A46 Coventry Junctions (Walsgrave)
Scheme number: TR010066

6.4 Environmental Statement
Non-Technical Summary

APFP Regulations 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A46 Coventry Junctions (Walsgrave)
Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT
Non-Technical Summary

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Planning Inspectorate Scheme Reference	TR010066
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Author	A46 Coventry Junctions (Walsgrave), Project Team & National Highways

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Rev 0	November 2024	Application Issue
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1. The Scheme

1.1.1. National Highways proposes to upgrade the A46 Coventry Junctions (Walsgrave), specifically, the junction of the A46 Coventry Eastern bypass and that of the B4082, East of Walsgrave; hereafter, these proposed upgrades will be referred to as 'the Scheme'. The Scheme is being progressed by National Highways (hereafter referred to as 'the Applicant') to ease congestion and reduce queuing along the A46 corridor, and forms part of a wider scheme of improvements to the A46.

1.1.2. The Scheme is a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008, which means that an application will need to be made for permission to construct the Scheme. The permission is called a Development Consent Order (DCO) that is awarded by the Secretary of State for Transport; following their review of a report from the Planning Inspectorate, which appoints an independent Examining Authority to examine the application, host a public examination and write a report with their recommendation. Information about the Planning Act 2008 and the Planning Inspectorate can be found on the Planning Inspectorate website https://national-infrastructure-consenting.planninginspectorate.gov.uk.

1.1.3. The Scheme requires an Environmental Impact Assessment (EIA), in line with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (EIA Regulations) and an Environmental Statement (ES) has been submitted as part of the DCO application. The full ES includes the following:

- ES Chapters, setting out the environmental assessment (**TR010066/APP/6.1**)
- ES Figures, including drawings, photographs and other illustrative material (**TR010066/APP/6.2**)
- ES Technical Appendices (**TR010066/APP/6.3**)
- ES Non-Technical Summary (**TR010066/APP/6.4**) (this document)

1.1.4. This document provides a non-technical summary of the information presented within the ES. The full ES and its supporting documents can be viewed online on the Planning Inspectorate's National Infrastructure Planning website. https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/TR010066.

1.2. Need for the Scheme

1.2.1. The A46 forms part of the Strategic Roads Network (SRN), connecting the M1, M6 and the M68 with the M5, providing links to the rest of the country. An investigation conducted by the Highways Agency (2014) indicated that parts of the A46 near Coventry suffer from congestion and unreliability concerning journey times, issues which will be exacerbated by future housing growth. The A46 also has safety performance issues, in comparison with the rest of the SRN.

1.2.2. Since the investigation in 2014, many sections of the A46 near Coventry have been, or are in the process of being, upgraded under the Department for Transport's second Road Investment Strategy (RIS2). However, the existing Walsgrave Junction on the A46 still remains a particular pinch point for traffic. There is concern that without improvements to the existing Walsgrave Junction, the delay caused by this Junction could undermine the existing investment and upgrades that have already been made on the A46.

1.3. Scheme objectives

1.3.1. The Scheme's objectives are listed as follows:

- An SRN that supports and facilitates economic growth, supporting employment and residential development opportunities.
- An SRN that is maintained to safe and serviceable condition.
- Improve the operation and efficiency of the existing transport network, delivering capacity enhancements to the SRN.
- An SRN that minimises its negative impacts on users, local communities and the environment.
- An SRN that balances the need of individuals and businesses that use and reply upon it.
- Reducing / minimising the impact on the wider environment, whilst seeking to bring enhancement.
- Operational maintenance to be considered holistically.

1.4. Scheme location

1.4.1. The Scheme is located in the West Midlands, approximately 5km to the east of Coventry city centre. The Scheme involves improvements to the B4082, which runs eastwards from Clifford Bridge Road to the existing A46 Walsgrave Junction, as well as to the A46, which runs north-south to the east of Coventry.

1.4.2. Nearby junctions to the Scheme include Binley Junction (on the A46), approximately 1.7km south of the existing Walsgrave Junction, and the M6 and

M69 Junctions, which both lie approximately 2.5km north of the existing Walsgrave Junction.

1.4.3. The Scheme is situated within the Coventry City Council and Rugby Borough Council administrative areas.

1.4.4. NTS Figure 1 (Appendix A) shows the location of the Scheme.

1.5. Environmental context

1.5.1. NTS Figure 2 (Appendix A) presents the key environmental constraints that have been considered during the EIA for the Scheme.

1.5.2. Notable statutory and non-statutory environmental designations and environmental constraints include, but are not limited to:

- Residential communities, part of Walsgrave on Sowe and Binley, as well as Hungerley Hall Farm and other isolated properties located off Brinklow Road.
- Nearby schools, notably Clifford Bridge Academy and Pearl Hyde Community Primary School.
- The Coventry City-Wide Air Quality Management Area (AQMA), which is immediately adjacent to the Scheme; the six Noise Important Areas (NIAs) situated within 2 kilometres (km) from the Scheme.
- Community facilities, notably the University Hospital Coventry, Wyken Community Centre, the Coombe Abbey Park, Spring Estate Allotments, Coombe Castle playing field and other recreational space.
- Coombe Abbey, a Grade II Listed building, and Combe Abbey Registered Park and Garden/Conservation Area, both of which are situated within Coombe Abbey Park.
- Other Listed Buildings, notably Hungerley Hall Farm, and scheduled monuments.
- Coombe Pool Site of Special Scientific Interest (SSSI), as well as the Herald Way Marsh SSSI and other unnamed ponds and drains.
- Local Nature Reserves (LNRs) and Local Wildlife Sites (LWSs), notably Herald Marsh Way LNR, Stoke Floods LNR, and Gainford Rise LWS.
- The floodplain north of the channel of the River Sowe, which is part of the Stoke Floods LNR.
- Drainage system, east of the A46.
- Smite Brook, the River Sowe and Withy Brook, which are all classified under the Water Framework Directive (WFD) as WFD waterbodies.
- Agricultural land classified as Grade 1 and Grade 3 under the Agricultural Land Classification (ALC) within the Order Limits (the area required for construction).

- Public footpaths and Public Rights of Way (PRoW), notably the Sowe Valley Walk and the footpath along Clifford Bridge Road, which includes a crossing point on Clifford Bridge Road near Bridgeacre Gardens.
- One veteran tree at Hungerley Hall Farm
- Smite Brook culvert (which passes under the A46 and the B4082) and two un-named ditches are present in the land required for the Scheme.

1.6. Description of the Scheme

1.6.1. The design of the Scheme has been through an iterative process, undertaken by an integrated team of engineering and environmental specialists taking account of consultation feedback, in order to achieve a good design that minimises adverse impacts and, where practicable, maximises improvements to the environment.

1.6.2. The Order Limits refer to the maximum area of land required, both temporarily and permanently for the construction, operation, and maintenance of the Scheme. Land within the Order Limits covers approximately 36.6 hectares (ha), including permanent land take of 34.6ha and temporary land take of 2.0ha.

Scheme design

1.6.3. Key elements of the Scheme are shown in Plate 1 (The Scheme) below.

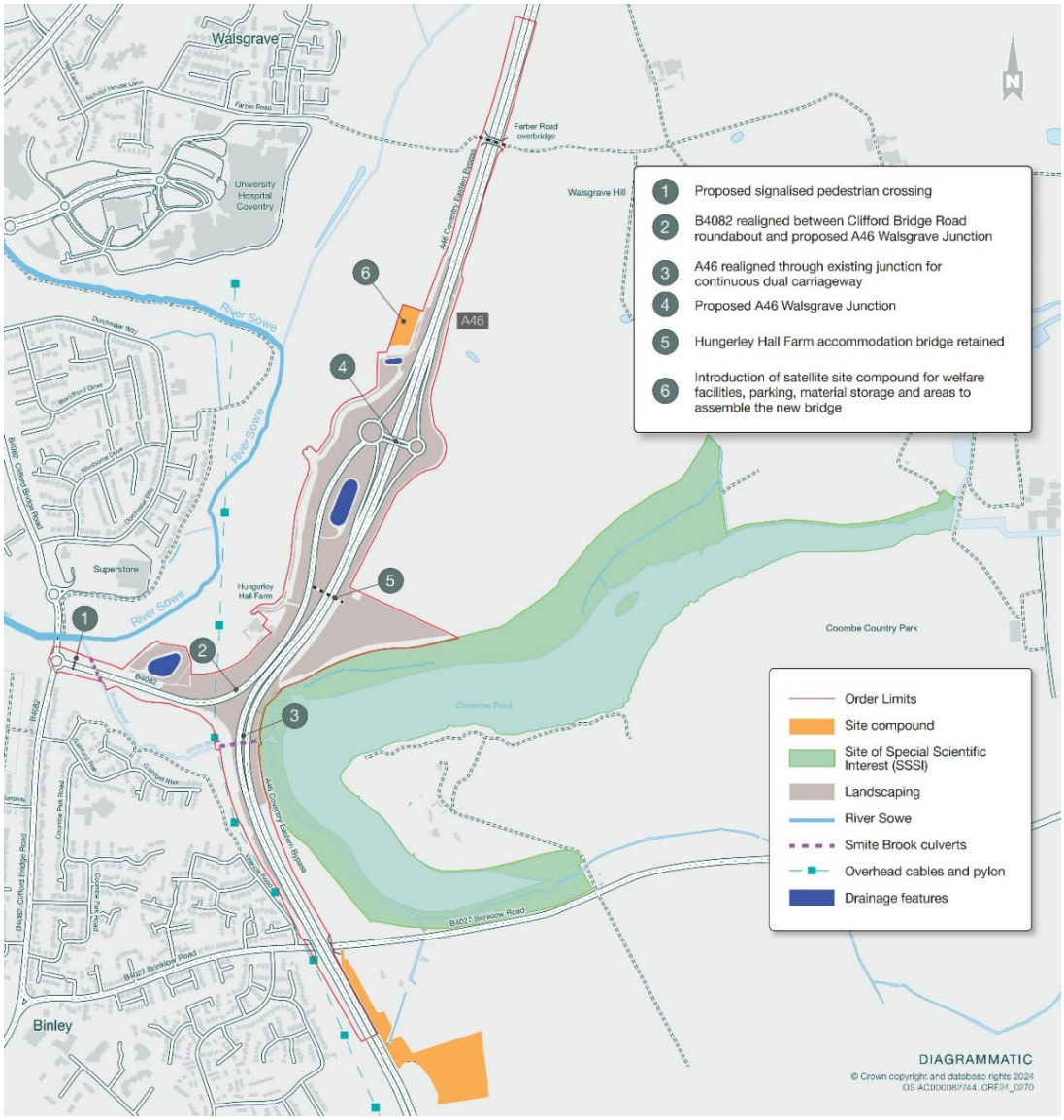
1.6.4. The permanent works included in the Scheme are summarised below, whilst detailed descriptions of these works and their construction methods are included in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**).

- Realignment of 880m of the A46.
- Removal of the two existing laybys on the A46.
- Removal of the existing A46 Walsgrave roundabout.
- Creation of a new section of road for the B4082, which would run for approximately 900m as a single carriageway north and parallel to the A46, to a new grade separated junction. The new section of the B4082 would be kerbed along its entire length.
- Creation of a new A46 Walsgrave Junction, consisting of a grade separated dumbbell roundabout arrangement (involving two roundabouts, a western and an eastern one). The western and eastern roundabouts would be connected by a new overbridge.
- Creation of four new slip roads to connect the roundabouts to the A46, allowing movement between the A46 and the B4082 local network. All four slip roads would be a single lane with a hard shoulder.

- The western roundabout would have four arms, connecting the A46 northbound carriageway with the junction overbridge and the new B4082 link road.
- The eastern roundabout would have three arms connecting the southbound slip roads to the new junction overbridge, leading to the western roundabout.
- The new slip roads and roundabouts would be located above the existing ground level, with embankments on either side.
- The new overbridge at the dumbbell junction would be a 30m long two-way single carriageway, with a hatched area in the central reserve to accommodate for broken down vehicles.
- Provision of road fencing and road restraint systems where required, such as steel and concrete barriers, post and rail fencing and badger fencing. Provision of gates in fencing where required.
- Provision of new road signage and markings.
- Creation of new farm access to Hungerley Hall Farm from the new B4082 link road.
- Ground improvement works to approximately a 1.5m depth under the footprint of the new overbridge.
- Creation of retaining walls for the new overbridge and four slip roads.
- Creation of embankments and cuttings along roads, as well as the reduction in height of an existing bund along the A46.
- Provision of a signalised pedestrian crossing on the B4082 link road near the Clifford Bridge Road/B4082 roundabout with pedestrian guard railings provided on the roundabout.
- Retention of the Hungerley Hall Farm accommodation overbridge (the existing bridge that provides farm vehicle access over the A46 mainline).
- Improvement of the existing drainage network, including the replacement of parts of the existing network.
- Provision of drainage networks on the new slip roads, the new section of the B4082 link road, the realigned section of the A46, the new dumbbell junction, and the new junction overbridge.
- Drainage features including a dry detention basin and two ponds that will be designed to be permanently wet.
- Provision of street lighting on the slip roads, dumbbell junction and the B4082 link road.
- Removal, relocation and replacement of roadside technology asset installations.
- Provision of a new variable message sign (VMS), which consists of a steel cantilever gantry supported on a reinforced concrete foundation.

- Creation of parking spaces for maintenance vehicles and a maintenance walking route.
- Utility protection works to Vodafone apparatus and Severn Trent Water foul rising main.
- Improvements to facilities for walkers, cyclists and horse-riders (WCH) through provision of a signalised pedestrian crossing on the B4082; and providing enabling works, including the retention of Hungerley Hall Farm accommodation overbridge, for a potential future WCH route to be provided by others.
- Replacement and installation of new highway boundary fencing.
- Replacement vegetation planting to compensate for the vegetation that needs to be removed to facilitate the Scheme.

Plate 1.1 The Scheme



Environmental design and mitigation

1.6.5. The design has been developed to meet the Scheme's objectives, whilst also minimising environmental effects wherever practicable.

1.6.6. The Scheme design adheres to the good practice principles of design and mitigation, as outlined in the Design Manual for Roads and Bridges (DMRB), published by National Highways (2020); this is detailed within the Scheme Design Report (**TR010055/APP/7.4**). The first option in mitigating adverse impacts is to seek design measures that would enable the impact to be avoided or, if this is not possible, reduced. This is referred to as embedded mitigation and includes measures such as changing the road's horizontal and vertical alignment, reducing the temporary and permanent footprint of the Scheme and altering construction methods. ES Figure 2.4 (Environmental Masterplan) (**TR010066/APP/6.2**) illustrates many of mitigation measures utilised in the Scheme.

1.6.7. Environmental design principles underlying the Scheme's design include, but are not limited to:

- Maintaining the landscape character of the area and integrating the Scheme into the existing landscape setting.
- Incorporating environmental mitigation requirements, such as reinstatement / mitigation planting and habitat creation, to reduce the impacts of the Scheme on biodiversity and enhance these where possible.
- Designing lighting so to minimise the impact of the Scheme on sensitive fauna and population and human health receptors (see section 3.8).
- Designing drainage systems so to mitigate flood risk and water quality impacts.
- Reducing material usage where possible through design, landscaping, the recycling of materials and the reuse of structures, such as the accommodation overbridge.
- Reducing carbon production from the Scheme where possible, such as through the reduction of waste and material usage.

Environmental Management Plan

1.6.8. The Environmental Management Plan (EMP) is a document produced to clearly state how the management and mitigation of environmental impacts during a Scheme will be delivered and monitored. The purpose of the First Iteration EMP is to detail how mitigation and management measures would be implemented to manage the environmental effects of the Scheme as identified within the ES. The First Iteration EMP (**TR010066/APP/6.5**) forms part of the DCO submission and includes the following appendices:

- Appendix B.1 Outline Construction Air Quality and Dust Management Plan
- Appendix B.2 Outline Construction Noise and Vibration Management Plan
- Appendix B.3 Outline Site Waste Management Plan
- Appendix B.4 Outline Landscape and Ecology Management Plan
- Appendix B.5 Outline Construction Communication Strategy
- Appendix B.6 Unexpected Archaeological Finds Protocol
- Appendix B.7 Historical Building Recording Written Scheme of Investigation
- Appendix B.8 Outline Carbon Management Plan

1.6.9. Within the First Iteration EMP is a register of environmental actions and commitments (REAC) (**TR010066/APP/6.5**), which includes but is not limited to:

- The required actions to mitigate or manage environmental impacts.
- The mechanism by which each action would be implemented.
- Who would be responsible for undertaking each action.
- The reporting requirements for each action.
- Any monitoring that would be required for each action.
- Who would be responsible for undertaking the monitoring.

1.6.10. Following the Secretary of State's approval of the DCO for the Scheme, the First Iteration EMP (**TR010066/APP/6.5**) will be updated to reference specific requirements relating to the various phases of construction. The following management plans will be prepared or refined as part of the Second Iteration EMP:

- Site Waste Management Plan (SWMP)
- Materials Management Plan (MMP) (if required)
- Soil Handling Management Plan
- Construction Noise and Dust Management Plan
- Construction Air Quality and Vibration Management Plan
- Construction Communication Strategy
- Landscape and Ecology Management Plan (LEMP)
- Water Monitoring and Management Plan
- Historic Building Recording Written Scheme of Investigation
- Invasive Non-Native Species (INNS) Management Plan
- Operational UXO Emergency Response Plan (if required)
- Unexpected Archaeological Finds Protocol

- Carbon Management Plan

1.6.11. The Second Iteration EMP (and any other document that forms part of it) would be a live document that would be maintained by the Principal Contractor (PC) throughout the construction phase of the scheme.

1.6.12. On completion of construction, the PC would prepare a Third Iteration EMP for the operational and maintenance phase of the Scheme. The Third Iteration EMP would be implemented by the maintenance authority responsible for the maintenance of the Scheme during the operational phase.

Construction works

Temporary works

1.6.13. The temporary works required for the Scheme are summarised below, with detailed descriptions of these works and their methods presented in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**). Temporary works are presented in ES Figure 2.5 (Temporary Works) (**TR010066/APP/6.2**).

- Provision of a satellite compound within the northern extent of the Order Limits to provide welfare facilities. This would require the stripping of topsoil and the creation of a temporary surface and the installation of temporary welded mesh fencing panels and gates.
- Provision of a temporary drainage system at the satellite compound.
- Site access routes would be cut and built along the permanent road alignment of the slips and the new B4082 link road.
- Construction of temporary lanes in the southbound verge south of the existing roundabout.
- Installation of temporary road signs during construction.
- Construction of site access/egress points at the three locations shown in ES Figure 2.5 (Temporary Works) (**TR010066/APP/6.2**). Each location would have hardened bell mouths constructed ahead of the start of works.
- Provision of temporary boundary fencing around construction works areas and safety barriers.
- Temporary widening of the existing A46 southbound carriageway (south of the existing Walsgrave Junction) into the southbound verge, pushing the road up to 5m eastwards to allow for a running lane for traffic during construction.
- Installation of temporary crossovers of the A46 (i.e., hardening of the central reservation so it can take traffic for approximately 500m) for traffic management during later phases of the construction programme.
- Installation of temporary construction lighting.

Construction programme

1.6.14. Construction is scheduled to commence in 2026. The Scheme would take approximately 23 months to construct, with an assumed opening year of 2028.

1.6.15. Table 1-1 below shows the targeted key dates and construction milestones. These dates are based on an anticipated DCO decision in May 2026.

Table 1-1 Key milestones and targeted dates

Milestone	Targeted start date	Targeted completion date
Anticipated DCO decision	May 2026	
Pre-commencement works	August 2026	October 2026
Start of main works	October 2026	June 2028
Full proposed scheme open to traffic	May 2028	

1.6.16. To reduce the disruption caused by the construction of the Scheme, certain works (referred to as pre-commencement works) would be undertaken ahead of the main construction works.

1.6.17. Construction works would take place between 07:00 and 19:00 on weekdays, Monday to Friday (excluding bank holidays), and between 07:00 to 14:00 on Saturdays. Where it is not possible to complete works within these times, these will preferably be carried out on Saturday afternoons between 13:00 and 18:00, but may be carried out on Sundays between 10:00 and 17:00. There may be exceptions to these hours to accommodate elements such as abnormal load deliveries, piling for the road gantry, and construction of the bridge deck (some of which will require full or partial road closure). Any night-time works would take place between 19:00 and 07:00. The working hours include a period of up to one hour before and up to one hour after normal working hours for start-up and close-down of activities. Construction working hours would remain constant all year round; however, construction would not occur on bank holidays or during the nighttime at the weekend.

1.6.18. Some construction activities may require road closures (either partial closure using a contraflow system or full closure); where these are necessary, advance notice will be given to local communities and road users and a suitable diversion will be put in place. To ensure that the public remain updated regarding construction works, an Outline Construction Communications Strategy has been produced and forms part of the First Iteration EMP (**TR010066/APP/6.5**) which will be secured through the DCO. An Outline Traffic Management Plan (**TR010066/APP/7.5**) has been prepared and will be submitted with the DCO

application. This would be developed into a full Traffic Management Plan (TMP) prior to construction and would be implemented throughout the construction of the Scheme, to make sure that there is a safe environment for those travelling along the route and for construction workers. Further details regarding the construction of the Scheme are contained within ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**). Site access points to the site will be off the A46 and will avoid the use of the local road network, in order to reduce construction related traffic.

1.7. Future baseline

1.7.1. The EIA has considered how the existing baseline conditions in the Order Limits would evolve over the coming years without the implementation of the Scheme, to create the future baseline conditions for assessment.

1.7.2. Changes to the existing baseline conditions may occur due to a combination of natural and human influences; these could include changes due to climate change (causing severe weather and increased flood risk) and changes due to residential or commercial development.

1.7.3. These changes have the potential to impact environmental aspects considered in this EIA: air quality, cultural heritage, landscape and visual, biodiversity, geology and soils, material assets and waste, noise and vibration, population and human health, road drainage and the water environment and climate. The ways in which changes to the future baseline may impact the environmental aspects are discussed in ES Chapters 5-15 (**TR010066/APP/6.1**).

1.7.4. The future baseline (future conditions without the Scheme) for climate in this EIA is based on the 2018 UK climate projections and is described in more detail in ES Chapter 14 (Climate) (**TR010066/APP/6.1**).

1.7.5. The future baseline for residential or commercial development and urban layout has been inferred from looking at proposed development on planning portals; this is described in detail within ES Chapter 15 (Combined and Cumulative Effects) (**TR010066/APP/6.1**).

2. Alternatives

Opportunities for A46 improvements

2.1.1. In 2014, Highways England published a Route Strategy Evidence Report, which identified four opportunities for the improvement of the Binley and Walsgrave Junctions along the A46, which would help to alleviate congestion and unreliable journey times; these included:

- Option 1: Improvements to the Binley Junction
- Option 2: Improvements to, and the relocation of, the existing Walsgrave Junction
- Option 3: Improvements to, or upgrade of, the M6 Junction 2 and the links between the M6 and M69
- Option 4: Improvements to both Binley and Walsgrave Junctions

2.1.2. Option 4 was progressed, and design development was undertaken between mid-March to October 2016 in several phases. Several design options for each of the two junctions were developed and evaluated against a number of metrics, such as impacts on safety, traffic, the environment, economic growth, stakeholders, as well as the cost of the development. Traffic modelling was also undertaken for these options.

2.1.3. The decision was taken in 2016 to take a phased approach to delivery, and Option 4 became two separate schemes for the two junctions. The first, the Binley junction upgrade, was consented by Highways Act Order on 8 August 2019 and opened for traffic in November 2022.

Options for Walsgrave improvements

2.1.4. In April 2018, a review of the previous work was completed for the Walsgrave Junction Scheme and further design work was undertaken. More alternative designs were considered for the existing Walsgrave Junction, and in total 30 alternative designs were considered at this stage. These 30 options were evaluated against the metrics noted above and traffic modelling was undertaken.

Shortlisted options

2.1.5. Subsequently, four preferred options were shortlisted and compared to a ‘do minimum’ scenario. Instead of undertaking the improvements to the existing Walsgrave Junction, the Applicant would implement a long-term repair and maintenance strategy, to maintain the serviceability of the existing Walsgrave Junction.

2.1.6. An Environmental Assessment Report (EAR) was produced at this stage by National Highways (2022) to compare the environmental effects of the four shortlisted options.

First consultation period

2.1.7. Public consultations were undertaken in 2022 (11 January – 14 February), as well as consultation with the relevant statutory stakeholders. The purpose of the consultation was to provide the local community and stakeholders with the opportunity to have their say on the four shortlisted options and share ideas, concerns, and local knowledge.

Chosen option

2.1.8. The final 'chosen option' was chosen in line with the conclusions of the EAR and the preferences expressed by the public and stakeholders during consultation. Subsequently, the Applicant released a Preferred Route Announcement (PRA) in June 2022.

2.1.9. Out of the shortlisted options, it is anticipated that the chosen option would have the least environmental impacts (including the lowest impact on flooding), while achieving the objectives of the Scheme, and would notably decrease congestion.

Second consultation period

2.1.10. Following the PRA, further consultation with environmental bodies was undertaken in September 2022. Subsequently, in February 2023 the Scheme progressed to the preliminary design stage and the design was refined, in line with the findings and recommendations from consultation and environmental assessments. The design changes made as a result of consultation and environmental assessments at this stage are summarised below:

- adjustment of vertical alignment of the A46 carriageway
- allocation of space in the western dumbbell roundabout to accommodate for a future link road
- reduction of the speed limit on the B4082 to 40 mph
- provision of a maintenance access track for the northern pond
- provision of lighting on the junction and slip roads along the B4082, but not on the A46 carriageway
- provision of a widened western verge to the B4082, which could accommodate a cycleway and footway in future
- provision of a signalised pedestrian crossing on the eastern arm of the Clifford Bridge Road roundabout

2.1.11. The reasoning for these design changes and their respective impacts are detailed in Table 3-8 of ES Chapter 3 (Assessment of Alternatives) (**TR010066/APP/6.1**).

2.1.12. Further statutory consultation was undertaken between 25 October and 22 December 2023. The Applicant consulted with both statutory consultees and the local community. Again, this feedback was considered in the design of the Scheme, and the design changes made following these statutory consultations, as well as further surveys undertaken between February and October 2023, are summarised below:

- retaining the accommodation overbridge to Hungerley Hall Farm
- provision of new access to Hungerley Hall Farm off the B4082 for farm vehicles to access the overbridge, so that the Farm can access land east of the A46
- provision of a new farm access road at Hungerley Hall Farm
- raising of the vertical alignment of the B4082, moving of the horizontal alignment westwards
- changing of the size, position and use of the northern pond
- removal of the northern access maintenance track, instead maintenance access to be via a maintenance strip along an embankment
- enlargement of the central pond
- changed orientation of the southern detention basin
- increasing the gradient of slopes to 1:3 across the majority of the Scheme, in order to facilitate planting and provide safer maintenance access
- partial removal of the raised bund alongside Coombe Pool and the partial re-building of this bund
- provision of a mammal crossing under the B4082 and mammal fencing
- inclusion of a variety of vegetation types in the landscape design
- alterations to planting and landscape design to increase the screening of the Scheme from receptors.

2.1.13. These design changes are included in the design which forms the application for development consent. These design changes have also been assessed as part of the EIA. The reasoning for these design changes and their respective impacts are detailed in Tables 3-8 and 3-9 of ES Chapter 3 (Assessment of Alternatives) (**TR010066/APP/6.1**).

2.1.14. Following the incorporation of the stated design changes, the Order Limits of the Scheme were adjusted to accommodate the design. These changes to Order Limits and the associated justification are described in Table 3-10 of ES Chapter 3 (Assessment of Alternatives) (**TR010066/APP/6.1**).

3. Significant effects

3.1.1. An environmental scoping exercise was undertaken prior to the production of the ES. This exercise involved undertaking a preliminary assessment of the potential environmental impacts of the Scheme; as such, the exercise determined the scope for the full environmental assessment, which environmental aspects should be assessed and to what level of detail. The findings of the scoping exercise are detailed in an Environmental Scoping Report (**TR010066/APP/6.8**) which was submitted to the Planning Inspectorate by National Highways in June 2023.

3.1.2. In August 2023, the Planning Inspectorate on behalf of the Secretary of State provided a response to the Environmental Scoping Report in the form of a Scoping Opinion (**TR010066/APP/6.9**). The Planning Inspectorate agreed that it is appropriate to scope out the following environmental aspects out of further environmental assessment:

- Heat and radiation
- Decommissioning
- Major Accidents and Disasters
- Transboundary Effects

3.1.3. It is appropriate that these aspects were not considered for further environmental assessment because they are unlikely to result in significant effects. The reasoning for this was presented in the Environmental Scoping Report (**TR010066/APP/6.8**).

3.2. Air quality

3.2.1. The impacts of the Scheme on emissions to the air have been modelled and assessed in this EIA. Changes in emissions cause changes in air quality, which can impact the health of humans and ecological receptors. Assessing impacts to air quality involves the consideration of current pollutant concentrations in the air, and the projection of future pollutant concentrations using computer models. The key pollutants that are assessed originate from vehicle emissions: Nitrogen Dioxide (NO_2), Nitrogen Oxides (NO_x), Ammonia (NH_3) and particulate matter (PM_{10} and $PM_{2.5}$).

3.2.2. The Scheme is located immediately adjacent to Coventry City Council Air Quality Management Area (AQMA), a citywide AQMA, designated as such due to its high levels of NO_2; no other AQMAs are located within the study areas for the Scheme.

Method of assessment

3.2.3. A detailed air quality assessment was conducted for the operation of the Scheme and a construction dust assessment completed for the construction of the Scheme. The impacts of ~~both construction traffic and~~ non-road mobile machinery (NRMM) emissions on air quality were scoped out of the EqIA, because these are unlikely to lead to significant air quality effects during construction. In the event that the construction programme extends beyond two years, i~~-~~mpacts related to construction traffic emissions have been screened and it has been determined that further assessment is not required.

3.2.4. Firstly, a review of the existing baseline conditions was undertaken using data and information from a variety of sources. This included data from Coventry City Council's NO_2 and PM_{10} monitoring networks, Rugby Borough Council's NO_2 monitoring network, the Air Pollution Information System (APIS 2024), and the Department for Food and Rural Affairs (DEFRA).

3.2.5. Subsequently, two different study areas were identified for the assessment of construction and operation phase impacts on air quality. For construction, a study area of 200m was used, based on the Order Limits of the Scheme. For operation, the study area was firstly determined by identifying roads that met the traffic scoping criteria outlined in Standards for Highways guidance (LA 105 in DMRB), based on reviewing the difference in traffic flows on these roads for two scenarios, both with and without the Scheme. The roads that met the scoping criteria, in addition to all other roads within 200m of these, were included within the affected road network (ARN). The study area for the assessment of air quality impacts during operation was then taken to include all the potentially sensitive human and ecological receptors within 200m of the roads that met the scoping criteria.

3.2.6. A qualitative assessment was undertaken to assess the impacts of construction dust on air quality and to determine the likelihood of significant effects; this informed the mitigation measures of the Scheme.

3.2.7. A detailed assessment of the changes in air pollutant concentrations at the identified sensitive receptors during operation was conducted using the Atmospheric Dispersion Modelling System for Roads (ADMS-Roads) software (version 5.0.0.1). Outputs from a strategic transport model were used as input data for the ADMS-ROAD model, as well as meteorological data and background pollution concentrations. Concentrations of NO_x, NO_2, NH_3 and PM_{10} were modelled for 2028 (the opening year of the Scheme) for both a 'Do Minimum' and a 'Do Something' scenario. The Do Something scenario included the Scheme, while the Do Minimum scenario did not; by comparing these scenarios, the impact of the Scheme itself on local air quality can be inferred.

This assessment was used to determine the likelihood of significant effects, and subsequently informed the mitigation measures of the Scheme. $PM_{2.5}$ was not modelled during this assessment; this is because the UK currently meets its targets for $PM_{2.5}$.

3.2.8. The significance of an air quality effect is based on the sensitivity of the receptor and the number of receptors impacted, as well as the magnitude and duration of the potential impact.

Construction

3.2.9. Best practice measures would be adhered to during construction, as outlined in the First Iteration EMP (**TR010066/APP/6.5**); therefore, it is likely that the Scheme would have **no significant effects** on local air quality due to the production of construction dust.

3.2.10. An outline air quality and dust management plan has been produced and is part of the First Iteration EMP (**TR010066/APP/6.5**), which will form part of the DCO submission. This outline plan would be used to develop a dust management plan prior to construction, which would outline the measures required to monitor the effectiveness of mitigation. Furthermore, daily on site and off-site inspections would be carried out to check that mitigation measures are being implemented, and a record of complaints and exceptional dust events would be created and filled out throughout construction; the details regarding these measures would be specified within the Second Iteration EMP at the detailed design stage.

Operation

3.2.11. It is anticipated that there would be **no significant effects** on air quality as a result of the operation of the Scheme; therefore, no specific air quality mitigation is required during the operation of the Scheme.

3.3. Cultural heritage

3.3.1. The impacts of the Scheme on three aspects of cultural heritage have been assessed in this EIA; these aspects are archaeological remains of human activity, historic buildings (or other built structures with historical value, including Conservation Areas), and historic landscapes (including designed landscapes, parkland and historically important hedgerows). This includes both designated and non-designated heritage assets. A list of all of the heritage assets included in the assessment is present in ES Appendix 6.1 (Cultural Heritage Information) (**TR010066/APP/6.3**).

3.3.2. Both temporary and permanent construction and operational effects on heritage assets have been considered in the cultural heritage assessment. Temporary

effects relate to changes in the setting of heritage assets, whereas permanent effects can be either physical effects on the heritage asset or effects on their setting. Effects can be direct or indirect; while direct effects result directly from a Scheme (e.g., new infrastructure impacting the setting of a heritage asset), indirect effects result from an impact of a Scheme on a receptor, which in turn impacts another receptor. An example of an indirect effect could be that a development causes a change in drainage across a wide area, which affects the preservation of archaeological remains in this area.

Method of assessment

3.3.3. Baseline information was obtained from desktop sources and collected during surveys; this information was used to assess the archaeological potential of the study area.

3.3.4. The study area was defined so that it would include the footprint of the Scheme, the areas surrounding the Scheme which could be physically affected or affected by noise, and the Zone of Visual Influence (ZVI). The ZVI is the area within which the Scheme would be theoretically visible to people.

3.3.5. A site visit was undertaken in July 2023 to determine the condition, setting and sensitivity of known heritage assets in the study area. A geophysical survey was also undertaken to identify anomalies of archaeological origin, but none were found; however, this study did identify evidence of agricultural activity, such as former field boundaries. A trial trenching survey was carried out and this identified one archaeological feature, a ditch, but this was designated as a low significance asset.

3.3.6. Once the baseline information had been obtained, heritage assets were screened following review of all available construction information to exclude those assets from detailed assessment on which the Scheme would not have any impact.

3.3.7. Subsequently, the significance of any effects on the remaining heritage assets was determined by considering the value and sensitivity of the heritage asset, as well as the magnitude and duration of the potential impact.

Construction

3.3.8. A temporary increase in traffic due to the construction of the proposed Scheme has the potential to impact the setting of nearby heritage assets; however, this would be minimised through the implementation of a traffic management plan. As such, it is anticipated that construction traffic would have **no significant effects** on heritage assets following mitigation.

3.3.9. Best practice construction measures will be implemented to minimise the noise, vibration and dust produced by the construction of the Scheme. Furthermore, monitoring measures for vibration/ground movement during construction would be set out in an outline heritage mitigation strategy, so that vibration and ground movement is reduced where practical throughout construction. Should vibration/ground movement surpass a prescribed threshold, inspections and/or the halting of works will be carried out; subsequently, the appropriate measures would subsequently be implemented to reduce this impact on heritage assets, where possible. As such, it is anticipated that construction noise, vibration and dust would have **no significant effects** on heritage assets following mitigation.

3.3.10. To mitigate potential impacts on unknown archaeological remains, an unexpected archaeological finds protocol (UAFP) will be developed. The UAFP will describe the measures required to mitigate impacts on unknown heritage assets in the event of an unexpected find. As such, it is anticipated that construction would have **Neutral (not significant) effects** on unknown archaeological remains following mitigation.

3.3.11. The construction of the Scheme would cause a permanent physical impact to the grade II Listed Buildings at Hungerley Hall Farmhouse, due to the demolition of the yard wall. A Historic Building Recording will be made of the Grade II listed wall at Hungerley Hall Farmhouse to mitigate the impact of construction on this heritage asset, by preserving the wall in historical records. Nonetheless, this is still expected to result in a **Slight adverse (not significant) effect**. It is possible that Hungerley Hall Farmhouse could also suffer a permanent impact, due to the construction of the Scheme, if the Farm's barns were physically affected following soil movement. However, vibration monitoring near the barns should prevent any potential damage to the barns, so that the resulting effect on the barns is expected to be **Neutral (not significant)**.

3.3.12. The construction of the Scheme would also permanently impact the setting and heritage value of the Hungerley Hall Farmhouse. While the proposed mitigation planting along the B4082 will screen the Scheme and soften its impact, the planting will not completely reduce the loss of character experienced by the farmhouse. Therefore, this is expected to result in a **Slight adverse (not significant) effect**.

Operation

3.3.13. It is expected that there will be **no significant effects** on cultural heritage receptors associated with the operation of the Scheme; therefore, no mitigation specific to cultural heritage is required for the operation phase of the Scheme.

3.4. Landscape and visual

3.4.1. The impacts of the Scheme on landscape and visual effects have been assessed in this EIA. Landscape and visual effects are interrelated but are distinct. Landscape effects relate to changes in the physical components or character of an area, irrespective of their visibility; whereas visual effects relate to the change in view experienced by people in specific locations (visual receptors). Landscape receptors are the distinctive character areas with the potential to experience change as a result of the Scheme.

3.4.2. The Scheme is situated on the edge of the city of Coventry, forming a division between the urban edge of Coventry to its west and rural countryside of Rugby to its east; therefore, there are a limited number of visual receptor locations with open views. The Scheme is situated on the boundary of two Natural England National Character Areas (NCAs). The Scheme is also partly located on the Green Belt.

Method of assessment

3.4.3. A desktop study and three site surveys (March, August, December 2023) were undertaken to determine the existing baseline conditions, to identify the potential landscape and visual receptors and their sensitivity, as well as the potential landscape and visual impacts of the Scheme on these receptors. Consultation with the local planning authorities was also undertaken to make sure all representative viewpoints were selected as visual receptors for assessment.

3.4.4. Landscape receptors are the distinctive character areas with the potential to experience change resulting from a Scheme. Whereas visual receptors are people in specific locations (such as their homes, work places, public spaces) that have the potential to experience a change in their view as a result of a Scheme. The assessment of impact on visual receptors is then undertaken by assessing the impact of a Scheme on a number of viewpoints which represent the views of people in specific locations (the visual receptors), these are called ‘representative viewpoints’. Thirteen representative viewpoints were used for visual assessment for this Scheme, which were selected in consultation with the local planning authorities. A 1km radius (from the Order Limits) study area was determined to be appropriate for the assessment of landscape and visual effects, following the review of desk-based studies, the three site visits, and a preliminary Zone of Theoretical Visibility (ZTV) study. There are no national or local landscape designations within the study area.

3.4.5. The assessment of landscape and visual effects within the study area includes the consideration of seasonal differences, both day and nighttime conditions, the impact of the change or loss of existing landscape features, the impact of

temporary construction activity, the impact of the introduction of new highway infrastructure, and the impact of vehicles travelling along the Scheme. The assessment of landscape and visual effects has been undertaken for the construction period, for year one of operation (immediately following construction), and for year 15 of operation (when mitigation planting has matured).

3.4.6. The significance of landscape and visual effects is based on the sensitivity of the landscape and visual receptors and the magnitude of landscape or visual change.

Construction

3.4.7. Environmental mitigation design measures have been integrated into the Scheme to reduce landscape and visual effects during construction. Mitigation measures include, but are not limited to, protecting retained vegetation, returning the land used for temporary works to its original state following construction, minimising permanent lighting usage and nighttime work where feasible, limiting temporary vertical construction elements where practical, and screening construction activities with bunds or earthworks where practical.

3.4.8. An arboricultural consultant has been engaged to inform the Preliminary design and produce ES Appendix 7.4 (Arboricultural Impact Assessment) (**TR010066/APP/6.3**). Within Appendix 7.4 is an initial Arboricultural Method Statement. This will be developed during detailed design and form part of the Second Iteration EMP. The Arboricultural Method Statement will outline tree protection and maintenance measures, as well as the monitoring that would be undertaken to make sure these measures are implemented.

3.4.9. Despite the mitigation measures outlined above, the construction of the Scheme would still result in significant effects. Of the four landscape character areas within the Scheme, one (PLCA 1 - Walsgrave Hill and Valley including Hungerley Hall Farm) would experience **Large adverse (significant) effects**, while the other three would experience **Slight adverse (not significant) effects**, due to the disturbance caused by construction activities. The Green belt would also experience **Slight adverse (not significant)** effects.

3.4.10. The majority of the representative viewpoints (nine) within the study area would be expected to experience either a **Slight** or **Neutral (not significant)** effect; however, **Large** or **Moderate (significant) effects** would be anticipated at four of the total 13 representative viewpoints, due to their proximity to the construction works. **Large or Moderate significant adverse effects** would likely be experienced by the residential receptors in close proximity to the Scheme, including residents of Farber Road, Barrow Close, Dorchester Way

(southern end) and Hungerley Hall Farm. In terms of recreational receptors users of PRoWs in close proximity to the Scheme would likely experience **significant adverse effects** as a result of the Scheme, while users of local footpaths in close proximity to the Scheme could experience effects of varying degrees, from **Slight adverse (not significant)** to **Moderate adverse (significant) effects**.

Operation

3.4.11. Mitigation measures such as the restoration of landscape pattern and character, and the planting of a range of species of local provenance would be implemented to reduce the landscape and visual impacts of the Scheme's operation. It is expected that the landscape overall would be enhanced by the planting outlined in ES Figure 2.4 (Environmental Masterplan) (**TR010066/APP/6.2**).

3.4.12. During operation, it is anticipated that the four landscape character areas within the Scheme would initially experience **Moderate adverse (significant)** or **Slight adverse (not significant) effects** at year one of the Scheme; Moderate adverse effects being experienced at PLCA 1 and slight at the other landscape character areas. However, following the maturing of planting at year 15, it is expected that these areas would experience either **Neutral** or **Slight beneficial (not significant) effects**. It is anticipated that the Green belt would experience a **Slight adverse (not significant) effect** at both years one and 15, due to the reduction in the openness of the Green belt.

3.4.13. The majority of representative viewpoints (11) within the study area would experience either **Slight adverse** or **Neutral (not significant) effects** at year 1 of the Scheme, and either **Neutral** or **Slight beneficial (not significant) effects** at year 15. While 'Viewpoint 1' (the recreational path to Coombe Abbey Park) is likely to experience a **Large adverse (significant) effect** at year 1, this would change to a **Slight beneficial (not significant) effect** at year 15, with the maturing of planting to screen the Scheme. However, the representative viewpoint at Hungerley Hall is expected to experience **Large adverse (significant) effects** at year one and **Moderate adverse (significant) effects** at year 15. At year one of operation, it is expected that the majority of residential receptors would experience **Large adverse (significant) effects**, while at year 15 effects at all receptors would have improved to be **Slight beneficial (not significant)**, except for residents at Hungerley Hall Farm. Similarly, regarding recreational receptors, PRoWs would experience **Large adverse (significant) effects** during year one of construction, but this would improve to be **Slight beneficial (not significant)** at year 15. Some local footpaths would experience effects during years one and 15 ranging from **Slight adverse** to **Neutral (not significant)** significance.

3.5. Biodiversity

3.5.1. The impacts of the Scheme on species, habitats and designated sites have been assessed in this EIA.

3.5.2. The ecological impacts of the Scheme on the Coombe Pool SSSI, Herald Way Marsh SSSI and LNR, LWSs within 250m of the Order Limits, Hungerley Hall Farm Ecosite, Coombe Abbey Pool Ecosite and the Stoke Flood LNR were assessed during both construction and operation as part of the EIA. The impacts of the Scheme on Willenhall Wood and Stonebridge Meadows LNRs were only assessed for the operation period because these receptors are located more than 2km from the Order limits of the Scheme, with no hydrological connections to the Scheme; however, they have been included in the assessment of operational ecological impacts because they were included in the assessment of operational air quality impacts. Ecological impacts have also been assessed for priority habitats, ponds, veteran trees and other terrestrial habitats, during both the construction and operation of the Scheme. The impacts on ancient woodland have only been assessed for the Scheme's operation because there are no ancient woodland areas within 500m of the Order Limits; however, this receptor has been included in the assessment of operational ecological impacts because they were included in the assessment of operational air quality impacts.

3.5.3. The impacts of both the construction and operation of the Scheme have also been assessed regarding the following protected species: Great Crested Newt (GCN), breeding birds, barn owl, wintering birds, bats, badger, otter, hazel dormouse, reptiles, water vole, white-clawed crayfish, hedgehog, fish, invasive non-native species (INNS), and other notable species.

Method of assessment

3.5.4. Study areas were identified for each of the ecological features mentioned above, subsequently a biodiversity baseline was determined for each ecological feature in its given study area.

3.5.5. In order to determine the biodiversity baseline for the Scheme, a number of surveys were undertaken from June 2022 to April 2024. These included a UK Habitat Classification (UKHab) survey, as well as ecological surveys for badger, bats, barn owl, breeding birds, GCN, otter, water vole and wintering birds. Desk studies were also undertaken, based upon data from the local biological records centre and web-based sources. Further pre-construction surveys would be undertaken in 2025 for badgers, bats, GCN, barn owl, otter, and water vole; a further INNS walkover survey would be undertaken in 2026.

3.5.6. Subsequently, the importance of each ecological receptor was evaluated, according to the criteria outlined in ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**). The potential impacts of both the construction and operation of the Scheme on ecological features were then assessed; this involved the consideration of the Scheme's design and the modelled traffic, air quality and noise data (see sections 3.1 and 3.6 of this non-technical summary).

3.5.7. Mitigation measures were identified to reduce the impacts of the Scheme on ecological receptors, in accordance with the mitigation hierarchy. The mitigation hierarchy prioritises the avoidance of adverse ecological impacts, followed by the minimisation of impacts, the restoration of other areas that are no longer in use on-site, and finally the offsetting of impacts.

3.5.8. The significance of the residual effects on ecological features was then assessed by considering the importance and sensitivity of the receptor, as well as the magnitude and duration of the impact.

Construction

~~3.5.9.~~ The Scheme has been designed so that it causes minimal habitat loss, and that where temporary loss is required for construction, less ecological valuable land has been chosen where practical. An area of woodland habitat in the Coombe Pool SSSI would be lost during the construction of the Scheme; however, a new larger woodland area would be planted to mitigate this and would be directly connected to the SSSI. Nonetheless, the SSSI would experience a **Slight adverse (not significant)** effect in relation to habitat loss. Mitigation measures would be implemented to prevent the spread of INNS in the SSSI (notably, rhododendron), as is outlined in the First Iteration EMP (TR010055/APP/6.5); therefore, the Scheme is anticipated to have a **Neutral (not significant)** effect on the SSSI in relation to the spread of INNS. The SSSI would also experience increased noise levels during construction, which have the potential to ~~to result in significant effects in relation to~~impact protected species within the SSSI. Mitigation measures would be implemented including a noise fence (Commitment NV2 of the REAC (**APP-110**), Appendix A of the First Iteration EMP (**REP1-110**) during the noisiest works affecting the SSSI and targeted monitoring of birds on Coombe Pool during the noisiest works and works near to the SSSI which will follow the protocols in a bird monitoring method statement Commitment BD10 of the REAC (**APP-110**)). It is anticipated that construction noise with mitigation would have a ~~**Moderate**~~ **Slight adverse (not significant)** effect on breeding waterbirds within the SSSI, including grey heron, and a ~~**Large**~~ **Slight adverse (not significant)** effect on wintering waterbirds within the SSSI, including shoveler.

3.5.9.

3.5.10. Outside of the SSSI, it is anticipated that habitat fragmentation during construction would have a **Neutral (not significant) effect** on breeding birds of local importance and a **Slight adverse (not significant) effect** on the county important yellowhammer, skylark, linnet and song thrush and county important wintering birds.

3.5.11. Construction noise is expected to cause **Slight adverse (not significant effect)** on bats, otters, and water vole, while badgers and other notable species would likely experience **Neutral (not significant) effects**. Barn owl would likely be disturbed by construction noise and vibration, which could lead them to abandon their nests; to mitigate this, two barn owl boxes will be provided at least 1km from the Order Limits of the Scheme in Coombe Abbey Park, to provide alternative nesting habitat for barn owls. As such, it is expected that barn owls would experience **Slight adverse (not significant) effects** due to construction noise and vibration. It is anticipated that for breeding and wintering birds outside of Coombe Pool SSSI, the mitigation measures mentioned in the First Iteration EMP (**TR010066/APP/6.5**) would be sufficient to mitigate any impacts to these birds.

~~3.5.11.~~3.5.12. Regarding designated sites other than the SSSI, the Scheme is expected to have **no significant effects** on Herald Way Marsh SSSI and LNR. The significance of the Scheme's effect on Coombe Pool Ecosite has been assessed as **Neutral (not significant)**. Whereas, Construction noise would also impact Coombe Abbey LWS, resulting in a **Slight adverse (significant) effect**. Hungerley Hall Farm Ecosite would experience minor temporary habitat loss during construction, but this has been assessed as resulting in a **Neutral (not significant) effect**. The Ecosite would also experience permanent habitat loss during construction, but later would experience habitat creation; therefore, overall, Hungerley Hall Farm Ecosite would experience a **Slight beneficial (not significant) effect**.

~~3.5.12.~~3.5.13. Other newly created habitat would include the creation of species-rich grassland, amenity grassland, shrubs, ground cover, scrub, native hedgerows with trees, marsh wet grassland and individual tree planting. Two of the proposed drainage basins would also be planted with aquatic species, providing permanently wet aquatic habitat. As such, despite the loss of some hedgerow habitat during construction, this habitat would experience a **Slight beneficial (not significant) effect**. Pond habitat would also experience a **Slight beneficial (not significant) effect**. There is one veteran tree, which is outside the Order Limits, but whose roots (the root protection zone) fall within the Order Limits; mitigation measures have been outlined in the Arboricultural Impact Assessment (see paragraph 3.4.8) and would be confirmed in the AMS prior to construction.

Therefore, it is anticipated that there would be a **Neutral (not significant) effect** on veteran trees during construction.

~~3.5.13.~~3.5.14. The habitat creation described above would benefit GCNs, breeding birds, wintering birds, bats, badgers, common reptiles, fish, hedgehog, brown hare, polecat, aquatic invertebrates, common amphibians, and potentially otter and water vole; it would also benefit the Hungerley Hall Farm Ecosite. However, parts of these habitats will take time to mature, and therefore the benefits to species may not be instant.

~~3.5.14.~~3.5.15. Following the creation (but not the maturing) of habitats and the implementation of the detailed mitigation measures, it is expected that construction of the Scheme would lead to a **Slight adverse (not significant) effect** on GCNs, barn owls, bats, otters, badgers, and other notable species. It is also anticipated that the loss of habitat due to the construction of the Scheme would have a **Slight adverse (not significant) effect** on the Skylark, linnet and song thrush (outside of the SSSI), which are all county important species; however, habitat loss is expected to have a **Neutral (not significant) effect** on the yellowhammer (outside of the SSSI), another county important species. Once planting has matured, it is anticipated that locally important breeding birds and county important wintering birds (outside of Coombe Pool SSSI), bats and common reptiles would experience a **Slight beneficial (not significant) effect** due to the Scheme.

~~3.5.15.~~3.5.16. A variety of other construction mitigation measures would be implemented to reduce the impact of construction on species, including the provision of badger fencing and gateways, creation of embankments, covering of excavations, minimised spill of construction lighting, retention of Hungerley Hall Farm accommodation overbridge (used by badgers and bats), dust mitigation measures, and the implementation of a temporary drainage strategy to reduce flood risk. Habitat connectivity would be achieved through the provision of native hedgerows and tree lines. Construction works would also be undertaken at timings that avoid sensitive seasons for protected species where feasible, as outlined in ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**). An Ecological Clerk of Works (ECoW) would be present on-site when required during construction to perform pre-clearance and pre-construction checks, to supervise works, and give advice regarding best practice. ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**) details the specific construction activities for which a ECoW would need to be present on site.

~~3.5.16.~~3.5.17. Temporary construction lighting would be limited to lighting of the satellite construction compound (approximately 700m north of Hungerley Hall Farm) and task lighting where required, which would be directed away from retained habitats and the Farm where feasible. Nonetheless it is still anticipated

that construction lighting would cause **Slight adverse (not significant) effects** on otters, fish, bats, and barn owls, while badgers, locally important breeding birds and county important wintering birds would likely experience a **Neutral (not significant) effect**. Breeding and wintering birds can also be impacted by visual stimuli from construction works, which can cause disturbance and abandonment of nests. It is anticipated that the Scheme could cause **Slight adverse (not significant) effects** on breeding and wintering birds (outside of Coombe Pool SSSI), due to visual disturbance.

~~3.5.17.~~3.5.18. The construction of the Scheme would require the closure and destruction of one active subsidiary sett (badger sett), for which a Natural England licence would be sought; this is anticipated to result in a **Slight adverse (not significant) effect** on badgers. A bat licence would be sought from Natural England if this was found to be required following future surveys.

~~3.5.18.~~3.5.19. There is risk of injury/mortality to animals during construction works (for instance, during vegetation clearance); however, mitigation would be employed during construction, as detailed within the First Iteration EMP (**TR010066/APP/6.5**), to reduce this impact. As such, it is anticipated that the Scheme would have a **Neutral effect (not significant)** on GCNs, otters, roosting bats, other notable species, and breeding and wintering birds (outside of Coombe Pool SSSI), due to mortality/injury. While mitigation would also be implemented to reduce the impact of the Scheme on the mortality and injury of badgers (such as badger fencing), due to the required destruction of the sett and the risk of badgers getting hit in the road, it is expected that badgers would experience a **Slight adverse (not significant) effect**.

Operation

~~3.5.19.~~3.5.20. Mitigation measures would be implemented during the operation of the Scheme to reduce impacts to sensitive species, habitats, and designated sites. These would include, but would not be limited to, the drainage strategy, noise and air pollution mitigation measures, the provision of tall vegetation screens along road verges, the provision of bat boxes, and the absence of lighting along the A46. Due to the implementation of the drainage strategy, it is anticipated that ecological features would experience a **Neutral (not significant) effect** as a result of hydrological changes, due to the Scheme.

~~3.5.20.~~3.5.21. During the operation of the Scheme, it is expected that noise levels across the Scheme's Order Limits will experience differential changes, with some areas increasing compared to the baseline (present noise levels), and others decreasing. It is anticipated that noise levels in parts of Coombe Pool SSSI would decrease during operation, which would have a **Slight beneficial (not significant) effect** on breeding waterbirds, breeding woodland birds,

wintering woodland birds and breeding grey heron. Wintering waterbirds would likely experience **Neutral (not significant) effects**. Noise levels during operation are likely to slightly increase at Coombe Abbey LWS, which would likely result in a **Slight adverse (not significant) effect**.

~~3.5.21.~~3.5.22. It is also anticipated that parts of the Coombe Pool SSSI would experience a reduction in air quality during operation, due to increased Nitrogen deposition. This is anticipated to have a **Slight adverse (not significant)** effect on herons, wintering wildfowl, breeding waterbirds and wintering birds within the SSSI. The Scheme is also expected to have a **Slight adverse (not significant)** effect on the Herald Wey Marsh SSSI/LNR/LWS, Willenhall Wood LNR/LWS/ancient woodland, Gainford Rise LWS, Piles Coppice LWS/ancient woodland, Stonebridge Meadows LNR and LWS, Lower Sowe Meadows LWS, Stretton Croft LWS, Baginton Fields LWS, Binley Common Farm Wood ancient woodland as well as a veteran tree in Piles Coppice, one veteran tree near Hungerley Hall Farm and a second nearby tree 'beginning to veteranise'~~.~~ due to changes in Nitrogen and Ammonia deposition. These changes are also expected to give rise to a **Neutral (not significant)** effect at ~~the Baginton Fields LWS and~~ Sowe Valley Dorchester Way LWS and Sowe Valley Wyken Croft to Ansty Road LWS. ~~Furthermore, these changes in air quality are expected to have a **Slight adverse effect (not significant)** upon other ancient woodlands, one veteran tree (near Hungerley Hall Farm) and another tree which is 'beginning to veteranise'.~~ In addition to these effects from changes in Nitrogen and Ammonia deposition, there is anticipated to be a **Slight adverse (not significant)** effect on Willenhall Wood LNR/LWS/ancient woodland and a **Neutral (not significant)** effect on Baginton Fields LWS from changes in NO_x.

Outside of the SSSI, operational noise is expected to result in Slight beneficial (not significant) effects on wintering birds and locally important breeding birds; otters are also expected to experience effects of this significance. Bats, badgers and county important birds (yellowhammer, linnet, song thrush and skylark) are expected to experience **Neutral (not significant)** effects due to operation noise. However, it is anticipated that otters would experience a **Slight adverse (not significant)** effect during operation due to increased noise at Coombe Pool and Smite Brook.

~~3.5.22.~~3.5.23. There would be an increased risk of mortality to some species during the operational phase, due to collision with traffic on the B4082 link road and the new dumbbell junction. It is anticipated that this would have a **Slight adverse (not significant) effect** on GCNs, breeding and wintering birds, barn owls, bats, badgers, and other notable species.

~~3.5.23.~~3.5.24. The Scheme would introduce lighting along the B4082 link road and the dumbbell junction in areas where the Scheme was not previously lit. It is

expected that this would have a **Slight adverse (not significant) effect** on bats, barn owls, wintering birds and breeding birds, and a **Neutral (not significant) effect** on badgers and otters.

3.6. Geology and soils

3.6.1. The impact of the Scheme on soil, surface water, ground water and human health, due to contamination, has been assessed in this EIA. The impacts of the Scheme on agricultural land have also been assessed, as soil quality impacts agricultural productivity. There are no designated geological sites within the construction area for the Scheme, therefore this assessment has concentrated on contamination and agricultural land.

Method of assessment

3.6.2. A study area of 1km beyond the Order Limits was decided for the assessment of contamination, while the area within the Order Limits was deemed the study area for the assessment of agricultural land. The assessment of the Scheme's potential effects was constrained to the respective study areas for contamination and agricultural land.

3.6.3. A contaminated land risk assessment assesses whether contaminants in soils or groundwater have the potential to cause harm to health or controlled waters. A ground investigation was undertaken in 2023 to determine the contamination baseline and estimate the risks posed by identified hazards (potential sources of contamination). The hazards identified in the investigation included infilled land, made ground, commercial/industrial land use, former landfills, and ground gas. Groundwater contaminant (from boreholes) and ground gas concentrations were also measured to establish the contamination baselines for groundwater and ground gas respectively.

3.6.4. The findings of the ground investigation were also used to develop a Conceptual Site Model (CSM), which enabled the assessment of contaminant pathways in the study area.

3.6.5. An ALC survey was also carried out in October 2023, to determine the type and quality of agricultural soil in the study area. It was estimated that the soil is mostly Best and Most Versatile (BMV) land, which is a finite national resource.

3.6.6. In order to determine the significance of the effect on a given receptor, its value (sensitivity) is evaluated along with the magnitude of the impact (change). The criteria for determining the value of a 'human health', 'surface water', 'ground water' and 'soil' receptors, as well as the magnitude of the impact (change) for these receptors, is detailed in ES Chapter 9 (Geology and Soils) (**TR010066/APP/6.1**).

Construction

3.6.7. The impacts of the Scheme on human health (of construction workers and local people), due to ground gases would be mitigated through the use of best practice measures during construction, such as the monitoring of potential ground gases and vapours in confined spaces during construction. However, it is expected that residential receptors, as well as users and occupiers of adjacent land to the Scheme (agricultural fields, paths), could experience **Slight adverse (not significant) effects** during construction following the implementation of mitigation measures, due to the ingestion of dust or the inhalation of dust and ground. It is anticipated that construction and maintenance workers for the Scheme would experience **Slight adverse (not significant) effects** in terms of their health, due to direct contact with contaminated solids and dusts, the ingestion of contaminated soils and dusts, or the inhalation of contaminated soils, gases, dusts, and vapours. It is anticipated that users of the A46 would experience **Neutral (not significant) effects** on their health during construction, due to direct contact with contaminated solids and dusts, the ingestion of contaminated soils and dusts, or the inhalation of contaminated soils, gases, dusts, and vapours

3.6.8. The Scheme would require the excavation of agricultural soils in temporary and permanent land take areas, which would impact agricultural soil resources. However, the impact of this on temporary land take areas would be minimised through the handling, storage, and re-use of soil on-site and the restoration of temporary land take areas to their former condition, following construction; therefore, it is expected that there would be a **Slight adverse (not significant)** effect on soils in temporary land take areas. However, the stripping of high-quality agricultural soils in permanent land take areas is still expected to have a **Large adverse (significant) effect** on Grade 1 (excellent quality) agricultural soils and a **Moderate adverse (significant) effect** on Grade 3a (good quality) and 3b (moderate quality) agricultural soils.

3.6.9. To reduce the risk of contamination and the potential impacts that this would have on local soils, surface water and ground water, a temporary drainage strategy would be implemented for the construction of the Scheme. A Soil Management Plan (SMP) will also be produced to make sure excavated soils are properly handled and are stored separately. Furthermore, should landfill materials be encountered during construction, these will be disposed of off-site at a suitably licensed facility. Following the implementation of mitigation measures, it is anticipated that surface water receptors (Smite Brook, Coombe Pool and associated surface water features) and groundwater receptors (Secondary A, B and undifferentiated Aquifers) would experience **Slight adverse (not significant) effects** during the construction of the Scheme.

Operation

3.6.10. The impact of the Scheme on geology and soils during operation is anticipated to be a **Neutral (not significant) effect**, as there is no change in the magnitude of impacts, so no mitigation is required.

3.7. Material assets and waste

3.7.1. The impacts of the Scheme on consumption of materials and products (from primary, recycled or secondary, and renewable sources), the use of materials offering sustainability benefits, and the use of excavated and other arisings that fall within the scope of waste exemption criteria, have been assessed in this EIA.

Method of assessment

3.7.2. This assessment of the impacts of the Scheme on the use of material assets and generation of waste was only assessed during the construction phase of the Scheme, because the operation of the Scheme is not anticipated to result in significant environmental effects, as agreed in the Scoping Opinion (**TR010066/APP/6.9**). Infrequent operation and maintenance activities are required for newly constructed assets; therefore, material usage and waste generation are minimal.

3.7.3. The receptors for material asset and waste impact assessment are the material assets themselves. Their consumption impacts upon their immediate and (in the case of primary materials) long-term availability. This results in the depletion of natural resources and potential associated adverse environmental impacts.

3.7.4. Baseline information was collected from a desk study and the ground investigation undertaken in 2023, which identified material asset and waste receptors, as well as geology and soil receptors. Two different study areas were used to examine the use of material assets; the first included temporary and permanent land take areas within the construction site, the second included feasible sources for, and the availability of, construction materials required to construct the Scheme's main elements.

3.7.5. The significance of the effect on a given receptor is determined by the magnitude of impact and the 'significance category' of the receptors, see ES Chapter 10 (Material Assets and Waste) (**TR010066/APP/6.1**) for further detail.

Construction

3.7.6. The Scheme is designed to avoid and reduce the environmental impacts of material assets and waste throughout its design stages, through the process of exploring alternatives and embedded mitigation.

3.7.7. The principles of the waste hierarchy have been implemented throughout the design process; the waste hierarchy establishes an order of preference for managing and disposing of waste where preventing waste is the preferred option and sending waste to landfill is the last resort. The Principal Contractor will also mitigate environmental effects by adhering to the principles of 'designing out waste' during construction, which includes, but is not limited to optimising resource use through efficiency, re-using construction waste where possible. The Principal Contractor will also prioritise the use of secondary and recycled materials, as well as local and responsibly sourced materials.

3.7.8. The SMP will guide the re-use of excavated soil during construction and will include measures to be implemented to classify, track, store, re-use and dispose of all excavated waste generated during the construction. A Site Waste Management Plan (SWMP) would be produced to identify the likely types and quantities of waste generated by the Scheme, and how waste would be reduced, re-used, managed, and disposed. A Materials Management Plan (MMP) would be prepared where applicable to provide lines of evidence covering the use of clean site won materials within the Scheme.

3.7.9. Overall, the recycled content of the materials used are predicted to be more than the regional target of 28%. If 'good practice' is achieved during construction, it is anticipated that an overall recycled content of 53% can be reached. In addition, it has been estimated that the Scheme has the potential to incorporate a recovery rate of 95% for construction and demolition waste. Therefore, the residual effect on natural resources due to the Scheme is expected to be **Slight adverse (not significant)** during construction.

Operation

3.7.10. No mitigation specific to material assets and waste is required for the operation phase as there is predicted to be **no significant effect** associated with the Scheme.

3.8. Noise and vibration

3.8.1. The impacts of the Scheme on noise and vibration have been assessed in this EIA.

3.8.2. There are no Noise Important Areas (NIAs) within 1km of the Scheme's Order Limits, but six NIAs are located within 2km. However, there are many residential, ecological, and cultural heritage receptors within close proximity to the Scheme.

Method of assessment

3.8.3. A baseline noise survey was undertaken between January and March 2024 at local roads likely to be impacted by the Scheme. The noise levels measured during this survey have been analysed to determine the UK road traffic noise index at nearby roads to the Scheme and allowed validation of the noise model.

3.8.4. Future construction noise during the Scheme was predicted using noise modelling software, construction vibration was predicted using British Standard calculation methods, and a construction noise traffic assessment has been carried out to predict noise generated by temporary traffic. Assessments carried out take into consideration a reasonable worst-case situation in terms of noise and vibration sources. Any mitigation identified has therefore been based upon this reasonable worst-case situation.

3.8.5. Operational noise was predicted for four scenarios: 'do minimum' and 'do something' in the opening year of the Scheme and 'do minimum' and 'do something' for the future year of the Scheme. For each scenario a road traffic noise model was produced to predict operational noise.

3.8.6. The criteria used for outlining the magnitude of the noise and vibration impacts, the sensitivity of receptors, and therefore the significance of effect are outlined in ES Chapter 11 (Noise and Vibration) (**TR010066/APP/6.1**).

Construction

3.8.7. Mitigation measures would be implemented to minimise potential noise and vibration impacts during the construction phase of the Scheme. The majority of construction works will be undertaken during daytime hours, as outlined in ES Chapter 11 (Noise and Vibration) (**TR010066/APP/6.1**), to minimise impacts on residential and receptors; further mitigation will be implemented where this is not possible.

3.8.8. During construction temporary noise barriers would be provided where required and best practice construction measures would be used to minimise noise production. Where all mitigation is implemented effectively, significant residual construction noise effects will be reduced but may still occur (based upon the reasonable worst-case assessed). Furthermore, the significance of effects on receptors due to night-time or weekend work will require further refinement related to locations and extents of mitigation required.

3.8.9. Construction vibration would be monitored, and local occupants of adjacent vibration sensitive receptors would be informed prior to the start of any works which could produce high vibration levels. Condition surveys and other assessments may be required to assess the fragility of structures at Hungerley

Hall Farm, which would be carried out prior to construction. With the implementation of the outlined mitigation, the Scheme is expected to give rise to **no significant effects** regarding construction vibration.

3.8.10. Temporary traffic will be directed by the routes prescribed in the Outline Traffic Management Plan (OTMP) (**TR010066/APP/7.5**), which would provide routes for traffic that would minimise the impacts of construction on receptors. With the implementation of the OTMP, it is likely that construction traffic will give rise to **no significant effects**.

Operation

3.8.11. Low-noise road surface will be used on the A46 to minimise operational noise levels, and in conjunction with a re-aligned A46 and changes in traffic flows and speeds; it is expected that there would be **no significant effects** on receptors due to operational noise.

3.8.12. The impact assessment for operational noise has concluded that the provision of noise barriers is not necessary for the Scheme, as significant effects are unlikely; therefore, these have not been included in the Scheme.

3.9. Population and human health

3.9.1. The impacts of the Scheme on the health of local communities, and on land-use and accessibility, have been assessed in this EIA. The land-use and accessibility assessment consists of the impacts on private property and housing, community land and assets, development land and businesses, agricultural land holdings, and walkers, cyclists and horse-riders (WCH).

3.9.2. Many residential properties, community facilities, parks and recreational areas, commercial properties, agricultural land holdings, farms and WCH routes are located near to the Scheme.

Method of assessment

3.9.3. To assess the significance of the effects of the Scheme on land-use and accessibility, the sensitivity (or value) of a given receptor and the magnitude of the impact (or change) to the receptor are both considered. The criteria for determining the sensitivity and importance of land-use and accessibility receptors are outlined in ES Chapter 12 (Population and Human Health) (**TR010066/APP/6.1**). Land-use and accessibility effects were considered for a study area of 500m from the Order Limits.

3.9.4. A qualitative assessment of the significance of the Scheme's effects on human health was carried out, considering the health profiles of affected communities,

health determinants, and the likely health outcomes of the Scheme. Health determinants are environmental factors that influence the health of people, examples include local noise and air quality levels, access to green space, access to travel; see ES Chapter 12 (Population and Human Health) (**TR010066/APP/6.1**) for a full list of examples. Human health effects were considered for a study area comprised of the following wards: Revel and Binley Woods, Henley and Wyken.

3.9.5. Baseline health profiles of affected communities within the study area are informed by health profile data, future trends and consultation. Baseline health profiles were used to determine the sensitivity of human health receptors. Relevant health determinants were identified from the list in ES Chapter 12 (Population and Human Health) (**TR010066/APP/6.1**). Subsequently, likely health outcomes are identified by considering health determinants and the sensitivity of receptors; however, the assessment of qualitative health impacts cannot be used to quantify the severity or extent of effects.

Construction

3.9.6. Appropriate mitigation will be implemented during construction to mitigate air quality, noise, traffic and visual impacts (see sections 3.1, 3.3 and 3.7 for further detail) on human health and land-use and accessibility receptors.

3.9.7. The OTMP (**TR010066/APP/7.5**) identifies diversion routes, which would make sure disruption is minimised to those travelling between communities, to facilities, or to businesses. Measures will also be identified to make sure access is maintained to private property. Safe and appropriate alternative routes would be provided, where WCH undergo temporary closure (i.e. for the temporary closure of the uncontrolled pedestrian crossing facility on the B4082 eastern arm of the Clifford Bridge Road roundabout). Correspondence with local communities would be maintained throughout construction and communities will be able to raise any complaints with a representative of the Applicant.

3.9.8. In order to mitigate the impact of construction on agricultural activities, the construction programme would be developed in conjunction with farm owners, to minimise disruption to critical farming activities. Dust suppression measures and a temporary drainage strategy would be implemented during construction to minimise the potential impacts on crops and livestock. Temporary land-take would also be minimised where possible and any farm equipment affected during construction would be replaced.

3.9.9. Following the implementation of mitigation measures, the impact of the construction of the Scheme on land-use and accessibility is expected to result in **Slight adverse (not significant)** effects to accesses to private property and

housing, as well as community land and assets. However, it is anticipated that the Scheme would have **Very Large (significant) effects** on Hungerley Hall Farm, in relation to access and infrastructure disruption; and **Moderate (significant) effects** on temporary land take and impacts to farming activities. There are also anticipated to be **Large (significant) effects** at Walsgrave Hill Farm Partnership in relation to access and infrastructure disruption; and **Slight Moderate (significant) effects** on temporary land take and impacts to farming activities. For WCH users, the temporary closure of the uncontrolled pedestrian crossing facility on the B4082 eastern arm of the Clifford Bridge Road roundabout would result in **Moderate adverse (significant) effects**.

3.9.10. Following the implementation of mitigation measures, the impact of the construction of the Scheme on human health is expected to result in **Neutral** effects in terms of:

- Access to community recreation, education facilities, green / open space, health care facilities and transport networks
- Air pollution
- Safety
- Sources and pathways of potential pollution (e.g., land/water contamination).

3.9.11. Following the implementation of mitigation measures, the impact of the construction of the Scheme on human health is expected to result in **Negative** health outcomes in terms of noise disturbance and landscape amenity.

Operation

3.9.12. Mitigation and enhancement measures have been incorporated into the design during the operational phase of the Scheme. A new signalised pedestrian crossing will facilitate north-south movement across the B4082. The amenity of the Scheme would also be improved through planting.

3.9.13. Journey times for some residents could increase, resulting in a **Slight adverse (not significant) effect**, but the majority of residential receptors will experience **Neutral (not significant) effects**. WCH users would experience a **slight beneficial (not significant) effect**, due to the new pedestrian crossing facility. The operation of the Scheme is not expected to impact community land and assets, development land and business,

3.9.14. Following the implementation of these mitigation measures, it is expected that Hungerley Hall Farm could experience **Moderate (significant) effects** in relation to farming activities, access and infrastructure and permanent land take. Walsgrave Hill Farm Partnership is also likely to experience **Moderate (significant) effects** in relation to access and infrastructure, **Slight Moderate**

(significant) effects on farming activities, and **Slight (not significant) effects** on permanent land take. However, the farms may also experience some **slight beneficial (not significant) effects** in relation to environmental considerations at the farms; for instance, increased habitat (due to planting) could support beneficial insects for pollination and pest control, supporting the long-term health of crops and sustainability at the farms.

3.9.15. Following the implementation of mitigation measures, the impact of the construction of the Scheme on human health is expected to result in **Neutral** effects in terms of:

- Air pollution
- Noise pollution
- Tranquillity in green/open space
- Landscape amenity (but negative for residents of Hungerley Hall Farm)
- Sources and pathways of potential pollution (e.g., land/water contamination)

3.9.16. Following the implementation of mitigation measures, the impact of the operation of the Scheme on human health is expected to result in **Positive** effects in terms of safety, as well as access to community, recreation and education facilities, green/open space, and transport networks.

3.10. Road drainage and the water environment

3.10.1. The impacts of the Scheme on road drainage and the water environment have been assessed in this EIA.

3.10.2. A number of key water receptors are located near to the Scheme, these are Coombe Pool, Smite Brook, the River Sowe, Withy Brook, the Warwickshire Avon and Herald Way Marsh. Of these, the following are WFD surface water body catchments: Withy Brook (from its source to its confluence with River Sowe), the River Sowe (confluence with Withy Brook to confluence with River Avon) and Smite Brook (source to confluence with River Sowe).

Method of assessment

3.10.3. The following assessments have been undertaken in this section of the EIA:

- Flood risk assessment (FRA)
- WFD assessment
- Water quality assessment
- Groundwater assessment

- Hydromorphological assessment

3.10.4. Further detail on these assessments is presented in ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**). These assessments obtained information from a desk-based study, a site walkover and groundwater monitoring; hydraulic modelling was undertaken for some of the assessments.

3.10.5. The Drainage Strategy Report (ES Appendix 13.6 (**TR010066/APP/6.3**)), describes the proposed drainage design and outlines mitigation measures to mitigate potential adverse impacts on the water environment.

3.10.6. The study area for assessment incorporates all ground and surface water features that could potentially be affected by the Scheme; for surface water this is 1km from the Order Limits, while for groundwater this is 2km.

3.10.7. The significance of effects on the water environment are estimated by considering the sensitivity of the receptors (water features) and the magnitude of impact on these.

Construction

3.10.8. To mitigate impacts to the water environment during construction (including during demolition), best practice measures for pollution prevention and water management would be implemented, these are detailed in ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**).

3.10.9. Proposed construction activities directly affecting a watercourse include a new outfall to an existing watercourse, temporary culverting and the infilling and severance of two watercourses. Consents to undertake these works would be sought either through the DCO or obtained via the Lead Local Flood Authorities prior to commencing these activities. The culvert would be designed to include erosion protection measures and avoid loss of habitat or biodiversity.

3.10.10. Temporary dewatering activities may require a transfer or full abstraction licence, while dewatering discharges to the environment may require an environmental permit. These would be sought either through the DCO or obtained direct from the Environment Agency prior to commencing these activities.

3.10.11. A temporary works drainage strategy would also be implemented during construction to reduce impacts on surface water features. This would involve capturing sediment runoff, treating runoff, and ensuring that the runoff rate to watercourses remains the same as the pre-construction baseline. This would include the incorporation of Sustainable Drainage Systems (SuDS). The temporary works drainage strategy would also include a flood emergency

response plan, to manage flood risk impacts during construction in the event of a flood, and to make sure that construction workers are not exposed to increased levels.

3.10.12. To reduce impacts on groundwater features during construction, a water quality monitoring plan would be developed; this would provide an early warning of potential groundwater impacts during construction, meaning that additional mitigation could be implemented to prevent the escalation of impacts. The design and piling methods used for the construction of temporary and permanent below ground structures and piles would also reduce the potential for impacts on groundwater levels, flows and quality.

3.10.13. It is expected that the significance of the residual effects experienced by surface water receptors during construction will range from **Neutral** to **Slight adverse (not significant) effect**. It is also expected that the significance of the residual effects experienced by groundwater receptors during construction will range from **Neutral** to **Slight adverse (not significant) effect**.

Operation

3.10.14. During operation, all road drainage will drain by surface water outfalls discharging to the River Sowe and Smite Brook. The drainage system has been designed to minimise impacts on the receiving surface and ground water, see ES Chapter 13 (Road Drainage and Water Environment) (**TR010066/APP/6.1**) for further detail.

3.10.15. The drainage strategy, which will be implemented, utilises sustainable urban drainage systems (SuDS) and is designed to be resilient to climate change, being able to accommodate increased rainfall rates. During operation, existing drainage systems will not experience increased runoff rates. The drainage system has also been designed to mitigate flood risk and provide detention basins, which would be planted with suitable local species to provide further water quality and biodiversity enhancements.

3.10.16. Below ground structures have been designed to minimise disturbance to groundwater flow, which in turn would minimise the potential risk of groundwater flooding and the loss of groundwater.

3.10.17. It is expected that the significance of the residual effects experienced by receptors during operation will range from **Neutral** to **Slight adverse (not significant) effect** for all surface and ground water receptors, besides the River Sowe. The River Sowe and its tributaries may experience a **Slight (not significant) or Moderate adverse (significant) effect**, due to changes in flow pathways.

3.11. Climate

3.11.1. The impacts of the Scheme on the climate has been assessed in this EIA, as well as the impacts of future climates (by assessing the resilience of the Scheme to climate change).

Method of assessment

3.11.2. The consideration of climate effects is achieved through two assessments, the Greenhouse gas (GHG) impact assessment and the Climate change resilience assessment.

3.11.3. The GHG impact assessment considers the effects on climate from carbon emissions arising from the Scheme, including whether the Scheme may affect the ability of the UK Government to meet its carbon reduction targets. This involves the assessment of both the construction and operation impacts of the Scheme on climate; details on the methodology of this are located in ES Chapter 14 (Climate) (**TR010066/APP/6.1**).

3.11.4. For the GHG impact assessment, the study area for the construction phase comprises the physical infrastructure assets associated with the Scheme and therefore includes the embodied carbon of the Scheme materials and emissions associated with construction activities. The study area for the operation phase includes the operational energy requirements of the Scheme (i.e. road lighting) and the ARN for road user carbon (vehicle emissions).

3.11.5. The climate change resilience assessment considered the ability of the Scheme to operate as intended, despite climate change impacts and associated weather effects (in line with climate change projections). This involves the assessment of the impacts of a changing climate on the Scheme during the operation of the Scheme. Where the climate change impact on project receptors is potentially significant, a risk assessment determined the likelihood and consequences of those impacts; the criteria for the likelihood of impacts and the severity of the consequences are detailed in ES Chapter 14 (Climate) (**TR010066/APP/6.1**). Subsequently, the significance of effects is determined by considering the likelihood and consequences of impacts.

3.11.6. For the climate change resilience assessment, the study area comprised the Order Limits of the Scheme.

Construction

GHG impact assessment

3.11.7. Construction activities would result in carbon emissions which contribute to a negative impact on the climate, as it is not currently feasible to completely

eliminate emissions. However, the carbon emissions reduction hierarchy would be adhered to during construction. This consists of:

- Avoid - avoiding the production of carbon (e.g., through the re-using or re-furbishing of existing assets, or exploring lower carbon options)
- Switching – applying low carbon solutions (materials, technologies, products) to reduce resource consumption, and applying efficient construction methods
- Improve – identify, assess, and finally integrate measures to further reduce carbon though on-site or off-site sequestration

3.11.8. It is unlikely that the construction phase of the Scheme would result in GHG emissions that would be defined as significant, considering that the GHG emissions from the Scheme are unlikely to have a material impact on the Government achieving its carbon targets; nonetheless, in line with Government guidance, the Scheme has sought to reduce GHG emissions as far as is practicable.

Operation

GHG impact assessment

3.11.9. Operation activities will result in carbon emissions which contribute to a negative impact on the climate, as it is not currently feasible to completely eliminate emissions. However, the design of the Scheme has adhered to the above carbon emissions reduction hierarchy and design measures to reduce the carbon footprint of the Scheme during its operation will be implemented. These design measures are outlined in ES Chapter 14 (Climate) (**TR010066/APP/6.1**); one example involves the retaining of an existing Hungerley Hall Farm accommodation overbridge, instead of the creation of a different field access.

3.11.10. It is unlikely that the construction phase of the Scheme would result in GHG emissions that would be defined as significant, considering that the GHG emissions from the Scheme are unlikely to have a material impact on the Government achieving its carbon targets. As such, it is anticipated that the Scheme would have **no significant effects** on GHGs.

Climate change resilience assessment

3.11.11. Measures to increase the resilience of the Scheme to a changing climate during its operational phase have been included in the design, such as the incorporation of a drainage design which is able to accommodate for increased rainfall rates due to climate change.

3.11.12. In the context of the vulnerability of the Scheme to climate change, projected climate change is anticipated to have **no significant effect** on the Scheme.

3.12. Combined and cumulative effects

Combined effects

3.12.1. Combined effects arise when different environmental impacts affect a single resource or receptor; for instance, an ecological receptor could be affected by a reduction in both noise and air quality due to a development. Combined effects have been assessed within the individual environmental aspect chapters of the ES (**TR010066/APP/6.1**).

3.12.2. During construction it is anticipated that Hungerley Hall Farm would experience **Significant cumulative effects** due to traffic disruption, changes to views and noise. It is anticipated that Coombe Pool SSSI would also experience **Significant cumulative effects** due to impacts relating to hydrology, air quality, noise, habitat loss and impacts related to the spread of INNS. See Table 15.4 of ES Chapter 15 (Combined and Cumulative Effects) (**TR010066/APP/6.1**) for further detail.

3.12.3. During the operation phase of the Scheme, it is anticipated that Hungerley Hall Farm would experience **significant adverse cumulative effects**. It is expected that there would be moderate adverse effects during operation on Hungerley Hall Farm in relation to both visual effects at year 15 of operation (large adverse during year one) and farming, due to permanent land take and disruption to access, infrastructure and farming activities; together, these effects would result in a significant cumulative effect.

Inter-project cumulative effects

3.12.4. Though a development may not cause significant effects for a given receptor (or group of receptors) by itself, the receptor may experience significant effects due to the cumulation of impacts from multiple developments; these effects are called inter-project cumulative effects.

3.12.5. A desk study was undertaken to collate a list of ‘other developments’ located within 1km of the Scheme’s Order Limits, which included a search of local planning websites and a search for Nationally Significant Infrastructure Projects. Screening criteria was subsequently applied to this list to reduce it to a shorter list against which the detailed assessment of cumulative effects would be undertaken; the criteria used are detailed in ES Chapter 15 (Combined and Cumulative Effects) (**TR010066/APP/6.1**). In order to assess the significance of cumulative effects, the sensitivity (value) of the receptor resource was considered, in conjunction with the anticipated magnitude of the impact from multiple developments; including, but not limited to, the consideration of factors such as the effect’s duration, its aerial extent and frequency.

3.12.6. **No significant inter-project cumulative effects** on environmental receptors are expected to arise from the Scheme, in conjunction with other developments, during the construction and operation phases of the Scheme. See Tables 15.6 and 15.7 of ES Chapter 15 (Combined and Cumulative Effects) (**TR010066/APP/6.1**) for further detail.

4. Summary

4.1.1. Table 4-1 provides a summary of the likely significant residual effects associated with the construction and operation of the Scheme. Mitigation measures have been developed for this assessment to avoid or reduce environmental effects where possible, and these measures have been considered when determining the significance of residual effects.

Table 4-1: Summary of likely significant residual effects

Aspect	Construction	Operation
Air Quality	No likely significant effects identified.	No likely significant effects identified.
Cultural Heritage	No likely significant effects identified.	No likely significant effects identified.
Landscape and Visual	It is anticipated that the landscape character area 'PLCA 1', which consists of Walsgrave Hill and Valley, including Hungerley Hall Farm, would experience Large adverse (significant) adverse effects, due to the disturbance caused by construction activities. Four representative viewpoints within the study area would likely experience adverse residual effects ranging from Moderate to Large (significant) in significance; this is because of the proximity of these representative viewpoints to construction works. Significant adverse effects would also be experienced by residents and users of recreational facilities in close proximity to the Scheme's construction works.	At year 1 of operation, it is anticipated that the landscape character area 'PLCA 1' would experience Moderate adverse (significant) effects; however, mitigation planting would have matured by year 15, meaning that there would no longer be any likely significant effects. At year 1 of operation, it is anticipated that the representative viewpoint on the footpath to Coombe Abbey Park would experience a Large adverse (significant) effect; however, with the maturing of mitigation planting, no significant effects are anticipated at year 15. The Hungerley Hall representative viewpoint would also likely experience Large adverse (significant) effects at year 1 of operation. It is anticipated that these effects would reduce with the maturing of mitigation planting; however, it is still estimated that the representative viewpoint would experience Moderate adverse (significant) effects at year 15. At year 1 of operation, it is expected that the majority of residential and recreational receptors would experience Large adverse (significant) effects; however, due to mitigation planting, these are expected to become Slight beneficial (not significant) effects by year 15.

Aspect	Construction	Operation
Biodiversity	No likely significant effects identified. ~~Large adverse (significant) effects are anticipated for Coombe Pool SSSI due to increased noise levels during construction. In turn, this would have a Large adverse (significant) effect on wintering water bids and a moderate adverse (significant) effect on breeding water birds.~~	No likely significant effects identified.
Geology and Soils	The stripping of high-quality soils in permanent land take areas is expected to have a Large to Moderate adverse (significant) effect on agricultural resources.	No likely significant effects identified.
Materials Assets and Waste	No likely significant effects identified.	No likely significant effects identified.
Noise and Vibration	No likely significant effects identified.	No likely significant effects identified.
Population and Human Health	It is anticipated that the Scheme would have Very Large (significant) effects on Hungerley Hall Farm, in relation to access and infrastructure disruption. It is also expected that the farm would experience Moderate (significant) effects on temporary land take and impacts to farming activities. It is anticipated that the Scheme would have Large (significant) effects on Walsgrave Hill Farm Partnership, in relation to access and infrastructure disruption. It is also expected that the farm would experience Slight Moderate (significant) effects on temporary land take and impacts to farming activities. For WCH users, the temporary closure of the uncontrolled pedestrian crossing facility on the B4082 eastern arm of the Clifford Bridge Road roundabout would result in Moderate adverse (significant) effects. The impact of the construction of the Scheme on human health is expected to result in Negative effects in terms of	It is expected that Hungerley Hall Farm would experience Moderate (significant) effects in relation to farming activities, access and infrastructure and permanent land take. Walsgrave Hill Farm Partnership is also likely to experience Moderate (significant) effects in relation to access and infrastructure, Slight Moderate (significant) effects relating to farming activities, and Slight (not significant) effects permanent land take. The impact on human health during the operation of the Scheme is expected to result in positive effects in terms of safety, as well as access to community, recreation and education facilities, green/open space, and transport networks. At this stage (prior to detailed design) the significance of effects on human health cannot be determined.

Aspect	Construction	Operation
	noise disturbance and landscape amenity, it is also possible that human health would experience significant negative effects due to construction noise and traffic. At this stage (prior to detailed design) the significance of effects on human health cannot be determined.	
Road Drainage and the Water Environment	No likely significant effects identified.	It is possible that the River Sowe and its tributaries could experience a Moderate adverse (significant effect), due to changes in flow pathways.
Climate	No likely significant effects identified.	No likely significant effects identified.

5. What happens next?

5.1.1. We have submitted the Environmental Statement to the Planning Inspectorate as part of our application for a DCO. The Planning Inspectorate will next consider whether the application should be accepted for examination.

5.1.2. The Planning Inspectorate will upload documents to its website (https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/TR010066) and will contact local authorities for confirmation of the adequacy of the pre-application consultation. If satisfactory responses are received and all the necessary documents have been provided, the Planning Inspectorate will accept the application and the pre-examination stage will begin. Registered interested parties can send written comments to the Planning Inspectorate and can ask to speak at a public hearing. The examination will last a maximum of six months.

5.1.3. The Examining Authority will then have three months to consider its recommendation. This recommendation and a supporting report will then be passed to the Secretary of State for Transport, who will have three months to decide whether to grant a Development Consent Order.

5.1.4. Finally, when the Secretary of State's decision is published, there will be a six-week High Court challenge period. If there are no High Court challenges, the decision will be final, and we would have the legal power to proceed with the Scheme.

Abbreviations

Abbreviation	Meaning
ADMS-Roads	Atmospheric Dispersion Modelling System for Roads
ALC	Agricultural Land Classification
APIS	Air Pollution Information System
AQMA	Air Quality Management Area
ARN	Affected Road Network
DCO	Development Consent Order
DEFRA	Department for Food and Rural Affairs
EAR	Environmental Assessment Report
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EIA Regulations	Environmental Impact Assessment Regulations 2017
ES	Environmental Statement
FRA	Flood Risk Assessment
GCN	Great Crested Newt
GHG	Greenhouse Gas
INNS	Invasive Non-Native Species
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MMP	Materials Management Plan
NCA	National Character Area
NH_3	Ammonia
NIA	Noise Important Area
NO_x	Nitrogen Oxide
NO_2	Nitrogen Dioxide
OTMP	Outline Traffic Management Plan
$PM_{2.5}$	Particulate Matter 10 (diameter of 10 microns)
PM_{10}	Particulate Matter 2.5 (diameter of 2.5 microns)
PRA	Preferred Route Announcement
PRoW	Public Right of Way
RIS2	Road Investment Strategy 2
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
SWMP	Site Waste Management Plan

Abbreviation	Meaning
TMP	Traffic Management Plan
UAFP	Unexpected Archaeological Finds Protocol
UKHab	UK Habitat Classification
VMS	Variable Message Sign
WCH	Walkers, Cyclists and Horse-riders
WFD	Water Framework Directive
ZTV	Zone of Theoretical Visibility
ZVI	Zone of Visual Influence

References

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National Highways (2022). The Coventry junction (Walsgrave) Environmental Assessment Report (EAR) PCF Stage 2.

Appendix A - Figures

The following figures are included within Appendix A:

- NTS Figure 1: The Location of the Scheme
- NTS Figure 2: Environmental Constraints

Legend

Order Limits

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REV	DATE	REVISION NOTE	ORG	CHKD	APP
P01	16.10.2024	FIRST EDITION	AC	CF	CF

Client

national highways

Project Title

A46 COVENTRY JUNCTIONS (WALSGRAVE)

Project Stage

DCO APPLICATION

Drawing Title

NTS FIGURE 1 - LOCATION PLAN

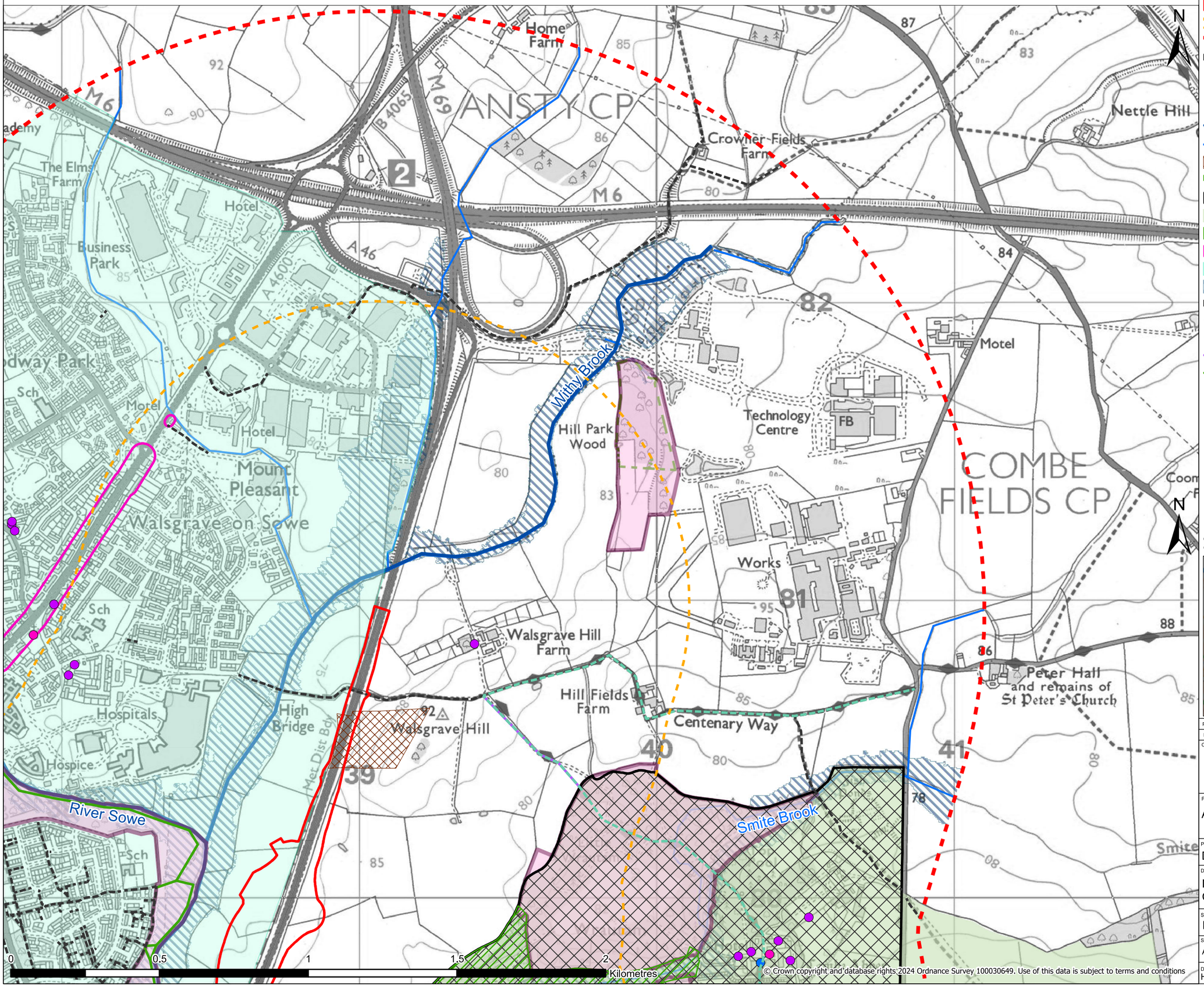
Suitability

FOR INFORMATION

Sheet Size	Scale	Status	Revision
A3	1:250,000	S3	P01

Drawing Number

HE604820-OIL-EGN-00-DR-LX-30012



Legend

- Order Limits
- Order Limits - 1km Buffer
- Order Limits - 2km Buffer

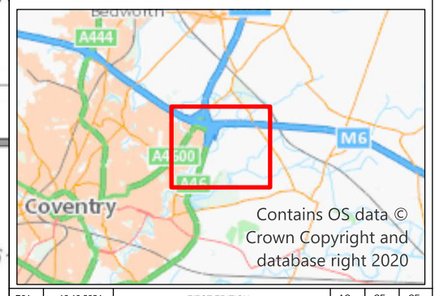
Listed Buildings

- Grade I
- Grade II
- Grade II*

- Main River
- Watercourse
- Historic Landfill Site
- Ancient Woodlands
- Coombe Abbey Conservation Area
- Registered Parks and Gardens
- Sites of Special Scientific Interest
- Noise Important Area
- Air Quality Management Area
- Flood Zone 3

Rights of Way

- Public Right of Way
- National Trail Route
- Exisiting Permissive Path
- Exisiting Informal/Recreational Footpath



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NTS FIGURE 2 - ENVIRONMENTAL CONSTRAINTS PLAN SHEET 2 OF 4

Suitability

FOR INFORMATION

Sheet Size	Scale	Status	Revision
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Drawing Number

HE604820-OIL-EGN-00-DR-LX-30013