**

Provide control and monitoring mechanisms for birds, vermin, insects, dust, odour, noise and litter.

## **Flooding**

Choose sites away from flood risk.

## **Records**

Maintain records of waste brought in/ taken out of the site.

## **Capacity**

Does the site have the capacity to contain the amount of rubble and debris that requires sifting/ before removal to the final disposal site.

## **Security**

On the assumption that a 24/7 security presence will be required, suitable domestic arrangements will be needed to support this e.g. staff rest area, toilets, showers. A building of modular construction may suit this purpose.

## **Access**

Consider whether the site needs to be and is accessible by a variety of transport modes for example:

by Road

- class of road access e.g. trunk road etc.;

by Rail

- distance from nearest railway station;
- whether station has freight handling facilities and access; and
- distance and location of nearest bulk railhead.

by River/ Canal

- whether site is accessible by navigable waterway;
- availability of suitable vessels to transport rubble/ debris by water; and
- whether an operational wharf is located or could be constructed at the site.

by Air

- whether there is a hard standing base helicopter pad at the site or suitable area for one to be constructed (if considered essential).

Also consider whether there is a risk that flooding could prevent access to the site.

## **Designated forensic/ sorting area**

Consideration should be given to inclusion of facilities for such tasks as:

- sorting and examination of large items, e.g. steel girders;
- searching and sifting of larger debris/ rubble;
- searching and sifting of smaller debris/ rubble.

As a consequence of recovery there will be a need to establish areas where items can be processed (examined and recorded) and stored, either temporarily or for the longer term pending the outcomes of investigation or identification processes.

### **Materials Recycling Facility**

This structure could provide a covered zone sheltered from the elements and with controlled access.

### **Examination and storage buildings**

These could be modular in construction, with discrete areas for the following processes:

- pathologist/ forensic archaeologist/ Disaster Victim Identification (DVI) examination;
- cold storage (e.g. a refrigerated lorry) for body parts;
- forensic examination and photography;
- forensic and DVI administration;
- forensic and property storage; and
- drying area for wet exhibits.

### **Rest, briefing and decontamination buildings**

Again these could be of a modular construction, close to but separate from other Buildings, with a 'dirty side' rest area, divided by a decontamination area, on the other side of which should be a clean rest area with briefing facilities.

### **Equipment required in recovery areas**

Including:

- Large items – Heavy lifting/ moving/ cutting plant to manipulate items for examination and storage.
- Larger debris/ rubble – A heavy duty conveyer belt system with grader facility for finer debris. Two JCBs, to load conveyer, and move out post-examination debris of no significance.
- Smaller debris/ rubble – Conveyer belt examination system and sifting machines.

### **Storage area**

Ideally this should consist of 'dexion' type racking on which plastic forensic storage boxes could be stored. A forklift truck may also be needed to assist in transit of items on site.



## **Monitoring of impact on site during use**

Before, during, and following completion of site activity, ground and aerial photographs should be taken with, important features such as structures, fences, and landscaping noted.

Representative soil samples and water samples from existing wells, streams etc. should be taken both before and after use in order to identify any contamination caused by its use. The site should also be checked for volatile organic compounds.

# Annex H: Legislation, Regulations and Associated Guidance

This annex provides summary details of legislation and regulation likely to be relevant to site clearance operations. It is not intended to be exhaustive, nor should it be considered a substitute for authoritative legal advice.

## Legislation relating to Local Government

### **Section 138 Local Government Act 1972**

Gives local authorities power, in the event of an emergency or disaster involving destruction of, or danger to life or property, to incur expenditure in taking action to avert, alleviate or eradicate the effects of the disaster. This does not provide any rights of entry.

### **Section 111 Local Government Act 1972**

General power of local authorities to do anything which is calculated to facilitate, or is conducive or incidental to, the discharge of any of their functions. This does not provide any rights of entry.

**Section 1 of the Localism Act 2011** provides a general power of competence for local authorities in England. Giving local authorities the general power to do anything which they consider is likely to promote or improve the “well-being” of their area (including economic, social and environmental) i.e. gives these authorities the same power to act that an individual generally has. Again does not provide a power of entry.

### **Section 76 Building Act 1984 – defective premises**

Where a building is in such a state as to be prejudicial to health, or a nuisance, and unreasonable delay would be caused by following procedure in section 80 of the Environmental Protection Act 1990, local authority may serve a notice on occupier specifying the defect. The local authority may, 9 days later, execute such works as are necessary to remedy the defective state and recover costs.

### **Section 77 Building Act 1984 – dangerous buildings**

Where a building or structure is in such a state as to be dangerous, the local authority may apply to a Magistrates Court for orders that the owner execute such work as is necessary to obviate the danger, or restricting its use until further notice. No notice is expressly required.

### **Section 78 Building Act 1984 – dangerous building – emergency measures**

If a building or structure is in such a state as to be dangerous and immediate action is necessary to remove the danger, this allows the local authority to take immediate action to remove the danger. This may not cover all site clearance (for instance it still needs to be removed urgently although it may not be a danger).

### **Section 79 Building Act 1984 – Ruinous and dilapidated buildings**

Where a building or rubble from a building's collapse/ demolition is in such a state as to be seriously detrimental to the amenities of the neighbourhood, local authorities may require the owner to execute such works of repair (or at the owner's election, demolish the building and remove any resulting rubbish) or removal of rubbish as is necessary in the interests of amenity. The local authority must give notice to the owner and state the time within which the works are to be executed.

### **Section 95 Building Act 1984 – Powers of Entry**

Power to enter premises at all reasonable hours to investigate, undertake works or for any other performance of local authority functions under the Act with the following restrictions:

- entry to premises, other than a factory or workplace, on 24 hours' notice, unless a warrant is obtained; and
- immediate entry with a warrant signed by a justice of the peace in a case of urgency.

### **Section 99(2) Building Act 1984 – Enforcement notice**

Section 99(2) enables the local authority to execute works and recover expenses for carrying out such works if the person upon whom there is a notice to carry out the works fails to execute the work within the time specified in the notice. A right of appeal exists under section 102.

### **Section 80 Environmental Protection Act (EPA) 1990 – Abatement notice**

Where a local authority is satisfied that a statutory nuisance exists under section 79 of the EPA 1990, the local authority must serve an abatement notice under section 80. The abatement notice must require abatement, prohibition and/ or restriction of the nuisance, and/ or further works or steps necessary to achieve these ends, within a timescale. It is an offence to breach, or fail to comply with, an abatement notice, without reasonable excuse, punishable by a maximum fine of £5,000 for individuals and £20,000 for businesses through the magistrate's court. The notice is served on the person responsible for the nuisance, or the owner of the premises if the nuisance is caused by structural defects. There is a 21 day period in which a notice can be appealed.

**Section 155 of the Local Government and Housing Act 1989** permits the Secretary of State to establish a scheme for a payment of 'disaster grants' where an emergency or disaster has occurred involving destruction of, or danger to, life or property, and one or more local authorities incur expenditure.

**Section 27 Police Reform and Social Responsibility Act 2011** amendments refer to the Mayor's Office for Policing and Crime at section 155(1a)(b), and to a police and crime commissioner at section 155 (4)(ea).

## Waste Management - Plans, Legislation, Regulations and Guidance

Government guidance on waste legislation is contained in the Environmental Management Guidance - [Waste legislation and regulations](#)

[The Waste Management Plan for England](#) provides an analysis on waste management in England and brings together current and planned waste management policies in one place

[Business and commercial waste](#) provides guidance for waste producers on managing waste including construction and demolition waste.

The Waste Resources Programme (WRAP) works with UK Governments, the EU and other funders to help deliver policies on waste prevention and resource efficiency. WRAP takes action on reducing waste, protecting natural resources and providing economic and environmental benefits and provides advice and guidance on specific waste and recycling issues to local authorities and businesses. Their guidance on [construction and demolition waste](#) has an emphasis on regeneration.

- [Guidance on classifying different types of waste](#)
- [Guidance on hazardous waste](#)
- [Guidance on finding someone to move waste](#)
- [Guidance on finding someone to treat hazardous waste](#)
- [Guidance on determining whether you need an environmental permit \(i.e. for onsite treatment of waste\)](#)
- [Guidance on exemptions from the need for a permit \(for storing waste\)](#)
- [Waste shipments](#) (importing and exporting)
- [Waste Strategy reducing and managing waste:](#)

[Other waste guidance](#) (collected general guidance on a range of waste issues).

# Web Addresses for hyperlinks within this guidance

## Chapter 1

Para 1.8 National Resilience Capabilities Programme

<https://www.gov.uk/guidance/preparation-and-planning-for-emergencies-the-capabilities-programme>

Para 1.8 The Department for Communities & Local Government

<https://www.gov.uk/government/publications/list-of-lead-government-departments-responsibilities-for-planning-response-and-recovery-from-emergencies>

## Chapter 2

Para 2.1 The Civil Contingencies Act

<http://www.legislation.gov.uk/ukpga/2004/36/contents>

Para 2.1 Emergency Recovery and Response

<https://www.gov.uk/government/publications/emergency-response-and-recovery>

Para 2.6 Central Government's Concept of Operations

<https://www.gov.uk/government/publications/the-central-government-s-concept-of-operations>

Para 2.6 National Recovery Guidance

<https://www.gov.uk/guidance/national-recovery-guidance>

## Chapter 3

Para 3.23 The Health and Safety Executive

<http://www.hse.gov.uk/aboutus/index.htm>

Para 3.24 Work-related Death Protocols

<http://www.hse.gov.uk/enforce/wrdp/>

Para 3.25 The Air Accident Investigation Branch

<https://www.gov.uk/government/organisations/air-accidents-investigation-branch>

Para 3.29 The Defence Air Investigation Branch

<https://www.gov.uk/government/organisations/defence-safety-authority>

Para 3.33 The Marine Accident Investigation Branch

<https://www.gov.uk/government/organisations/marine-accident-investigation-branch>

Para 3.36 The Rail Accident Investigation Branch

<https://www.gov.uk/government/organisations/rail-accident-investigation-branch>

Para 3.41 The Crown Prosecution Service

<https://www.cps.gov.uk/legal/assets/uploads/files/MOU%20between%20CPA%20and%20AIBs%20revised%20version%2030.10.08.pdf>

Para 3.41 The Coroners' Society

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/383405/1305\\_Coroners\\_AIB\\_MoU.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/383405/1305_Coroners_AIB_MoU.pdf)

Para 3.43 Chief Fire and Rescue Officers' Association

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/399852/140811-CFOA\\_RAIB\\_MoU\\_-\\_Final.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/399852/140811-CFOA_RAIB_MoU_-_Final.pdf)

Para 3.43 Historic England

<https://historicengland.org.uk/about/what-we-do/historic-englands-role/>

Para 3.43 Flooding & Historic Buildings

<https://historicengland.org.uk/images-books/publications/flooding-and-historic-buildings-2ednrev/>

Para 3.43 The National Trust

<https://www.nationaltrust.org.uk/>

Para 3.43 English Heritage

<http://www.english-heritage.org.uk/>

Para 3.43 Natural England

<https://www.gov.uk/government/organisations/natural-england/about>

Para 3.43 Historic Royal Palaces

[https://en.wikipedia.org/wiki/Secretary\\_of\\_State\\_for\\_Culture,\\_Media\\_and\\_Sport](https://en.wikipedia.org/wiki/Secretary_of_State_for_Culture,_Media_and_Sport)

Para 3.43 National Parks

<http://www.nationalparks.gov.uk/>

## **Chapter 4**

Para 4.2 COMAH

<http://www.hse.gov.uk/comah/>

Para 4.12 Dealing with Fatalities in an Emergency

<https://www.gov.uk/government/publications/guidance-on-dealing-with-fatalities-in-emergencies>

Para 4.15 The Air Accident Investigation Branch

<https://www.gov.uk/government/organisations/air-accidents-investigation-branch>

Para 4.15 The Marine Accident Investigation Branch

<https://www.gov.uk/government/organisations/marine-accident-investigation-branch>

Para 4.15 The Rail Accident Investigation Branch

<https://www.gov.uk/government/organisations/rail-accident-investigation-branch>

Refer to those listed in Chapter 3 above

## Chapter 5

Para 5.3 National Recovery Guidance

<https://www.gov.uk/guidance/national-recovery-guidance-environmental-issues#national-recovery-guidance---recovery-from-a-chemical-biological-radiological-or-nuclear-incident>

Para 5.3 Strategic National Guidance

<https://www.gov.uk/government/publications/strategic-national-guidance-the-decontamination-of-buildings-infrastructure-and-open-environment-exposed-to-chemical-biological-radiological-or-nuclear-materials>

Para 5.7 Useful Case Studies of Hazmat and CBRN incidents

<https://www.gov.uk/government/collections/examples-of-cbrn-and-hazmat-incidents>

Para 5.8 External Support Directory

<https://www.resilience.gov.uk/RDService/Login.aspx?ReturnUrl=%2fRDService%2fhome%2f3182%2f11.-Media-Library>

Para 5.17 & 5.18 External Support Directory (see Para 5.8 above)

Para 5.18 Resilience Direct

<https://www.resilience.gov.uk/RDService/Login.aspx?ReturnUrl=%2fRDService%2fhome%2f3182%2f11.-Media-Library>

Para 5.19 Environment Agency and DCLG Environmental Handbook

<http://www.ukfrs.com/Information%20and%20Research/Environment%20Agency%20and%20DCLG%20environmental%20handbook.pdf>

Para 5.19 Guidelines to help manage environmental responsibilities to prevent pollution and comply with the law.

<https://www.sepa.org.uk/media/100557/ppg-21-pollution-incident-response-planning.pdf>

Para 5.19 regulatory position statement 060

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/359919/LIT\\_9938.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/359919/LIT_9938.pdf)

Para 5.19 MCA STOP notices

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/338808/130802\\_STOP\\_Notice-Waste\\_Management.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338808/130802_STOP_Notice-Waste_Management.pdf)

Para 5.19 Waste legislation and regulations  
<https://www.gov.uk/guidance/waste-legislation-and-regulations>

Para 5.19 regulatory position statement 025  
<https://www.gov.uk/government/publications/hazardous-waste-premises-notification-regulatory-position-statement>

Para 5.25 UK Recovery Handbook for Biological Incidents  
<https://www.gov.uk/government/publications/uk-recovery-handbook-for-biological-incidents>

Para 5.25 UK Recovery Guidance for Chemical Incidents  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/201024/UKRHCI\\_publication\\_31st\\_May\\_2012\\_web2.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/201024/UKRHCI_publication_31st_May_2012_web2.pdf)

Para 5.25 UK Recovery Handbook for Radiation Incidents  
<https://www.gov.uk/government/publications/uk-recovery-handbooks-for-radiation-incidents-2015>

Para 5.25 chemical recovery navigation tool  
<https://www.gov.uk/government/publications/chemical-and-radiation-recovery-navigation-tool-cr-rnt>

Para 5.25 chemical recovery record form  
<https://www.gov.uk/government/publications/chemical-recovery-record-form-crrf-food-inhabited-areas-and-water-environment>

Para 5.25 Inhabited areas; Food; Drinking water  
<https://www.gov.uk/government/publications/radiation-recovery-navigation-tool-inhabited-areas-rad-rnt>

<https://www.gov.uk/government/publications/radiation-recovery-navigation-tool-food-production-rad-rnt>

<https://www.gov.uk/government/publications/radiation-recovery-navigation-tool-drinking-water-supplies-rad-rnt>

Para 5.25 radiation recovery record form  
<https://www.gov.uk/government/publications/radiation-recovery-record-form-food-inhabited-areas-and-drinking-water>

Para 5.25 e-learning module: principles of recovery and remediation



[http://legacyassets.phe.org.uk/tools/CRT\\_elearning/eguide\\_rnt.html](http://legacyassets.phe.org.uk/tools/CRT_elearning/eguide_rnt.html)

Para 5.25 guidance on recovery from flooding: essential information for frontline responders

<https://www.gov.uk/government/publications/recovering-from-flooding-information-for-frontline-responders>

Para 5.27 National Contingency Plan

<https://www.gov.uk/government/consultations/national-contingency-plan-for-marine-pollution-from-shipping-and-offshore-installations>

Para 5.27 Planning the Processing of Waste arising from a Marine Oil Spill: Guide and Decision-making Tool.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/86070/Planning\\_the\\_processing\\_of\\_waste\\_-\\_pre-incident.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/86070/Planning_the_processing_of_waste_-_pre-incident.pdf)

Para 5.28 Shoreline Technical and Operational Advice Notices (STOp).

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/338808/130802\\_STOp\\_Notice- Waste\\_Management.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338808/130802_STOp_Notice- Waste_Management.pdf)

## **Chapter 6**

Para 6.19 Defining Waste Recovery: Permanent Deposit of waste on land

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/338808/130802\\_STOp\\_Notice- Waste\\_Management.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338808/130802_STOp_Notice- Waste_Management.pdf)

Para 6.20 Section 100 of the Building Act 1984

<http://www.legislation.gov.uk/ukpga/1984/55/section/100>

Para 6.22 Waste Strategy

<https://www.gov.uk/government/policies/waste-and-recycling>

Para 6.25 Strategic National Guidance

<https://www.gov.uk/government/publications/strategic-national-guidance-the-decontamination-of-buildings-infrastructure-and-open-environment-exposed-to-chemical-biological-radiological-or-nuclear-materials>

## **Chapter 7**

7.3 Environmental Permitting Regulations

<https://www.gov.uk/government/publications/rgn-11-enforcement-powers>

## **Annex B**

Case Study 2: Wreck of cargo vessel carrying containers and fuel oil in the English Channel 2007

HM Receiver of Wreck

<https://www.gov.uk/government/groups/receiver-of-wreck>

## **Annex H**

Construction and Demolition Waste

<http://www.wrap.org.uk/content/demolition-and-regeneration>

Guidance on classifying different types of waste

<https://www.gov.uk/how-to-classify-different-types-of-waste>

Guidance on hazardous waste

<https://www.gov.uk/dispose-hazardous-waste>

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Guidance on finding someone to move waste

<https://www.gov.uk/guidance/access-the-public-register-for-environmental-information>

Guidance on finding someone to treat hazardous waste

<https://www.gov.uk/hazardous-waste-disposal>

Guidance on determining whether you need an environmental permit (i.e. for onsite treatment of waste)

<https://www.gov.uk/guidance/check-if-you-need-an-environmental-permit>

Guidance on exemptions from the need for a permit (for storing waste)

<https://www.gov.uk/government/collections/waste-exemptions-storing-waste>

Waste shipments

<https://www.gov.uk/topic/environmental-management/waste>

Waste Strategy reducing and managing waste

<https://www.gov.uk/government/policies/waste-and-recycling>

Other waste guidance

<https://www.gov.uk/topic/environmental-management/waste>