

A428 Black Cat to Caxton Gibbet improvements

TR010044

Volume 6

6.3 Environmental Statement

Appendix 4.2: Major Accidents and Disasters Screening

Planning Act 2008

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009

26 February 2021

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009**

**A428 Black Cat to Caxton Gibbet
improvements
Development Consent Order 202[]**

Appendix 4.2: Major Accidents and Disasters Screening

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1 Major accidents and disasters screening

1.1 Background

- 1.1.1 Regulation 5(4) of *The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017* (Ref 1-1) stipulates that the “*expected significant effects arising from the vulnerability of a proposed development to major accidents or disasters that are relevant to that development*” are to be identified and assessed as part of an Environmental Impact Assessment (EIA).
- 1.1.2 This requirement derives from *Directive 2011/92/EU* (Ref 1-2), as amended by *Directive 2014/52/EU* (Ref 1-3). This legislation emphasises the need to consider the vulnerability of projects, in terms of their exposure and resilience, to major accidents and/or disasters (such as flooding, earthquakes and sea level rises), the risk of those accidents and/or disasters occurring, and the implications for the likelihood of significant adverse environmental effects.
- 1.1.3 A major accident is defined as an acute or chronic event, caused by a human activity or development, which has substantial consequences for people or the environment. A major disaster has a similar definition; however, the cause is natural, albeit sometimes exacerbated by human activity (for example climate change).
- 1.1.4 For the purposes of this appendix, major accidents and disasters are referred to collectively as ‘major events’.
- 1.1.5 Development projects can be:
- A source of major events, for example if a bridge or tunnel component were to fail and collapse.
 - A receptor of major events, for example if a flood event occurred which inundated parts of a development.
- 1.1.6 The identification of likely significant effects associated with major events enables development projects to be designed in a manner that provides environmental protection, for example by making allowances in the design to build in resilience to the effects of flood events arising from predicted climate change.

1.2 Legislation and policy

- 1.2.1 National legislation and policy pertaining to major events of relevance to the Scheme is presented in **Table 1-1**.

Table 1-1: Screening and scoping of major events relevant to the Scheme

Policy/Legislation	Relevance to major events
UK national policy	
<p>National Policy Statement for National Networks (NPSNN) (Ref 1-4)</p>	<p>Climate change</p> <p>The NPSNN (Ref 1-4) recognises that climate change could result in <i>"an increased risk of flooding, drought, heatwaves, intense rainfall events and other extreme events such as storms and wildfires, as well as rising sea levels"</i> and that</p> <p><i>'4.38...New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the provision of green infrastructure.'</i></p> <p>In terms of the use of climate change forecasts when designing national networks, the NPSNN (Ref 1-4) states that:</p> <p><i>'4.41...Where transport infrastructure has safety-critical elements and the design life of the asset is 60 years or greater, the applicant should apply the UK Climate Projections 2009 (UKCP09) high emissions scenario (high impact, low likelihood) against the 2080 projections at the 50% probability level.'</i></p> <p>Security</p> <p>The NPSNN (Ref 1-4) sets out responsibilities and policy in relation to national networks security as follows:</p> <p><i>4.74...The Department for Transport acts as the Sector Sponsor Department for the national networks and in this capacity has lead responsibility for security matters in that sector and for directing the security approach to be taken. The Department works closely with Government agencies including the Centre for the Protection of National Infrastructure (CPNI) to reduce the vulnerability of the most 'critical' infrastructure assets in the sector to terrorism and other national security threats.</i></p> <p><i>4.75 Government policy is to ensure that, where possible, proportionate protective security measures are designed into new infrastructure projects at an early stage in the project development. Where applications for development consent for infrastructure covered by this NPS relate to potentially 'critical' infrastructure, there may be national security considerations.</i></p>
<p>Overarching National Policy Statement for Energy (EN-1) (Ref 1-5)</p>	<p>Climate change</p> <p>In relation to climate change, EN-1 (Ref 1-5) <i>'sets out how the energy sector can help deliver the Government's climate change objectives by clearly setting out the need for new low carbon energy infrastructure to contribute to climate change mitigation'</i>.</p> <p>Paragraph 5.7.2 of EN-1 (Ref 1-5) states that:</p> <p><i>'Climate change over the next few decades is likely to mean milder, wetter winters and hotter, drier summers in the UK, while sea levels will continue to rise. Within the lifetime of energy projects, these factors will lead to increased flood risks in areas susceptible to flooding, and to an increased risk of the</i></p>

Policy/Legislation	Relevance to major events
	<p><i>occurrence of floods in some areas which are not currently thought of as being at risk.'</i></p> <p>Security</p> <p>Paragraph 4.15.2 of EN-1 (Ref 1-5) states that:</p> <p><i>'Government policy is to ensure that, where possible, proportionate protective security measures are designed into new infrastructure projects at an early stage in the project development. Where applications for development consent for infrastructure covered by this NPS relate to potentially 'critical' infrastructure, there may be national security considerations.'</i></p>
<p>National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Ref 1-6)</p>	<p>Policies contained in EN-4 (Ref 1-6) are additional to those contained within EN-1 (Ref 1-5).</p> <p>In relation to pipeline safety, section 2.19 of EN-4 (Ref 1-6) notes that the principal legislation governing the safety of pipelines is the <i>Pipelines Safety Regulations 1996</i> (Ref 1-7), which require that pipelines are designed, constructed and operated so that the risks are as low as is reasonably practicable.</p>
<p>National Planning Policy Framework (NPPF) (Ref 1-8)</p>	<p>The NPPF (Ref 1-8) contains policies that seek to promote healthy and safe communities. Paragraph 95 of the NPPF (Ref 1-8) states:</p> <p><i>Planning policies and decisions should promote public safety and take into account wider security and defence requirements by:</i></p> <p>a) <i>anticipating and addressing possible malicious threats and natural hazards, especially in locations where large numbers of people are expected to congregate. Policies for relevant areas (such as town centre and regeneration frameworks), and the layout and design of developments, should be informed by the most up-to-date information available from the police and other agencies about the nature of potential threats and their implications. This includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security; and</i></p> <p>b) <i>recognising and supporting development required for operational defence and security purposes, and ensuring that operational sites are not affected adversely by the impact of other development proposed in the area.</i></p>
<p>UK legislation</p>	
<p>The Control of Major Accident Hazards Regulations 2015 (Ref 1-9)</p>	<p><i>The Control of Major Accident Hazards Regulations 2015</i> (Ref 1-9) aim to prevent and mitigate the effects of major accidents involving dangerous substances (which can cause serious damage/harm to people and/or the environment), and ensure that businesses take all necessary measures to prevent major accidents involving dangerous substances (including limiting the consequences to people and the environment of any major accidents which occur).</p>
<p>Health and Safety at Work etc. Act 1974 (Ref 1-10)</p>	<p>The <i>Health and Safety at Work etc. Act 1974</i> (Ref 1-10) is the primary piece of legislation covering occupational health and safety in Great Britain. It sets out</p>

Policy/Legislation	Relevance to major events
	the general duties which employers have towards employees and members of the public.
The Workplace (Health, Safety and Welfare) Regulations 1992 (Ref 1-11).	The <i>Workplace (Health, Safety and Welfare) Regulations 1992</i> (Ref 1-11) cover a wide range of basic health, safety and welfare issues and apply to most workplaces.
The Management of Health and Safety at Work Regulations 1999 (Ref 1-12).	<i>The Management of Health and Safety at Work Regulations 1999</i> (Ref 1-12). make explicit what employers are required to do to manage health and safety and place a duty on employers to assess and manage risks to their employees.
<i>The Pipelines Safety Regulations 1996</i> (Ref 1-7)	<i>The Pipelines Safety Regulations 1996</i> (Ref 1-7) are the principal health and safety legislation in the UK concerning the safety of pipelines, the overall aim of which are to ensure pipelines are designed and constructed properly and operated safely.
<i>Gas Safety (Management) Regulations 1996</i> (Ref 1-13)	<p><i>The Gas Safety (Management) Regulations 1996</i> (Ref 1-13) apply to the conveyance of natural gas (methane) through pipes to domestic and other consumers and cover four main areas:</p> <ul style="list-style-type: none"> a) The safe management of gas flow through a network, particularly those parts supplying domestic consumers, and a duty to minimise the risk of a gas supply emergency. b) Arrangements for dealing with supply emergencies. c) Arrangements for dealing with reported gas escapes and gas incidents. d) Gas composition.

1.3 Preliminary screening exercise

- 1.3.1 A preliminary screening of major events of potential relevance to the A428 Black Cat to Caxton Gibbet improvements (the Scheme) was undertaken in 2018 as part of the EIA scoping process, the purpose being to identify whether such events would require consideration in the EIA.
- 1.3.2 The findings of the preliminary screening exercise were presented within **Appendix 5.1** of the Scoping Report (Ref 1-14). This concluded that the vulnerability of the Scheme to major events would be low, and that the Scheme would not be a contributing factor to causing or exacerbating these types of event.
- 1.3.3 Based on these conclusions, the topic of major accidents and disasters was proposed to be scoped out from further consideration in the EIA.

1.4 Scoping opinion

- 1.4.1 On behalf of the Secretary of State, the Planning Inspectorate (the Inspectorate) provided its formal scoping opinion **[TR010044/APP/6.5]** on 13 May 2019.

- 1.4.2 In respect of major accidents and disasters, whilst the Inspectorate acknowledged the findings of the preliminary screening exercise contained within the Scoping Report (Ref 1-14), it stated that:
- a. The Environmental Statement should include a description and assessment (where relevant) of the likely significant effects resulting from accidents and disasters applicable to the Scheme.
 - b. The assessment should specifically assess significant effects resulting from the risks to human health, cultural heritage or the environment.
 - c. The assessment should consider the vulnerability of the Scheme to a potential accident or disaster, and the potential of the Scheme to cause an accident or disaster.
 - d. Where appropriate, the assessment 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.
 - e. Use should be made of appropriate guidance and risk assessments to better understand the likelihood of an occurrence of an accident or hazard, and the Scheme's susceptibility to those potential hazards.
 - f. Any measures to be employed to prevent and control significant effects relating to major accidents and disasters should be presented in either the relevant aspect chapter or in a dedicated chapter of the Environmental Statement.
- 1.4.3 Accordingly, the preliminary screening exercise was revisited as part of the EIA to:
- a. Account for changes made to the design and extents of the Scheme, as described in **Chapter 2, The Scheme** of the Environmental Statement **[TR010044/APP/6.1]**.
 - b. Account for any new or updated guidance relevant to the identification and assessment of major events that has been published subsequent to receipt of the Scoping Opinion **[TR010044/APP/6.5]**.
 - c. Identify whether the parameters and conclusions presented in the preliminary screening exercise remained valid, or whether further assessment and mitigation was necessary.
- 1.4.4 Section 1.5 describes the approach adopted for the screening, assessment and reporting of major events.

1.5 Methodology for the assessment of major events

Stage 1: Compilation of a long list of major events

- 1.5.2 The screening exercise commenced at Stage 1 with the identification of major events, referencing the following information sources and using professional judgement to develop a long list for further consideration:
- a. The UK Government's *National Risk Register of Civil Emergencies* (Ref 1-15) – which explains the risks of major emergencies that could affect the UK and provides resilience advice and guidance.
 - b. The Bedfordshire Local Resilience Forum's *Risks and Plans for Bedfordshire* leaflet (Ref 1-16) – which identifies risk hazards to local businesses, communities and individuals in Bedfordshire, and sets out emergency plans to respond to and recover from incidents.
 - c. Cambridgeshire and Peterborough Local Resilience Forum's *Community Risk Register* (Ref 1-17) – which highlights risks that have the highest likelihood and potential to have significant impact and disruption to local communities in Cambridgeshire and Peterborough.
- 1.5.3 Each identified major event was then categorised within the following types of disaster and accident.
- a. Geological and ground-related disasters.
 - b. Hydrological disasters.
 - c. Meteorological disasters.
 - d. Space disasters.
 - e. Transport accidents.
 - f. Engineering accidents and failures.
 - g. Industrial accidents.
 - h. Terrorism, crime, war and civil unrest.
 - i. Disease.

Stage 2: Screening of the long list of major events

- 1.5.4 To better understand the likelihood of a major event on the long list occurring and the Scheme's susceptibility to such an event, reference was made to guidance contained in *Advice Note eleven: Annex G – The Health and Safety Executive* (Ref 1-18), published by the Inspectorate.
- 1.5.5 Events that were identified as unlikely to occur due to their type or applicability to the Scheme, the characteristics of the Scheme, and/or the geographic location of the Scheme, were screened out and discounted from further consideration during Stage 2. An example is famine, which, although a major event, is highly unlikely to occur within the UK due to the current economic status.

- 1.5.6 It was further identified that some major events, for example those relating to health and wellbeing in the workplace, are already safeguarded by the legislation presented in **Table 1-1**. Accordingly, the screening exercise concluded that it was reasonable and proportionate to scope out construction workers, and similar operatives undertaking future maintenance activities on the Scheme, as receptors in the assessment as their health and wellbeing in the workplace would be safeguarded and protected through this legislation, thereby minimising the risk from major events to an acceptable level.

Stage 3: Further Screening of major events within the long list

- 1.5.7 The identification of the need to screen major events into the EIA was undertaken by considering their likely significance. Effects considered to be not significant were screened out, with a justification provided (see **Table 1-2**). Where effects were considered to be significant, or further information or analysis was required, events were screened in at this stage.

- 1.5.8 Factors considered in the further screening of major events included:

- a. Whether the major event is reasonably foreseeable – such events may be very unlikely but there are likely to be examples of similar incidents affecting road schemes, or else near misses have occurred. Where they are not reasonably foreseeable (i.e. they are unrealistic, they are screened out).
- b. Whether the consequences, even if they were to occur, are so small that the event could not be considered major.
- c. Whether there is the potential for the event to interact with relevant environmental resources and receptors.
- d. The extent to which major events could alter the significance of effects associated with the topic assessments reported in **Chapters 5 – 14** of the Environmental Statement **[TR010044/APP/6.1]**.
- e. Whether such events would be appropriately mitigated and/or managed such that the consequential effects would not be significant and could therefore be scoped out of further consideration.
- f. Whether further mitigation (i.e. measures over and above those already embedded into the design of the Scheme or already identified as being essential to mitigate adverse environmental effects) would be required to reduce their likelihood/risk and/or improve the resilience of the Scheme to major events.

Stage 4: Assessment of shortlisted major events

- 1.5.9 The findings of Stage 3 concluded that the initial identification, screening and subsequent scoping of major events resulted in no requirement for these events to be assessed in detail at Stage 4.

1.6 Assessment outcomes

- 1.6.1 The outcomes of each stage of the major events assessment are presented in **Table 1-2**.

Table 1-2: Screening of major events relevant to the Scheme

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
Geological and ground related disasters					
Avalanches	No - avalanches are not considered relevant given the geographical location of the Scheme.	N/A	N/A	N/A	N/A
Landslides	Yes	Water resources and ecological receptors Properties People, drivers and workers	This type of event has been considered by the geotechnical and highway engineering teams as a fundamental part of the Scheme's development. In designing the Scheme to applicable standards, environmental resources and receptors would not be put at a greater risk as a consequence of the Scheme.	No	Chapter 9 Geology and soils
Earthquakes	No - the Scheme would not be located in a geologically active area, and as such earthquake events are not considered a risk to the Scheme.	N/A	N/A	N/A	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
Sinkholes	Yes	Water resources and ecological receptors Properties People, drivers and workers	This type of event has been considered by the geotechnical and highway engineering teams as a fundamental part of the Scheme's design-development. The nature of the underlying geology beneath the Scheme is such that sinkholes are considered unlikely to occur.	No	Chapter 9 Geology and soils
Ground stability	Yes	Aquatic environment and ecological receptors Properties People, drivers and workers	This type of event has been considered by the geotechnical and highway engineering teams as a fundamental part of the Scheme's design-development. In designing the Scheme to applicable standards, environmental resources and receptors would not be put at a greater risk as a consequence of the Scheme.	No	Chapter 9 Geology and soils
Volcanic eruptions	No – the Scheme is not located in a volcanically active area, and it is considered highly unlikely that an ash cloud could	N/A	N/A	N/A	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
	significantly impact on any aspect of the Scheme.				
Landfill accidents	Yes	Water resources Aquatic environment and ecological receptors Properties People, drivers and workers	A number of historic landfill sites are recorded in proximity to the Scheme, concentrated around the Wyboston and Wyboston Leisure Park areas. These were used for a range of wastes including commercial, industrial, inert, household and special wastes. One closed landfill site is recorded to the north of Eltislely. Potential exists for landfill sites in close proximity to the Scheme to contain materials that could be damaging to human and ecological receptors. Best practice mitigation measures would be implemented by the Principal Contractor during construction of the Scheme to avoid and/or minimise the risk of any disturbance and the opening of possible pollutant pathways associated with landfill sites. Such measures are described in the Contaminated Land Management	No	Chapter 9 Geology and soils

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			Plan within the First Iteration EMP [TR010044/APP/6.8].		
Hydrological disasters					
Flooding	Yes	Aquatic environment and ecological receptors Properties People, drivers and workers	Detailed flood modelling has been undertaken as part of the EIA to identify, model and evaluate flood risk associated with the Scheme. This modelling has considered both the vulnerability of the Scheme to flooding, and the potential for the Scheme to exacerbate flooding. Appropriate measures have been incorporated into the Scheme design to capture, control, manage, treat and discharge surface water. Allowances have also been made in the Scheme design for the effects of future climate change. Collectively, these measures would appropriately manage potential flood risk associated with the Scheme.	No	Chapter 2 The Scheme Chapter 13 Road drainage and the water environment

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
Limnic eruptions	No – the Scheme is not located in proximity to any natural deep water lakes.	N/A	N/A	N/A	N/A
Groundwater contamination events within Source Protection Zones	No – the Scheme is not located within, or in proximity to, any Source Protection Zones.	N/A	N/A	N/A	N/A
Tsunami or storm surge	No – the Scheme is geographically located at distance from the UK's coastline (approx. 70km south-west of The Wash)	N/A	N/A	N/A	N/A
Meteorological disasters					
Blizzards	Yes	People, drivers and workers	This type of event could cause road users to be trapped on the highway. The design of the Scheme has incorporated resilience measures to account for, and respond to, severe weather events, the details of which are presented in Chapter 2, The	No	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>Scheme of the Environment Statement [TR010044/APP/6.1].</p> <p>No further measures are therefore considered to be required as part of the Scheme.</p>		
Cyclonic storms	Yes	People, drivers and workers	<p>This type of event could result in damage to highway infrastructure and could affect journeys made by road users.</p> <p>The design of the Scheme has incorporated resilience measures to account for, and respond to, severe weather events, the details of which are presented in Chapter 2, The Scheme of the Environment Statement [TR010044/APP/6.1].</p> <p>No further measures are therefore considered to be required as part of the Scheme.</p>	No	N/A
Droughts	Yes	<p>Aquatic environment and ecological receptors</p> <p>People, drivers and workers</p>	<p>This type of event could result in the drying out of features forming part of the Scheme design, and/or result in dust affecting road users and highway operatives.</p>	No	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>The design of the Scheme has incorporated resilience measures to account for, and respond to, severe weather events, the details of which are presented in Chapter 2, The Scheme of the Environment Statement [TR010044/APP/6.1].</p> <p>No further measures are therefore considered to be required as part of the Scheme.</p>		
Thunderstorms	Yes	People, drivers and workers	<p>This type of event could result in lightning strikes to elevated structures (such as bridges) introduced as part of the Scheme.</p> <p>The design of the Scheme has incorporated resilience measures to account for, and respond to, severe weather events, the details of which are presented in Chapter 2, The Scheme of the Environment Statement [TR010044/APP/6.1].</p> <p>No further measures are therefore considered to be required as part of the Scheme.</p>	No	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
Hailstorms	Yes	People, drivers and workers	<p>This type of event could result in difficult driving conditions for road users.</p> <p>The design of the Scheme has incorporated resilience measures to account for, and respond to, severe weather events, the details of which are presented in Chapter 2, The Scheme of the Environment Statement [TR010044/APP/6.1].</p> <p>No further measures are therefore considered to be required as part of the Scheme.</p>	No	N/A
Heatwaves	Yes	<p>Aquatic environment and ecological receptors</p> <p>People, drivers and workers</p>	<p>This type of event could give rise to changes in climatic conditions, with road infrastructure exposed to greater heat intensity and exposure to sunlight.</p> <p>The design of the Scheme has incorporated resilience measures to account for, and respond to, severe weather events, the details of which are presented in Chapter 2, The Scheme of the Environment Statement [TR010044/APP/6.1].</p>	No	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			No further measures are therefore considered to be required as part of the Scheme.		
Tornadoes	No – these events are uncommon in the UK. On the rare occasions where these conditions do emerge they are typically of a force that is much less destructive in comparison to those found in other parts of the world.	N/A	N/A	N/A	N/A
Wildfires	Yes	Aquatic environment and ecological receptors Properties People, drivers and workers	Parts of the Scheme would be located in, and be surrounded by, areas of grassland that could be at risk of wildfire events during hot and dry periods, for example from vehicle incidents, deliberate arson or accidental causes. In the event of a wildfire event presenting a risk to drivers, for example through the proximity of the fire and/or the spread of smoke across the highway, road or lane closures would be implemented by Highways England until such time	No	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>the fire is controlled and extinguished by emergency response teams.</p> <p>It is anticipated that the reduction in the rate of car accidents as a consequence of the Scheme would reduce the risk of these incidents triggering fires.</p> <p>The design of the Scheme has incorporated resilience measures to account for, and respond to, severe weather events, the details of which are presented in Chapter 2, The Scheme of the Environment Statement [TR010044/APP/6.1].</p> <p>No further measures are therefore considered to be required as part of the Scheme.</p>		
Air quality events	Yes	Ecological receptors People, drivers and workers	<p>Emissions associated with vehicles travelling on new and improved sections of highway proposed as part of the Scheme may contribute to events associated with poor air quality.</p> <p>The potential for significant effects arising from this type of event has been considered in detail as part of the EIA, as reported in Chapter 5,</p>	No	Chapter 5 Air quality

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>Air quality of the Environmental Statement [TR010044/APP/6.1].</p> <p>Accordingly, there is no requirement to consider and evaluate this type of event further.</p>		
Space disasters					
Impact events and airburst	No – the risk associated with this type of event occurring is very low.	N/A	N/A	N/A	N/A
Solar flare	Yes	Road users	<p>Solar flare events are known to interrupt radio and other electronic communications; however, no such systems would be implemented as part of the Scheme.</p> <p>Specific measures are therefore not considered to be required as part of the Scheme.</p>	No	N/A
Transport accidents					
Road accidents	Yes	Aquatic environment and ecological receptors	The Scheme has been designed to achieve a reduction in existing accident rates on the road network, and to manage any accidental	No	Chapter 13 Road drainage and the water environment

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
		People, drivers and workers	<p>spillages through the incorporation of modern drainage and treatment systems.</p> <p>The environmental risks posed by spillages of hazardous loads as a result of road accidents have been considered within the EIA.</p>		
Rail accidents	Yes	<p>Aquatic environment and ecological receptors</p> <p>People, drivers and workers</p>	<p>The Scheme would cross a section of the East Coast Main Line to the south of the settlement of Little Barford.</p> <p>The presence of this operational railway has been taken account of during the definition of the outline construction working methods and timing/phasing of activities.</p> <p>These working methods and phasing of activities are outlined in Chapter 2, The Scheme of the Environmental Statement [TR010044/APP/6.1] and would be further developed by the Principal Contractor.</p> <p>In addition, a two-party overbridge agreement covering the construction of the Scheme would be signed and agreed between Highways England</p>	No	Chapter 2 The Scheme

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>and Network Rail prior to the commencement of construction.</p> <p>Minimising the risk of operational rail accidents has been considered during the design-development of the Scheme. Approval in principle for the highway design has been secured from Network Rail, and this accounts for Network Rail's specific requirements – for example horizontal and vertical clearances, and containment requirements on bridge parapets.</p> <p>In addition, the protective provisions with Network Rail allow Network Rail to specify any protective works which in its opinion are necessary to ensure the safety or stability of railway property or the continuation of that safe and efficient operation of the railway network.</p>		
Aircraft disasters	No – the Scheme is located at distance from the nearest international airport (Luton – approx. 34km (21 miles) south) and domestic airport	N/A	N/A	N/A	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
	(Cambridge – approx. 18km (11 miles) east).				
Maritime disasters	No – the Scheme would be located on land and at distance from coastal areas (approx. 70km (43 miles) south-west of The Wash).	N/A	N/A	N/A	N/A
Engineering accidents and failures					
Bridge failure	Yes	Aquatic environment and ecological receptors People, drivers and workers	Bridge works are proposed as part of the Scheme. These structures have been designed to meet modern safety standards, reducing their likelihood of future failure. The risk associated with the Scheme of this event is considered no greater than other roads that include structures designed to comparable standards.	No	Chapter 2 The Scheme
Property or bridge demolition accidents	Yes	People, drivers and workers	The Scheme would require the demolition of two residential properties (Brook Cottages – Grade II Listed).	No	Chapter 2 The Scheme

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>A group of commercial buildings (including a hotel and petrol station) would require demolition as part of the Scheme, located on the A1 at Black Cat Junction.</p> <p>A car wash facility near Caxton Gibbet would be removed to facilitate progression of the Scheme.</p> <p>The existing Roxton Road bridge and redundant sections of carriageway would be demolished as part of the Scheme.</p> <p>The risks of accidents occurring during demolition works would be taken into account by the Principal Contractor and considered as part of their own detailed methodology and risk assessments carried out in advance of these works. Best practice construction techniques would also be used by the Principal Contractor during demolition works to reduce the risk of accidents occurring.</p> <p>Surveys would be undertaken prior to the demolition of properties and structures to confirm whether any potential harmful substances (for</p>		Chapter 12 Population and human health

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
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			<p>example asbestos) are present, and to determine the risk to people.</p> <p>Where necessary, demolition works would comply with <i>The Construction (Design and Management) Regulations 2015</i> (Ref 1-19) and any necessary notice requirements under the Building Act 1984 (Ref 1-20).</p>		
Tunnel failure/fire	No – no tunnel structures are proposed as part of the Scheme.	N/A	N/A	N/A	N/A
Dam failure	No – no dams are located within proximity of the Scheme.	N/A	N/A	N/A	N/A
Flood defence failure	Yes	People, drivers and workers	<p>The Scheme would cross areas of floodplain associated with the River Great Ouse (east of the A421/A1 junction) and Hen Brook (south-east of St. Neots).</p> <p>The area does not benefit from flood defences or provides flood storage areas.</p> <p>The design of the Scheme has been developed to include allowances for</p>	No	<p>Chapter 2 The Scheme</p> <p>Chapter 13 Road drainage and the water environment</p>

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			future climate change that could result in flooding. The potential risk of breach events has been considered in the EIA as part of the Road Drainage and the Water Environment assessment.		
Mast and tower collapse	No – no masts or towers are proposed as part of the Scheme, and no such infrastructure currently exists within a ‘topple’ distance from the Scheme.	N/A	N/A	N/A	N/A
Building failure or fire	Yes	People, drivers and workers	Buildings in proximity to the Scheme comprise low-rise residential and commercial properties, a number of which have been identified as requiring demolition to facilitate progression of the Scheme. The risk of building failure or fire occurring during construction of the Scheme would be taken into account by the Principal Contractor and considered as part of their own detailed methodology and risk	No	Chapter 2 The Scheme

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>assessments carried out in advance of these works.</p> <p>Best practice construction techniques would also be used by the Principal Contractor during construction of the Scheme to reduce the risk of building failures and fires, including where works would be undertaken in proximity to buildings and premises that contain potentially flammable substances and materials (for example petrol stations) or any establishments subject to <i>The Control of Major Accident Hazards Regulations 2015</i> (Ref 1-9).</p> <p>Operationally, the risk of building failures or fires on land uses surrounding the Scheme are not considered to be any greater than those associated with existing land uses surrounding the existing A428.</p>		
Utilities failure	Yes	People, drivers and workers	Underground and above-ground utilities coincide with the Scheme, the responsibilities of which lie with the relevant local operator, company or statutory undertaker should this infrastructure fail.	No	Chapter 4 Environmental assessment methodology

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>The requirement for utility diversion works has been considered as part of the design-development of the Scheme, and such works have been considered within the EIA.</p> <p>The potential risk of construction-related incidents when undertaking diversion works as part of the Scheme would be covered by existing legislation and by any relevant protective provisions secured by the Order.</p> <p>Construction of the Scheme would require the diversion of a high pressure gas main, which could be subject to failure – for example through corrosion and leakage – leading to the release of gas conveyed through the pipeline into the environment. The risk of failure would be managed through construction of the pipeline to relevant design standards, and through the undertaking of risk assessments to minimise the probability of such an event occurring.</p>		

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			The <i>National Emergency Plan: Downstream Gas and Electricity</i> (Ref 1-21) sets out the response arrangements that would be implemented in the event of a gas or electricity supply emergency relating to a failure of utilities infrastructure.		
Industrial accidents					
Defence industry and Unexploded Ordnance risk	Yes	Aquatic environment and ecological receptors People, drivers and workers	Potential exists for encountering unexploded ordnance during construction of the Scheme. Best practice measures would be undertaken by the Principal Contractor during construction of the Scheme to brief operatives and raise awareness of this issue, and to define appropriate response strategies should this be discovered during the works. Such measures are described in the First Iteration EMP [TR010044/APP/6.8]. There would be a limited risk of unexploded ordnance affecting the Scheme, once operational.	No	Chapter 2 The Scheme

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
Energy industry (fossil fuel)	Yes	People, drivers and workers	The risk of ground contamination resulting from Scheme progression has been assessed as part of the geotechnical investigations, geological and hydrological studies undertaken to inform the design-development and EIA processes.	No	Chapter 9 Geology and soils Chapter 13 Road drainage and the water environment
Nuclear power	No – all such active plants are located at considerable distance from the Scheme.	N/A	N/A	N/A	N/A
Oil and gas refinery / storage	No – no such facilities are located in proximity to the Scheme.	N/A	N/A	N/A	N/A
Food industry	No – no such facilities are located in proximity to the Scheme.	N/A	N/A	N/A	N/A
Chemical industry	No – no such facilities are located in proximity to the Scheme.	N/A	N/A	N/A	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
Manufacturing industry	No – no such facilities are located in proximity to the Scheme.	N/A	N/A	N/A	N/A
Mining industry	Yes	People, drivers and workers	Quarrying operations for sand and gravel are recorded on land adjacent to Black Cat Junction on the A1 (Black Cat Quarry). Geotechnical investigations undertaken as part of the design-development and EIA processes have considered historic mining activity on land associated with the Scheme.	No	Chapter 2 The Scheme Chapter 9 Geology and soils Chapter 10 Material assets and waste
Terrorism, crime, war and civil unrest					
Bomb / vehicle attack on people or infrastructure	No – the Scheme is unlikely to be a target for this type of event due to the low number of exposed targets.	N/A	N/A	N/A	N/A
Mass shooting	No – the Scheme is unlikely to be a target for this type of event due to	N/A	N/A	N/A	N/A

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
	the low number of exposed targets.				
Chemical / gas attack	No – the Scheme is unlikely to be a target for this type of incident due to the low number of exposed targets.	N/A	N/A	N/A	N/A
Rioting	No – the nature of the Scheme is such that it is not considered to be a target for this type of event.	N/A	N/A	N/A	N/A
Cyber-attack	Yes	People, drivers and workers	<p>The increasing reliance on roadside technology could render the Scheme more vulnerable to a cyber-attack.</p> <p>Highways England is accountable to the Secretary of State for Transport for ensuring the resilience of their strategic road network to national security risks, including cyber-attack.</p> <p>Highways England's <i>Information Management and Technology Strategy</i> (Ref 1-22) outlines the key principles that underpin the operation, maintenance and</p>	No	Chapter 2 The Scheme

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>modernisation of the organisation’s information and technology assets. This document states that Highways England is required to comply with Government policies and principles covering the areas of Cyber Security and Security of Services in the UK.</p> <p>Accordingly, the roadside technology incorporated into the Scheme has been designed to be compliant with relevant policies covering cyber security, which would minimise the risk of future attacks.</p>		
Disease					
Pandemic	Yes	People, drivers and workers	<p>Due to the global Coronavirus pandemic in 2020 and 2021, there is a risk that similar influenza-style pandemics could occur in the future.</p> <p>In such events, Government lockdown procedures would be implemented to limit the movement of people within the UK to control and reduce the spread of viral infection. Such restrictions would accordingly reduce the number and</p>	No	<p>Chapter 2 The Scheme</p> <p>Chapter 12 Population and human health</p>

Stage 1: long list	Stage 2: screening of long list	Stage 3: further screening		Stage 4: assessment	Relevant EIA topic(s) or Environmental Statement chapter
Event	Relevant to Scheme?	Relevant receptors	Mitigation and/or management action	Requires assessment?	
			<p>frequency of journeys made on the road network.</p> <p>Key workers would be identified by Highways England and its appointed network maintenance contractors to undertake essential highway repair and/or maintenance works, and to ensure the safe operation of the Scheme for those needing to make essential journeys during lockdown periods.</p>		
Spread of human, animal and plant diseases	Yes	<p>Aquatic and ecological receptors</p> <p>People, drivers and workers</p>	<p>The spread of disease as a consequence of the Scheme is not considered to be any greater than that associated with other highway schemes.</p> <p>Best practice control measures would be implemented by the Principal Contractor during construction to handle and dispose of any diseased plants and/or injurious weeds, and to prevent their spread. Such measures are described in the Biodiversity Management Plan within the First Iteration EMP [TR010044/APP/6.8].</p>	No	<p>Chapter 2 The Scheme</p> <p>Chapter 8 Biodiversity</p>

1.7 References

- Ref 1-1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. HMSO (2017).
<http://www.legislation.gov.uk/ukxi/2017/572/contents/made>
- Ref 1-2 Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification). Official Journal of the European Union (2011).
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32011L0092>
- Ref 1-3 Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. Official Journal of the European Union (2014).
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0052>
- Ref 1-4 National Policy Statement for National Networks. Department for Transport (2014).
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- Ref 1-5 Overarching National Policy Statement for Energy (EN-1). Department of Energy & Climate Change (2011).
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf
- Ref 1-6 National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4). Department of Energy & Climate Change (2011).
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47857/1941-nps-gas-supply-oil-en4.pdf
- Ref 1-7 The Pipelines Safety Regulations 1996. HMSO (1996).
<https://www.legislation.gov.uk/ukxi/1996/825/contents/made>
- Ref 1-8 National Planning Policy Framework. Department for Communities and Local Government (2019).
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf
- Ref 1-9 The Control of Major Accident Hazards Regulations 2015. The Stationery Office (2015).
https://www.legislation.gov.uk/ukxi/2015/483/pdfs/ukxi_20150483_en.pdf
- Ref 1-10 Health and Safety at Work etc. Act 1974. HMSO (1974).
https://www.legislation.gov.uk/ukpga/1974/37/pdfs/ukpga_19740037_en.pdf
- Ref 1-11 The Workplace (Health, Safety and Welfare) Regulations 1992. HMSO (1992).
<http://www.legislation.gov.uk/ukxi/1992/3004/contents/made>

- Ref 1-12 The Management of Health and Safety at Work Regulations 1999. HMSO (1999).
<http://www.legislation.gov.uk/ukxi/1999/3242/contents/made>
- Ref 1-13 Gas Safety (Management) Regulations 1996. HMSO (1996).
<https://www.legislation.gov.uk/ukxi/1996/551/contents/made>
- Ref 1-14 A428 Black Cat to Caxton Gibbet: Environmental Scoping Report. Highways England (2019).
<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010044/TR010044-000006-BCCG%20-%20Scoping%20Report.pdf>
- Ref 1-15 National Risk Register of Civil Emergencies, 2017 Edition. Cabinet Office (2017).
<https://www.gov.uk/government/publications/national-risk-register-of-civil-emergencies-2017-edition>
- Ref 1-16 Know Your Risks: Risks and Plans for Bedfordshire. Bedfordshire Prepared (2017).
<https://www.bedfordshireprepared.org.uk/wp-content/uploads/2017/03/Know-Your-Risks-Risks-and-Plans.pdf>
- Ref 1-17 Community Risk Register. Cambridgeshire and Peterborough Local Resilience Forum (2020).
<https://www.cambsfire.gov.uk/community-safety/be-prepared-for-an-emergency/cambridgeshire-and-peterborough-local-resilience-forum-cplrf/community-risk-register/>
- Ref 1-18 Advice Note eleven: Annex G – The Health and Safety Executive. The Planning Inspectorate (2017).
<https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2018/03/Advice-note-11-Annex-G.pdf>
- Ref 1-19 The Construction (Design and Management) Regulations 2015. The Stationery Office (2015).
<https://www.legislation.gov.uk/ukxi/2015/51/contents/made>
- Ref 1-20 Building Act 1984. HMSO (1984).
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- Ref 1-21 National Emergency Plan: Downstream Gas and Electricity. Department for Business, Energy & Industrial Strategy (2019).
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- Ref 1-22 Information Management and Technology Strategy. Highways England (2016).
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