Introduction

This Environmental Action Plan (EAP) summarises the actions required to implement the environmental mitigation and outcomes contained within the Environmental Statement (ES) of the Oxford Flood Alleviation Scheme (OFAS) (the ‘Scheme’). It sets out specific objectives and targets defining the way in which we wish the ES and its relevant findings to be addressed during the implementation phase of the project (detailed design and construction) and post-construction phase. It also details roles and responsibilities of those involved in the works.

The EAP has been prepared as a tool to assist the Contractors involved in the works, to:

- ensure compliance with environmental legislation and accepted best practice guidelines; and
- set out specific requirements and necessary actions for environmental management, and assigns responsibilities for those actions.

Summary of Scope of Works

The proposed Scheme and associated works are summarised below:

- Construction of a new channel to the west of Oxford City Centre, between the A34 to the west and the railway to the east. The channel will extend south-easterly from the confluence of the Botley and Seacourt Streams approximately 0.6km north of Botley Road, to just south of Kennington (approximately 0.3km south of the A423 ring road). The new channel will carry excess flow from the Seacourt Stream, Bulstake Stream and Hinksey Stream channels during a flood event, thereby reducing the water level in the main River Thames (and its floodplain) and so reducing the frequency of flooding in built-up areas. The channel will comprise two stages:
  - First stage channel – this will be the inner part of the channel which will be permanently wet and carry flowing water all of the time; and
  - Second (or ‘two-stage’) channel – this will be created by lowering the ground between 1m and 1.5m to one or both sides of the first stage channel. The second stage channel will be dry for most of the time but when river levels are sufficiently high, water will flow along the second stage channel. This may occur regularly during wetter periods, especially during the winter months. During large flood events, the fields in the existing floodplain around the new channel will also continue to be inundated.

  In some local areas, a second stage channel will be constructed without a first stage channel and vice versa;

- Provision of new flood defences (embankments and walls) to protect houses which would otherwise continue to flood even with the reduced river levels;

- Provision of new culverts and bridges to cross highways and footpaths to maintain access routes;

- Installation of flood gates for access (under normal, non-flood, conditions) through the new defences noted above;

- Creation of new and/or improved habitat for flora and fauna, where it does not compromise flood defence or other environmental receptors. This habitat creation/restoration forms part of the integrated design of the Scheme to help mitigate habitat losses, to meet WFD measures and support England Biodiversity 2020 habitat creation targets e.g. new wetland habitat within the footprint of the second stage channel, new channel connecting the Bulstake and Hinksey Streams, new lowland meadow habitat outside the footprint of the second stage channel. The wetland features in the second stage channel will incorporate a variety of profiles and gradients, to include marginal shelves, steep banks and undulating bed profiles to maximise wetland habitat diversity; and
Removal of Towles Mill, in conjunction with a separate scheme at the upstream end of the Seacourt Stream, will facilitate fish passage around Oxford for the first time in over a century.

Roles
Each action in Table 1 has named persons or organisations who are responsible for ensuring that the action is implemented.

The Environment Agency Project Manager has overall responsibility for the project and ensuring that the EAP is implemented, and updated as appropriate. The National Environmental Assessment Service (NEAS) are responsible for agreeing any changes to the EAP and for signing off, or agreeing to the signing off of actions.

The Environment Agency’s Principal Designer and Environmental Clerk of Works will oversee the health and safety of the project, ensuring it is implemented in accordance with the Environment Agency’s Safety, Health, Environment and Wellbeing (SHEW) Code of Practice (CoP).

The Contractor and the Engineering and Construction Contract (ECC) Project Manager are responsible for advising NEAS on any changes to method statements or the planned construction work as these may result in changes to the EAP or additional consultation with statutory consultees. NEAS will assess the significance of these changes and determine the appropriate course of action.

The Contractor’s Site Manager is also responsible for implementing good environmental practice on site, in line with their own Environmental Management System (EMS).

CH2M (now Jacobs) will provide site supervision during construction of the Scheme, by a qualified and competent Environmental Clerk of Works (ECW). The ECW will monitor adherence to the EMS. Typical issues include:

- Any working hour restrictions
- Dust suppression measures
- Adherence to protected species requirements and licence conditions
- Management of invasive species
- Traffic management
- Site waste management
- Materials management
- Maintenance of the carbon calculator
- Vehicle maintenance and management
- Pollution prevention and control (including storage, refuelling and incident response)
- Response procedures e.g. services strike, contaminated land
- Hazardous materials handling and storage
- Noise management
- Securing and delineation of working areas including signage
- Vegetation and tree protection measures
- Soil de-compaction measures in relevant areas
- Inspection of subsoil in areas to be planted and the inspection (and analysis, where relevant) of topsoil prior to and during spreading and cultivation.

CH2M will also provide a Landscape Clerk of Works (LCoW) and Arboricultural Clerk of Works (ACoW) to oversee all landscape aspects of the construction contract for the duration of the works.
General Provisions
The EAP sets out the objectives, actions, timescales and responsible parties for each management measure.

The Contractor will also be required to adhere to standard procedures and good working practice, including the former Pollution Prevention Guidelines, the principles of Considerate Contractors and the Environment Agency’s SHEW CoP.

Whilst the requirement to adhere to these standard procedures is cited in this EAP, the individual procedures are not listed.

Contractual Status of the EAP
Responsibility for adherence to the various requirements of this EAP lies with the Environment Agency, the Designer (CH2M) and the Contractor, as shown in the tables. Where the EAP reflects requirements of UK Environmental Law (e.g. prevention of pollution), compliance is mandatory and need not be reflected specifically in the construction contract. Otherwise, where actions fall specifically to the Contractor, these are reflected also in the Works Information that forms part of the construction contract. With regard to all other aspects, this EAP is included in the construction contract as Site Information.

Where changes to the Works Information or the contractor’s working methods conflict with this EAP, this shall be brought to the attention of the ECC Project Manager so that discussions can be held with NEAS prior to formal instruction by the ECC Project Manager.

Environmental Incident Reporting
An Environmental Incident is defined as either a failure to meet an environmental target or an adverse environmental occurrence not included in the EAP.

All personnel on site will have a duty to report any incident immediately to the Contractor Site Manager. The Contractor’s Site Manager will be responsible for ensuring that the ECC Project Manager is informed immediately of any incident on site, and the ECC Project Manager will then be responsible for informing the relevant parties and advising on an appropriate course of action.

All environmental incidents must be reported to the Environment Agency Incident Hotline 0800 80 70 60 as per the Environmental Incident Reporting Poster at the earliest opportunity and then to the ECC Project Manager, Site Supervisor, Environment Agency Project Manager, Environment Agency NEAS Environmental Project Manager and ECW. In addition, near misses must be reported via the hotline where there was/is the potential for a significant impact and where lessons can be learned.

Initial reports for such incidents and near misses must be followed by a written report using the Contractor’s in-house forms. This must include the following information: project/location, date, Contractor, NIRS reference number, details of what happened, cause of incident, lessons learned. This final and comprehensive investigation report is to be provided by the Contractor to the Environment Agency Project Manager and Safety, Health and Environment Manager within 14 days.
Environmental Audits
Site audits will be undertaken during construction by an appointed ECW. These visits will be recorded in an ECW reporting template. Technical assistance can be obtained from functional staff as appropriate.

Environmentally Significant Changes
Any change to the foreseen design (as shown on the plans in Appendix A ‘Scheme Overview and Engineering Design Drawings’ of the Environmental Statement), of the works must be communicated immediately to the ECC Project Manager, who will, in consultation with NEAS, evaluate the environmental implications of the change and advise accordingly. No changes will be implemented without the prior evaluation of the environmental implications and prior approval of the Project Manager.

Site Specific Actions
Site specific actions to ensure protection of the environment during the Scheme are outlined in Table 1.
<table>
<thead>
<tr>
<th>Action Ref</th>
<th>Objective</th>
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<th>Target</th>
<th>Responsible party</th>
<th>Comments/observations</th>
<th>Further action requirement / update</th>
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<tbody>
<tr>
<td>PR1</td>
<td>To adhere to any conditions of the Planning Permission</td>
<td>Ensure all planning conditions are discharged in writing to Oxfordshire County Council Planning Department, and await approval before proceeding with the relevant works.</td>
<td>To ensure works are legally compliant</td>
<td>Environment Agency Project Manager</td>
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<td>PR2</td>
<td>Include any additional actions resulting from planning conditions in this EAP.</td>
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<td>PR3</td>
<td>Submit a Construction and Environmental Management Plan in accordance with detailed conditions to the Environment Agency Project Manager and ensure sign-off with Oxfordshire County Council.</td>
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<td>PR4</td>
<td>To ensure the works are appropriately programmed</td>
<td>Ensure that the Contractor plans the construction programme in accordance with any seasonal and ecological restrictions identified in the Environmental Statement.</td>
<td>Works appropriately programmed to minimise environmental impact</td>
<td>Environment Agency Project Manager</td>
<td>See environmental restrictions programme</td>
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<td>PR5</td>
<td>Work with the ECW/Environment Agency to ensure EPS licences, other species’ licences and consents for fish rescues are obtained in good time for the site works programme.</td>
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<td>Contractor</td>
<td>Environment Agency to obtain the EPS licences.</td>
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<td>PR6</td>
<td>To obtain agreement from landowners</td>
<td>Liaison with landowners to discuss and agree entry and access to sites, including aftercare/maintenance during landscape establishment and future operation.</td>
<td>To ensure legal entry to land has been obtained</td>
<td>Dalcour Maclaren</td>
<td>Access is required through Network Rail land.</td>
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<td>PR7</td>
<td>To minimise disturbance to users of public space</td>
<td>Erect and maintain signage around works to inform the local community of the works taking place and any likely access restrictions.</td>
<td>No valid complaints from the local community.</td>
<td>Contractor</td>
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<td>PR8</td>
<td>To minimise disruption to local residents, recreational users, road users/commuters and businesses during construction</td>
<td>Work with Oxfordshire County Council to agree road closures and advertise the closure of Old Abingdon Road and Kennington Road in advance of construction.</td>
<td>No valid complaints from the local community.</td>
<td>Contractor</td>
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<td>PR9</td>
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<td>Prepare working method statement for the construction works in line with the Traffic Management Plan to include adherence to best practice working methods and defined working hours i.e. 7.00am to 7.00pm Monday to Friday and 8.00am – 1.00pm Saturday (with piling works restricted 8.00am – 6.00pm Monday to Friday). Specific arrangements to be made where sensitive receptors may be affected at particular times of day (e.g. school drop-off and collection times, particularly at South Hinksey Interchange). Some limited 24 hour working may be required to install the new A423 culverts, this will be kept to a minimum.</td>
<td>No complaints from the local community.</td>
<td>Contractor</td>
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<td>PR10</td>
<td>PRE-CONSTRUCTION</td>
<td>Inform sensitive residential receptors of the nature, timing and duration of the construction activities, including traffic controls and reinstatement of land.</td>
<td>No valid complaints from the local community.</td>
<td>Contractor</td>
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<td>PR11</td>
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<td>Appoint a Public Liaison Officer to address local community concerns</td>
<td>To listen to the concerns of the local community.</td>
<td>Contractor</td>
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<td>PR12</td>
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<td>Work with public transport providers to mitigate impacts on transport routes</td>
<td>Minimal disruption to local community from traffic congestion</td>
<td>Environment Agency Project Manager</td>
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<td>PR13</td>
<td>Recreation and Public Access</td>
<td>Finalise the draft site wide Construction Traffic Management Plan (CTMP) in consultation with the Highways Agency (see action under Traffic and Transport). [This plan shall be submitted as part of the Construction Phase Plan] Include the following measures in the CTMP: - clear demarcation of vehicle and pedestrian routes and how interactions will be dealt with. - inform the local community of the nature and duration of the temporary footpath/cycleway closures (and diversions) and alternative provisions of access through signage and Agreement of the CTMP with the Highways Agency</td>
<td>Agreement of the CTMP with the Highways Agency</td>
<td>CH2M Project Manager</td>
<td>See outline CTMP (CH2M 2017)</td>
<td>There are a number of public and permissive footpaths and bridleways, which need to be permanently or temporarily diverted during the construction of the works. Initial plans for each of the diversions have been</td>
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<td>webpage updates. For permissive footpaths, post notices for closures and diversions on the affected footpath at least 4 weeks before any diversion is implemented to give adequate notice to the public.</td>
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<td>• Continue to liaise with Oxfordshire County Council Public Rights of Way officer to pre-agree appropriate closure/diversion routes for footpaths, the bridleway and cycle paths with the identification of appropriate alternative routes to accommodate users of the footpaths and strategic cycling corridor, and provide signage prior to closures/diversion. Allow 12 weeks in the programme for approval from Oxfordshire County Highways for the closure or diversion of public footpaths and bridleways.</td>
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<td>• Where diversions are required, ensure these are within acceptable distance thresholds for users and aligned with desire lines.</td>
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<td>• Where interfacing with routes, ensure hoardings enclose the work area to contain construction activities. Where hoarding will encroach onto existing footpaths to provide working space for construction activities, maintain a general minimum footpath width of 2m.</td>
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<td>• ensure that construction materials and soil are discussed with Oxfordshire County Council Public Rights of Way Officer.</td>
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<td>The Contractor is responsible for the final layout, application, payment for and programming of the diversions and closures.</td>
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<td>PRE-CONSTRUCTION</td>
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<td>swept off any affected footpaths, the bridleway and cycleways.</td>
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<td>PR14</td>
<td>To minimise disturbance to water based recreational users from restricted access to Bulstake and Hinksey Stream, and the River Thames</td>
<td>Mark channels (Bulstake and Hinksey Streams) to be closed during construction with navigation markers and warning signs, in advance of the works. Consult water-based recreational groups/societies and landowners with riparian interests on restrictions to watercourses during construction.</td>
<td>No complaints from water-based recreational users</td>
<td>Environment Agency Project Manager</td>
<td>Cannot connect into Bulstake Stream until the new Bulstake Weir is built and ready to prevent backflow from the Thames.</td>
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<td>Landscape and Visual Amenity</td>
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<td>PR15</td>
<td>To maintain long-term visual appearance of works areas.</td>
<td>Follow Landscape and Habitat Management Plan, and Landscape Specification to inform the long-term management of the works areas, and to incorporate requirements for vegetation management.</td>
<td>Effective long-term management of works to achieve and balance flood conveyance and environmental objectives.</td>
<td>CH2M</td>
<td>See General Arrangement Landscape Plans (Gillespies 2018) and Landscape and Habitat Management Plans (Gillespies 2018) Landscape Specification (Gillespies 2018)</td>
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<td>Flora and Fauna</td>
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<td>PR16</td>
<td>To mitigate the loss of floodplain meadow (part of Hinksey Meadow)</td>
<td>Seek agreement to use green hay from Hinksey Meadow, if possible (or Oxford Meadows) to spread on proposed new MG4a areas</td>
<td>Increase area, through creation, of MG4a habitat</td>
<td>Environment Agency NEAS</td>
<td>See MG4a mitigation strategy (CH2M 2018)</td>
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<td>Sign a management agreement with the landowners and tenant(s) of the new meadows to ensure both areas are managed as meadow and mown in mid-summer following completion of Scheme.</td>
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<td>Sign a management agreement with Oxford City Council for the southern-most meadow to ensure it is managed as meadow and mown in late summer following completion of Scheme.</td>
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<td>PR17</td>
<td>Prepare method statement for MG4a turf translocation for approval by EA.</td>
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<td>Increase area, through creation, of MG4a habitat</td>
<td>Contractor</td>
<td>See MG4a mitigation strategy (CH2M 2018)</td>
<td>Method statement to be prepared by grassland specialist.</td>
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<td>PR18</td>
<td>Carefully lift MG4a turf that will need to be taken up to create the second stage channel and translocate directly to proposed MG4a meadow area, subject to approval by the landowner. If landowner approval is not received, instead store the turf offsite and translocate to the lower second stage at Hinksey Meadow when this is complete. Lifting is to be done in</td>
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<td>Contractor</td>
<td>See MG4a mitigation strategy (CH2M 2018)</td>
<td>Translocation to be carried out by a grassland specialist.</td>
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<td>PR19</td>
<td>To avoid impacts on badgers</td>
<td>Close affected setts within works areas under licence prior to construction, where possible and necessary. Before closing any setts, install one-way gates on all entrances and monitor as per standard methodology and good practice. Supervise the destruction of any setts required to enable the Scheme to proceed.</td>
<td>No harm to badgers and full compliance with the Protection of Badgers Act 1992 and W&amp;CA</td>
<td>ECW</td>
<td>See Badger Assessment (CH2M 2016) and Badger Technical Note (CH2M 2017)</td>
<td>A toolbox talk will be provided to contractors prior to the commencement of works so that any new badger setts can be identified and reported.</td>
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<td>PR20</td>
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<td>Provide Heras fencing to enforce a 30m exclusion zone around badger setts that are not being closed or disturbed and are within the vicinity of the works.</td>
<td>No harm to badgers and full compliance with the Protection of Badgers Act 1992 and W&amp;CA</td>
<td>Contractor</td>
<td>See Badger Assessment (CH2M 2016) and Badger Technical Note (CH2M 2017)</td>
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<td>PR21</td>
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<td>To inform an appropriate mitigation strategy, carry out pre-construction survey work to identify any additional setts (such as outlier or satellite setts). This should include areas where limited or no previous access has been granted (e.g. Network Rail land). Update the existing mitigation strategy/plan for badgers to provide advice on course of action if new setts are discovered. Provide a toolbox talk to contractors prior to the commencement of works, so that any new badger setts can be identified and reported.</td>
<td></td>
<td>ECW</td>
<td>See Badger Assessment (CH2M 2016) and Badger Technical Note (CH2M 2017)</td>
<td>Contractor programme to be provided to CH2M ecologist.</td>
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<td>PR22</td>
<td>To prevent spread of invasive plant species (notably Himalayan balsam, and Japanese knotweed).</td>
<td>Produce a management plan that demonstrates how invasive species will be dealt with on site with particular consideration of soil movement, storage and management. The management plan will need to be agreed with the Environment Agency in advance of scheme construction. Train contractors to recognise Japanese knotweed and Himalayan Balsam and maintain vigilance for any additional stands of this species or previously unidentified invasive plant species. Provide site operatives with identification cards for Japanese knotweed. Within site boundary, fence-off areas of identified Japanese knotweed in accordance with the Invasive Species Survey Plans to prevent interference and further spread during construction.</td>
<td>Full compliance with the W&amp;CA</td>
<td>Contractor</td>
<td>Further guidance is provided in The Knotweed Code of Practice (Environment Agency 2013). See Invasive Species Surveys (EcologyLink 2016 and 2017)</td>
<td>Environment Agency to advise on whether TVO will be continuing spraying of invasives during the duration of the construction works.</td>
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<td>PR23</td>
<td>To avoid impacts on amphibians</td>
<td>Remove (dismantle by hand) all potentially suitable hibernacula outside the wintering (hibernation) period to minimise the risk of harm to amphibians. Undertake the work prior to or after the main bird breeding season to minimise the risk of disturbing nests (see PR24). Check hibernacula for amphibians and move off-site to a pre-determined ‘safe’ hibernacula/refugia.</td>
<td>No impacts on amphibians.</td>
<td>ECW</td>
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<td>PR24</td>
<td>To avoid impacts on breeding birds</td>
<td>Undertake vegetation clearance outside of bird breeding season with the exception of certain areas where removal needs to be delayed in order to protect other species. If unforeseen tree/scrub removal is required within the bird breeding season (late February to end September), request that ECW carries out a watching brief to identify whether breeding birds are using affected tree/area of scrub.</td>
<td>No impacts on breeding birds.</td>
<td>Contractor</td>
<td>See Breeding Bird Surveys (Hazelwood Conservation 2017)</td>
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<tr>
<td>PR25</td>
<td>To provide replacement nesting habitats for displaced breeding birds</td>
<td>Identify sites for artificial nest-box installation outside the Scheme.</td>
<td>No impacts on breeding birds.</td>
<td>Environment Agency Project Manager</td>
<td>Artificial nest box designs are targeted for specific species and their locations will be based on data collected through previous breeding bird surveys.</td>
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<tr>
<td>PR26</td>
<td>To protect any reptiles that may be using areas identified as supporting potentially suitable habitat.</td>
<td>Construct new refugia sites, to compensate for the loss of habitat and refugia sites within the construction footprint. Undertake a programme of habitat manipulation (phased strimming during the spring/summer months prior to construction when reptiles are active, on all long grassland areas considered to provide suitable habitat for common reptile species (to be advised by the ECW), to render areas unsuitable for reptiles and to</td>
<td>No harm to reptiles and full compliance with the Wildlife and Countryside Act.</td>
<td>Contractor</td>
<td>See reptile surveys (CH2M 2016 and 2017) New refugia sites to be in place prior to the removal of refugia within the construction footprint. Due to the low numbers of reptiles</td>
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<td>PRE-CONSTRUCTION</td>
<td>encourage any individuals present to move away from areas where they may be injured or killed. Strimming or mowing to be undertaken in stages, successively and gradually reducing the height and reducing the area of vegetation to displace any reptiles present. Initially, cut vegetation to 400mm above ground level, next day to 200mm and on the final day, cut to 50mm/ground level to maintain the vegetation in a state unsuitable to reptiles. Once the vegetation is removed to ground level, maintain the vegetation height at levels &lt;5cm to keep the habitat unsuitable for reptiles until construction activities have been completed.</td>
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<td>using the site during presence/absence surveys, it is considered that two new refugia sites will sufficiently mitigate for the loss of any habitat within the construction footprint. Due to the presence of grass snake during the surveys, create a grass snake egg laying heap and a hibernacula brash/log pile.</td>
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<td>PR27</td>
<td>Remove (dismantle by hand) all potentially suitable hibernacula outside the wintering (hibernation) period to minimise the risk of harm to reptiles. Check hibernacula for reptiles and move off-site to a pre-determined ‘safe’ hibernacula/refugia.</td>
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<td>ECW</td>
<td>See reptile surveys (CH2M 2016 and 2017)</td>
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<tr>
<td>PR28</td>
<td>To avoid disturbance to bats and their roosts</td>
<td>Agree the Bat Method Statement with Natural England prior to planning consent being granted. Assess bat roost potential of any additional trees requiring removal and undertake further inspection if necessary. Re-survey all trees with features of high bat</td>
<td>No harm to bats and full compliance with the Wildlife and Countryside Act and Habitats and</td>
<td>CH2M (suitably licensed ecologist)</td>
<td>Bat surveys (Greena Ecology 2018)</td>
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<td>PRE-CONSTRUCTION</td>
<td>potential well in advance of construction work commencing, to check whether any have been used by bats since the initial surveys, to allow a licence application to be determined, or for variations of an existing licence to be agreed with NE. Carry out all surveys and inspections required by the Bat Method Statement. Fell trees using approved methods where required.</td>
<td>Species Regulations.</td>
<td>CH2M (suitably licensed ecologist)</td>
<td>Tree felling should be minimised where possible, particularly those identified as having bat roost potential.</td>
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<tr>
<td>PR29</td>
<td>Where necessary, obtain a European Protected Species (EPS) licence prior to removal of any trees or bat boxes or the disturbance of bridges supporting bat roosts and identify appropriate measures to mitigate the loss of bat roosts. NB at the time of submitting the planning application, three trees had been identified for which an EPS licence is definitely required.</td>
<td>No injury or death of bats and no adverse impacts on conservation status of local population of bats. Full compliance with the W&amp;CA and Habitats and Species Directive.</td>
<td>CH2M (suitably experienced ecologist)</td>
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<tr>
<td>PR30</td>
<td>To avoid disturbance to otters and their resting sites</td>
<td>Carry out initial checks for otter holts in March 2018. Carry out pre-construction checks of all potential and confirmed otter holts between July - August 2018, and periodically throughout the construction period.</td>
<td>Full compliance with the W&amp;CA and Habitat Regulations.</td>
<td>CH2M (suitably experienced ecologist)</td>
<td>If otter use is identified during pre-construction surveys, specific working methods may</td>
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<td>PR31</td>
<td>Dismantle potential otter holts with no evidence of use prior to vegetation clearance commencing. Establish an exclusion zone around any holts that are being monitored for activity or are known to be active, to prevent disturbance prior to any works taking place. In areas of dense vegetation, care should be taken for the possibility of a holt being present when carrying out vegetation clearance.</td>
<td>No injury or death of otters or disturbance to their resting sites.</td>
<td>CH2M (suitably experienced ecologist)</td>
<td>need to be identified that are less disturbing to otters. The size of the exclusion zone will be a minimum of 30m but will be decided on a case by case basis. If a maternal holt is identified, an exclusion zone of up to 200m will need to be established to prevent disturbance, but again will be decided on a case by case basis. Since breeding may occur at any time of year, the presence of active (maternal) natal holts can never be ruled out. See Water Vole and Otter Survey (CH2M)</td>
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<td>PR32</td>
<td>Any active holts that need to be destroyed, should be closed following the detailed guidance under an EPS licence with respect to surveillance requirements to ensure that the otter is no longer using the holt; for maternal holts, the period of dependence by mother and young may be for a period of three months or more, and may require adaptations to the programme to allow for the otters to vacate the site. For active holts which do not need to be closed, a disturbance licence may be necessary depending on the proximity to the working area and the context of the holt.</td>
<td></td>
<td>CH2M (suitably experienced ecologist)</td>
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<td>PR33</td>
<td>To avoid disturbance to water voles</td>
<td>Carry out pre-construction surveys in March - September 2018 for Areas 1-3 and in 2019 for Area 4 (dependant on when works commence). Carry out pre-construction checks for water vole four weeks before works commence. Identify sections of channel near the Scheme area which are suitable habitat for water voles but where water voles are not currently present for translocation and monitor areas to ensure they are free of water voles. Improve the habitat in the new location well in advance of translocation as necessary.</td>
<td>Full compliance with the W&amp;CA.</td>
<td>CH2M (suitably experienced ecologist)</td>
<td>See Water Vole and Otter Survey (CH2M 2016) The Environment Agency are intending to support BBOWT through the OFAS funding to extend their mink-trapping as part of the water vole project.</td>
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<td>PR34</td>
<td>Maintain population of creeping marshwort</td>
<td>If water voles are found within the Scheme area, under licence displace or trap and translocate them to receptor sites in line with licence conditions.</td>
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<td>Trapping water voles can only be done at specific times of year in accordance with a licence from Natural England.</td>
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<td>PR35</td>
<td>Maintain population of creeping marshwort</td>
<td>Identify suitable site for translocation of creeping marshwort and arrange (in advance) for translocation of some of the plants for propagation off-site.</td>
<td>Ensure survival of rare plants that may be affected by the Scheme.</td>
<td>Environment Agency Project Manager</td>
<td>See mitigation strategy for creeping marshwort (CH2M 2018) See communications</td>
<td>Translocation of plants between March and May.</td>
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<td>PR36</td>
<td>Obtain a licence for translocation of creeping marshwort plants from Natural England</td>
<td>Comply with legislative requirements</td>
<td>with Judy Webb</td>
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<td>PR36</td>
<td>Advance mowing of the vegetation in the ditch in which Creeping marshwort grows within the paddock in Willow Walk Meadow, during the growing season (end of April to October) in advance of the construction period. Fence off the ditch so that construction vehicles have no access to it, other than any vehicles required to support the mowing. Follow method agreed with Judy Webb.</td>
<td>No change in creeping marshwort population</td>
<td>Environment Agency</td>
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<tr>
<td>PR37</td>
<td>Maintain population of whorled water-milfoil</td>
<td>Ensure survival of rare plants that may be affected by the Scheme.</td>
<td>Environment Agency Project Manager</td>
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<td>PR38</td>
<td>Avoid disturbance to fisheries</td>
<td>Minimal impacts on fish</td>
<td>Contractor</td>
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**PRE-CONSTRUCTION**

- Mowing by Oxford Preservation Trust. Mowing is anticipated to require hand tools or other method acceptable to Judy Webb and the Environment Agency.

See mitigation strategy for whorled water-milfoil (CH2M 2018)

Translocation of plants between March and May.
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<td>Programme works which obstruct Bulstake Stream, Seacourt Stream or Hinksey Stream, or which directly affect fish spawning areas, to avoid March to July. Prepare a risk assessment and method statement for fish rescue at Kennington Pond, for approval and consent (to remove and transfer fish - see WI2017.6) by the Environment Agency.</td>
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<td><strong>Water and Hydromorphology</strong></td>
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<td>PR39</td>
<td>To protect groundwater and surface water quality</td>
<td>Prepare and implement a Sediment Management Plan. Regularly review and update the plan as the Scheme progresses to reflect changes to the works and programme.</td>
<td>No pollution of ground or surface water</td>
<td>Contractor</td>
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<tr>
<td>PR40</td>
<td>To protect groundwater and surface water quality</td>
<td>Finalise details of the groundwater and surface water monitoring programme for the works, with control/trigger levels for level and quality.</td>
<td>No pollution of ground or surface water</td>
<td>Environment Agency Project Manager</td>
<td>Any discharge will be in accordance with Environment Agency permits, if required, to be agreed in advance.</td>
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<tr>
<td>PR41</td>
<td>To protect groundwater and surface water quality</td>
<td>Develop a strategy for in-channel works and temporary stream diversions, to minimise both the disruption to ecological elements and the risk of siltation/scour during the construction phase.</td>
<td>No pollution of ground or surface water</td>
<td>Contractor</td>
<td>Any discharge will be in accordance with Environment Agency consents, if required, to be agreed in advance.</td>
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<tr>
<td>PR42</td>
<td>To protect groundwater and surface water resources</td>
<td>Develop a groundwater control strategy and working method for new channel construction or channel clearance to prevent significant changes to groundwater level, including appropriate recharge of any abstracted groundwater back to the environment where appropriate, e.g. through recharge trenches/boreholes where feasible. Develop a water level monitoring strategy for the scheme.</td>
<td>Reduced impacts on groundwater fed features</td>
<td>Contractor/ EA</td>
<td>Any abstraction/discharge will be in accordance with Environment Agency permits, if required, to be agreed in advance.</td>
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<td>PR43</td>
<td>To protect groundwater and surface water quality</td>
<td>Develop a methodology for excavations and piling in or adjacent to landfill areas, to specify suitable design, construction techniques and monitoring strategy; and identification of disposal routes for any contaminated water that is abstracted. Develop controlled waters remedial target values for any re-emplaced fill and incorporate into a final remediation strategy for any contaminated materials.</td>
<td>No significant pollution of groundwater-fed features</td>
<td>Contractor</td>
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<td>PRE-CONSTRUCTION</td>
<td>Develop a water quality monitoring strategy for the scheme, including control and trigger levels for groundwater and surface water where they could be affected by scheme construction activities.</td>
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<td></td>
<td>Historic Environment</td>
<td>Avoid impacts on archaeological remains where possible and preserve archaeology in situ where possible. Where preservation in situ is not possible, preserve by record.</td>
<td>Protect archaeological remains</td>
<td>Contractor (through the appointed sub-contracting archaeologist).</td>
<td>See Cultural Heritage chapter in Environmental Statement See WI 2024 ‘Archaeological Works’ of Works Information</td>
<td>Preservation in situ methodology to be approved by NEAS, Oxford City Council and Oxfordshire County Council</td>
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<td>PR44</td>
<td>To protect and mitigate archaeology and the historic environment during implementation of the works</td>
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| **PR45** | To protect and mitigate archaeology and the historic environment during implementation of the works | Evaluate the MG4 grassland by archaeological trial trenching (as it was excluded during the previous programme of trial trenching). Undertake the following actions:  
• Produce Written Scheme of Investigation (WSI);  
• Undertaken a programme of archaeological trial trenching;  
• Undertake any required specialist analyses or dating;  
• Produce an evaluation report on the results of the trial trenching;  
• Identify any mitigation areas based on the results of the trial trenching. | Ascertain the presence or absence of archaeological remains within the MG4 Grassland | Contractor (through the appointed sub-contracting archaeologist). | See Cultural Heritage chapter in Environmental Statement  
See WI 2024 ‘Archaeological Works’ of Works Information | WSI, evaluation report and mitigation areas to be approved by NEAS, Oxford City Council and Oxfordshire County Council |
| **PR46** | To protect and mitigate archaeology and the historic environment during implementation of the works | Agree and design archaeological mitigation areas through WSI(s). A single WSI may be acceptable for the entire scheme or separate WSIs may be required for each different archaeological mitigation type. Agree with Historic England the archaeological works required on the Old Abingdon Road (OAR) culverts (Scheduled Monument). | Preserve archaeology by record | Contractor (through the appointed sub-contracting archaeologist). | See Cultural Heritage chapter in Environmental Statement  
See WI 2024 ‘Archaeological Works’ of Works Information | WSI and mitigation areas to be approved by NEAS, Oxford City Council, Oxfordshire County Council and Historic England. |
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| PR47 | To protect and mitigate archaeology and the historic environment during implementation of the works | Undertake a programme of archaeological recording and mitigation including:  
• Targeted excavation of the OAR;  
• Areas of Strip, Map and Sample;  
• Earthwork surveys;  
• A programme of geoarchaeological assessment;  
• Specialist analyses or dating, as required. | Preserve archaeology by record | Contractor (through the appointed sub-contracting archaeologist). | See Cultural Heritage chapter in Environmental Statement  
See WI 2024 ‘Archaeological Works’ of Works Information | Monitoring of the archaeological works may be required by NEAS, Oxford City Council, Oxfordshire County Council and Historic England. |
| PR48 | To increase public awareness of local archaeology | Seek opportunities to show the public archaeological work as it is progressing during the project. This might include a web-site, boards / posters on outside of site fencing or for exhibitions, open days, school and local talks, press releases and social media outreach. | Opportunities identified to involve the public | Contractor (through the appointed sub-contracting archaeologist). | See Cultural Heritage chapter in Environmental Statement  
See WI 2024 ‘Archaeological Works’ of Works Information | NEAS and OCC to set scope of community archaeology engagement alongside final scope of mitigation |
<p>| Sustainable Use of Land | | | | | | |
| PR49 | To minimise damage to soils | Programme the majority of earth movements and soil handling for between late May and early September when the soils are likely to be drier, as far as is practically possible. | No unnecessary damage to soils/land | Contractor | | |</p>
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<td>PR50</td>
<td>To protect human health</td>
<td>Develop a final contaminated land remediation strategy for the scheme, to include derivation of re-use/remedial target values and measures for handling sampling, treatment and/or re-emplacement of any contaminated soils; and measures to deal with any soil gas risk.</td>
<td>No significant risk to human health</td>
<td>Contractor</td>
<td>Will include remediation strategy for controlled waters.</td>
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<td><strong>Air Quality</strong></td>
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<td>PR51</td>
<td>Minimise air pollution caused by the Scheme</td>
<td>Plan a six-month air quality monitoring campaign to be performed at a number of locations, and agree with Oxford City Council and the VoWH District Council in advance. Commence the campaign three months before the construction phase begins (and continue for the first three months of the construction phase).</td>
<td>No long-term change in air quality</td>
<td>CH2M</td>
<td>See Air Quality modelling (CH2M 2018)</td>
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<td><strong>Traffic and Transport</strong></td>
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<td>PR52</td>
<td>To minimise impacts on local road network (including public rights of way)</td>
<td>Establish a Transport Management Working Group for the duration of the works, in line with the requirements of the Construction Traffic Management Plan (CTMP).</td>
<td>No significant impacts on local road network</td>
<td>Environment Agency</td>
<td>See Appendix M of Environmental Statement.</td>
<td>The TMWG to monitor the CTMP and ensure direct communication between the contractor, the LHA and</td>
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<td>PR53</td>
<td>PRE-CONSTRUCTION</td>
<td>Finalise the CTMP, provided in the Traffic Assessment, in consultation with the Environment Agency and the relevant highway consultees. Comply with pre-construction mitigation measures outlined in the CTMP and adhere to requirements of Traffic Assessment (Appendix M of the Environmental Statement).</td>
<td>Contractor</td>
<td>See Outline CTMP and Appendix M of Environmental Statement. It should be noted that there is a critical interface with the park and ride service providers due to known development works at both Seacourt and Redbridge Park and Rides. The Contractor will need to be part of an agreed strategy of working to minimise conflicts.</td>
<td>Highways England.</td>
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<td>CONSTRUCTION</td>
<td>C1</td>
<td>To minimise disruption to local residents, recreational users and businesses (e.g. from noise, dust, vibration and access disturbance and visibility of works adjacent to public areas)</td>
<td>Work in accordance with method statements, giving due consideration to noise and light impacts of the works. Adhere to defined working hours and best practice methods. Limit use of equipment on site to normal working hours i.e. 7.00am to 7.00pm Monday to Friday and 8.00am – 1.00pm Saturday (with piling works restricted 8.00am – 6.00pm Monday to Friday). No construction activities will be undertaken outside of these hours or on Public Holidays without the prior written agreement of the Environment Agency Project Manager. Specific arrangements to be made for sensitive receptors if required.</td>
<td>Compliance with agreed working hours. No valid complaints from the local community.</td>
<td>Contractor</td>
<td>Some work will be undertaken in winter when many of the working hours will be after dark – take particular care to ensure safe working and minimise noise and light disturbance to local residents where possible. Based on recommendations from the Vale of White Horse District Council, the Contractor may wish to apply for s61 pre-approval for agreed working practices with regard to noise around residential areas to avoid a blanket requirement.</td>
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<td>C2</td>
<td>To minimise disruption to local residents, recreational users and businesses (e.g. from noise, dust, vibration and access disturbance and visibility of works adjacent to public areas)</td>
<td>Keep working area tidy and compact and ensure no cross-contamination of construction or other materials and soils in storage areas. Suppress dust during long periods of dry weather. Only allow essential construction plant to access works areas. Provide appropriate signage. Affix and maintain plastic screening mesh to works boundary fencing to reduce dust and visual intrusion of works in areas where works are adjacent to public areas with higher footfall.</td>
<td>No valid complaints from the local community.</td>
<td>Contractor</td>
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<td>Inform the Environment Agency Project Manager within 48 hours of receiving any complaints.</td>
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<td>C3</td>
<td>To avoid unnecessary disruption to recreational users of public footpaths, bridleways and cycleways</td>
<td>Minimise duration of temporary footpath, bridleway and cycleway closures. Where closures are not required, carefully manage the interfaces of access routes and footpaths with manned staff/banksmen. Maintain working area/access route fencing for duration of the works. Ensure that construction materials and soils are swept off any footpaths and cycleways. Ensure that all cycle paths are free of materials that might cause punctures i.e. ensure sites are cleaned thoroughly before reopening, to avoid complaints. For permissive footpaths, post notices for closures and diversions on the affected footpath at least 4 weeks before any diversion is implemented to give adequate notice to the public. Ensure Willow Walk Bridleway remains open to the public at all times, ensuring the provision of a temporary diversion (acceptable for use by horses) at all times the existing route is closed to the public. Make available a footpath to the public through Seacourt Nature Reserve to gain access to Hinksey Meadow from either the Westway Bridge or from Botley Road at all times. A diversion from the existing route to the edge of the working area is acceptable. Provide a temporary diversion for the Devil’s Backbone at all times. This must connect the village to the existing footbridge over the railway; plan the route to minimise the length of the diversion route.</td>
<td>No unnecessary disturbance to recreational users No health and safety incidents as a result of bicycle punctures</td>
<td>Contractor</td>
<td>There are a number of public and permissive footpaths and bridleways, which need to be permanently or temporarily diverted during the construction of the works. Initial plans for each of the diversions have been discussed with Oxfordshire County Council Public Rights of Way Officer. The Contractor is responsible for the final layout, application, payment for and programming of the diversions and closures. The Contractor shall allow 12 weeks in the programme for approval from Oxfordshire County Highways for the closure or diversion of public footpaths and bridleways. The existing stone bridge on Willow Walk has a 3 tonne weight</td>
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<td>CONSTRUCTION</td>
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<td>The Contractor shall prepare and implement a site wide traffic management plan including clear demarcation of vehicle and pedestrian routes and how interactions will be dealt with. This plan shall be submitted as part of the Construction Phase Plan.</td>
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<td>limit and shall not be used in conjunction with the implementation of the works.</td>
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<td>C4</td>
<td>To avoid unnecessary noise disturbance and reduce noise levels to the local community</td>
<td>Adopt Best Practicable Means (BPM) (as defined in Section 72 of the Control of Pollution Act 1974 on-site to reduce temporary noise levels arising during the construction period. Implement the following controls: • Ensure Public Liaison Officer is aware of any concerns from the local community; • Carefully select equipment, for example any compressors brought to site will be super-silenced or sound reduced models fitted with acoustic enclosures or any pneumatic tools will be fitted with silencers or mufflers, wherever practicable; • Properly maintain all plant and equipment and operate in accordance with manufacturers’ recommendations; • Shut down equipment when not in use for a period longer than five minutes; and • Ensure that no vehicles wait or queue on public highways with engines running. Take care when unloading deliveries.</td>
<td>No valid complaints from the local community.</td>
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| C5        | To minimise disturbance to recreational users | Continue to consult the public, businesses and water corridor users affected by the Scheme with regard to the nature and timing of activities and access restrictions during construction.  
Maintain access to the River Thames at all times, and maintain access to light craft (e.g. canoes) to other watercourses, unless necessary temporarily for works.  
Ensure that phasing of the works will not affect all access points simultaneously. Sign any alternative accesses.  
Implement mitigation measures relating to the public rights of way detailed in the CTMP.  
Maintain signage adjacent to the public open spaces throughout the Scheme.  
Fence off areas of land within and adjacent to the working area to prohibit recreational users but maintain existing public access to as much land as possible.  
Open areas in winter, where practical, if this can be done safely. | No valid complaints from the public | Contractor | See CTMP (CH2M 2018) |
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<td>C6</td>
<td>To maintain visual appearance of works areas and access routes during construction.</td>
<td>Keep working areas compact and tidy. Ensure temporary lighting levels and direction does not cause visual intrusion to properties. Store materials and machinery in identified compound areas.</td>
<td>No valid complaints</td>
<td>Contractor</td>
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<td>C7</td>
<td>To ensure implementation of landscape works and protection of trees</td>
<td>Protect trees in accordance with the Arboricultural Method Statement and revised Tree Protection Plans (see Tree Protection Technical Note 2018). Implement all soft and hard landscape proposals in accordance with the contract documents, Landscape Specification and landscape plans. Ensure all soft landscape works (seeding and planting) are implemented as soon as is practicable to suit the next planting season after completion of engineering/ground works, and maintain these works throughout the remainder of the construction period and agreed establishment/maintenance period.</td>
<td>Implementation and establishment of soft landscape works</td>
<td>Contractor</td>
<td>See Arboricultural Method Statement, Tree Protection Technical Note. See Landscape General Arrangement Plans, Planting Plans and Landscape and Habitat Management Plans (Gillespies 2018) Landscape Specification (Gillespies 2018)</td>
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<td>C8</td>
<td>To ensure adequate biosecurity measures</td>
<td>Procure all plants and trees from nurseries/suppliers that have no confirmed plant disease infections and are Horticultural Trades Association (HTA) members with quality assurance certification in place.</td>
<td>No transmission of plant diseases as a result of the works</td>
<td>Contractor</td>
<td>All plant material supplied should be of native/local provenance.</td>
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<td>C9</td>
<td>To avoid impacts on badgers</td>
<td>Ensure there is no obstruction to badger movements during construction, with the exception of fences around excavations (or open pipe systems) to prevent accidental injury or trapping. Provide an escape route in excavations consisting of a scaffold board or plank laid at a 45 degree angle. Adhere to all requirements of the badger licence. Ensure fencing is in-place to enforce an exclusion zone around any known active sett that are within the vicinity of the works. Point any security lights required away from setts.</td>
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<td>No harm to badgers and full compliance with the Protection of Badgers Act 1992 and W&amp;CA</td>
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<td>Contractor</td>
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Further action requirement: Contractor will be provided with Badger Report and locations of badger setts prior to works.
<p>| C10 | Construct a new artificial sett, under licence. The new sett is to be built in accordance with CH2M design. This artificial sett will firstly provide a compensatory sett for any badger setts found during vegetation clearance that will have to be closed and/or as enhancement for the local population, and secondly provide alternative shelter for the badgers which currently use the main sett, which will be disturbed and may need to be temporarily closed under licence. It is likely that a temporary sett closure licence will be required. However, this will be reviewed by CH2M to see if a disturbance licence is more appropriate, following a review of the working area considered necessary and in particular the extent of excavations within 30m of the sett. If a temporary sett closure licence is sought, close the main active sett no earlier than six months after the artificial sett is complete. Do not interfere with the artificial sett during this time. No ground works may be carried out within 30m of the main sett until it has been temporarily closed. If a disturbance licence is obtained, works within 30m of the main sett cannot start until the licence is obtained, but do not need to wait six months after the artificial sett is complete. In this case, ground works must be identical to those described in the licence application. | No harm to badgers and full compliance with the Protection of Badgers Act 1992 and W&amp;CA | Contractor will be provided with Badger Report and locations of badger setts in proximity to the Works. The new artificial sett will be made as desirable as possible for the badgers, with plenty of suitable dry bedding material and supplementary feeding. The closure and disturbance of active badger setts is restricted to between 1 July to 30 November only. | A toolbox talk will be provided to contractors prior to the commencement of works so that any new badger setts can be identified and reported. |</p>
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<td>C11</td>
<td>To protect aquatic invertebrates</td>
<td>Take appropriate measures to prevent pollution and smothering of in-channel habitats by silt. Adopt standard good practice.</td>
<td>Minimise harm to aquatic invertebrates</td>
<td>Contractor</td>
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<td>C12</td>
<td>To protect trees, hedgerows and notable habitats/vegetation that are to be retained.</td>
<td>Protect trees to be retained (as shown in the Tree Protection Technical Note April 2018) with appropriate tree protection measures according to BS 5837:2012 Trees in relation to design, demolition and construction, and in accordance with the Arboricultural Impact Assessment (to include high visibility marker tape and temporary stakes laid out by an arboriculturist prior to vegetation clearance) and Arboricultural Method Statement.</td>
<td>Minimise impacts upon retained trees, hedgerows and notable habitats.</td>
<td>Contractor</td>
<td>See Arboricultural Impact Assessment and Method Statement (Middlemarch 2018) See Tree Protection Technical Note</td>
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<tr>
<td>C13</td>
<td>To prevent spread of invasive plant species (notably Himalayan balsam, and Japanese knotweed)</td>
<td>Provide a toolbox talk to the Contractors with regard to the risks of spreading invasive species and their responsibilities at the start of the construction works and with regard to soil management and vegetation protection. This talk should refer to wider biosecurity requirements in relation to all kit, plant and clothing being brought to site adhering to strict biosecurity measures.</td>
<td>No spread of invasive species</td>
<td>ECW</td>
<td>The amount of bare ground to be exposed on this site means it will be highly prone to invasives being brought onto site and becoming established.</td>
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<tr>
<td>C14</td>
<td>Adhere to agreed management plan for dealing with invasive species.</td>
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<td>C15</td>
<td>To avoid impacts on amphibians</td>
<td>If any great crested newts are found during the construction works, stop all work immediately and consult the ECW. If other amphibian species (common and palmate newt, frogs and toads) are found during the construction works, move these off-site to a pre-determined ‘safe’ hibernacula/refugia or water body.</td>
<td>No impacts on amphibians</td>
<td>Contractor</td>
<td>Consultation and advice from Natural England might also be required. No known great crested newts within working areas.</td>
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<td>C16</td>
<td>To provide replacement nesting habitats for displaced breeding birds</td>
<td>Implement programme of artificial nest-box installation outside the Scheme by installing nest boxes during the first winter of the Scheme, during vegetation clearance, before the nesting season begins.</td>
<td>No impacts on breeding birds</td>
<td>Environment Agency Project Manager</td>
<td>Artificial nest box designs are targeted for specific species and their locations will be based on data collected through previous breeding bird surveys.</td>
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<tr>
<td>C17</td>
<td>To avoid disturbance to breeding birds</td>
<td>Undertake clearance of woody vegetation and scrub (trees and shrubs) outside of main breeding season (mid Feb to end September). If nesting birds are discovered during the construction works, set up an exclusion zone around the nest and seek the advice of the ECW.</td>
<td>No impacts on breeding birds and full compliance with the W&amp;CA</td>
<td>Contractor</td>
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To avoid disturbance to otters and resting sites during construction:

- Minimise removal of riverside vegetation as far as possible. Fence off any deep holes or trenches and leave escape routes in place.

  If an otter or potential otter holt/resting place is discovered during construction, cease works within 100m and seek the advice of the ECW.

  In the event of a maternal holt being identified, establish an exclusion zone of up to 200m or more, depending on bespoke advice, to prevent disturbance until breeding is complete. If the discovered holt is within the footprint of the working area, remove holt under licence, once mother and cubs are confirmed to have left naturally; otherwise maintain surveillance if the holt may be used again and may be subject to disturbance.

  Direct artificial lighting away from the river where possible, and where it will not impact people or sensitive receptors.

  Manage construction of in-river and bankside structures and works so that otter passage can be maintained overnight.

  Fence off areas of scrub during construction to cause as little disturbance as possible. The fencing will have signs that clearly mark the areas that contractors must not enter. A buffer zone of at least 2m is suggested around these areas of scrub but ensure otters can enter and leave these areas.

  Keep construction equipment, materials and portacabins away from pathways or tracks that could

Full compliance with the W&CA | Contractor | Seek advice on these aspects from EA Ecologist (Graham Scholey).
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<td>be used by otters to allow them to continue to move throughout and around the site. If an EPS licence is required then works must comply with all requirements of this licence.</td>
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<td>C19</td>
<td>To avoid disturbance to water vole and resting sites during construction</td>
<td>Minimise removal of riverside vegetation as far as possible. If a water vole burrow is discovered during construction, that had not previously been recorded, cease works within 10m and seek the advice of the ECW. Fence off receptor site(s) during construction if considered necessary by the ECW, with signage that clearly states contractors must not enter. Direct artificial lighting away from receptors site(s). Comply with all requirements of any licences passed from the ECW.</td>
<td>Full compliance with the W&amp;CA.</td>
<td>Contractor</td>
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<td>ECW to make Contractors aware of when works are taking place close to/upstream of water vole receptor site(s) and spill/leak control measures reiterated.</td>
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<td><strong>C20</strong></td>
<td>To protect any reptiles that may be using areas identified as supporting potentially suitable habitat</td>
<td>In areas where reptiles may be active, maintain vegetation height at levels &lt;50mm using hand tools and under the supervision of an experienced ecologist to keep the habitat unsuitable for reptiles until construction activities have been completed. If reptiles are found to be present during the works, stop the works and seek the advice of the ECW.</td>
<td>No harm to reptiles and full compliance with the Wildlife and Countryside Act.</td>
<td>Contractor</td>
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<td><strong>C21</strong></td>
<td>To avoid disturbance to bats and their roosts</td>
<td>Shroud any lighting and direct light away from hedgerows and riparian trees. All works requiring vegetation clearance must comply with the Bat Method Statement. Where EPS licence(s) for bats are required then works must also comply with all requirements of this licence.</td>
<td>No injury or death of bats and no adverse impacts on conservation status of local population of bats. Full compliance with the W&amp;CA.</td>
<td>Contractor</td>
<td>See bat surveys (Greena Ecology)</td>
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<td><strong>C22</strong></td>
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<td>Check new installations to ensure any lighting is appropriate in key locations of known sensitivity/use by bats, as the construction of the scheme progresses.</td>
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<td>ECW</td>
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<td>C23</td>
<td>Avoid disturbance to hedgehogs and other small mammals</td>
<td>Ensure there is no obstruction to small mammal movements during construction, with the exception of fences around excavations (or open pipe systems) to prevent accidental injury or trapping. Provide an escape route in excavations consisting of a scaffold board or plank laid at a 45 degree angle. Any wildlife encountered during site clearance or subsequent construction activities should be allowed to exit the site on their own, via safe routes, or gently redirected, if required.</td>
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<td>C24</td>
<td>To minimise impacts on fisheries</td>
<td>Take appropriate measures to prevent pollution and smothering of in-channel habitats by silt.</td>
<td>No impacts on fisheries</td>
<td>Contractor</td>
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<td>C25</td>
<td>To maintain population of creeping marshwort</td>
<td>Ensure that Oxford Preservation Trust continue to mow the vegetation in the ditch in which the plant grows within the paddock in Willow Walk Meadow, during the growing season within the construction period. Fence off the ditch so that construction vehicles have no access to it, other than any vehicles required to support the mowing.</td>
<td>No change in creeping marshwort population</td>
<td>Environment Agency</td>
<td>Mowing is anticipated to require hand tools, unless the contractor can produce a method statement using other methods which is acceptable to the Environment Agency.</td>
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<td>C26</td>
<td>To avoid disturbance to fisheries</td>
<td>In line with normal Environment Agency practice, all in-channel work requiring dewatering to provide safe access for the workforce will be preceded by a fish rescue. Fish will be returned to another part of the same stream they are rescued from. All works that directly affect gravel beds within channels or works causing elevated sediment suspension/deposition (plus sheet piling) have been programmed to avoid the period March to July. Permission from the Environment Agency is needed for any proposal to re-programme in-channel works into the period March to July.</td>
<td>Avoid impacts on fish</td>
<td>Contractor</td>
<td>All in-channel works (plus breaking through from the existing channels into the new channel) needs to be carried out from August to February.</td>
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<td>C27</td>
<td>To protect groundwater and surface water quality</td>
<td>Implement standard spill/leak control measures (e.g. bunded fuel storage area, spill kits, interceptors). Install temporary drains and silt traps where required in temporary works areas. Mitigate the risk of silt generation from temporary stockpile areas from rainfall/flood events, and of leachate generation from excavated materials, e.g. by the use of impermeable bases, flood bunds, and temporary covering of exposed material.</td>
<td>No pollution of ground or surface water</td>
<td>Contractor</td>
<td>Any discharge will be in accordance with Environment Agency consents, if required, to be agreed in advance.</td>
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<td>Historic Environment</td>
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| C28        | To protect and mitigate archaeology and the historic environment during implementation of the works | Avoid impacts on archaeological remains where possible and preserve archaeology in situ where possible. Carry out a programme of geoarchaeological assessment. Undertake a watching brief including:  
  - Produce WSI for archaeological watching brief if a separate WSI is required;  
  - Undertake an archaeological watching brief on areas identified within the WSI;  
  - Undertake any required specialist analyses or dating. | Minimise damage to archaeological remains and preserve archaeology by record | Contractor (through the appointed sub-contracting archaeologist). | See Cultural Heritage chapter in Environmental Statement  
See WI 2024 ‘Archaeological Works’ of Works Information | WSI to be approved by NEAS, Oxford City Council and Oxfordshire County Council |

### Sustainable Use of Land

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<tr>
<td>C29</td>
<td>To minimise damage to soils</td>
<td>Ensure adherence to Defra’s ‘Safeguarding our Soils’ Strategy and the Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Defra, 2009), as well as our strategy document ‘Soil a Precious Resource: Our strategy for protecting, managing and restoring soil (Environment Agency, 2007). Adhere to the recommendations in the Soil Resources Report and Soils and Agricultural Quality Report (LRA 2018) with regard to soil stripping, storage and placement.</td>
<td>No unnecessary damage to soils/land</td>
<td>Contractor</td>
<td>See Soil Resources Report and Soils and Agricultural Quality Report (LRA 2018)</td>
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<td>C30</td>
<td>To minimise damage to soils</td>
<td>Adhere to the recommendations in the Soil Resources Report and Soils and Agricultural Quality Report (LRA 2018) with regard to landscaping and planting.</td>
<td>No unnecessary damage to soils/land and no increased incidence of waterlogging</td>
<td>Landscape Sub-contractor</td>
<td>See Soil Resources Report and Soils and Agricultural Quality Report (LRA 2018)</td>
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<tr>
<td>C31</td>
<td>To manage soil contamination risks</td>
<td>Follow standard practice including:</td>
<td>No negative effects on soil or land quality</td>
<td>Contractor</td>
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<td>• Employment of a health and safety plan for any workers likely to come into physical contact with contaminated soils, gases or vapours during the construction phase.</td>
<td>• Use of measures to mitigate dust migration risks from exposed soils and stockpile areas (e.g. tarpaulins, dust suppression sprays and/or siting of any contaminated/odorous stockpiles away from residential areas).</td>
<td>• Construction phase monitoring of soil gas levels where there is a significant risk of changing existing soil gas migration pathways e.g in landfill areas.</td>
<td>• Appropriate design of a capping layer or seeding of any bare soils exposed at the end of the earthworks phase to reduce potential exposure pathways.</td>
<td>• Validation of the remediation strategy.</td>
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<tr>
<td>C32</td>
<td>To minimise damage to soils</td>
<td>Loosen any subsoils that have been unavoidably compacted during the construction works, before any topsoil is spread on them. Ensure that any areas outside of the Scheme area (i.e. not within the footprint of the Scheme or adjacent working areas) are not trafficked by construction vehicles. Store stripped topsoil in separate resource bunds to an approximate maximum height of 2m high. These bunds will be kept grassed and free from construction traffic until required for re-use.</td>
<td>No unnecessary damage to soils/land</td>
<td>Contractor</td>
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<tr>
<td>C33</td>
<td>To minimise air pollution</td>
<td>Operate EURO VI vehicles which are expected to have significantly lower emissions of NOX, and to agree with the Highways Authorities, and implement, a Construction Traffic Management Plan. Implement the CEMP, which will include the following measures:</td>
<td>No air pollution increases that are detrimental to health</td>
<td>Contractor</td>
<td>See Air Quality chapter of Environmental Statement for sensitive receptors</td>
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</table>
• Locate machinery and dust causing activities away from sensitive receptors where feasible;
• Regularly undertake visual inspections to determine whether there are any significant dust episodes;
• Ensure adequate water supply on site for dust suppression, as and when required;
• All vehicles to switch off engines when not in use (i.e. no idling of vehicles);
• Effective vehicle cleaning and specific wheelwashing on leaving the site and damping down of haul routes, where there is a potential for carrying dust or mud off the site;
• Cover all loads entering and leaving the site;
• On-road vehicles to comply to regulated emission standards;
• Minimise movement of construction traffic around the site;
• Impose and signpost maximum speed limits within the construction areas; and
• Regularly inspect haul routes for integrity and undertake repairs as appropriate.
• Ensure the disposal of any run-off water from dust suppression activities, is in accordance with legal requirements;
• Maintain all dust control equipment and record any maintenance activities;
• Avoid double handling of material where possible;
• Use water as a dust suppressant where required;
• Ensure the mixing of cement, and similar...
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<tr>
<td>CONSTRUCTION</td>
<td>materials takes place in enclosed areas; • Ensure slopes on stockpiles are no steeper than the natural angle of repose; • Stockpiles should be covered and located away from sensitive receptors where possible. • Avoid the circulation of construction vehicles during traffic peak hours to minimise the risk of congestion.</td>
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<td>Traffic and Transport</td>
<td>C34 To minimise traffic disruption</td>
<td>Continue consultation with the Highways Authority and adhere to requirements of Traffic Assessment (Appendix M of the Environmental Statement).</td>
<td>No complaints about traffic relating to the works.</td>
<td>Contractor</td>
<td>See Traffic Assessment (Appendix M of the Environmental Statement)</td>
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<tr>
<td>PC1</td>
<td>To minimise impacts on local community</td>
<td>Maintain role of Public Liaison Officer during reinstatement of Scheme</td>
<td>No complaints from local community</td>
<td>Contractor</td>
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<tr>
<td>PC2</td>
<td>To minimise impacts on public rights of way</td>
<td>Ensure that re-opened public rights of way are adequately reinstated</td>
<td>Return all disturbed habitats to pre-construction condition.</td>
<td>Contractor</td>
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<tr>
<td>PC3</td>
<td>To offset losses of public open space</td>
<td>Ensure new public open spaces are created and adequately maintained.</td>
<td>No complaints from the public</td>
<td>Environment Agency Project Manager</td>
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<tr>
<td>PC4</td>
<td>To offset losses of allotment gardens</td>
<td>Prepare new allotment gardens to the west of the existing allotments at Bulstake Close in accordance with landowner agreement and Landscape Management Plans.</td>
<td>No complaints from users of the allotment gardens</td>
<td>Environment Agency Project Manager</td>
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**Local community**

**Recreation and public access**

**Landscape and visual amenity**
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<tr>
<td>PCS</td>
<td>To reduce visual disturbance</td>
<td>Replant woodland areas, trees and new MG4a habitats in accordance with the Landscape and Habitat Management and Planting Plans, and Landscape Specification. Return disturbed habitats in temporary working areas to their original condition (or better) as soon as possible.</td>
<td>No valid complaints from the public Minimal loss of key floral species and colonization by invasive species</td>
<td>Contractor</td>
<td>Ensure action is included in the contract documents. Refer to Landscape General Arrangement Plans, Landscape and Habitat Management Plans and Planting Plans (Gillespies 2018) Landscape Specification (Gillespies 2018)</td>
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<td>PC6</td>
<td>Consult Friends of Kendall Copse on tree planting proposals</td>
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<td>No valid complaint</td>
<td>Environment Agency Project Manager</td>
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**Flora and fauna**
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<td>POST-CONSTRUCTION</td>
<td></td>
<td>As soon as construction works are completed, disturbed habitats in temporary working areas will be returned to their original condition or better as quickly as possible to minimise loss of key species. Re-introduce whorled water-milfoil to the pond at Kennington Pit if needed and monitor plant growth. If groundwater levels at Willow Walk Meadow are found to have been lowered by the Scheme upon completion, deepen and widen the ditch to provide the creeping marshwort with sufficiently-wet ground.</td>
<td>Return all disturbed habitats to pre-construction condition.</td>
<td>Contractor</td>
<td>See mitigation strategies for creeping marshwort and whorled water-milfoil</td>
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<td>PC8</td>
<td>To mitigate the loss of lowland meadows (Hinksey Meadow)</td>
<td>Create 17.3ha of new meadow (as shown on the Landscape Masterplan). Plant the remainder of the new meadow with seeds of meadow grasses and wild flowers taken from MG4a meadows, by seeding and/or spreading of green hay. Implement management agreement for the new meadow to ensure it is managed as meadow and mown in late summer.</td>
<td>Replace all lowland meadows destroyed due to construction</td>
<td>Landscape Subcontractor (for first 12 months). Environment Agency to appoint/reappoint landscape subcontractor for maintenance years 2 to 5. Environment Agency to implement long term plan described in the Landscape and Habitat Management Plan and Schedules (funding available years 6 to 10)</td>
<td>Annual hay cuts required at Hinksey Meadow and receptor sites</td>
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| PC9 | To monitor impacts of scheme on ecology | Carry out ecological and mitigation monitoring in line with any protected species licensing provisions, and the Landscape and Ecological Management Plans.  
- Implement a Monitoring Plan, which is being developed in line with Table 14.1 Provisional Monitoring Schedule in the Environmental Statement. | No loss or change in distribution of habitat or population of species. | Environment Agency Project Manager | See Table 14.1 Monitoring Schedule in the Environmental Statement | |
| PC10 | To avoid the spread of invasive floral species | Continue monitoring, and treatment as necessary, of invasive plant species within and immediately adjacent to the Scheme area. | No spread of invasive species and compliance with legislation | Environment Agency Project Manager | | |
| Water and hydromorphology |
| PC11 | To monitor changes in groundwater levels | Continue to monitor loggers installed during the design stage of the Scheme.  
Carry out additional groundwater monitoring during the initial operational phases of the Scheme (e.g. for the first five years), particularly in areas of environmental sensitivity such as the MG4a grassland at Hinksey Meadows. | Identification of any impacts of changing groundwater levels on important ecological habitats to enable remedial action. | Environment Agency Project Manager | | |
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| PC12       | To protect and promote archaeology and the historic environment | Carry out post-excavation assessment and reporting after mitigation area has been completed. This will include:  
• Processing and analysis of finds and samples;  
• Full reporting;  
• Site archive prepared and deposited with the Oxfordshire County Museums Service;  
• Publication of the archaeological results;  
• Public dissemination |
|            |           | Preserve archaeology by record and public dissemination               |
|            |           | Contractor (through the appointed sub-contracting archaeologist).     |
|            |           | See Cultural Heritage chapter in Environmental Statement             |
|            |           | See WI 2024 ‘Archaeological Works’ of Works Information              |
|            |           | Reporting and publication to be approved by NEAS, Oxford City Council, Oxfordshire County Council and Historic England. |