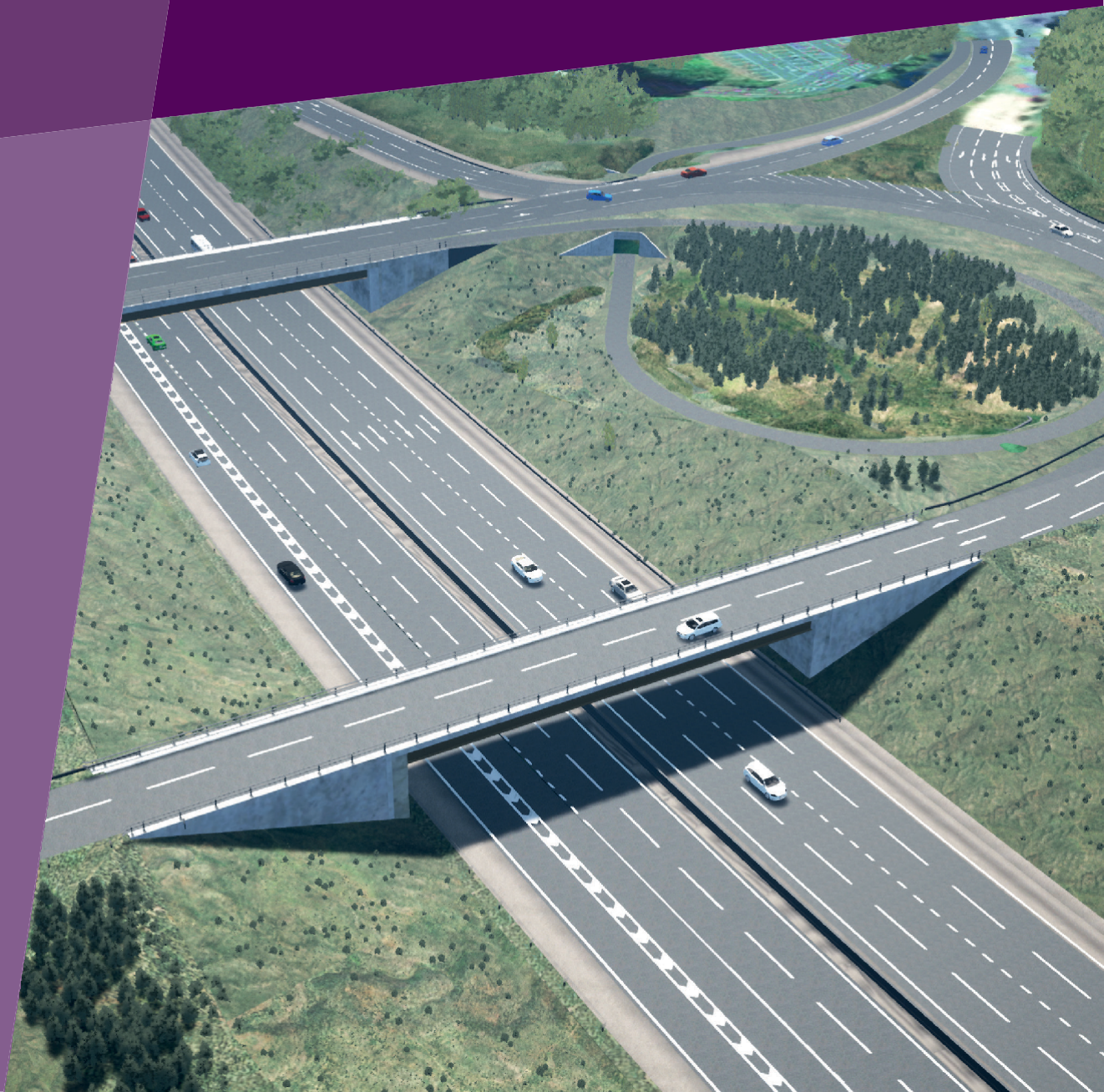


M3

junction 9 improvement scheme

Preliminary Environmental Information Report Non-Technical Summary (Part 1 of 2)

May 2021



Contents

- 1 Introduction 1**
 - 1.1 Background 1
 - 1.2 What is the purpose of the Preliminary Environmental Information Report? 1
 - 1.3 Background to the Proposed Scheme..... 1
 - 1.4 What are the objectives of the Proposed Scheme? 2
 - 1.5 Consideration of alternatives 2
 - 1.6 Description of the Proposed Scheme..... 3
 - 1.7 What are the key environmental matters which the scheme must consider (known as environmental constraints)? 6
 - 1.8 How is the Proposed Scheme responding to some of its environmental impacts (known as mitigation and enhancement) 7
 - 1.9 What is Environmental Impact Assessment? 7
- 2 Air Quality 9**
 - 2.1 Study Area 9
 - 2.2 Baseline 9
 - 2.3 Receptors potentially affected by the Proposed Scheme 9
 - 2.4 Mitigation..... 9
 - 2.5 Preliminary findings of assessment..... 10
 - 2.6 Further assessment 10
- 3 Cultural Heritage 11**
 - 3.1 Study Area 11
 - 3.2 Baseline 11
 - 3.3 Receptors potentially affected by the Proposed Scheme 12
 - 3.4 Mitigation..... 12
 - 3.5 Preliminary findings of assessment..... 12
 - 3.6 Further assessment 13
- 4 Landscape and Visual 14**
 - 4.1 Study Area 14
 - 4.2 Baseline 14
 - 4.3 Receptors potentially affected by the Proposed Scheme 14
 - 4.4 Mitigation..... 14
 - 4.5 Preliminary findings of assessment..... 15
 - 4.6 Further assessment 15

- 5 Biodiversity..... 16**
 - 5.1 Study Area 16
 - 5.2 Baseline 16
 - 5.3 Receptors potentially affected by the Proposed Scheme 16
 - 5.4 Mitigation..... 16
 - 5.5 Preliminary findings of assessment..... 17
 - 5.6 Further assessment 17
- 6 Geology and Soils 18**
 - 6.1 Study Area 18
 - 6.2 Baseline 18
 - 6.3 Receptors potentially affected by the Proposed Scheme 18
 - 6.4 Mitigation..... 18
 - 6.5 Preliminary findings of assessment..... 19
 - 6.6 Further assessment 19
- 7 Material Assets and Waste 20**
 - 7.1 Study Area 20
 - 7.2 Baseline 20
 - 7.3 Receptors potentially affected by the Proposed Scheme 20
 - 7.4 Mitigation..... 20
 - 7.5 Preliminary findings of assessment..... 21
 - 7.6 Further assessment 21
- 8 Noise and Vibration 22**
 - 8.1 Study Area 22
 - 8.2 Baseline 22
 - 8.3 Receptors potentially affected by the Proposed Scheme 22
 - 8.4 Mitigation..... 22
 - 8.5 Preliminary findings of assessment..... 23
 - 8.6 Further assessment 23
- 9 Population and Health 24**
 - 9.1 Study Area 24
 - 9.2 Baseline 24
 - 9.3 Receptors potentially affected by the Proposed Scheme 24
 - 9.4 Mitigation..... 24
 - 9.5 Preliminary findings of assessment..... 25
 - 9.6 Further assessment 25
- 10 Road Drainage and the Water Environment 26**

10.1	Study Area	26
10.2	Baseline	26
10.3	Receptors potentially affected by the Proposed Scheme	26
10.4	Mitigation.....	26
10.5	Preliminary findings of assessment.....	27
10.6	Further assessment	27
11	Climate	28
11.1	Study Area	28
11.2	Baseline	28
11.3	Receptors potentially affected by the Proposed Scheme	28
11.4	Mitigation.....	28
11.5	Preliminary findings of assessment.....	29
11.6	Further assessment	29
12	In Combination and Cumulative Effects	31
12.1	Introduction	31
12.2	In combination effects	31
12.3	Cumulative effects.....	31
13	What are the next steps?.....	33
13.1	Pre-design public consultation	33
Figures		34

Figures

Figure 1 – Site Location Plan

Figure 2 – Indicative General Arrangement Plan

Figure 3 – Existing and New Walking and Cycling Routes

Figure 4 – Indicative Land Use Plan

Figure 5 – Environmental Constraints

Figure 6 – Preliminary Environmental Mitigation Design Plan

Figure 7 – Current Air Quality Study Area and Relevant Designated Sites

Figure 8 – Designated Heritage Assets

Figure 9 – Secondary Study Area

Figure 10 – Mineral Safeguarding Area

Figure 11 – Preliminary Operational Noise Assessment – Opening Year (2026)

Figure 12 – Preliminary Operational Noise Assessment – Future Year (2041)

Figure 13 – EA Flood Zones

This page is intentionally blank

1 Introduction

1.1 Background

- 1.1.1 This document is the Non-Technical Summary of the Preliminary Environmental Information Report which forms part of the Development Consent Order (a type of planning permission) pre-application consultation material for the M3 Junction 9 Improvement (the Proposed Scheme).

1.2 What is the purpose of the Preliminary Environmental Information Report?

- 1.2.1 The Preliminary Environmental Information Report presents the preliminary findings of the assessment, using the environmental information available at this stage, along with descriptions of likely environmental effects (where possible) and mitigation measures for the Proposed Scheme. We have produced the Preliminary Environmental Information Report and this Non-Technical Summary to explain the key issues to allow you to prepare responses to our consultation.
- 1.2.2 The process of scheme development and Environmental Impact Assessment is ongoing at this stage and the information is preliminary. The final findings of the Environmental Impact Assessment will be informed by feedback from this public consultation and reported within the Environmental Statement prepared for the Proposed Scheme. The Environmental Statement will accompany a Development Consent Order application submitted to the Secretary of State through the Planning Inspectorate.

1.3 Background to the Proposed Scheme

- 1.3.1 M3 Junction 9 is a key transport junction. It connects south Hampshire (which has an intensive freight generating industry) and the wider area, with London via the M3 and the Midlands/North via the A34 (which also links to the principal east–west A303 corridor). The Site Location Plan is shown in **Figure 1**.
- 1.3.2 A large volume of traffic currently uses the junction (approximately 6,000 vehicles per hour during busy periods), which acts as a bottleneck and causes significant delays throughout the day. Northbound and southbound traffic movements between the M3 and the A34 are particularly intensive, with tailbacks onto the M3 often resulting in safety concerns during busy periods.
- 1.3.3 To address this, the Proposed Scheme would increase capacity and improve journey time reliability. The Proposed Scheme would include same direction free-flow link between the M3/A34, the replacement of the existing Junction 9 roundabout with a smaller roundabout, walking, cycling and horse riding facilities, conversion of the M3 south of Junction 9 to a four-lane motorway, improved motorway slip roads, the addition of new structures and improvements to safety features, signage and technology. **Section 1.6** of this report further describes the Proposed Scheme.

1.3.4 The Proposed Scheme is classed as a Nationally Significant Infrastructure Project under the Planning Act 2008 (as an alteration to a highway) and, as such, requires a Development Consent Order to proceed. Highways England intends to submit an application to construct the Proposed Scheme to the Secretary of State through the Planning Inspectorate. Before we submit the application, we will carry out consultation (to which this document relates), an assessment of the impacts on the environment and refinement of the design of the Proposed Scheme.

1.4 What are the objectives of the Proposed Scheme?

1.4.1 The Proposed Scheme has five strategic objectives:

- Reduce congestion and increase how reliable people's journey times are.
- Improve safety by reducing delays and making traffic queues shorter.
- Improve the environment, where possible, by reducing the number of households affected by noise, improving air quality and achieving the best we can for the diversity of local plants and animals.
- Improve access for walkers and cyclists connecting the National Cycle Route 23 east to west across the junction and providing additional footpaths linking Kings Worthy to the west of the junction.
- Support economic growth by making capacity for more jobs, business and housing.

1.5 Consideration of alternatives

1.5.1 The need for the Proposed Scheme was first considered in 2013, where a study identified that free-flow links from the M3 to the A34 and a remodelled Junction 9 would be the best option to relieve congestion. In 2015, the Department for Transport then identified M3 Junction 9 as a key investment in the Road Investment Strategy.

1.5.2 Highways England then developed the Proposed Scheme taking into account factors like the environment, costs and compliance with scheme objectives.

1.5.3 In early 2018, the preferred option was presented at a public options consultation where views were sought. Feedback highlighted that the main concerns with the preferred option were related to safety and access from Junction 9 to the A33. In 2018 we announced we would progress with the preferred option we'd presented to the public.

1.5.4 Through a consultation process undertaken in 2019, further concerns were raised in relation to local stakeholder perception, traffic capacity and operational safety.

- 1.5.5 As a result, in May 2020, Highways England prepared a report identifying four 'solutions'. It was identified that Solution 2 would support economic growth, encourage a freer, better flowing network whilst also reducing severance impacts and improving access for non-road users to Kings Worthy. It had the potential to encourage greater active travel whilst also encouraging access to the South Downs National Park and was taken forward as the preferred solution to address concerns raised in 2019.
- 1.5.6 Since the selection of Solution 2, further examination of options has been undertaken to consider the most appropriate routes for walkers, cyclists and horse-riders in relation to the environment, consideration against scheme objectives, highways, structures and safety.
- 1.5.7 Ongoing design and assessment work will contribute to the consideration of alternatives relating to the selection of construction compounds and areas to manage earth dug which cannot be re-used to construct the Proposed Development (see [Section 1.6](#)).

1.6 Description of the Proposed Scheme

- 1.6.1 The existing M3 Junction 9 connects multiple nationally and locally significant routes. The M3 here is joined with the A34 towards Newbury and Salisbury, the A272 towards Petersfield and southern Winchester and Easton Lane towards Winnall and northern Winchester. [Figure 2](#) shows the Proposed Scheme.
- 1.6.2 The A33 from Basingstoke connects with the A34 just north of the roundabout, and the A31 from Alton connects to the A272 just south of it.
- 1.6.3 The improvements proposed below aim to maintain this existing connectivity, while increasing capacity, simplifying routing and improving facilities for walkers, cyclists and horse-riders:
- Widening of the M3 from a two-lane motorway (with a hard shoulder) to a four-lane motorway between the south-facing roundabout slip roads
 - A new smaller roundabout arrangement within the footprint of the existing roundabout, incorporating new connections over the M3 with walking, cycling and horse-riding facilities
 - Connector roads from and to the new roundabout
 - Improved slip roads to/from the M3.
- 1.6.4 The existing M3 northbound (south of Junction 9) would be converted to a four-lane motorway. North of Junction 9, two lanes would diverge from the M3 to form a new A34 northbound link, while the remaining two lanes would continue north as the M3.
- 1.6.5 The A34 southbound would pass under the M3 and A33 and an offslip would be provided (off the A34 southbound link road) connecting to the new

Junction 9 roundabout, while the other would join the M3 southbound carriageway.

- 1.6.6 The Junction 9 roundabout would be replaced with a smaller roundabout.
- 1.6.7 The existing A34 link connecting to the existing Junction 9 roundabout would be converted into a two-way road to connect to the A33. This would provide access to the Traffic Officer Service and Highways England maintenance depot. North of the depot the carriageway would continue with a link to the M3 northbound, and a continuation of the A33 northbound towards Basingstoke.
- 1.6.8 A new M3 southbound slip road (off the motorway) would merge with the new A34 southbound connector road, which then proceeds along a new link to the Junction 9 roundabout to maintain local access.
- 1.6.9 The Proposed Scheme would require a number of highway structures to facilitate the new road alignments, which will be considered further as the design of the Proposed Scheme progresses. The Proposed Scheme boundary also includes land that may need to be used both temporarily and permanently.
- 1.6.10 There are a number of existing road bridges which cross the River Itchen. Based on the current design, it is only considered that the Kings Worthy bridge would require modification to accommodate the new road configuration.
- 1.6.11 Walking, cycling and horse-riding facilities around and within the proposed junction are to be upgraded and would retain the provision of the National Cycle Network 23. The current route of the National Cycle Network 23 from the Tesco roundabout, through the Junction 9 roundabout and on to Easton Lane is to be upgraded with future provision for horse-riders allowed for (who would be required to dismount and lead horses through) which currently ceases within the existing roundabout. On both sides of the motorway, the existing walking and cycling route link both parts to Easton Lane which would descend to a subway route provided beneath the new roundabout. A new walking route to the west of the M3 would be provided to link the A33/B3047 Junction to Winnall Industrial Estate situated on Easton Lane. The route would be constructed in the existing verge and then continue on to part of the existing road network which is to be abandoned. This route would require a new crossing (not for road users) of the River Itchen. Three subways would be required to accommodate existing and improved provision of routes in the area. An additional footpath is proposed on the eastern side of the Proposed Scheme to link Easton Lane with Long Walk, which would provide a circular leisure path, for those using the South Downs National Park and linking to other paths in the area. **Figure 3** shows the existing and new walking and cycling routes.

- 1.6.12 As a result of construction activities there is likely to be the requirement to temporarily divert existing walking, cycling and horse-riding routes. Such details are subject to further design.
- 1.6.13 It is not currently planned to light any of the junction or slip roads. The subways and underpasses will be lit, and the lighting design is currently being developed.
- 1.6.14 The Proposed Scheme would also require new closed-circuit television masts, signage and gantries, the heights of which are yet to be finalised.
- 1.6.15 A drainage strategy is being prepared which seeks to both capture and treat surface water runoff from the Proposed Scheme and control its release to prevent pollution and prevent increased levels of water entering the local water system.
- 1.6.16 Utility diversions will be required to accommodate the Proposed Scheme. Further work to identify these and their diversion is ongoing.
- 1.6.17 The construction of the Proposed Scheme is estimated to commence in autumn 2023 with a first year of operation proposed in winter 2026. The construction programme of the Proposed Scheme has been designed to reduce disruption to local surroundings, the environment, residents, businesses and road users as far as practical. The construction works would include site establishment, utility diversions, works to construct new bridges, roads, roundabouts, retaining walls, underpasses, walking, cycling and horse-riding facilities and signs, barriers and gantries.
- 1.6.18 A number of temporary construction compounds would be required, the number and final location of such is subject to ongoing design work. However, it is considered that suitable locations could include land to the east of the existing junction, two smaller areas within the roundabout, land between the A33/A34 and land adjacent to the A34 and A272 near Christmas Hill. Anticipated activities and such locations would include car parking, welfare, storage, wheel washing and drainage. **Figure 4** shows the currently proposed construction compounds.
- 1.6.19 At this stage, it is anticipated that construction working hours would be between 7am to 7pm Monday to Friday, 7am to 1pm Saturday, with the possibility for occasional overnight, Sunday and bank holiday working.
- 1.6.20 The construction of the Proposed Scheme would likely produce earth arisings that need to be managed. Three areas for management of excess earth arisings (i.e. earth dug which cannot be re-used to construct the Proposed Development) are currently under consideration although not all are anticipated to be required and are the subject of further work including finalisation of the design. Once excess earth dug has been distributed, the land is envisaged to be returned to agriculture. **Figure 4** shows these areas to the east of the M3.

1.6.21 During the construction phase there may be the requirement to temporarily divert traffic on the existing road network. The management of traffic will be carefully planned to minimise delay to motorists whilst providing safety. The relevant stakeholders will be consulted during the preparation of associated traffic management arrangements. Diverted traffic is likely to be mainly confined to the motorway and A roads. However, where this is not possible the local road network would be used.

1.7 What are the key environmental matters which the scheme must consider (known as environmental constraints)?

- 1.7.1 The Proposed Scheme is surrounded by a mainly urban area to the west of the M3 and a mainly rural area to the east. The South Downs National Park is a nationally important designated area within and adjacent to the Proposed Scheme to the north, east, south and in some areas, the west. The environmental constraints are shown on **Figure 5**.
- 1.7.2 The River Itchen and associated floodplain lies within the northern part of the Proposed Scheme and two groundwater Source Protection Zones (a zone that shows the level of risk to the source of water from contamination) lie within the northern extent of the Proposed Scheme. The River Itchen is designated as a Special Area of Conservation and a Site of Special Scientific Interest. St Catherine's Hill Site of Special Scientific Interest is located approximately 500 metres south of the Proposed Scheme.
- 1.7.3 There are residential areas close to the A34 in the north of the Proposed Scheme, including Headbourne Worthy, Kings Worthy and Abbots Worthy. There are a small number of schools and educational facilities including St Swithun's School north of the B3404 and east of the M3, Winnall primary school and Stepping Stones pre-school to the south west of the junction.
- 1.7.4 Immediately west of the Proposed Scheme is the Sun Valley Business Park, Tesco, Winnall Industrial Estate and Scylla Industrial Estate. Wykeham Trade Park and Highways England's maintenance depot are located to the north-west of the junction.
- 1.7.5 There are a number of scheduled monuments and listed buildings that are of national and regional importance near the Proposed Scheme along with a record of known archaeological assets in the area.
- 1.7.6 Further designations such as Noise Important Areas (the aim of a noise important area designation is to improve the noise environment in these areas) and Air Quality Management Areas (a geographical area covering an existing air pollution hotspot) (none of which sit within the Proposed Scheme but are close by) are shown on **Figure 5** (Environmental Constraints Plan).

1.8 How is the Proposed Scheme responding to some of its environmental impacts (known as mitigation and enhancement)

1.8.1 The current environmental mitigation proposals include:

- designing the Proposed Scheme to fit with the local undulating landscape
- reduce the need to remove existing vegetation where possible
- create a suite of measures that the Proposed Scheme design intends to incorporate (known as compensations and enhancements) informed by our ongoing ecology survey work
- avoiding or minimising potential impacts to sensitive ecological receptors (for example badgers or valued habitats)
- developing a biodiversity mitigation strategy

1.8.2 The current environmental mitigation and enhancement details are being developed as the design and the Environmental Impact Assessment progresses. **Figure 6** of this Non-Technical Summary shows the current environmental mitigation design plan which shows how land is intended to be reinstated after construction activities have been completed. For example, vegetation and grassland to be retained, creation of new chalk grassland, species rich grassland, wildflower mix, broadleaved woodland, and native shrub planting.

1.9 What is Environmental Impact Assessment?

1.9.1 Environmental Impact Assessment is the process for identifying the likely environmental effects (good or bad) of proposed developments and predicting how serious the impacts the proposed development could have on people, plants, animals and buildings. The aim is to ensure the following are carried out:

- an assessment of likely effects of a proposed development on the environment
- consideration of mitigation measures and alternatives in light of potential environmental effects
- an assessment of the cumulative effects of a proposed development

1.9.2 Through this process, the development should include measures to prevent, reduce or offset any significant adverse environmental effects of the proposals and enhance the beneficial effects.

1.9.3 We are carrying out the Environmental Impact Assessment in line with the relevant Regulations and to the standards set out in the Design Manual for Roads and Bridges (a Highways England Design standard). Some

environmental topics will follow additional best practice guidance, such as the survey methodology from the Chartered Institute of Ecology and Environmental Management.

- 1.9.4 We submitted an Environmental Impact Assessment Scoping Report to the Planning Inspectorate on 15 October 2020 which set out the intended scope of the Environmental Impact Assessment. Following a period of consultation with stakeholders, the Planning Inspectorate provided their Scoping Opinion on 27 November 2020, a copy of which can be found at:

<https://infrastructure.planninginspectorate.gov.uk/projects/south-east/m3-junction-9-improvement/?ipcsection=docs>

- 1.9.5 We have considered the Scoping Opinion during the ongoing assessment work and used it to inform the preliminary environmental information. The Scoping Opinion and the preliminary findings of the assessment (identified in the Preliminary Environmental Information Report) form the basis for us to carry out further work, which will be presented in the Environmental Statement that will accompany the Development Consent Order application.

- 1.9.6 The following environmental topics are being considered and the findings of ongoing assessment work will be reported in the Environmental Statement:

- Air quality
- Cultural heritage
- Landscape and visual
- Biodiversity
- Geology and soils
- Material assets and waste
- Noise and vibration
- Population and health
- Road drainage and the water environment
- Climate
- Cumulative and In Combination effects

- 1.9.7 We will also carry out an assessment for major accidents and disasters (referred to as major events) identified for the Proposed Scheme which we will report in the Environmental Statement. The major events identified as relevant for the Proposed Scheme are storms, floods, transport accidents, ground instability and chalk dissolution/sinkholes.

2 Air Quality

2.1 Study Area

- 2.1.1 The study area for the construction phase is up to 200m from the Proposed Scheme boundary. The study area for the operational phase is the affected road network (the roads which may be impacted by the construction of the Proposed Scheme) around the Proposed Scheme and any roads within 200m of the affected road network (as shown on **Figure 7**).

2.2 Baseline

- 2.2.1 The Proposed Scheme falls within the local authority area of Winchester City Council. There are a number of local authority air quality monitoring stations within one kilometre of the air quality study area in Winchester City Council and Eastleigh Borough Council. Winchester City Council has one Air Quality Management Area in Winchester Town Centre where the annual nitrogen dioxide objective was exceeded in 2019. The Proposed Scheme is not located within the Air Quality Management Area.
- 2.2.2 According to the Department for Environment, Food and Rural Affairs data and the relevant Pollution Climate Mapping links that intersect the Proposed Scheme, levels of nitrogen dioxide and fine particulate matter are below the air quality thresholds.
- 2.2.3 The oxides of nitrogen levels around the Proposed Scheme are below the critical level at most of the key ecological habitats except St Catherine's Hill Site of Special Scientific Interest. The nitrogen deposition rates are below the critical level at all key habitats apart from Highclere Park Site of Scientific Interest and Burghclere Beacon Site of Special Scientific Interest.

2.3 Receptors potentially affected by the Proposed Scheme

- 2.3.1 A range of potentially affected sensitive receptors have been identified around the Proposed Scheme including local residents and road users. Key habitats have been identified around the site including Sites of Special Scientific Interest and Special Areas of Conservation, such as the River Itchen.

2.4 Mitigation

- 2.4.1 Mitigation measures during construction activities will include measures to reduce dust generation and dispersion and the use of existing vegetation barriers will be maximised. These measures will be set out in more detail in the Environmental Statement.
- 2.4.2 No mitigation measures are likely to be required for the operation of the Proposed Scheme but if they are considered necessary through further assessment, they will be reported within the Environmental Statement.

2.5 Preliminary findings of assessment

- 2.5.1 The preliminary findings of the assessment indicate that effects from construction activities, construction traffic and local traffic management measures such as temporary road closures and diversions cannot be ruled out and will be considered further and reported in the Environmental Statement.
- 2.5.2 The preliminary findings of the assessment indicate that during operation, some roads in the affected road network will experience an increase in traffic including Easton Lane, sections of the B3404 and the A31 (east). Some of these areas are within the Winchester Air Quality Management Area so there will be an increase in pollutant concentrations at some receptors as a result of the Proposed Scheme. However, many roads in Winchester will experience a decrease in traffic with an expected reduction in pollutant concentrations. The Proposed Scheme is unlikely to have significant impacts upon designated habitats. Ongoing work will be carried out to determine the significance of these effects.

2.6 Further assessment

- 2.6.1 Further assessment related to the construction phase will include checking that the extent of the study area is still suitable as further details relating to construction become available, clarifying the duration and extent of changes in traffic levels related to construction activities and temporary road closures and diversions.
- 2.6.2 Further assessment related to the operational phase will include further consultation with relevant local authorities to agree sensitive receptors and sensitive designated ecological habits, computer modelling of emissions, the interpretation of these results in line with guidance and the identification of appropriate mitigation measures.

3 Cultural Heritage

3.1 Study Area

- 3.1.1 The study area for both the construction and operation phases is one kilometre around the Proposed Scheme boundary for designated cultural heritage assets and 300m around the non-designated cultural heritage assets, as shown on **Figure 8**.

3.2 Baseline

- 3.2.1 An initial walkover survey and a desk-based assessment were undertaken to define the baseline. There are no Scheduled Monuments within the Proposed Scheme boundary itself. However, there are 11 within one kilometre which are of high value and national interest. These include a round barrow cemetery on Magdalen Hill (Grade II Registered Park and Garden), St Gertrude's Chapel and the late Iron Age Settlement to the north of Grace's Farm. The Proposed Scheme boundary covers parts of Abbots Worthy and Kings Worthy conservation areas and there are 133 Listed Buildings and three further conservation areas within one kilometre of the Proposed Scheme boundary.
- 3.2.2 The remains of Neolithic and Bronze Age funerary monuments, two small early Bronze Age cemeteries, middle and late Bronze Age settlements, 'Celtic' field systems, an early Iron Age settlement, a late Iron Age/ Romano-British settlement and evidence of early medieval occupation have all been found within the Proposed Scheme boundary. These remains have mainly been excavated during the construction of the M3. Other known remains include a ring ditch, two roman roads, a possible Anglo-Saxon settlement, water meadows, an early-medieval royal residence, watermill and pond, post-medieval cottages, former railway line, flint and dark clay and cropmarks and earthworks. There is also potential for the presence of archaeological remains that are currently unknown. Previous archaeological investigations have demonstrated that the Proposed Scheme lies within an archaeologically sensitive area.
- 3.2.3 Before the M3 was built, land within the Proposed Scheme boundary was predominantly farmland with a number of woods, coppices and water meadows and was crossed by several roads out of Winchester and the former railway line between London and Southampton. Any remains in these areas are likely to have been significantly impacted. The majority of the land within the Proposed Scheme, the potential areas for excess material and temporary construction compounds are located in areas that appear to have remained relatively undeveloped. Therefore, it is anticipated that if archaeological remains are present they are likely to have survived.

3.3 Receptors potentially affected by the Proposed Scheme

- 3.3.1 Receptors include archaeological remains, built heritage assets and historic landscapes within one kilometre of the Proposed Scheme boundary. Designated heritage assets are shown on **Figure 8**.

3.4 Mitigation

- 3.4.1 A programme of archaeological mitigation that could include watching briefs of intrusive groundworks (monitoring by a suitably qualified archaeologist during construction) and detailed archaeological excavation may be required prior to construction. Further analysis will be undertaken for remains from the paleoenvironmental geological age to understand past landscapes and human activity. Considerate construction practices will be undertaken.

3.5 Preliminary findings of assessment

Construction

- 3.5.1 The preliminary findings of the assessment identified that construction of the Proposed Scheme could directly impact cultural heritage assets such as known archaeological remains and previously unidentified archaeological remains. The construction of the Proposed Scheme could also indirectly impact the setting of two Scheduled Monuments; the round barrow cemetery on Magdalen Hill Down and the site of St Gertrude's Chapel. Some of these effects are likely to be significant because archaeological remains may be removed entirely or damaged, therefore reducing their archaeological value.
- 3.5.2 The construction will not result in direct impacts to any listed or unlisted buildings. There is potential for adverse impacts upon the Kings Worthy and Abbots Worthy Conservation Areas, Grade II* Listed Worthy Park House and historic landscape areas as the construction works will be visible and could have an adverse impact to their setting. Indirect impacts such as temporary road closures could cause temporary adverse effects to the setting of conservation areas and listed buildings if traffic diversions are routed near these assets.

Operation

- 3.5.3 The preliminary findings of the assessment indicate that there are unlikely to be operational impacts to the round barrow cemetery on Magdalen Hill Down and St Gertrude's Chapel. There is potential for impacts to the Iron Age settlement to the north of Grace's Farm. There is also the potential to impact archaeological remains through changes to local hydrological regimes. Once further detailed design and the landscape and visual model have been finalised, the preliminary findings of the assessment will be reviewed.
- 3.5.4 The preliminary findings of the assessment indicate that there would be no direct effects to listed or unlisted historic buildings, nor direct changes to the Kings Worthy or Abbots Worthy Conservation areas. However, there is

potential for the setting of Worthy Park House (Grade II* Listed) and both conservation areas to be affected. It is not anticipated that there would be an effect to the setting of Abbotsworthy House.

3.6 Further assessment

- 3.6.1 Further assessment work is anticipated to include archaeological evaluative work to clarify the presence and significance of remains within the Proposed Scheme boundary and further consultation with the local authority on cultural heritage assets that were not visited during the initial walkover survey.

4 Landscape and Visual

4.1 Study Area

- 4.1.1 The study area for both the construction and operation phases is three kilometres north and south and two kilometres east and west from the Proposed Scheme boundary.

4.2 Baseline

- 4.2.1 The existing landscape pattern is complex and strongly influenced by the M3 and A34 transport corridors and road features such as bridges, slip roads and signage. There are large areas of trees and shrubs and established vegetation on embankments planted at the time of construction of these roads. The areas to manage excess earth dug which cannot be re-used to construct the Proposed Development is defined by undulating arable farmland bound by hedgerows and hedgerow trees and these areas lie within the boundary of the South Downs National Park.
- 4.2.2 The area to the east and south of the M3 is a valued landscape of rolling chalk downland with large agricultural fields interspersed with small woodlands and copses, hedgerow field boundaries and a small number of farm holdings and houses. St Catherine's Hill is a prominent landscape feature to the south of Winchester. There are some important public rights of way used for recreation near the Proposed Scheme including St Swithun's Way, the Itchen Way Long Distance Path, the South Downs Way and National Cycle Network Route 23 which provides a link from Winchester to the South Downs National Park.

4.3 Receptors potentially affected by the Proposed Scheme

- 4.3.1 The key landscape receptors include topography, land use of the site and surrounding area, vegetation, heritage statutory designations, landscape statutory designations, public rights of way, perceptual aspects, visual receptors (e.g. residents) and landscape character.

4.4 Mitigation

- 4.4.1 The design will be integrated into the surrounding landscape, with particular regard given to the South Downs National Park. Measures will include retention of vegetation where possible, identification of important trees that are to be protected and planting of native species in advance of construction works and during operation to screen views. The planting design will be agreed with key stakeholders and residents and a programme of long-term monitoring of the landscape mitigation will be prepared.
- 4.4.2 Other mitigation measures will include principles related to the Considerate Constructors Scheme such as tidy site management and controlling construction lighting to minimise visual impacts.

4.5 Preliminary findings of assessment

Construction

4.5.1 The preliminary findings of the assessment indicate that the removal of some existing vegetation, earthworks and presence of construction plant, materials, machinery, compounds and lighting would potentially result in landscape and visual impacts during construction that would temporarily impact all of the identified receptors. The assessment has also identified potential for significant effects on landscape character from the loss of landscape features, changes to the profile of areas of land, and the introduction of construction activity. There is also likely to be a temporary adverse impact on the scenic quality of the views.

Operation

4.5.2 The preliminary findings of the assessment indicate that adverse effects on topography are anticipated to remain during operation as the landscape will be altered indefinitely. However, earthworks have been designed to integrate into the surrounding landscape.

4.5.3 Longer term beneficial effects are anticipated on land use of the site and surrounding area and vegetation as a result of planting of new vegetation. The public rights of way near the Proposed Scheme will experience longer term beneficial effects as a new walking route near the A33/A34 carriageways and a new footpath between Easton Lane and Long Walk will be created that link to the South Downs National Park and Winchester.

4.5.4 Over time, adverse landscape and visual effects on the South Downs National Park, tranquillity and landscape character would lessen as the vegetation grows and screens views of the Proposed Scheme. There is potential for indirect effects from changes to the setting of some listed buildings from the landscape mitigation.

4.6 Further assessment

4.6.1 Further assessment work anticipated includes further assessment of effects on receptors, ongoing visual modelling to understand the impacts of the Proposed Scheme and collaborative design to agree landscape mitigation.

5 Biodiversity

5.1 Study Area

5.1.1 The study area used to determine impacts to biodiversity features are as follows:

- Two kilometre radius for protected species, statutory and non-statutory designated sites and notable habitats
- Five kilometre radius for bats
- 10 kilometre radius for Special Areas of Conservation and Special Protection Areas, extended to 30 kilometres for a Special Area of Conservation for bats.

5.2 Baseline

5.2.1 A number of sites designated for biodiversity value are located within the Proposed Scheme boundary, including the River Itchen Special Area of Conservation and the River Itchen Site of Special Scientific Interest and a number within two kilometres of the Proposed Scheme boundary, including: Mottisfont Bats Special Area of Conservation, St Catherine's Hill and Cheesefoot Head Site of Special Scientific Interest. There is one Site of Importance for Nature Conservation within the Proposed Scheme boundary, (Easton Down), six others within 2km of the Proposed Scheme boundary and one that is also a Road Verge of Ecological Importance (valued at the local level).

5.2.2 Ecological surveys are being carried out in the local area which have so far identified a diverse range of habitats; including grazed semi-improved pastures, small woodlands and historic water meadow in the eastern part of Proposed Scheme. Species identified within and near the Proposed Scheme boundary include bats, badgers, hazel dormice, otter, water vole, hedgehog, brown hare, harvest mouse, pole cat, breeding birds, wintering birds, reptiles, amphibians including great crested newts, freshwater fish, terrestrial invertebrates, aquatic invertebrates and notable plants.

5.3 Receptors potentially affected by the Proposed Scheme

5.3.1 The receptors are the designated sites, habitats and species set out in **Section 5.2** above.

5.4 Mitigation

5.4.1 During construction, mitigation measures will include fencing to prevent access to important habitats, timing the construction works to avoid bird breeding and bat roosting periods, obtaining the correct licenses to

undertake ecological works and supervision from an ecological specialist whilst construction works are being undertaken.

- 5.4.2 The mitigation seeks to avoid impacts in the first instance, reduce or prevent them or compensate for adverse impacts. Other mitigation measures include the design of the proposed new bridge, which is intended to be clear span and set back from the river bank to allow for continued wildlife movement, reduction for the requirement of earthworks near the roundabout, replacement and enhancement of hedgerows, a sensitive lighting design and design of a Sustainable Drainage System that includes measures beneficial to wildlife.
- 5.4.3 New habitats of ecological value (sensitively designed to the local area) will be created across the Proposed Scheme. This will include creation of areas of chalk grassland, broadleaved and native scrub and species rich grassland. The preliminary landscape and ecological mitigation plan is shown in **Figure 6**.

5.5 Preliminary findings of assessment

- 5.5.1 The preliminary findings of the assessment indicate potential impacts to some species and habitats within and next to the Proposed Scheme boundary through loss or damage to habitats, disturbance, displacement of species through fragmentation of land and disturbance of wildlife from construction activities that generate noise, air, water and light emissions. While significant impacts are not anticipated at the River Itchen from any construction or operational activity, potential habitat degradation caused by traffic emissions will be considered through ongoing assessment work.
- 5.5.2 No significant impacts are anticipated to Mottisfont Bats Special Area of Conservation due to the intervening distance from the Proposed Scheme boundary, or to Easton Down Site of Importance for Nature Conservation as necessary construction measures will be in place.

5.6 Further assessment

- 5.6.1 Further assessment work anticipated includes updated ecological surveys for some species, computer modelling to assess the impacts to designated sites from vehicle exhaust emissions and collection of further information on the River Itchen to assess effects to this receptor in more detail.

6 Geology and Soils

6.1 Study Area

- 6.1.1 The study area for the geology and soils assessment comprises a buffer zone of 250m around the Proposed Scheme boundary.

6.2 Baseline

- 6.2.1 The land around the Proposed Scheme boundary is predominantly agricultural, most of which is currently used for arable production and much of the surrounding area remained undeveloped until the 1930's when parts of the road network began to be constructed. Industrial uses including gas works and a railway line also existed in the area. There are three historical landfills within the study area. The River Itchen floodplain is within the Proposed Scheme boundary and Nun's Walk stream flows parallel to the River Itchen.
- 6.2.2 The majority of the geology in the vicinity comprises chalk from two different chalk formations. Along the route of the River Itchen in the north of the Proposed Scheme, the chalk is overlain by alluvium and head. To the east of the M3 there is an area of clay with flints and head overlying the chalk. There is also made ground from construction of the M3, A34 and A33. A number of chalk pits and cavities have been identified in the Proposed Scheme boundary. The chalk within the Proposed Scheme boundary and the overlying deposits are designated as principal and secondary aquifers which are important drinking water resources. Some of the land has been identified as Best and Most Versatile agricultural land.

6.3 Receptors potentially affected by the Proposed Scheme

- 6.3.1 The receptors identified include geology and geomorphology, groundwater, surface water, environmentally sensitive sites, the built environment, human health and agricultural land.

6.4 Mitigation

- 6.4.1 Without mitigation and the implementation of adequate control measures, there is the potential for contaminants from contamination sources to enter groundwater, should they be disturbed during scheme construction. The application will include measures for the identification and management of excavated materials generated during the construction works. Measures would also be included to limit the potential for accidental releases of potential contaminants and uncontrolled surface water run-off to occur during construction. Monitoring of surfaced water and groundwater should be undertaken. Health and safety procedures will be established for dealing with unexpected soil or groundwater contamination that may be encountered during construction.

- 6.4.2 In relation to ground instability, the potential impacts will be mitigated through appropriate ground investigation being undertaken so that any slopes, structures and remedial works are safe and stable.

6.5 Preliminary findings of assessment

Construction

- 6.5.1 The preliminary findings of the assessment indicate that there are potential adverse effects including accidental release of contaminants or creation of new pathways for contamination from piling, both of which could cause health impacts to construction workers and the environment. There is also potential for land stability issues. However, these effects will be managed through management plans.
- 6.5.2 Adverse effects may be possible from the loss of productive agricultural land. However, the majority of agricultural land would be affected on a temporary basis and reinstated to agricultural use upon completion of the construction phase.

Operation

- 6.5.3 The preliminary findings of the assessment indicate that there is potential for chemical attack and decay of concrete structures from existing contamination. However, it is likely that the majority of impacts will be mitigated through the design of the Proposed Scheme and the implementation of good working practices.

6.6 Further assessment

- 6.6.1 A set of risk assessments and further ground investigations will be undertaken that will inform recommendations for remediation (reversing or stopping environmental damage) and mitigation, if required. Risk assessments will also be undertaken for ground gas and controlled waters. An assessment to understand the location and number of cavities in the ground will be prepared.

7 Material Assets and Waste

7.1 Study Area

- 7.1.1 There are two study areas for material assets and waste, shown in **Figure 9**. The first is the area within the Proposed Scheme boundary for waste generated from the Proposed Scheme and the second study area gives consideration of raw material availability and waste management facility capacity and therefore covers the south of England.

7.2 Baseline

- 7.2.1 Material assets and waste considers the use of material resources, including mineral safeguarding, and the generation and management of waste associated with the construction of the Proposed Scheme. During operation, the quantity of materials used and the waste produced as a result of the Proposed Scheme is anticipated to be small.
- 7.2.2 The Proposed Scheme is located partially within an area safeguarded for the deposit of superficial sand/gravel (a Mineral Safeguarding Area), as shown in **Figure 10**.
- 7.2.3 There is an increasing shortage of landfill capacity in England, and the total and non-inert landfill capacity in the south of England is likely to become an increasingly sensitive receptor over time.
- 7.2.4 However, there is a very high (92%) recovery rate for non-hazardous construction and demolition waste arisings within the UK, and these rates have steadily risen within the south of England over the past 13 years.

7.3 Receptors potentially affected by the Proposed Scheme

- 7.3.1 The receptors include material assets, Mineral Safeguarding Areas and waste management capacity such as landfill capacity.

7.4 Mitigation

- 7.4.1 The Proposed Scheme will have in place a Site Waste Management Plan which will include steps to be taken to manage and dispose of the varied waste that is anticipated to occur during the construction phase.
- 7.4.2 A Materials Management Plan will also be developed to ensure that any adverse effects associated with material assets are responsibly managed. This will include measures that promote the re-use and recycling of materials where possible, using locally sourced materials and suppliers where practical and limiting likelihood of waste.

7.5 Preliminary findings of assessment

- 7.5.1 The Environmental Statement will report the assessment considering available construction materials in the area that would be required to be used by the Proposed Scheme.
- 7.5.2 The Proposed Scheme's impact upon the Mineral Safeguarding Area indicates that the potential for sterilisation (i.e. preventing extraction of minerals in that location) is very low. Much of the Mineral Safeguarding Area affected lies adjacent to the existing strategic road network; these areas are likely already devoid of mineral or would not be practicable to work. Other areas of the Mineral Safeguarding Area affected are small and lie within the vicinity of the strategic road network and on the periphery of a reasonable working area.
- 7.5.3 The Environmental Statement will report the assessment of how levels of waste expected to generate could affect nearby waste management capacity.

7.6 Further assessment

- 7.6.1 A qualitative and quantitative assessment of the potential effects of the Proposed Scheme on materials will be undertaken to identify the types and quantities of material required for the project, information on recycled content and sustainability credentials, type and volume of material to be recovered from off-site sources and to determine details of on-site storage and stockpiling arrangements.
- 7.6.2 A waste assessment will be undertaken to establish the potential effects resulting from waste generation. This will identify the types and quantities of waste arising from the Proposed Scheme and assess against the reduction in the regional landfill capacity.

8 Noise and Vibration

8.1 Study Area

- 8.1.1 The study area for construction noise comprises a buffer zone of 300m around the Proposed Scheme boundary and for construction vibration the study area is 100m. The study area for operational road traffic will ultimately be defined through a combination of the Proposed Scheme footprint and the predicted change in traffic flows to determine affected links, whether those lie within the main study area or within the wider road network. Final study areas will be determined through ongoing assessment work.

8.2 Baseline

- 8.2.1 Noise from existing sources varies around the Proposed Scheme. Noise levels were measured at a number of locations near the Proposed Scheme in 2019 and 2021. Much of the noise comes from road traffic using the M3, A34 and A33. Some areas within the Proposed Scheme are not near these major roads so are quieter. Other noise comes from commercial areas, aircraft and the local Winchester to Basingstoke train line.

8.3 Receptors potentially affected by the Proposed Scheme

- 8.3.1 A large number of noise and vibration sensitive receptors have been identified in the area surrounding the Proposed Scheme. These comprise of residential areas including Headbourne Worthy, Kings Worthy, Easton village, eastern fringes of Winchester including Winnall, St Giles Hill and Highcliffe and properties along Easton Lane towards Winchester, nursery schools, primary schools, secondary schools, healthcare facilities, places of worship, scheduled monuments, designated areas, public rights of way and commercial areas.
- 8.3.2 Three designated Noise Important Areas are located within the study area. The aim of Noise Important Areas is to improve the noise environment in these areas.

8.4 Mitigation

- 8.4.1 Standard noise and vibration control measures will be implemented during construction which will include a requirement for the contractor to apply best practicable construction measures. During the operational phase environmental noise barriers (as necessary) and low noise road surfaces (where necessary) will be considered to minimise adverse effects to receptors. These types of mitigation measures would be developed in conjunction with ecologists and landscape architects.

8.5 Preliminary findings of assessment

Construction

8.5.1 The preliminary findings of the assessment indicate that construction activities such as site preparation and piling could cause high levels of noise and vibration. How significantly these activities impact receptors will depend on the time of day and duration of the works and how far away they are undertaken from receptors. The noise from construction compounds is unlikely to impact sensitive receptors as there are no residents within 100m of the proposed compound locations. Further assessment will be undertaken to fully understand these impacts and whether there will be impacts to ecological receptors.

Operation

8.5.2 The preliminary findings of the assessment show that road traffic noise will potentially result in effects at receptors. It is not yet known if these effects will be beneficial or adverse. The level of noise is dependent on volume, speed and type of vehicle, road surface, the presence of screening between the road and a receptor and views of the road. Therefore, if these variables change, so will the noise levels that are experienced by receptors. A range of scenarios have been modelled, including the proposed opening year of the road (2026) and 2046 to understand how noise levels will change. All of the scenarios resulted in either negligible or imperceptible changes to noise and are shown in **Figure 11** and **Figure 12**.

8.6 Further assessment

8.6.1 Further assessment will be undertaken to determine construction and operational impacts. This will be possible when more details are known about the construction programme and when the construction equipment that will be used is determined. The 3D noise model will also determine noise levels at different scenarios which will help determine the mitigation that will be required.

9 Population and Health

9.1 Study Area

- 9.1.1 The population and health assessment comprises a buffer zone of two kilometres around the Proposed Scheme boundary.

9.2 Baseline

- 9.2.1 A number of settlements are either within or adjacent to the Proposed Scheme boundary, including Winchester City Centre, suburbs of Winchester and surrounding villages including Headbourne Worthy and Kings Worthy. Winchester is a historic city centre with a hospital, education facilities, a retail area, employment areas and tourist attractions. Winnall Industrial Estate, Valley Business Park and the Wykeham Trade Park lie immediately west of the Proposed Scheme boundary.
- 9.2.2 The population for Winchester is in line with the average age profile for the south-east with approximately 18.5% of the population aged between 0-15 and approximately 18.5% of the population aged over 65. The area is less diverse than the south-east in terms of ethnicity and religion. The health of people in Winchester is generally better than the average for England and life expectancy for both men and women is higher than the average for England.
- 9.2.3 A network of public rights of way surrounds the Proposed Scheme. The South Downs Way National Trail crosses the M3 using an overbridge south of Junction 9. The National Cycle Network Route 23 that links Reading to Southampton also crosses the M3. There are four regional trails in the Itchen Valley.

9.3 Receptors potentially affected by the Proposed Scheme

- 9.3.1 Receptors include residential areas, public rights of way, educational facilities, employment areas, human health, care homes, nursery's, hospitals and places of worship.

9.4 Mitigation

- 9.4.1 A number of mitigation measures will be implemented during the construction phase to minimise the impact to people. This includes an improved pedestrian and cycle route over the M3, public right of way network improvements, better integration of residential, industrial and commercial areas accessed from Easton Lane and use of local labour during construction where possible. Mitigation measures will also include procedures to manage public amenity impacts during the construction phase.

9.5 Preliminary findings of assessment

Construction

9.5.1 The preliminary findings of the assessment indicate a range of beneficial and adverse effects. There will be temporary adverse effects to Winnall Industrial Estate as there may be more queues on nearby roads during construction. These queues could also adversely impact human health through increasing driver stress and decreasing physical activity. Users of the National Cycle Route and public rights of way would also temporarily experience effects related to noise, vibration, dust, severance and visual intrusion which would reduce amenity. Temporary beneficial effects during the construction phase will occur due to use of local labour which will boost the local construction sector.

Operation

9.5.2 Overall, once the Proposed Scheme is in operation, it will improve the adverse effects identified for the construction phase through better access to Winnall Industrial Estate, improvements to the National Cycle Route and public right of way and an overall reduction in driver stress as queues decrease and safety increases.

9.6 Further assessment

- 9.6.1 Economic modelling will be undertaken to understand impacts to local employment, the supply chain and other economic impacts that the Proposed Scheme will generate during construction and operation.
- 9.6.2 Further assessments will be undertaken, including an economic appraisal that will identify economic benefits, and an equalities impact assessment that will identify effects on persons with protected characteristics and WCH optioneering reporting.

10 Road Drainage and the Water Environment

10.1 Study Area

10.1.1 The road drainage and the water environment assessment comprises a buffer zone of 500 metres around the Proposed Scheme boundary.

10.2 Baseline

10.2.1 The Proposed Scheme crosses the River Itchen at three locations along the A34, A33 and M3. The Proposed Scheme also crosses one of the River Itchen's tributaries, the Nun's Walk Stream, which is crossed by the A34. The River has several tributaries and land drains. There are also a number of ditches, ponds, wetlands, watercourses associated with this floodplain. The River Itchen is designated as a Special Area of Conservation and a Site of Special Scientific Interest. It also flows through the South Downs National Park and into the Southampton and Solent Water Special Protection Area. Both the River Itchen and Nun's Walk Stream are classified as overall good status as part of the Water Framework Directive.

10.2.2 The Proposed Scheme boundary mostly falls within Flood Zone one which has a low risk of flooding. The northern and western part of the Proposed Scheme boundary falls within Flood Zone 2 and 3 which has a medium and high risk of flooding, respectively, as shown on **Figure 13**.

10.2.3 There are existing drainage features within the Proposed Scheme boundaries that pose a risk of pollution or flooding. The general geology of the area is chalk which provides a high level of water storage, with some alluvium.

10.2.4 A programme of monitoring was undertaken to understand water changes and quality.

10.3 Receptors potentially affected by the Proposed Scheme

10.3.1 Receptors include a number of watercourses in the surrounding area, as described in **Section 10.2** above.

10.4 Mitigation

10.4.1 A range of measures are being incorporated into the design of the Proposed Scheme to avoid and reduce impacts on surface water and groundwater bodies. These include installation of systems to trap silty and polluted water, preparation of incident response plans in case of any accidental spillages, locating construction compounds outside areas at risk of flooding where possible and preparing a drainage strategy which includes a Sustainable Drainage System.

10.5 Preliminary findings of assessment

Construction

10.5.1 The preliminary findings of the assessment indicate that construction may potentially affect the quality of both surface water and groundwater bodies and there is potential for flood risk to increase in the local area. Adverse effects may be associated with the possible release of contaminants and changes to the flow of water. These effects are not expected to be significant as mitigation measures will be put in place to protect the water environment and prevent pollution.

Operation

10.5.2 The preliminary findings of the assessment indicate that operation of the Scheme will have the potential to influence the water environment and increase flood risk through modifications to bridges and alteration of existing surface water drainage. These effects are not expected to be significant after mitigation.

10.6 Further assessment

10.6.1 The existing drainage arrangements and the potential impacts that the Proposed Scheme could have on the road drainage and water environment will be reviewed and assessed in further detail. Hydraulic modelling will be undertaken to determine flood risk impacts.

11 Climate

11.1 Study Area

11.1.1 For the greenhouse gas emissions assessment, the study area for the construction phase is within the Proposed Scheme boundary as well as activities that occur beyond the boundary, such as transport of construction materials. The study area for the operational phase is the affected road network (the roads which may be impacted by the construction of the Proposed Scheme).

11.1.2 For the Vulnerability to Climate Change Assessment, the study area is two 25 kilometre grids within which the Proposed Scheme is located, although the area of influence for potential climatic impacts is expected to be limited to the Proposed Scheme boundary and the immediate area. The assessment focuses on the operation of the Proposed Scheme, as the construction period is relatively short and is unlikely to be impacted by long term climatic changes.

11.2 Baseline

11.2.1 The transport sector represents 28% of the net UK greenhouse gas emissions. Transport was the greatest source of greenhouse gas emissions in Winchester City Council (59% of emissions) and south east England (46% of emissions) in 2018.

11.2.2 Historic UK climate data shows that a gradual warming has occurred between 1961 and 2018. There has been an increase in average rainfall, with wetter winters and an increase in severe autumn and winter wind storms.

11.3 Receptors potentially affected by the Proposed Scheme

11.3.1 As greenhouse gases are released into the Earth's atmosphere and are not limited to geographic boundaries, the receptor is the global atmosphere.

11.3.2 The Proposed Scheme receptors vulnerable to climate change include infrastructure, including road surfaces and pavements, structures, drainage, landscaping and end-users.

11.4 Mitigation

11.4.1 Potential mitigation measures to reduce greenhouse gas emissions are being considered as the design of the Proposed Scheme evolves. This involves designing, specifying and constructing the Proposed Scheme to reduce the consumption of resources and maximise the lifespan of surfaces and structures.

11.4.2 Measures to reduce greenhouse gas emissions during construction include use of efficient construction plant and/or those powered by electricity from alternative/lower carbon fuels. Measures to reduce greenhouse gas emissions during operation will be considered and set out in the Environmental Statement. The assessment takes into account a future uptake in electric vehicles.

11.4.3 Potential mitigation measures to improve the Proposed Scheme's resilience to climate change include designing the drainage system to mitigate flood risk and designing the Proposed Scheme to be resilient to anticipated increases in summer temperatures.

11.5 Preliminary findings of assessment

Construction

11.5.1 The preliminary greenhouse gas emissions assessment has identified that, during construction, greenhouse gas emissions will be generated as a result of the embodied carbon from purchased materials and onsite construction activities such as use of diesel or petrol fuelled equipment.

Operation

11.5.2 During operation, the Proposed Scheme will generate additional greenhouse gas emissions as a result of an increase in traffic. This will result in long-term adverse effects.

11.5.3 The preliminary vulnerability to climate change assessment identified the following climate-related hazards:

- Long term changes to climate norms
- Heatwaves
- Floods and droughts
- Storms, lightning and storm surges
- Snow, ice and hail

11.6 Further assessment

11.6.1 Further assessment related to the calculation and assessment of greenhouse gas emissions will include quantifying the greenhouse gas emissions that arise as a result of construction activities and the operation of the Proposed Scheme. A qualitative assessment of land use change, carbon storage from vegetation, operational maintenance, repair and replacement will also be undertaken.

11.6.2 The vulnerability to climate change assessment will assess the likelihood, consequence and significance of the climate hazards identified in **Paragraph 11.5.3**, against the sensitive receptors identified in **Paragraph 11.3.2**.

12 In Combination and Cumulative Effects

12.1 Introduction

12.1.1 There is potential for the Proposed Scheme to have in combination and cumulative environmental effects, which could occur either as a result of changes caused by other reasonably foreseeable developments acting cumulatively with the effects of the Proposed Scheme (known as cumulative effects); or from the combined effect of several different impacts acting together on a single receptor from the Proposed Scheme, such that the combined effect would be more significant than the sum of the individual effects (known as in combination effects).

12.2 In combination effects

12.2.1 Each technical Environmental Statement chapter will report the assessment of effects to receptors relevant to that topic's methodology. In some instances, the same receptor or resource could be assessed in more than one technical chapter or more than once within the same technical chapter. In these cases, there is the possibility that several individual effects on the same receptor (which are not significant in their own right) could add up to create a significant in combination effect.

12.2.2 Once the ongoing Environmental Impact Assessment work has been completed, an assessment of interrelationships between topics will be undertaken and reported in the Environmental Statement.

12.3 Cumulative effects

12.3.1 The assessment of cumulative effects from 'other development' in combination with the Proposed Scheme follows a staged process as follows:

- Establish a 'zone of influence' relating to each environmental discipline, within which effects associated with that discipline are considered could occur.
- Develop a long list of other development which fall within the zone of influence, that could have effect interactions with the Proposed Scheme.
- Develop a short list of other developments which could have effect interactions with the Proposed Scheme (effectively, consider the long list in more detail).
- Gather information available on the shortlisted developments.
- Assess the likely significant cumulative effects of the shortlisted developments with the Proposed Development.

12.3.2 For this consultation exercise, a long and short list of developments has been prepared and reported in the Preliminary Environmental Information Report.

New cumulative schemes, or the status of identified cumulative schemes could alter between now and the preparation of the Environmental Statement, therefore the assessment of cumulative effects has not yet been undertaken. The assessment of cumulative schemes identified in the short list will be undertaken and reported in the Environmental Statement.

13 What are the next steps?

13.1 Pre-design public consultation

- 13.1.1 Highways England would like to obtain the views of the public on the draft proposals for the Proposed Scheme design, taking into account the potential environmental effects of the Proposed Scheme. We will then consider those views in finalising the design and refining the ongoing Environmental Impact Assessment and Environmental Statement.
- 13.1.2 Highways England continues to engage with a range of stakeholders including prescribed bodies, local authorities and political representatives. Following adoption of the second Scoping Opinion in November 2020 Highways England is conducting a further round of statutory consultation.
- 13.1.3 This Non-Technical Summary of the PEIR has been prepared to assist consultees and members of the public in developing an informed view of the potential likely significant effects of the Proposed Scheme.
- 13.1.4 Information related to the Proposed Scheme is available to access on the consultation web page.
- 13.1.5 Members of the public and the wider community are able to respond to the consultation using the online questionnaire, by email, or via a dedicated freepost address, enclosing a completed consultation questionnaire or letter. Respondents have the opportunity to comment on all aspects of the Proposed Scheme, including the environmental information.

Responding to the consultation

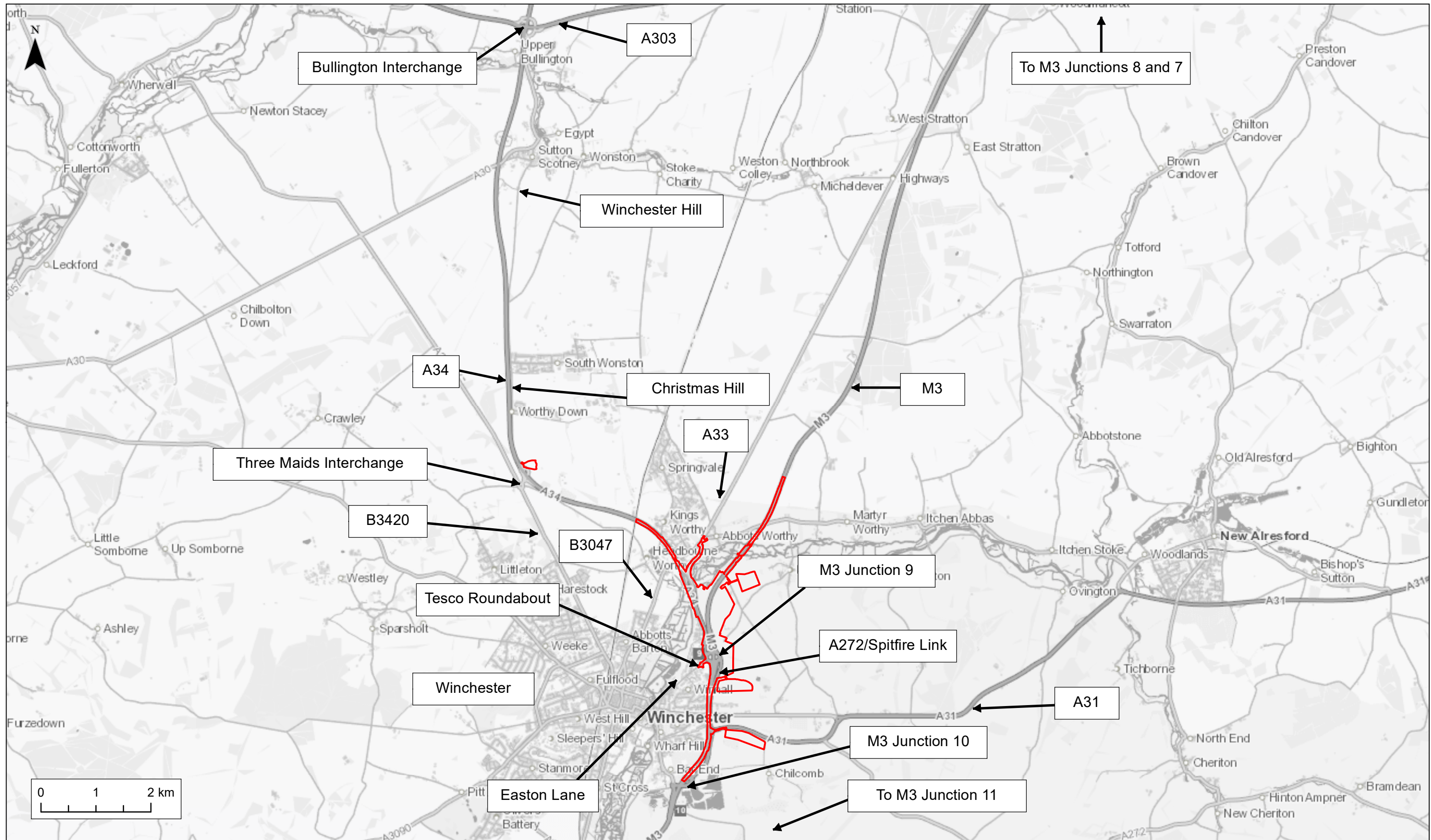
- 13.1.6 Highways England must submit an application for development consent to the Secretary of State for authorisation to construct the Proposed Scheme. Highways England must consider consultation responses and is required to document these responses as part of its application for development consent.
- 13.1.7 The Environmental Statement will be submitted with the application for development consent. Once the application has been submitted and accepted by the Planning Inspectorate on behalf of the Secretary of State, the public and wider community will have further opportunity to comment on the application. Details of how the Development Consent Order process works can be found on the Planning Inspectorate's National Infrastructure Planning website:

<https://infrastructure.planninginspectorate.gov.uk/application-process/>

- 13.1.8 You can view all the consultation materials on our webpage at:

<http://www.highwaysengland.co.uk/m3junction9>

Figures



KEY
 Indicative Application Boundary

Figure Status **FOR INFORMATION**

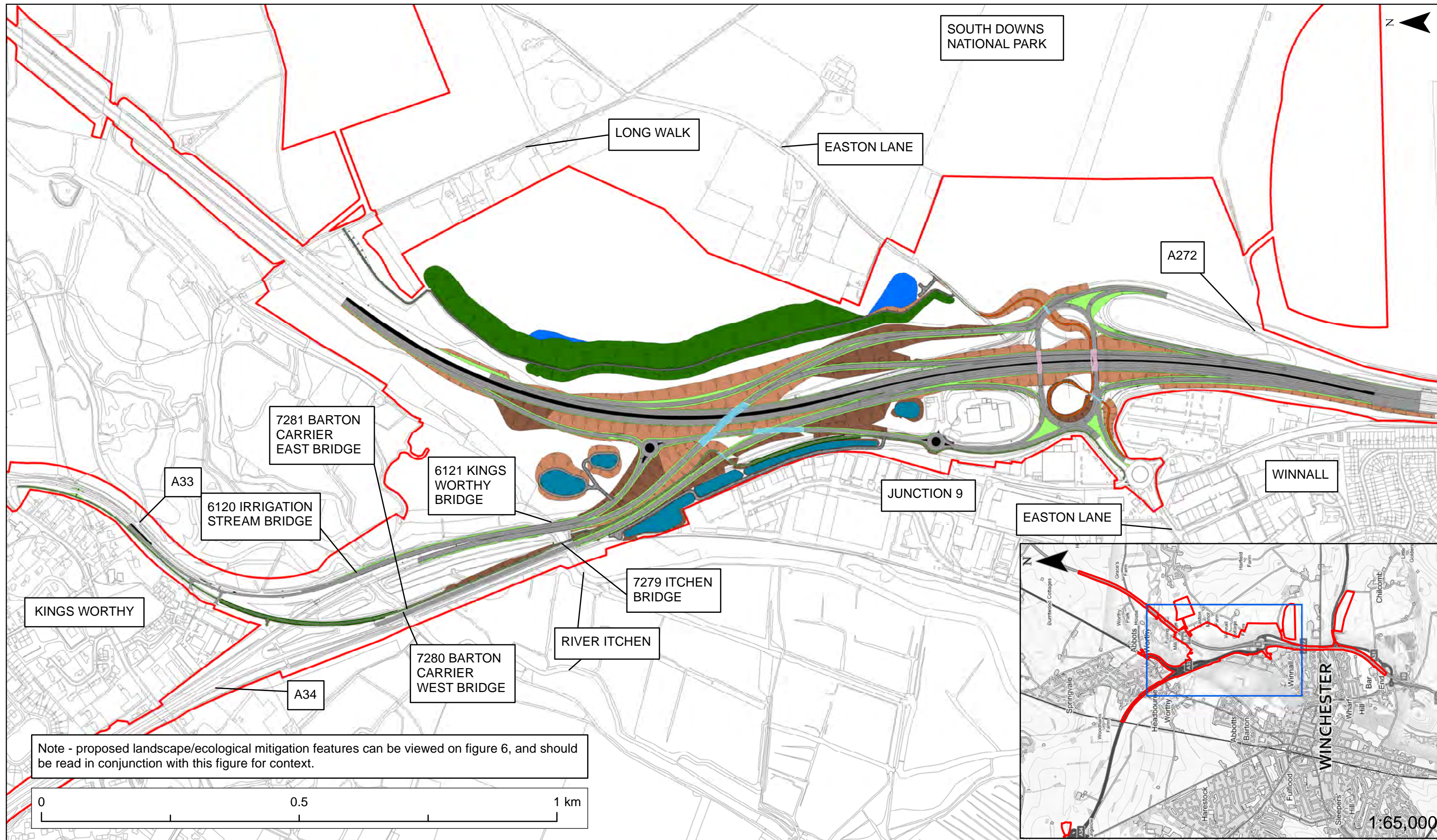
Project Title **M3 JUNCTION 9 IMPROVEMENT**



Figure Title **SITE LOCATION PLAN**



Scale: 1:65,000	Designed: TL	Drawn: TL	Checked: JM	Approved: JM
Original Size: A3	Date: 07/01/2021	Date: 07/01/2021	Date: 07/01/2021	Date: 07/01/2021
FIGURE 1				Project Ref No. 48176
				Revision: A



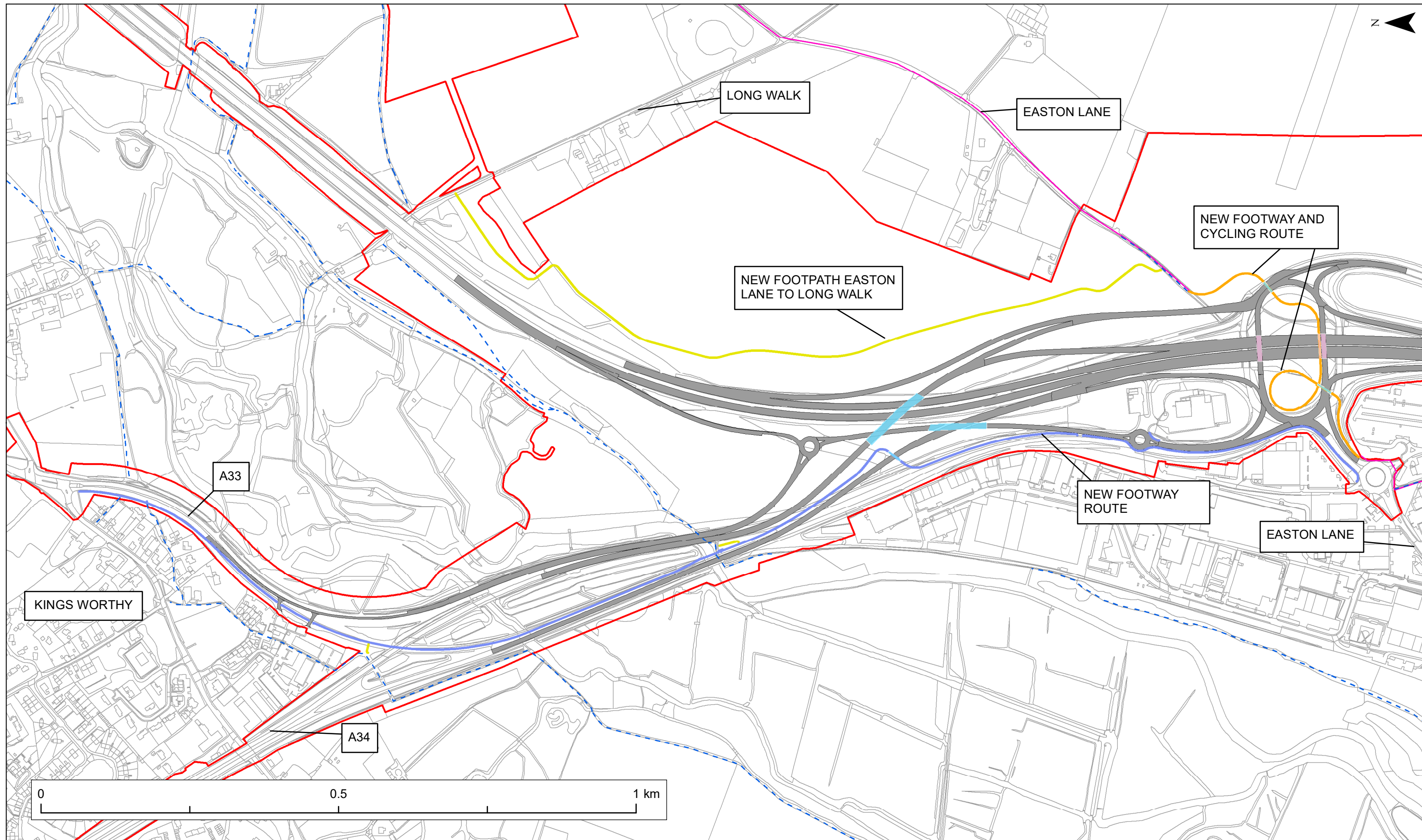
KEY	
Indicative Application Boundary	Proposed Attenuation Basin Maintenance Track
OS Mastermap	Proposed Footway Route
Bridge Extent Above M3 Alignment	Proposed Carriageway
Underpass / Subway	Proposed Chalk/Grass Bund
Proposed Embankment in Fill	Proposed Footway, Cycling and Other User Routes (Including future provision)
Proposed Embankment in Cut	Proposed Traffic Island/Central Reserve
Proposed Attenuation Basin	Proposed Verge
Proposed Infiltration Basin	

© Crown copyright and database rights 2020. Use of this data is subject to terms and conditions. Ordnance Survey Licence 100030649. Contains public sector information licensed under the Open Government Licence v3.0.

Figure Status: **FOR INFORMATION**

Client:

Project Title: M3 JUNCTION 9 IMPROVEMENT				
Figure Title: INDICATIVE GENERAL ARRANGEMENT PLAN				
Scale: 1:7,000	Designed: TL	Drawn: TL	Checked: JM	Approved: JW
Original Size: A3	Date: 24/05/2021	Date: 24/05/2021	Date: 24/05/2021	Date: 24/05/2021
FIGURE 2				Project Ref No. 48176 Revision: A



KEY

- Indicative Application Boundary
- Existing Footpath
- New Footway Route
- New Footpath Link
- New Footway and Cycling Route
- Proposed Carriageway
- Bridge Extent Above M3 Alignment
- Underpass / Subway

© Crown copyright and database rights 2020. Use of this data is subject to terms and conditions. Ordnance Survey Licence 100030649.
 Contains public sector information licensed under the Open Government Licence v3.0.

Figure Status: **FOR INFORMATION**

VolkerFitzpatrick

Client: **highways england**

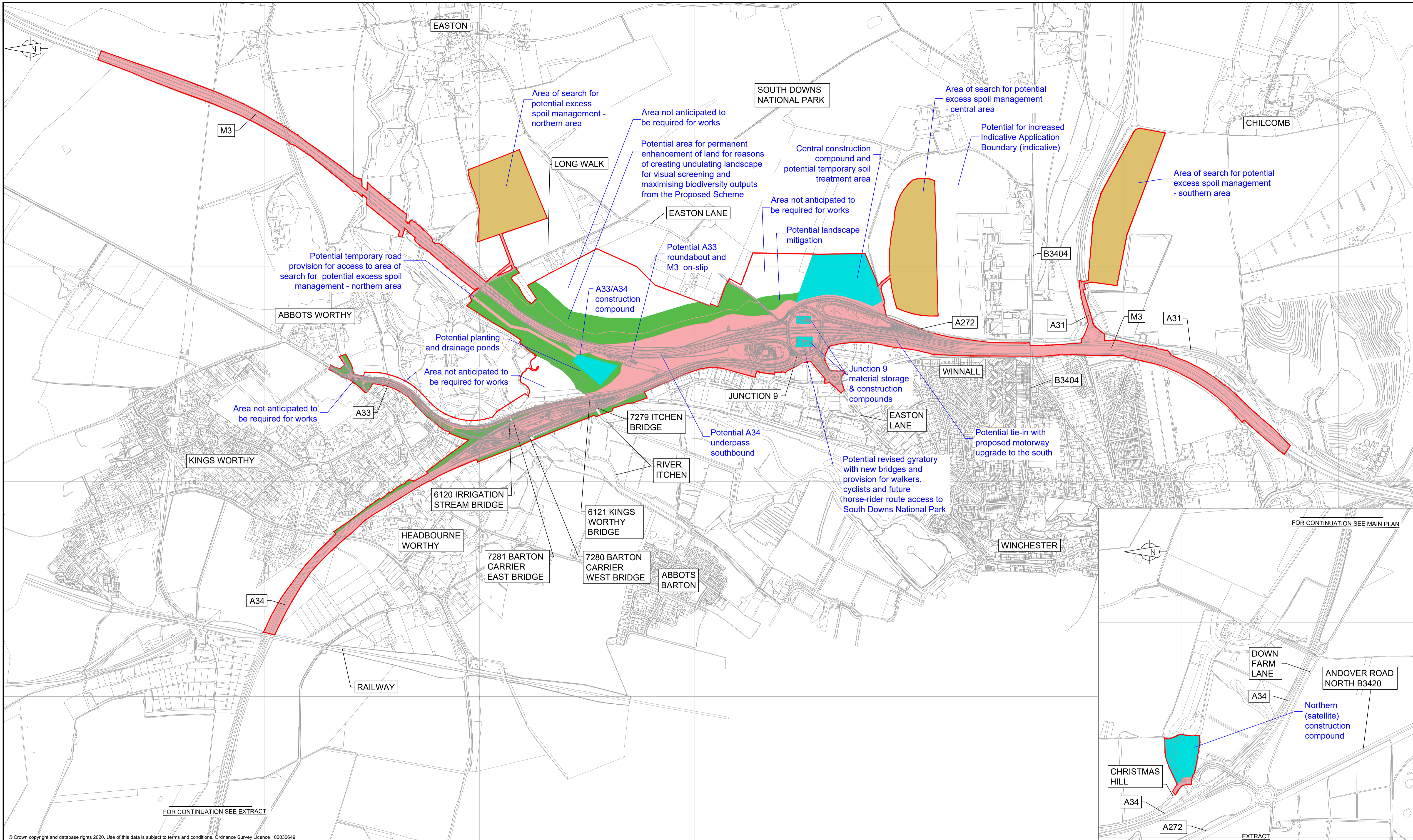
Project Title: **M3 JUNCTION 9 IMPROVEMENT**

Figure Title: **EXISTING AND NEW WALKING AND CYCLING ROUTES**

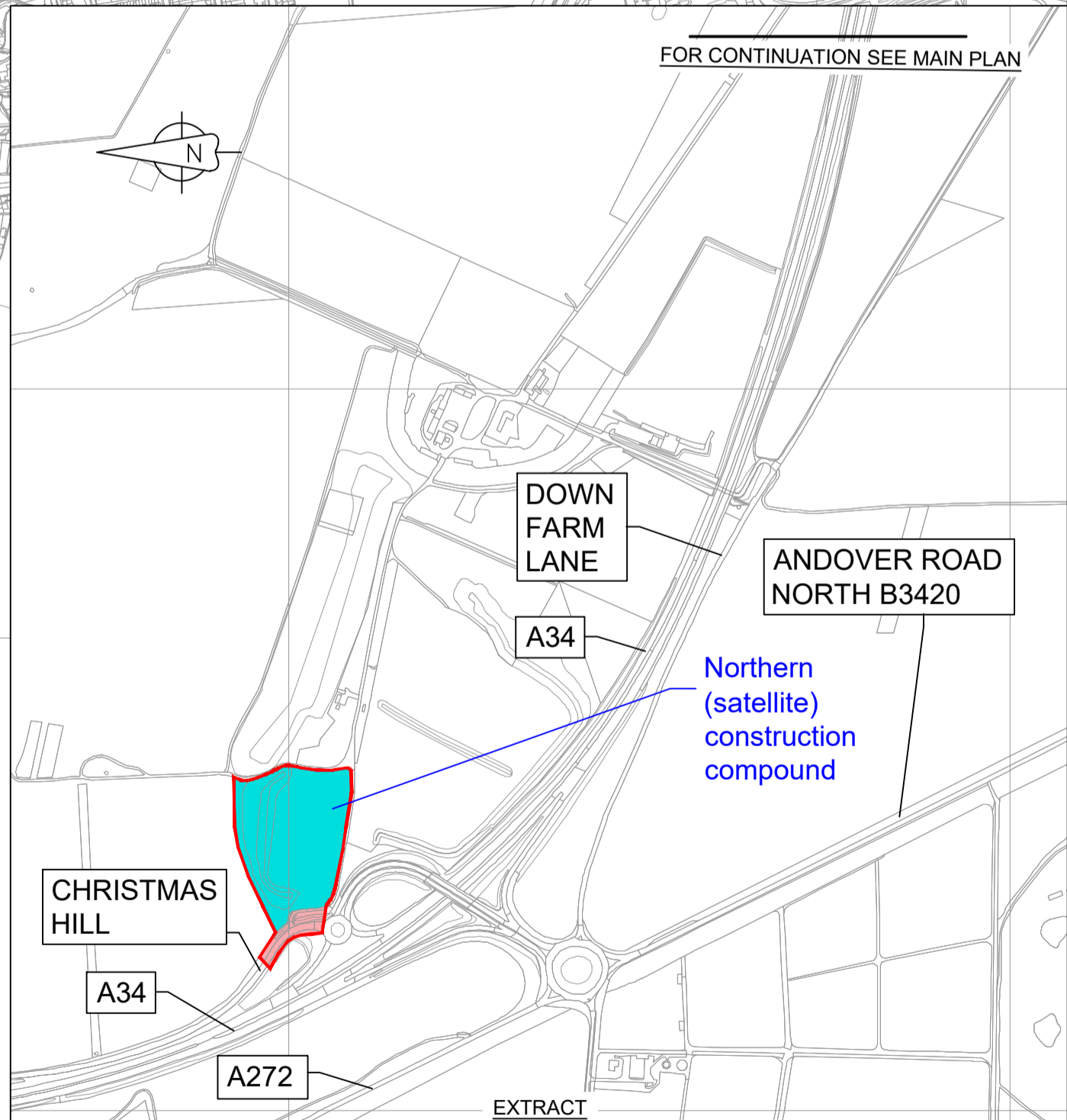
Scale: 1:6,000	Designed: TL	Drawn: TL	Checked: JM	Approved: JW
Original Size: A3	Date: 14/05/2021	Date: 14/05/2021	Date: 14/05/2021	Date: 14/05/2021

FIGURE 3

Project Ref No. 48176
Revision: A



FOR CONTINUATION SEE EXTRACT



© Crown copyright and database rights 2020. Use of this data is subject to terms and conditions. Ordnance Survey Licence 100030649

KEY:

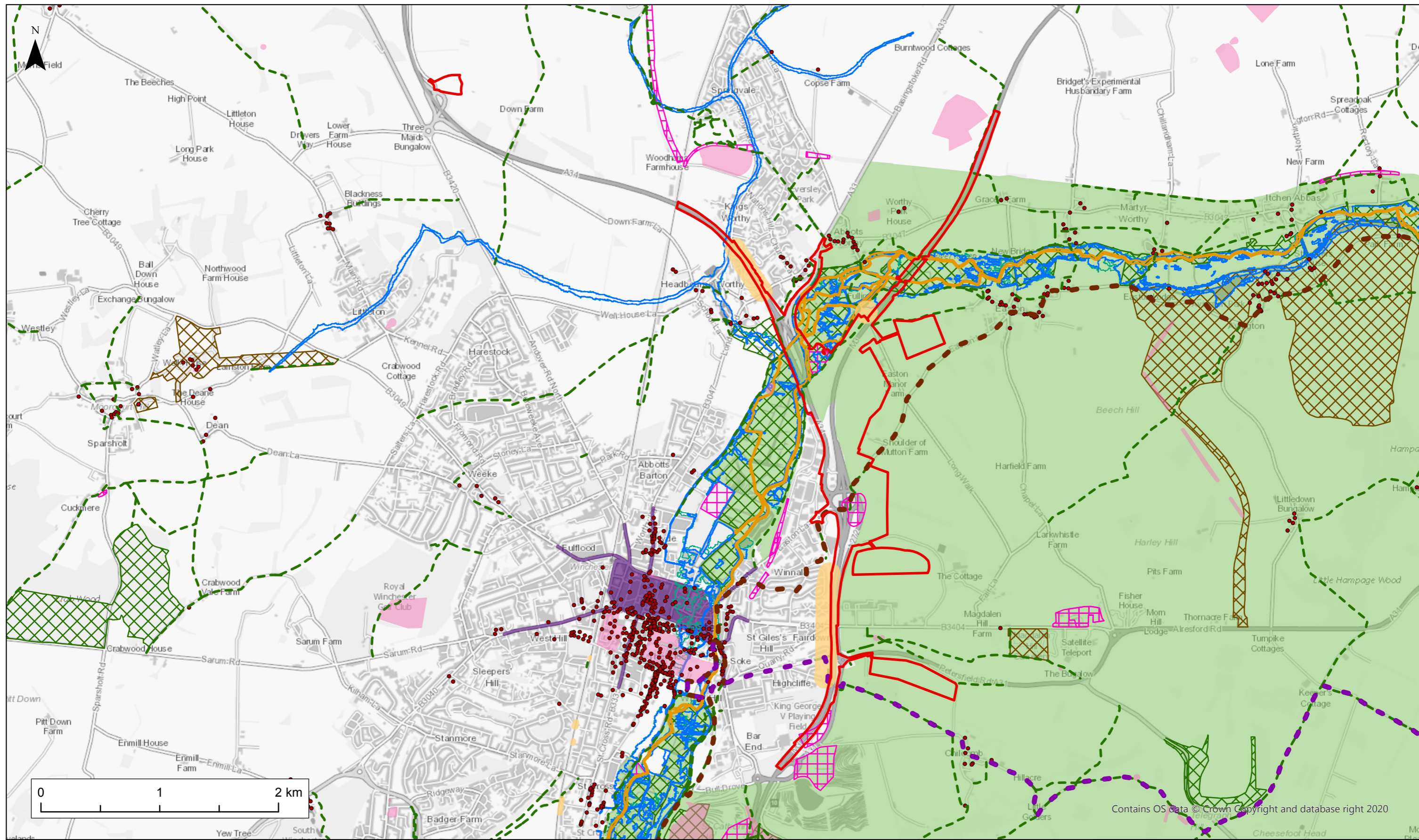
	ORDNANCE SURVEY MAPPING
	INDICATIVE APPLICATION BOUNDARY
	INDICATIVE PERMANENT/TEMPORARY HIGHWAY LAND TAKE INCLUDING PRINCIPAL ACCESS AND HAUL ROUTES
	INDICATIVE ENVIRONMENTAL MITIGATION AREAS
	INDICATIVE CONSTRUCTION COMPOUND AREAS
	AREAS OF SEARCH FOR POTENTIAL EXCESS SPOIL MANAGEMENT
TEXT	EXISTING PLACE OR ROAD NAME
Text	PROPOSED SCHEME DESCRIPTION

- NOTE:**
- ACCESS WILL BE PROVIDED THROUGH THE IAB FOR WALKERS, CYCLISTS AND FUTURE HORSE-RIDER ROUTE CROSSING THE M3 J9 ROUNDABOUT TO CONNECT WITH THE NATIONAL CYCLE ROUTE 23 TO THE EAST, AS WELL AS PROVIDING ACCESS TO THE NORTH.
 - THE BASE MAPPING SHOWN REPRESENTS THE EXISTING ROAD CONFIGURATION AS PROVIDED BY THE ORDNANCE SURVEY. IT DOES NOT PRESENT PROPOSED SCHEME DETAIL.
 - FIGURE 2.3 TO BE READ IN CONJUNCTION WITH THE ENVIRONMENTAL CONSTRAINTS SHOWN WITHIN FIGURE 2.2.

Drawing Status

INFORMATION

Project Title		M3 JUNCTION 9 IMPROVEMENT			
Drawing Title		INDICATIVE LAND USE PLAN			
Scale	NTS	Designed	N/A	Drawn	LB
Original Size	A1	Date	-	Date	16.04.21
Checked	JM	Date	16.04.21	Approved	AS
Date	16.04.21	Date	16.04.21	Date	16.04.21
Drawing Number	FIGURE 4				
Project Ref. No.	48176				
Revision	P3				



Contains OS data © Crown Copyright and database right 2020

KEY		
Indicative Application Boundary	Scheduled Monuments	Historic Landfill Sites
Listed Buildings	Special Area of Conservation	Site of Special Scientific Interest
Public Rights of Way	Flood Zone 3	Historic Parks and Gardens
National Trails	Flood Zone 2	South Downs National Park
National Cycle Network Route	Air Quality Management Area	Noise Important Areas (Round 3)

Contains Ordnance Survey data © Crown copyright and database right 2020. Contains public sector information licensed under the Open Government Licence v3.0. Contains Environment Agency information © Environment Agency and/or database right. © Historic England 2020. Contains Ordnance Survey data © Crown copyright and database right 2020 The Historic England GIS Data contained in this material was obtained on 2020. The most publicly available up to date Historic England GIS Data can be obtained from <http://www.HistoricEngland.org.uk>.

Figure Status: **FOR INFORMATION**

VolkerFitzpatrick

Client: **highways england**

Project Title		M3 JUNCTION 9 IMPROVEMENT		
Figure Title		ENVIRONMENTAL CONSTRAINTS		
Scale: 1:30,000	Designed:	Drawn: TW	Checked: JM	Approved: JM
Original Size: A3	Date:	Date: 09/09/2020	Date: 09/09/2020	Date: 09/09/2020
FIGURE 5				Project Ref No.
				Revision



Area of search for potential excess spoil management to be returned to agricultural use

Indicative location of hedgerows impacted by Proposed Scheme to be mitigated

Area of search for potential excess spoil management to be returned to agricultural use

Proposed broadleaf woodland between sections of new carriageway to help soften views and enhance green infrastructure links along route

Proposed linear broadleaf woodland feature to reinforce screening of road network from views further east within SDNP

Proposed chalk grassland treatment to earthwork cuttings adjacent to road network

Proposed conversion and reprofiling of existing agricultural land to chalk grassland

Proposed footpath connection between Easton Lane and Long Walk

Proposed conversion of existing agricultural land to species rich grassland

Proposed broadleaf woodland planting to provide visual screening of new section of carriageway and enhance habitat connectivity adjacent to SSSI

Existing vegetation around River Itchen to be retained and enhanced

River Itchen and its tributaries

Moorside Road Winnall Industrial Estate

Opportunity to create areas of wildflower/chalk grassland near to junctions to enhance visual amenity and biodiversity value

Existing vegetation adjacent to retail park to be retained and enhanced

Winnall

Opportunity to integrate public art installations within this area to enhance entrance to Winchester city

Kings Worthy

Proposed SuDS and attenuation features to respond sympathetically to local landform favouring avoiding over-engineered basin construction. Ecological enhancements to be integrated into design to contribute to riparian corridor habitats

Proposed to change abandoned A33 northbound carriageway into a walking route. Walking route to be flanked with chalk grass supporting local landscape character, visual amenity and ecological connectivity

Potential for public art exhibition to be integrated into retaining wall structures on approach to Winchester enhancing user experience and visual amenity

Area of search for potential excess spoil management to be returned to agricultural use

INSET 1

LEGEND

	Indicative Application Boundary
	Public Rights of Way
	Vegetation to be retained and enhanced
	Grassland to be retained and enhanced
	River Itchen and its tributaries

Proposed

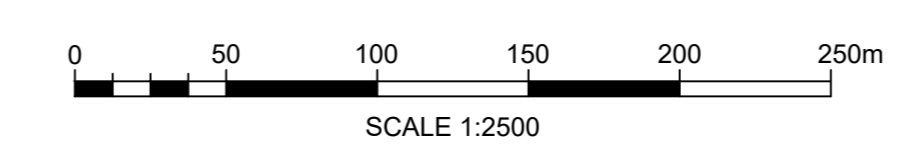
	Proposed footpath connection between Easton Lane and Long Walk
	LE1.3 Chalk Grassland
	LE1.3 Species Rich Grassland
	LE1.3 Wildflower Grass Mix
	LE6.4 Marginal Aquatic Grass Mix

	LE6.4 Wetland Grass Mix
	LE1.1 Reinforced Grass Mix
	LE2.1 Broadleaf Woodland Planting
	LE2.8 Native Shrub Planting

N.B. Landscape element codes sourced from Highways England, *DMRB LA117 Landscape Design* (2020) Table 4.2b, pg. 13

- LE1.3: Species rich (or conservation) grassland
- LE2.1: Woodland
- LE2.8: Scrub
- LE6.1: Water bodies and associated plants

Acronyms
DMRB - Design Manual for Roads and Bridges
SDNP - South Downs National Park
SSSI - Site of Special Scientific Interest
SuDS - Sustainable Drainage System

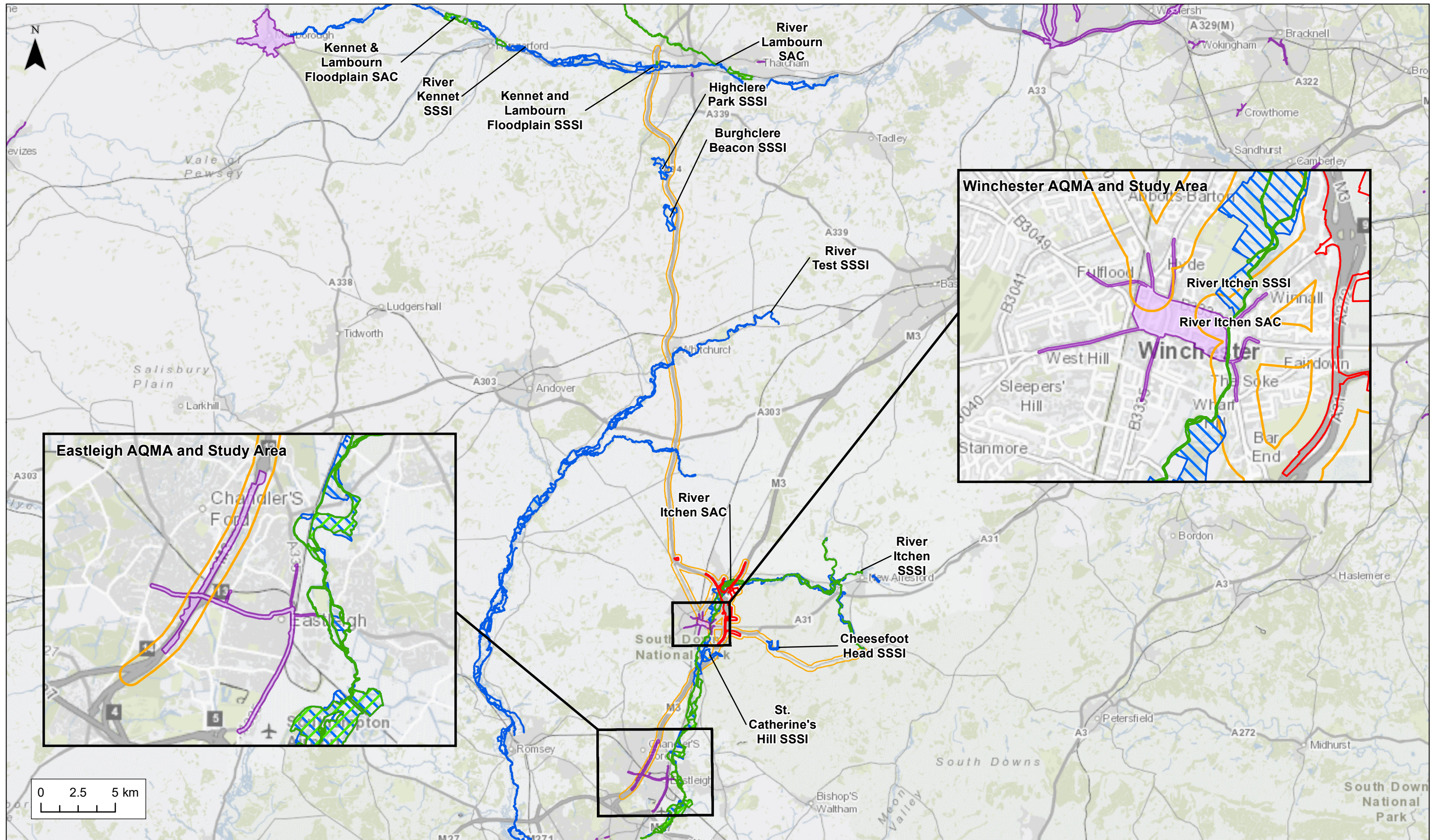


Rev	Date	Description	Drawn	Chk'd	App'd
B	15.04.21	Proposed Scheme design update	JJ	JM	MF
A	18.12.20	Amendment to annotations	JJ	DM	JM

FOR INFORMATION

highways england

Project Title		M3 JUNCTION 9 IMPROVEMENT			
Drawing Title		STAGE 3B HIGHWAY WORKS PRELIMINARY ENVIRONMENTAL MITIGATION DESIGN PLAN			
Scale	1:2500	Designed	DM	Drawn	JJ
Original Size	A0	Date	15.04.21	Date	15.04.21
Checked	JM	Date	15.04.21	Approved	MF
Date	15.04.21	Date	15.04.21	Date	15.04.21
Project No.	48176	Revision	B		
FIGURE 6					



- KEY**
- Indicative Application Boundary
 - Roads exceeding DMRB traffic scoping criteria 200 m buffer
 - Site of Special Scientific Interest (SSSI)
 - Special Area of Conservation (SAC)
 - Air Quality Management Area

Contains OS data © Crown Copyright and database right 2020
 Contains public sector information licensed under the Open Government Licence v3.0.
 © Natural England copyright 2020

Figure Status **FOR INFORMATION**

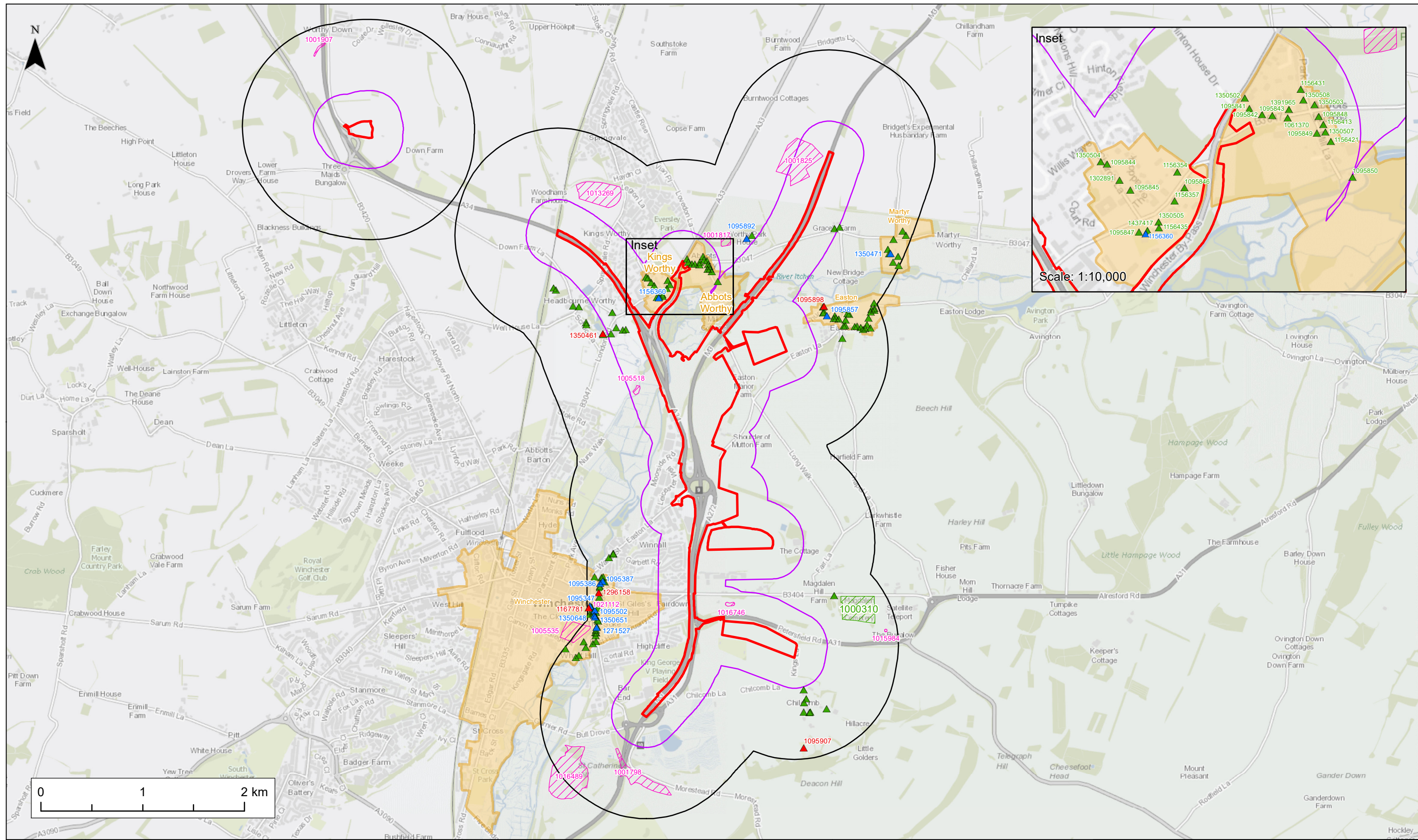
Project Title **M3 JUNCTION 9 IMPROVEMENT**



Figure Title **CURRENT AIR QUALITY STUDY AREA AND RELEVANT DESIGNATED SITES**



Client	Scale: 1:240,000	Designed: IB	Drawn: IB	Checked: DF	Approved: PB
	Original Size: A3	Date: 13/01/2021	Date: 13/01/2021	Date: 13/01/2021	Date: 13/01/2021
FIGURE 7					Project Ref No: 48176
					Revision B



KEY

- Indicative Application Boundary
- 300m Study Area
- 1km Study Area
- Registered Park and Garden
- Scheduled Monument
- Conservation Area
- ▲ Grade I Listed Building
- ▲ Grade II* Listed Building
- ▲ Grade II Listed Building

Contains Ordnance Survey data © Crown copyright and database right 2020.
 Contains public sector information licensed under the Open Government Licence v3.0.
 © Historic England

Figure Status	FOR INFORMATION
Client	

Project Title					M3 JUNCTION 9 IMPROVEMENT				
Figure Title					DESIGNATED HERITAGE ASSETS				
Scale: 1:35,000	Designed: DB	Drawn: DB	Checked: TL	Approved: RG					
Original Size: A3	Date: 25/11/2020	Date: 25/11/2020	Date: 25/11/2020	Date: 25/11/2020					
FIGURE 8					Project Ref No. 48176 Revision: A				