M25 junction 10/A3 Wisley interchange TR010030
7.3 Register of environmental actions and commitments

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M25 junction 10/A3 Wisley interchange

The M25 junction 10/A3 Wisley interchange Development Consent Order 202[x]

7.3 REGISTER OF ENVIRONMENTAL ACTIONS AND COMMITMENTS

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Author:	M25 junction 10/A3 Wisley interchange project team, Highways England

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1. Introduction

1.1.1 This Register of Environmental Actions and Commitments (REAC) is made up of two parts. Part 1 sets out the schedule of mitigation commitments, and Part 2 is the Environmental Action Plan (EAP).

1.1.2 Although the REAC initially forms part of the Environmental Statement (ES), during the implementation of the Scheme it is appended to the Construction Environmental Management Plan (CEMP) and viewed as a 'live' document. The REAC therefore acts in part as a 'bridge' between the ES and the CEMP. Part 2 can be added to during the detailed design phase, and as each objective is achieved, the date of achievement entered, with the initials of the person signing it off.

1.1.3 [Note: Principal Contractor to update Part 1 and Part 2 of the REAC once the DCO is approved and during detailed design.]

1.2 Part 1: Schedule of environmental mitigation commitments

1.2.1 The schedule set out in Part 1 (Table 1.1) summarises the mitigation measures that have been committed to within the various chapters of the ES, with a cross-reference to the relevant 'Requirements' that secure those commitments in the DCO.

1.2.2 [Note: Principal Contractor to update Table 1.1 once the DCO is approved and during detailed design.]

1.3 Part 2: Environmental Action Plan

1.3.1 The schedules set out in Tables 1.2, 1.3 and 1.4 comprises the EAP before the start of construction, during construction, and post construction. The EAP sets out the actions required to implement the Scheme in accordance with the ES. It sets out environmental objectives that are derived from environmental mitigation measures identified within Table 1.1 and Volume 1 of the ES, together with the actions required to achieve those objectives and the targets (or achievement criteria) that would be used to determine whether the objective has been met.

1.3.2 The environmental objectives identified in the EAP may be related to one or more of the mitigation measures identified in Volume 1 of the ES. Relevant mitigation measures are identified by cross-reference to the relevant Chapter of the ES. An individual objective may require a single action to achieve the relevant target, or may require a series of actions carried out in order, or several separate actions carried out in parallel. Each action required has been identified separately.

1.3.3 The responsibility for undertaking the action has been allocated as clearly as possible - as a minimum to the relevant corporate body (Highways England, Principal Contractor or the Designer).

1.3.4 If the action requires consultation, agreement or approval from one or more third parties, they are identified in the Action/Commitment Implementation methods column.

1.3.5 An individual environmental objective may require actions in more than one phase of the Scheme, i.e. pre-construction, construction or operation. If so, this is identified in the Scheme Stage column.

1.3.6 [Note: Principal Contractor to update Tables 1.2, 1.3 and 1.4 once the DCO is approved and during detailed design.]

1.4 Actions required before the start of construction

1.4.1 Actions required at this stage fall into the following main categories:

- Designing/planning for other actions required before construction and for actions required during construction;
- Consultation with and/or seeking agreement where required, from third parties;
- Applications for European Protected Species Licences and any other consents or legal procedures still required in advance of construction; and
- Construction of mitigation measures required in advance of the main works.

1.5 Actions required during the construction period

1.5.1 Actions required at this stage fall into the following main categories:

- Continued designing/planning for actions required during construction and after construction; and
- Construction or other implementation of the majority of ES mitigation measures and of most EAP actions.

1.6 Actions required after the end of construction

1.6.1 Actions required at this stage fall into the following main categories:

- Implementation of actions required during the first few years after construction, to ensure the successful establishment of mitigation measures;
- Implementation of long-term maintenance/management measures; and
- If applicable, any post-construction monitoring and evaluation measures to determine the success or otherwise of mitigation measures.

Table 1.1: REAC Part 1: Schedule of environmental mitigation commitments

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
Air Quality					
Dust and emissions to air caused by the construction works of the Scheme	Ch 5, section 5.9	TR0100/APP/6.3	Mitigation and control measures for construction activities will be included in the CEMP and implemented during the construction phase. The CEMP will be consulted with the local authorities.	Not expected to be significant with appropriate mitigation measures in place.	CEMP
Noise and Vibration					
Construction noise and vibration	Ch 6, section 6.9	TR0100/APP/6.3	Apply mitigation measures in alignment with the guidance detailed in BS 5228: 2009+A1:2014 - Part 1: Noise 'Code of Practice for noise and vibration control on construction and open sites', Part 1: Noise and Part 2: Vibration. (See paragraph 12.8.1) and best practicable means (BPM) in accordance with the Control of Pollution Act 1974. Carry out good stakeholder communications with local residents to ensure that they are well informed of the progress of the works and are given notice of any activities that are likely to generate high levels of noise or vibration in advance of the works being undertaken.	No significant effects are expected, although adverse effects are likely for those properties and other sensitive receptors close to the construction of the Scheme. Perceptible vibration due to piling for retaining wall construction works and vibratory rolling for road surfacing works is a possibility on occasion at those properties closest to the Scheme.	CEMP, Stakeholder Liaison Plan
Construction traffic	Ch 6, section 6.9	TR0100/APP/6.3	Prepare and implement a Traffic Management Plan to manage construction traffic flows and routing to avoid residential areas as far as possible.	Not expected to be significant.	Traffic Management Plan
Operational noise and vibration	Ch 6, section 6.9	TR0100/APP/6.3	Provide lower noise road surfacing on all carriageways of the A3 and environmental noise barriers, where required in the design of the Scheme to minimise impacts during the operation phase and to improve existing noise levels.	No significant effects that are attributable to the Scheme.	Scheme Layout Plans (application document TR010030/APP/2.8)
Biodiversity					
Designated sites – SPA	Ch 7, section 7.13	TR0100/APP/6.3	Designated sites: a compensation package will be provided that will include 1:1 compensation land for all permanent land take from the SPA, and 3:1 enhancement areas for all permanent and temporary land take from the SPA.	Short term – temporary very large adverse effect Long term – permanent large positive effect	Scheme Layout Plans (application document TR010030/APP/2.8)
Designated sites – SSSI	Ch 7, section 7.13	TR0100/APP/6.3	The SPA compensation package will also benefit the SSSI. Common land replacement land parcels located immediately adjacent to the SSSI will be managed to compliment the SSSI. For details of mitigation for Bolder Mere see Road Drainage and the Water Environment section below.	Short term – temporary very large adverse effect Long term – permanent neutral effect	Scheme Layout Plans (application document TR010030/APP/2.8)
Designated sites – LNR	Ch 7, section 7.13	TR0100/APP/6.3	The measures described for the SPA and SSSI will also benefit the LNR.	Short term – temporary moderate adverse effect Long term – permanent neutral effect	Scheme Layout Plans (application document TR010030/APP/2.8)
Elm Corner SNCI	Ch 7, section 7.13	TR0100/APP/6.3	Woodland enhancement measures within Elm Corner SNCI (including ancient woodland area).	Short term – temporary moderate adverse effect Long term – permanent neutral effect	Scheme Layout Plans (application document TR010030/APP/2.8)
Wisley Airfield SNCI	Ch 7, section 7.13	TR0100/APP/6.3	Temporary land take areas will be replanted with shrubs and trees. Will still be a permanent loss of 2.6 ha of land	Short term – temporary moderate adverse effect Long term – permanent moderate adverse effect	Scheme Layout Plans (application document TR010030/APP/2.8)
Ancient woodland and veteran trees	Ch 7, section 7.13	TR0100/APP/6.3	43 ha of woodland planting and improved woodland linkages, soil translocation from ancient woodlands lost to provide seed bank for ancient woodland ground flora to establish in newly created areas. Enhancement of ancient woodland at Chatley Farm. Due to irreplaceable nature of ancient woodland, despite the increases in woodland area and enhancement of retained ancient woodland, there still remains a permanent loss of 0.2 ha of ancient woodland at Elm Corner and Heyswood.	Permanent adverse moderate effect	Scheme Layout Plans (application document TR010030/APP/2.8)
Habitats	Ch 7, section 7.9	TR0100/APP/6.3	Habitat Creation/Planting as follows: • Old Lane SPA compensation land – this field will be planted with a low density of trees to create wood pasture with a 20% canopy cover. This will continue to be	Short term – temporary very large adverse effect Long term – permanent neutral effect	Scheme Layout Plans (application document TR010030/APP/2.10)

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
			grazed as wood pasture, providing an enhanced invertebrate resource and potential foraging habitat for SPA qualifying species; • Wisley SPA compensation land – this field will be planted with a low density of trees to create wood pasture with a 20% canopy cover. This will continue to be grazed as wood pasture, providing an enhanced invertebrate resource and potential foraging habitat for SPA qualifying species; • SPA enhancement areas – these areas will undergo a mixture of full clearance (with only certain mature trees being retained) to allow heathland regeneration and thinning to create open areas such as rides, and to enable a more diverse woodland to establish; • Temporary land take – this will be replanted with trees and/or shrubs to create a visual screen, but will also contain areas of grassland, sandy banks and open soil areas to restore biodiversity; • Replacement land at Park Barn Farm will be planted with woodland areas, and the open grass habitat will be managed to reduce nutrient levels and encourage acid grassland and, in time, heathland species to become established; • Replacement land at Chatley Farm will involve the management of existing woodland areas to allow a more diverse woodland habitat to establish, with additional woodland planting; and • Replacement land at Hatchford End will undergo some woodland planting. • Woodland management in Elm Corner SNCI		
Great crested newts	Ch 7, section 7.9	TR0100/APP/6.3	• Site compounds and storage areas to be located away from aquatic habitats that may support breeding populations of great crested newts; • Ecological Clerk of Works to be present during site clearance operations. Site clearance operations in connected habitats within 250 m of great crested newt breeding ponds will be undertaken under a Precautionary Method of Working in respect of great crested newts; • Where possible material from site clearance works will be used to create additional refugia and/or hibernacula to improve the suitability of terrestrial habitats; and • Creation of 23 ha of heathland habitat, 33 ha of woodland and 37 ha of enhanced woodland areas.	Short term – Temporary adverse effect Long term – Permanent positive effect	Protected Species Constraints Plan
Common reptiles	Ch 7, section 7.9	TR0100/APP/6.3	• Ecological Clerk of Works to be present during site clearance operations. Site clearance operations will be undertaken under a Precautionary Method of Working in respect of common reptiles; • Where possible material from site clearance works will be used to create additional refugia and/or hibernacula to improve the suitability of terrestrial habitats; and • Creation of 23 ha of heathland habitat and open glades within wooded areas suitable for common reptiles.	Short term – Temporary adverse effect Long term – Permanent positive effect	Protected Species Constraints Plan
Sand lizards	Ch 7, section 7.9	TR0100/APP/6.3	• Ecological Clerk of Works to be present during site clearance operations. Site clearance operations in Ockham Common will be undertaken under a Precautionary Method of Working in respect of sand lizards; • Where possible material from site clearance works will be used to create additional features, such as sandy banks, to improve the suitability of terrestrial habitats; and • Creation of 23 ha of heathland habitat suitable for sand lizards.	Short term – Temporary neutral effect Long term – Permanent positive effect	Protected Species Constraints Plan

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
Breeding birds	Ch 7, section 7.9	TR0100/APP/6.3	• Vegetation to be retained/lost (including trees and scrub) will be clearly demarcated with an agreed marking system with the Principal Contractor to avoid encroachment into areas of high value bird habitat; • Vegetation removal as part of the site clearance must consider the potential for nesting birds through programming vegetation removal, to take place outside the bird breeding season. Therefore, vegetation removal would occur from September through to February inclusive; • If vegetation removal during the bird nesting season cannot be avoided, then works will be undertaken under a Precautionary Method of Working in respect of breeding birds, and pre-clearance checks for nesting birds will be required for all potentially suitable nesting habitats. If nesting birds are identified, then protective buffer zones around each nest would be required and vegetation removal within that buffer may have to be postponed until all the young have fledged or the nest is abandoned; • The proposed landscape restoration planting would include native species of local provenance that provide suitable nesting areas or a source of food at different times of year; • Subject to 3rd party agreement nest boxes would be provided in suitable locations (in woodland and on mature trees) as part of the enhancements for the Scheme. This will include open fronted nest boxes for spotted flycatchers; • Where possible night time working would be kept to a minimum during the construction period. In addition, operational lighting would aim to avoid illuminating habitats adjacent to the Scheme; and • Creation and enhancement of habitats provided as part of the Scheme will provide long term nesting habitats for breeding birds (i.e. SPA compensation land, SPA enhancement areas, replacement land and reinstatement of temporary land take).	Short term – Temporary slight adverse effect Long term – Permanent neutral effect	Protected Species Constraints Plan
Hobby	Ch 7, section 7.9	TR0100/APP/6.3	• During the breeding season, surveys to determine if hobbies are nesting within the wooded area by Hut Hill. If found to be nesting, a buffer will be put in place to ensure that the hobbies are not disturbed at the nest; and • There will be no operational impacts.	Neutral effect	Protected Species Constraints Plan
Dartford warbler, nightjar and woodlark	Ch 7, section 7.9	TR0100/APP/6.3	• Disturbance of open heathland areas will be avoided during the nesting bird season (typically 1st March to 31st August, but this is extended to include all of February to avoid the risk of disturbing woodlarks on nesting territory); • The only works required within or adjacent to open heathland areas are enhancement works. The enhancement works will increase the amount of available open heathland habitat for these species. The enhancement work will be staged to enable a range of habitat regrowth ages, and to avoid attracting sensitive heathland species into areas immediately adjacent to the Scheme footprint during the construction work; and • Creation of 23 ha of heathland habitat and enhancement of 25 ha of SPA woodland habitat.	Short term – neutral effect Long term – permanent large positive effect	Protected Species Constraints Plan
Bats	Ch 7, section 7.9	TR0100/APP/6.3	• Planting for the Scheme will take into account general habitat requirements for bats; • Any removal of trees that support a bat roost, or works on buildings that support roosting bats, will be carried out under a licence as issued by Natural England; • Additional lighting should only be installed in accordance with the Lighting Engineers Guidance for the Reduction of Light Pollution (Bat Conservation Trust and The Institution of Lighting Engineers, 2009). In brief the effect on bats and disturbance to adjacent habitats can be minimised by the use of suitable lamps	Short term – Temporary adverse effect Long Term – Permanent positive effect	Protected Species Constraints Plan

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
			with low light spillage, such as LEDs, instead of mercury or metal halide lamps. The brightness would be kept as low as possible by directing the beam downwards using hoods and limiting the height of lighting columns; • Night working should be avoided where possible. If it cannot be avoided, it should be restricted in the vicinity of known bat commuting routes and valuable areas of foraging habitat (i.e. commuting routes should not be illuminated nor have generators placed next to them); • Subject to 3rd party agreement bat boxes will be provided in suitable locations (in woodland and on mature trees) as part of the enhancements for the Scheme; and • Enhancement of habitats as a result of compensation measures, leading to increased food resource.		
Invertebrates	Ch 7, section 7.9	TR0100/APP/6.3	Planting for the Scheme and enhancement works will take in to account general habitat requirements for invertebrates as well as providing key features such as sandy banks and open scrapes where possible.	Short term – Temporary adverse Long term – Permanent positive	Protected Species Constraints Plan
Badgers	Ch 7, section 7.9	TR0100/APP/6.3	• An artificial badger sett will be created to compensate for the temporary closure of partial loss of a main sett within the footprint of the highway proposals. A 30 m buffer zone implemented around the entrances to retained badger setts within the EZoI of the Scheme to avoid risk of harm and disturbance to badgers in the area; • A badger survey will be conducted prior to construction works to determine the level of activity at badger stets which have the potential to be affected by construction; • All excavations will be covered or closed overnight to prevent any animals (i.e. badgers) becoming trapped. Alternatively, a 'ramp' or graded edge will be provided as a means of escape; • Felling activities, be it woodland clearance or thinning, will avoid active badger setts; • Fencing will be established immediately adjacent to the Scheme to deter badgers from crossing the road at unsafe locations where surveys to inform detailed design indicate this is necessary and practicable; Inactive badger setts will be destroyed under a precautionary method.	Short term – Temporary slight adverse effect Long term – Permanent slight adverse effect	Protected Species Constraints Plan
Road Drainage and the Water Environment					
Deterioration in surface water and groundwater quality resulting from construction activities.	Ch 8, section 8.9	TR0100/APP/6.3	• All works to be undertaken in accordance with the Pollution Prevention Guidelines (PPGs[1]); • Temporary works sites, haul roads and other associated works should be designed and maintained to minimise impact; • Areas which may generate contaminated water, such as oil storage areas, will be bunded and have water discharged to self-contained units with treatment facilities; • Tests will be undertaken to ensure contaminated material is identified isolated and reworked or removed to special landfill to avoid any leachate problems; • Temporary land-take required for construction will include adequate areas of land set aside for robust control measures, for example sustainable drainage control; • A Pollution Prevention Plan, including spillage response measures, will be prepared prior to construction; • Appropriate method statements for working with and storing oils and chemicals in line with the requirements of the Control of Pollution (Oil Storage) Regulations	Not expected to be significant with appropriate mitigation measures in place.	N/A
	Ch 8, section 8.9	TR0100/APP/6.3		Not expected to be significant with appropriate mitigation measures in place.	N/A

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
			2001 will be prepared; • An Environmental Incident Control Plan to ensure protective measures are implemented to deal with both normal and emergency situations will be prepared; • Contractors will undertake construction work to best practice standards; • A permanent drainage system will be developed and approved by relevant parties before the construction phase commences; • A construction phase Surface Water Management Plan will be prepared; • A piling risk assessment will be carried out to ensure the selected piling method does not introduce contamination pathways into the aquifer; and • Where sheet piling is replacing existing retaining walls, the design will not exceed the existing extent and depth of the retaining wall.		
Increased risk of flooding (fluvial, surface water and groundwater) resulting from construction activities.	Ch 8, section 8.9	TR0100/APP/6.3	• No materials or plant will be stored within the floodplain; • The Environment Agency Flood Warning system will be signed up to and a procedure will be put in place to ensure timely evacuation of personnel (and plant if safe to do) from the floodplain; • For any works in ordinary watercourses, such as obstructions to flow, Ordinary Watercourse Consent will be obtained from Surrey County Council. Similar works to any main rivers, or any works within eight metres of a main river, will require an Environmental Permit from the Environment Agency; • A construction phase Surface Water Management Plan will be prepared; • If ground compaction has occurred it will be reinstated as existing; and • The Environment Agency Flood Warning system will be signed up to and a procedure will be put in place to ensure timely evacuation of personnel (and plant if safe to do) from the floodplain.	Not expected to be significant with appropriate mitigation measures in place.	N/A
Depletion of water resources	Ch 8, section 8.9	TR0100/APP/6.3	A material efficient design will be adopted and implemented by the Design Team. Measurement will be via a brief statement from the design team estimating the overall quantity of material required through the application of an efficient design. Monitoring will be through confirmation from the Construction Team that the Scheme 'As Constructed' is in accordance with the design. The CEMP will be developed and implemented to consider methods to manage and reduce water use in construction. Monitoring will be through an appropriate programme of Environmental Auditing and Reporting.	Not expected to be significant with appropriate mitigation measures in place.	N/A
Damage to riparian and channel features and disruption of natural hydraulic and sediment process resulting from construction/modification of watercourse crossings and construction of highway drainage outfalls.	Ch 8, section 8.9	TR0100/APP/6.3	• River and habitat enhancement measures to be implemented on the Stratford Brook upstream of the A3 crossing; • A feasibility study will be undertaken into river habitat and fish and mammal passage improvement along the Stratford Brook and recommendations from this study implemented, and • Adherence to the following generic guidance for detailed design of single span bridges, culverts, bank protection: 1) Chapter 8 of Fluvial Design Guide (Environment Agency, 2010), 2) Chapter 4 of Culvert design and operation guide (C689) (Ciria, 2010), 3) Water Framework Directive Mitigation Measures Manual (Environment Agency, 2013), 4) Advice on minimising impact on fish passage in the Fish Pass Manual (Environment Agency, 2010), 5) SEPA's advice on river crossings and position statement on culverting (SEPA 201, 2015).	Not expected to be significant with appropriate mitigation measures in place.	Scheme Layout Plans (application document TR010030/APP/2.8)

[1] Pollution Prevention Guidelines (PPGs) with particular reference to PPG1 (general guide to the prevention of water pollution), PPG3 (use and design of oil separators in surface water drainage systems), PPG5 (works near or liable to affect watercourses) and PPG6 (working at construction and demolition sites). The PPGs contain a mix of regulatory requirements and good practice advice. They have been withdrawn by the Environment Agency but are still considered good practice advice to avoid pollution of watercourses. All of the PPGs are available from http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
Damage to Bolder Mere margins as a result of construction activities.	Ch 8, section 8.9	TR0100/APP/6.3	• Reinstatement of habitat along northwest shore of Bolder Mere (adjacent to the A3) which will involve the lake margin being reprofiled into the water (to replicate the current slope) and the reedbed re-established (through translocation of the existing reedbed and/or new reedbed planting; • Habitat improvements, particularly along the southern edge of Bolder Mere to improve lake margins for designated species; • Groundwater Investigations will be undertaken to assess the groundwater flow direction and groundwater contribution into Bolder Mere which may result in alterations being made to the design of the sheet pile element of the retaining wall, to ensure it does not form more of a barrier to groundwater flow into Bolder Mere than the existing retaining wall; • A management programme to reduce/remove the existing carp population in Bolder Mere will be prepared and implemented; and • A feasibility assessment of the likely effectiveness of implementing a management plan for the following invasive non-native species known to be present in Bolder Mere (narrow-clawed crayfish, New Zealand pigmyweed and Nuttall's waterweed) will be undertaken. The assessments will also look into improving conditions for macrophytes within the lake.	Not expected to be significant with appropriate mitigation measures in place.	Scheme Layout Plans (application document TR010030/APP/2.8)
Loss of ephemeral ditches as a result of construction activities.	Ch 8, section 8.9	TR0100/APP/6.3	• Enhancement of water features on Replacement Land and in SPA Enhancement areas at: – Chatley Wood pond; – Ditch downstream of Bolder Mere; – Wisley ditches north. • Relevant guidance on modification of a river channel including the River Restoration Centre website (RRC, 2014) will be adhered to.	Not expected to be significant with appropriate mitigation measures in place.	Scheme Layout Plans (application document TR010030/APP/2.8)
Alterations to groundwater flow paths as a result of construction activities.	Ch 8, section 8.9	TR0100/APP/6.3	• Intrusive ground investigation will be carried out to determine the groundwater flow direction and the depth to groundwater. On the basis of these investigations, alterations will be made to the design of the piles or retaining walls, to ensure they do not form a barrier to groundwater flow; • Deep foundations will be designed in accordance with industry standards – taking into account the site-specific water level and flow monitoring data obtained from instructive ground investigation for the Scheme; and • A piling risk assessment will be carried out to ensure the selected piling method does not introduce contamination pathways into the aquifer.	Not expected to be significant with appropriate mitigation measures in place.	N/A
Deterioration in surface water and groundwater quality resulting from the operation of the Scheme.	Ch 8, section 8.9	TR0100/APP/6.3	• The design of the Highway drainage system for the Scheme will comply with all current standards and sustainable drainage system (SuDS) best practice techniques to ensure that sustainability is a key drainage design criterion; • Highway run-off from Catchments 1 to 3, 5, 9, 11, 13, 16, 18, 19, 20 to 23 and 27 will pass through an attenuation pond and/or ditch before being discharged into the natural environment. By discharging the highway runoff slowly and by allowing suspended solids to settle out they the attenuation ponds and/or ditches also provide water quality treatment to the highway runoff; • A risk assessment will be undertaken using data obtained from the Ground Investigation for the Scheme to determine the need for and type of mitigation on soakaways receiving highway run-off; • Outfalls will be located at less sensitive areas (i.e. not on active, eroding meanders); and • Outfall structures will be set flush to the existing bank line to minimise potential erosion around the structure and minimise section of channel bed impacted.	Not expected to be significant with appropriate mitigation measures in place.	Scheme Layout Plans (application document TR010030/APP/2.8)

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
Increased risk of fluvial, surface water and groundwater flooding as a result of the operation of the Scheme.	Ch 8, section 8.9	TR0100/APP/6.3	• Run-off from the Scheme will be attenuated before reaching a watercourse for the 1 in 100 annual probability event (1%) taking into account a 20% allowance for climate change and hence there will be no increase in runoff from the site and no increase in flood risk; • Highways drainage discharge will be attenuated prior to outfall, by passage through attenuation ponds/ditches/pipes; • The highway drainage system will be designed in line with the current standards of HD 45/09 (Highways Agency, 2009) to ensure that run-off from the site; • Outfall structures will be set flush to the existing bank line to minimise potential erosion around the structure and minimise section of channel bed impacted; • Deep foundations extending below the groundwater table will be designated in accordance with industry standards considering the site-specific water level and flow monitoring data obtained from the intrusive ground investigation for the Scheme; and • Substantial clear spacing between piles and appropriate piling installation methods should be adopted.	Not expected to be significant with appropriate mitigation measures in place.	Scheme Layout Plans (application document TR010030/APP/2.8)
Barrier to mammal passage along the river corridor of Stratford Brook.	Ch 8, section 8.9	TR0100/APP/6.3	A mammal shelf will be incorporated on Stratford Brook underbridge, (set above flood level and if possible 100-year climate change level).	Not expected to be significant with appropriate mitigation measures in place.	N/A
Drainage of road run off directly to Bolder Mere	Ch 8, Section 8.9	TR0100/APP/6.3	The Scheme intends to close this pathway by redirecting runoff via mechanical treatment to a nearby Ordinary Watercourse. The reduced pollutant load to Bolder Mere is expected to improve lake water quality. Agreement of the details of this element of the Scheme design with the Environment Agency is included as a requirement of the Development Control Order for the Scheme.	Not expected to be significant with appropriate mitigation measures in place.	N/A
Landscape					
Visual and landscape impacts on surrounding area	Ch 9, section 9.9	TR0100/APP/6.3	Further develop and implement the landscape proposals as set out in the Proposed Scheme Layout Plans in accordance with guidance in the Design Manual for Roads and Bridgeworks and associated documents.	Slight adverse in Year 15	Scheme Layout Plans (application document TR010030/APP/2.8)
Visual and landscape impacts on surrounding area	Ch 9, section 9.9	TR0100/APP/6.3	Maintain and manage landscape works to ensure successful establishment of all elements of the Scheme.	Slight adverse in Year 15	Scheme Layout Plans (application document TR010030/APP/2.8)
Impact on vegetation to be retained	Ch 9, section 9.9	TR0100/APP/6.3	Ensure the protection of all trees and other vegetation to be retained in accordance with BS 55 and other best practice guidance.	Slight adverse in Year 15	Scheme Layout Plans (application document TR010030/APP/2.8)
Impact on soils	Ch 9, section 9.9	TR0100/APP/6.3	Ensure the stripping, storage and maintenance of soils necessary for the scheme in accordance with best practice guidance and develop a Soil Handling and Management Plan (SHMP).	Slight adverse in Year 15	Scheme Layout Plans (application document TR010030/APP/2.8)
Stakeholders	Ch 9, section 9.9	TR0100/APP/6.3	Continue liaison with Surrey Wildlife Trust, Forestry Commission and the Woodland Trust to ensure that these bodies are content as far as possible with the proposed Scheme.	N/A	N/A
Landowners	Ch 9, section 9.9	TR0100/APP/6.3	Maintain liaison with affected landowners to develop landscape proposals that take account of their views where possible.	N/A	N/A
Geology and Soils					
Contamination - release and spread of known contamination. For example, disturbance of	Ch 10, section 10.9	TR0100/APP/6.3	Detailed liaison with the appropriate statutory authority and the landfill operator (if applicable) and other stakeholders to ensure that any disturbance of landfill area does not result in an unacceptable risk to either human health or environmental receptors by incorporating appropriate mitigation measures into the design and	Minor adverse	N/A

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
landfill sites during construction.			construction phases. Further investigation and assessment shall be carried out as necessary.		
Contamination - release and spread of unknown contamination. Possible disturbance of unknown localised contamination during construction such as in filled pits, spillages and that associated with existing and disused drainage systems.	Ch 10, section 10.9	TR0100/APP/6.3	Should contamination be encountered during ground investigation or the construction phase, additional investigations and risk assessments will be undertaken to identify any remediation required.	Minor adverse	N/A
Contamination - release and spread of potentially contaminated dust during construction.	Ch 10, section 10.9	TR0100/APP/6.3	Dust suppression measures will be used during periods of dry weather to prevent dust blow.	Minor adverse	CEMP
Contamination - potentially contaminated run-off from the construction site during construction phase.	Ch 10, section 10.9	TR0100/APP/6.3	Appropriate mitigation measures during construction to collect any contaminated water as set out in the CEMP.	Negligible	CEMP
Contamination - accidental spillages on the highway during the operational phase.	Ch 10, section 10.9	TR0100/APP/6.3	Appropriate pollution prevention measures would be implemented during any clean up activity. Site would be covered by hardstanding which would limit migration of contamination.	See Road Drainage section above	CEMP
Contamination - Potentially contaminated run-off from the highway during operation.	Ch 10, section 10.9	TR0100/APP/6.3	Design measures to collect any contaminated water in attenuation ponds where silt and contaminants can settle out.	See Road Drainage section above	CEMP
Soil deterioration and consolidation - compaction of near surface deposits during the construction phase is likely to occur. Increase in vertical load experienced by the underlying soil due to the construction of the embankments.	Ch 10, section 10.9	TR0100/APP/6.3	Soil management operations to be in accordance with Defra's Construction Code of Practice for the sustainable use of soils on Construction Sites, with mitigation methods adopted to alleviate the effects on topsoil in line with an approved Soil Handling and Management Plan (SHMP) to be outlined in the CEMP.	Minor beneficial	CEMP and SHMP
Earthworks balance - reuse of material to be considered as the main source of fill for the Scheme. An assessment of the suitability of the material from a geotechnical point of view and a review of contamination results is required to confirm whether it will be acceptable for reuse.	Ch 10, section 10.9	TR0100/APP/6.3	Full assessment of the information available to determine the acceptability/suitability for reuse within the Scheme earthworks. Surplus topsoil from all areas would be sustainably managed and re-used. This would be in line with the requirements of a SHMP to be outlined in the CEMP.	See Materials section below	CEMP and SHMP

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
Agricultural land - permanent loss of agricultural land.	Ch 10, section 10.9	TR0100/APP/6.3	Permanent loss of agricultural land cannot be mitigated.	Significant adverse effect on Park Bark Farm	Environmental Statement, Figure 13.4
Agricultural land - temporary loss of agricultural land.	Ch 10, section 10.9	TR0100/APP/6.3	Agricultural land would be returned to landowners on completion of the construction works.	Neutral	Environmental Statement, Figure 13.4
Cultural Heritage					
Removal of archaeological remains	Ch 11, section 11.9	TR0100/APP/6.3	Preservation of archaeological significance through evaluation, recording, and publication of information contributing to regional research objectives.	Slight adverse, not significant	N/A
Impact of construction on setting of historic buildings	Ch 11, section 11.9	TR0100/APP/6.3	Construction works could temporarily impact the setting of the Grade II* RHS Wisley Registered Park and Garden, the Grade I Registered Park and Garden at Painshill Park, and the Bowl Barrow on Cockcrow Hill Scheduled Monument. Mitigation measures include protective fencing around the Scheduled Bowl Barrow on Cockcrow Hill. No mitigation measures are proposed for impacts to the settings of the Registered Parks and Gardens (RPGs) beyond those to limit overall noise and to allow access.	Slight adverse, not significant	Environmental Statement
Effects on setting during operation of the Scheme	Ch 11, section 11.9	TR0100/APP/6.3	Landscape planting to minimise the anticipated impacts on the settings of RHS Wisley, Painshill Park and the listed buildings within Painshill Park. Designs for noise barriers near the Scheduled Bowl Barrow on Cockcrow Hill will be developed in consultation with Historic England to identify potential for improving the setting of the monument.	Slight adverse, not significant	Scheme Layout Plans (application document TR010030/APP/2.8)
Materials and Waste					
Depletion of primary materials or other resources	Ch 12, section 12.9	TR0100/APP/6.3	Adopt a material efficient design, to be implemented by the Design Team as the Scheme's design develops. Measurement will be via a brief statement from the design team estimating the overall quantity of material required through the application of an efficient design. Monitoring will be through confirmation from the Construction Team that the Scheme 'As Constructed' is in accordance with the design. Use land temporarily reserved for material storage to significantly increase the amounts of materials that can be re-used within the Scheme and therefore reduce the import of primary or recycled materials. Develop and implement the CEMP to consider and manage the re-use of materials on-site, off-site secondary/recycled materials, locally sourced materials, and other responsibly sourced materials. The CEMP will include a Site Waste Management Plan and Materials Management Plan, or equivalent, where required.	Neutral	N/A
Depletion of local or national waste management capacity	Ch 12, section 12.9	TR0100/APP/6.3	Design out waste where possible (e.g. through specification of standard lengths, use of offsite manufactured and modular elements etc.). Use land temporarily reserved for material storage to significantly increase the quantity of material that can be re-used within the Scheme and therefore reduce the import of primary or recycled materials. Develop a Site Waste Management Plan as part of the CEMP early in design to explore methods to manage waste arising from the construction, demolition and excavation in accordance with the waste hierarchy. Leave hazardous materials (e.g. tar bound planings) *in situ* where safe and feasible to do so to avoid unnecessary generation of hazardous waste arisings. All wastes will be managed in accordance with the waste hierarchy.	Construction, demolition and excavation waste - Neutral Hazardous waste - Neutral	N/A
People and Communities					

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
Access, Community Severance and Engagement	Ch 13, section 13.9	TR0100/APP/6.3	Ensure a clear stakeholder plan is established to provide consistent and regular communication with a range of stakeholders. The plan must acknowledge the differing perspectives and issues of each stakeholder. Maintain communication with the general public pre-construction, during construction in line with the Community Relations Strategy. The contractor will develop the traffic management plan to set out access arrangements for all parties affected by the works during the construction phase. This will set out alternative access arrangements to ensure that access can be maintained at all times during the works. The alternative access arrangements will be communicated to all affected parties in good time so that they are aware of and can comment on the arrangements. To ensure public transport routes and bus stops along the A3 are maintained and disruption is managed. Potential disruption should be discussed with local authorities, public bus companies and providers well in advance. Potential for temporary delays due to construction and temporary relocation of bus stops to be mitigated with appropriate traffic management. Ensure the 715 and C1/C2 bus routes are maintained and disruption is managed. Prepare for the removal and relocation of existing bus stops at Wisley Lane and Painshill interchange. Potential disruption should be discussed with local public bus companies, RHS Wisley and Painshill Park in advance.	Significant adverse	Figure 13.5 NMU Diversions Scheme Layout Plans (application document TR010030/APP/2.8)
NMU Routes and PRoWs	Ch 13, section 13.9	TR0100/APP/6.3	Construction works should be programmed so that affected PRoW, footpaths or cycleways remain open for part, or duration, of the construction period, and so that other routes can act as a diversion route for those affected. Including along the A3 shared pedestrian and cycle NMU route and PRoWs and BW12 and FP12 at J10 so temporary severance is mitigated. Replacement overbridges at Cockrow, Claremont and Wisley Lane are provided before existing routes close to minimise severance to NMUs across the A3 and M25. Provide a temporary footbridge at Wisley Lane while the Wisley Lane overbridge is constructed. A clear and consistent signage strategy will be designed and implemented, to direct users during construction and support access to community and recreational facilities using footpaths and cycleways. Users of affected PRoW, footpaths and cycleways should be notified of planned diversions, with signs along sections to be closed during construction, at least one month prior to the works. Deliver a 10m wide green bridge at Cockrow and work to progress a wider bridge through the Designated Funds programme if funds are available. Existing crossings and routes only to be diverted or closed once alternative routes are in place.	Significant adverse	Scheme Layout Plans (application document TR010030/APP/2.8)
Drivers and Driver Stress	Ch 13, section 13.9	TR0100/APP/6.3	Clear signage and provision of access information for all users during construction and before operation. During the construction phase, a traffic management plan and site traffic management plan would be implemented to reduce any increase in stress caused by the roadworks. This would include temporary signage which would be put in place to reduce uncertainty and frustration.	Neutral	Traffic Management Plan
Land Take	Ch 13, section 13.9	TR0100/APP/6.3	Identification and delivery of replacement land for Common Land and Public Open Space of an equivalent quality and appropriate location to support ongoing use by existing users/groups. Land acquired temporarily for construction compounds and working areas will be restored to a condition equivalent to its original before being returned to its owner.	Significant adverse	Scheme Layout Plans (application document TR010030/APP/2.8)

Impact	ES reference	DCO reference	Mitigation commitments (location)	Residual effect [not significant, neutral, slight/moderate/large adverse, slight/moderate/large beneficial]	Proposed plan reference (e.g. Proposed Scheme Layout Plans, etc)
			Land within the DCO boundary that is not required for the Scheme permanently will be restored to its original use in agreement with landowners. Restoration of land occupied or disturbed during the construction process that is not permanently acquired for engineering and landscaping to a condition equivalent to its original. It will be subject to an aftercare period, of a duration to be agreed, during which time problems with settlement, drainage and weed infestation will be rectified.		
Amenity	Ch 13, section 13.9	TR0100/APP/6.3	Less intensive piling processes to be used close to sensitive receptors as part of a BPM approach.	Significant adverse	Scheme Layout Plans (application document TR010030/APP/2.8)
Residential Receptors	Ch 13, section 13.9	TR0100/APP/6.3	Liaison to be managed with Wilderness Cottage to ensure they can access and egress their property at all times during the improvements to Old Lane.	Moderate adverse	Scheme Layout Plans (application document TR010030/APP/2.8)
Community Receptors	Ch 13, section 13.9	TR0100/APP/6.3	Construction activities to be preferably undertaken outside of school hours at school locations, including Feltonfleet School, and to be mindful of exam seasons to avoid amenity impacts.	Significant adverse	Scheme Layout Plans (application document TR010030/APP/2.8)
Business Receptors	Ch 13, section 13.9	TR0100/APP/6.3	The construction phase may be a source of employment for local people. This should be supported through local job centres and supply chain. Ensure a clear and easy to access complaints and advice helpline and ensure that complaints are responded to, investigated and addressed promptly. Ensure recruitment for construction jobs and procurement of goods and services starts at district and regional levels to ensure that the employment and economic benefits of the construction phase benefits the district and the region.	Moderate adverse	Traffic Management Plan
Agricultural Land and Holdings	Ch 13, section 13.9	TR0100/APP/6.3	Maintain Surrey Wildlife Trust's Pond Farm access across the M25 and A3, connected by the Cockcrow and Clearmount overbridges until the new bridges are in place. Engineered and other mitigation measures to minimise construction impacts on farming interests will be agreed with land owners and tenants before and during the construction process. Essential measures are: Demarcation of the construction working corridor once defined, in order to prevent disturbance to adjacent areas; Provision of temporary access to fields, as required; Erection of livestock fencing along the working corridor, where required; Provision of drinking water for livestock, as necessary; and Diversion or restoration of land drainage systems affected by the Scheme. The quality and quantity of soil on site will be maintained by implementing appropriate techniques for stripping, stockpiling and reinstatement, in accordance with Defra's 2009 Code of Practice for the Sustainable Use of Soils on Construction Sites. This approach will be adopted in a SHMP, which will in due course form part of the CEMP. A qualified soil scientist will supervise all aspects of this work.	Large adverse for Park Barn Farm	Scheme Layout Plans (application document TR010030/APP/2.8)
Climate					
Global warming	Ch 15, section 15.11	TR0100/APP/6.3	a. Reduce material consumption and waste generation; b. Reduce transport distances for materials and waste; c. Select low-carbon, recycled and site-won materials where practicable; d. Reduce transport distances of site workers; e. Minimise energy consumption onsite as far as possible by using low-emission and high-efficiency construction plant; f. Minimise water consumption onsite as far as possible by using efficient plant and processes; and g. Employ the Carbon Calculator Tool to monitor greenhouse gas emissions against Key Performance Indicators (KPIs).	Not significant	N/A

Table 1.2: REAC Part 2: Environmental Action Plan – Actions required before start of construction (i.e. during detailed design stage or before construction)

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
Air Quality									
AQ1.1	Ch 5, section 5.9	Plan the construction works to limit and control emissions to air.	Develop a plan to ensure the works shall be carried out in accordance with the BPM, as described in Section 79 (9) of the Environmental Protection Act 1990, to reduce fumes or emissions which may affect air quality.	Local authorities to be consulted on mitigation measures outlined in the CEMP, and the methodology and locations for monitoring surveys.	Set up pre-construction monitoring of dust deposition three months before construction	Principal Contractor	An agreed plan to carry out the works in accordance with the agreement with the local authority. No justified complaints of dust nuisance from receptors in the vicinity of the Scheme. Daily site audits.	Initial: Date:	N/A
Noise and Vibration									
NV1.1	Ch 6, section 6.9	Agree construction phase noise and vibration levels with local authorities.	Consult with local authorities regarding construction noise and vibration limit levels and Section 61 applications. Undertake any further baseline noise and vibration monitoring at residential locations requested by the local authorities.	Agreement with Surrey County Council, Elmbridge Borough Council and Guildford Borough Council on the methodology for surveys and monitoring.	N/A	Designer/Principal Contractor	Agree with the local authorities.	Initial: Date:	To be completed before any site work undertaken. Local authorities normally require noise and vibration monitoring immediately before construction.
NV1.2	Ch 6, section 6.9	Mitigate construction phase noise and vibration if required.	Identify in the CEMP activities that could result in significant noise and vibration levels.	Consult on activities and locations with Surrey County Council, Elmbridge Borough Council, Guildford Borough Council, local residents and Natural England.	N/A	Highways England/ Designer/Principal Contractor	Agreement on locations and activities with the local authorities and Highways England.	Initial: Date:	To occur after Detailed Design - before start of construction. The requirement for mitigation measures is expected. This would be reconsidered after detailed construction programme and plant details.
Biodiversity									
BD1.1	Ch 7, section 7.9	To avoid the spread of invasive species such as Japanese Knotweed and Himalayan balsam.	Conduct invasive species surveys, identify all invasive species and their locations within the Scheme boundaries. Prepare an invasive species control method statement. Implement any pre-construction requirements as detailed in the invasive species control method statement.	Method to be advised by Principal Contractor and agreed with the Designer/Client.	To be advised by Principal Contractor	Competent subcontractor to be appointed by the Principal Contractor to manage invasive plant species.	Produce a detailed map indicating the locations of invasive species within the Scheme boundary. Invasive species control method statement to conform to best practice guidelines and relevant legislation. Effectively remove the risk of spreading the invasive species within and outside of the Scheme. Produce a suitable	Initial: Date:	Further actions may be required during construction to prevent the spread of invasive species.

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
							method to comply with during construction to prevent spread.		
BD1.2	Ch 7, section 7.9	Continue to monitor fauna within the Scheme boundary.	Update species surveys to ensure that on commencing construction the data is less than 12 months old (to include: breeding birds (particularly hobby, Dartford warbler, woodlark and nightjar), badger, and bats).	Undertake surveys in accordance with approved methodology in agreement with the Designer/Client during survey season following method used to establish baseline.	N/A	Principal Contractor appointed Ecologist	Complete record of species to enable works to be carried out without contravening legislation/guidance.	Initial: Date:	Continue to observe the habitat for any change in species distribution during the construction phase as required.
			React to a change in locations and population size of notable species by re-evaluating mitigation recommendations to ensure they continue to be sufficient.					Initial: Date:	
BD1.3	Ch 7, section 7.9	Displacement of protected species.	Create a method statement that follows legislation and best practice guidelines for the displacement of common reptiles, sand lizards and great crested newts from the Scheme footprint.	Agree Method Statement with Natural England.	N/A	Principal Contractor appointed Ecologist	The successful displacement of species that will be affected. The affected area is clear of protected species so work can commence without committing legal offenses.	Initial: Date:	N/A
BD1.4	Ch 7, section 7.9	Removal of bat roost features.	Undertake works in accordance with a bat licence as issued by Natural England. Appropriate mitigation in the form of artificial roost boxes and bat mitigation structure and sensitive lighting will be required.	Works in accordance with licence as agreed with Natural England.	To be advised by Natural England	Principal Contractor appointed Ecologist (licence holder)	The successful closure of bat roosts that will be affected, and the provision of mitigation measures, so work can commence without committing legal offenses.	Initial: Date:	N/A
BD1.5	Ch 7, section 7.9	Closure of badger sett.	Undertake works in accordance with a badger licence as issued by Natural England. Appropriate mitigation in the form of an artificial sett will be required.	In accordance with licence as agreed with Natural England.	To be advised by Natural England	Principal Contractor appointed Ecologist (licence holder)	The successful closure of the badgers sett that will be affected, and the provision of mitigation measures, so work can commence without committing legal offenses.	Initial: Date:	N/A
Road Drainage and the Water Environment									
RD1.1	Ch 8, section 8.9	To comply with the Design Manual for Roads and Bridges (DMRB) guidance, ensure discharges from the road do not lead to a deterioration in the classification status of receiving waterbodies.	Develop a detailed drainage design in agreement with the Environment Agency in relation to the treatment of road runoff pollutants.	N/A	N/A	Designer	Agreed detailed design.	Initial: Date:	N/A
RD1.2	Ch 8, section 8.9		Undertake appropriate levels of assessment in line with the DMRB to assess the effects of routine runoff on surface waters, groundwaters and the	Develop drainage design during detailed design phase to ensure DMRB standards are still met.	Agreement to design with Environment Agency.	Designer	Agreed detailed design, compliance with standards or agreed derogation with Environment Agency.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			likelihood and effects of spillage assessed.						
RD1.3	Ch 8, section 8.9		Develop Pollution Prevention Plan, including spillage response measures and incorporate in the CEMP.	Agreement of Pollution Prevention Plan with Environment Agency.	N/A	Principal Contractor	Pollution Prevention Plan in place prior to construction.	Initial: Date:	N/A
RD1.4	Ch 8, section 8.9		Prepare appropriate method statements for working with and storing oils and chemicals in line with the requirements of the Control of Pollution (Oil Storage) Regulations 2001.	Agreement of method statement with Environment Agency.			Appropriate method statements in place prior to construction.	Initial: Date:	N/A
RD1.5	Ch 8, section 8.9		Design an Environmental Incident Control Plan for the construction period on site to ensure protective measures are implemented to deal with both normal and emergency situations.	Agreement of Incident Control Plan with Environment Agency.			Environmental Incident Control Plan in place prior to construction.	Initial: Date:	N/A
RD1.6	Ch 8, section 8.9		Agree a Drainage Strategy for the construction site.	Agreement of Drainage Strategy with Environment Agency.			Agreement of drainage strategy with Environment Agency.	Initial: Date:	N/A
RD1.7	Ch 8, section 8.9		Secure an Environmental Permit from the Environment Agency for the works over or adjacent to Bolder Mere.	Discuss and agree with Environment Agency.			Consent for works granted prior to construction.	Initial: Date:	Allow six weeks for consent.
RD1.8	Ch 8, section 8.9		Complete a groundwater risk assessment will be completed to determine the impact of the Scheme on groundwater quality and whether any mitigation measures are required.	Agreement with Environment Agency.	N/A	Designer	Approval of groundwater risk assessment with Environment Agency.	Initial: Date:	N/A
RD1.9	Ch 8, section 8.9	To avoid impacts on surface water and provide mitigation and betterment in the form of SuDS during operation.	The drainage design will provide mitigation in the form of SuDS. The choice of the system is dependent on the physical environment of the Scheme and needs to consider the availability of land, climate and rainfall characteristics, soil permeability, topography and spillage risk.	Agreement on drainage design with Environment Agency.	N/A	Designer	Approval from Environment Agency.	Initial: Date:	N/A
RD1.10	Ch 8, section 8.9	Prevent adverse effects on flood risk.	Prepare a construction phase Surface Water Management Plan.	Discuss and agree with Environment Agency.	N/A	Principal Contractor	Approved Surface Water Management Plan in place prior to construction.	Initial: Date:	N/A
RD1.11	Ch 8, section 8.9		Develop detailed drainage design that provides adequate capacity and green field run-off rate.	Discuss and agree with Environment Agency.	N/A	Designer/Principal Contractor	Agreement of detailed drainage design with Environment Agency.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
RD1.12	Ch 8, section 8.9		Secure an Environmental Permit from the Environment Agency for the works on Stratford Brook associated with the construction of the Stratford Brook bridge.	Discuss and agree with Environment Agency.	N/A	Designer/Principal Contractor	Issue of Environmental Permit from EA before construction phase.	Initial: Date:	N/A
RD1.13	Ch 8, section 8.9		Sign up to the Environment Agency flood warning system put in place a procedure to ensure timely evacuation of personnel (and plant if safe to do) from the floodplain.	N/A	N/A	Designer/Principal Contractor	Flood Warning system signed up to	Initial: Date:	N/A
RD1.14	Ch 8, section 8.9		An appropriate method statement for potential water ingress into excavations will be prepared.	N/A	N/A	Designer/Principal Contractor	N/A	Initial: Date:	N/A
RD1.15	Ch 8, section 8.9		Prepare method statement for working near/within Bolder Mere to ensure no impact on the structural integrity of the retaining structure.	Gain approval for method statement from Reservoir Engineer.	N/A	Designer/Principal Contractor	Approval for method statement from Reservoir Engineer.	Initial: Date:	N/A
RD1.16	Ch 8, section 8.9	Prevent adverse effects on groundwater flow	Ensure an intrusive ground investigation is undertaken to determine the groundwater flow direction and the depth to groundwater. On the basis of these investigations, alterations will be made to the detailed design of the piles or retaining walls, to ensure they do not form a barrier to groundwater flow.	Assessment of impact within Piling Risk Assessment followed by agreement with Environment Agency.	All actions agreed with the Environment Agency will be carried out.	Designer/Principal Contractor	The Piling Risk Assessment will be submitted to the Environment Agency for approval and agreement prior to commencement of the construction phase.	Initial: Date:	N/A
RD1.17	Ch 8, section 8.9	Comply with Water Framework Directive.	To review and update the WFD compliance assessment when any changes to the design likely to have an impact at a waterbody scale are made to ensure that the Scheme is WFD compliant.	Discussion with and input from Environment Agency.	N/A	Designer	Inclusion of mitigation measures stated in the Water Framework Directive assessment in the design.	Initial: Date:	N/A
RD1.18	Ch 8, section 8.9		Ensure Environment Agency agree with the Water Framework Directive assessment.	Agreement with Environment Agency.				Initial: Date:	N/A
RD1.19	Ch 8, section 8.9	Prevent pollution of aquifers and prevent pollution of surface waters.	Drainage design will consider the risks from any residual contamination.	Environmental controls will be included within the CEMP and implemented through the construction phase.	N/A	Designer	Agreed detailed design.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
Landscape									
LV1.1	Ch 9, section 9.9	Mitigation planting to replace lost vegetation.	Prepare detailed landscape and ecological design including planting schedules and specification documentation.	Share design proposals with Natural England and Surrey Wildlife Trust.	N/A	Designer/Principal Contractor	Approval of documents by Highways England after consultation with third parties statutory bodies as appropriate.	Initial: Date:	N/A
LV1.2	Ch 9, section 9.9	Mitigation planting to integrate the Scheme design.						Initial: Date:	N/A
LV1.3	Ch 9, section 9.9	Mitigation planting to provide screening functions.						Initial: Date:	N/A
LV1.4	Ch 9, section 9.9	Mitigation planting to provide habitat replacement and/or enhancement.						Initial: Date:	N/A
LV1.5	Ch 9, section 9.9	Mitigation grass seeding to replace and integrate lost verge grass and incorporate new species rich grassland areas.						Initial: Date:	N/A
LV1.6	Ch 9, section 9.9	Mitigation planting to balancing ponds.						Initial: Date:	N/A
LV1.7	Ch 9, section 9.9	Mitigation planting to replace lost woodland and trees associated with the construction of the Scheme.						Initial: Date:	N/A
LV1.8	Ch 9, section 9.9	Mitigation planting to screen the Scheme from sensitive receptors.						Initial: Date:	N/A
LV1.9	Ch 9, section 9.9	Ensure protection of trees covered by TPO's and Ancient Woodland is undertaken prior to construction.	Landscape input into the fencing design and Principal Contractor's implementation programme to ensure a suitable security fence is proposed around the sensitive locations.	Consultation with Forestry Commission Woodland Trust and local authorities on methods.	N/A.	Designer/Principal Contractor	Confirmation of method with consultees.	Initial: Date:	N/A
LV1.10	Ch 9, section 9.9	Ensure earthworks design suitable for planting and seeding and to determine requirement for soil retention.	Landscape input into detailed design of all slope gradients/earthworks. Landscape to consider requirement for soil retention on any slopes steeper than 1:2.5.	Approval of earthworks design by environmental designer.	N/A	Designer/Principal Contractor	Approval of documents by Highways England.	Initial: Date:	N/A
Geology and Soils									
GS1.1	Ch 10, section 10.9	Prevent adverse risks to identified on-site and off-site human health and environmental receptors associated with the presence of ground or groundwater	Complete a ground investigation (GI) and Ground Investigation Report to characterise ground conditions and inform the Scheme final	All appropriate assessments will be completed and/or required mitigation measures and recommendations will be implemented prior to the start of construction.	N/A	Client/Designer/ Principal Contractor	Reports following the GI will be submitted to the Environment Agency and local authorities for approval and agreement prior to commencement of the construction phase.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
		contamination (refer to ES).	design and required mitigation measures. Fully assess the risk to receptors identified in the ES from contamination following completion of the GI. The assessment of risk will consist of the following where appropriate and as required: • GQRA • DQRA • PRA Where contamination risks are identified and mitigation is required, the following reports will be produced where appropriate and as required: • Site Specific Remediation Strategy • Monitoring Strategies • Verification Plan	Where any consent, approval or agreement is required to be given by the appropriate authorities it shall not be unreasonably withheld or delayed. Any approvals from the appropriate authorities will be deemed to have been given if it is neither given nor refused in writing and with a statement of the grounds for refusal within two months of the submission of any documents for approval. The Scheme will be operated in accordance with the relevant regulations and best practice guidance in applying Best Available Techniques and pollution prevention.					
GS1.2	Ch 10, section 10.9	Prevent adverse risks to identified on-site and off-site human health and environmental receptors associated with the presence of ground or groundwater contamination or ground gas/vapours (refer to ES).	Where required and as informed by appropriate assessments following the GI construction phase and operation phase monitoring (soil, groundwater, gas and vapour) will be carried out.	All appropriate assessments will be completed and/or required mitigation measures and recommendations will be implemented prior to the start of construction. Where any consent, approval or agreement is required to be given by the appropriate authorities it shall not be unreasonably withheld or delayed. Any approvals from the appropriate authorities will be deemed to have been given if it is neither given nor refused in writing and with a statement of the grounds for refusal within two months of the submission of any documents for approval. The Scheme will be operated in accordance with the relevant regulations and best practice guidance in applying Best Available Techniques and pollution prevention.	Monitoring will be undertaken to obtain a better understanding of the ground gas at the site.	Client/Designer/ Principal Contractor	Results of construction and operation monitoring will be reported as per requirements outlined in monitoring strategies developed as part of GS1.1 and agreed with the Environment Agency and local authorities.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
GS1.3	Ch 10, section 10.9	Prevent adverse risks to identified on-site and off-site human health and environmental receptors associated with the presence of ground or groundwater contamination or the migration of ground gases or vapours (refer to ES).	Completion and submission of verification report(s) as outlined within the verification plan (GS1.1) where appropriate and as required. The Scheme will be operated in accordance with the relevant regulations and best practice guidance in applying Best Available Techniques and pollution prevention.	Monitoring requirements presented in monitoring strategies will be agreed with Environment Agency prior to comment of construction.	All actions agreed with the Environment Agency will be carried out.	Client/Designer/ Principal Contractor	Verification report(s) will be submitted to the Environment Agency and local authorities as per GS1 and outlined in the verification plan.	Initial: Date:	N/A
GS1.4	Ch 10, section 10.9	Prevent adverse risks to on-site human health receptors (construction workers) associated with the presence of ground or groundwater contamination or the migration of ground gases or vapours.	The works will be carried out in accordance with the Construction Design Management (CDM) Regulations 2015 and in accordance with appropriate guidelines and best practices. Health and safety Risk Assessment Method Statements (RAMS) and appropriate Personal Protective Equipment (PPE) for the protection of construction workers in accordance with the Control of Substances Hazardous to Health (COSHH) Regulations 2002. Mitigation measure will be designed and implemented accordingly.	Principal Contractor to plan and organise the job, and work together with others involved to make sure that the work is carried out without risks to health and safety.	Monitoring will be undertaken to obtain a better understanding of the groundwater regime at the site and, as appropriate, ground gas/vapour concentrations.	Principal Contractor	Principal Contractor to prepare a Construction Phase Plan and RAMS.	Initial: Date:	N/A
GS1.5	Ch 10, section 10.9	Limit permanent removal of soils during earthworks and foundation construction and reuse of excess materials.	A Site Waste Management Plan (SWMP) and Soil Handling Management Plan (SHMP) will be outlined for reducing the volume of materials permanently removed from the site, and the handling and management of waste soil.	Mitigation measures and environmental controls will be included within the CEMP, SWMP and SHMP, and implemented through the construction phase.	Mitigation measures as set out in the CEMP, SRMP and SWMP and the SHMP will be monitored during the construction phase.	Principal Contractor/ Designer	SHMP, SRMP, SWMP and CEMP (including a MMP where required).	Initial: Date:	N/A
GS1.6	Ch 10, section 10.9	Maintenance of quality of stockpiled soils, prevention of erosion and protection of soil structures during earthworks activities.	All temporarily acquired land occupied or disturbed during the construction process shall be restored/reinstated to a condition equivalent to its original.(In agreement with the landowners) The construction working corridor will be demarcated once defined in order to prevent disturbance to adjacent land. If spoil is to be placed on land intended for farming, addition of	Mitigation measures and environmental controls will be included within the SHMP, CEMP (including MPP where required) and outlined in the Detailed Design.	Mitigation measures and environmental controls within the SHMP, CEMP (including MPP where required) and outlined in the Detailed Design will be monitored during construction.	Principal Contractor/ECoW	SHMP, CEMP (including a MMP where required) and Detailed Design	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			topsoil will be undertaken and the land will need an aftercare period (duration to be agreed) to rectify settlement and compaction. The area of earthworks at any one time will be limited to reduce temporary effects on topography, soil compaction and erosion. The duration of soil exposure will be limited and timely reinstatement of vegetation or hardstanding will be implemented to prevent soil erosion. The quality and quantity of soil on site will be maintained by implementing appropriate techniques for stripping, stockpiling and reinstatement, in accordance with Defra's 2009 Code of Practice for the Sustainable Use of Soils on Construction Sites. Over stockpiling will be avoided to reduce compaction of soil and loss of integrity. Disturbed soils should be reinstated to their original quality using a SHMP. Restored soils will be inspected and treated, if necessary, for the presence of noxious weeds. Damage to field drains will be rectified by diversion or replacement. Work will be undertaken in accordance with appropriate guidelines and best practices (e.g. Defra's 2009 Code of Practice for Sustainable Use of Soils on Construction Sites, BS 3882:2015 Specification for topsoil). If required, a CL:AIRE MMP will be included within the CEMP to reduce the amount of material permanently removed from the area of the Scheme.						

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
GS1.7	Ch 10, section 10.9	Prevention of spread of possible contamination within site soils, surface waters or groundwater due to construction activities and prevention of spills and leaks of hazardous substances.	Work will be undertaken in accordance with appropriate guidelines and best practices. Hazardous substances, including contaminated soil, fuels, chemicals, waste and construction material will be stored, handled, transported and disposed of, according to relevant legislation and best practice guidance to mitigate spillages, leaks or accidental release of their contents. Valves and trigger guns will be protected from vandalism and kept locked when not in use. Implementation of working method statements during construction to manage groundwater and surface water appropriately to ensure that there is no run-off from the works, any material/waste stockpiles and storage containers into adjacent/nearby surface watercourses. Implementation of appropriate pollution incident control e.g. plant drip trays and spill kits; and safe storage of fuel, oils and equipment during construction. Possible spreading of contamination within site soils, spillage and leakages of hazardous substances shall be prevented/reduced through proper storage, handling, transportation and disposal of hazardous substances including contaminated soil, fuel, chemicals, hazardous wastes, contaminated construction materials in accordance with relevant legislation and best practice guidelines. Procedure to manage and remediate any contaminated land encountered during the construction shall be in place. This will be approved by a suitably qualified person.	Environmental controls will be included within the CEMP and implemented through the construction phase.	Mitigation measures and environmental controls within the SHMP, CEMP (including MPP where required) and outlined in the Detailed Design will be monitored during construction.	Principal Designer Principal Contractor	CEMP	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			If unexpected contamination is encountered during earthworks, further assessment will be required. The assessment will define the need any further mitigation measures, including remediation or removal of contamination as appropriate.						
GS1.8	Ch 10, section 10.9	Prevent pollution of aquifers and prevent pollution of surface waters.	Work will be undertaken in accordance with appropriate guidelines and best practices. Open trench construction will be adopted. Piling risk assessments will be undertaken in line with relevant Environment Agency guidance to assess the risk from piling and to determine appropriate piling methods as appropriate. Hazardous substances, including contaminated land, fuels, chemicals, waste and construction material, will be stored, handled, transported and disposed of according to relevant legislation and best practice guidance to mitigate spillages and leaks. Drainage design will consider the risks from any residual contamination.	Piling risk assessments will be subject to agreement with the Environment Agency. Environmental controls will be included within the CEMP and implemented through the construction phase.	Mitigation measures and environmental controls within the SHMP, CEMP (including MPP where required) and outlined in the Detailed Design will be monitored during construction.	Principal Designer Principal Contractor	Mitigation measures as included in the CEMP and piling risk assessments.	Initial: Date:	N/A
GS1.9	Ch 10, section 10.9	Protection of identified on-site and off-site human health receptors from exposure to contaminated dust or fibres through ingestion/inhalation/dermal contact.	Work will be undertaken in accordance with appropriate guidelines and best practices. Dust will be suppressed using best practice methods, good stockpile management and timely removal of stockpiled material to prevent spread of potentially contaminated windblown material. Dust suppression measures shall include water spraying, wheel washing for vehicles leaving the site and re-vegetation of earthworks. Health and Safety Risk Assessments and Environmental Risk Assessments within method statements will be formed.	Environmental controls will be included within the CEMP and implemented through the construction phase.	Mitigation measures and environmental controls laid out within the CEMP will be monitored during construction.	Principal Contractor	Mitigation measures as included in the CEMP	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			Appropriate Personal Protective Equipment for the protection of construction workers will be used.						
GS1.10	Ch 10, section 10.9	Prevent adverse impacts to on-site or off-site property receptors associated with the presence of aggressive constituents in soil or groundwater or the migration of ground gases or vapours along preferential pathways.	A Ground Investigation Report will be completed to characterise ground conditions and determine aggressivity of the ground towards buried concrete and inform the Scheme final design. An assessment of the aggressivity of the ground and groundwater conditions will be undertaken in accordance with BRE Special Digest 1 (2005).		Monitoring will be undertaken to obtain a better understanding of the groundwater regime at the site and, as appropriate, ground gas/vapour concentrations.	Principal Designer	Ground Investigation Report and other risk assessment reports listed in GS1.1.	Initial: Date:	N/A
GS1.11	Ch 10, section 10.9	Prevent injury/death to human receptors and/or damage to property receptors associated with the potential discovery and unplanned/uncontrolled detonation of UXOs.	The assessment of UXO risks is being undertaken in a phased approach. To further assess the UXO hazard level within the Scheme, a detailed UXO desk study and a UXO survey will be completed prior to undertaking any ground investigation. Mitigation measures identified through the above assessments to reduce the risk, including the need for any additional assessments/surveys, will be implemented in the CEMP accordingly. Future work relating to UXO risks will follow CIRIA C681 guidelines, including the need to include and control UXO risks through the site Health and Safety File, Construction Phase Plan and site Emergency Response Plan.	Completion of UXO detailed desk study and UXO survey to determine further actions and required mitigation measures.	N/A	Client Principal Designer Principal Contractor	Mitigation measures laid out within the CEMP and in the site Health and Safety file, Construction Phase Plan and site Emergency Response Plan as required.	Initial: Date:	N/A
Cultural Heritage									
CH1.1	Ch 11, section 11.9	Identify archaeological remains that may be encountered during construction and achieve preservation by record.	The Scheme shall seek to avoid direct impacts on known heritage assets during enabling and construction works. This can be achieved through careful design, including well designed screening, to site works away from heritage assets. Prepare a Written Scheme of Investigation to cover the geophysical survey, evaluation trenching, and excavation of	Agreement with Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils.	As determined necessary by methodologies outlined in the Written Scheme of Investigation. Archaeological monitoring required in all areas identified by local planning policy as areas of high	Designer/Principal Contractor	Agreement with the Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils on content of the Written Scheme of Investigation.	Initial: Date:	Written Scheme of Investigation to be prepared by an appropriate archaeological specialist or specialists.

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			areas subject to soil stripping and ground disturbing activities, and mitigate through recording in advance of and during construction (or other means as appropriate) following agreement with the Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils.		archaeological potential.				
Materials and Waste									
MW1.1	Ch 12, section 12.9	Reduce import of primary materials or other resources and maximise re-use of materials through design and planning.	Adopt material efficient design.	Design decisions that have reduced the materials required for the Scheme have been recorded in the Environmental Statement. Any further revisions to the Scheme's design should consider using materials efficiently.	N/A	Designer	Statement from Design Team estimating the overall quantity of material required through the application of an efficient design.	Initial: Date:	N/A
			Implement good materials management and good practice construction methods, including use of temporary materials storage areas.	Development of a Site Waste Management Plan as part of the CEMP.	N/A	Principal Contractor	Approval of a CEMP and Site Waste Management Plan by Highways England.	Initial: Date:	
			Use sustainable materials and re-use site-won materials within the Scheme to reduce use impact on primary materials or other resources where feasible to do so.	Development of Materials Management Plan, WRAP Quality Protocol (aggregates from inert waste) or other means of demonstrating end-of-waste status to enable re-use of soil and aggregates within the Scheme. The Materials Management Plan will identify temporary land available for storage of materials. Supply the Materials Management Plan to the Environment Agency ahead of a formal application.	N/A	Principal Contractor	Confirmation that a Materials Management Plan has been produced during the pre-construction phase. Consult with the Environment Agency on the Materials Management Plan prior to implementation.	Initial: Date:	N/A
MW1.2	Ch 12, section 12.9	Minimise waste generation and off-site waste management through design and planning.	Design out waste from the Scheme, where possible.	Review and revise the Scheme in next stages to reduce waste.	N/A	Designer	Updated statement in Site Waste Management Plan from Design Team estimating the overall quantity of waste reduced through the application of designing out waste measures.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			Consider good materials management and good practice construction methods, including use of temporary materials storage areas.	Develop a Site Waste Management Plan in the pre-construction phase to explore methods to manage waste arising from the construction in accordance with the waste hierarchy.	N/A	Principal Contractor	Approval of Site Waste Management Plan by Highways England.	Initial: Date:	N/A
MW1.3	Ch 12, section 12.9	Reduce impacts associated with importing materials and exporting waste through design and planning.	Identify nearby sources of materials and suitable local or regional waste management facilities. Consider good practice construction methods and reduce haulage distances and/or need to travel.	Develop a Materials Management Plan and Site Waste Management Plan considering the proximity principle and the social or environmental impacts of transporting waste and materials.	N/A	Principal Contractor	Confirmation that a CEMP, Site Waste Management Plan and Materials Management Plan have been produced and approved by Highways England during the pre-construction phase.	Initial: Date:	N/A
People and Communities									
PC1.1	Ch 13, section 13.9	To mitigate the impacts of construction on communities and people.	Ensure a clear and easy to access complaints and advice helpline and ensure that complaints are responded to, investigated and addressed promptly. Establish a clear stakeholder plan to provide consistent and regular communication with a range of stakeholders. The plan must acknowledge the differing perspectives and issues of each stakeholder. Limit the extent of direct, permanent land take and severance affecting identified individual receptors.	Community Liaison Plan.	Community Liaison Plan to be reviewed every six months.	Principal Contractor	Good community relations. Downward trend in complaints over the course of the Scheme. Annual report to Highways England and the local authorities.	Initial: Date:	N/A
PC1.2	Ch 13, section 13.9	To mitigate the impacts of construction on Private Residential receptors.	Review the Traffic Management Plan and Buildability Report to ensure that access to all properties is maintained during the course of the works.	Update the Traffic Management Plan after discussions	Access to be reviewed as required.	Principal Contractor	No objections to access arrangement from residents and emergency services.	Initial: Date:	N/A
PC1.3	Ch 13, section 13.9	To mitigate the impacts of construction on Community Assets.	Ensure the 715 and C1/C2 bus routes are maintained and disruption is managed. Prepare for the removal and relocation of existing bus stops at Wisley Lane and Painshill interchange. Discuss potential disruption with local public bus companies, RHS Wisley and Painshill Park in advance. Confirmation of delivery of replacement land for Common Land of an equivalent quality	Agreement with Surrey County Council, Stagecoach, RHS Wisley and Painshill Park. Replacement land included in the Scheme.	Operation of bus routes reviewed quarterly during construction. Annual user surveys to be conducted for the replacement land.	Principal Contractor	No reduction of bus services during construction. Highways England kept informed of discussions.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			and appropriate location to support ongoing use by existing users/groups.						
PC1.4	Ch 13, section 13.9	To mitigate the impacts of construction on Local Business.	Ensure recruitment for construction jobs and procurement of goods and services starts at district and regional levels to ensure that the employment and economic benefits of the construction phase benefits the district and the region.	Promotion of job opportunities and recruitment with local authorities and local Job Centre.	Survey of workforce.	Principal Contractor	The construction of the Scheme benefits the district and region. Regular reporting to Highways England.	Initial: Date:	N/A
PC1.5	Ch 13, section 13.9	To mitigate the impacts of construction on Agricultural Land.	Engineered and other mitigation measures to minimise construction impacts on farming interests will be agreed with land owners and tenants before the construction process starts. Essential measures are: • Demarcation of the construction working corridor once defined, in order to prevent disturbance to adjacent areas; • Provision of temporary access to fields, as required; • Erection of livestock fencing along the working corridor, where required; • Provision of drinking water for livestock, as necessary; and • Diversion or restoration of land drainage systems affected by the Scheme	Agreement of proposals with affected land owners.	N/A	Principal Contractor	Written confirmation from land owners that they are satisfied with the proposals.	Initial: Date:	N/A
PC1.6	Ch 13, section 13.9	To mitigate the impacts of construction on NMU.	Construction works will be programmed so that affected PRoW, footpaths or cycleways remain open or suitable alternative diversions are planned for duration, of the construction period, and so that other routes can act as a diversion route for those affected. A clear and consistent signage strategy will be designed, to direct users during construction and support access to community and recreational facilities using footpaths and cycleways.	Establish an NMU Forum and include PRoW measures in the Community Liaison Plan.	N/A	Principal Contractor	Acceptance of measures in the Community Liaison Plan by NMU Forum	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			Users of affected PRoW, footpaths and cycleways should be notified of planned diversions, with signs along sections to be closed during construction, at least one month prior to the works.						
PC1.7	Ch 13, section 13.9	To mitigate the impacts of construction on Vehicle Travellers.	A Traffic Management Plan, produced by the contractor, will be prepared and updated as necessary to mitigate a number of negative effects for road users during construction and to ensure the businesses that require customer, supply chain and delivery access are not impacted significantly. Review the design to minimise effects upon vehicular travellers during construction through traffic management measures. All diversion routes and any temporary or permanent closures of roads would need suitable signage to minimise adverse effects on driver stress.	Agreement of Traffic Management Plan with local authorities and emergency services and CPS.	To be reviewed in line with the customer care plan.	Principal Contractor	Traffic Management Plan agreed with local authorities and emergency services.	Initial: Date:	N/A
Climate									
C1.1	Ch 15, section 15.11	Reduce greenhouse gas emissions from material production and transport to site.	• Design out materials, where possible; • Specify low-carbon alternative materials, where practicable; • Specify materials that can be sourced locally; • Specify materials in standard quantities, to prevent over-supply and wastage; • Incorporate site-won materials where possible; • Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.	Design review to identify ways of reducing material usage.	N/A	Designer	Carbon Calculator Tool to assess carbon emissions against KPIs.	Initial: Date:	N/A
C1.2		Reduce greenhouse gas emissions from waste generation and transport from site.	• Review design to specify materials in standard quantities, to prevent over-supply and wastage; • Incorporate site-won materials where possible;	Design review to identify ways of reducing material usage.	N/A	Designer	Carbon Calculator Tool to assess carbon emissions against KPIs.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			• Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.						
C1.3	Ch 15, section 15.11	Reduce greenhouse gas emissions from construction processes.	Review design with energy and water efficiency construction processes in mind.	N/A	N/A	Designer	Carbon Calculator Tool to assess carbon emissions against KPIs.	Initial: Date:	N/A
C1.4	Ch 15, section 15.2.10	To prevent: • Hotter summers damaging materials and reducing asset lives; • Heavier rain and wetter winters from weakening soil beneath the carriageway causing damage to assets.	Review the detailed design to ensure that the: • Materials selected are robust enough to endure a range of extreme climate futures; • Structures are designed to adapt to the expected variations in temperature.	Design review	N/A	Designer	Statement from Design Team confirming the design is appropriate given the projected future changes to climate.	Initial: Date:	N/A
C1.5	Ch 15, section 15.2.10	To prevent increased sedimentation during hotter drier summers from reducing the design capacity of drainage infrastructure.	Review the detailed design to ensure that the: • Landscape design is appropriate; • Drainage design is appropriate.	Design review	N/A	Designer	Statement from Design Team confirming the design is appropriate given the projected future changes to climate.	Initial: Date:	N/A
C1.6	Ch 15, section 15.2.10	To ensure embankment stability during hotter drier summers.	Review the detailed embankment design to ensure it accounts for hotter drier summers and check the associated proposed geology and soils mitigation has been implemented.	Design review	N/A	Designer	Statement from Design Team confirming the design is appropriate given the projected future changes to climate.	Initial: Date:	N/A
C1.7	Ch 15, section 15.2.10	To prevent assets being damaged by more frequent storms in the future (in particular lighting and electronic display equipment).	Review the detailed designs level of protection against transient overvoltage (lightning strikes).	Design review	N/A	Designer	Statement from Design Team confirming the design is appropriate given the projected future changes to climate.	Initial: Date:	N/A
C1.8	Ch 15, section 15.2.10	To prevent flood risk increasing beyond acceptable limits in the future as a result of climate change (wetter winters and heavier rain).	Review the climate change allowance incorporated into the detailed drainage design.	Design review	N/A	Designer	Statement from Design Team confirming the design is appropriate given the projected future changes to climate.	Initial: Date:	N/A
C1.9	Ch 15, section 15.2.10	To protect the water environment from impacts associated with climate change.	Review the detailed drainage design to ensure any connections to the water environment include sufficient pre-treatment to protect receptors against more intense first flush impacts in the future. Also check the design accounts	Design review	N/A	Designer	Statement from Design Team confirming the design is appropriate given the projected future changes to climate.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
			for the fact that river flows could reduce in the future.						

Table 1.3: REAC Part 2: Environmental Action Plan – Actions required during construction

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
Air Quality									
AQ2.1	Ch 5, section 5.9	Limit and control emissions to air during construction.	Develop a management plan that shall take into account the principles of prevention and mitigation and Elmbridge and Guildford Borough Councils' Best Practice Guidance to prevent dust and pollutants emissions as far as reasonably and practically possible. To limit and control emissions to air during construction, works shall be carried out in accordance with the Best Practicable Means, as described in Section 79 (9) of the Environmental Protection Act 1990, to reduce fumes or emissions which may impact upon air quality. The Principal Contractor will undertake mitigation measures to address construction dust from the site, taking into account the impact of site preparation and construction works on residential and business uses. These measures include: • Regular water-spraying and sweeping of unpaved and paved roads to minimise dust and remove mud and debris; • Spraying water during cutting/grinding operations (i.e. cutting curb slabs); • Removing mud and other debris from wheels and chassis of vehicles leaving the site where appropriate to minimise the amount of mud and debris deposited on the roads using wheel washes, shaker bars or rotating bristles; • Ensuring that all vehicles with open loads of potential dusty materials are securely sheeted or enclosed; • Enforcing and maintaining a low speed limit on site i.e. unmade surfaces to minimise dust entrainment and dispersion; • Ensuring any temporary site roads are no wider than necessary to minimise their surface area; • Damping down of surfaces prior to their being worked particularly in dry conditions; • Storing dusty materials away from site boundaries and in appropriate containment (e.g. sheeting, sacks, barrels etc.); • Minimising the height of stockpiles and profiling to minimise wind-blown dust emissions and risk of pile collapse; • Locating stockpiles out of the wind (or cover, seed or fence) to minimise the potential for dust generation; and All vehicle engines and plant motors shall be switched off when not in use.	Prepare Dust, Noise and Nuisance Management Plan and consult with local authorities.	Daily observations by ECoW	Principal Contractor	Daily Site Audits. No justified complaints of emissions to air, such as dust, from receptors in the vicinity of the Scheme. Dust issues to be included in monthly project environmental reports.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
Noise and Vibration									
NV2.1	Ch 6, section 6.9	Limit noise emissions during construction.	• Consult with the Environmental Health Departments at the local authorities to obtain guidance on their requirements for managing and controlling noise and vibration from construction works; • Monitor construction noise and vibration levels as required by the local authority. If noise/vibration levels are elevated locally mitigate, change method of working, temporary re-house, insulate property, etc; • Submit a Section 61 application under the Control of Pollution Act 1974 for some construction works, especially if night-time working is proposed; • Keep local residents and other affected parties informed of the progress of the works, including when and where the noisiest activities will be taking place and how long they are expected to last; • Use good working practices namely use of exhaust silencers in all vehicles and plant, engineering controls (e.g. acoustic covers, mufflers or suppressors) for plant and equipment like generators, compressors, pneumatic percussive tools etc., to reduce noise where relevant to their activities to prevent nuisance. Other good practices include intermittent shutdown of equipment when not in use, avoiding operation of noise generating plant and equipment close to noise-sensitive buildings as far as practicable, avoiding cleaning of concrete mixers by hammering the drums, installing temporary noise barriers and careful handling of materials to prevent generation of noise shall be adopted during the construction phase; • In addition to the above good working practices, where piling is required, the piling method should be selected carefully to minimise noise and vibration impacts at receptors by generating low levels of vibration, methodologies such as rotary bored piling should be considered first; • Selection of routes and programs for the transportation of construction materials, spoil and personnel to minimise noise and vibration at sensitive receptors; • Avoiding vehicles waiting or queuing on the Public Highway with engines running; and • Designing and construction of temporary infrastructure to minimise noise and vibration.	Prepare Dust, Noise and Nuisance Management Plan and consult with local authorities. Agree measures with Highways England, local authorities and local residents.	Maintain noise and vibration monitoring locations throughout construction and report on a monthly basis. Works to be stopped where agreed levels are exceeded until alternative methods to reduce to acceptable levels are developed.	Principal Contractor	Daily site audits, Section 61 consent, letter drop, community liaison. Provide monitored data to local authorities. If necessary, agree updated mitigation strategy.	Initial: Date:	Any assessment based on agreed noise and vibration limits with local authorities.
Biodiversity									

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
BD2.1	Ch 7, section 7.9	Preservation of woodland, scrub, grassland and notable habitats.	h. Application and management of licence/consent/assent relevant to protected/notable habitat; • Clearly mark vegetation which is to be lost or retained with a pre-agreed marking system; • Loss of ancient woodland habitat and veteran trees shall be avoided, and the Principal Contractor will seek guidance from the Designer/Client if it is thought ancient woodland and veteran trees might be affected.	Works to be carried out in accordance with the Landscape and Ecology Management and Monitoring Plan (application document TR010030/APP/6.5) and with the Series 3000 specification for the works.	In accordance with the Landscape and Ecology Management and Monitoring Plan (application document TR010030/APP/6.5).	Principal Contractor with guidance from the suitably qualified ECoW.	Minimise and prevent unnecessary loss of vegetation to be retained. Increase the quality of the habitat thus increasing the area's biodiversity. Mitigation measures as included in the CEMP, assents/consents and outlined in the Detailed Design.	Initial: Date:	Post monitoring and post construction care required for the predetermined time frame. Subject to Statement of Common Ground with Natural England and Surrey County Council. Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.2	Ch 7, section 7.9	Creation of SPA compensation land	• Source tree stock from certified providers; • Prepare ground for tree planting and plant small groupings of 5-7 feathered trees; • Translocate an agreed amount of dead wood from works area.	SPA Management and Monitoring Plan (Application Ref: TR010030/APP/6.5)	Monitoring plan	Principal Contractor with guidance from the suitably qualified ECoW.	Plant trees as per the specification, ensuring that the SPA compensation land meets the proposals described in the SPA management and monitoring plan	Initial: Date:	Post monitoring and post construction care required for the predetermined time frame. Subject to Statement of Common Ground with Natural England and Surrey County Council. Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.3	Ch 7, section 7.9	Creation of SPA enhancement areas	• Survey SPA enhancement areas and identify trees with bat roost potential (BRP), veteran features, or significant value for saprophytic invertebrates (e.g. standing dead wood) and mark trees for retention;	SPA Management and Monitoring Plan (application document TR010030/APP/6.5)	Monitoring plan	Principal Contractor with guidance from the suitably qualified ECoW.	Remove trees and undertake selective planting as per the specification, ensuring that the SPA enhancement areas meet the proposals described in the	Initial: Date:	Post monitoring and post construction care required for the

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			• Fell trees using a forestry harvester, collect all cut material with a timber forwarder and remove; • Selective planting of trees within some of the woodland thinning areas to increase diversity. • Grind 80% of tree stumps, leaving those which have potential value for saprophytic invertebrates (e.g. a large diameter and/or existing rot); • Within Ockham Common section, treat rhododendron, sycamore or birch stumps with herbicide to discourage re-growth (Wisley Common has grazing to control this); • 'Scrape' the top 15-20cm layer which will contain the needle 'leaf litter' and the 'humus layer' to expose the mineral soil layer; • Install fire breaks as necessary.				SPA management and monitoring plan		predetermined time frame. Subject to Statement of Common Ground with Natural England and Surrey County Council. Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.4	Ch 7, section 7.9	Minimise disturbance to protected species.	• Application and management of licence/consent/assent relevant to protected species; • When construction is occurring in close proximity to known protected species sites the ECoW will be present as much as possible.	Construction team to adhere to method statements with support of ECoW.	Regular reporting on progress as specified in the method statement – details to be advised.	Principal Contractor appointed ECoW	No fatalities or impact on normal behaviour patterns of protected species.	Initial: Date:	Additional action maybe required if the distribution of protected species was to change. An ecologist's advice should be sort if during construction a protected species is located. Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.5	Ch 7, section 7.9	Mitigation of impact on great crested newt.	• Application and management of Precautionary Working Method Statement.	Construction team to adhere to method statements with support of ECoW.	Regular reporting on progress as specified in the method statement – details to be advised.	Principal Contractor appointed ECoW	No fatalities and impacting or impact on normal behaviour patterns of protected species.	Initial: Date:	Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.

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BD2.6	Ch 7, section 7.9	Mitigation of impact on common reptiles and sand lizards.	• Application and management of Precautionary Working Method Statement; • Inspection and maintenance of reptile fencing during the construction phase; • No holes or trenches to be left open over night without battered sides, covered or use of ramps; • Maintenance and wherever possible, enhancement of habitat connectivity and commuting routes for species, including underpasses and culverts.	Construction team to adhere to method statements with support of ECoW.	Regular reporting on progress as specified in the method statement – details to be advised.	Principal Contractor	No fatalities and impacting or impact on normal behaviour patterns of protected species.	Initial: Date:	Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.7	Ch 7, section 7.9	Mitigation of impact on badgers.	• Application and management of Badger Licence or Precautionary Working Method Statement; • Conduct walkover surveys and monitoring of badger sett on site prior to commencement of and during construction phase; • Cover the open excavation or provide ramps during construction phase; • Installation of badger fencing to prevent access to roads during construction phase; and • Maintenance and wherever possible, enhancement of habitat connectivity and commuting routes for species, including underpasses and culverts.	Construction team to adhere to method statement in licence with support of licence holder.	Regular reporting on progress as specified in the method statement – details to be advised.	Principal Contractor and licence holder.	No fatalities and impacting or impact on normal behaviour patterns of protected species.	Initial: Date:	Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.8	Ch 7, section 7.9	Mitigation of impact on bats.	• Application and management of Bat Licence or Precautionary Working Method Statement; • Aerial inspection and soft felling under ecologist supervision for all trees with bat roost potential within the Scheme footprint needing to be cleared during construction phase; • Inspection of built structures to be checked to determine any ad hoc presence of roosting bats during construction phase; • RAMS from subcontractors will be reviewed and authorised by the Principal Contractor's environment team before work commences to ensure the requirements above are understood, incorporated into working methods and adhered to; • High noise level and high impact machinery and operations, particularly during hibernation period during the construction phase shall be avoided wherever possible; • Retention of features with potential to provide bat roosting sites where possible (i.e. mature trees and suitable structures); • Provision of a sensitive lighting design during construction that takes bats and other wildlife into account; • Installation of bat hop overs during construction (material covered heras fencing and potted plants) to	Construction team to adhere to method statement in licence with support of licence holder.	Regular reporting on progress as specified in the method statement – details to be advised.	Principal Contractor and licence holder.	No fatalities and impacting or impact on normal behaviour patterns of protected species.	Initial: Date:	Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.

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			encourage flight over working areas where they intersect with commuter routes; and • Any night lighting (relating to site compound security or for night time working) to be directed and avoid illumination of key foraging areas during construction, should not produce UV light, has a narrow wavelength, and avoids blue-white colour of light. Warm white lighting should be used if possible.						
BD2.9	Ch 7, section 7.9	Mitigation of impact on breeding birds.	• Vegetation to be retained/lost (including trees and scrubs) would be clearly demarcated with an agreed marking system with the Principal Contractor to avoid encroachment into areas of high value bird habitat; • Avoid nesting season for vegetation clearance (pre-construction phase), where possible. Where this is not possible, works to occur under the supervision of an ecologist who will conduct nesting bird checks and set up protective areas around nest until the nest has been abandoned or the chicks have fledged; • All birds, their nests and eggs are protected by Wildlife and Countryside Act 1981 under which it is an offence to intentionally kill, injure, disturb or take any wild bird. This legislation and its requirements should be highlighted in staff inductions, toolbox talks and signed by all contractors, operators and subcontractors during pre- construction and construction phase; and • If nesting birds are encountered during construction, contractors are to stop work immediately and contact the Principal Contractor's ecologists for advice and the production of a suitable revised method statement.	Construction team to adhere to method statements with support of ECoW.	Regular reporting on progress as specified in the method statement – details to be advised.	Principal Contractor	No fatalities and impacting or impact on normal behaviour patterns of protected species.	Initial: Date:	Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.10	Ch 7, section 7.9	Hobby	During the breeding season, surveys to determine if hobbies are nesting within the wooded area are to be carried out. If found to be nesting, a buffer will be put in place to ensure that the hobbies are not disturbed at the nest.	Surveys to be undertaken for presence of Hobby and construction team to adhere to method statements with support of ECoW.	Regular reporting on progress as specified in the method statement – details to be advised.	Principal Contractor	Determining presence or absence and determining active nest sites. Annual reports to be prepared during monitoring period.	Initial: Date:	Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.
BD2.11	Ch 7, section 7.9	Dartford warbler, nightjar and woodlark	• Disturbance of open heathland areas will be avoided during the nesting bird season (typically 1st March to 31st August, but this is extended to include all of February to avoid the risk of disturbing woodlarks on nesting territory); and • SPA enhancement works will increase the amount of available open heathland habitat for these species. The enhancement work will be staged to enable a range of habitat regrowth ages, and to avoid attracting sensitive heathland species into areas immediately	Works to be carried out in accordance with SPA Management and Monitoring Plan (application document TR010030/APP/6.5) and with the Series 3000 specification for the works.	In accordance with SPA Management and Monitoring Plan (application document TR010030/APP/6.5).	Principal Contractor	As baseline numbers or better. Annual reports to be prepared during monitoring period.	Initial: Date:	Management Plans for the proposals in the SPA and other areas will be produced which will set out management and monitoring arrangements.

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			adjacent to the Scheme footprint during the construction work.						
BD2.12	Ch 7, section 7.9	Prevent spread of invasive species.	• Construction methods to follow agreed method statement; and • Invasive species management plan and control measures acted upon prioritising avoidance.	Construction team to adhere to method statements with support of ECoW.	Regular reporting on progress as specified in the method statement - details to be advised.	Competent subcontractor to be appointed by Principal Contractor to manage invasive plant species.	No additional spread of invasive species on site as a result of the Scheme	Initial: Date:	An appropriate management plan should be produced by a suitably competent subcontractor to ensure the proposed works can be undertaken within the provisions of appropriate legislation and Codes of Practice. The management plan would detail methods of control and disposal. The implementation of any management plan would be addressed through measures detailed in the CEMP.
Road Drainage and the Water Environment									
RD2.1	Ch 8, section 8.9	Prevent adverse impacts on water quality.	• Adopt good working practices and follow the relevant Environment Agency Pollution Guidance as noted in the ES; • Establish the permanent drainage system for the Scheme early in the construction process to reduce the temporary risks of pollution to the water environment during construction; • Make spill kits available at appropriate locations and that site personnel have been trained in their use; • Comply with the Environmental Incident Control Plan on site during the works; • Where possible, ensure storage of construction materials or temporary stockpiling of excavated soils away from surface waterbodies and drains; • Materials, chemicals, and fuels shall be stored in suitable areas as per the COSHH requirements and Control of Pollution (Oil Storage) Regulations 2001. to	Contractor to conform to good working practices and ECoW to review at regular intervals.	Compliance with agreed Pollution Prevention Guidance notes.	Principal Contractor	No detrimental effect on water quality during the construction phase. No environmental incidents arising from the construction works. Monthly reporting.	Initial: Date:	N/A

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			prevent harm to Human Health and Environment.; and • Construction plant must be refuelled in designated areas on an impermeable surface, away from drains and watercourses.						
RD2.2	Ch 8, section 8.9	Comply with Water Framework Directive.	Ensure appropriate mitigation as stated in the Environmental Statement is implemented during construction.	Sign off by ECoW.	Mitigation measures to be signed off by Designer on completion.	Principal Contractor	No environmental incidents arising from the construction works.	Initial: Date:	N/A
RD2.3	Ch 8, section 8.9	To limit the impact on the water environment as a result of works over or adjacent to water bodies.	• The placing of any wet concrete in or close to any watercourse would be controlled in order to minimise the risk of leakage of wet cement into the watercourse; • The washing of any concrete mixing plant or ready-mix lorries would be carried out in a way that prevents cleaning effluent to flow into any watercourse or drain; • Haul roads on the site and the approaches to the watercourse would be cleaned regularly in order to prevent the build-up of mud; • Before any discharge of water were to be made from the site, adequate provisions for preventing pollution would be made, such as by incorporating silt settlement techniques. The techniques employed would be chosen as appropriate for each specific site. Techniques may include settlement lagoons, use of straw bales for silt trapping and use of flocculants; • pH, chemical, and sediment to be managed and monitored in line with relevant permits or Memorandums of Understanding for all works near watercourses and suitable treatment implemented if necessary; • Areas of bare soil would be kept to a minimum to reduce silty runoff; • Areas which may generate contaminated water would need to be bunded and have water discharged to self-contained units with treatment facilities. There would be no discharge to groundwater; and • Tests would be undertaken to ensure contaminated material is identified, isolated and reworked or removed to special landfill to avoid any leachate problems.	Contractor to conform to good working practices and ECoW to review at regular intervals.	Reviewed at regular intervals during construction.	Principal Contractor	No detrimental effect on water quality during the construction phase. No environmental incidents arising from the construction works. Monthly reporting.	Initial: Date:	N/A
RD2.4	Ch 8, section 8.9	To limit impacts arising from disturbance of silt.	• All pumped drainage from the construction works, including areas used for temporary storage of construction materials or excavated soils, would be passed through silt settlement treatment prior to discharge to surface watercourses or drains; • All roads and hardstandings would be kept clean and tidy in order to prevent the build-up of oil and dirt that	Contractor to conform to good working practices and ECoW to review at regular intervals.	Reviewed at regular intervals during construction.	Principal Contractor	No detrimental effect on water quality during the construction phase. No environmental incidents arising from the construction works. Monthly reporting.	Initial: Date:	N/A

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			may be washed into a watercourse or drain during heavy rainfall; • Where appropriate, watercourses would be shielded by bunds and/or silt fencing in order to prevent contamination from surface water runoff; and • The use of water sprays for reducing dust or washing construction areas would be carefully regulated in order to avoid washing substantial quantities of silt (etc.) into surface water drains. Where large quantities of gravel, mud or other such material required clearing, the area would be swept clean prior to any subsequent hosing down.						
RD2.5	Ch 8, section 8.9	To limit impacts arising from contamination of water bodies by wet cement or concrete, oil or other liquids as a result of accidental spillage or discharge.	• Manholes and catch pits would be covered to prevent concrete/cement ingress; • Concreting at watercourse culvert sites would be closely supervised to prevent concrete contamination of the watercourses; • The washing of any concrete mixing plant or ready-mix lorries would be carried out so as to prevent the resulting effluent from being allowed to discharge/flow into any watercourse or drain; • Materials to be stored in line with the Resources Management Plan, and in line with the Control of Pollution (Oil Storage) Regulations 2001 and COSHH 2002; • Small plants such as pumps, concrete mixers, air compressors shall be provided with drip trays; • All drums and barrels containing fuel, chemical, oil shall be stored on paved and bund-shield (impermeable bunds with a capacity of 110%) surfaces with sheds and shall be properly labelled with flow control taps; • An emergency response plan shall be incorporated in the CEMP/EMS prior to the construction phase to handle any spillage or leakage of potentially contaminating substances; and • Spill kits shall be provided at all locations where hazardous substances are stored with special focus to the areas close to drains and waterbodies.	Contractor to conform to good working practices and ECoW to review at regular intervals.	Reviewed at regular intervals during construction.	Principal Contractor	No detrimental effect on water quality during the construction phase. No environmental incidents arising from the construction works. Monthly reporting.	Initial: Date:	N/A
RD2.6	Ch 8, section 8.9	To avoid potentially contaminated runoff from the highway during construction and operation.	Appropriate drainage to collect, treat or contain runoff during construction and operation to be provided.	Principal Contractor to carry out all works as set out in the SWMP. ECoW to review.	Reviewed at regular intervals during construction.	Principal Contractor	Appropriate mitigation measures set out in CEMP to collect any contaminated water.	Initial: Date:	N/A
RD2.7	Ch 8, section 8.9	To limit impacts arising upon groundwater during earthwork.	• Operations to be carried out under the Environmental Permitting Regulations (Abstraction and Discharge Permits) and other relevant legislation such as Groundwater Investigation Consent; • Groundwater would be pumped from excavations into lagoons/settlement tanks in order to enable sediment	ECoW to review.	Reviewed at regular intervals during construction.	Principal Contractor	Mitigation measures as included in the CEMP.	Initial: Date:	N/A

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			to drop out, and if necessary, sediment removal would be aided by the addition of flocculants, subject to the agreement of the Environment Agency. After sediment removal, water would be discharged to a watercourse subject to agreement/permit with the Environment Agency; • Subsoil would be exposed for a minimum length of time after topsoil strip. Cut-off trenches, where necessary, would be excavated in order to prevent massive surface water runoff into watercourses. Cut-off trenches would discharge into sediment lagoons, with discharge to watercourses subject to prior consent of the Environment Agency; • Topsoil/vegetation along watercourses would be retained in order to aid attenuation and sediment infiltration; • Construction phase operations would be carried out in accordance with the guidance contained within the Environment Agency Pollution Prevention Guidelines, and with due regard to the Environment Agency Policy and Practice for the Protection of Groundwater; and • Consideration would be given to Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention. Piling operations would be subject to Risk Assessment and any measures to prevent pollution to the aquifer would be covered by piling method statements.						
RD2.8	Ch 8, section 8.9	To prevent adverse effects on flood risk.	Implement construction phase Surface Water Management Plan. During culvert works monitor water levels within the watercourse, put in procedures to evacuate personnel (and plant, if safe to do so) to areas of higher ground if water levels are almost at bank full/start to overtop.	ECoW to review.	Reviewed at regular intervals during construction.	Principal Contractor	No increase in flood risk during the construction phase.	Initial: Date:	N/A
Landscape									
LV2.1	Ch 9, section 9.9	To limit visual intrusion and impacts upon landscape character during construction and to limit impacts upon existing trees and vegetation.	• Ensure any loss of vegetation is kept to a minimum by careful siting of site compounds, haulage routes and stockpiles/storage areas; • Prepare method statement for earth movements and soil storage; • Limit stockpiles of materials and deliveries to an as and when needed basis wherever possible; • Welfare units and temporary site offices in a colour that would aid integration with the surrounding landscape where possible; • Use limited and/or directional lighting wherever possible to restrict night time impacts.	Adhering to guidance outlined in respective project documents. Principal Contractor to set out methods and gain approval from Client/Designer	Daily site audits.	Principal Contractor	Principal Contractor's method statement approved by Highways England. No transgressions of agreed working arrangements.	Initial: Date:	N/A

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LV2.2	Ch 9, section 9.9	Minimise impacts of site clearance to prevent damage to trees, significant vegetation and habitat.	• ECoW to oversee all site clearance and environmental implementation works; • Ensure suitable habitat protection fencing is erected prior to site clearance and commencement of construction; • Arborist/Ecologist input on requirement for tree works and tree protection of important/mature trees to BS 5837:2012 Trees in relation to construction; and • Prevent damage to roots, stem and branches of existing trees to be retained.	Method Statement for tree protection works to be prepared. Consult on tree protection methods with Woodland Trust, Surrey Wildlife Trust and local authorities in accordance with industry standards.	Maintenance of tree protection during construction to form part of ECoW weekly reporting	Principal Contractor	Identification of all vegetation for protection and protection fencing in accordance with BS 5837:2012. Confirmed within Principal Contractor's method statement.	Initial: Date:	N/A
LV2.3	Ch 9, section 9.9	Soil handling and mitigation planting in accordance with detailed landscape and ecology design contract documents.	• Soils to be handled in accordance with an approved Soil Handling and Management Strategy prepared by a specialist in soil management. • ECoW to ensure subsoil and topsoil profiles are of appropriate depths and soils meet specification (soil analysis) prior to commencement of planting and seeding works; • Ensure all gradients and final levels are correct and in line with the Scheme design. Make sure there are no areas susceptible to waterlogging through poor drainage; • Ensure soil is prepared in line with the landscape and ecology specification (ground preparation, cultivation); • Supply and sow seeds at the correct time of year for each specified seed mix (Mar-May) and in accordance with the specification; and • Supply and plant trees/shrubs in accordance with the specification during the next available planting season after completion of earthworks (Oct-March).	Prepare project Soil Handling and Management Strategy and consult with Natural England and Surrey Wildlife Trust on contents Adhering to guidance outlined in respective project documents and the Proposed Scheme Layout Plans.	Weekly inspection and reporting by ECoW	Principal Contractor	Soil management operations to be approved by designer's soil specialist Obtain adequate subsoil and topsoil analysis prior to spreading. ECoW to confirm soil and planting methods during planting works and carry out inspection on completion. Planting to be in accordance with BS 4428:1989, BS8545:2014, BS3882:2015 where relevant.	Initial: Date:	Proposed Scheme Layout Plans (application document TR010030/APP/2.10)
Geology and Soils									
GS2.1	Ch 10, section 10.9	Limit permanent removal of soils during earthworks and foundation construction and reuse of excess materials.	A Construction Resources Management Plan (CRMP) will be outlined to reduce the volume of materials permanently removed from the site. A SWMP and SHMP will also be outlined for handling and management of waste soil.	Environmental controls will be included within the CEMP.	Monitoring measures shall be detailed within the CEMP.	Principal Contractor	Adequate earthworks balance achieved. Disposal off site reduced as much as possible.	Initial: Date:	N/A
GS2.2	Ch 10, section 10.9	To avoid waste generation and soil disposal offsite.	Where practicable, treatment of 'unacceptable' material (i.e. material not suitable for use in engineering works)	Environmental controls will be included within the	Monitoring measures shall be detailed within the	Principal Contractor	Adequate earthworks balance achieved. Disposal off site reduced as much as possible.	Initial: Date:	N/A

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			onsite to render it acceptable for use in the works (for example, by treatment with lime or cement).	CEMP, SWMP and SHMP.	CEMP, SWMP and SHMP.				
GS2.3	Ch 10, section 10.9	Maintenance of quality of stockpiled soils and protection of soil structure.	• Highways England will provide the Principal Contractor with all relevant land quality data to inform reinstatement specification, including chemical and geotechnical information; • All temporarily acquired land occupied or disturbed during the construction process, shall be restored/reinstated to a condition equivalent to its original state as agreed pre-construction by Highways England; • If spoil is to be spread on land intended for farming, addition of topsoil will be undertaken and the land will need an aftercare period of at least five years to rectify settlement and compaction. Use appropriate machinery to minimise soil compaction; • The quality and quantity of soil on site should be maintained by implementing appropriate techniques for stripping, stockpiling and reinstatement. Disturbed soils should be reinstated to their original quality using a SHMP; • Strip topsoil and subsoil when weather and soil conditions are suitable. Separate storage and management of topsoil and subsoil storage heaps. Return topsoil and subsoil to the original plots where possible. If the stockpile has remained for more than 6 months then it shall be remediated in accordance with agreed reinstatement parameters by Highways England; • Work will be undertaken in accordance with appropriate guidelines and best practices (e.g. Defra's 2009 Code of Practice for Sustainable Use of Soils on Construction Sites, BS 3882:2015 Specification for topsoil); • A Resources Management Plan shall be included as part of the EMS to reduce the amount of material permanently removed from the area of the Scheme; • Define access routes to all working areas and restrict access to only these areas; and • Include drainage at the toe of embankment slopes.	Environmental controls will be included within the CEMP and SHMP.	Monitoring measures shall be detailed within the CEMP and SHMP.	Principal Contractor	Approval and acceptance of soil areas by ECoW and land owners.	Initial: Date:	This action is continued in those to be undertaken after the end of construction.
GS2.4	Ch 10, section 10.9	Prevention of spread of possible contamination within site soils. Prevention of spills and leaks of hazardous substances.	• Implementation of CL:AIRE MMP, including an Inspection and Discovery Strategy; • Hazardous substances, including contaminated soil, fuels, chemicals, waste and construction material, will be stored, handled, transported and disposed of, according to relevant legislation and best practice guidance to mitigate spillages and leaks; • Develop Water Management Plan to manage groundwater and surface water appropriately and ensure that there is no run-off from the works, any	Environmental controls will be included within the CEMP and SHMP.	Monitoring measures shall be detailed within the CEMP and SHMP.	Principal Contractor	No significant pollution incidents during the works. Matters to be reported each month.	Initial: Date:	N/A

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			material/waste stockpiles and storage containers into adjacent/nearby surface watercourses; • Implementation of appropriate pollution incident control e.g. plant drip trays and spill kits; and safe storage of fuel, oils and equipment during construction; • Possible spreading of contamination within site soils, spillage and leakages of hazardous substances shall be reduced through proper storage, handling, transportation and disposal of hazardous substances including contaminated soil, fuel, chemicals, hazardous wastes, contaminated construction materials in accordance with relevant legislation and best practice guidelines; and • Procedure to manage and remediate any contaminated land encountered during the construction shall be in place. This will be approved by a suitably qualified person.						
GS2.5	Ch 10, section 10.9	Prevent pollution of Principal Aquifers and Secondary Aquifers. Prevent pollution of surface water features.	• Open trench construction; • Where piling or penetrative ground improvement is required through contaminated ground, especially in the vicinity of source protection zones and aquifers, works will be carried out in accordance with the Environment Agency's "Piling into contaminated sites" guidance and "Piling and Penetrative Ground Improvement Method on Land Affected by Contamination: Guidance on Pollution Prevention" and a Foundation Work Risk Assessment may be required to be undertaken; • Liaison with the EA Hydrogeology specialist should be undertaken and suitable permits applied for e.g. Groundwater Investigation Consent, should pumping tests be required; and • Hazardous substances, including contaminated land, fuels, chemicals, waste and construction material, will be stored, handled, transported and disposed of, according to relevant legislation and best practice guidance to mitigate spillages and leaks.	Environmental controls will be included within the CEMP and as per discussions with the Environment Agency.	Monitoring measures shall be detailed within the CEMP and as per discussions with the Environment Agency.	Principal Contractor	No significant pollution incidents during the works. Matters to be reported each month.	Initial: Date:	N/A
GS2.6	Ch 10, section 10.9	Protection of future site users from the short-term risk of exposure to contaminated dust through ingestion/ inhalation/dermal contact.	• Dust will be suppressed using best practice methods to prevent spread of potentially contaminated windblown material. Dust suppression measures shall include wheel washing for vehicles leaving the site and re-vegetation of earthworks and exposed areas; • Use dust suppression system in the area of any mobile screening and crushing plant; and • Health and Safety Risk Assessments and Environmental Risk Assessments within method statements.	Methods as specified in best practice guidance.	As required and in consultation with local authorities.	Principal Contractor	No reported incidents. Monthly reporting to Client.	Initial: Date:	N/A
Cultural Heritage									

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CH2.1	Ch 11, section 11.9	Preservation by record of archaeological remains.	Highways England will develop a program of archaeological investigation (i.e. Written Scheme of Investigation) to be undertaken in areas affected by the Scheme, including construction compounds and access routes, where there is a potential for significant archaeological remains to survive. The scope and extent of such investigations should be developed in consultation with the Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils, and subject to a Written Scheme of Investigation for their approval. This work will comprise a geophysical survey in the first instance, with an archaeological watching brief on all geotechnical investigations to ascertain the palaeo-environmental potential of the study area. Implement archaeological monitoring during construction (i.e. watching brief), (or other means as appropriate, depending on the results of the geophysical survey conducted under action CH1.1) in accordance with the Written Scheme of Investigation prepared under action CH1.1.	Agreement with Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils.	As determined necessary by methodologies outlined in the Written Scheme of Investigation. Archaeological monitoring required in all areas identified by local planning policy as areas of high archaeological potential.	Principal Contractor Heritage Specialist	Consultation with the local authority Archaeological Advisor. Production of a Written Scheme of Investigation. Appointment of an archaeological subcontractor to undertake the agreed works. Completion of the works in accordance with the relevant Written Scheme of Investigation and to the satisfaction of the Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils.	Initial: Date:	Archaeological works to be monitored by a specialist archaeological consultant. Opportunity to be given to the Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils to visit site.
Materials and Waste									
MW2.1	Ch 12, section 12.9	Minimise material use and impact of material use from the Scheme.	Procurement of materials shall ensure optimal quantity of material delivery on-time to prevent over supply and waste generation on site. Where practicable, standardisation of materials and building elements will be incorporated into the Scheme design to minimise required material resources and the production of waste, e.g. the use of prefabricated components. In addition, where practicable, the materials required for the Scheme shall be sourced from local suppliers with responsible sourcing certifications. Ensure all timber products are sourced from sustainable sources. Where possible timber procured for the Scheme will be obtained from recycled, reclaimed sources or be accredited to meet sustainable forestry standard, such as the Forestry Stewardship Council. Any remaining timber not sourced through the above will target a known temperate source using the Defra central point of expertise in timber as a guideline. Consider re-use of materials within the Scheme at all stages of construction. Soil and aggregate will be generated during construction, demolition and excavation works. This should be re-used within the Scheme where it is suitable and practical to store it. The possibility of using the material on other local Schemes should also be explored.	A Scheme-wide Materials Management Plan will be developed to ensure that materials imported to site and site-won materials are managed effectively. This document will be updated during the construction phase.	Under the CL:AIRE Definition of Waste: Development Industry Code Practice, a Materials Management Plan must be reviewed by a Qualified Person and a declaration signed. The Materials Management Plan will be regularly reviewed and updated during the construction phase.	Principal Contractor	Confirmation from the Principal Contractor that the Scheme 'As Constructed' is in accordance with the design. Where soil or aggregate is reused on-site under a Materials Management Plan, a verification report will need to be produced and kept for 2 years. Monitor through programme of Environmental Auditing and Reporting.	Initial: Date:	N/A
MW2.2	Ch 12, section 12.9	Minimise waste generation and impact of wastes arising from the Scheme.	Implement good materials management and good practice construction methods to minimise waste generation. Wastes that are generated will be	A Site Waste Management Plan will be implemented by the Principal	Waste transfer notes and consignment notes will be kept on	Principal Contractor	Confirmation from the Principal Contractor that the Scheme 'As Constructed' is in accordance with the design.	Initial: Date:	N/A

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			segregated and stored in dedicated areas. All wastes will be managed in accordance with the waste hierarchy. Wastes generated during the construction phase of the Scheme will be sampled and characterised to determine the appropriate waste classification, i.e. inert, non-hazardous or hazardous. Compliance with waste Duty of Care will be ensured to prevent negative environmental impacts arising from handling, storing, transporting and disposing of wastes arising from the Scheme. Transfer of waste off-site will be carried out by a licensed waste carrier and with the appropriate documentation including: • a written description of the waste and the waste code; • non-hazardous waste will be accompanied by a transfer note or appropriate season ticket; and • hazardous waste will be accompanied by a consignment note. Checks will be made by the Principal Contractor or waste holder to ensure the receiving facility is authorised to receive the waste and undertake the required waste activity. Where safe and appropriate to do so, road planings may be left in situ to avoid unnecessary generation of hazardous waste arisings requiring disposal. This activity will require an exemption or environmental permit. An appropriate exemption or environmental permit will be sought for storing, treating, using or disposing of waste as part of the Scheme. For example, crushing of demolition waste may be required to produce an aggregate which can be used A dedicated Waste Manager from the Principal Contractor shall be responsible for all the waste strategy and management measures including segregation, collection, storage, transportation and disposal/treatment of hazardous and non-hazardous wastes arising from the Scheme. The Principal Contractor must ensure that Waste Electrical and Electronic Equipment produced in the construction, demolition and excavation should be segregated and managed separately from other wastes.	Contractor. The document will identify personnel and their roles and responsibilities relating to waste. This includes maintaining records of waste transfers. All personnel working on the site should be aware of waste management procedures. The Principal Contractor will manage construction, demolition and excavation wastes in accordance with the Site Waste Management Plan.	record during the construction phase and as required by the legislation. Waste carrier licences and waste management facility permits will be checked to ensure they are authorised to undertake the waste activity.		Implement CEMP, MMP and SWMP, with all construction workers aware of measures identified in plans. Monitor through programme of Environmental Auditing and Reporting.		
WM2.3	Ch 12, section 12.9	Reduce effects of importing materials and exporting waste.	Give preference to nearby sources of materials and suitable local or regional waste management facilities. Implement good practice construction methods and reduce haulage distances and/or need to travel.	The CEMP will consider sources of construction materials. The CEMP and Site Waste Management Plan will consider suitable	The CEMP and Site Waste Management Plan will be reviewed and updated on a regular basis.	Principal Contractor	Implement CEMP, MMP, Site Waste Management Plan and traffic management plan, with all construction workers aware of measures identified in plans. Monitor through programme of Environmental Auditing and Reporting.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
				waste management facilities.					
People and Communities									
PC2.1	Ch 13, section 13.9	To mitigate the impacts of construction on communities and people.	BPM approach to be taken to daytime and night-time construction works to minimise noise, vibration and dust disposal impacts at residential and community receptors. Less intensive piling processes to be used close to sensitive receptors as part of a BPM approach. Replacing high quality amenity planting.	Measures as set out in the Community Liaison Plan Agreement with local residents and NMU User Groups.	Community Liaison Plan to be reviewed every six months.	Principal Contractor	Good community relations. Downward trend in complaints over the course of the Scheme. Annual report to Highways England and the local authorities.	Initial: Date:	N/A
PC2.2	Ch 13, section 13.9	To mitigate the impacts of construction on Private Residential receptors.	Alternative access arrangements will be made for properties, should the existing accesses be temporarily closed during the construction phase. Liaison to be managed with Wilderness Cottage to ensure they can access and egress their property at all times during the improvements to Old Lane. Ensure emergency vehicle access to local residents at all times.	Agreement to access arrangements with local residents and emergency services.	Access to be reviewed quarterly.	Principal Contractor	No objections to access arrangement from residents and emergency services.	Initial: Date:	N/A
PC2.3	Ch 13, section 13.9	To mitigate the impacts of construction on Community Assets.	Construction activities to be preferably undertaken outside of school hours at school locations and to be mindful of exam seasons to avoid amenity impacts. Ensure the 715 and C1/C2 bus routes are maintained and disruption is minimised. Remove and relocate existing bus stops at Wisley Lane and Painshill interchange. Potential disruption should be discussed with local public bus companies, RHS Wisley and Painshill Park in advance.	Discuss and agree with Surrey County Council, Stagecoach, RHS Wisley and Painshill Park.	Operation of bus routes reviewed quarterly during construction.	Principal Contractor	Implementation of measures outlined in the Detailed Design, the Traffic and Transport Management Plan and CEMP. No reduction of bus services during construction.	Initial: Date:	N/A
PC2.4	Ch 13, section 13.9	To mitigate the impacts of construction on Local Business.	Ensure a clear and easy to access complaints and advice helpline and ensure that complaints are responded to, investigated and addressed promptly. Ensure recruitment for construction jobs and procurement of goods and services starts at district and regional levels to ensure that the employment and economic benefits of the construction phase benefits the district and the region.	Discuss and agree with local businesses and local authorities and Job Centre.	Survey of workforce.	Principal Contractor	Direct communications with local Job Centre Plus and recruitment agencies. The construction of the Scheme benefits the district and region.	Initial: Date:	N/A
PC2.5	Ch 13, section 13.9	To mitigate the impacts of construction on Agricultural Land.	Control noise and dust to avoid/reduce impact on agricultural land. The quality and quantity of soil on site will be maintained by implementing appropriate techniques for stripping, stockpiling and reinstatement, in accordance with Defra's 2009 Code of Practice for the Sustainable Use of Soils on Construction Sites. This approach will be adopted in a Soil Handling Management Plan (SHMP), which will in due course form part of the Construction Environmental Management Plan (CEMP). A qualified soil scientist will supervise all aspects of this work.	Measures as set out in the CEMP/SWHP and as agreed with local landowners.	Quarterly liaison with land owners.	Principal Contractor	Continuity of access/operation for farm businesses. Reinstatement of areas affected by temporary use back to agriculture. Confirmation from land owners that they are satisfied with the proposals.	Initial: Date:	N/A
PC2.6	Ch 13, section 13.9	To mitigate the impacts of construction on Development Land.	Land acquired temporarily for construction compounds and working areas will be restored to a condition equivalent to its original before being returned to its owner.	Community Liaison Plan Agreement with local landowners.	Quarterly liaison with land owners	Principal Contractor	Confirmation from land owners that they are satisfied with the proposals.	Initial: Date:	N/A

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
PC2.7	Ch 13, section 13.9	To mitigate the impacts of construction on NMUs.	Ensure pedestrian linkages and accessibility are maintained. Construction works should be programmed so that affected PRoW, footpaths or cycleways remain open for part the duration, of the construction period, and so that other routes can act as a diversion route for those affected. Deliver Green Bridge at Cockrow Bridge through Designated Funds.	Agreement with local authorities, including Surrey County Council and NMU Forum and as set out in the Community Liaison Plan Agreement with Highways England.	Record feedback from users of NMU/PRoW.	Principal Contractor	Implementation of measures outlined in the Detailed Design, the Traffic and Transport Management Plan and CEMP. Programme and plan for temporary NMU access. NMU access/ connectivity maintained	Initial: Date:	N/A
Climate									
C2.1	Ch 13, section 13.9	Reduce greenhouse gas emissions from material production and transport to site.	• Follow the Construction Resources Management Plan (CRMP) as discussed in MW2.1; • Procure materials in optimal quantities to prevent over-supply; • Give preference to local sources of materials; • Prioritise the use of secondary/recycled materials; • Incorporate site-won materials back into construction where possible; and • Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.	N/A	Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.	Principal Contractor	Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.	Initial: Date:	N/A
C2.2	Ch 15, section 15.11	Reduce greenhouse gas emissions from waste generation and transport from site.	• Follow the Construction Resources Management Plan (CRMP) as discussed in MW2.1; • Procure materials in optimal quantities to prevent over-supply; • Give preference to local waste disposal companies; • Incorporate site-won materials back into construction where possible; and • Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.	N/A	Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.	Principal Contractor	Employ the Carbon Calculator Tool to monitor carbon emissions against KPIs.	Initial: Date:	N/A
C2.3	Ch 15, section 15.11	Reduce greenhouse gas emissions from transport of workers.	• Give preference to local workers/subcontractors; • Encourage sustainable modes of transport and lift sharing of workers; and • Ensure the minimum number of workers are onsite at any one time, to minimise transport.	N/A	Worker travel surveys. Labour planning and numbers on site.	Principal Contractor	Worker travel surveys. Labour planning and numbers on site.	Initial: Date:	N/A
C2.4	Ch 15, section 15.11	Reduce greenhouse gas emissions from construction processes.	• Minimise energy consumption onsite as far as possible by using low-emission and high-efficiency construction plant; • Set suitable energy consumption targets, and monitor/report consumption against these targets; • Minimise water consumption onsite as far as possible by using efficient plant and processes; • Consider alternate construction techniques to reduce greenhouse gas emissions; and • Set suitable water consumption targets, and monitor/report consumption against these targets.	N/A	Site energy and water consumption monitoring.	Principal Contractor	Reporting of site energy and water consumption, compared against targets.	Initial: Date:	N/A

Table 1.4: REAC Part 2: Environmental Action Plan – Actions required after the end of construction (i.e. during operation)

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
Air Quality									
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noise and Vibration									
NV3.1	Ch 6, section 6.9	Based upon final Scheme design and as built drawings, meet requirements of Land Compensation Act 1973, Part 2. Reassess the properties that meet the eligibility criteria of The Noise Insulation Regulations 1975.	Publish list of properties within 300 m that qualify for noise insulation, or statement that no properties qualify. Make offers of insulation to eligible properties before construction commences.	Consult with local residents.		Highways England/ Designer/ Principal Contractor	Highways England approval of the eligible properties. Residents accepting offers on insulation.	Initial: Date:	Legal requirement under the Land Compensation Act 1973, Part 2.
NV3.2	Ch 6, section 6.9	Assess changes in noise and vibration levels post construction works.	Undertake noise monitoring at residential locations to establish post construction Scheme noise levels. Undertake noise monitoring in SPA to confirm noise levels as part of ecological monitoring measures.	Consult with local residents, Surrey Wildlife Trust and Natural England.	As required by SPA Management Plan (application document TR010030/APP/6.5).	Designer/ Principal Contractor	Highways England approval of the detailed noise levels.	Initial: Date:	There is no requirement to undertake noise measurements, however Highways England generally request post opening noise monitoring.
Biodiversity									
BD3.1	Ch 7, section 7.9	Minimisation of operational impacts from habitat loss, disturbance and severance.	Establishment of a post-construction ecological survey and monitoring programme to be agreed with Highways England specialist and third parties as appropriate and in accordance with the ES.	In accordance with the Landscape and Ecology Management and Monitoring Plan (application document TR010030/APP/6.5) and in agreement with Natural England, Surrey County Council, Elmbridge Borough Council, Guildford Borough Council.	In accordance with the Landscape and Ecology Management and Monitoring Plan (application document TR010030/APP/6.5).	ECoW/ Principal Contractor's Ecologist	To ensure the mitigation and enhancements has minimised the overall effect of the Scheme on the ecosystem.	Initial: Date:	The monitoring programme to be agreed with all stakeholders, in particular to decide what the indicators of success would be. This could include the successful establishment of certain species, or % cover of certain botanical species. The monitoring programme would also include actions to resolve any failures in the mitigation or
			Monitor the success of the planting proposals, especially woodland and shrub/scrub planting. Inspection surveys of species habitat creation and enhancement measures to ensure success in the post construction period and during the aftercare period.		In accordance with the Landscape and Ecology Management and Monitoring Plan (application document TR010030/APP/6.5)				

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									enhancement measures.
BD3.2	Ch 7, section 7.9	Mitigate impact of loss of habitat from SSSI and SPA.	Continue habitat improvement activity in Ockham and Wisley Commons SSSI and Thames Basin Heaths SPA until end of contractual maintenance period.	Agreement with Natural England and Surrey County Council.	In accordance with the SPA Management and Monitoring Plan (application document TR010030/APP/6.5) and the Landscape and Ecology Management and Monitoring Plan (application document TR010030/APP/6.5).	ECoW/ Principal Contractor's Ecologist	As set out in the SPA Management and Monitoring Plan (application document TR010030/APP/6.5).	Initial: Date:	Methodology subject to ongoing review to ensure effectiveness.
Road Drainage and the Water Environment									
RD3.1	Ch 8, section 8.9	Maintenance of attenuation pond/ditches.	Remove contaminated sediment periodically from the attenuation ponds, soakaways and other drainage features. Undertake regular inspections to ascertain when this action would need to be taken.	Arrange schedule of inspections and reporting. Agreement with Surrey County Council.	Status log for attenuation ponds to be maintained.	Principal Contractor	Successful operation of ponds. Annual reporting by contractor and maintaining agent	Initial: Date:	N/A
Landscape									
LV3.1	Ch 9, section 9.9	Mitigation planting to replace lost vegetation, integrate Scheme and provide screening functions.	Aftercare requirement for all landscape planting for minimum of 5 years or term as set out in Management Plans prior to handover to managing agent or landowner.	Operations to be in accordance with the Series 3000 specification and CEMP.	Monitoring requirements as set out in Series 3000 specification and CEMP.	Principal Contractor and Scheme Landscape Architect	Regular inspections of planting by the ECoW to approve thriving specimens and achievement of growth in accordance with contract document specifications.	Initial: Date:	. N/A
LV3.2	Ch 9, section 9.9	Ensure long term maintenance of landscape works and planted areas.	Prepare HEMP and data for EnvIS/soft estate management.	Operation in HEMP to be in accordance with Management Plans as discussed with Managing Agent, Natural England, Surrey Wildlife Trust and affected landowners.	Monitoring requirements as developed and set out in HEMP.	Principal Contractor, Managing Agent	Successful establishment of landscape mitigation - achievement criteria as set out in Management Plans.	Initial: Date:	N/A
Geology and Soils									

Ref.	ES ref.	Environmental Objective	Action/Commitment {including specific locations, if applicable and any assumptions of the action/commitment}	Action/Commitment Implementation methods (incl. stakeholder agreements)	Required Monitoring Details	Responsible Person	Achievement criteria and reporting requirement	Completion record	Notes/Further action
GS3.1	Ch 10, section 10.9	To avoid deterioration of soil resources.	Aftercare of restored soils if required. Appropriate cropping of restored soils, for example a temporary grass ley if required, and associated soil nutrient requirements.	To be detailed within CEMP and SHMP for the Scheme.	To be detailed within the CEMP and SHMP for the Scheme.	Principal Contractor	Retain soil resources potential to support plant growth and maintain quality of agricultural land/soils.	Initial: Date:	N/A
Cultural Heritage									
CH3.1	Ch 11, section 11.9	Complete actions required to achieve preservation by record of heritage features in accordance with relevant Written Scheme of Investigations, ES commitments and agreements with Historic England and the Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils.	Implement post-fieldwork analysis and processing of records, samples, artefacts etc. obtained through implementation of pre-construction and post-construction actions, in accordance with any relevant Written Scheme of Investigations.	Agreement with Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils.	None required	Principal Contractor	Report(s) accepted for publication if appropriate; archive reports accepted as satisfactory by the Archaeological Officers of the Greater London Archaeology Advisory Service and Elmbridge and Guildford Borough Councils.	Initial: Date:	Post-excavation and reporting works to be monitored by a specialist archaeological consultant.
CH3.2			Prepare records, samples, artefacts etc. as an archive or series of archives for deposition in a museum or other appropriate repository in accordance with any relevant Written Scheme of Investigation, and implement the deposition. Charges for deposition will apply.			Principal Contractor	Archives transferred to appropriate museum or other repository.	Initial: Date:	
Materials and Waste									
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
People and Communities									
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Climate									
C3.1	Ch15.2.10	To maintain the design level of flood protection.	Regular inspection of drainage infrastructure and clearance of sediment traps.	To be detailed within CEMP	To be detailed within the CEMP.	Managing Agent	Successful operation of drainage infrastructure. No flooding following rainfall events within design limits.	N/A	N/A
C3.2	Ch15.2.12	To ensure extreme climate events are not having unexpected impacts.	Monitoring and evaluation of the Scheme's major assets resilience to climate shall be part of regular asset inspections to inform climate change adaptation decision-making in the future.	To be detailed within CEMP	To be detailed within the CEMP.	Managing Agent	To ensure in an ongoing manner that the embedded mitigation has/is minimising the overall effect of climate change on the Scheme.	N/A	N/A

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