



Smart Motorways Programme

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M56 J6 to J8

Outline Environmental Management Plan

June 2018

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1. Introduction and background to Project

1.1 Purpose of the Report

1.1.1 The purpose of an Environmental Management Plan (EMP) is to manage the environmental effects of the Proposed Scheme. Over the lifetime of the Proposed Scheme the EMP will be built upon, moving from the Outline Environmental Management Plan (OEMP) prepared at this stage, to a more specific document that will manage the environmental effects of the project during the construction (Construction Environmental Management Plan (CEMP)) and maintenance and operation phases (Handover Environmental Management Plan (HEMP)) of the Proposed Scheme. The EMP will be a live document relevant to the active Project Control Framework (PCF) stage, and will be updated as required over the lifetime of the project should the design of the Proposed Scheme, predicted effects or legislation change. Throughout the construction, maintenance and operation phases the EMP will be used to:

- Act as a continuous link and main reference document for environmental issues between the design, construction, and the maintenance and operation stages of the Proposed Scheme.
- Demonstrate how construction activities and supporting design will properly integrate the requirements of environmental legislation, policy, good practice and those of the environmental regulatory authorities and third parties.
- Record the objectives, commitments and mitigation measures to be implemented together with programme and date of achievement.
- Identify the key staff structures and responsibilities associated with the delivery of the Proposed Scheme and environmental control and communication and training requirements as necessary.
- Describe the contractor's proposals for ensuring that the requirements of the environmental design are achieved, or are in the process of being achieved, during the Contract Period.
- Act as a vehicle for transferring key environmental information at handover to the body responsible for operational management. This will include details of the asset, short and long term management requirements and any monitoring or other environmental commitments.
- Provide a review, monitoring and audit mechanism to determine effectiveness of, and compliance with, environmental control measures and how any necessary corrective action will take place.

Outline Environmental Management Plan

- 1.1.2 The specific measures identified in this OEMP are presented in Section 3 and a Record of Environmental Actions and Commitments register HE549345-JAJV-EGN-SG_MULTI-RP-LE-0002, an excel file, and are explained further below. The Record of Environmental Actions and Commitments register documents the environmental measures as reported in the M56 J6-8 Environmental Assessment Report. A set of maps (Annex A – Figure 1) also accompanies the OEMP to help spatially identify the locations of identified risk areas.
- 1.1.3 Spatially specific environmental risks identified during the assessment of the Proposed Scheme, and the environmental management measures proposed to reduce these risks are described in this OEMP in the Record of Environmental Actions and Commitments register. The responsibility and timing for implementation of these measures is also outlined to help set out the way in which good environmental performance of the Proposed Scheme should

be ensured. A colour (broadly RAG) rating for each risk area is provided (explained in further detail within paragraphs 1.1.7 and 1.1.8) and an indication is given as to whether the risk may result in a schedule, commercial, reputational or legislative compliance threat to the project.

- 1.1.4 The sources of information used to identify the environmental risk and subsequent management measures at this stage include the Environmental Scoping Report (HE549345-JAJV-EGN-SG_MULTI-RP-LE-0006), and Environmental Assessment Report (HE549345-JAJV-EGN-SG_MULTI-RP-LE-0001).
- 1.1.5 The environmental risk assessment undertaken and management measures proposed which forms the OEMP is included within the Record of Environmental Actions and Commitments document HE549345-JAJV-EGN-SG_MULTI-RP-LE-0002. At this stage, it is only possible to indicate in outline the persons responsible and the timings associated with these actions and commitments; these will be further developed through PCF4 and PCF5 (Design Fix (DF) 4 and DF5, respectively). When the CEMP is prepared, prior to construction, these commitments and actions will be further developed by the Delivery Partner, as required, to describe how the measures will be implemented.
- 1.1.6 The mapping (Annex A – Figure 1) that supports the OEMP is provided at PCF3 (DF3) to give a spatial indication of the location of each measure, rather than detailed specifics which will become further available as the project progresses. As such, the mapping should not be used to solely determine the details associated with each measure. Each location requiring action shown on the map has a unique identifier which relates directly to further information provided in the register and the documents should be used in combination. The mapping will be further developed through PCF4 and PCF5, refining and enhancing the presentation of information to further accommodate the needs of the Delivery Partner, and any advice received from Highways England.

Guidance

- 1.1.7 The general process for the management of environmental effects on Highways England's Schemes is set out in the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 2, Part 5, HA 205/08 and Part 6, HD 48/08 (Highways Agency, 2008). More specific advice is provided in the Interim Advice Note (IAN) 183/14 Environmental Management Plans (IAN 183/14) (Highways Agency, 2014). The guidance in IAN 183/14 takes into consideration Environmental Management Plans: Practitioner Best Practice Series, Volume 12 (IEEMA, 2008) and BS EN ISO 14001: Environmental Management (BSI, 1996, as amended).

Risk assessment matrix

- 1.1.8 To generate colour rating for each risk area within the register, a risk assessment matrix has been utilised. This is provided in Figure 1.1 below.
- 1.1.9 A rating per risk, pre- and post-environmental management measure, is provided showing the effect that the measure has in reducing the overall significance of risk.

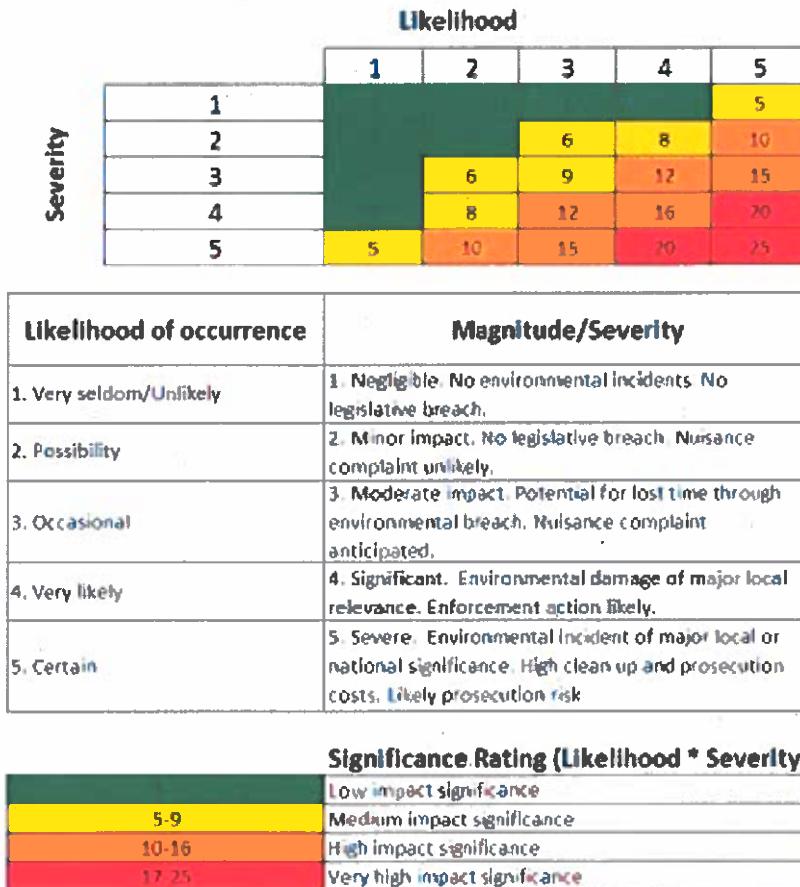


Figure 1.1 – Risk assessment matrix

Next steps

- 1.1.10 The OEMP, as issued at PCF3 (DF3), is intended as a snapshot of commitments, informed through the Scoping Report and EAR, which will be required moving beyond DF3.
- 1.1.11 It is intended that the documentation (specifically, the register detailing the OEMP measures, and the mapping visually highlighting the locations each measure needs to be implemented), will remain live throughout PCF4 and PCF5 (DF4 and DF5, respectively) with ongoing input and update from the Design Agent until the point at which it will handed over to the Delivery Partner to inform their CEMP.
- 1.1.12 The Delivery Partner will develop the CEMP in conjunction with Design Agent. The Delivery Partner will be responsible for appropriate implementation of the requirements set out in the CEMP. The CEMP will remain a live document throughout construction, however, no works will commence without Highways England initial approval of the CEMP.
- 1.1.13 Upon completion of construction, the HEMP will be developed by the Delivery Partner as part of the handover documentation and provided to the maintaining authority. It will then be the responsibility of the maintaining authority to implement the HEMP on an ongoing basis.

1.2 The Project

- 1.2.1 Highways England is proposing to upgrade the M56 between Junction 6 Manchester Airport and Junction 8 A556 (M56 J6-8) to a Smart Motorway. Smart Motorways use active traffic management (ATM) techniques to increase capacity by use of variable speed limits and conversion of the hard shoulder to a running lane. The Proposed Scheme will include all lane running (ALR) along this section by permanently converting the hard shoulder into a live lane. The Proposed Scheme aims to relieve congestion and smooth traffic flow; improve journey times and journey time reliability; maintain safety levels for all road users; and support the economic development of the nation.
- 1.2.2 The M56 is the North Cheshire Motorway connecting Cheshire, North Wales and the West Midlands (via the M6 and A556) to the Greater Manchester Conurbation.
- 1.2.3 The Proposed Scheme length is approximately 6.5km. Currently the network in this area is dual 3-lane (D3M) with hard shoulder, although there is an extended parallel merge / diverge arrangement for the east facing slip roads at Junction 7.

1.3 Project Objectives

- 1.3.1 The first 'Road Investment Strategy' (RIS 1) outlines a long-term programme for England's motorways and major roads with the stable funding needed to plan ahead. The RIS 1 comprises:
- A long-term vision for England's motorways and major roads, outlining how Highways England will create smooth, smart and sustainable roads
 - A multi-year investment plan that will be used to improve the network and create better roads for users; and
 - High-level objectives for the first road's period 2015 to 2020.
- 1.3.2 In April 2015, the Highways England Operating Licence was brought into force, which sets out the Secretary of State's statutory directions and guidance to Highways England for the management of roads. The document makes clear, to both Highways England and the wider community of road users and stakeholders, what Highways England is expected to achieve and how they must behave in discharging their duties and in delivering the Government's vision and plans for the network, set out in the Road Investment Strategy (RIS).
- 1.3.3 The Licence in Parts 4.2g and h requires Highways England to "Minimise the environmental impacts of operating, maintaining and improving its network and seek to protect and enhance the quality of the surrounding environment" and "Conform to the principles of sustainable development". The Highways England Licence and the RIS set out a series of environmental objectives to which the Proposed Scheme will seek to deliver.
- 1.3.4 Further distillation of the environmental policies and objectives, have been developed into Environmental Objectives included within the Smart Motorways Programme Client Environmental Scheme Requirements. The way in which the Proposed Scheme achieves these requirements have been addressed within this report and are summarised in Table 1-1 below.

Table 1.1 Environmental Objectives

Objective	M56 J6 to J8 - Smart Motorway Project
Air Quality and Carbon Emissions	
To avoid an increase in emissions in NO ₂ where they could threaten the achievement of the Air Quality Standard across the wider area likely to be affected by working with relevant authorities to secure appropriate mitigation to ensure so far as possible the standards are not breached.	In the opening year (2020 M56 DS only) there would be 9 exceedances without the Proposed Scheme and 11 exceedances with the Proposed Scheme. Changes in concentrations have been evaluated in line with IAN 174/13. Of the 138 receptors modelled, there is one receptor with a 'small increase' in annual mean NO ₂ with the Proposed Scheme, but concentrations would be below the AQS objective. Changes in annual mean NO ₂ concentrations at all other locations are estimated to be 'imperceptible'. All changes are classed as 'not significant' for local air quality.
To avoid adverse effects upon SSSI due to additional nitrogen deposition.	There are no ecologically designated sites within 200m of the Affected Road Network for the 'M56 only' Do Something scenario.
Noise	
To achieve reductions in the number of dwellings exposed to noise levels, within Noise Important Areas or other areas experiencing elevated noise levels, using Best Available Technology in the attenuation of noise that are proportionate and reasonable.	The Department for Transport RIS 2015-2020 aspires to the target that by 2040 over 90% fewer people are impacted by noise from the strategic road network. The target for the first Road Period 2015-2020, is to mitigate at least 1,150 Noise Important Areas expecting to reduce the number of people severely affected by noise from the strategic road network by at least 250,000. Within Noise Important Areas there is 1 property predicted to experience negligible (less than 3dB) noise increases and 9 properties predicted to experience no change or negligible noise decreases over the long term (difference between opening year Do-Minimum and Design Year Do-Something). Overall, there is a decrease in the number of properties with noise levels over SOAEL.
To avoid increases in noise levels where there would be a significant impact on public amenity.	The proposal is to include new low noise road surface across lanes 1 and 4, which will have the potential to reduce noise levels by 0.5dB in the opening year when compared with the existing low noise road surface sections, and by 1.7dB when compared with existing hot rolled asphalt sections.
Biodiversity (to explore and achieve where practicable)	
No direct or indirect effect upon SSSI.	All proposed works are within the highways boundary. Rostherne Mere SSSI is located approximately 350m from the highways boundary. The site falls outside of the Ecological Zone of Influence (taken as within 200m of the footprint of the Proposed Scheme, or within the air quality affected road network, or within a river catchment for sites over 200m but hydrologically connected to the Proposed Scheme). A Habitat Regulations Assessment for this SSSI was completed as part of the Environmental Assessment, the results of which determined that there would be no likely significant adverse effects (either alone or in-combination with other projects and plans) anticipated on Rostherne Mere SSSI during the

Objective	M56 J6 to J8 - Smart Motorway Project
	<p>construction and operational phase of the Proposed Scheme.</p> <p>Additionally, two more SSSI's are situated within the study area; Cotterill Clough SSSI (750m from highways boundary) and Dunham Park SSSI (1.5km from highways boundary). These both fall outside the EZoI.</p>
Seek to avoid loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees.	<p>Any tree protection measures considered necessary would be detailed in the OEMP to prevent damage to tree roots and stems during works.</p> <p>This would include buffer zones for any works immediately adjacent to ancient woodland, particularly around Hancock's Bank South which lies within 15m of the highways boundary.</p> <p>No aged or veteran trees have been identified within the highways boundary.</p>
Maximise opportunities to deliver beneficial biodiversity outcomes and contribute to the ecological objectives of nearby SSSI and Nature Improvement Areas.	<p>Locations of potential enhancement opportunities both on-network and off-network have been identified, which include the potential enhancement of local wildlife sites and habitats of principal importance which fall within the study area.</p> <p>Habitat reinstatement on-network would also consider the use of native trees and diverse wildflower seed mixes.</p>
To establish new habitat within the soft estate that contributes towards the Client's and Biodiversity Action Plan without compromising maintenance and renewal requirements.	<p>Planting schemes will consider the use of native trees and diverse wildflower seed mixes.</p> <p>The removal and control of invasive plant species from the network would also contribute towards the plan.</p>
Working towards no net loss in biodiversity	<p>Opportunities for biodiversity enhancement have been identified both on-network and off-network. There may be opportunities to work with local wildlife and conservation groups to enhance nearby wildlife sites.</p> <p>Habitats reinstated within the highways boundary would be of higher biodiversity value than existing levels, primarily through planting of native tree species and diverse wildflower seed mixes.</p>
Landscape	
To deliver sustainable infrastructure that is sustainable and as aesthetically sensitive, durable, adaptable and resilient as reasonably possible.	<p>Additional screen planting would be implemented to replace the loss of existing screening vegetation to ensure that screening value would be reinstated when mitigation planting matures. Proposed planting would be native and aim to provide improved biodiversity. Further detail on mitigation is provided in the OEMP.</p>
To ensure no adverse significant visual intrusion or significant effect upon heritage assets.	<p>One Heritage asset, Yew Tree House Grade II Listed Building, would experience a temporary significant adverse effect during construction only. By future Year 15 the planting along the highway boundary would have matured and would largely screen gantries from within the setting of the Yew Tree House Grade II Listed Building.</p>

Objective	M56 J6 to J8 - Smart Motorway Project
	There are no other significant effects on the setting of any cultural heritage assets as a result of the Proposed Scheme.
Take all reasonable steps to minimise any detrimental impact on amenity including the impact of light pollution.	<p>Lighting during construction would be set within the context of existing lighting on the M56 and within housing estates. Impacts from the temporary duration of lighting during construction would occur in unlit sections of road and have been included and reported in the assessment of key representative viewpoints.</p> <p>The Proposed Scheme would not change the extent of lighting along the M56 and the new technology with full cut-off LED lanterns and increased control of lighting levels would serve to lessen any existing impacts from light spill. It is considered that there would be no change from the existing situation.</p>
To maintain functionality and connectivity of the green infrastructure network. Where possible, mitigate adverse impacts and where appropriate, improve the network and other areas of open space.	<p>There is the potential for planting to replace vegetation lost and, in addition, improve the overall resource along the route to benefit landscape integration of the road, connectivity for nature, visual screening, visual amenity and driver experience.</p> <p>There is little opportunity to improve the network due to the narrow width of the verge and lack of open space.</p>
To mitigate any existing impacts.	<p>There is the potential for a small number of visual receptors to benefit from an increase in screening from the motorway compared to their existing view and there is the potential for an increase in planting along the wider route corridor to the benefit of landscape integration and green infrastructure within the landscape through which the road passes.</p>
To deliver a landscape strategy that aligns with the current environmental objectives for the scheme.	The Landscape design strategy aims to both maintain the existing Visual mitigation and Landscape Vegetation connectivity as well as improving Planting Biodiversity.
Heritage	
To undertake measures to avoid significant effects upon heritage assets.	<p>One Heritage asset, Yew Tree House Grade II Listed Building, would experience a temporary significant adverse effect during construction only. By future Year 15 the planting along the highway boundary would have matured and would largely screen gantries from within the setting of the Yew Tree House Grade II Listed Building.</p> <p>There are no other significant effects on the setting of any cultural heritage assets as a result of the Proposed Scheme.</p>
Accessibility and Transport	
Explore reasonable measures to enhance accessibility for pedestrians and cyclists at motorway junctions in order to reduce existing severance.	The current level of accessibility along the Proposed Scheme is considered to be adequate and will be maintained.
Promote equality and consider the needs of disabled people.	Designs take account of current Disability design requirements.
Consider other transport modes in developing the scheme.	Not considered.

Objective	M56 J6 to J8 - Smart Motorway Project
Undertake a proportionate assessment of the impacts on other networks and take reasonable steps to mitigate such impacts.	The proposed SMP is not considered to have a negative effect on other networks and as such know further proportionate assessment has been proposed.
Water Quality and Flood Risk Rectify any existing water quality and flood risk issues to contribute towards Water Framework Directive and deliver capacity to take account of climate change.	<p>Standard pollution prevention measures and best practice will be employed during construction; these measures are detailed in the OEMP and will be detailed in the CEMP to be prepared and implemented by the Delivery Partner. The scale of the proposed works and restriction to within the existing highway boundary result in a low likelihood of a significant effect during construction.</p> <p>The Proposed Scheme is designed, and will be managed through the OEMP, to ensure water volumes or pollutants do not increase at any existing outfalls.</p> <p>The Proposed Scheme will include drainage improvements, in accordance with Interim Advice Note 161/15 such that discharges will be at existing established rates (up to the 1:100 year rainfall event).</p>
There is to be no increase in the volume and peak flow rates of surface water leaving the site unless specific offsite arrangements are made to the same effect.	<p>The Proposed Scheme will include drainage improvements, in accordance with Interim Advice Note 161/15 such that discharges will be at existing established rates (up to the 1:100 year rainfall event). Hence additional drainage capacity will be provided within the piped network to account for an increase in impermeable area.</p>
Avoid any detriment to water quality or flood risk.	<p>Standard pollution prevention measures and best practice will be employed during construction; these measures are detailed in the OEMP and will be detailed in the CEMP to be prepared and implemented by the Delivery Partner. The scale of the proposed works and restriction to within the existing highway boundary result in a low likelihood of a significant effect during construction.</p> <p>The Proposed Scheme is designed, and will be managed through the OEMP, to ensure water volumes or pollutants do not increase at any existing outfalls.</p> <p>The Proposed Scheme will include drainage improvements, in accordance with Interim Advice Note 161/15 such that discharges will be at existing established rates (up to the 1:100 year rainfall event).</p>
Ensure/establish a state of the art pollution control system commensurate with the objectives of minimising the need for traffic management.	<p>Standard pollution prevention measures and best practice will be employed during construction; these measures are detailed in the OEMP and will be detailed in the CEMP to be prepared and implemented by the Delivery Partner. The scale of the proposed works and restriction to within the existing highway boundary result in a low likelihood of a significant effect during construction.</p>
Ensure upstream flood risk is considered through design and assessment.	Designs to take account of upstream flood risk and ensure that the Proposed Scheme has no effects on flood risk.
Ensure surface and groundwater	Designs have considered and will continue to take

3. Record of Environmental Actions and Commitments (REAC)

3.1 Outline Environmental Management Plan

Description of Action/Commitment	Source/Reference of Requirement	ID	Location	RAG Status	Likelihood	Severity	Legislative Risk	Reputational	Commercial	Schedule	RAG Status	Likelihood	Severity	Environmental Management Measures	RAG Status	Responsibility	Timing	
General +3.143 Environmental Management																		
Undertake environmental review of design to ensure compliance with the EAR (Identify additional mitigation measures as required as design progresses).	HE Guidance	EGN1	Site wide	4	2	Y	Y	Y	Y	Y	Y	Y	Y	Review design at DF4 and DF5 against conclusion of EAR to confirm conclusions remain valid. Generate additional mitigation measures if required.	1	1	Design Agent	DF4 - DF5
Construction Environmental Management Plan	Best Practice	EGN2	Site wide	4	2	Y	Y	Y	Y	Y	Y	Y	Y	The final CEMP will contain information related to: a) any requirements attached to the DCO for the Scheme (where applicable); b) any further mitigation measures, as agreed post publication, with the consultees and landowners; c) mitigation measures developed following the completion of ecological surveys prior to the works commencing; and d) environmental commitments in the Contractor's Environmental Management System ("EMS"). Scheme specific environmental objectives and targets for construction preparation and construction phases will be agreed between Highways England and the Contractor. These are likely to include environmental, social and sustainability targets and key performance indicators ("KPIs"), such as targets for re-using and recycling waste on site. The final CEMP will set out the final agreed objectives and will include a programme of actions to achieve the Scheme objectives and targets. Progress towards achieving the environmental objectives and targets will be monitored, measured and reported by the Contractor on a monthly basis to Highways England's Project Manager. The final CEMP will include, or reference, the legal and other environmental obligations relevant to the Contractors' activities. These may include: a) environmental legislation; b) the commitments made in the ES and other relevant documents.	2	2	Delivery Partner	Pre-construction During construction

			c) commitments made by Highways England to local planning authorities; regulatory bodies such as the Environment Agency, Natural England, and Historic England; and local communities; d) other licences and consents required to construct the Scheme.			
			A management structure that includes an organisational chart encompassing all staff responsible for environmental work is to be included within the final CEMP. This will set out the respective roles and responsibilities with regard to the environment and identify the nominated Construction Environmental Manager.			
Handover Environmental Management Plan	Best Practice	EGN3	Site wide	4 2	Y Y Y Y	Handover Environmental Management Plans ("HEMP") - towards the end of the construction period the final CEMP will be refined into a HEMP which will represent a further development of the Outline and final CEMP and will set out the proposed strategy for the future maintenance and management of all environmental areas and mitigation.
Considerate Constructors Scheme	Best Practice	EGN4	Entire project	4 2	Y Y Y Y	The project will be registered with the Considerate Constructors Scheme ("CCS").
Supervision of construction works	Best Practice	EGN5	Site wide	4 2	Y Y Y Y	Sufficient suitably qualified and experienced personnel will be appointed by the Contractor to supervise the main construction works. This will include professionally qualified environmental management staff with relevant experience in the environmental disciplines included within the ES and the Outline CEMP. They will be present on site during the main construction works, as appropriate, to advise the Contractor and the contract management team, and supervise and report on the implementation of appropriate environmental mitigation measures and safeguards.
EAR based on guidance such as the CIRIA Environmental Good Practice on Site Guidelines (CIRIA, 2015)				N N N Y U		Toolbox talks or other training to be provided to site staff on relevant environmental issues, such as working in proximity to vegetation to ensure zero or minor environmental incidents.
General environmental awareness	Best Practice	EGN6	Site wide	2 3	Y Y Y Y	Core working hours will be from 07:00 to 19:00 on weekdays (excluding bank holidays) and from 07:00 to 16:00 on Saturdays. The Contractor will adhere to the core working hours for each site as far as is reasonably practicable.
Core working hours	Best Practice	EGN7	Site wide	4 2	N N Y Y U	A copy of all relevant environmental applications and consents/authorisations is to be kept in a project environmental file and copies provided to Highways England of all applications and consents/authorisations as soon as practical after submission and receipt.
Documentation	Best Practice	EGN8	Site wide	2 2	N N Y Y U	Any conditions included in consents/licences/permits will be documented in the final CEMP and considered as part of the planning, design and construction process.

Consultation with local residents and property owners	Consultation strategy	EGN9	Identify adjacent residential properties	2	1	N	Y	Y	U	Local residents and property owners must be kept informed about the nature and timing of the works, including compound locations and traffic controls, via such means as newsletters and public meetings.	2	1	Delivery Partner	During construction
Scheme lighting design	Best Practice	EGN10	Site wide	2	1	Y	Y	Y	U	The final lighting scheme to be implemented by the Contractor will be required to comply with current guidance such as the Institute of Lighting Professionals Guidance Notes for the Reduction of Obtrusive Light GN01 (2011) and the provisions of BS 5489, Code of Practice for the Design of Road Lighting (BSI, 2013a), where applicable.	2	1	Designer	Pre-construction
Air Quality										The Delivery Partner will develop and submit method statements, monitoring and reporting protocols that demonstrate to Highways England that no significant impact will result from their construction works. These should include: <ul style="list-style-type: none"> - Machinery and dust causing activities, haul routes, stockpiles to be located away from sensitive receptors as far as practicable. - Visual inspections to be undertaken on a daily basis to determine whether there are any significant dust episodes as a result of the construction activities. - Cover, seed or fence stockpiles to prevent wind whipping where appropriate. - All vehicles to switch off engines – no idling vehicles. - Effective vehicle cleaning and specific wheel-washing on leaving site and damping down of haul routes where there is potential for carrying dust or mud off the site. - Visual inspections to be undertaken on a daily basis to determine whether there are any significant cleanliness issues on public roads and access routes. Remedial action to be undertaken using wet sweeping methods. 	2	1	Delivery Partner	Pre-construction
Manage generation of construction dust at any location where there are sensitive receptors within 200m of the proposed works.	EAR (Section 5), DMRB HA207/07 (section 3.45), AQ1		Any location where there are sensitive receptors within 200m of the proposed works.	2	3	N	N	Y	N					
Manage site wide construction dust generation through application of standard mitigation measures	EAR (Section 5), DMRB HA207/07 (section 3.45), AQ2		Site wide	2	2	Y	N	Y	Y	Appropriate measures described in IAQM Guidance on the assessment of dust from demolition and construction to be adopted and detailed in working Method Statements.	2	2	Delivery Partner	Pre-construction
Noise Controls - Construction Phase										Use of Best Practicable Means (BS 5228-1 and Section 72 of Control of Pollution Act 1994) during construction works. The Delivery Partner must develop a CEMP based on the below actions.	2	4		DF4-DF5 Through to construction
Noise from construction of ERAs	EAR Section 8	NV1	ERA EB - 5+00 - 6+050	3	4	Y	Y	Y	Y	* As far as practicable, works should be undertaken during core daytime hours, i.e. 07:00 to 19:00. <ul style="list-style-type: none"> • Works should be limited to no more than 10 working days in any 15 consecutive days and must not exceed 40 days in any 6 consecutive months. • No percussive piling will be used in the area. Instead alternative low noise methods/design must be chosen (e.g. Given piling, CFA or a bored piling 	2	4	Delivery Partner	
	NV2	ERA EB 2 - 7+00 - 7+100	3	4	Y	Y	Y	Y						

NV3	ERA WB4 - 7+350 - 7+300	3	3	Y	Y	Y	Y	Y	Y	Y	Y							2	3	
NV4	ERA WB5 - 5+700 - 5+800	3	4	Y	Y	Y	Y	Y	Y	Y	Y						2	4		
NV5	GB-01 - 10 (3500, 4875, 5625, 6450, 7675, 8230, 8750, 8950)	3	2	Y	Y	Y	Y	Y	Y	Y	Y						2	2		
NV6	GA 41 - 48 (8325, 7575, 6450, 5625, 4825, 4200)	3	2	Y	Y	Y	Y	Y	Y	Y	Y						2	2		
Noise from construction of new gantry foundations																				
EAR Section 8.8																				
solution). • The Delivery Partner should use temporary noise barriers and/or piling shrouds as far as practicable and would act to reduce noise levels • Residents must be fully informed of the potential risk for noise effects prior to works commencing • Noise monitoring sites should be established at a range of receptors to ensure that the night average noise levels do not exceed the SOAEL. Where the ambient noise level exceeds the SOAEL, the noise from construction works should not exceed the pre-existing ambient noise levels by more than 3dB. Noise monitoring locations are available in the public realm on Algrave Road. These can be developed and agreed with the Delivery Partner DF4-DF5. • The Delivery Partner must apply for a Section 61 (of Control of Pollution Act) agreement prior to works commencing if the local authority is in favour. • The Delivery Partner will provide the method of working with at least 14 days' notice. No work shall commence without the written acceptance from Highways England.																				
Use of Best Practicable Means (BS 5228-1 and Section 72 of Control of Pollution Act 1974) during construction works. The Delivery Partner must develop a CEMP based on the below actions.																				
• As far as practicable, works should be undertaken during core daytime hours, i.e. 07:00 to 19:00. • Works should be limited to no more than 10 working days in any 15 consecutive days and must not exceed 40 days in any 6 consecutive months. • Avoid the use of percussive piling in this area. Instead alternative low noise methods/design must be chosen e.g. Giken piling, CFA or a bored piling solution). • The Delivery Partner should use temporary noise barriers and/or piling shrouds where they are available and would act to reduce noise levels. • Residents must be fully informed of the potential risk for noise effects prior to works commencing. • Noise monitoring sites should be established at a range of receptors to ensure that the night average noise levels do not exceed the SOAEL. Where the ambient noise level exceeds the SOAEL, the noise from construction works should not exceed the pre-existing ambient noise levels by more than 3dB. Noise monitoring locations are available in the public realm on Algrave Road. These can be developed and agreed with the Delivery Partner DF4-DF5. • The Delivery Partner must apply for a Section 61 (of Control of Pollution Act) agreement prior to works commencing if the local authority is in favour • The Delivery Partner will provide the method of working with at least 14 days' notice. No work shall commence without the written acceptance from Highways England.																				
DF4-DF5 Through to construction Delivery Partner																				

Best Practice	NV7	Site wide	4	4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Method Statements															
EAR Section 8.7	NV8	Site wide	4	4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Section 61 consents															
EAR Section 8.7	NV9	Site wide	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Noise and vibration monitoring															
Best Practice	NV10	Site wide	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Inspection															
Consultation with properties within 300m and those signed up for updates (Figure 2.11)	Best Practice	NV11	Warburton Green	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

illustrates all properties within 300m of the M56 J6 to J8)	NV12	Ashley	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	NV13	Thomas Green	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Best Practice	NV14	Keepers Cottage (8900)	3	3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Construction noise mitigation for properties within 100m of construction activities	NV15	Warrington Green	3	3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Best Practice	NV16	Ashley	3	3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Construction noise mitigation for properties within 200m of construction activities																			

Replacement of existing noise barriers	Best Practice	NV17	INV (from about 9650)	2	1	Y	Y	Y	Y	Y	Y	The Delivery Partner should undertake a noise barrier survey to determine whether any of existing noise barrier would need to be replaced within a 5 year period after the opening of the proposed scheme. The survey should be conducted to examine the existing noise barriers structural and acoustic performance characteristics. Where the noise barrier survey indicates that the barrier is failing or may fail in the 5 year period after opening, the Delivery Partner should replace the existing noise barrier with a new noise barrier of equal acoustic performance and of equal height/length of the existing noise barrier.	1	1	Delivery Partner	During DF/5
Piling activities	EAR Section 8.8	NV18	Site wide	3	4	Y	Y	Y	Y	Y	Y	Methods of construction and plant will be selected so as to minimise noise and vibration and reduce the use of percussive and vibratory equipment, particularly for night time working.	3	2	Delivery Partner	During construction
Construction site layout within 100m of dwellings	Best Practice	NV19	Site wide	4	4	Y	Y	Y	Y	Y	Y	Use of temporary noise barriers and/or piling shrouds should be considered where piling is required within 300m of a noise sensitive receptor location	3	2	Delivery Partner	During construction
Carriageway surfacing	EAR Section 8.7	NV20	Site wide	2	4	Y	Y	Y	Y	Y	Y	Careful consideration will be made of the site layout in order that any noise impact at nearby sensitive properties is minimised. Static plant will be located so as to optimise screening and/or distance attenuation in relation to occupied residential properties and fitted with suitable enclosures where practicable.	3	2	Delivery Partner	During construction
Working hours	Best Practice	NV21	Site wide	4	4	Y	Y	Y	Y	Y	Y	Lane 1 and 4 of the carriageway within the working footprint will be resurfaced using low noise material	1	4	Delivery Partner	During construction
Works duration	Best Practice	NV22	Site wide	4	4	Y	Y	Y	Y	Y	Y	Where practicable, works (including deliveries to site) should be programmed such that the requirement for working outside of normal working hours is minimised.	2	4	Delivery Partner	Pre-construction
Diversion routes	EAR Section 8.7	NV35	Site wide	4	3	Y	Y	Y	Y	Y	Y	Works should be limited to no more than 10 working days in any 15 consecutive days and must not exceed 40 days in any 6 consecutive months.	4	1	Delivery Partner	During construction

	EAR Section 8.7	NV23	Site wide	4	4	Y	Y	Y	Y	Y	Y	Y	Y	The number of instances of a particular diversion route in operation should be limited to the following														
														<ul style="list-style-type: none"> • Less than 10 days in any 15 consecutive day period, and • Less than 40 days in any consecutive 6 month period. <p>Where a diversion route is used, or expected to be used, for a number of occurrences equal to or above these limits, all noise sensitive receptors within 50m of the diversion route, fronting onto the diversion route, should be offered Noise Insulation, or costs thereof, to treat the facade of the property facing the diversion route.</p>														
Diversion durations																												
Vibration Controls - Construction phase																												
<p>Vibration from construction of ERA's, gantry foundations and proposed noise barrier foundations</p> <p>Best Practice</p>																												
<p>ERAs EB - 5+900 - 6+050, EB 2 - 7+000 - 7+100 WB4 - 7+350 - 7+500, WB5 - 5+700 - 5+800</p> <p>NV24</p> <p>GB-01 - 10 (3600, 4875, 5625, 6450, 7675, 8230, 8750, 8950) GA 2 - 4 Y Y Y Y Y Y Y Y Y Y Y Y</p> <p>NV25</p> <p>41 - 48 (8525, 7575, 6450, 5625, 4825, 4200)</p>																												
<p>Develop a CEMP based on the below.</p> <ul style="list-style-type: none"> • Appropriate investigations into ground conditions in order that consideration can be given to methods of working which could avoid problems. • Undertake works during daytime core hours 07:00-19:00. • Low vibration method/design must be chosen (e.g. Giken piling, CFA or a bored piling solution). • Residents must be fully informed of the potential risk for vibration effects prior to works commencing. • Vibration monitoring should be undertaken at the worst affected location (likely the closest location). • The Delivery Partner will provide the method of working with at least 14 days' notice. No work shall commence without the written acceptance from Highways England. 																												
<p>Vibration</p> <p>NV26</p> <p>Site wide 2 2 Y Y Y Y Y Y</p>																												
<p>The Delivery Partner will establish criteria, controls and working methods, taking account of guidance in BS 5228 - 1 and BS 5228 - 2. ISO 4866 - Mechanical vibration and shock, vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on</p>																												
<p>Pre-construction</p> <p>Delivery Partner</p> <p>During construction</p>																												
<p>2</p> <p>1</p>																												

		structures and BS 7385- 2 Evaluation and measurement for vibration in buildings – Part 2. Guide to damage levels from groundborne vibration 1993 Best practical means will be used to control vibration levels so that the PV thresholds at sensitive receptors are not exceeded as a result of the works.	
		<p>If predicted vibration levels exceed 1mm/s component PPV at occupied residential buildings or 3mm/s PPV at occupied commercial buildings more detailed appraisal should be carried out in accordance with the methods in BS 5228 – 2. If this identifies that people occupying buildings may experience levels in excess of the threshold values those potentially affected will be notified as soon as practicable in advance of the works. The notification will describe the nature and duration of the works and any associated proposals for vibration monitoring.</p> <p>Highways England will require its Delivery Partner to notify and consult it and the relevant local authority regarding any works predicted to generate a PPV above 10mm/s. Where it is determined that there is no reasonable or practicable means to reduce predicted or measured vibration then the Delivery Partner will:</p> <ul style="list-style-type: none">a) agree with Highways England and consult with the local authority under the relevant s61 consent, monitoring for vibration and strain induced in the building during the works;b) consult occupiers of properties about:<ul style="list-style-type: none">i. the surveys to be carried out and any consequent actions; andii. any additional reasonable and practicable mitigation to be provided for occupants;c) carry out a condition survey before and after the relevant works; andd) advise the local authority through the relevant s61 consent application. <p>In addition, any old buildings, or buildings that may be unusually vulnerable to vibration, that are located within 50m of any activities that may give rise to significant vibration will be identified.</p> <p>Where the predicted vibration at the foundations of such buildings exceeds 3mm/s PPV then Highways England will require its Contractor to undertake an initial condition survey of the building. Based on the survey, the level of vibration above which condition surveys and continuous vibration monitoring are required will be confirmed with the building owner. The local authority will be notified through the relevant s61 consent application</p>	
		<p>Best Practice</p>	
			<p>Noise controls - Operational Phase</p>

Noise insulation regulations assessment	EAR Section 8.10	NV27	All buildings within 300m of the proposed scheme	3 3 Y Y Y Y	Within 6 months of the proposed scheme being opened to road traffic, an assessment shall be undertaken in accordance with the regulations set out in the Noise Insulation Regulations 1975 to determine whether any buildings qualify for offers of noise insulation. Offers of noise insulation to eligible buildings should be made with 6 months of the proposed scheme being opened to road traffic.	1 3	Highways England	After scheme opening
Retention of existing noise barriers	EAR Section 2.5	NV28	Existing noise barrier locations	4 4 Y Y Y Y	All existing noise barriers are to be retained as part of the proposed scheme. Where existing noise barriers clash with proposed new infrastructure, a new noise barrier of at least equal height and performance should be provided in its position, or as close to the existing position as possible. The contractor should carry out an assessment to ensure no significant effects arise from either the temporary removal of the noise barrier, nor as a result of the noise barrier realignment.	1 2	Delivery Partner	Prior to and during construction
Replacement of existing noise barriers	Best Practice	NV29	INV (from about 9650)	2 2 Y Y Y Y	The Delivery Partner should undertake a noise barrier survey to determine whether any of existing noise barrier would need to be replaced within a 5 year period after the opening of the proposed scheme. The survey should be conducted to examine the existing noise barriers structural and acoustic performance characteristics. Where the noise barrier survey indicates that the barrier is failing, or may fail in the 5 year period after opening, the Delivery Partner should replace the existing noise barrier with a new noise barrier of equal acoustic performance and of equal height/length of the existing noise barrier.	1 1	Delivery Partner	During DF4/5
Ecology and Nature Conservation								
Vegetation clearance and excavation in areas within 250m of GCN pond	EAR Section 6.4 Notable and/or Legally Protected Species Report Section 3.3 GCN constraints drawing HA549345-JA:IV-SEC-SG-MULTI-DR-GI-0201	ECOL1 WB,	8+800 to 8+400	5 5 Y Y Y Y	Work will need to be undertaken under the conditions of a licence from Natural England and ecological supervision. GCN to be removed from the work area via a translocation program that will involve herptile fencing being installed and a trapping program undertaken by a licensed ecologist for a duration of up to 90 days in suitable weather conditions during the GCN active period (March to October inclusive) dependent on favourable weather conditions (night time temperatures over 5 degrees Celsius). Works to take place once 5 clear days of no GCN present within traps. Exclusion fence to remain in situ until works are complete and removed during the active period (March to October inclusive). Gully pots will need to be designed into the drainage design in these areas to stop amphibians becoming trapped.	5 2	Design Agent Delivery Partner	During construction

Badgers - Preconstruction survey	EAR Section 6.7 Notable and/or Legally Protected Species Report Section 3.5 Badger survey report HE549345-JA/JV- EEC-SG_MULTI- RP-LE-0001	ECOL3	Site wide	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	2	1	Delivery Partner Pre-construction
Badgers - Sett closures	EAR Section 6.7.6 Notable and/or Legally Protected Species Report Section 3.5 Badger survey report HE549345-JA/JV- EEC-SG_MULTI- RP-LE-0001	ECOL4	Sett 3 EB 8+95 Sett 6 EB 7+870 Sett 7 EB 7+800 Sett 10 WB 7+100 Sett 11 WB 7+070 Sett 15 EB 6+95 Sett 19 EB 5+85 Sett 20 EB 5+50 Sett 28 WB 4+875 Sett 29 EB 4+950 Sett 32 EB 3+260 Sett 36-320	Sett 3 EB 8+95 Sett 6 EB 7+870 Sett 7 EB 7+800 Sett 10 WB 7+100 Sett 11 WB 7+070 Sett 15 EB 6+95 Sett 19 EB 5+85 Sett 20 EB 5+50 Sett 28 WB 4+875 Sett 29 EB 4+950 Sett 32 EB 3+260 Sett 36-320	Sett 3 EB 8+95 Sett 6 EB 7+870 Sett 7 EB 7+800 Sett 10 WB 7+100 Sett 11 WB 7+070 Sett 15 EB 6+95 Sett 19 EB 5+85 Sett 20 EB 5+50 Sett 28 WB 4+875 Sett 29 EB 4+950 Sett 32 EB 3+260 Sett 36-320	Closure of sett entrance must only be undertaken under Natural England licence by an ecologist in accordance with the licenced methodology. This will include fitting excluding fencing and one way exclusion gate, exclusion period of 21 days during the 'open' period for badgers July to November inclusive. Welded chain link fencing to over ground up to 5m from each sett entrance to prevent badgers digging back into their sett during the exclusion period. Creation of artificial setts may be required where main active breeding setts are required to be closed.	Y	Y	Y	Y	Y	Y	Y	Y	5	1	Delivery Partner Pre-construction
Badgers - Works within 30m of an active sett	EAR Section 6.8.39 to 6.8.43 Notable and/or Legally Protected Species Report Section 3.5 Badger survey report HE549345-JA/JV- EEC-SG_MULTI- RP-LE-0001	ECOL5	Sett 2 & 3 EB 8+570 - 8+655 Sett 33 EB 8+145 - 8+205 Sett 6 & 7 EB 7+95 - 7+680 Sett 10 & 11 WB 7+045 - 7+130 Sett 12 EB 6+270 - 6+330 Sett 15 & 16 EB 5+895 - 6+055 Sett 17, 19 & 20 EB 5+730 - 5+480 Sett 25 EB 5+405 - 5+370 Sett 29 & 30 EB 5+030 - 4+895 Sett 28 WB 4+890 - 4+960 Sett 36 EB 370 - 450	Sett 2 & 3 EB 8+570 - 8+655 Sett 33 EB 8+145 - 8+205 Sett 6 & 7 EB 7+95 - 7+680 Sett 10 & 11 WB 7+045 - 7+130 Sett 12 EB 6+270 - 6+330 Sett 15 & 16 EB 5+895 - 6+055 Sett 17, 19 & 20 EB 5+730 - 5+480 Sett 25 EB 5+405 - 5+370 Sett 29 & 30 EB 5+030 - 4+895 Sett 28 WB 4+890 - 4+960 Sett 36 EB 370 - 450	Any badger sets found within 30m of working areas should be fenced off and disturbance avoided. Works within 30m of entrances to be carried out under method statement. If disturbance cannot be avoided, then work to be carried out under Natural England disturbance licence following a method statement and under ecological watching brief during July to November inclusive.	Y	Y	Y	Y	Y	Y	Y	Y	6	1	Delivery Partner construction	

		Sett 32 EB 3+290 - 3+290	Sett 1 EB 8+690 Sett 9 WB 7+280 - 7+330	Vegetation to be removed during the winter (before the end of February) to expose the sett entrances. Provided ECOW can confirm that sett entrance is still inactive, soft blocking should be applied, to reduce the risk of disturbed badger holes becoming occupied leading up to construction. Soft blocking is a non-licensable mitigation measure, if entrance becomes active works within 30m may need to take place under Natural England licence.	Delivery Partner	During construction
	EAR Section 6.8.43 Notable and/or Legally Protected Species Report Section 3.5 Badger survey report HE549345-JAV-EEC-SG_MULTI-RP-LE-0001	ECOL6	Sett 13 & 14 WB 6+180 - WB 6+060 - Sett 23 & 24 EB 5+490 - 5+410 Sett 26 & 27 EB 5+080 - 4+970 Sett 34 & 35 EB 3+155 - 3+095	Y Y Y Y Y Y Y Y Y Y	1 1	Delivery Partner
	Bats - works to trees or structures with known bat roosts Bat Survey Report HE549345-JAV-EEC-SG_MULTI-RP-LE-0001	ECOL7	Site wide - currently no known roosts further surveys required	Y Y Y Y Y Y Y Y Y Y	5 5	Delivery Partner
	Bats - works within 30m of known bat roosts Bat Survey Report HE549345-JAV-EEC-SG_MULTI-RP-LE-0001	ECOL8	Site wide - currently no known roosts further surveys required	Y Y Y Y Y Y Y Y Y Y	5 5	Delivery Partner
	Notable and/or Legally Protected Species Report Section 3.4 Bat Survey Report HE549345-JAV-EEC-SG_MULTI-RP-LE-0001	ECOL9	River Bollin - 8+000 SB and NB	N N N Y Y N N N Y Y	3 1	Delivery Partner
	Oters - works near to watercourses with potential for Otter Ecological constraint drawing HA549345-JAV-EEC-SG-MULTI-DR-GI-0502	ECOL10	River Bollin Drain (7-GCN-22) - 7+300 SB and NB	N N N Y Y N N N Y Y	3 1	Delivery Partner
	ECOL11	Birkin Brook - 4+200 SB and NB	N N N Y Y N N N Y Y	3 1	Delivery Partner	
	ECOL12	Sutts Hollow Brook - 2+355 SB and NB	N N N Y Y N N N Y Y	3 1	Delivery Partner	
						Pre-construction During construction

		River Bollin - 8+000 SB and NB	ECOL13	4	2	Y	Y	Y	Y									
		Birkin Brook - 4+200 SB and NB	ECOL14	4	2	Y	Y	Y	Y									
		EAR Section 6 & 32 to 6.8.35 Notable and/or Legally Protected Species Report Section 3.7 Water Voles - Works within 5m of watercourse with potential for Water Voles																
		Ecological constraint drawing HA549345-JA/JV-FEC-SG-MULTI-DR-GI-0502																
		Sutts Hollow Brook - 2+355 SB and NB	ECOL15	4	2	Y	Y	Y	Y									
		Breeding/Nesting Birds - site set-up and all works requiring vegetation removal																
		EAR Section 6.8.44 to 6.8.48 and breeding/nesting bird report HA549345-JA/JV-FEC-SG-MULTI-RP-LE-0001	ECOL16	4	3	Y	Y	Y	Y									
		A pre-construction survey will be undertaken along water courses near construction works which were considered to have suitable habitat to support water voles to confirm continued absence of this species. If evidence of water vole are identified prior to works commencing then ECaw to be consulted and a Natural England Licence may be required if a water vole burrow is found (or suspected) stop work and seek advice from Ecological Clerk of Works (ECoW).																
		Mitigation will need to be implemented to minimise the risk of water vole being injured or killed. This will include undertaking phased vegetation clearance under the supervision of an ecological clerk of works, which will encourage the water voles to leave the work area into adjacent suitable habitat along the watercourse. This should be undertaken between mid-February 2018 and mid-April 2018. A finger tip search of the works area to ensure no individuals remain. Any excavations, or clearing culvert of silt beneath a carriageway works must take place under watching brief and adhere to method statement.																
		Where works are to be undertaken to structures on watercourses which may be used by water voles, measures to minimise disturbance will be implemented. Night working will be minimised to avoid disturbance to water voles commuting along watercourses. In particular, efforts will be made to avoid significant construction noise or vibration during the hours of darkness. Construction/site lighting will use directional lamps, so that light-spill to the watercourses and their banks is avoided. Wherever possible, allowance for the passage of water voles along one or both banks of the watercourse will be incorporated within the temporary works arrangements.																
		To prevent illegal disturbance of breeding birds or their nests, no removal or disturbance of vegetation which can be used by breeding birds will take place within the bird breeding season (typically March to August inclusive), unless this is unavoidable.																
		Where habitat removal is required during the bird breeding season (March to August inclusive) a nesting bird check should be undertaken by a competent ecologist in accordance with the Method Statement to ensure that there are no active birds' nests within the area to be cleared. Nesting bird checks should be undertaken no longer than 24 hours prior to vegetation clearance. Any active nests found must have a 3m cordon set up around them and be avoided until an ECaw has confirmed that the nestlings have fledged.																

Vegetation clearance - site set-up and all works requiring removal	EAR Section 6.8.10 to 6.8.15	ECOL17	Site wide	3 2	Y Y Y Y	<p>Construction activities and vegetation removal will be confined to the minimum areas required for the works. Under Ecological Clerk of Works (ECoW) supervision, the contractor will clearly define and fence off construction areas prior to works starting in any area in order to protect the vegetation that is to be retained. No construction activity, including temporary storage of materials or vehicles, to be allowed outside these areas for the duration of the construction works.</p> <p>Under Ecological Clerk of Works (ECoW), protection of trees to be retained are to be protected in accordance with British Standard BS5837:2012 - Trees in relation to design, demolition and construction.</p> <p>No vegetation clearance lower than 150mm shall take place without prior advice and sign-off from the Ecological Clerk of Works (ECoW).</p>	3 1	Delivery Partner	During construction
	Invasive species * Preconstruction survey	EAR Section 6.4.54 to 6.4.56	ECOL18	Site wide	2 2	N N Y N			
	Invasive species - Site set-up and all works requiring vegetation removal or excavations	EAR Section 6.7.2	ECOL19	Site wide	5 2	N N Y N			
Invasive species - Construction works within 7m of invasive plant species	Notable and/or Legally Protected Species Report Section 3.2	ECOL20	WB 5-925 EB 4+750 Himalayan Balsam EB 8+075 EB 8+020 WB 7+410 EB 7+340 WB 5+190 WB 4+330 EB 4+140 EB 5+450 WB 4+870 WB 4+800 WB 4+625	5 3	N N Y N	<p>Areas of plant invasive species shall be marked out with an exclusion zone (7m radius) using barrier tape and / or spray paint to prevent cross contamination.</p> <p>Works within exclusion zone to be carried out in accordance with the Method Statement following best practice which includes:</p> <ul style="list-style-type: none"> - Any arisings should be left in situ as the soil could contain invasive plant species. - Where arisings cannot be left in situ, contractor to remove all soil and cuttings and dispose of via a licensed carrier to a licensed refuse site 	5 2	Delivery Partner	During construction
	EAR Section 6.7.2	ECOL21	Site wide	5 6	Y Y Y Y				
	Legally Protected Species	EAR Section 6.7 / 6.8	ECOL21	Site wide	5 6	Y Y Y Y			

General pre-construction surveys	EAR Section 6.7 / 6.8	ECOL22	Areas which include potentially suitable resting or breeding habitat for mobile protected species, such as roosting bats, water vole burrows, badger setts or otter holes.	Y Y Y Y Y	The Contractors will undertake pre-construction surveys to determine the current status and distribution of protected and notable species and their current status and distribution along the Scheme. The Contractor will ensure that exclusion zones which are appropriate considering the nature of the construction works to be undertaken are maintained. Where pre-construction surveys are undertaken the Contractor will be required to update the final CEMP to include any additional mitigation measures and/or licences required for the works.	3 2	Delivery Partner	Pre-construction
General consultation	EAR Section 6.7 / 6.8	ECOL23	Site wide	2 2	N N N N	Contractor will consult with the relevant local authorities, NE, the EA and the relevant local wildlife trusts regarding preparation of the ecological aspects of the final CEMP.	2 1	Delivery Partner
General site supervision	EAR Section 6.7 / 6.8	ECOL24	Site wide	2 2	N N Y Y	A qualified ecologist will oversee the implementation of the ecological mitigation.	2 1	Delivery Partner
General site good practice	EAR Section 6.7 / 6.8	ECOL25	Site Wide	2 2	N N Y Y	<p>General measures to be implemented by the Contractor on the Scheme include:</p> <ul style="list-style-type: none"> a) the Contractor will be required to comply with the EA's Pollution Prevention Guidance ("PPG") during works close to ditches, watercourses and culverts; b) ensure careful siting of compounds, materials storage areas, haul routes etc. to avoid semi-natural habitats and protected species wherever possible; c) avoid night-time working where practicable – particularly in the vicinity of sensitive habitats such as woodland, hedgerows and watercourses; d) avoid the use of lighting, generators (and other noisy equipment) at night where possible – particularly in the vicinity of sensitive habitats; e) cover all excavations overnight (where practicable) or providing appropriate escape ramps for mammals (where practicable) in the form of a sloped face to the excavation or a scaffold plank or similar; f) visually check uncovered excavations for the presence of wildlife each morning before works commence. The Contractor will seek advice from the EAD if a protected species is found or suspected; g) where practicable reducing the severance impact of vegetation removal by maintaining the feature intact as long as possible, in particular by keeping any gap to the minimum required for the purpose and considering filling gaps with brash or similar when work is not being undertaken (e.g. on a bat commuting route at night) so that it can continue to function as a wildlife corridor; and h) careful and regular management of soil storage areas to maximise their future value in landscape planting and to dissuade badgers and other burrowing animals from colonising them in the interim. 	2 1	Delivery Partner
								During construction

Site documentation for European Protected Species	EAR Section 6.7 / 6.8	ECOL26	Site wide	5	3	N	Y	Y	Copies of all protected species licences obtained for the works must be retained on site at all times.	5	3	Delivery Partner	During construction	
Habitat reinstatement	EAR Section 6.7 / 6.8	ECOL21	Site wide	2	2	N	N	Y	Where temporary habitat loss is required to facilitate construction, the vegetation will be reinstated post construction, in accordance with the Environmental Masterplan. Where replacement planting is provided, this mitigation will be integrated with landscape planting, as appropriate, using native species of local provenance.	1	1	Delivery Partner	During construction	
Works affecting Non-Stanutory Designated Sites	EAR Section 6.7 / 6.8	ECOL22	Sunbank Woods and Ponds SBI	9+050 - 8+650 Jacksons Bank East LWS 8+550 - 7+330 Rossmill SBI 8+330 - 7-825 Ryecroft Covert LWS 1+100 4+200 Hancocks Bank South LWS 4+555 - 3+920 Hancocks Bank North LWS 4+350 - 3+875 Yanwood Heath Covert LWS 3+400 - 2+750 Rostherne Mere - 3+050 SB to 0+100 Cotteril Clough - 150,000 to 8+500	4	4	Y	Y	Y	Any works within close proximity to non-statutory designated sites will need to be undertaken in accordance with standard working practices to ensure no direct or indirect impacts such as damage or pollution. This includes the following SBIs and LWSs; Jackson's Bank, East Rossmill, Hancock's Bank North and South and Ryecroft Covert. Silt barriers would be used for works adjacent to statutory and non-statutory designated sites for nature conservation value and ancient woodland present adjacent to the Proposed Scheme, to prevent soil run off and pollution of these habitats.	4	1	Delivery Partner	During construction
Works affecting Sites of Special Scientific Interest (SSSI)	EAR Section 6.7 / 6.8	ECOL23	Rostherne Mere - 3+050 SB to 0+100	5	5	Y	Y	Y	Application for Natural England Asset required for activities affecting SSSIs. Should the works need to extend outside the assented area, further liaison with Natural England may be required. Silt barriers would be used for works adjacent to statutory and non-statutory designated sites for nature conservation value and ancient woodland present adjacent to the Proposed Scheme, to prevent soil run off and pollution of these habitats.	5	1	Delivery Partner	Pre-construction	
Landscape and Visual Impact	EAR Section LVIA	Design, Construction and Mitigation Measures	LV01	Site wide	2	2	Y	Y	Y	Prior to any vegetation clearance commencing, all areas of existing vegetation shall be assessed by a qualified landscape architect and the Ecological Clerk of Works (ECoW) to confirm vegetation to be protected or reinstated following the construction works.	2	1	Delivery Partner	Pre-construction

Preparation of plans (schedules) for vegetation clearance to ensure vegetation is removed only where essential to construct the Proposed Scheme and to allow for sight lines and safety requirements. Vegetation removal to be refined beyond DF3.	EAR Section LVIA Design, Construction and Mitigation Measures; Environmental Masterplan and Landscape Capacity Scoping Report	LV02	Site wide	3 4	Y Y Y Y Y	At detail design the designer will prepare, at a suitable scale, a plan showing areas of existing trees and vegetation to be retained and protected for the duration of the construction phase. The plan will also show the respective root protection zone and protection measures for the retained vegetation as well as identifying the existing vegetation to be removed. Extent of vegetation clearance to be carefully controlled in liaison with project arboriculturist and landscape architect to ensure minimal removal required to implement the works and to allow for sight lines and safety requirements. In particular, retain existing vegetation at the top of embankments to retain visual amenity. Retain mature trees which contribute to visual amenity of sensitive receptors. (Existing vegetation is essential for landscape integration and/or visual screening. Vegetation removal for SMP interventions would result in High risk of significant landscape or visual effects. Low potential to mitigate landscape and visual effects with new planting.)	3 1	Design Agent	Pre-construction	
Protection of retained vegetation	EAR Section LVIA Design, Construction and Mitigation Measures	LV03	Site wide	3 4	Y Y Y Y Y	The Contractor will protect trees and vegetation to be retained in line with retained vegetation plans using suitable protective fencing to prevent accidental damage by movement of construction plant and vehicles. Tree protection will be in line with the recommendations in current guidance such as BS8837:2012 Trees in relation to design, demolition and construction (BSI, 2012). Measures to protect trees will be determined by the Contractor prior to implementation, including the following, as appropriate: a) provision of appropriate protective fencing to reduce the risks associated with vehicles trafficking over root systems or beneath canopies; b) measures to prevent compaction of soils; c) maintenance of vegetation buffer strips, where practicable; and d) procedures for the selective removal of lower branches to reduce the risk of damage by construction plant and vehicles.	3 1	Delivery Partner	During construction	
Vegetation clearance in areas adjacent to ancient woodland and trees protected by Tree Preservation Order to be undertaken in the presence of an arboriculturalist or other appropriately qualified professional.	EAR Section LVIA Design, Construction and Mitigation Measures; and Landscape Receptors and Viewpoint Locations within EAR (Figure 7.1) and Environmental Masterplan (at DF4)	LV04a	TBC at DF4/5	4 2	Y Y Y Y Y	Areas to be outlined via site clearance and/or Environmental Masterplan drawings. Where areas of ancient woodland and TPOs outside the highway boundary adjoin areas of vegetation clearance, an arboriculturalist or other appropriately qualified professional would be present on site to ensure clearance does not encroach within the root protection areas. Tree protection measures will be utilised to prevent damage to tree roots and stems during works. This would include buffer zones for any works immediately adjacent to notable or valuable trees.	4 1		DF4 - DF5 During construction	
		LV04b	Example - 16500 - 16800 (NB Hoo Wood)	3 3	Y Y Y Y Y		2 2		Delivery Partner	
		LV04c	Site wide (TPOs)	3 3	Y Y Y Y Y		2 2			

Design of reinstatement planting	As described in EAR (Section LVIA) and at outline design within Environmental Masterplan (DF4) Landscape and Ecological Detail Design Plans at DF5.	Site wide	4 4	Y Y Y Y	At detailed design the designer will prepare, at a suitable scale, landscape planting plans showing the replacement tree and shrub planting plots and grass seeding areas for the Scheme. This will include for each planting plot a schedule of plant species, the percentage mixes, plant sizes, planting density and planting quantities, using native planting and of a similar species mix to that removed. For grassland areas this should include the quantity and sowing rates for the seed mixes to be used. The planting plans will be accompanied with a planting specification which will include details of tree, shrub and grass seed provenance and the details of the plant suppliers to be used. Land used temporarily is to be returned to a condition suitable for the continuation of the original use, including the replanting of screening vegetation on re-profiled slopes. Replacement planting is to be provided where screening vegetation cannot be retained and where gantry locations cannot be moved due to the technical and safety requirements of the Proposed Scheme	3 2	Design Agent	Pre-construction	
Consultation with key stakeholders for design of reinstatement planting	Consultation strategy Best Practice	LV06	Site wide	2 2	Y Y Y Y	Relevant local authorities, NE and other statutory bodies that have an interest and adjacent landowners will be consulted regarding the landscape and planting proposals.	2 1	Design Agent	Pre-construction
TPOs within reinstatement planting design	EAR Section LVIA Design, Construction and Mitigation Measures, and Landscape Receptors and Viewpoint Locations within EAR and Environmental Masterplan (at DF4)	LV07	Site wide	4 4	Y Y Y Y	Where a tree which is covered by a TPO or located within a Conservation Area is affected by the works (i.e. such as root damage or felled), the Contractor will be required to liaise with and agree the replacement tree species and tree size with the relevant local planning authority. As a minimum replacement trees will be of an appropriate size and species and planted at the same place as soon as the owner of the land can reasonably do this, as is required under current policies such as Department for Communities and Local Government (2012) National Planning Policy Framework ("NPPF").	4 4	Delivery Partner	Pre-construction
Design of reinstatement planting for trees	EAR Section LVIA Design, Construction and Mitigation Measures, and Landscape Receptors and Viewpoint Locations within EAR and Environmental Masterplan (at DF4)	LV08	Site wide	3 2	Y Y Y Y	Any trees intended to be retained which are felled or die as a consequence of construction works will be replaced by the Contractor. Where reasonably practicable, the size and species of replacement trees will be selected to achieve to the greatest extent possible, a close resemblance of the original trees most effectively using locally occurring native species of local provenance and taking cognisance of any management plans for areas of woodland immediately adjacent.	3 2	Delivery Partner	During construction

Works associated with reinstatement planting	EAR Section LVIA Design, Construction and Mitigation Measures; Best Practice	LV09	Site wide	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Delivery Partner		During construction	
															2	1		
Monitoring and maintenance of reinstatement planting	EAR Section LVIA Design, Construction and Mitigation Measures; Best Practice	LV10	Site wide	2	2	N	N	Y	Y	N	N	N	N	N	N	Delivery Partner	Post-construction	
Soil handling during reinstatement planting		EAR Section LVIA Design, Construction and Mitigation Measures; Best Practice	LV11	Site wide	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Delivery Partner	During construction	
Where there are no windthrow or visual issues, tree felling will be reduced to that necessary to allow the safe construction and operation of the Scheme.	EAR Section LVIA Design, Construction and Mitigation Measures; Best Practice																	
Where existing noise barriers are to be removed, replace them within a short timeframe.	EAR Section LVIA Design, Construction and Mitigation Measures, based on guidance such as the CIRIA Environmental Good Practice on Site Guidelines (CIRIA, 2015)	LV13	Existing noise barriers	3	3	Y	Y	Y	Y	N	N	N	N	N	N	Delivery Partner	During construction	

Watching brief for construction works on or adjacent to sites of archaeological or cultural heritage interest and during topsoil stripping.	Best Practice	CH2	Site wide in areas of previously undisturbed land	N N Y N	In these locations there is potential for the Scheme to cause direct physical impacts to currently unknown archaeological remains. If such works are likely to disturb previously un-excavated ground, archaeological watching briefs will be undertaken during topsoil stripping and excavations. Any archaeological watching briefs will be followed by an appropriate programme of assessment, analysis and reporting. If potential archaeological remains are encountered during works, activities in this location to be halted and advice sought from the Contractor's Environmental Manager.	2 2	Delivery Partner	During construction
Records to be kept on site	Best Practice	CH3	Site wide	2 2	N N Y N	Records of all archaeological remains found and copies of any mitigation measures determined in consultation with the local authority archaeologists and/or Historic England throughout the works must be kept on site at all times.	2 1	Delivery Partner
Temporary visual impact on cultural heritage assets within 300m of the new gantries and other infrastructure	EAR (see section LVI A Design, Construction and Mitigation Measures)	CH4	8+625 WB (Yew Tree Farm Grade II)	3 2	N N Y N	Appropriate replacement planting implemented in accordance with the Environmental Masterplan	2 2	Delivery Partner
Materials, Geology and Soils								
Sustainable resource use	Best Practice	MR1	Site wide	2 1	N N Y N	"Contractor will prepare a Resource Efficiency Management Plan covering the selection and procurement of materials prior to and during construction. Where practicable the contractor will implement measures to manage material resources use during construction including: a) using sustainably sourced materials; b) using recycled or secondary materials; and c) minimising the use of materials that have the potential to harm human health or the environment"	1 1	Delivery Partner
Waste Minimisation	Best Practice	MR2	Site wide	2 1	N N Y N	The Contractor will be responsible for the reduction of waste arisings from the Scheme where reasonably practicable. This will include measures such as careful storage of materials on site and 'just in time' deliveries which will be secured through the development and implementation of the Materials Management Plan and Logistics Plan	1 1	Delivery Partner
Construction								
Pre-construction								
During construction								

Material reuse	Best Practice	MR3	Site wide	2	1	N	N	Y	N	Opportunities will be considered and measures will be implemented in the design and construction of the Scheme by the Contractor to reuse waste or surplus materials, as appropriate. The Contractor will need to demonstrate that where possible reuse has been maximised and where this is not possible it will need to be recorded. The Contractor will also be expected to investigate, secure and record where the reuse of materials and waste has been used elsewhere offsite.	1	1	Delivery Partner	During construction		
Materials handling and storage	Best Practice	MR4	Site wide	2	1	N	N	Y	N	There will be dedicated areas for handling and storing excavated material. The Contractor will be responsible for managing these areas in such a way as to prevent harm to human health, amenity and the environment. The earthworks material excavated from areas of cutting and borrow pits will vary in its engineering properties and these will need to be assessed and utilised to ensure the best use of all materials.	1	1	Delivery Partner	During construction		
Site Waste Management Plan	Best Practice	MR5	Site wide	2	1	N	N	Y	N	The SWMP will include detailed procedures for compliance with the requirements for waste transfer notes in accordance with the Waste (England and Wales) Regulations 2011, and arrangements for auditing the actions of other parties in the waste handing chain.	1	1	Delivery Partner	During construction		
Waste Disposal	Best Practice	MR6	Site wide	2	1	N	N	Y	N	A register of all waste loads leaving the site will be maintained by the Contractor to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.	1	1	Delivery Partner	During construction		

People and Communities										Road Drainage and Water Environment				
Stakeholder Communication Plan	Best Practice	CM1	Site wide	2	2	N	N	Y	Y	The contractor will develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	2	1	Delivery Partner	Prior to construction
Minimise impacts of construction traffic on local network and population	Best Practice	CM2	Site wide	2	2	N	N	Y	Y	A Construction Transport Management Plan will be prepared, setting out measures to manage construction traffic and the potential impacts on the local road network and all travellers. Will include details on closures and diversion routes. The Plan will be agreed with the highway authorities for the local road network. Notify public and provide complaints contacts.	2	1	Delivery Partner	Prior to construction
Minimise disruption during construction	Best Practice	CM3	Site wide	2	2	N	N	Y	Y	The contractor will provide appropriate information and diversion measures in relation to the control of dust and noise generation and visual intrusion on nearby receptors.	2	1	Delivery Partner	During construction
All construction works to avoid increasing flood risk										Appropriate control measures implemented in accordance with best practice pollution control to mitigate the impact of reduction in amenity arising from changes in air quality, visual intrusion and noise and disturbance affecting local residents and businesses within the area.	2	1	Delivery Partner	During construction
Consents for abstractions	Best Practice	WR1	Site wide	2	1	N	Y	Y	Y	Construction activities will be undertaken by the Contractor taking into consideration the requirements to avoid any increase in flood risk. Appropriate measures, such as keeping watercourses clear of obstructions and debris to reduce blockage risk, will be implemented by the Contractor throughout the works in order to prevent, potential flooding events. Suitable access and safe refuges are to be identified for use in the event of a flood and these will be communicated to all site personnel as part of the Contractor's site induction. Appropriate maintenance access will be made available to watercourses and associated flood risk structures, if required	2	1	Delivery Partner	During construction
Consents for dewatering	Best Practice	WR2	Site Wide	2	1	N	Y	Y	Y	Any proposed abstractions (e.g. for batching plants, wheel washing etc.) whether surface water or groundwater if in excess of 20m³/day will require an abstraction licence. Abstractions for dewatering, if required, may need an abstraction licence. Discharges from construction compound areas, may require discharge consent.	2	1	Delivery Partner	Pre-construction
		WR3	Site Wide	2	2	N	Y	Y	Y	Where de-watering activities are required, early engagement with the EA will occur to discuss proposed solutions and to ensure solutions and controls are compliant with the current Regulatory Position Statement ('RPS') for temporary dewatering. Applications for appropriate consents will be prepared and lodged with the EA, with consent secured prior to discharging any water generated via dewatering activities.	2	1	Delivery Partner	Pre-construction

Excavation work in the vicinity of aquifers and private water supplies	Best Practice	WR4	Site Wide	2	1	N	Y	Y	Y	Delivery Partner	During construction
All works within the floodplain	Best Practice	WR5	Site Wide	2	2	N	Y	Y	Y	Pre-construction	
Site documentation for flood risk	Best Practice	WR6	Site Wide	2	2	N	Y	Y	Y	Delivery Partner	During construction
Compensatory areas for flood risk	Best Practice	WR7	Site Wide	2	2	N	Y	Y	Y	Delivery Partner	During construction
Site documentation for pollution control	Best Practice	WR8	Site Wide	2	2	N	Y	Y	Y	Delivery Partner	During construction

A method statement and risk assessment will be undertaken for any excavation / dewatering works in sensitive locations and adjacent to abstractions. This would include details of the anticipated pump rates and rate of recharge.

Any ingress of water into excavations would be pumped to a suitable settlement lagoon or tank and the clear water discharged into the drainage system in a condition suitable to meet the requirements of the Environment Agency as applicable

The Contractor will, as far as reasonably practicable, ensure that flood risk is managed safely throughout the construction and implementation period and consider potential flooding effects when planning sites and storing materials. The Contractor should prepare site specific flood risk management plans (to be included within the CEMP) for those areas of the site at risk of flooding. These plans would include all areas within the 1 in 100 year plus climate change floodplain, areas susceptible to groundwater flooding, and other flood risk sources, such as sewer flooding and areas at risk of reservoir flooding

The Contractor will consult with the relevant regulatory bodies and other relevant risk management authorities on areas at risk of flooding and make appropriate use of the EA's Floodline flood warning service for works within areas at risk of flooding. Contact details will be provided to all site personnel as part of their site induction.

An Emergency Flood Response Plan will be provided within the scheme Emergency Response Procedures and will include measures to protect the construction works, plant, and workforce within the compound, rescue and recovery areas in the event of a flood.

Flood defence consent documentation (if deemed required at detailed design) must be kept on site at all times

The contractor will provide flood compensation areas as set out in a Environmental Management Plan.

A Control of Substances Hazardous to Health ('COSHH') Register will be maintained by the Contractor for each site compound and updated throughout the works as required; and Copies of the Site compound plan are to be kept on Site, the plan is to clearly indicate where potentially polluting substances and COSHH stores are to be located.

	Pollution control for all construction works	Best Practice	WR9	Site wide	N	Y	Y	Y	1	Delivery Partner	Pre-construction During construction
											To ensure the quality of the water environment does not deteriorate during construction the Contractor will prepare and implement a surface water and/or groundwater monitoring plan, particularly in relation to works that could affect aquifers or drilling works. This will include a pollution control plan, and emergency response plan taking into account standard best practices and relevant PPGs. The Contractor will comply with current pollution control requirements such as 'The Control of Pollution (Oil Storage) (England) Regulations 2001' that apply in relation to storage of any oil based materials that may be required in the temporary compound areas. Stationary plant used by the Contractor will be fitted with measures such as drip trays to retain any leakage of oil or fuel. The Contractor will empty trays at regular intervals to prevent overflow. The contractor will provide a suitable construction site drainage system with appropriately sized treatment facilities such as settlement or detention basins. The Contractor will consult with the EA (and any other relevant statutory authorities) regarding the measures to be implemented to contain and manage surface water runoff from the construction of the Scheme, and requirements for water quality monitoring of watercourses or groundwater potentially affected by construction works or discharge of surface water run-off. The Environment Agency must be informed of all pollution incidents and action taken accordingly. There is no guidance as to what constitutes a pollution incident (thresholds etc), the EcOW should be consulted.

Noise Controls - Construction Phase

		Noise Controls - Construction Phase				Noise from construction of ERAs				Noise from construction of new gantry foundations				
NV1	ERA EB - 5+900 - 6+050	3	4	Y	Y	Y	Y	Y	Y	Use of Best Practicable Means (BS 5228-1 and Section 72 of Control of Pollution Act 1974) during construction works. The Delivery Partner must develop a CEMP based on the below actions.	2	4	DF4-DF5 Through to construction	
NV2	ERA EB 2 - 7+000 - 7+100	3	4	Y	Y	Y	Y	Y	Y	* As far as practicable, works should be undertaken during core daytime hours, i.e. 07:00 to 19:00. • Works should be limited to no more than 10 working days in any 15 consecutive days and must not exceed 40 days in any 6 consecutive months. • No percussive piling will be used in the area. Instead alternative low noise method/design must be chosen (e.g. Given piling, CFA or a bored piling solution). • The Delivery Partner should use temporary noise barriers and/or piling shrouds as far as practicable and would act to reduce noise levels. • Residents must be fully informed of the potential risk for noise effects prior to works commencing. • Noise monitoring sites should be established at a range of receptors to ensure that the night average noise levels do not exceed the SOAEL. Where the ambient noise level exceeds the SOAEL, the noise from construction works should not exceed the pre-existing ambient noise levels by more than 3dB. Noise monitoring locations are available in the public realm on Algrave Road. These can be developed and agreed with the Delivery Partner DF4-DF5. * The Delivery Partner must apply for a Section 61 (of Control of Pollution Act) agreement prior to works commencing if the local authority is in favour. • The Delivery Partner will provide the method of working with at least 11 days' notice. No work shall commence without the written acceptance from Highways England.	2	4	Delivery Partner	
NV3	ERA WB4 - 7+350 - 7+500	3	3	Y	Y	Y	Y	Y	Y	Use of Best Practicable Means (BS 5228-1 and Section 72 of Control of Pollution Act 1974) during construction works. The Delivery Partner must develop a CEMP based on the below actions.	2	3	Delivery Partner	
NV4	ERA WBS - 5+700 - 5+800	3	4	Y	Y	Y	Y	Y	Y	* As far as practicable, works should be undertaken during core daytime hours, i.e. 07:00 to 19:00. • Works should be limited to no more than 10 working days in any 15 consecutive days and must not exceed 40 days in any 6 consecutive months. • Avoid the use of percussive piling in this area. Instead alternative low noise method/design must be chosen (e.g. Giken piling, CFA or a bored piling solution). • The Delivery Partner should use temporary noise barriers and/or piling shrouds where they are available and would	2	4	Delivery Partner	
NV5	GB -01 - 10	3	2	Y	Y	Y	Y	Y	Y	Use of Best Practicable Means (BS 5228-1 and Section 72 of Control of Pollution Act 1974) during construction works. The Delivery Partner must develop a CEMP based on the below actions.	2	2	DF4-DF5 Through to construction	

NV6	GA 41 - 48	3	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Best Practice	NV7	Site wide	4	4	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Method Statements														
EAR Section 8.7	NV8	Site wide	4	4	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Section 61 consents														
EAR Section 8.7	NV9	Site wide	2	2	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Noise and vibration monitoring														

act to reduce noise levels.
 • Residents must be fully informed of the potential risk for noise effects prior to works commencing.
 • Noise monitoring sites should be established at a range of receptors to ensure that the night average noise levels do not exceed the SOAEL. Where the ambient noise level exceeds the SOAEL, the noise from construction works should not exceed the pre-existing ambient noise levels by more than 3dB. Noise monitoring locations are available in the public realm on Algrave Road. These can be developed and agreed with the Delivery Partner DF4-DF5.
 • The Delivery Partner must apply for a Section 61 (of Control of Pollution Act) agreement prior to works commencing if the local authority is in favour.
 • The Delivery Partner will provide the method of working without the written acceptance from Highways England.

The Contractor will assess, consider and implement best practicable means ("BPM") at all times throughout the construction of the Scheme following the guidance contained within Section 72 of Control of Pollution Act 1974, BS 5228-2 and BS 5228-1. The Contractor will develop and submit a noise and vibration management plan (NvMP) including method statements, monitoring and reporting protocols that demonstrate to Highways England that no significant impact will result from their construction works. The method statements shall specify how immediate neighbours will be kept informed of the measures taken to achieve this requirement. The Delivery Partner will provide the method of working with at least 14 days notice. No work shall commence without the written acceptance from Highways England.

The Delivery Partner will produce and submit an application under Section 61 of Part III of The Control of Pollution Act 1974 to the Local Authority Environmental Health Department in whose area the works are to take place – once approved, any conditions applied to the approval shall be complied with.
 The consent applications will be discussed with the relevant local authority, or authorities, both prior to construction work and throughout the construction period. Where works requiring a s61 consent are re-scheduled or modified the Contractor will apply for a dispensation or variation from the appropriate local authority, before commencing those works.

The Contractor will undertake and report noise and vibration monitoring as is necessary to ensure and demonstrate compliance with all noise and vibration commitments and any s61 consent(s). Noise monitoring requirements to be agreed with the local authority. Monitoring sites should be established at a range of receptors to ensure that the night average noise levels do not exceed pre-existing ambient noise levels.

Best Practice	NV10	Site wide	2	2	Y	Y	Y	Y	Y	2	1	Delivery Partner
Inspection												During construction
Consultation with properties within 300m and those signed up for updates (Figure 2.11) illustrates all properties within 300m of the M56 J6 to J8)	NV11	Warburton Green	2	2	Y	Y	Y	Y	Y	2	2	Delivery Partner
	NV12	Ashley	2	2	Y	Y	Y	Y	Y	2	2	Delivery Partner
	NV13	Thomas Green	2	2	Y	Y	Y	Y	Y	2	2	Delivery Partner
Construction noise mitigation for properties within 100m of construction activities	NV14	Keepers Cottage	3	3	Y	Y	Y	Y	Y	2	3	Delivery Partner
												During construction

Construction noise mitigation for properties within 100m of construction activities

- Liaison with relevant local Environmental Health Officers, affected residents and commercial operations will be undertaken to ensure that noise and vibration during construction are effectively managed
- Keep all receptors within 300m of the Proposed Scheme informed of the progress of the works, including the nature and timing of the works, including compound locations and traffic controls, via such means as newsletters and public meetings.
- Appoint a responsible person to liaise with the public, have a representative available on site during daytime working hours to answer queries or address any concerns expressed.
- Treat complaints fairly and expeditiously.

Locallised use of hoardings, portable barriers and acoustic sheds will be erected as necessary to shield particularly noisy activities.

Careful selection of equipment, for example any compressors brought to site will be super-silenced or sound reduced models fitted with acoustic enclosures or any pneumatic tools will be fitted with silencers or mufflers wherever practicable to achieve required acoustic performance. Generators, pumps and lights required for 24-hour operation will be super-silenced (enclosed) and/or screened. All relevant plant will comply with permissible noise levels set out in the relevant European Directives.

The contractor will develop and submit method statements, monitoring and reporting protocols that demonstrate to Highways England that all plant and equipment will be properly maintained and operated in accordance with manufacturers' recommendations. Plant will be inspected on arrival to site.

The contractor will develop and submit method statements, monitoring and reporting protocols that demonstrate to Highways England that machines in intermittent use will be shut down in intervening periods of non-use or, where this is impracticable, they will be throttled down to a minimum.

Where it is identified that static items of plant are likely to generate relatively high noise levels, portable noise screens will be sourced and introduced to provide additional noise attenuation when working close to residential properties.

Plant will be fitted with broadband reversing alarms

	NV15	Warburton Green	3	3	Y	Y	Y	Y	Y	Y	The Delivery Partner will develop and submit a method statement and monitoring and reporting protocols that demonstrate to Highways England that no vehicles will wait or queue on public highways or in the vicinity of site compounds with engines running for periods in excess of 10 minutes.	2	3	Delivery Partner	During construction
Best Practice	NV16	Ashley	3	3	Y	Y	Y	Y	Y	Y		2	3	Delivery Partner	During construction
Construction noise mitigation for properties within 200m of construction activities															
Replacement of existing noise barriers	Best Practice	NV17	INV	2	1	Y	Y	Y	Y	Y	The Delivery Partner should undertake a noise barrier survey to determine whether any of existing noise barrier would need to be replaced within a 5 year period after the opening of the proposed scheme. The survey should be conducted to examine the existing noise barriers structural and acoustic performance characteristics. Where the noise barrier survey indicates that the barrier is failing, or may fail in the 5 year period after opening, the Delivery Partner should replace the existing noise barrier with a new noise barrier of equal acoustic performance and of equal height/length of the existing noise barrier.	1	1	Delivery Partner	During DF4/5
EAR Section 8.8	Piling activities	NV18	Site wide	3	4	Y	Y	Y	Y	Y	Methods of construction and plant will be selected so as to minimise noise and vibration and reduce the use of percussive and vibratory equipment, particularly for night time working.	3	2	Delivery Partner	During construction
Construction site layout within 100m of dwellings	Best Practice	NV19	Site wide	4	4	Y	Y	Y	Y	Y	Use of temporary noise barriers and/or piling shrouds should be considered where piling is required within 300m of a noise sensitive receptor location.	3	2	Delivery Partner	During construction
Carrigeway surfacing	EAR Section 8.7	NV20	Site wide	2	4	Y	Y	Y	Y	Y	Careful consideration will be made of the site layout in order that any noise impact at nearby sensitive properties is minimised. Static plant will be located so as to optimise screening and/or distance attenuation in relation to occupied residential properties and fitted with suitable enclosures where practicable.	1	4	Delivery Partner	During construction
Working hours	Best Practice	NV21	Site wide	4	4	Y	Y	Y	Y	Y	Lane 1 and 4 of the carriageway within the working footprint will be resurfaced using low noise material	2	4	Delivery Partner	Pre-construction
Works duration	Best Practice	NV22	Site wide	4	4	Y	Y	Y	Y	Y	Where practicable, works (including deliveries to site) should be programmed such that the requirement for working outside of normal working hours is minimised.	4	1	Delivery Partner	During construction
Diversion routes	EAR Section 8.7	NV35	Site wide	4	3	Y	Y	Y	Y	Y	• Full carriageway closures should be advertised well in advance of the works to ensure regular users of the M56 at night are aware of when closures are going to occur. • The Delivery Partner should liaise with local authorities regarding planned carriageway closures in order to ensure that they do not coincide with planned maintenance works on the diversion route, for example. • Consideration should also be given to alteration of timings of signal controlled junctions, to avoid queuing traffic and to allow diverted motorway traffic to pass through the diversion route quicker. • Consideration should also be given to the use of several diversion routes simultaneously (e.g. so clockwise traffic is taken one route, anticlockwise traffic is taken another), which will act to split traffic volumes into different	4	1	Delivery Partner	During construction

		geographical areas, lessening the impact in one single area						
		The number of instances of a particular diversion route in operation should be limited to the following to avoid significant effects:						
		<ul style="list-style-type: none"> • Less than 10 days in any 15 consecutive day period, and less than 40 days in any consecutive 6 month period. Where a diversion route is used, or expected to be used, for a number of occurrences equal to or above these limits, all noise sensitive receptors within 50m of the diversion route, fronting onto the diversion route, should be offered Noise insulation, or costs thereof, to treat the facade of the property facing the diversion route. 						
Division durations								
EAR Section 8.7		NV23	Site wide	4	4	Y	Y	Y
Vibration Controls - Construction phase		NV24	ERA's	2	4	Y	Y	Y
		NV25	Gentry	2	4	Y	Y	Y
Vibration from construction of ERA's, gantry foundations and proposed noise barrier foundations		Best Practice						
		Develop a CEMP based on the below <ul style="list-style-type: none"> • Appropriate investigations into ground conditions in order that consideration can be given to methods of working which could avoid problems. • Undertake works during daytime core hours 07:00-19:00. Low vibration method/design must be chosen (e.g. Giken piling, CFA or a bored piling solution). Residents must be fully informed of the potential risk for vibration effects prior to works commencing Vibration monitoring should be undertaken at the worst affected location (likely the closest location). The Delivery Partner will provide the method of working with at least 14 days' notice. No work shall commence without the writing acceptance from Highways England. 						
		Delivery Partner						
		During construction						

Vibration	NV26	Site wide	2	2	Y Y Y	Highways England will require its Delivery Partner to notify and consult it and the relevant local authority regarding any works predicted to generate a PPV above 10mm/s. Where it is determined that there is no reasonable or practicable means to reduce predicted or measured vibration then the Delivery Partner will:	Pre- construction During construction
						If predicted vibration levels exceed 1mm/s component PPV at occupied residential buildings or 3mm/s PPV at occupied commercial buildings more detailed appraisal should be carried out in accordance with the methods in BS 5228 – 2. If this identifies that people occupying buildings may experience levels in excess of the threshold values those potentially affected will be notified as soon as practically possible in advance of the works. The notification will describe the nature and duration of the works and any associated proposals for vibration monitoring.	Delivery Partner

Noise controls - Operational Phase		Best Practice			
Noise insulation regulations assessment	EAR Section 8.10 NV27	All buildings within 300m of the proposed scheme	Y Y Y Y	Within 6 months of the proposed scheme being opened to road traffic, an assessment shall be undertaken in accordance with the regulations set out in the Noise Insulation Regulations 1975 to determine whether any buildings qualify for offers of noise insulation. Offers of noise insulation to eligible buildings should be made within 6 months of the proposed scheme being opened to road traffic.	1 3 Highways England After scheme opening
Retention of existing noise barriers	EAR Section 2.5 NV28	Existing noise barrier locations	Y Y Y Y	All existing noise barriers are to be retained as part of the proposed scheme. Where existing noise barriers clash with proposed new infrastructure, a new noise barrier of at least equal height and performance should be provided in its position, or as close to the existing position as possible. The contractor should carry out an assessment to ensure no significant effects arise from either the temporary removal of the noise barrier, nor as a result of the noise barrier realignment.	1 2 Delivery Partner Prior to and during construction

										Delivery Partner		During DF4/5	
Ecology and Nature Conservation													
Replacement of existing noise barriers	Best Practice	NV29	INV	2	2	Y	Y	Y	Y	1	1		
Ecology and Nature Conservation													
Notable and/or Legally Protected Species Report Section 3.3	EAR Section 6.4	ECOL1	8+800 to 8+400 WB.	6	5	Y	Y	Y	Y	5	2		
Vegetation clearance and excavation in areas within 250m of GCN pond	GCN constraints drawing HA543345-JA/JV-EEC-SC-MULTI-DR-GR-0201	ECOL2	7+700 to 7+450 SB.	5	5	Y	Y	Y	Y	5	2		
Badgers - Preconstruction survey	EAR Section 6.7	ECOL3	Site wide	2	2	Y	Y	Y	Y	2	1		
Badgers - Sett closures	Notable and/or Legally Protected Species Report Section 3.5	ECOL4	Site wide	5	5	Y	Y	Y	Y	5	1		

EAR Section 6.8.39 to 6.8.43	Notable and/or Legally Protected Species Report Section 3.5	ECOL5	Site wide	5	3	Y	Y	Y	Y	Y	Y	Y
Badgers - Works within 30m of an active sett	Badger survey report HE549345-JA/VEC-SG_MULTI-RP-LE-0001	EAR Section 6.8.39 to 6.8.43	Notable and/or Legally Protected Species Report Section 3.5	ECOL6	Site wide	2	2	Y	Y	Y	Y	Y
Bats - works to trees or structures with known bat roosts	Bat Survey Report HE549345-JA/VEC-SG_MULTI-RP-LE-0001	Notable and/or Legally Protected Species Report Section 3.4	ECOL7	Site wide	5	5	Y	Y	Y	Y	Y	Y
Bats - works within 30m of known bat roosts	Bat Survey Report HE549345-JA/VEC-SG_MULTI-RP-LE-0001	Notable and/or Legally Protected Species Report Section 3.4	ECOL8	Site wide	5	5	Y	Y	Y	Y	Y	Y
Otters - works near to watercourses with potential for Otter	Otters - works near to watercourses with potential for Otter	EAR Section 6.8.27 to 6.8.31	Notable and/or Legally Protected Species Report Section 3.6	ECOL9	River Bolin - 8-000 SB and NB	5	2	N	N	Y	Y	Y
Ecological constraint drawing HA549345-JA/VEC-SG_MULTI-DRG-0502	Ecological constraint drawing HA549345-JA/VEC-SG_MULTI-DRG-0502	River Bolin Drain (7-GCN-22) - 7-300 SB and NB	ECOL10	River Bolin Drain (7-GCN-22) - 7-300 SB and NB	5	2	N	N	Y	Y	Y	Y
Birkin Brook	Birkin Brook	4-4-200 SB and NB	ECOL11	Birkin Brook	5	2	N	N	Y	Y	Y	Y

Any badger setts found within 30m of working areas should be fenced off and disturbance avoided. Works within 30m of entrances to be carried out under method statement. If disturbance cannot be avoided, then work to be carried out under Natural Eng and disturbance licence following a method statement and under ecological watching brief during July to November, inclusive

Vegetation to be removed during the winter (before the end of February) to expose the sett entrances. Provided ECOW can confirm that sett entrance is still inactive, soft blocking should be applied, to reduce the risk of disused badger holes becoming occupied leading up to construction. Soft blocking is a non-licensable mitigation measure. If entrance becomes active works within 30m may need to take place under Natural England licence.

If invasive works are required on any structure or tree identified as having a bat roost within it, a European Protected Species licence will be sought from NE and mitigation will be implemented as agreed in the related method statement which will include seasonal restrictions. The Contractor will be required to avoid construction lighting and use directional lighting to avoid causing disturbance to bats using sensitive roosts and foraging habitat, particularly during the period May to September.

Where works are to be undertaken within 30m of a known bat roost (not directly impacted) a Precautionary Method of Working including mitigation measures will be required to limit the potential for disturbance (e.g. noise barriers, timing of work etc.) in consultation with the EcOW. Where it is considered that the measures will not mitigate the potential disturbance a European Protected Species Licence will be sought from Natural England.

A pre-construction survey will be undertaken along water courses in close proximity to construction works which were considered to be suitable habitats for otters to confirm continued absence of this species. If evidence of otter are identified prior to works commencing then EcOW to be consulted and a Natural England Licence may be required. Where works are to be undertaken to structures on watercourses which may be used by otters, measures to minimise disturbance will be implemented. Night working will be minimised to avoid disturbance to otters commencing along watercourses. In particular, efforts will be made to avoid significant construction noise or vibration during the hours of darkness. Construction/site lighting will use directional lamps, so that light-split to the watercourses

		Sutts Hollow Brook - 2+555 SB and NB ECOL12	N N Y Y	and their banks is avoided. Wherever possible, allowance for the passage of otters along one or both banks of the watercourse will be incorporated within the temporary works arrangements. Otter ledges will be provided as part of the permanent works where the presence of otters has been identified.	3 1
		River Bollin - 8+000 SB and NB ECOL13	Y Y Y Y	A pre-construction survey will be undertaken along water courses near construction works which were considered to have suitable habitat to support water voles to confirm continued absence of this species. If evidence of water vole are identified prior to works commencing than ECoW to be consulted and a Natural England Licence may be required. If a water vole burrow is found (or suspected) stop work and seek advice from Ecological Clerk of Works (ECoW). Mitigation will need to be implemented to minimise the risk of water vole being injured or killed. This will include undertaking phased vegetation clearance under the supervision of an ecological clerk of works, which will encourage the water voles to leave the work area into adjacent suitable habitat along the watercourse. This should be undertaken between mid-February 2018 and mid-April 2018, a fingertip search of the works area to ensure no individuals remain.	2 2
	EAR Section 6.8.32 to 6.8.35 Notable and/or Legally Protected Species Report Section 3.7 Water Voles - Works within 5m of watercourse with potential for Water Voles	Birkin Brook - 4+200 SB and NB ECOL14	Y Y Y Y	Any excavations, or clearing culvert of silt beneath carriageway works must take place under watching brief and adhere to method statement. Where works are to be undertaken to structures on watercourses which may be used by water voles, measures to minimise disturbance will be implemented. Night working will be minimised to avoid disturbance to water voles commuting along watercourses. In particular, efforts will be made to avoid significant construction noise or vibration during the hours of darkness. Construction/site lighting will use directional lamps, so that light-spill to the watercourses and their banks is avoided. Wherever possible, allowance for the passage of water voles along one or both banks of the watercourse will be incorporated within the temporary works arrangements.	2 2
	Ecological constraint drawing HA543345-JAJV-EEC-SS-MULTI-DR-GI-0502	Sutts Hollow Brook - 2+555 SB and NB ECOL15	Y Y Y Y	To prevent illegal disturbance of breeding birds or their nests, no removal or disturbance of vegetation which can be used by breeding birds will take place within the bird breeding season (typically March to August inclusive), unless this is unavoidable.	2 2
	EAR Section 6.8.44 to 6.8.48 and breeding/nesting site set-up and all works requiring vegetation removal	Site wide - all scrub/trees within the scheme extent ECOL16 HE543345-JAJV-EEC-SS_MULTI-RP-LE-0001	Y Y Y Y	Where habitat removal is required during the bird breeding season (March to August inclusive) a nesting bird check should be undertaken by a competent ecologist in accordance with the Method Statement to ensure that there are no active 'birds' nests within the area to be cleared. Nesting bird checks should be undertaken no longer than 24 hours prior to vegetation clearance. Any active nests found must have a 3m cordon set up around them and be avoided until an ECoW has confirmed that the nestlings have fledged	2 1

Category	Section / Species	Site Type	Delivery Partner	During construction	Pre-construction		
						1	2
Vegetation clearance - site set-up and all works requiring removal	EAR Section 6.8.10 to 6.8.15	ECOL17	Site wide	3	2	Y	Y
Invasive species - Preconstruction survey	EAR Section 6.4.54 to 6.4.56	ECOL18	Site wide	2	2	N	Y
Invasive species - Site set-up and all works requiring vegetation removal or excavations	EAR Section 6.7.2	ECOL19	Site wide	5	2	N	Y
Invasive species - Construction works within 7m of invasive plant species	Notable and/or Legally Protected Species Report Section 3.2 EAR Section 6.7.2	ECOL20	Site wide	5	3	N	Y
Legally Protected Species	EAR Section 6.7 / 6.8	ECOL21	Site wide	5	5	Y	Y
General pre-construction surveys	EAR Section 6.7 / 6.8	ECOL22	Areas which include potentially suitable resting or breeding habitat for mobile protected species, such as roosting bats, water vole, burrows, badger sets or otter holes	3	3	Y	Y

Construction activities and vegetation removal will be confined to the minimum areas required for the works. Under Ecological Clerk of Works (ECoW) supervision, the contractor will clearly define and fence off construction areas prior to works starting in any area in order to protect the vegetation that is to be retained. No construction activity, including temporary storage of materials or vehicles, to be allowed outside these areas for the duration of the construction works.

Under Ecological Clerk of Works (ECoW) supervision, all trees to be retained are to be protected in accordance with British Standard BS5837-2012 - Trees in relation to design, demolition and construction.

No vegetation clearance lower than 150mm shall take place without prior advice and sign-off from the Ecological Clerk of Works (ECoW).

A pre-construction survey of invasive species is to be undertaken prior to the commencement of construction works in any area to confirm and map the locations of all invasive species. The pre-construction survey results will be incorporated, along with species-specific control measures, into the final CEMP.

Do not trample or cut vegetation, or undertake excavations unless the absence of invasive species has been confirmed. If invasive species are identified or suspected in any construction works area, works are to cease to await advice of the Ecological Clerk of Works (ECoW).

Areas of plant invasive species shall be marked out with an exclusion zone (7m radius) using barrier tape and/or spray paint to prevent cross contamination. Works within an exclusion zone to be carried out in accordance with the Method Statement following best practice which includes:

- Any arisings should be left in situ as the soil could contain invasive plant species.
- Where arisings cannot be left in situ, contractor to remove all soil and cuttings and dispose of via a licensed carrier to a licensed refuse site.

Should legally protected species be identified during the works at any stage, then all works in that area should cease immediately and a ECoW should be contacted for further advice.

The Contractors will undertake pre-construction surveys to determine the current status and distribution of protected and notable species and their current status and distribution along the Scheme. The Contractor will ensure that exclusion zones which are appropriate considering the nature of the construction works to be undertaken are maintained. Where pre-construction surveys are undertaken the Contractor will be required to update the final CEMP to include any additional mitigation measures and/or licences required for the works.

										Delivery Partner	Pre-construction
General consultation	EAR Section 6.7 / 6.8	ECOL23	Site wide	2	2	N	N	N	Contractor will consult with the relevant local authorities, NE, the EA and the relevant local wildlife trusts regarding preparation of the ecological aspects of the final CEMP	2	1
General site supervision	EAR Section 6.7 / 6.8	ECOL24	Site wide	2	2	N	N	Y	A qualified ecologist will oversee the implementation of the ecological mitigation.	2	1
									General measures to be implemented by the Contractor on the Scheme include:		
									a) the Contractor will be required to comply with the EA's Pollution Prevention Guidance ("PPG") during works close to ditches, watercourses and culverts;		
									b) ensure careful siting of compounds, materials storage areas, haul routes etc. to avoid semi-natural habitats and protected species wherever possible;		
									c) avoid night-time working where practicable – particularly in the vicinity of sensitive habitats such as woodland, hedgerows and watercourses;		
									d) avoid the use of lighting, generators (and other noisy equipment) at night where possible – particularly in the vicinity of sensitive habitats;		
									e) cover all excavations overnight (where practicable) or providing appropriate escape ramps for mammals (where practicable) in the form of a sloped face to the excavation or a scaffold plank or similar;	2	1
									f) visually check uncovered excavations for the presence of wildlife each morning before works commence. The Contractor will seek advice from the EAD if a protected species is found or suspected;		
									g) where practicable reducing the severance impact of vegetation removal by maintaining the feature intact as long as possible, in particular by keeping any gap to the minimum required for the purpose and considering filling gaps with brash or similar when work is not being undertaken (e.g. on a bat commuting route at night) so that it can continue to function as a wildlife corridor; and		
									h) careful and regular management of soil storage areas to maximise their future value in landscape planting and to dissuade badgers and other burrowing animals from colonising them in the interim.		
									Copies of all protected species licences obtained for the works must be retained on site at all times	5	3
										Delivery Partner	During construction
										Delivery Partner	During construction
Site documentation for European Protected Species	EAR Section 6.7 / 6.8	ECOL26	Site wide	5	3	N	Y	Y	Where temporary habitat loss is required to facilitate construction, the vegetation will be reinstated post construction, in accordance with the Environmental Masterplan. Where replacement planting is provided, this mitigation will be integrated with landscape planting, as appropriate, using native species of local provenance.	1	1
Habitat reinstatement	EAR Section 6.7 / 6.8	ECOL21	Site wide	2	2	N	N	Y			

Category	Location / Description	Type	Pre-construction				Delivery Partner				During construction			
			1	2	3	4	1	2	3	4	1	2	3	4
Works affecting Non-Statutory Designated Sites	EAR Section 6.7 / 6.8	ECOL22	Site wide	4	4	Y	Y	Y	Y	Y	4	1	Delivery Partner	During construction
Works affecting Sites of Special Scientific Interest (SSSI)	EAR Section 6.7 / 6.8	Rostherne Mere - 3+050 SB to 0+100 Cotterill Clough - 150,000 to 8+510	ECOL23	5	5	Y	Y	Y	Y	Y	5	1	Delivery Partner	Pre-construction
Landscape and Visual Impact														
Preconstruction survey prior to vegetation clearance commencing	EAR Section LVIA Design, Construction and Mitigation Measures	LV01	Site wide	2	2	Y	Y	Y	Y	Y	2	1	Delivery Partner	Pre-construction
Preparation of plans (schedules) for vegetation clearance to ensure only where essential to construct the Proposed Scheme and to allow for sight lines and safety requirements. Vegetation removal to be refined beyond DF3	EAR Section LVIA Design, Construction and Mitigation Measures, Environmental Masterplan and Landscape Capacity drawings in the Scoping Report	LV02	Site wide	3	4	Y	Y	Y	Y	Y	3	1	Design Agent	Pre-construction
Any works* within close proximity to non-statutory designated sites will need to be undertaken in accordance with standard working practices to ensure no direct or indirect impacts such as damage or pollution. This includes the following SBS and LWSs: Jackson's Bank East, Rossmill, Hancock's Bank North and South, and Ryecroft Covert. Silt barriers would be used for works adjacent to statutory and non-statutory designated sites for nature conservation value and ancient woodland present adjacent to the Proposed Scheme, to prevent soil run off and pollution of these habitats.														
Application for Natural England Asset required for activities affecting SSSIs. Should the works need to extend outside the assented area, further liaison with Natural England may be required. Silt barriers would be used for works adjacent to statutory and non-statutory designated sites for nature conservation value and ancient woodland present adjacent to the Proposed Scheme, to prevent soil run off and pollution of these habitats.														
Prior to any vegetation clearance commencing, all areas of existing vegetation shall be assessed by a qualified landscape architect and the Ecological Clerk of Works (ECoW) to confirm vegetation to be protected or reinstated following the construction works.														
At detail design the designer will prepare, at a suitable scale, a plan showing areas of existing trees and vegetation to be retained and planned for the duration of the construction phase. The plan will also show the respective root protection zone and protection measures for the retained vegetation as well as identifying the existing vegetation to be removed.														
Extent of vegetation clearance to be carefully controlled in liaison with project arboriculturist and landscape architect to ensure minimal removal required to implement the works and to allow for sight lines and safety requirements. In particular, retain existing vegetation at the top of embankments to retain visual amenity. Retain mature trees which contribute to visual amenity of sensitive receptors. (Existing vegetation is essential for landscape integration and/or visual screening. Vegetation removal for SMP interventions would result in High risk of significant landscape or visual effects. Low potential to mitigate landscape and visual effects with new planting.														

Protection of retained vegetation	EAR Section LVIA Design, Construction and Mitigation Measures	LV03	Site wide	3	4			Delivery Partner	During construction	
						Y	Y			
Vegetation clearance in areas adjacent to ancient woodland and trees protected by Tree Preservation Order to be undertaken in the presence of an arboriculturalist or other appropriately qualified professional.	EAR Section LVIA Design, Construction and Mitigation Measures, and Landscape Receptors and Viewpoint Locations within EAR (Figure 7.1) and Environmental Masterplan (at DF4).	LV04a	TBC at DF4/5	4	2	Y	Y	Areas to be outlined via site clearance and/or Environmental Masterplan drawings. Where areas of ancient woodland and TPOs outside the highway boundary adjoin areas of vegetation clearance, an arboriculturalist or other appropriately qualified professional would be present on site to ensure clearance does not encroach within the root protection areas. Tree protection measures will be utilised to prevent damage to tree roots and stems during works. This would include buffer zones for any works immediately adjacent to notable or valuable trees.	4	1
Design of reinstatement planting	As described in EAR (Section LVIA) and at outline design within Environmental Masterplan (DF4); Landscape and Ecological Detail Design Plans at DF5.	LV05	Site wide	4	4	Y	Y	At detailed design the designer will prepare, at a suitable scale, landscape planting plans showing the replacement tree and shrub planting plots and grass seeding areas for the Scheme. This will include for each planting plot a schedule of plant species, the percentage mixes, plant sizes, planting density and planting quantities using native planting and/or similar species mix to that removed. For grassland areas this should include the quantity and sowing rates for the seed mixes to be used. The planting plans will be accompanied with a planting specification which will include details of tree, shrub and grass seed provenance and the details of the plant suppliers to be used. Land used temporarily is to be returned to a condition suitable for the continuation of the original use, including the replanting of screening vegetation on re-profiled slopes. Replacement planting is to be provided where screening vegetation cannot be retained and where gantry locations cannot be moved due to the technical and safety requirements of the Proposed Scheme.	3	2
Consultation with key stakeholders for design of reinstatement planting	Consultation strategy Best Practice	LV06	Site wide	2	2	Y	Y	Relevant local authorities, NE and other statutory bodies that have an interest and adjacent landowners will be consulted regarding the landscape and planting proposals	2	1
								Design Agent	Pre-construction	

TPOs within reinstatement planting design	EAR Section LVIA Design, Construction and Mitigation Measures, and Landscape Receptors and Viewpoint Locations within EAR and Environmental Masterplan (at Df4)	Site wide	4	4	Y	Y	Y	Y	Where a tree which is covered by a TPO or located within a Conservation Area is affected by the works (i.e. such as root damage or felled) the Contractor will be required to liaise with and agree the replacement tree species and tree size with the relevant local planning authority. As a minimum replacement trees will be "of an appropriate size and species and planted at the same place as soon as the owner of the land can reasonably do this" as is required under current policies such as Department for Communities and Local Government (2012) National Planning Policy Framework ('NPPF').	4	4	Delivery Partner	Pre-construction
Design of reinstatement planting for trees	EAR Section LVIA Design, Construction and Mitigation Measures, and Landscape Receptors and Viewpoint Locations within EAR and Environmental Masterplan (at Df4)	Site wide	3	2	Y	Y	Y	Y	Any trees intended to be retained which are felled or die as a consequence of construction works will be replaced by the Contractor. Where reasonably practicable, the size and species of replacement trees will be selected to achieve to the greatest extent possible, a close resemblance of the original trees most effectively using locally occurring native species of local provenance and taking cognisance of any management plans for areas of woodland immediately adjacent.	3	2	Delivery Partner	During construction
Works associated with reinstatement planting	EAR Section LVIA Design, Construction and Mitigation Measures; Best Practice	Site wide	2	2	Y	Y	Y	Y	Replacement planting is to be provided in line with replacement planting plans. The supply, storage, handling, planting and maintenance of new planting, seedling, wildflower seeding and other landscape work will be undertaken by the Contractor in accordance with appropriate British Standards, including BS 4428: 1989 Code of practice for general landscape operations (excluding hard surfaces) (BSI, 1989), procurement, movement, handling, storage, planting and maintenance of plant material will be carried out in accordance with current guidance such as BS 3936 - 1: 1992 Nursery stock (BSI, 1992); Specification for trees and shrubs, and other Guidance including the UK Forestry Standard and the United Kingdom Woodland Assurance Standard (UKWAS, 2008).	2	1	Delivery Partner	During construction
Monitoring and maintenance of reinstatement planting	EAR Section LVIA Design, Construction and Mitigation Measures; Best Practice	Site wide	2	2	N	Y	Y	N	The Contractor will undertake appropriate inspection, monitoring and maintenance of landscaping and planting provided as part of the Scheme to facilitate the effective establishment of vegetation and record the effectiveness of landscaping proposals. In order to ensure the replacement tree and shrub areas establish as intended the Contractor is required to maintain this planting for a five year period from the date of completion of the works. As part of this requirement the Contractor will be responsible for rectifying all planting defects during this period.	2	1	Delivery Partner	Post-construction
Soil handling during reinstatement planting	EAR Section LVIA Design, Construction and Mitigation Measures; Best Practice	Site wide	2	2	Y	Y	Y	N	The sourcing, testing, stripping, handling, storage and spreading of site-won and imported topsoil will comply with current guidance such as BS 6031: 2009 Code of practice for earthworks (BSI, 2009). Further, imported topsoil will comply with the BS 3882: 2007 Specification for topsoil and requirements for use (BSI, 2007).	2	1	Delivery Partner	During construction

Where there are no windthrow or visual issues, tree felling will be reduced to that necessary to allow the safe construction and operation of the Scheme.	EAR Section LV1A Design, Construction and Mitigation Measures; Best Practice	Site wide	2	2	Y	Y	N	N	Tree felling will be carried out by the Contractor taking appropriate consideration of the Forestry Commission's Forest and Water Guidelines (Forestry Commission, 2003) to mitigate risks from felling of trees on the freshwater environment.	2	1	Delivery Partner	During construction	
Where existing noise barriers are to be removed, replace them within a short timeframe.	EAR Section LV1A Design, Construction and Mitigation Measures, based on guidance such as the CIRIA Environmental Good Practice on Site Guidelines (CIRIA, 2015)	LV13 Existing noise barriers	3	3	Y	Y	Y	N	Where appropriate, tree surgery, e.g. crown reduction, pollarding, coppicing etc., will be employed in preference to felling so as to maintain the maximum biodiversity/landscape interest. Any tree surgery operations will comply with the recommendations in current guidance such as BS 3998: 2010 Tree work - Recommendations, as appropriate.	2	2	Delivery Partner	During construction	
Minimal disruption to nearby visually sensitive receptors when developing the layout for, and operating, construction compounds	EAR Section LV1A Design, Construction and Mitigation Measures.	LV14 Adjacent residential properties	3	3	Y	Y	Y	N	Retain vegetation along highway boundary/protect / avoid damage to tree roots to trees outwith the highway boundary. Where necessary limit works to facing / other tree work only if required for H&S. Replacement noise barriers are to be erected as soon as is practicable after removal of the existing barrier, due to the sensitive nature of receptors adjacent which are screened by them. Barriers should be removed on a phased basis, i.e. only removed once it is required for works to take place at that location. Where the replacement of a barrier cannot be undertaken soon after the removal of the existing, temporary noise screens should be used.	2	2	Delivery Partner	During construction	
Cultural Heritage	WSI for construction works on or adjacent to sites of archaeological or cultural heritage interest and during topsoil stripping	CH1	Site wide in areas of previously undisturbed land	5	5	Y	Y	Y	N	A site specific WSI will be developed by the Contractor for each area or site-specific cultural heritage works. These documents will be developed in consultation with the relevant local authority and Historic England. The WSI will include: a) a programme and methodology of site investigation and recording; b) a programme for post investigation assessment; c) provision for analysis of the site investigation recording; d) provision for publication and dissemination of the analysis and records of the site investigation; e) provision to be made for archive deposition of the analysis and records of the site investigation; and f) nomination of a competent person or	3	2	Delivery Partner	Prior to construction During construction

		person/s/organisation to undertake the works set out within the WSIs				
Watching brief for construction works on or adjacent to sites of archaeological or cultural heritage interest and during topsoil stripping.	Best Practice	Site wide in areas of previously undisturbed land	CH2	3	3	N N Y N
Records to be kept on site	Best Practice	Site wide	CH3	2	2	N N Y N
Temporary visual impact on cultural heritage assets within 300m of the new gantries and other infrastructure.	EAR (see section LVIA Design, Construction and Mitigation Measures)	8+625 WB (New Tree Farm Grade II)	CH4	3	2	N N Y N
Materials, Geology and Soils						
Sustainable resource use	Best Practice	Site wide	MR1	2	1	N N Y N

In these locations there is potential for the Scheme to cause direct physical impacts to currently unknown archaeological remains. If such works are likely to disturb previously un-excavated ground, archaeological watching briefs will be undertaken during topsoil stripping and excavations. Any archaeological watching briefs will be followed by an appropriate programme of assessment, analysis and reporting. If potential archaeological remains are encountered during works, activities in this location to be halted and advice sought from the Contractor's Environmental Manager.

Records of all archaeological remains found and copies of any mitigation measures determined in consultation with the local authority archaeologists and/or Historic England throughout the works must be kept on site at all times.

Delivery Partner
During construction

Delivery Partner
During construction

"Contractor will prepare a Resource Efficiency Management Plan covering the selection and procurement of materials prior to and during construction. Where practicable the contractor will implement measures to manage material resources use during construction including
a) using sustainably sourced materials;
b) using recycled or secondary materials; and
c) minimising the use of materials that have the potential to harm human health or the environment"

Delivery Partner
During construction

Delivery Partner
During construction

						Delivery Partner	During construction
Waste Minimisation	Best Practice	MR2	Site wide	2	1	N	N Y N
Material reuse	Best Practice	MR3	Site wide	2	1	N N Y	N Y N
Materials handling and storage	Best Practice	MR4	Site wide	2	1	N N Y	N Y N
Site Waste Management Plan	Best Practice	MR5	Site wide	2	1	N N Y	N Y N
Waste Disposal	Best Practice	MR6	Site wide	2	1	N N Y	N Y N

The Contractor will be responsible for the reduction of waste arisings from the Scheme where reasonably practicable. This will include measures such as careful storage of materials on site and just in time deliveries which will be secured through the development and implementation of the Materials Management Plan and Logistics Plan.

The Contractor will be responsible for the storage and management of the earthworks material excavated from the Scheme. This material will be used wherever practicable to construct the engineering earthworks and to mitigate the environmental effects of the Scheme. The reuse of site-won materials will be maximised through the further development and delivery of the Outline MMP.

Opportunities will be considered and measures will be implemented in the design and construction of the Scheme by the Contractor to reuse waste or surplus materials, as appropriate. The Contractor will need to demonstrate that where possible reuse has been maximised, and where this is not possible it will need to be recorded. The Contractor will also be expected to investigate, secure and record where the reuse of materials and waste has been used elsewhere offsite.

There will be dedicated areas for handling and storing excavated material. The Contractor will be responsible for managing these areas in such a way as to prevent harm to human health, amenity and the environment. The earthworks material excavated from areas of cutting and borrow pits will vary in its engineering properties and these will need to be assessed and utilised to ensure the best use of all materials.

The SWMP will include detailed procedures for compliance with the requirements for waste transfer notes, in accordance with the Waste (England and Wales) Regulations 2011, and arrangements for auditing the actions of other parties in the waste handling chain.

The types, quantities and destination of waste arisings from the Scheme will be identified, measured and recorded in the SWMP. This information will be reported on a periodic basis.

The Contractor will comply with all legal 'duty of care' requirements to protect the interests and safety of others from the potential effects of handling, storing, transporting and depositing excavated materials and demolition/construction wastes arising from the project.

A register of all waste loads leaving the site will be maintained by the Contractor to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.

All waste arisings will be appropriately transported and disposed of by the Contractor (or their sub-contractors) at permitted or designated sites.

Off-site recovery and/or disposal facilities to be sought in close proximity to the application site.

People and Communities														
Stakeholder Communication Plan	Best Practice	CIM1	Site wide	2	2	N	N	Y	Y	The contractor will develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	2	1	Delivery Partner	Prior to construction
Minimise impacts of construction traffic on local network and population	Best Practice	CIM2	Site wide	2	2	N	N	Y	Y	A Construction Transport Management Plan will be prepared, setting out measures to manage construction traffic and the potential impacts on the local road network and all travellers. Will include details on closures and diversion routes. The Plan will be agreed with the highway authorities for the local road network. Notify public and provide complaints contacts.	2	1	Delivery Partner	Prior to construction
Minimise disruption during construction	Best Practice	CIM3	Site wide	2	2	N	N	Y	Y	The contractor will provide appropriate information and diversion measures in relation to the control of dust and noise generation and visual intrusion on nearby receptors. Appropriate control measures implemented in accordance with best practice pollution control to mitigate the impact of reduction in amenity arising from changes in air quality, visual intrusion and noise and disturbance affecting local residents and businesses within the area.	2	1	Delivery Partner	During construction
Road Drainage and Water Environment														
All construction works to avoid increasing flood risk	Best Practice	WR1	Site wide	2	1	N	Y	Y	Y	Construction activities will be undertaken by the Contractor taking into consideration the requirements to avoid any increase in flood risk. Appropriate measures, such as keeping watercourses clear of obstructions and debris to reduce blockage risk, will be implemented by the Contractor throughout the works in order to prevent, potential flooding events. Suitable access and safe refuges are to be identified for use in the event of a flood and these will be communicated to all site personnel as part of the Contractor's site induction. Appropriate maintenance access will be made available to watercourses and associated flood risk structures, if required	2	1	Delivery Partner	During construction
Consents for abstractions	Best Practice	WR2	Site Wide	2	1	N	Y	Y	Y	Any proposed abstractions (e.g. for batching plants, wheel washing etc.) whether surface water or groundwater if in excess of 20m³/day will require an abstraction licence from the Environment Agency. Abstractions for dewatering, if required, may need an abstraction licence. Discharges from construction compound areas, may require discharge consent.	2	1	Delivery Partner	Pre-construction
Consents for dewatering	Best Practice	WR3	Site Wide	2	2	N	Y	Y	Y	Where de-watering activities are required, early engagement with the EA will occur to discuss proposed solutions and to ensure solutions and controls are compliant with the current Regulatory Position Statement ('RPS') for temporary dewatering. Applications for appropriate consents will be prepared and lodged with the EA, with consent secured prior to discharging any water generated via dewatering activities.	2	1	Delivery Partner	Pre-construction

Excavation work in the vicinity of aquifers and private water supplies	Best Practice	WR4	Site Wide	2	1	N	Y	Y	Y	2	1	Delivery Partner	During construction
All works within the floodplain	Best Practice	WR5	Site Wide	2	2	N	Y	Y	Y	2	1	Delivery Partner	Pre-construction
Site documentation for flood risk	Best Practice	WR6	Site Wide	2	2	N	Y	Y	Y	2	1	Delivery Partner	During construction
Compensatory areas for flood risk	Best Practice	WR7	Site Wide	2	2	N	Y	Y	Y	2	1	Delivery Partner	During construction
Site documentation for pollution control	Best Practice	WR8	Site Wide	2	2	N	Y	Y	Y	2	1	Delivery Partner	During construction

Pollution control for all construction works	WR9	Site wide	WR9			Best Practice	Pre-construction During construction
			2	2	N		
			Y	Y	Y		

2 1

Delivery
Partner

Pre-
construction
During
construction

To ensure the quality of the water environment does not deteriorate during construction the Contractor will prepare and implement a surface water and/or groundwater monitoring plan, particularly in relation to works that could affect aquifers or drilling works. This will include a pollution control plan, and emergency response plan taking into account standard best practices and relevant PPGs. The Contractor will comply with current pollution control requirements such as 'The Control of Pollution (Oil Storage) (England) Regulations 2001' that apply in relation to storage of any oil based materials, that may be required in the temporary compound areas. Stationary plant used by the Contractor will be fitted with measures such as drip trays to retain any leakage of oil or fuel. The Contractor will empty trays at regular intervals to prevent overflow. The contractor will provide a suitable construction site drainage system with appropriately sized treatment facilities such as settlement or detention basins. The Contractor will consult with the EA (and any other relevant statutory authority) regarding the measures to be implemented to contain and manage surface water runoff from the construction of the Scheme, and requirements for water quality monitoring of watercourses or groundwater, potentially affected by construction works or discharge of surface water run-off. The Environment Agency must be informed of all pollution incidents and action taken accordingly. There is no guidance as to what constitutes a pollution incident (thresholds etc), the ECOW should be consulted.

4. Consents and permissions

- 4.1.1 Once the detailed design is available at PCF4, further assessment and consultation with regulating bodies is required to ascertain the need for project consents, licences and permissions. At the time of writing possible consents, licences and permissions for the M56 J6-8 comprise:
- An application under Section 61 of Part III of The Control of Pollution Act 1974 to the Local Authority Environmental Health Department in whose area the works are to take place - once approved, any conditions applied to the approval shall be complied with.
 - Water discharge consents are to be lodged with the Environment Agency, with consent secured prior to discharging any water, including water generated via dewatering activities.
 - Flood defence consent, if applicable, is to be obtained from the Environment Agency.
 - Abstractions for dewatering, if required, may need an abstraction licence from the Environment Agency.
 - European Protected Species licences are to be sought from Natural England. Work will need to be undertaken under the conditions of a licence from Natural England and ecological supervision.
 - All other commitments made by Highways England to local planning authorities; regulatory bodies such as the Environment Agency, Natural England, and Historic England; and local communities must be documented and abided by.
- 4.1.2 Any conditions included in consents/licences/permits will be documented in the final CEMP and considered as part of the planning, design and construction process.

5. Environmental Asset data and as Built Drawings

- 5.1.1 All environmental asset data and as built drawings have been provided to ENVIS coordinators. Such information is relevant at the time of submission (June 2018) and relates to the design at PCF3; all information and observations cover the lifespan of the OEMP in line with the requirements of Highways England's Interim Advice Note 84/10. Data which is updated through following PCF stages will be submitted promptly to the ENVIS coordinators.

6. References

- BSI. 1996. BS EN ISO 14001: Environmental Management (as amended).
- Highways England. 2008. Design Manual for Roads and Bridges (DMRB) Volume 11, Section 2, Part 5, HA 205/08 and Part 6, HD 48/08.
- Highways England. 2014. Interim Advice Note (IAN) 183/14 Environmental Management Plans (IAN 183/14)
- Institute of Environmental Management and Assessment. 2008. Environmental Management Plans: Practitioner Best Practice Series, Volume 12

7. Abbreviations

Abbreviation	Full Term
ALR	All Lane Running
CEMP	Construction Environmental Management Plan
CM	Controlled Motorway
EMP	Environmental Management Plan
ERA	Emergency Refuge Areas
HEMP	Handover Environmental Management Plan
DF	Design Fix
DMRB	Design Manual for Roads and Bridges
IAN	Interim Advice Note
IEMA	Institute of Environmental Management and Assessment
OEMP	Outline Environmental Management Plan
PCF	Project Control Framework
RCB	Rigid Concrete Barrier
RIS	Road Investment Strategy'
VRS	Vehicle Restraint System

Annex A: Constraints Map

