Teddington Direct River Abstraction

Preliminary Environmental Information Report
Appendix 4.1 – Major Accidents and Disasters

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Appendix 4.1 – Major Accidents and Disasters

A.1 Introduction

A.1.1 This appendix sets out how risks relating to major accidents and disasters have been considered and mitigated through the design of the Teddington Direct River Abstraction Project (hereafter referred to as 'the Project') and assessed in the Environmental Impact Assessment (EIA).

A.1.2 The Institute of Environmental Assessment and Management (IEMA) has defined 'major accidents and disasters' (collectively referred to as 'MAD' hereafter) as the following (IEMA, 2020):

a. '*A major accident is an event (for instance, train derailment or major road traffic accident) that threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment and requires the use of resources beyond those of the client or its appointed representatives (i.e. contractors) to manage. Major accidents can be caused by disasters resulting from both man-made and natural hazards.*'

b. '*A disaster is a man-made/external hazard (such as an act of terrorism) or a natural hazard (such as an earthquake) with the potential to cause an event or situation that meets the definition of a major accident.*'

A.2 Legislation, policy and guidance

Legislation

A.2.1 Overarching legislation includes The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Relevant text from these Regulations includes the following:

a. Regulation 5(4) – '*The significant effects to be identified, described and assessed under paragraph (2) include, where relevant, the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development.*'

b. Schedule 4, paragraph 8 – '*A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.* […] *Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.*'

A.2.2 Risk assessments under relevant UK or retained EU law, proposed mitigation measures, and preparedness plans are used to prevent or respond to such emergencies, ensuring compliance with applicable directives or environmental assessments. The underlying objective is to ensure that appropriate precautionary actions are taken for those developments which: '*…because of their vulnerability to major accidents and/or natural disasters (such as flooding, sea level rise, or earthquakes), are likely to have significant adverse effects on the environment.*' (paragraph 15, European Union Directive 2014/52/EU).

Policy

A.2.3 The National Policy Statement (NPS) for Water Resources Infrastructure (Department for Environment, Food and Rural Affairs (Defra), 2023) outlines key safety principles for water infrastructure projects. It mandates engagement with relevant bodies such as local authorities and the Health and Safety Executive (HSE) on safety matters.

A.2.4 Furthermore, the NPS recognises that national security considerations apply across all national infrastructure sectors. Defra acts as the sector sponsor department for the water sector with lead responsibility for security matters and for directing the security approach to be taken. Defra works with the Centre for the Protection of National Infrastructure to reduce the vulnerability of the water sector to terrorism and other national security threats.

Guidance

A.2.5 IEMA has prepared a primer to guide the assessment of this aspect in EIA. This primer is entitled Major Accidents and Disasters in EIA (IEMA, 2020) (hereafter referred to as 'the Primer').

A.2.6 The Primer (IEMA, 2020) recognises that primary and tertiary mitigation for major accidents and/or disasters for infrastructure and other built environment developments is covered by a wide range of safety and non-safety-related legislation. This mitigation is generally sufficient to manage vulnerabilities to major accidents and/or disasters without the need for secondary mitigation in most circumstances.

A.2.7 The Primer (IEMA, 2020), therefore, suggests a 'signposting' approach to assessment, making efficient use of existing and available risk assessments rather than duplicating any risk quantification and management already undertaken on developments as part of the assessment approach.

A.2.8 Based on this guidance, this appendix notes potential MAD risks in Table A.1 and where this is either assessed as part of the EIA and/or controlled via existing regulations and frameworks. Where assessed as part of the EIA, this appendix signposts to where this further assessment can be found associated with other aspects.

Consultation, engagement and scoping

A.2.9 The EIA Scoping Report (Thames Water, 2024) outlined a long list of potential major accident effects. The long list of events/risks was refined by assessing their potential impact on the Project, interaction with external hazards, adequacy of controls, mitigation measures and professional judgment regarding environmental constraints and Project nature. The list has been further refined following consultation responses received as part of the EIA Scoping Opinion (Planning Inspectorate, 2024).

A.2.10 A meeting was held in March 2025 with representatives from the London Borough of Hounslow, London Borough of Richmond upon Thames and the Royal Borough of Kingston upon Thames. The format of MAD reporting within the Preliminary Environmental Information (PEI) Report was discussed, along with the list of potential MAD risks. No objections were raised at this time.

A.3 Potential MAD risks

A.3.1 Table A.1 identifies potential MAD risks and how these are addressed by the Project.

Table A.1 Potential MAD risks and how these are addressed by the Project

Potential MAD risk	Further information	Further assessment included in EIA? Y/N	Mitigation secured through the DCO and/or via existing regulations? Indicative until DCO has been drafted.
Structural hazards	Potential for seismic activities, subsidence and ground collapse risks from tunnelling and construction activities (e.g. towpath).	Yes – assessment will be included in Chapter 10: Ground Conditions and Contaminated Land in the Environmental Statement (ES).	Development Consent Order (DCO) – Detailed design submissions as part of DCO Requirements, inclusion of protective provisions for owners of key assets potentially affected and measures within Code of Construction Practice.
High voltage electricity	Potential for electrocution, fire hazard and power outages impacting local area.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Risks identified and managed via The Construction (Design and Management) Regulations 2015 (CDM Regulations), construction planning and method statements.
Explosions	Potential for severe injuries, fatalities, structure damage and fire hazards as a result of use of explosive gases during construction or operation.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Risks identified and managed via CDM Regulations, construction planning and method statements.
Unexploded ordnance (UXO) explosions	Potential for discovery and accidental detonation of UXO.	Yes – assessment included in Chapter 10: Ground Conditions and Contaminated Land in the PEI Report/ES.	DCO – UXO awareness briefings prior to construction to be included in Code of Construction Practice.

Potential MAD risk	Further information	Further assessment included in EIA? Y/N	Mitigation secured through the DCO and/or via existing regulations? Indicative until DCO has been drafted.
Major fire	Potential for severe injuries, fatalities, structural damage and environmental pollution as a result of a major fire during construction or operation.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Risks identified and managed via fire prevention measures, installation of advanced fire detection and suppression systems and emergency response plans.
Impact on Thames Lee Tunnel and water services	Potential for disruption of water supply, potential contamination and health impacts.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Risks managed via a comprehensive risk assessment, monitoring systems and emergency response plans.
Major accidents involving the tertiary treatment plant (TTP) operation	Potential for industrial accidents, including chemical spills, pipeline ruptures and sewage overflows, due to potential COMAH site effects.	Yes – assessment included in Chapter 5: Water Resources and Flood Risk.	Both – Existing regulations, such as Regulation 5(1) of The Control of Major Accident Hazards (COMAH) Regulations 2015 (HSE, 2015) and General Regulation 3 of The Management of Health and Safety at Work Regulations 1999, provide sufficient evidence to demonstrate safe operation of the TTP. The DCO application will include the requirement to adhere to the Code of Construction Practice, which would include pollution response procedures.
Major accidents during construction	Potential for injuries, fatalities, structural damage, environmental contamination and delays due to major accidents during construction.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via robust health and safety protocols, risk assessments, and emergency response plans.

Potential MAD risk	Further information	Further assessment included in EIA? Y/N	Mitigation secured through the DCO and/or via existing regulations? Indicative until DCO has been drafted.
External accidents affecting the site population within the Order limits	Potential for injuries, fatalities, structural damage and environmental contamination.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via site-specific risk assessments, traffic management plans, environmental management plans/systems and emergency response plans.
Acts of terrorism	Potential for severe injuries, fatalities, structural damage and disruption of critical infrastructure due to terrorist attack.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via Security and Emergency Measures Direction, collaboration with national and local authorities, and emergency response plans.
Industrial accidents	Potential for severe injuries, fatalities, environmental contamination and significant delays as a result of an industrial-scale accident.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via robust health and safety protocols, containment systems, environmental management plans/systems and emergency response plans.
Human health impacts	Potential for spread of disease, severe health impacts, delays and increased healthcare burden.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via health and safety protocols, health surveillance and emergency response plans.
Public health emergencies	Potential for spread of disease, severe health impacts, delays and increased healthcare burden.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via health and safety protocols, health surveillance and emergency response plans.
Cyber attacks	Potential for disruption of operations, data breaches and potential safety risks due to a cyber attack.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via cyber security measures, regular audits, and emergency response plans as per guidance from the National Protective Security Authority (NPSA).
Transport of hazardous material	Potential for accidents involving vehicles transporting hazardous	Yes – assessment included in Chapter	Existing regulations – Managed by existing controls enforced by the HSE, the Driver and Vehicle

Potential MAD risk	Further information	Further assessment included in EIA? Y/N	Mitigation secured through the DCO and/or via existing regulations? Indicative until DCO has been drafted.
	material during the construction phase.	12: Traffic and Transport.	Standards Agency, and the police. The Carriage of Dangerous Goods Manual (HSE, 2024) sets out various controls relating to matters including but not limited to packaging, tanks, consignment procedures, loading and unloading, and crew and vehicle requirements.
Navigational risks	Potential for accidents involving water-based vessels for installation of cofferdams during the construction phase.	Yes – assessment to be included in a Navigational Risk Assessment at ES stage.	The production of a Navigational Risk Assessment (for the tidal area) and corresponding river assessment will identify controls required to ensure the safety of the waterways during construction and operation. Any required measures will be brought forward as part of the DCO application.
Other utilities	Potential for impacts/outages of other utilities as a result of the Project affecting them.	No – agreed to be scoped out in EIA Scoping Opinion.	DCO – Where requested, protective provisions for owners of key assets potentially affected to be included in DCO. A figure showing the location of major utilities will be included in the Project Description chapter of the ES once relevant utility searches have been completed.
Aerodrome safeguarding	Potential for accidents as a result of the Project affecting the safe operation of nearby aerodromes.	No – agreed to be scoped out in EIA Scoping Opinion.	Existing regulations – Managed via consultation requirements where a project is in close proximity to an aerodrome, including requirements for approval of Tall Structures and Cranes Permit if required within 6km of an aerodrome.

A.4 Next steps

A.4.1 As the Project progresses, the potential MAD risks will be refined either to add further MAD risks following suggestions from stakeholders or to provide more explicit descriptions of how MAD risks are proposed to be managed where necessary.

A.5 References

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Planning Inspectorate (2024). Scoping Opinion: Proposed Teddington Direct River Abstraction. Case Reference: WA010006.

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