

Appendix 19-1 Environmental Risk Record

ID	Hazard	Hazard source and/ or pathway	Receptor	Reasonable worst consequence if event occurred	Could the risk result in serious damage (i.e. could it result in a MA&D)?	Study area of potential impact	Worst Case Severity of Harm	Pre-mitigation			Post-mitigation			
								Duration	Category of Consequence	Proposed mitigation	Likelihood	Tolerability	Significance of Effect	Sources of information
Construction														
Vulnerability of the Proposed Development to natural disasters during construction														
C1	Extreme rainfall events and subsequent flooding	Flooding of the construction site and properties downstream Run-off from construction site Creation of new drainage pathways	<p><i>On-site:</i> Construction personnel and equipment, Sensitive environmental receptors on-site (e.g. groundwater and soils, refer to Chapter 20 of the Environmental Statement (ES) for further description); Existing LTN airport infrastructure and aircrafts; Artefacts of national or international importance during import/export;</p> <p><i>Off-site:</i> Properties; General public; Agricultural land; Sensitive environmental and heritage receptors off-site (e.g. controlled waters, sites of importance for nature conservation, and heritage assets, as identified within Chapter 20 of the ES).</p>	<p><i>On-site:</i> Damage to construction equipment and risk of injury to construction personnel due to flooding; Release of contaminants into the environment, resulting in a major pollution incident due to run-off the construction site (see Risk ID C14); Damage to equipment and infrastructure within the existing LTN airport, stopping airport operations; Damage to artefacts of national or international importance during import/export;</p> <p><i>Off-site:</i> Damage to and evacuation of affected properties due to flooding; Damage to crops; Release of contaminants into the environment, resulting in a major pollution incident.</p>	Yes	1km radius of the Main Application Site	Major	Medium term	Category B	<p>The Draft CoCP sets the requirement for a surface water management plan to be prepared to manage surface water runoff from the construction site prior to the installation of permanent drainage infrastructure. If the installation of permanent drainage impacts on the existing LTN airport drainage network, a temporary drainage system may be required. Furthermore, a survey of the existing drainage system to inform design development would be undertaken. This will mitigate the risk of flooding at the site and downstream of the construction site before permanent drainage is installed. Furthermore, any construction works within areas at risk of flooding will be limited, as set out within the Draft CoCP.</p> <p>The Draft CoCP also outlines measures for pollution prevention from the construction site and requires for a pollution incident response plan to be prepared by the Contractor in case of an accidental release of contaminants (see Risk ID C14).</p> <p>During later phases of construction, permanent drainage infrastructure would have been installed which can accommodate for surface water flows during 1 in 100 years storm event, accounting for an increase in precipitation of 40% due to climate change.</p>	Remote	TifALARP*	Not Significant	ES Chapter 8 Climate Change; ES Chapter 12: Water Resources; Drainage Strategy; Draft Code of Construction Practice (CoCP);
C2	Strong winds, tornadoes	Debris from construction site during strong winds (Foreign Object Debris (FOD) hazard) Unsafe operation of lifting equipment	<p><i>On-site:</i> Construction personnel and equipment, Existing LTN airport infrastructure and aircrafts, Artefacts of national or international importance during import/export</p> <p><i>Off-site:</i> Properties; General public</p>	<p><i>On-site:</i> Damage to construction equipment and risk of injury or death of construction personnel; Collision of aircraft with FOD from construction site; Damage to existing LTN airport infrastructure; Damage to artefacts of national or international importance during import/export;</p> <p><i>Off-site:</i> Damage to property and risk of injury to general public</p>	Yes	500m radius of Main Application Site	Catastrophic	Very long term or Permanent	Category D	<p>All materials and equipment stored on site will be covered and secured to minimise the risk of debris from site during strong winds. Furthermore, weather forecast will be monitored throughout construction to plan for extreme weather events. In line with the Draft CoCP, dust suppression measures will be implemented to dampen down surfaces and minimise the risk of dust from the construction site.</p> <p>A safe system of work will be established for the operation of lifting equipment, including the fitting of lifting equipment with anemometers and stopping work during strong winds, if required, in line with the requirements of Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).</p>	Extremely improbable	TifALARP	Not significant	Draft CoCP
C3	High temperatures, heat waves and drought	Heat Dust from construction site due to dry weather	<p><i>On-site:</i> Construction personnel and equipment, Existing LTN airport infrastructure and aircrafts, Artefacts of national or international importance during import/export</p> <p><i>Off-site:</i> Properties; General public; Agricultural land; Sensitive environmental receptors.</p>	<p><i>On-site:</i> Heat exhaustion of construction personnel; Soiling of equipment; Reduced visibility at existing airfield due to dust from construction site; Damage to artefacts of national or international importance during import/export;</p> <p><i>Off-site:</i> Dust deposition on properties, agricultural land, and sensitive environmental sites; Adverse effect on human health.</p>	No – the effects are unlikely to result in serious damage as defined for the purposes of this assessment, effects due to dust emissions	500m radius of Main Application Site	No Serious Damage	Short term	Not a MA&D	n/a	N/A	N/A	N/A	ES Chapter 6 Air Quality; Draft CoCP
C4	Snow and ice	Extreme cold weather including snowfall Cold weather resulting in icy surfaces	<p><i>On-site:</i> Construction personnel and equipment;</p> <p><i>Off-site:</i> Environmental sensitive receptors; Agricultural land</p>	<p><i>On-Site</i> Risk to the health of construction workers due to freezing temperatures; Failure of construction machinery; Reduced visibility, snow and ice on runway leading to an aircraft accident within the Main Application Site;</p> <p><i>Off-site</i> Melting snow and ice washing pollutants and contaminants into surrounding areas.</p>	Yes	500m radius of Main Application Site	Catastrophic	Very long term or Permanent	Category D	<p>The contractor is to comply with the provisions of the Health and Safety at Work Act 1974, ensuring occupational health and safety arrangements are in place; A safe system of work will be established for the operation of construction machinery and for undertaking works, which will consider risks associated with adverse weather conditions, such as snow (e.g. risks associated with frozen machinery, as well as any increased risk of slips, trips and falls for work at height); LTN airport snow and ice control measures and equipment would be implemented for existing airport operations;</p> <p>Weather forecast will be monitored throughout construction to plan for extreme weather events, including snowfall and ice, as set out within the Draft CoCP; Pollution prevention measures are described in hazard ID C15.</p>	Extremely improbable	TifALARP	Not significant	Draft CoCP
C5	Lightning	Tall equipment which may attract lightning (e.g. cranes). Fire hazard has been considered in risk ID C12. Loss of utilities has been considered in risk ID C17. No other hazard pathways to off-site receptors due to lightning striking the construction site have been identified.	<p><i>On-site:</i> Construction personnel and equipment.</p>	<p><i>On-site:</i> Damage to construction equipment and risk of injury or death of construction personnel;</p>	Yes	Main Application Site	Catastrophic	Very long term or Permanent	Category D	<p>A safe system of work will be established for the operation of equipment which may attract lightning or for any works at increased risk (e.g. roofing, pipework etc.). Furthermore, weather forecast will be monitored throughout construction to plan for extreme weather events, including thunderstorms, as set out in the Draft CoCP.</p>	Extremely improbable	TifALARP	Not significant	Draft CoCP

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						Study area of potential impact	Worst Case Severity of Harm	Duration	Category of Consequence		Likelihood	Tolerability	Significance of Effect	
C6	Reduced visibility, e.g. due to volcanic ash, sand, fog	Volcanic eruptions overseas can produce ash clouds which may reach the UK and impact on the construction site. Reduced visibility due to weather. No hazard pathways to off-site receptors as a result of volcanic ash, sand or fog occurring on the construction site have been identified.	<i>On-site:</i> Construction personnel and equipment.	<i>On-site:</i> Deposition of ashes, sand on construction areas and equipment Reduced visibility limiting construction works.	No - the effects are unlikely to result in serious damage as defined for the purposes of this assessment, assuming that any work	Main Application Site	No Serious Damage	Short term	Not a MA&D	n/a	N/A	N/A	N/A	Bedfordshire Prepared Know Your Risks.

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						Study area of potential impact	Worst Case Severity of Harm	Duration	Category of Consequence		Likelihood	Tolerability	Significance of Effect	
C7	Geological hazards, e.g. ground instability, landslides, ground collapse and sinkholes	Unstable ground conditions, landslides, sinkholes following heavy rainfall	<p><i>On-site:</i> Construction personnel and equipment; Existing LTN airport infrastructure and aircrafts, Artefacts of national or international importance during import/export</p> <p><i>Off-site:</i> Properties; General public; Agricultural land; Sensitive environmental receptors.</p>	<p><i>On-site:</i> Collapse and subsidence of ground can lead to damage to equipment and death or injury; Damage to artefacts of national or international importance during import/export.</p> <p><i>Off-site:</i> Damage to property and risk of injury to general public; Physical damage to sensitive environmental receptors.</p>	No – as discussed within ES Chapter 11 Soils and Geology, the existing ground conditions are not susceptible to	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Chapter 11: Soils and Geology
C8	Seismic hazards, e.g. earthquakes, tremors	Earthquakes, tremors resulting in physical damage	<p><i>On-site:</i> Construction personnel and equipment; Existing LTN airport infrastructure, workers and passengers; Artefacts of national or international importance during import/export</p> <p><i>Off-site:</i> Properties; General public; Agricultural land; Sensitive environmental receptors.</p>	<p><i>On-site:</i> Damage to construction equipment and existing LTN airport infrastructure; Damage to artefacts of national or international importance during import/export; Risk of injury or death due to collapse of buildings;</p> <p><i>Off-site:</i> Damage to property and risk of injury to general public; Physical damage to sensitive environmental receptors.</p>	No - Data collated by British Geological Survey[1] and Musson and Sargeant (2007)[2] demonstrate that the Main Application Site is located within an area with one of the lowest risks of seismic hazards in the UK. Therefore, no MA&D hazards related to seismic activity are considered likely.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	BGS UK Seismic Hazard Mapping ^{1,2}
C9	Space weather (e.g. geomagnetic storms, radiation storms and solar flares)	Disruption of telecommunications Increased radiation. No hazard pathways to off-site receptors as a result of electronic interference impacting on the construction site have been identified.	<i>On site:</i> Construction personnel and equipment;	Interference with radio and telecommunications systems Increase in ionising radiation (e.g. loss of primary navigation system or loss of communications);	No - the effects are unlikely to result in serious damage as defined for the purposes of this assessment, assuming that	Main Application Site	No Serious Damage	Short term	Not a MA&D	n/a	N/A	N/A	N/A	n/a
C10	Wildfires	The Main Application Site is not located within an area at risk of wildfires. Therefore no hazard pathways have been identified.	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11	Sea level rise, tsunamis	The Main Application Site is not located within an area at risk of sea level rise or tsunamis. Therefore no hazard pathways have been identified.	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Vulnerability of the construction of the Proposed Development to major accidents from on-site sources and the potential major accidents resulting from its construction														
C12	Fire and/or explosion at the Main Application Site	Cutting or drilling into unidentified utilities; Release of landfill gas as a result of construction activities; Fire/ explosion at the existing LTN airport (e.g. T1 fuel farm) leading to a domino effect; Unexploded Ordnance (UXO); Storage and handling of fuel or other flammable and combustible material; Explosion risk associated with fuel pipeline, e.g. due to leaks, over pressurisation, drilling, cutting, welding; Electrical faults and faulty wiring; Hot work operations (e.g. welding, smouldering, grinding etc); Smoking; Portable heaters; Temporary lighting and lamps; Arson (also refer to risk ID C26); Lightning (also refer to risk ID C5).	<p><i>On-site:</i> Construction personnel and equipment; Existing LTN airport users, infrastructure and aircrafts; Artefacts of national or international importance during import/export</p> <p><i>Off-site:</i> General public; Properties; Agricultural land; Sensitive environmental and heritage receptors.</p>	<p><i>On-site:</i> Damage to construction equipment and risk of injury or death of construction personnel; Risk of injury or death of the users and workers at the existing LTN airport;</p> <p>Damage to existing LTN airport infrastructure; Reduced visibility due to smoke from fire, affecting aircraft;</p> <p>Damage to artefacts of national or international importance during import/export;</p> <p><i>Off-site:</i> Damage to property and risk of injury or death to the general public Indirect effects on human health, property, heritage assets and wildlife due to smoke and ash deposition.;</p>	Yes	2km radius of Main Application Site	Major	Very long term or Permanent	Category D	<p>Utilities searches, desk studies, Ground Investigation, UXO risk assessment[3] and consultation with statutory stakeholders have been undertaken to assess the risks associated with existing services, ground gas from landfill, and UXO, and to plan construction works accordingly.</p> <p>As set out in the Draft CoCP and identified in the UXO risk assessment, control measures for earthworks have been specified, including a watching brief for UXO during construction; and a requirement for an UXO Emergency Response Plan and UXO Safety and Awareness briefings for groundworks contractors.</p> <p>Gas protection measures will be incorporated into the design in compliance with the British Standard 8485 , where required.</p> <p>Fire safety risks at the construction site will be managed in compliance with CDM Regulations 2015 and Regulatory Reform (Fire Safety) Order 2005 (FSO) (England and Wales). A Fire Risk Assessment will be completed and implemented to manage the risks throughout construction, including emergency plans and procedures and measures for the safe storage and handling of fuel.</p> <p>Any hot work operations will be completed under a Hot Work Permit.</p> <p>Fuel pipeline connection to the existing Fina pipeline will be constructed in compliance with Pipeline Safety Regulations 1996 (as amended).</p> <p>The existing LTN airport is managed in line with safety and security management systems and emergency plans compliant with relevant CAA guidance and legislation. Furthermore, the existing T1 fuel farm is managed and regularly inspected in compliance with its COMAH consent. Any hazardous substances</p>	Extremely improbable	TifALARP	Not significant	ES Chapter 11: Soils and Geology Draft CoCP

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											stored on site for construction (e.g. fuel, oils etc.) are to be located landside and at distance from hazardous substances stores associated with the operating airport to minimise the risk of a domino effect in case of fire or explosion.				
C13	Ground instability	Potential instability of excavations Platform with batters of up to 25m Settlement of proposed platform Construction over the landfill	<p><i>On-site:</i> Construction personnel and equipment; Existing LTN airport users, infrastructure and aircrafts; Artefacts of national or international importance during import/export.</p> <p><i>Off-site:</i> General public; Properties; Agricultural land; Sensitive environmental and heritage receptors.</p>	<p><i>On-site:</i> Collapse and subsidence of ground that can lead to damage to equipment and death or injury of construction personnel. Damage to existing LTN airport infrastructure and death or injury of LTN airport users and workers; Damage to artefacts of national or international importance during import/export;</p> <p><i>Off-site:</i> Damage to property, agricultural land, heritage assets and risk of injury or death to the general public; Physical damage to sensitive environmental sites.</p>	Yes	500m radius of Main Application Site	Major	Very long term or Permanent	Category D	<p>An analysis of cut slopes has been undertaken as part of the earthworks design and slopes with a stable gradient have been specified in order to mitigate risks on and off-site.</p> <p>A safe system work will be established by the Contractor for earthworks and to secure any temporary slopes from collapse. Furthermore, earthworks sequence would be planned to avoid large vertical drops and unprotected edges. Work areas would be clearly identified to prevent access to workers in areas of excavation with the use of heavy plant machinery. Newly formed earthbanks will be seeded and/ or planted to secure slopes.</p> <p>In order to mitigate the risk of ground settlement, careful treatment of the formation materials will be essential and a starter layer of granular material overlaid by geotextile is proposed across the earthworks footprint as part of the geotechnical design.</p> <p>Construction over the landfill will require piling for the new terminal building and multi-storey car park. Furthermore the design of hardstanding and road infrastructure would account for the potential settlement of landfill material.</p> <p>It is considered that all practicable mitigation has been incorporated within the Proposed Development.</p>	Extremely improbable	TifALARP	Not significant	Design, Construction Report Draft CoCP	
C14	Major leaks and spillages at the Main Application Site resulting in contamination or release of hazardous substances	<p>Handling and storage of hazardous substances, i.e. chemicals and fuels;</p> <p>Loss of containment;</p> <p>Contaminated run-off from site;</p> <p>During construction works it is possible that more leachate will be temporarily generated as areas of landfill waste are exposed;</p> <p>Works on landfill releasing landfill hazardous substances such as asbestos.</p>	<p><i>On-site:</i> Construction personnel; Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Sensitive environmental receptors on-site (e.g. groundwater and soils).</p> <p><i>Off-site:</i> General public; Agricultural land; Sensitive environmental receptors.</p>	<p><i>On-site:</i> Risk of contact with hazardous substances to construction personnel, LTN airport users and workers; Damage to artefacts of national or international importance during import/export;</p> <p><i>Off-site:</i> Risk of contact with hazardous substances by general public; Contamination of sensitive environmental receptors and agricultural land.</p>	Yes	2km radius of the Main Application Site, off-site highway improvement sites and construction traffic routes	Major	Long term	Category C	<p>A set of pollution and contamination control measures, including a pollution incident response plan would be implemented as required by the Draft CoCP and in compliance with Control of Substances Hazardous to Health Regulations (COSHH).</p> <p>All hazardous substances would be double banded to at least 110% of the stored capacity and located away from drainage infrastructure.</p> <p>Temporary leachate collection sumps are proposed to be installed. These sumps will be regularly monitored during works and where significant quantities of leachate is collected in the wells, this will be pumped and disposed of off-site. Fuel pipeline connection to the existing Fina pipeline will be constructed in compliance with Pipeline Safety Regulations 1996 (as amended).</p>	Extremely remote	TifALARP	Not significant	ES Chapter 11: Soils and Geology; ES Chapter 12: Water Resources; Draft CoCP	
C15	Impacts on road safety caused by the construction traffic of the Proposed Development	<p>Road traffic accidents involving Proposed Development's construction traffic</p> <p>Road traffic accidents due to temporary off-site highway works</p>	<p><i>Off-site:</i> Motorised and non-motorised users of routes assigned for Proposed Development's construction traffic Properties</p>	<p><i>Off-site:</i> Death or injury of road users; Damage to properties;</p>	Yes	Construction traffic routes	Major	Very long term or Permanent	Category D	<p>An assessment of the effects of construction traffic on road safety is provided within ES Chapter 7: Traffic and Transport and the Transport Assessment.</p> <p>Construction traffic movements would be managed by a Construction Logistics Plan (CLP) and a Construction Traffic Management Plan (CTMP).</p>	Extremely improbable	TifALARP	Not significant	ES Chapter 7: Traffic and Transport CLP CTMP Transport Assessment	
C16	Accidents resulting from the interface of existing LTN airport operations and the construction activities associated with the Proposed Development (under normal or emergency conditions)	<p>Construction activities causing an aircraft accident due to infringement of EASA clearance zones.</p> <p>Construction works causing electronic interference to airport radio and telecommunications systems.</p> <p>Construction lighting disrupting visibility.</p> <p>Collision of aircraft or airport vehicles with construction traffic.</p> <p>Cut and cover tunnel box construction of DART under live Taxiways Delta and Foxtrot.</p> <p>Construction work may affect the taxiway and runways by way of settlement or debris on the surface (see Risk ID C13 and C2).</p> <p>Aircraft accident or incident unrelated</p>	<p><i>On-site:</i> Construction personnel and equipment; Aircraft passengers; LTN airport users and workers; Existing LTN airport infrastructure; Artefacts of national or international importance during import/export.</p>	<p><i>On-site:</i> Aircraft accident; Death or injury of aircraft passengers, airport users and workers, and construction workers; Damage to existing airport infrastructure and construction equipment. Disruption to the operation of LTN airport; Damage to artefacts of national or international importance during import/export;</p>	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	<p>In line with a detailed Construction Phase Plan, construction methods and equipment will be chosen that comply with restrictions, such as height of equipment, so that they do not infringe taxiway, apron or runway regulated clearances. These heights and safe working constraints will be dependent on the Obstacle Limitation Surface (OLS) heights of the area and would not be compromised in any instance. Restrictions on working will also be implemented due to jet blast and wingtip clearance. For example the phasing of construction on the airfield apron has been proposed so that aircraft can manoeuvre at regulated safe working distances from construction. A full safety plan will be developed and implemented, setting out the appropriate distances for workforce and plant to operate.</p> <p>Procedures for safe traffic management would be specified during the detailed construction phasing planning. Phases of construction that are near to taxiing aircraft, such as on the additional taxiways may require revised or curtailed taxiing routes to avoid being in close proximity to live construction areas.</p> <p>The volume of airside traffic would be minimised where possible. Security and vehicle cleanliness of construction traffic to airside areas would be tightly controlled. Furthermore, construction traffic would be segregated with separate entry and exit routes.</p> <p>Careful construction phase planning would be undertaken to allow LTN airport to remain operational throughout construction. This may include temporary taxiway diversions, for example for the construction of DART extension to Terminal 2.</p>	Extremely improbable	TifALARP	Not significant	Draft CoCP	
C17	Loss of utilities	Unidentified utilities, including gas, electricity, water and broadband impacted by excavation, piling, cutting and drilling works.	<p><i>On-site:</i> Existing LTN airport infrastructure;</p> <p><i>Off-site:</i> Properties served by such utilities</p>	<p><i>On-site:</i> Disruption of utilities can lead to an interruption of existing LTN airport communications and services which may increase another MA&D risk; Disruption of operability of emergency services at the LTN airport;</p> <p><i>Off-site:</i> Disruption of utilities for properties</p>	Yes	500m radius of the Main Application Site and off-site highway improvements	No Serious Damage	Short term	Not a MA&D	<p>Services critical to the airport operations would be protected at all times during the construction works. Inspection pits for the buried utilities would be performed and clearances clearly demarcated on site.</p>	N/A	N/A	N/A	Draft CoCP	
C18	Emergency response activities implemented on	Water from fire extinguishing draining into environmentally sensitive areas and/ or controlled	<p><i>On-site:</i> Groundwater</p> <p><i>Off site:</i></p>	Contamination and pollution of identified sensitive environmental receptors	Yes	500m radius of the Main Application Site	No Serious Damage	Medium term	Not a MA&D	Refer to mitigation summarised under Risk ID C1	N/A	N/A	N/A	Chapter 11: Soils and geology; Chapter 12: Water Resources; Draft CoCP	

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							Worst Case Severity of Harm	Duration	Category of Consequence		Likelihood	Tolerability	Significance of Effect	Sources of information
	the Main Application Site	waters	Sensitive environmental receptors, controlled waters and agricultural land			Application Site								
C19	Increased risk of bird strike	Increased risk of bird strike due to construction activities (e.g. exposure of landfill material)	On-site: Aircrafts and aircraft passengers; Artefacts of national or international importance during import/export.	On-site: Aircraft accident; Risk of injury or death; Damage to artefacts of national or international importance during import/export;	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	The Contractor will be required to manage the risk of construction activities attracting birds, e.g. during the excavation and sorting of landfill materials.	Extremely improbable	TifALARP	Not significant	
C20	Absent or deficient safety/ environmental management systems (e.g. inadequate planning, resource provision, procedures)	Increased risk of MA&D hazards described within this register.	On-site: Construction personnel and equipment; Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Off-site: General public; Agricultural land; Sensitive environmental receptors.	As described within this register for all hazards relevant to the construction phase.	Yes	2km radius within Main Application Site and off-site highway improvement works	Catastrophic	Very long term or Permanent	Category D	As set out in the Draft CoCP, the Contractor will be required to set up and implement accredited safety and environmental management systems (e.g. certified to ISO 45001 and 14001 standards or equivalent). Construction management and security plans would need to include potential for flying debris/projectiles from rotating equipment; dust management; interaction with airport safety/environmental/emergency systems and vice versa (including obstruction of signs and lighting); interaction with airport operations, systems and utilities; collision/impact; airport security/cyber security/access; heavy lifts; use of tall and/or mobile equipment; communication and control of temporary changes (e.g. to runways, taxiways, roadways, access/egress routes); and changes to emergency response arrangements, capacity and capability). Regular audits will be undertaken to monitor compliance against the management systems. The existing LTN airport environmental and safety management procedures will be followed within the site of the existing airport.	Extremely improbable	TifALARP	Not significant	Draft CoCP
C21	Absent or deficient security provision (e.g. inadequate planning, resource provision, procedures)	Increased risk of vandalism/ crime/ terrorism (see Risk ID C26)	On-site: Construction personnel and equipment; Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Off-site: General public;	As described within this register for Risk ID C26	Yes	Main Application Site	Catastrophic	Very long term or Permanent	Category D	Security for the construction site will be provided with access only provided to those who have passed relevant induction and security clearance, if required. As set out in the Draft CoCP site hoarding will be provided around the construction site perimeter and regularly inspected. The existing LTN airport security management procedures will be followed within the site of the existing airport.	Extremely improbable	TifALARP	Not significant	Draft CoCP
Vulnerability of the construction of the Proposed Development to major accidents from off-site sources														
C22	Fire at a neighbouring site	Fire at a neighbouring site impacting on the construction of the Proposed Development	On-site: Construction personnel and equipment; Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Off-site: General public; Agricultural land; Sensitive environmental receptors;	On-site: Damage to construction equipment and risk of injury or death of construction personnel; Risk of injury or death of the users and workers at the existing LTN airport; Damage to existing LTN airport infrastructure; Reduced visibility due to smoke from fire, affecting aircraft; Damage to artefacts of national or international importance during import/export; Off-site: Damage to property and risk of injury or death to	Yes	2km radius of Main Application Site	Catastrophic	Very long term or Permanent	Category D	Risk mitigation measures set out under Risk ID C12 will apply, if fire from a neighbouring site was to spread into the construction site.	Extremely improbable	TifALARP	Not significant	
C23	Explosion and structural collapse at neighbouring sites	Explosion and structural collapse impacting on the construction of the Proposed Development	On-site: Construction personnel and equipment; Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Off-site: General public; Agricultural land;	Falling debris or collapse of infrastructure within the neighbouring area. Impeded access to the Main Application Site. Loss of utilities at the Main Application Site (considered under Risk ID C17). Damage to artefacts of national or international	No – the effects are unlikely to cause serious damage, as defined for the purposes of this assessment.	Main Application Site and offsite highway works	No Serious Damage	Short term	Not a MA&D	n/a	N/A	N/A	N/A	n/a
C24	Contamination or release of hazardous substances by off-site sources;	Contamination or release of hazardous substances impacting on the construction of the Proposed Development	On-site: Construction personnel; Existing LTN airport users and workers; Off-site: General public; Agricultural land; Sensitive environmental receptors.	On-site: Risk of contact with hazardous substances to construction personnel, LTN airport users and workers. Off-site: Risk of contact with hazardous substances by general public; Contamination of sensitive environmental receptors and agricultural land.	Yes	2km radius of the Main Application Site, off-site highway improvement sites and construction traffic routes	Major	Long term	Category C	Refer to mitigation summarised under Risk ID C14	Extremely remote	TifALARP	Not significant	n/a
C25	External interference (e.g. lasers, fireworks, sky lanterns, drones, wind turbine)	No hazard pathways from external interference impacting on the construction works of the Proposed Development have been identified. See Risk ID C12 regarding fire hazard and Risk ID C26 regarding vandalism/ crime/ terrorism	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C26	Vandalism/ crime/terrorism leading to increased risk to the safety of members of public and site	Criminal damage/ vandalism; Theft; Terrorist acts; Hijacked aircraft; Unauthorised vehicles accessing the construction site.	On-site: Construction personnel and equipment; Existing LTN airport users and workers, and infrastructure; Artefacts of national or international importance during import/export.	Death or risk of injury to construction personnel, LTN airport users, workers and the general public Damage to construction equipment and LTN airport infrastructure; Damage to artefacts of national or international	Yes	500m radius of Main Application Site	Catastrophic	Very long term or Permanent	Category D	Security for the construction site will be provided with access only provided to those who have passed relevant induction and security clearance, if required. As set out in the Draft CoCP site hoarding will be provided around the construction site perimeter and regularly inspected. The existing LTN airport security management procedures will be followed within	Extremely improbable	TifALARP	Not significant	Draft CoCP

ID	Hazard	Hazard source and/ or pathway	Receptor	Reasonable worst consequence if event occurred	Could the risk result in serious damage (i.e. could it result in a MA&D)?	Study area of potential impact	Worst Case Severity of Harm	Pre-mitigation			Proposed mitigation	Post-mitigation			
								Duration	Category of Consequence	Likelihood		Tolerability	Significance of Effect	Sources of information	
		workers		Damage to artefacts of national or international importance during import/export							The existing LTN airport security management procedures will be followed within the site of the existing impact				
C27	Civil unrest or protest	Members of the public protesting; LTN airport staff industrial action	On-site: Construction personnel and equipment; Construction personnel and equipment;	Disruption to construction and LTN airport operations; Damage of equipment or existing infrastructure.	No – no effects resulting in serious damage as	Main Application Site	No Serious Damage	Short term	Not a MA&D	n/a	N/A	N/A	N/A	n/a	
C28	Disease outbreak and infestation	Importation of biological agents/ biohazard/ disease/ pathogen, including by disembarking passengers and/ or flight with controlled disease or biohazard; Disease outbreak or epidemics impacting the construction workers. Discharge from the construction site may spread biohazard due to contaminated runoff (see Risk ID C14)	On-site: Construction personnel; Existing LTN airport users and workers; Off-site: General public; Agricultural land; Sensitive environmental receptors	Death or risk of injury to construction personnel, LTN airport users, workers and the general public. Contamination of sensitive environmental receptors and agricultural land due to contaminated runoff from the construction site.	Yes	1km of the Main Application Site	Catastrophic	Very long term or Permanent	Category D	Existing LTN airport safety and security management procedures will be followed to minimise the risk of biohazards or epidemics. Construction workers will use appropriate Personal Protective Equipment suitable to the work activity. See Risk ID C14 for the management of contaminated runoff.	Extremely improbable	TifALARP	Not significant	Bedfordshire Prepared Know Your Risks.	
C29	Cyber-attack and digital data security	Hackers Security breach of the construction site	On-site: Construction personnel;	Loss of data confidentiality and integrity; Unauthorised access to the airport or bypassed security systems; Risk of vandalism/ crime/ terrorism is considered under Risk ID C26	No – the effects are not considered to result in serious damage as defined for the purposes of this	Main Application Site	No Serious Damage	Short term	Not a MA&D	n/a	n/a	n/a	n/a	n/a	
Construction of the Proposed Development impacting on the vulnerability of a receptor to a MA&D hazard															
C30	Limiting the ability of an emergency response plan to be implemented	Construction works impeding or obstructing the response of emergency services, e.g. highway improvement works or works within the operational LTN airport Increased response time of emergency services	On-site: Construction personnel; Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Off-site: General public; Agricultural land; Sensitive environmental receptors	Full or partial obstruction to the operation of emergency services, leading to a slow response time and increased number of deaths/ injuries, spread of contamination or damage to artefacts of national or international importance during import/export.	Yes	2km radius of the Main Application Site, offsite highways improvement works	Catastrophic	Very long term or Permanent	Category D	The Contractor will liaise with emergency services and LLAOL to ensure that emergency access routes, muster points and parking for emergency services vehicles are not impeded during construction. Emergency access and safe evacuation routes will be maintained at the LTN airport and construction site throughout the works.	Extremely improbable	TifALARP	Not significant	Draft CoCP	
Operation															
Vulnerability of the Proposed Development to natural disasters during operation															
O1	Extreme rainfall events and subsequent flooding	Flooding of the site and properties downstream Run-off from site Creation of new drainage pathways	On-site: Sensitive environmental receptors on-site; LTN airport infrastructure and aircrafts; Artefacts of national or international importance during import/export. Off-site: Properties; Agricultural land; General public; Sensitive environmental and heritage receptors off-site.	On-site: Release of contaminants into the environment, resulting in a major pollution incident due to run-off from the site (see Risk ID O14); Damage to equipment and infrastructure within the existing LTN airport, stopping airport operations; Damage to artefacts of national or international importance during import/export; Off-site: Damage to and evacuation of affected properties due to flooding; Damage to crops; Release of contaminants into the environment, resulting in a major pollution incident.	Yes	1km radius of the Main Application Site	Major	Medium term	Category B	The Proposed Development lies within an area of low risk of flooding, as set out within the FRA; The drainage strategy of the Proposed Development can accommodate for surface water flows during 1 in 100 years storm event, accounting for an increase in precipitation of 40% due to climate change. The new drainage system will be monitored in terms of levels of contamination and volume and will be diverted into storage tanks when trigger levels are reached – for either volume or contamination levels. From the storage tanks, the water will be treated by an effluent treatment plant (ETP) before discharging into an infiltration basin. The new drainage system will also divert some of the existing drainage runs at the LTN airport away from the current soakaways to ensure the collected surface water has the opportunity of being monitored and if required stored and treated before discharging into the infiltration basin. The infiltration basin has been located underground to reduce the risk of bird strikes. It is important to note that the infiltration basin has been sized such that it should remain dry in all but the most severe storms. Infiltration into the Chalk will be relatively fast. The Fire Training Ground (to be located to the south of the runway) would be wholly self-contained and not drain to ground under any circumstance. Effluent generated from fire training activities (containing foam and hydrocarbon breakdown constituents) may, subject to securing the necessary consents, be directed into existing public foul sewerage systems or be tankered away for treatment off-site. See Risk ID O14 for a description of mitigation measures incorporated within design for pollution prevention.	Remote	TifALARP	Not significant	ES Chapter 8 Climate Change; ES Chapter 12: Water Resources; Drainage Strategy;	
O2	Strong winds, tornadoes	Aircraft accident due to adverse weather conditions	On-site: Existing LTN airport users and workers, infrastructure and aircrafts; Artefacts of national or international importance during import/export. Off-site: Properties; General public	On-site: Aircraft accident; Death or injury to LTN airport users or workers; Damage to LTN airport infrastructure; Damage to artefacts of national or international importance during import/export; Off-site: Damage to property and risk of injury to general	Yes	500m radius of Main Application Site	Catastrophic	Very long term or Permanent	Category D	LTN airport will continue to be managed in line with CAA guidance for airport safeguarding, this will include monitoring of weather at the place of departure, along the route and at the intended destination to prevent aircraft incidents due to adverse weather conditions. Note the on-site rescue and firefighting service are the first-responders for any incident within the LTN airport boundary. Public Safety Zones have been established at either ends of the runway, where	Extremely improbable	TifALARP	Not significant		

ID	Hazard	Hazard source and/ or pathway	Receptor	Reasonable worst consequence if event occurred	Could the risk result in serious damage (i.e. could it result in a MA&D)?	Pre-mitigation				Post-mitigation			Sources of information	
						Study area of potential impact	Worst Case Severity of Harm	Duration	Category of Consequence	Proposed mitigation	Likelihood	Tolerability		Significance of Effect
				public		Public Safety Zone		Permanent		planning restrictions apply, to minimise the number of people and properties at risk in case of an incident occurring during aircraft landing or take-off.				
O3	High temperatures, heat waves and drought	Heat No hazard pathways from the operational airport to off-site receptors have been identified.	<i>On-site:</i> Existing LTN airport users and workers;	<i>On-site:</i> Heat exhaustion; Overheating of equipment and buildings; Reduced visibility at existing airfield due to dust;	No – the effects of high temperatures are unlikely to result in serious damage as defined for the purposes of this assessment.	Main Application Site	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ES Chapter 8 Climate Change;
O4	Snow and ice	Extreme cold weather resulting in snow and ice on runway or taxiways	<i>On-site:</i> Existing LTN airport users and workers; Artefacts of national or international importance during import/export.	<i>On-site:</i> Aircraft accident; Road traffic incident at the airport Contaminated run-off from melting snow and ice; Damage to artefacts of national or international importance during import/export;	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	LTN airport will continue to be managed in line with CAA guidance for airport safeguarding, this includes implementing a control plan for the management of snow and ice and the use of de-icers and snow ploughs for runways, taxiways and aprons. Note the on-site rescue and firefighting service are the first-responders for any incident within the LTN airport boundary. Public Safety Zones have been established at either ends of the runway, where planning restrictions apply, to minimise the number of people and properties at risk in case of an incident occurring during aircraft landing or take-off. Refer to Risk ID O1 on drainage strategy for pollution prevention measures.	Extremely improbable	TifALARP	Not significant	
O5	Lightning	Tall equipment which may attract lightning (e.g. radio or telecommunications masts) and aircraft. Fire hazard has been considered in risk ID O12. Loss of utilities has been considered in risk ID O17.	<i>On-site:</i> Existing LTN airport users and workers; Existing LTN airport infrastructure and aircrafts; Artefacts of national or international importance during import/export.	<i>On-site:</i> Aircraft accident; Loss of telecommunications; Damage to artefacts of national or international importance during import/export;	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	LTN airport will continue to be managed in line with CAA guidance for airport safeguarding, this will include monitoring of weather at the place of departure, along the route and at the intended destination to prevent aircraft incidents due to adverse weather conditions . Note the on-site rescue and firefighting service are the first-responders for any incident within the LTN airport boundary. Public Safety Zones have been established at either ends of the runway, where planning restrictions apply, to minimise the number of people and properties at risk in case of an incident occurring during aircraft landing or take-off. The Proposed Development has been designed in compliance with the Electricity at Work Regulations 1989 and BS EN/IEC 62305 for the installation of Lightning	Extremely improbable	TifALARP	Not significant	
O6	Reduced visibility, e.g. due to volcanic ash, sand, fog	Volcanic eruptions overseas can produce ash clouds which may reach the UK and impact on the construction site. Reduced visibility due to weather	<i>On-site:</i> Existing LTN airport users and workers; Artefacts of national or international importance during import/export.	<i>On-site:</i> Deposition of ashes on LTN airport infrastructure; Aircraft accident resulting in death or injuries; Damage to artefacts of national or international importance during import/export;	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	LTN airport will continue to be managed in line with CAA guidance for airport safeguarding, this will include monitoring of weather at the place of departure, along the route and at the intended destination to prevent aircraft incidents due to adverse weather conditions. Note the on-site rescue and firefighting service are the first-responders for any incident within the LTN airport boundary. Public Safety Zones have been established at either ends of the runway, where planning restrictions apply, to minimise the number of people and properties at risk in case of an incident occurring during aircraft landing or take-off.	Extremely improbable	TifALARP	Not significant	
O7	Geological hazards, e.g. ground instability, landslides, ground collapse and sinkholes	Unstable ground conditions, landslides, sinkholes following heavy rainfall	<i>On-site:</i> Existing LTN airport infrastructure and aircrafts; Artefacts of national or international importance during import/export. <i>Off-site:</i> Properties; General public; Agricultural land;	<i>On-site:</i> Collapse and subsidence of ground can lead to damage to equipment and death or injury; Damage to artefacts of national or international importance during import/export; <i>Off-site:</i> Damage to property and risk of injury to general public; Physical damage to sensitive environmental receptors.	No – as discussed within ES Chapter 11 Soils and Geology, the existing ground conditions are not	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Chapter 11: Soils and Geology
O8	Seismic hazards, e.g. earthquakes, tremors	Earthquakes, tremors resulting in physical damage	<i>On-site:</i> LTN airport infrastructure, workers and passengers; Artefacts of national or international importance during import/export. <i>Off-site:</i> Properties; General public; Agricultural land; Sensitive environmental receptors.	<i>On-site:</i> Damage to LTN airport infrastructure; Risk of injury or death due to collapse of buildings; Damage to artefacts of national or international importance during import/export; <i>Off-site:</i> Damage to property and risk of injury to general public; Physical damage to sensitive environmental receptors.	No - Data collated by British Geological Survey[1] and Musson and Sargeant (2007)[2] demonstrate that the Main Application Site is located within an area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	BGS UK Seismic Hazard Mapping ^{1,2}
O9	Space weather (e.g. geomagnetic storms, radiation storms and solar flares)	Disruption of telecommunications Increased radiation. No hazard pathways to off-site receptors as a result of electronic interference impacting on the operation of the Proposed Development have been identified.	<i>On site:</i> Existing LTN airport users and workers, infrastructure and aircrafts; Artefacts of national or international importance during import/export.	Interference with radio and telecommunications systems (e.g. loss of primary navigation system or loss of communications); Aircraft accident; Damage to artefacts of national or international importance during import/export;	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	LTN airport will continue to be managed in line with CAA guidance for airport safeguarding, this will include monitoring of weather at the place of departure, along the route and at the intended destination to prevent aircraft incidents due to adverse weather conditions. Note the on-site rescue and firefighting service are the first-responders for any incident within the LTN airport boundary. Public Safety Zones have been established at either ends of the runway, where planning restrictions apply, to minimise the number of people and properties at risk in case of an incident occurring during aircraft landing or take-off.	Extremely improbable	TifALARP	Not significant	

ID	Hazard	Hazard source and/ or pathway	Receptor	Reasonable worst consequence if event occurred	Could the risk result in serious damage (i.e. could it result in a MA&D)?	Study area of potential impact	Pre-mitigation			Proposed mitigation	Post-mitigation			
							Worst Case Severity of Harm	Duration	Category of Consequence		Likelihood	Tolerability	Significance of Effect	Sources of information
O10	Wildfires	The Main Application Site is not located within an area at risk of wildfires. Therefore no hazard pathways have been identified.	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
O11	Sea level rise, tsunamis	The Main Application Site is not located within an area at risk of sea level rise or tsunamis. Therefore no hazard pathways have been identified.	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Vulnerability of the operation of the Proposed Development to major accidents from on-site sources and the potential major accidents resulting from its operation														
O12	Fire and/or explosion at the Main Application Site	Storage and handling of fuel or other flammable and combustible material; Aircraft accidents; LTN T2 activities, e.g. restaurants; Release of landfill gas; Fire/ explosion at the existing LTN airport (e.g. T1 fuel farm) leading to a domino effect; Explosion risk associated with fuel pipeline, e.g. due to leaks; Static discharge; Equipment failure, electrical faults and faulty wiring; Smoking; Portable heaters; Arson (also refer to risk ID O27); Lightning (also refer to risk ID O5).	On-site: Existing LTN airport users, workers, infrastructure and aircrafts; Artefacts of national or international importance during import/export. Off-site: General public; Properties; Agricultural land; Sensitive environmental and heritage receptors.	On-site: Risk of injury or death of the users and workers at the existing LTN airport; Damage to existing LTN airport infrastructure; Reduced visibility due to smoke from fire, affecting aircraft; Off-site: Damage to property and risk of injury or death to the general public; Indirect effects on human health, property, heritage assets and wildlife due to smoke and ash deposition; Existing LTN airport users and workers, infrastructure and aircrafts.	Yes	2km radius within Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	The design of Proposed Development has been developed in accordance with Schedule 1, Part B of the Building Regulations (2010) (as amended), Regulatory Reform (Fire Safety) Order 2005, and BS7974 Application of fire safety engineering principles to the design of buildings. A fire and evacuation strategy will be implemented on site, which sets out the emergency procedures and evacuation routes in case of fire. The on-site rescue and firefighting are the first-responders for any incident within the LTN airport boundary. A three-minute response time across the airport will be maintained. The airport layout has been developed in consultation with the existing LTN airport fire safety and emergency resilience officers. A hydrant system will connect to all new aircraft stands and the existing number of emergency water tanks around the runway will be retained. Storage and handling of fuels within the fuel farm will be carried out in accordance with its COMAH and Hazardous Substances Consents and safety management system. This will include measure to minimise the risk of fire and explosion, which may include electrical bonding and earthing of equipment, installation of Remotely Operated Shut-Off Valves (ROSOV) in the fuel transfer pipelines/ storage tanks to isolate the equipment in an emergency, and installation of fire safe shut off valves, inclusion of high integrity independent tank overfill protection systems, leak-tight bunds should be installed and all bund penetrations should be fire resistant as well as being leak-tight. Ground gas protection measures are summarised under Risk ID C12.	Extremely improbable	TifALARP	No	
O13	Ground instability	Ground instability at the Main Application Site associated with the ground settlement of the built up platform and construction on the landfill has been considered under Risk ID C13.	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a
O14	Major leaks and spillages at the Main Application Site resulting in contamination or release of hazardous substances	Handling and storage of hazardous substances, i.e. chemicals and fuels; Loss of containment; Contaminated run-off from site; Creation of new drainage pathways to sensitive receptors	On-site: Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Sensitive environmental receptors on-site (e.g. groundwater and soils). Off-site: General public; Agricultural land; Sensitive environmental receptors.	On-site: Risk of contact with hazardous substances to LTN airport users and workers. Off-site: Risk of contact with hazardous substances by general public; Contamination of sensitive environmental receptors and agricultural land.	Yes	2km radius within the Main Application Site	Catastrophic	Long term	Category D	A number of pollution prevention measures are being considered for inclusion within the drainage design. These include the following: • Full retention separators for all runoff from aprons, taxiways and the runway. Bypass separators would only be used in areas for short term parking or road ways that receive light contamination. • An Effluent Treatment Plant (ETP) for the de-icing agents. • Automated and real time monitoring of volume and chemical content pre and post treatment that will control the actuated inlet valves to storage chamber upstream from the ETP to divert water above the contamination trigger levels to storage for treatment. • Emergency isolation valves have been positioned strategically for use in the event of severe pollutant spillages. If high levels of TOC (Total Organic Compound) have entered the storage tanks, access points will be provided to allow the effluent to be tankered away, for treatment off site. • Foul water will be treated by a Sewage Treatment Plant (SPT) prior to being discharged into the infiltration basin. • Permeable paving is proposed for long term car parks which will include a bio membrane that will treat the fuel and oils leaks and include storage in the paving build up. • Leachate from the area of landfill to be built on will be controlled by capping the area with a water proof membrane in order to prevent water ingress. Hence the area will be impermeable and surface water will be channelled towards the Thames Water sewer network or soakaways. • Effluent generated from fire training activities at the Fire Training Ground will, subject to securing the necessary consents, be directed into existing public foul sewerage systems or be tankered away for treatment off-site. • The fuel farm will be surrounded by a bund. Surface water will drain through petrol interceptors with sensors to measure water quality. If contamination reaches high enough levels to trigger the actuated inlets valves, the water will be diverted	Extremely improbable	TifALARP	Not significant	Chapter11: Soils and Geology; Chapter 12: Water Resources; Drainage Strategy;

ID	Hazard	Hazard source and/ or pathway	Receptor	Reasonable worst consequence if event occurred	Could the risk result in serious damage (i.e. could it result in a MA&D)?	Study area of potential impact	Worst Case Severity of Harm	Pre-mitigation			Post-mitigation				
								Duration	Category of Consequence	Proposed mitigation	Likelihood	Tolerability	Significance of Effect	Sources of information	
											away from the infiltration basin and towards the ETP. If a significant leak occurred from the tanks, the actuated inlet valves would close the drainage completely and the fuel spill would be tankered away for treatment off-site. Storage and handling of fuels within the fuel farm will be carried out in accordance with its COMAH and Hazardous Substances Consents and safety management system. • The pollution prevention strategy for the use of de-icers will include: - Improved controls and spill reporting, - All refuelling vehicles will carry spill kits to limit the amount from spills reaching the drainage system, - Improved controls and management of the application of ground de-icers, - Improved controls and management for application of de-icers to aircraft, - No products used for de-icing will be classified as hazardous.				
O15	Impacts on road safety due to an increase in traffic movements associated with the Proposed Development	<i>On-site:</i> Increased number of vehicular and aircraft movements at the LTN airport <i>Off-site:</i> Increase in road traffic and changes to junction layouts;	<i>On-site:</i> LTN airport users, workers and aircraft LTN airport infrastructure; Artefacts of national or international importance during import/export. <i>Off-site:</i> Motorised and non-motorised users of the road network leading to the LTN airport Properties	<i>On-site:</i> Death or injury of LTN airport users, workers and aircraft passengers; Damage to LTN airport infrastructure; Damage to artefacts of national or international importance during import/export; <i>Off-site:</i> Death or injury of road users; Damage to properties;	Yes	Main Application Site Road network assessed within the TA	Catastrophic	Very long term or Permanent	Category D	Improvements on the highway network have been carried out to minimise the effects of increased traffic derived from the increased LTN airport capacity; Road Safety Audits of the junctions to be improved are to be undertaken to inform detailed design development; Where applicable, the highway design of the Proposed Development will be developed to the standards set within the Design Manual for Roads and Bridges (DMRB). Furthermore, the Proposed Development will connect directly to the Fina fuel pipeline, eliminating the need for fuel to be transported to the airport via road. From T2 fuel farm, fuel would be transported to T1 fuel farm via internal airport roads, until the T1 fuel farm is connected to the T2 fuel farm via a pipeline. An assessment of the effects of operational traffic on road safety is provided within ES Chapter 7: Traffic and Transport and the Transport Assessment.	Extremely improbable	TifALARP	Not significant	Chapter 7: Traffic and Transport Transport Assessment (TA)	
O16	Aircraft accidents	Changes to the airport layout and surrounding areas; Increased number of aircraft using the LTN airport; Failure of safety systems leading to aircraft failure, signalling failure, air traffic coordination failure	<i>On-site:</i> LTN airport users, workers, infrastructure, aircrafts and passengers; Artefacts of national or international importance during import/export.	<i>On-site:</i> Aircraft accidents; Death or injury of LTN airport users, workers, aircraft passengers; Damage to LTN airport infrastructure; Refer to Risk ID O12 for risk of fire and explosion; Refer to Risk ID O14 for risk of major spills and leaks; Damage to artefacts of national or international importance during import/export;	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	The Proposed Development has been designed in compliance with EASA and CAA guidance and EC aviation regulations. LTN airport will continue to implement safety and security management systems and emergency plans compliant with relevant CAA guidance and legislation. Post DCO, major MA&D assessment will continue to be reviewed and updated. Risk management will adopt 'As Low As Reasonably Practicable' and inherent safe design principles. The design will adopt an inherently safe strategy including containment, safe operation, drainage strategy, safety/environmental management controls, Emergency Planning and emergency management/response controls (including clean-up and restoration). Assessment will cover normal operation and operation in non routine situations such as emergencies or adverse weather. Note the on-site rescue and firefighting service are the first-responders for any incident within the LTN airport boundary.	Extremely improbable	TifALARP	Not significant		
O17	Loss / disruption of utilities	Shortage in generation availability to meet demand, technical failure, severe weather conditions, or any combination of the above	<i>On-site:</i> LTN airport infrastructure;	Loss of utilities can impact on the LTN airport energy or water supply, and telecommunications, this can disrupt LTN operations and emergency response, leading to an increased risk or ability to respond to a MA&D.	Yes	Main Application Site	Major	Medium term	Category B	Emergency water tanks located adjacent to the runway will store water for the rescue and firefighting service regardless of a disruption to water supply . The design of the Proposed Development incorporates uninterruptible power sources (UPS), which will provide emergency power for critical infrastructure, if mains power fails. Furthermore, water, telecommunications and electricity suppliers in the UK electricity have plans and arrangements in place to deal with supply disruptions.	Extremely remote	Tolerable	Not significant		
O18	Emergency response activities implemented on the Main Application Site impacting on sensitive receptors	Runoff from the Fire Training Ground impacting on sensitive environmental receptors Smoke from the Fire Training Ground reducing visibility on runway	<i>On-site:</i> Aircraft and aircraft passengers; Artefacts of national or international importance during import/export. <i>Off-site:</i> Sensitive environmental receptors,	<i>On-site:</i> Aircraft accidents; Death or injury of LTN airport users, workers, aircraft passengers; Damage to LTN airport infrastructure; Damage to artefacts of national or international importance during import/export;	Yes	500m radius of the Main Application Site Public Safety Zone	Severe	Medium term	Category A	Refer to Risk ID O14 for a summary of mitigation measures to prevent major spills and leaks.	Remote	Tolerable	Not significant		
O19	Increased risk of bird strike	Increased risk due to changes to the airport layout and surrounding areas attracting birds, and due to the increase in air traffic.	<i>On-site:</i> Aircraft and aircraft passengers; Artefacts of national or international importance during import/export.	<i>On-site:</i> Aircraft accidents; Death or injury of LTN airport users, workers, aircraft passengers; Damage to LTN airport infrastructure; Damage to artefacts of national or international importance during import/export;	Yes	Main Application Site Public Safety Zone	Catastrophic	Very long term or Permanent	Category D	The Proposed Development has been designed to avoid the site being used by birds, for example the infiltration basins will be underground to avoid the introduction of new waterbodies that could attract birds. Furthermore, LTN airport would continue to operate its bird strike prevention management plan. Design of the Proposed Development has been developed not to attract birds in order to minimise the risk of bird strike, for example via measures included within the landscape design and the Landscape and Biodiversity Management Plan	Extremely improbable	TifALARP	Not significant		
	Absent or deficient safety/ environmental management	Increased risk of MA&D hazards	<i>On-site:</i> Existing LTN airport users and workers;	As described within this register for all hazards		2km radius within Main Application Site		Very long		The existing LTN airport environmental and safety management procedures will be	Extremely		Not		

ID	Hazard	Hazard source and/ or pathway	Receptor	Reasonable worst consequence if event occurred	Could the risk result in serious damage (i.e. could it result in a MA&D)?	Pre-mitigation				Proposed mitigation	Post-mitigation			Sources of information
						Study area of potential impact	Worst Case Severity of Harm	Duration	Category of Consequence		Likelihood	Tolerability	Significance of Effect	
O20	systems (e.g. inadequate planning, resource provision,	Increased risk of various hazards described within this register.	Off-site: General public; Agricultural land; Sensitive environmental receptors.	As described within this register for all hazards relevant to the operational phase.	Yes	and off-site highway improvement works	Catastrophic	term or Permanent	Category D	followed within the site of the existing airport. These are subject to inspection by the CAA.	Extremely improbable	TifALARP	Not significant	
O21	Absent or deficient security provision (e.g. inadequate planning, resource provision, procedures)	Increased risk of vandalism/ crime/ terrorism (see Risk ID O26, O27 and O28)	On-site: Existing LTN airport users and workers; Off-site: General public;	As described within this register for Risk ID O26, O27 and O28	Yes	Main Application Site	Catastrophic	Very long term or Permanent	Category D	The existing LTN airport security management procedures will be followed within the site of the existing airport. These are subject to inspection by the CAA. The existing London Luton Airport Policing Unit is expected to continue policing the airport.	Extremely improbable	TifALARP	Not significant	
Vulnerability of the Proposed Development to major accidents from off-site sources														
O22	Fire at a neighbouring site	Fire at a neighbouring site impacting on the construction of the Proposed Development	On-site: Existing LTN airport users and workers; Artefacts of national or international importance during import/export. Off-site: General public; Agricultural land; Sensitive environmental receptors;	On-site: Risk of injury or death of the users and workers at the existing LTN airport; Damage to existing LTN airport infrastructure; Reduced visibility due to smoke from fire, affecting aircraft; Damage to artefacts of national or international importance during import/export; Off-site: Damage to property and risk of injury or death to the general public; Indirect effects on human health, property, heritage assets and wildlife due to smoke and ash deposition.	Yes	2km radius of Main Application Site	Catastrophic	Very long term or Permanent	Category D	Risk mitigation measures set out under Risk ID O12 will apply, if the fire was to spread to the airport. The airport rescue and firefighting service can also respond to incidents in the immediate vicinity of the airport.	Extremely improbable	TifALARP	Not significant	
O23	Explosion and structural collapse at neighbouring sites	Explosion and structural collapse impacting on the operation of the Proposed Development	On-site: Existing LTN airport users and workers; Off-site: General public; Agricultural land; Sensitive environmental receptors;	Falling debris or collapse of infrastructure within the neighbouring area. Impeded access to the Main Application Site. Loss of utilities at the Main Application Site (considered under Risk ID O17).	No – the effects are unlikely to cause serious damage at the Main Application Site, as defined for the purposes of	Main Application Site	Severe	Short term	Not a MA&D	n/a	N/A	N/A	Not significant	n/a
O24	Contamination or release of hazardous substances by off-site sources;	Contamination or release of hazardous substances impacting on the operation of the Proposed Development	On-site: Existing LTN airport users and workers; Off-site: General public; Agricultural land; Sensitive environmental receptors.	On-site: Risk of contact with hazardous substances to LTN airport users and workers. Off-site: Risk of contact with hazardous substances by general public; Contamination of sensitive environmental receptors and agricultural land.	Yes	2km radius of the Main Application Site, off-site highway improvement sites and construction traffic routes	Major	Medium term	Category B	Refer to mitigation summarised under Risk ID O14	Extremely remote	Tolerable	Not significant	n/a
O25	External aircraft interference (e.g. lasers, fireworks, sky lanterns, drones, wind turbine interaction with radar)	Drones, lasers, fireworks etc. interfering with aircraft or telecommunications See Risk ID O12 regarding fire hazard and Risk ID O27 regarding vandalism/ crime/ terrorism.	n/a	On-site: Aircraft incident Risk of injury or death of the users and workers at the existing LTN airport, passengers of aircraft; Damage to infrastructure; Damage to artefacts of national or international importance during import/export.	Yes	Main Application Site	Catastrophic	Very long term or Permanent	Category D	The existing LTN airport safety management procedures will be followed within the site of the existing airport in case of external interference. These procedures are subject to inspection by the CAA.	Extremely improbable	TifALARP	Not significant	
O26	Cyber-attack and digital data security	Hackers Security breach of existing LTN airport systems	On-site: LTN airport users and workers, Aircraft passengers;	Loss of data confidentiality and integrity; Unauthorised access to the airport or bypassed security systems; See Risk ID O27 for vandalism/ crime/ terrorism	No – the effects are not considered to result in serious damage as defined for the purposes of this assessment. It is also noted that the Proposed Development	Main Application Site	No Serious Damage	Short term	Not a MA&D	n/a	n/a	n/a	n/a	n/a
		Members of the public protesting;	On-site:	Disruption to LTN airport operations;	No – the									

ID	Hazard	Hazard source and/ or pathway	Receptor	Reasonable worst consequence if event occurred	Could the risk result in serious damage (i.e. could it result in a MA&D)?	Study area of potential impact	Pre-mitigation			Proposed mitigation	Post-mitigation			
							Worst Case Severity of Harm	Duration	Category of Consequence		Likelihood	Tolerability	Significance of Effect	Sources of information
O27	Civil unrest or protest	LTN airport staff industrial action	Existing LTN airport users and workers, and infrastructure; Artefacts of national or international importance during import/export.	Damage of existing infrastructure. See Risk ID O27 for vandalism/ crime/ terrorism Damage to artefacts of national or international importance during import/export.	effects are not considered to result in serious damage as defined for the purposes of	Main Application Site	Severe	Short term	Not a MA&D	n/a	n/a	n/a	n/a	
O28	Vandalism/crime/terrorism leading to increased risk to the safety of members of public and site workers	Criminal damage/ vandalism; Theft; Terrorist acts; Hijacked aircraft; Unauthorised vehicles accessing the airport.	<i>On-site:</i> Existing LTN airport users and workers, and infrastructure; Artefacts of national or international importance during import/export <i>Off-site:</i> General public	Death or risk of injury to LTN airport users, workers and the general public Damage to construction equipment and LTN airport infrastructure Damage to artefacts of national or international importance during import/export.	Yes	500m radius of Main Application Site	Catastrophic	Very long term or Permanent	Category D	The existing LTN airport security management procedures will be followed within the site of the existing airport. These are subject to inspection by the CAA. Furthermore, the London Luton Airport Policing Unit is expected to continue policing airport to deter and detect criminal and terrorist activity; National Counter Terrorism Security Office's Crowded Places Guidance (2017) provides guidance for the transport including aviation sector	Extremely improbable	TifALARP	No	
O29	Disease outbreak and infestation	Importation of biological agents/ biohazard/ disease/ pathogen, including by disembarking passengers and/ or flight with controlled disease or biohazard; Disease outbreak or epidemics impacting LTN airport users and workers. Discharge from the site may spread biohazard due to contaminated runoff (see Risk ID O14)	<i>On-site:</i> Existing LTN airport users and workers; <i>Off-site:</i> General public; Agricultural land; Sensitive environmental receptors	Death or risk of injury to LTN airport users, workers and the general public. Contamination of sensitive environmental receptors and agricultural land due to contaminated runoff from the construction site.	Yes	1km of the Main Application Site	Catastrophic	Very long term or Permanent	Category D	The existing LTN airport environmental and safety management procedures will continue to be followed across the airport, including measures to minimise risks from biohazard or disease outbreaks. These are subject to inspection by the CAA. The design of the Proposed Development does not change the risk profile of this hazard.	Extremely improbable	TifALARP	Not significant	
Operation of the Proposed Development impacting on the vulnerability of a receptor to a MA&D hazard														
O30	Limiting the ability of an emergency response plan to be implemented	Layout of the Proposed Development reducing the response time of emergency services within the operational LTN airport	<i>On-site:</i> Existing LTN airport users and workers; Artefacts of national or international importance during import/export. <i>Off-site:</i> General public; Agricultural land; Sensitive environmental receptors	Insufficient access to emergency services, leading to a slow response time and increased number of deaths/ injuries, spread of contamination or damage to artefacts of national or international importance during import/export.	Yes	2km radius of the Main Application Site, offsite highways improvement works	Catastrophic	Very long term or Permanent	Category D	On-site emergency access routes to enable a suitable response time by the rescue and firefighting service, as required by the CAA, have been established by the layout of the Proposed Development. Emergency plans and procedures, access and safe evacuation routes will be maintained throughout operation.	Extremely improbable	TifALARP	Not significant	

[1] http://www.earthquakes.bgs.ac.uk/hazard/uk_hazard_map.html
 [2] http://www.earthquakes.bgs.ac.uk/hazard/UK_seismic_hazard_report.pdf
 [3] Landmark and Alpha Associates (2018) Detailed Unexploded Ordnance (UXO) Threat & Risk Assessment Project Number P6329.
 [4] http://www.earthquakes.bgs.ac.uk/hazard/uk_hazard_map.html
 [5] http://www.earthquakes.bgs.ac.uk/hazard/UK_seismic_hazard_report.pdf

	Severity of Harm Categories				
	No Serious Damage	Severe	Major	Catastrophic	Source of Definition
Receptors	While this level of harm might be significant pollution, it is not considered to result in serious irrecoverable damage	The lowest level of harm that might be considered to result in serious damage.			
People (including passengers, workers, members of the public) Aircrafts and aerodromes	Significant incident involving circumstances indicating that an accident, a serious or major incident could have occurred, if the risk had not been managed within safety margins, or if another aircraft had been in the vicinity. Reduced ability of the flight crew or air traffic control to cope with the increase in workload as a result of the conditions impairing their efficiency. Nuisance to occupants of the aircraft or staff/members of public at the aerodrome.	A major incident associated with the operation of an aircraft, in which safety of aircraft may have been compromised, having led to a near collision between aircraft, with ground or obstacles. Minor injury to occupants of the aircraft or staff/members of public at the aerodrome. Minor damage to aircraft or major aerodrome facilities may occur.	As defined in Council directive 94/56/EC for air traffic services. For the aerodrome, an event where an accident nearly occurs. The outcome is not under control and could very likely lead to an accident. Damage to major aerodrome facilities. Serious injury to staff/members of public at the aerodrome.	As defined in Council directive 94/56/EC for air traffic services. Also includes loss of or substantial damage to major aerodrome facilities. Serious injury or death of multiple staff/ members of public at the aerodrome.	CAP760
Designated Land/ Water Sites (Nationally important) (e.g. NNR, SSSI, MNR)	<0.5ha or <10%	>0.5ha or 10-50% of site area, associated linear feature or population	>50% of site area, associated linear feature or population	n/a	CDOIF
Designated Land/Water Sites (Internationally important) (e.g. SAC, SPA, Ramsar)	<0.5ha or <5% (<5% LF/Pop)	>0.5ha or 5-25% of site area or 5-25% of associated linear feature or population	25-50% of site area, associated linear feature or population	>50% of site area, associated linear feature or population	CDOIF
Other designated Land (e.g. ESA, AONB, National Park, etc.)	<10ha or <10%	10-100ha or 10-50% of land	>100ha or >50% of land	n/a	CDOIF
Scarce Habitat	<2 ha or <10%	2-20ha or 10-50% of habitat	>20ha or >50% of habitat	n/a	CDOIF
Widespread Habitat - Non designated Land	<10ha	Contamination of 10-100ha of land, preventing growing of crops, grazing of domestic animals or renders the area inaccessible to the public because of possible skin contact with dangerous substances. Alternatively, contamination of 10ha or more of vacant land.	100-1000ha (applied as per text under 'Severe')	>1000ha (applied as per text under 'Severe')	CDOIF
Widespread Habitat - Non designated Water	n/a	Contamination of aquatic habitat which prevents fishing or aquaculture or renders is inaccessible to the public.	n/a	n/a	CDOIF
Groundwater Source of Drinking Water	Interruption of drinking water supply <1000 person-hours or For England & Wales only <1ha SPZ	Interruption of drinking water supplied from a ground or surface source (where persons affected x duration in hours [at least 2] > 1,000) or For England & Wales only 1-10ha of SPZ where drinking water standards are breached	>1 x 10 ⁷ person-hours interruption of drinking water (a town of ~100,000 people losing supply for month) or For England & Wales only 10-100ha SPZ drinking water standards breached	>1 x 10 ⁹ person-hours interruption of drinking (~1 million people losing supply for 1 month) or For England & Wales only >100ha SPZ drinking water standards breached	CDOIF
Groundwater – non Drinking Water Source	<1ha	1-100ha of aquifer where water quality standards are breached (or hazardous substance is discernible)	100-10,000ha	>10,000ha	CDOIF

	Severity of Harm Categories				
	No Serious Damage	Severe	Major	Catastrophic	Source of Definition
Receptors	While this level of harm might be significant pollution, it is not considered to result in serious irrecoverable damage	The lowest level of harm that might be considered to result in serious damage.			
Groundwater in unproductive strata	Groundwater not a pathway to another receptor.	Where the groundwater is a pathway for another receptor assess against relevant criteria for the receptor.			CDOIF
Soil or sediment (i.e. as receptor rather than purely a pathway)	Contamination not leading to environmental damage (as per ELD), or not significantly affecting overlying water quality	Contamination of 10- 100ha of land etc. as per Widespread Habitat; Contamination sufficient to be deemed environmental damage (Environmental Liability Directive)	Contamination of 100-1000ha of land, as per Widespread Habitat; Contamination rendering the soil immediately hazardous to humans (e.g. skin contact) or the living environment, but remediation available	Contamination of >1000ha of land, as per Widespread Habitat; Contamination rendering the soil immediately hazardous to humans (e.g. skin contact) or the living environment and remediation difficult or impossible.	CDOIF
Built environment <i>Under CDOIF, this is limited to Grade 1 / Cat A Listed buildings, scheduled ancient monuments, conservation area, etc</i>	Damage below a level at which designation of importance would be withdrawn.	Damage sufficient for designation of importance to be withdrawn.	Feature of built environment subject to designation of importance entirely destroyed.	n/a	CDOIF
Particular species (Note - these criteria apply nationally - i.e. England, Wales, Scotland)	Loss of <1% of animal or <5% of plant ground cover in a habitat.	Loss of 1-10% of animal or 5-50% of plant ground cover.	Loss of 10-90% of animal or 50-90% of plant ground cover.	Total loss (>90%) of animal or plant ground cover.	CDOIF
Marine	<2ha littoral or sublittoral zone, <100ha of open sea benthic community, <100 dead sea birds (<500 gulls), <5 dead/significantly impaired sea mammals	2-20ha littoral or sublittoral zone, 100-1000ha of open sea benthic community, 100-1000 dead sea birds (500-5000 gulls), 5-50 dead/significantly impaired sea mammals	20-200ha littoral or sub-littoral zone, 100-10,000ha of open sea benthic community, 1000-10,000 dead sea birds (5,000-50,000 gulls), 50-500 dead/significantly impaired sea mammals	>200ha littoral or sublittoral zone, >10000ha of open sea benthic community, >10000 dead sea birds (>50000 gulls), >500 dead/ significantly impaired sea mammals	CDOIF
Fresh and estuarine water habitats	Impact below that of Severe	WFD Chemical or ecological status lowered by one class for 2-10km of watercourse or 2-20ha or 10-50% area of estuaries or ponds. Plus interruption of drinking water supplies, as per DETR Table 6	WFD Chemical or ecological status lowered by one class for 10-200km of watercourse or 20- 200ha or 50-90% area of estuaries and ponds. Plus interruption of drinking water supplies, as per DETR Table 6	WFD Chemical or ecological status lowered by one class for >200km of watercourse or >200ha or >90% area of estuaries and ponds. Plus interruption of drinking water supplies, as per DETR Table 6	CDOIF

Sources:
CAA CAP760 Guidance on the conduct of Hazard Identification, Risk Assessment and the Production of Safety Cases: <https://publicapps.caa.co.uk/docs/33/CAP760.pdf>

CDOIF Guideline - Environmental Risk Tolerability for COMAH Establishments: https://www.sepa.org.uk/media/219154/cdoif_guideline__environmental_risk_assessment_v2.pdf

Appendix 19-1
Definitions for Duration/ Recovery Criteria

Description	Short term	Medium term	Long term	Very long term or Permanent
	Harm with such short recovery is not considered a MA&D.			
Population	n/a	Recoverable injuries	Irrecoverable injuries	Death
Groundwater or surface water drinking water source (public or private)	n/a	n/a	Harm affecting drinking water source or SPZ < 6 years	Harm affecting drinking water source or SPZ >6 years
Groundwater (except drinking water sources): WFD Hazardous/Non Hazardous Substances	WFD hazardous substances < 3 months	WFD hazardous subs > 3 months	WFD hazardous subs > 6yrs	WFD hazardous subs >20 years
	WFD non-hazardous substances < 1yr	WFD nonhazardous substances > 1yr	WFD non-hazardous substances >10 years	WFD non-hazardous substances >20 years
Surface water (except drinking water sources – see above)	< 1 year	>1 year	>10 years	>20 years
Land	< 3 years or < 2 growing seasons for agricultural land	> 3 years or > 2 growing seasons for agricultural land	>20 years	>50 years
Built environment	Can be repaired in < 3 years, such that its designation can be reinstated	Can be repaired in > 3 years, such that its designation can be reinstated	Feature destroyed, cannot be rebuilt, all features except world heritage site	Feature destroyed, cannot be rebuilt, world heritage site

Source: CDOIF Guideline - Environmental Risk Tolerability for COMAH Establishments:
https://www.sepa.org.uk/media/219154/cdoif_guideline__environmental_risk_assessment_v2.pdf

Category of Consequence

Catastrophic	Not MA&D	C	D	D
Major	Not MA&D	B	C	D
Severe	Not MA&D	A	B	C
No Serious Damage	Not MA&D	Not MA&D	Not MA&D	Not MA&D
	Short term	Medium term	Long term	Very long term

Source: CDOIF Guideline - Environmental Risk Tolerability for COMAH Establishments:
https://www.sepa.org.uk/media/219154/cdoif_guideline__environmental_risk_assessment_v2.pdf

	Probability	Extremely improbable	Extremely remote	Remote	Reasonably probable	Frequent
	Quantitative definition	Never	Once in 1000 years to once in 100,000 years	Once in 10 years to once in 1000 years	Once per 40 days to once in 10 years	Once per hour to once in 40 days
Qualitative definition	Should virtually never occur but is theoretically possible	Very unlikely to occur	Unlikely to occur during the total operational life of the system	May occur once during total operational life of the system	May occur several times during operational life	
Consequence (CDOIF definition)	Consequence CAP760 definition					
Category D	Accidents	TifALARP*	Intolerable	Intolerable	Intolerable	Intolerable
Category C	Serious incident	Tolerable	TifALARP*	Intolerable	Intolerable	Intolerable
Category B	Major incident	Tolerable	Tolerable	TifALARP*	Intolerable	Intolerable
Category A	Significant incident	Tolerable	Tolerable	Tolerable	TifALARP*	Intolerable
Not a MA&D	No effect immediately	Not within the scope of MA&D assessment				

*TifALARP = Tolerable if ALARP (As Low As Reasonably Practicable)

Significant effect = unacceptable/ intolerable risks

Not significant effect = acceptable (tolerable) and TifALARP risks

Sources:

CAA CAP760 Guidance on the conduct of Hazard Identification, Risk Assessment and the Production of Safety Cases:

<https://publicapps.caa.co.uk/docs/33/CAP760.pdf>

CDOIF Guideline - Environmental Risk Tolerability for COMAH Establishments:

https://www.sepa.org.uk/media/219154/cdoif_guideline_environmental_risk_assessment_v2.pdf