East Midlands Gateway
Phase 2 (EMG2)

Document [6.21]

ENVIRONMENTAL STATEMENT

Volume 1 Main Statement

Chapter 20

Major Accidents and Disasters

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The East Midlands Gateway Phase 2 and Highway Order 202X and The East Midlands Gateway Rail Freight and Highway (Amendment) Order 202X

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20. Major Accidents and Disasters

20.1. Introduction

20.1.1. This chapter of the ES presents the findings of EIA work undertaken concerning potential impacts of the **Scheme** on major accidents and disasters (MAD) matters. For the purposes of clarity, this chapter considers the **Scheme** which comprises the **EMG2 Main Site**, **Highway Works** and **EMG1 Works** as set out in **Chapter 3: Project Description** and all associated risk activities.

20.1.2. This chapter reports the preliminary assessment of the potential vulnerability of the **Scheme** to MAD during construction and operation.

20.1.3. The relevant Appendices to this chapter are:

- Appendix 20a: Major Accidents and Disasters Long List
- Appendix 20b: ES Risk Record

20.1.4. This chapter:

- outlines the scope and methodology of the assessment;
- describes relevant policy, legislation and guidance;
- presents the environmental baseline relevant to the MAD assessment;
- describes the embedded mitigation measures;
- presents the potential environmental effects on MAD arising from the **Scheme**, based on the information gathered and the analysis and assessments undertaken;
- identifies any assumptions and limitations encountered in compiling the environmental information; and
- highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

20.2. Scope and Methodology of the Assessment

20.2.1. The MAD assessment of the **Scheme** has been undertaken in line with the policy, legislation and guidance described in section 20.3.

20.2.2. Key definitions for this MAD chapter are provided in Table 20.1. These definitions have been developed by reference to the definitions used in the policy, legislation and guidance noted in section 20.3 as well as professional judgement in the context of the **Scheme**.

Table 20.1: Definitions

Key term	Definition
(Major) Accident	An event that threatens immediate or delayed serious damage to human health, welfare and/or the environment and requires the use of resources beyond those of the Applicant or its contractors to respond to the event. Serious damage includes the loss of life or permanent injury and/or permanent or long lasting damage to an environmental receptor that cannot be restored through minor clean-up and restoration efforts. The significance of this effect will consider the extent, severity and duration of harm and the sensitivity of the receptor.
Adaptive Capacity	The capacity of receptors to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.
ALARP	"ALARP" stands for "as low as reasonably practicable". Reasonably practicable involves weighing a risk against the trouble, time and money needed to control it. Therefore, ALARP describes the level to which the HSE expects to see workplace risks controlled.
Disaster	A naturally occurring phenomenon such as an extreme weather event (for example storm, flood, temperature) or ground-related hazard events (for example subsidence, landslide, earthquake) with the potential to cause an event or situation that meets the definition of a Major Accident as defined above.
External Influencing Factor	A factor that occurs beyond the limits of the **Scheme** that may present a risk to the **Scheme**, e.g., if an external disaster occurred (e.g., earthquake, COMAH site major accident) it would increase the risk of serious damage to an environmental receptor associated with the **Scheme**.
Hazard	Anything with the potential to cause harm, including ill-health and injury, damage to property or the environment; or a combination of these.
Internal Influencing Factor	A factor that occurs within the limits of the **Scheme** that may present a risk to the **Scheme**.
Magnitude of Impact	The magnitude of an impact is typically defined by the following factors: extent – the area over which an effect occurs; duration – the time for which the effect occurs; frequency – how often the effect occurs; and

	severity – the degree of change relative to existing conditions.
MAD Group	A MAD which can be grouped as either a Natural Hazard (Disaster) or Technological or Manmade Hazard (Major Accident).
MAD Category	A set of values used to categorise events within a related parent MAD Group, such as Geophysical or Industrial and Urban Accidents.
MAD Type	A set of values used to sub-categorise events within a MAD Category, such as Major Accident Hazard sites .
Risk	The likelihood of an impact occurring combined with effect or consequence(s) of the impact on a receptor if it does occur.
Risk Event	An identified, unplanned event, which is considered relevant to the **Scheme** and has the potential to be a Major Accident and/or Disaster subject to assessment of its potential to result in a significant adverse effect on an environmental receptor.
Sensitivity	The sensitivity of a receptor is a function of its value, and capacity to accommodate change reflecting its ability to recover if it is affected. It is typically defined by the following factors: Adaptability – the degree to which a receptor can avoid, adapt to or recover from an effect. Tolerance – the ability of a receptor to accommodate temporary or permanent change. Recoverability – the temporal scale over and extent to which a receptor will recover following an effect.
Vulnerability	In the context of EIA Regulations, the term refers to the 'exposure and resilience' of the **Scheme** to the risk of a MAD. Vulnerability is influenced by sensitivity, adaptive capacity and magnitude of impact.

20.2.3. To date, there is no regulatory guidance on how to consider MAD within the context of an EIA. However, the assessment takes account of guidance noted in Section 20.3. The assessment of MAD has been achieved through a review of available documentation and regulatory requirements. The assessment does not involve assessment from 'first principles' as it is recognised that existing legislation and health and safety requirements already identify risks and help to protect human beings and the environment.

20.2.4. The assessment presents any identified risks along with whether these are managed to be ALARP or require further precautionary mitigation actions beyond those already integrated into the design and execution of the **Scheme**.

20.2.5. The potential for identified relevant MAD to result in a significant adverse environmental effect have been evaluated using a risk-based approach. The approach has considered the environmental consequences of a MAD, the likelihood of these consequences occurring, considering planned design and embedded mitigation, and the acceptability of the subsequent risk to the relevant receptor. The following process has been applied to each of the MAD categories included for assessment:

- identifying risks;
- screening these risks;
- defining the impact;
- assessing the risk; and
- appraising risk management options.

Baseline data

20.2.6. A desk-based data collection exercise has been undertaken, including review of available information, to determine the baseline conditions.

20.2.7. The key sources of information used to determine the baseline for MAD are:

- National Risk Register of Civil Emergencies ;
- British Geological Survey (BGS) GeoIndex Onshore;
- International Disaster Database;
- Health and Safety Executive's (HSE) Planning Advice Web App;
- HSE's COMAH 2015 Public Information Search;
- Ordnance Survey mapping;
- Google aerial and street view maps; and
- Technical topic chapters (Chapters 6 to 19)

Sensitive receptors

20.2.8. In line with Schedule 4 of the EIA Regulations, the following sensitive receptors are considered with respect to MAD:

- members of the public and local communities;
- infrastructure and the built environment;
- the natural environment, including ecosystems, land and soil quality, air quality,
- surface and groundwater resources and landscape;
- the historic environment, including archaeology and built heritage; and
- the interaction between the factors above.

20.2.9. The specific potential receptors of effects resulting from MAD within those categories are reported in the relevant other ES chapters (6 to 19).

20.2.10. Excluded receptors include:

- Staff of the Applicant and/or their suppliers, whether during the construction or operation phase of the **Scheme** due to an employer's commitment and obligations to manage risks to employees are addressed in the Health and Safety At Work etc Act 1974.
- Members of the public who are wilfully trespassing, for example, a breach of the **Scheme's** perimeter fencing. Defined as outside the occupier's legal requirements under the Occupiers' Liability Act 1984.

Identifying risks

20.2.11. Low consequence events, whatever their likelihood, do not meet the definition of MAD as defined in the IEMA guidance. For example, minor spills which may occur during construction, but will be limited in area and volume and temporary in nature, do not meet the definition of a major accident. Such minor events will be dealt with by the measures included in the CEMP (Appendix [3x]) and do not fall within the scope of this assessment.

20.2.12. High likelihood and high consequence events also do not meet the definition of MAD as the risk assessment and design process will identify and avoid or design out such risks. In addition, activities which fall into this category are highly regulated to minimise the risk to be ALARP.

20.2.13. This assessment focuses on low and very low likelihood, but potentially high consequence events.

20.2.14. Low likelihood events are defined, for the purposes of this assessment, as those which may occur during the lifetime of the **Scheme**: no more than once in 10 years for the construction phase; and no more than once in 100 years for the operation phase. This is an upper boundary for low likelihood.

20.2.15. Very low likelihood events are also included in the assessment, which may only occur at most once in every 1,000 years. Mitigation measures will reflect what is reasonable for such rare events, considering their potential consequence, within the guiding principle of risks being ALARP.

20.2.16. High consequence events are considered as those having the potential to lead to a significant adverse effect should they occur. This remains the same for both very low and low likelihood events.

20.2.17. The risk identification process has used existing sources of information, wherever possible, such as risk assessments undertaken for the **Scheme** as part of other processes (many of which are required by law) or Risk Events identified within the UK's current National Risk Register. No additional risk assessments have been undertaken and the risk identification activity has focused on collating and reviewing existing sources of information.

20.2.18. To identify whether a Risk Event has the potential to be a MAD event, which also has the potential to have a significant adverse effect on an environmental receptor, three components

need to be present: a source, a pathway (between source and receptor) and a receptor. As such, and as recommended by DEFRA's 2011 Guidelines, the assessment uses the following conceptual model:

- The source is the original cause of the hazard, which has the potential to cause harm;
- The pathway is the route by which the source can reach the receptor; and
- The receptor is the specific component of the environment that could be adversely affected, if the source reaches it.

20.2.19. Risk Events which do not have all three components have been scoped out from further assessment.

Screen Risks

20.2.20. The following MAD screening process has been used to identify those Risk Events that will require further consideration within the assessment:

- Is there a potential source, and/or pathway and/or receptor? If not, no further assessment required;
- Is there a relevant environmental receptor present in the locations where the Risk Event could occur, and a pathway whereby the source of harm can reach the receptor? If not, no further assessment required; and
- Could the potential impact on the environmental receptor result in a potential for a significant adverse effect? If not, no further assessment required.

20.2.21. For those Risk Events which are not screened out during the three-step process, the following assessment methodology has been used. The assessment forms the basis for recommending additional mitigation measures, as appropriate. Refer to **Appendix 20a: Major Accidents and Disasters Long List**.

Define Mitigation Measures

20.2.22. Several mechanisms are in place to reduce the vulnerability of the **Scheme** to MAD or to mitigate significant effects on the environment should they occur. All measures to manage and reduce the risk of significant adverse effects occurring due to the vulnerability of the **Scheme** to MAD are considered to be embedded mitigation measures for the purposes of the assessment. It has been assumed that:

- the construction stage(s) of the **Scheme** will be managed through the implementation of a Construction Phase Plan (required under the CDM Regulations 2015) and an CEMP; and
- the design, installation, commissioning, operation and maintenance of plant, drainage systems, equipment, and machinery, including associated systems, will consider Good Engineering Practice.

20.2.23. Risk mitigation options fall into the following categories:

- Eliminate (or 'avoid') the risk by adopting alternative processes to eradicate the source of the hazard or remove the receptor.
- Reduce the risk by adapting proposed processes such that either the likelihood or the impact of the Risk Event can be decreased.
- Isolate the risk by using physical measures to ensure that should the Risk Event occur, it can be effectively isolated such that there is no pathway.
- Control the risk by ensuring that appropriate measures are in place (for example emergency response) so that should a Risk Event occur, it can be controlled and managed appropriately. The mitigation hierarchy of repair and compensate any significant damage to environmental receptors may then apply following a control measure.
- Exploit the risk if it presents potential benefits or new opportunities.

20.2.24. As safety risks will be required to be adequately addressed within the regulatory framework for the **Scheme**, it is not anticipated that significant residual effects, in terms of safety risks, will be identified as an output of the assessment.

20.2.25. Other measures of relevance to the assessment are described in the relevant technical chapters (Chapters 6 to 19).

20.2.26. A reasonable worst-case environmental impact(s) has been identified for each Risk Event included for assessment. Impacts have been identified in consultation with relevant disciplines for each environmental factor assessed within this ES. The environmental impacts are identified through a qualitative process that seeks to answer the question 'could this event constitute a major accident or disaster in terms of the definitions provided?'. Where relevant, specific sensitive receptors around the **Scheme** are considered. The Risk Record (**Appendix 20.2: ES Risk Record**) records the outcome of this process.

20.2.27. The likelihood of the reasonable worst-case environmental effect(s) occurring has been evaluated considering the following:

- the likelihood of the Risk Event occurring considering the measures already embedded into the design and execution of the **Scheme**; and
- the likelihood that an environmental receptor is affected by the Risk Event.

20.2.28. Likelihood assessments evaluate whether the effect (for example, loss of life) is a possible outcome of the Risk Event.

20.2.29. This evaluation refers to existing risk assessments as well as consultation with relevant discipline specialists.

20.2.30. The assessment of the risk has been carried out in line with the IEMA guidance.

20.2.31. Where likely significant adverse effects are identified, mitigation measures must be in place, commensurate with the likelihood of the event occurring. The assessment considers, in consultation with relevant environmental topics, whether the risk to the environmental receptor is managed to be ALARP with the embedded mitigation measures. If gaps are identified, where

the embedded mitigation measures do not represent management of risks to an environmental receptor to be ALARP, then additional measures will be required. The Risk Record presented in **Appendix 20b: ES Risk Record** records the outcome of the assessment.

Significance criteria

20.2.32. By definition, a major accident and/or disaster would have a major significant effect on the environment. Accordingly, any risks that could result in a MAD without suitable mitigation, management or regulatory controls in place will be assessed as significant. The determination of significance is based on professional judgement in accordance with the general methodology provided in **Chapter 1: Introduction** and the baseline receptors reported in Chapters 6 to 19.

Study area

20.2.33. MAD types both within and outside the **EMG2 Main Site**, **Highway Works** and **EMG1 Works** have been assessed, along with potential internal and external influencing factors. The following factors and associated distances from the **Scheme** boundary were adopted for setting the Study Area:

20.2.34. Manmade features:

- Airports and airfields within approximately 13km (the legal distance of the safeguarding zone for licensed airports in the UK.
- Control of Major Accident Hazard facilities within 5km;
- Major accident hazard pipelines within 500m;
- Fuel retail sites (including Liquified Natural Gas, Liquified Petroleum Gas) within 1km;
- Rail infrastructure within 500m; and
- Transmission (gas, electrical, oil/fuels) crossing the **Scheme** Boundary.

20.2.35. Natural features with the potential to create risks within:

- 3km (chiefly hydrological and geological, for example dam failure and seismic activity respectively); and
- 1km (chiefly hydrological and geological, for example flood risk and unstable ground conditions respectively).

20.2.36. The internal and external influencing factors, which may have high adverse consequences on the **Scheme**, are reviewed for the varying distances.

Limitations and Assumptions

20.2.37. The limitations, uncertainties, and assumptions made in assessing the vulnerability of the **Scheme** to a MAD are as follows:

20.2.38. The design of the **Scheme** and its implementation is guided by other industry standards and codes, many of which are mandatory. These require infrastructure and systems to be designed so that risks to people and the environment are either eliminated or reduced to levels that are

ALARP. This has therefore been assumed, although the detail of those measures is not known at this time.

20.2.39. Environmental effects associated with unplanned events that do not meet the definition of a major accident and/or disaster e.g., minor leaks and spills that may be contained within the construction sites are addressed in other relevant technical chapters.

Consultation

20.2.40. Key consultation discussions are summarised in Table 20.2, together with details of how these issues have been considered in the production of this ES and cross-references to where this information may be found.

Table 20.2: Response to the Scoping Opinion adopted by the Planning Inspectorate 24 September 2024

PINS ID	Ref	Description / Theme	Inspectorate's Comment	How and where addressed?
3.0.4	Table 5.1	Aerodrome safeguarding	The Applicant proposes to scope out effects on aerodrome safeguarding on the basis that a drainage design and a bird strike assessment would be included with the DCO. No measures are defined in the Scoping Report. The Inspectorate notes that the Proposed Development is adjacent to East Midlands Airport. Scoping Report Chapter 11 also states that the drainage design for the **EMG2 Main Site** would potentially incorporate surface water storage and a series of swales and basins. The Inspectorate therefore considers that in the absence of details at this stage on the measures to control bird strike risk, that aerodrome safeguarding cannot be scoped out of the assessment. The ES should therefore include a description of any potential hazards to air safety. This should cross refer to the assessment of major accidents and disasters. Please also therefore	Information and assessment of drainage is provided in **Chapter 13: Flood Risk and Drainage**. Information and assessment of bird strikes is provided in Chapter 9: Ecology and Biodiversity. The nature, location and extent of potential hazards and risks are described in this ES chapter. All control measures and delivery mechanisms secured are described.

			refer to ID 3.0.7 of this Scoping Opinion.	
3.0.7	Table 5.1	Vulnerability to major accidents or disasters	The Scoping Report proposes to scope out vulnerability to major accidents and disasters on the basis that the Proposed Development will introduce a logistics and industrial development into an area with similar land uses, and that construction practices would adhere to good practice guidance. The Inspectorate notes that the Proposed Development lies adjacent to East Midlands Airport and within the consultation zone of one Major Hazard Site. Given the nature and scale of the Proposed Development and its potential to result in increased populations near these facilities, and as the nature and types of major accidents or disasters have not been defined in the Scoping Report, the Inspectorate does not agree to scope this aspect out. The ES should include a risk assessment that sets out the potential risks from and vulnerability of the Proposed Development to, major accidents and disasters. The ES should also include details of the proposed response plans to any identified risks and details of how these would be secured within a DCO.	Risks associated with the location of the **Scheme** in proximity of East Midlands Airport and within the consultation zone of one Major Hazard Site are considered within this chapter. A preliminary assessment of the vulnerability of the **Scheme** to MAD during construction and operation is presented in **Appendix 20a: Major Accidents and Disasters Long List** and **Appendix 20b: ES Risk Record**. MAD measures adopted as part of the **Scheme** are outlined in this chapter.
N/A	HSE's land use planning advice	HSE's consultation distances and risk assessment	The consultation zones for Major Hazard Site H4798 (Gasrec Ltd, Zone B East Midlands Gateway, DE74 2DL) are almost fully encompassed by the north section of the proposed development footprint. It is unclear from the information provided whether this major hazard	Risks associated with the location of the **Scheme** within the consultation zone of one Major Hazard Site is

			site is an integral part of the previous EMG1. The EIA scoping report, in Section 5.9, states that Vulnerability to major accidents or disasters and population and human health impacts are factors that could to be scoped out of the EIA at this stage. However, given that the development could result in increased populations in the vicinity of this major site, for example section 4.7 indicates that one of the alterations to the existing **EMG1** is the extension of the management suite, the location of additional people in the vicinity of this major hazards site should be given further consideration. At this stage there is insufficient information with regards to the location of people associated with the development in relation to the major hazards site to provide further comment. It would be beneficial for the applicant to undertake a risk assessment as early as possible to satisfy themselves that their design and operation will meet the requirements of relevant health and safety legislation as design of the Proposed Development progresses.	considered within this chapter. HSE's feedback on this ES chapter is requested.
N/A	HSE's land use planning advice	Guidance	Regulation 5(4) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires the assessment of significant effects to include, where relevant, the expected significant effects arising from the proposed development's vulnerability to major accidents. HSE's role in NSIPs is summarised in the Planning Inspectorate's Advice Note 11 'working with public bodies in the infrastructure planning process' Annex G Nationally Significant Infrastructure Projects - Advice Note	Noted. Guidance used to support the assessment within this chapter is listed in section 20.3.

			Eleven, Annex G: The Health and Safety Executive - GOV.UK (www.gov.uk). This document includes the requirement to consider risk assessments under the heading "Risk assessments".	

20.3. Policy, Guidance and Legislative Context

Policy

20.3.1. The National Policy Statement (NPS) for National Networks March 2024 has been considered, in particular references made to road and rail safety. The NPS sets out the need and the Government's policies to deliver the development of NSIPs on the national road and rail networks in England.

20.3.2. The National Planning Policy Framework (NPPF), last revised in December 2024, notes that, with relevance to MAD:

20.3.3. Paragraph 46 states *"Local planning authorities should consult the appropriate bodies when considering applications for the siting of, or changes to, major hazard sites, installations or pipelines, or for development around them".*

20.3.4. Paragraph 102 states: *"Planning policies and decisions should promote public safety and take into account wider security and defence requirements by:*

- *a) anticipating and addressing possible malicious threats and other hazards (whether natural or man-made), especially in locations where large numbers of people are expected to congregate 44 . 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. The safety of children and other vulnerable users in proximity to open water, railways and other potential hazards should be considered in planning and assessing proposals for development; and*
- *b) 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".*

Legislation

20.3.5. The legislation relevant to the assessment of MAD for the **Scheme** is detailed in Table 20.3.

Table 20.3 MAD summary of legislation

Legislation	Description
The Infrastructure Planning (EIA) Regulations 2017	Schedule 4 Paragraph 5(d) of the EIA Regulations requires: "A description of the likely significant effects of the development on the environment resulting from … the risks to human health, cultural heritage or the environment (for example due to accidents or disasters)". Schedule 4, Paragraph 8 of the EIA Regulations requires: A description of the expected significant adverse effects of the **Scheme** on the environment deriving from the vulnerability of the **Scheme** to risks of MAD that are relevant to the project concerned. If appropriate, a description of the measures envisaged to prevent or mitigate the significant adverse effects of major accidents and/or disasters on the environment and details of the preparedness for and proposed response to such emergencies.
Health and Safety at Work etc. Act 1974 (c. 37)	Provides the framework for the regulation of workplace health and safety in the UK. It provides a legal framework for the provision of safe plant and equipment and prevention of harm to people from occupational hazards present in a workplace, including emergencies, which may affect those offsite or visiting the **Scheme**.
Construction (Design and Management) (CDM) Regulations 2015	Places legal duties on almost all parties involved in construction work, with specific duties on clients, designers and contractors, so that health and safety is considered throughout the life of a construction project from inception to demolition and removal. The client, designer(s) and contractor(s) must avoid foreseeable risks, so far as is reasonably practicable, by eliminating hazards associated with the design, construction, operation and maintenance of the **Scheme**. The CDM regulations ensure that mechanisms are in place to continually identify, evaluate and manage safety risks throughout the design, construction and operation phases of the **Scheme**. Many of the risks identified and managed at the detailed design phase also serve to eliminate or reduce the risk of a major accident (and therefore environmental consequence) occurring during the construction and operation phases.
The Supply of Machinery (Safety)	The regulations aim to remove technical barriers to trade, in particular products, by harmonising national health and safety provisions applicable to such products when they are first placed on the market or put into service in the European Economic Area.

Regulations 2008	Many of the risks identified and managed in the design of machinery used in and associated with the **Scheme** will serve to eliminate or reduce the risk of a major accident (and therefore environmental consequence) occurring during the construction and operation phases of the **Scheme**.
Occupier's Liability Act 1984 (c.3)	This Act amends the law of England and Wales as to the liability of persons as occupiers of premises for injury suffered by persons other than their visitors. The Act provides a legal framework for the prevention of harm to people from occupational safety and health hazards present on premises under the control of the occupier, including to those visiting the premises. The **Scheme** will include premises controlled by the Applicant that will attract visitors who could be impacted by MAD whilst on/crossing those controlled premises.

Guidance

20.3.6. The assessment has been carried out with reference to the following guidance:

- Major Accidents and Disasters in EIA: A Primer, published by the Institute of Environmental Management and Assessment[1].
- Public Health England Advice on the content of Environmental Statements accompanying an application under the Nationally Significant Infrastructure Planning Regime.
- Planning Inspectorate's Advice Page on working with public bodies in the infrastructure planning process Annex G – The Health and Safety Executive[2]
- DEFRA 'Green Leaves III' Guidelines for Environmental Risk Assessment and Management (2011)[3]
- ISO 31000:2018 Risk Management – Guidelines 2018[4]

[1] Institute of Environmental Management and Assessment. September 2020. Major Accidents and Disasters in EIA: A Primer. Available online: https://www.iema.net/resources/blog/2020/09/23/iema-major-accidents-and-disasters-in-eia-primer

[2] https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-eleven-working-with-public-bodies-in-the-infrastructure-planning-process/nationally-significant-infrastructure-projects-advice-note-eleven-annex-g-the-h

[3] https://www.gov.uk/government/publications/guidelines-for-environmental-risk-assessment-and-management-green-leaves-iii

[4] https://www.iso.org/standard/65694.html

20.4. Baseline Conditions

20.4.1. The baseline relevant to MAD comprises:

- features external to the **Scheme** that contribute a potential source of hazard to the **Scheme**;
- sensitive environmental receptors at risk of significant effect; and
- current (without the **Scheme**) MAD risks in the locality.

20.4.2. The **EMG2 Main Site**:

- Is located adjacent to East Midlands Airport;
- Is located within the consultation zones for Major Hazard Site H4798;
- Is not located within a 5km radius of any Control of Major Accident Hazard (COMAH) sites or HSE Licensed explosives sites;
- Is located immediately adjacent to the Donington Park motorway services including fuel retail.
- Requires diversion of the existing on-site overhead and underground 11kV (HV) and LV cables.
- Falls within the East Midlands Freeport designation, specifically the East Midlands Airport and Gateway Industrial Cluster (EMAGIC) site.

20.4.3. The **Highways Works**:

- Is located adjacent to East Midlands Airport;
- Is located within the consultation zones for Major Hazard Site H4798;
- Fall within the East Midlands Freeport designation, specifically the East Midlands Airport and Gateway Industrial Cluster (EMAGIC) site;
- Is not located within a 5km radius of any Control of Major Accident Hazard (COMAH) sites or HSE Licensed explosives sites;
- Is located immediately adjacent to the Donington Park motorway services including fuel retail.
- Requires diversion of the existing underground 11kV (HV) and LV cables within the highway to accommodate the proposed **Highways Works**.
- Requires diversion of the existing underground Medium Pressure and Low Pressure gas mains within the EMG2 Access Works to accommodate the proposed alterations to the existing highway.
- Requires diversion of the existing underground duct network within the **Highway Works** to accommodate the proposed alterations to the existing highway.

20.4.4. The **EMG1 Works:**

- Is located adjacent to East Midlands Airport;

- Is located within the consultation zones for Major Hazard Site H4798;
- Falls within the East Midlands Freeport designation, specifically the East Midlands Airport and Gateway Industrial Cluster (EMAGIC) site;
- Includes elements of land within parts of the original EMG1 site including the rail freight terminal;
- Includes land within and around the existing EMG1 public transport interchange and site management building at the EMG1 site entrance.
- Is not located within a 5km radius of any Control of Major Accident Hazard (COMAH) sites or HSE Licensed explosives sites.
- Will include a compound to host new 33kV switchboard.

20.4.5. Baseline information from ES Chapters 6 to 19 have also been used to inform the MAD assessment.

Future baseline

20.4.6. The future baseline is not anticipated to differ significantly from the current baseline with regards to the vulnerability of the **Scheme** to the risk of major accident(s) and/or disaster(s).

20.5. Potential Impacts

20.5.1. Potential Impacts are not considered for the MAD assessment. A MAD assessment takes account of the embedded design, mitigation and enhancement measures detailed in Section 20.6 to define the vulnerability of the **Scheme** to the risk of MAD during both the construction and operation phases, detailed in Section 18.8.

20.6. Mitigation Measures

[this section to be completed]

20.6.1. As part of the design process a number of embedded mitigation measures are included within the **Scheme** to reduce the overall impact of the development. The Applicant has committed to constructing and managing the **Scheme** in accordance with the measures listed in Table 20.4 to reduce the potential risks of MAD.

20.6.2. Additional design, mitigation and enhancement measures are set out in Appendix 20b: ES Risk Record. With the mitigation measures proposed, no monitoring has been identified as necessary.

Table 20.4 Mitigation Measures

Measures adopted as part of the Scheme	**Justification**
CDM Health & Safety Plan (relevant to construction phase only)	The CDM regulations ensure that mechanisms are in place to continually identify, evaluate and manage safety risks throughout the design, construction and operation phases of the **Scheme**. Many of the risks identified and managed at the detailed design phase also serve to eliminate or reduce the risk of a major accident (and therefore environmental consequence) occurring during the construction and operation phases.
Construction Environmental Management Plan (CEMP) for construction phase environmental mitigation (to be submitted as part of the application for development consent)	The CEMP outlines measures to ensure compliance and adherence to safe and sustainable construction practices and sets out the controls that will be adopted during the construction of the scheme to minimise any adverse environmental effects (for example, noise, dust, lighting, surface water run-off and ecology). This will be appended to **Chapter 3** of this ES. A Site Waste Management Plan will also be provided and appended to **Chapter 18: Materials and Waste**. A CEMP ensures that risks associated with construction accidents are ALARP.
Sustainable Drainage System (SuDS)	A surface water drainage strategy for the **EMG2 Main Site** and Plot 16 (as part of the **EMG1 Works**) has been developed to ensure that run-off generated by the **Scheme** is dealt with in a sustainable manner in accordance with local and national standards. In respect of the **EMG2 Main Site**, the drainage strategy has been designed to intercept and store rainwater falling on the development, before discharging it to the local watercourse in the south east corner of the site at a runoff rate that will be agreed with the drainage authorities. This will require the installation of a series of attenuation basins and swales along the western and southern boundaries to store and treat surface water run-off from the development. This strategic drainage infrastructure will be installed as the earthworks progresses. Additional treatment facilities, such as on-plot attenuation basins, will be provided as each development zone is brought forward and will connect into the strategic drainage infrastructure. With appropriate mitigation measures in place, the Scheme will not have significant adverse effects upon the flood risk and drainage. Full details of

	the drainage strategy and flood risk assessment is provided in **Chapter 13** and the associated appendices.
Construction Traffic Management Plan (CTMP)	The CTMP sets out the arrangements and management practices that will be adopted to minimise the impact of traffic on the local road network.
Highways Works	A package of highways works is proposed as part of the **Scheme** including substantial improvements around Junction 24 of the M1, referred to as the J24 Improvements as well as more minor works on the local highways network and pedestrian/cycle route enhancements, referred to as the **Highways Works**. The full extent of the highway works are shown on the Highways Works General Arrangement Drawings (Document 2.8) and details are outlined in **Chapter 3: Project Description** and **Chapter 6: Traffic and Transportation**. These highways works will facilitate access to the scene of the event of an emergency.
Sustainable Transport Strategy - Gateway Shuttle Bus service	A central part of the Sustainable Transport Strategy for the **EMG2 Main Site** will be a Gateway Shuttle Bus service. This will be a free service for all site employees providing a highly sustainable and affordable alternative to single occupancy car travel. It will operate by providing a 'last mile' service for employees with links from their workplaces to existing local bus operator services through a dedicated on-site interchange at the site entrance. Using state of the art fully electric shuttle buses, patronage at EMG1 has to date far exceeded expectations, with some 4,800 trips per week achieved in 2023. The **EMG2** shuttle service will be co-ordinated through an expanded Transport Working Group already in operation at EMG1. This ensures that through close cooperation between all parties, bus services operate throughout the day to support the shift patterns of the businesses. Full details of the Sustainable Transport Strategy for **EMG2** are provided in Appendix 6[x].
HGV parking area	A secure, dedicated, HGV parking area to meet the needs of HGVs visiting the **EMG2 Main Site** and/or EMG1.
Security infrastructure and emergency access	The **Scheme** includes security infrastructure to serve the **EMG2 Main Site**, including fencing, gates, security kiosks, and security lighting. The **EMG2 Main Site** has emergency and security access from the A453 via a new arm off the Hunter Road roundabout (the EMG2 Access Works), with

	an principal access alternative location access further to the west along the A453.
Operational design standards	The following will be included within the management of the **EMG2 Main Site** through the requirements in the DCO to ensure a high quality environment is maintained throughout: • Emergency response and contingency plans in place to be secured through the requirements in the DCO.; • Ensure effective, essential winter maintenance; • Regularly reviewed and updated winter maintenance plans; • Regular maintenance of assets to detect deterioration and damage; • Standard operating procedures in place for use in the event of necessary road/rail closure and/or traffic diversion; • Use of construction materials with superior properties which offer increased tolerance to fluctuating temperatures; • Road user warning systems in place in areas exposed to high winds; • Regular sweeping and cleaning to remove debris; • Effective vegetation maintenance; • Regular surveys, management and monitoring of street lighting to ensure asset stability; and • Regular maintenance and cleaning of drainage systems.
Emergency Preparedness and Response Plan	An Emergency Preparedness and Response Plan will be prepared for the **Scheme** which will consider the risks associated with fires or other risks impacting the Scheme and the potential for the **Scheme** to be an ignition source for a fire or risk to cause external damage. In addition, the design of the **Scheme** will incorporate fire suppression systems as required.
UK Health and Safety legislation	Risks associated with occupational health and safety are not considered applicable to the Scheme due to detailed adherence UK Health and Safety legislation, such as: • ISO 45001 management system • The Workplace (Health, Safety and Welfare) Regulations 1992 • Management of Health & Safety at Work Regulations 1999

	• The Dangerous Substances and Explosive Atmospheres Regulations 2002 • The Control of Major Accident Hazard Regulations 2015
Lighting Strategy	The strategy notes that all illumination levels will be set as low as practicable while complying with safety and security recommendations and the design levels set out in BS EN 12464 'Light and lighting – Lighting of work places – Part 2: Outdoor work places' and BS 5489-1 'Design of road lighting- Lighting of roads and public amenity areas'. It confirms that an indicative external lighting design has been produced that minimises light pollution.

20.7. Residual Effects

20.7.1. This section details the output of the preliminary assessment of the vulnerability of the **Scheme** to the risk of MAD during both the construction and operation phases, taking into account the embedded design, mitigation and enhancement measures detailed in section 20.6.

20.7.2. Based on the information known at this stage of the **Scheme**, MAD Events to which the **Scheme** may be vulnerable during construction and operation are summarised below.

Construction Phase Potential MAD Events

20.7.3. One MAD event has been identified to which the **Scheme** may be vulnerable during the construction phase as detailed in Appendix 20b: ES Risk Record.

20.7.4. Based on the assumptions and mitigation measures put forward in this Chapter it is considered that the identified potential major accident(s) and/or disaster(s) events above would all be managed to be ALARP.

Operational Phase

20.7.5. Five MAD events has been identified to which the **Scheme** may be vulnerable during the operation phase as detailed in Appendix 20b ES Risk Record.

20.7.6. Based on the assumptions and mitigation measures put forward in other relevant ES Chapters, it is considered that the identified potential major accident(s) and/or disaster(s) events above would all be managed to be ALARP.

20.8. Cumulative Effects

[*This section is to be reviewed and completed on receipt of final traffic data]*

Intra-project effects

20.8.1. This chapter reports the preliminary assessment of the vulnerability of the **Scheme** to MAD during construction and operation through the use of the baseline information from all other ES topic Chapters and reports the identified potential, intra-project effects in **Appendix 20b**.

Inter-project effects

20.8.2. The **Scheme** is located within the East Midlands Airport and Gateway Industrial Cluster (EMAGIC), area which includes land within SEGRO's Logistics Park East Midlands Gateway (EMG1), the redevelopment of the Ratcliffe-on-Soar Power Station site, and the East Midlands Intermodal Park (EMIP) near Derby.

20.8.3. The mitigation measures incorporated as part of the **Scheme** such as [to be completed] ensure the vulnerability of the **Scheme** to MAD is ALARP, when considered alone and in combination with other committed developments. The principal cumulative effects would relate to traffic, and therefore an assessment is provided as part of the Transport Assessment and mitigation is proposed including the delivery of the **Highway Works** to ensure there are no significant impact.

20.8.4. From a MAD perspective, all committed developments nearby will be subject to health and safety requirements, to ensure that the risk of accidents is ALARP. As such, there are predicted to be no cumulative effects with other committed development with regards to MAD.

20.9. Summary of Effects and Conclusions

20.9.1. [section to be completed].

20.9.2. This Chapter presents the environmental baseline relevant to the MAD assessment and assesses the potential environmental effects on MAD arising from the **Scheme.**

20.9.3. At the construction stage, one MAD event has been identified to which the **Scheme** may be vulnerable as set out within **Appendix 20b**. Based on the assumptions and mitigation measures put forward in this Chapter it is considered that the identified potential major accident(s) and/or disaster(s) event would be managed to be ALARP.

20.9.4. In regards to the operational stage, five MAD events has been identified to which the **Scheme** may be vulnerable as set out within **Appendix 20b** however Based on the assumptions and mitigation measures put forward in this Chapter it is considered that the identified potential major accident(s) and/or disaster(s) event would be managed to be ALARP.

20.9.5. It is considered that there would be no cumulative effects with other committed development with regards to MAD as that all committed developments nearby will be subject to health and safety requirements, to ensure that the risk of accidents is ALARP.

20.9.6. It is therefore considered that, with the proposed mitigation in place, the **Scheme** is not vulnerable to MADs and the **Scheme** would not exacerbate the vulnerability of surrounding hazard sites.