Norwich Western Link

Environmental Statement

Chapter 18: Major Accidents and Disasters (MAD)

Appendix 18.2 Risk Record

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1.1.1 The Long List in '**Environmental Statement Appendix 18.1: Major Accidents and Disasters Long List** (Document Reference: 3.18.01), presents all of the Major Accident and Disaster (MA&D) Event categories and types which have been considered as part of the assessment. Those MA&D Event types which could not be scoped out have been further assessed, the output of which is presented below. This Appendix is a record of all potential MA&D Events considered as part of the Environmental Statement assessment process.

1.1.2 We have included a summary of key information shown in this document in an accessible format in section 1.1.1. However, some users may not be able to access all technical details that are included in the rest of this document. If you require this document in a more accessible format, please contact norwichwesternlink@norfolk.gov.uk.

Table 1 Risk Record

Risk Record Entry Number	Major Event Category	Risk Event Type	Section of Proposed Scheme	Hazard Description	Applicable Phases (Construction, Operational, Maintenance)*	Risk Description	Hazard Sources and / or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a Major Accident or Disaster?	Justification	Is this ALARP with existing mitigation?	Justification
1	Natural Hazards: Geophysical	Ground collapse	River Wensum Viaduct (including approach embankments, abutments and piers)	Presence of chalk beneath the Proposed Scheme.	Construction	Collapse of ground into a void.	Presence of chalk.	Construction Design Management register. Ground conditions / geotechnical report.	Death and / or injury to construction workers.	No	No	No	No	No	Yes	No	No	No	No	No	1) Establish a Risk rating for the site using a natural cavities and mining database search and occurrence Risk assessment, together with an assessment of groundwater conditions. 2) Undertake a detailed design ground investigation to identify dissolution features. 3) Undertake a piling Risk assessment to inform the design. 4) Depending on the Risk rating, implement site inspections at the construction stage, the requirement for which would be identified in the Construction Design Management Risk Register.	No	The reasonable worst consequence of this event does not meet the criteria of a Major Accident. The only potential receptors of harm are construction workers.	Not applicable	As Low As Reasonably Practicable principle not considered as does not meet the criteria of a Major Accident.

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2	Natural Hazards: Geophysical	Ground collapse	River Wensum Viaduct (including approach embankments, abutments and piers)	Presence of chalk beneath the Proposed Scheme.	Operation	Collapse of the roadway into a void.	Presence of chalk.	Construction Design Management register. Ground conditions / geotechnical report.	Injury to multiple road users.	No	No	Yes	No	No	Yes	No	No	Yes	No	No	1) Establish a Risk rating for the site using a natural cavities and mining database search and occurrence Risk assessment, together with an assessment of groundwater conditions. 2) Undertake a detailed design ground investigation to identify dissolution features. 3) Undertake a piling Risk assessment to inform the design. 4) Norfolk County Council to implement a monitoring regime during operation.	Yes	Could cause loss of life or permanent injury to multiple road users.	Yes	Assuming embedded mitigation effectively managed and implemented.

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3	Technological or Manmade Hazards: Industrial and Urban Accidents	Fire and / or explosion or release of harmful gas	Breck Road crossing and gas main near the A1067	Presence of underground high pressure gas pipelines.	Construction, Maintenance	Striking of underground services / utilities.	Presence of existing natural gas transmission pipelines.	Construction Design Management register. Construction phase H&S plan.	Fire and / or explosion affects neighbouring property and / or members of the public.	Yes	Yes	Yes	No	No	No	No	No	No	No	No	1) Utilities Risk assessment to identify location of utilities along the Proposed Scheme. 2) Engagement with the Health and Safety Executive Land Use Planning team. 3) Engagement with National Grid. 4) If piling is to be undertaken within 15 metres of the pipeline, a pipeline integrity assessment would be undertaken prior to construction works and vibration monitoring during construction works. 5) If necessary, an assessment to determine the extent of potential ground movement that may be detrimental to the integrity of the pipeline would be undertaken.	Yes	Could cause loss of life or permanent injury to multiple members of the public; or significant structural property damage.	Yes	Assuming embedded mitigation effectively managed and implemented.

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4	Transport Accidents	Aviation	Route wide	Presence of crane(s) in Norwich airport safeguarding zone.	Construction	Aircraft impacting crane.	Presence of crane.	Construction Design Management register. Construction phase health and safety plan. Norwich airport safeguarding assessment.	Damage to aircraft.	No	No	Yes	No	No	No	No	No	Yes	No	No	Engagement with Norwich Airport. Mitigation measures would be identified in the safeguarding assessment undertaken by the aerodrome in advance of the construction phase.	Yes	Could cause loss of life or permanent injury to multiple members of the public.	Yes	Assuming embedded mitigation effectively managed and implemented.