

Biodiversity Impact Assessment



Swindon Services

On behalf of Moto Hospitality Ltd

May 2024

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1 Executive Summary

Report purpose	This report identifies the results of a quantitative Biodiversity Impact Assessment undertaken of proposals for construction of Swindon Services at M4 Junction 16, SN5 8UD (approx. central grid reference SU 10435 82710). A Biodiversity Impact Assessment (BIA) is required in accordance with Core Policy 50 from the Wiltshire Core Strategy Development Plan Document (adopted January 2015). This report functions to satisfy the requirements of the following part of that policy: <i>“All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services.”</i>
Date and methods of survey and assessment	A baseline habitat condition assessment of the site was undertaken in August 2022 and May 2023 and the results used to populate the DEFRA 4.0 Biodiversity Metric based on planting plans provided by Beech Design Ltd (drawing reference Swindon MRA - M49-101 - site layout - rev D). Ecological advice for maximising biodiversity gain potential within the layout was provided during the detailed design stage and incorporated within the plans. The mitigation hierarchy and all other best practice principles for biodiversity net gain were followed during the design process.
Key findings	The 7.3 ha site has a baseline biodiversity value of 16.58 habitat units, 5.18 hedgerow units and no river units. The Biodiversity Metric Calculator identifies a net gain of +2.89 habitat units, equivalent to a change of 16.58% will be achieved, alongside a net gain of +0.69 hedgerow units, equivalent to 13.29% change. Condition assessments were made on a precautionary basis for robustness. The actual biodiversity net gain potentially achievable at the site may exceed the values above. Assumptions on composition and condition of proposed habitats are explained; broad creation/management specifications, timeframes and monitoring requirements are provided by this report that would be required to meet these assumptions. The metric also indicates that rules relating to ‘trading down’ have been satisfied. Features such as bird boxes and bat boxes are not considered within the biodiversity metric calculation but will be incorporated within the site which will further enhance the site for wildlife, as detailed within the Ecology Chapter (Ecology by Design, 2023). This assessment has robustly demonstrated that the proposals will result in a biodiversity net gain, satisfying Core Policy 50 from the Wiltshire Core Strategy Development Plan Document and ensuring a biodiversity gain will be achieved as part of the proposals. No guidance for a specific percentage gain is specified, however, a net gain in excess of 10% biodiversity gain will be achieved as part of the proposals. Post-consent, this report should be used to inform a detailed Biodiversity Net Gain Management and Monitoring Plan (BMMP). A BMMP will be required to ensure the long-term delivery of the habitats contributing to the quantitative net gain calculated by this report.

2 Introduction

2.1 Background

- 2.1.1 Ecology by Design were commissioned by Smith Jenkins on behalf of Moto Hospitality Ltd to undertake a Biodiversity Impact Assessment (BIA) of proposals for the construction of Swindon Services at M4 Junction 16, SN5 8UD (approx. central grid reference SU 10435 82710).

2.2 Site Description

- 2.2.1 The 7.3 ha site is comprised of modified grassland, other neutral grassland, bramble scrub, mixed scrub, hardstanding, and woodland. The site is bordered by the M4 motorway to the north, and the B4005 borders the southern and southwestern edges of the site. Agricultural fields are present bordering the east of the site; woodland stands are present to the south of the B4005. The wider surroundings include the village of Blagrove to the north of the M4, with predominantly agricultural and pastureland to the south of the M4. Seven ponds are located within 500m of the site boundary, three of which are both south of the M4 and are present within 250m of the site boundary.

2.3 Proposals

- 2.3.1 The proposals at the site are an outline planning application for Swindon Services (in line with Beech Design - M49_101 – proposed layout plan (illustrative) - rev G).

2.4 Relevant Policy and Legislation

- 2.4.1 Core Policy 50 from the Wiltshire Core Strategy Development Plan Document (adopted 2015) states:
- 2.4.2 *“All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services.”*
- 2.4.3 No guidance for a specific percentage gain is specified, as such a specific percentage gain beyond no net loss may not need to be achieved. As outlined within the Environment Act, a 10% Biodiversity Net Gain (BNG) above baseline conditions for all developments in England will be required from January 2024.
- 2.4.4 The National Planning Policy Framework (NPPF) (MHCLG, 2021) states that development proposals should seek opportunities for securing measurable net gains for biodiversity. It also outlines that development proposals should follow a ‘mitigation hierarchy’ by which loss of

biodiversity should preferably be avoided as a first course of action, mitigated as a second, or compensated for as a last resort.

2.5 Aims of Report

- 2.5.1 This report is a Biodiversity Impact Assessment (BIA) of the proposals at the site. It has been produced following a site visit to evaluate the baseline habitats present and a review of the proposed habitats in accordance with the guidance provided alongside the DEFRA 4.0 BIA metric (Natural England, 2023b) and industry standard guidance (CIEEM *et al.*, 2019; BSI, 2021).
- 2.5.2 This report is intended to satisfy the requirements of the Wiltshire Core Strategy Development Plan Document, ensuring a net gain in biodiversity (in line within Core Policy 50) read in conjunction with the detailed landscape proposals Beech Design drawing reference: Swindon MRA - M49-101 - site layout - rev D.pdf).
- 2.5.3 This report will be submitted to Wiltshire Council alongside a completed copy of the DEFRA Biodiversity Metric 4.0 Calculation Tool (Natural England, 2023a) to inform the outline planning application. GIS shapefiles will be available on request.
- 2.5.4 This report addresses a quantitative biodiversity net gain assessment only, it should be read in conjunction with the Ecology Chapter (Ecology by Design, 2023) which addresses all other ecological considerations such as designated sites and protected species.

2.6 Personnel

- 2.6.1 The site visit, mapping and completion of the DEFRA 4.0 metric (Natural England, 2023a) was undertaken by Ecology by Design Ecologist Olyvia Hall BSc(Hons) MSc QCIEEM who has more than two years' experience carrying out habitat surveys. The report, metric and associated figures were reviewed by Associate Ecologist Laura Grant BSc (Hons) MCIEEM who has 15 years' experience as an ecologist.
- 2.6.2 Olyvia and Laura have both received specific training in the use of the DEFRA 4.0 metric and are suitably qualified and accomplished in habitat evaluation and use of GIS to complete a biodiversity impact assessment metric on a site of this nature.

3 Methods

3.1 Desk Study

- 3.1.1 The Ecology Chapter (Ecology by Design, 2023) includes a detailed desk study to inform the application which is not discussed further within this report.

3.2 Biodiversity Impact Assessment

Compliance with Best Practice

- 3.2.1 A biodiversity impact assessment was undertaken using the DEFRA 4.0 metric (Natural England, 2023a) in accordance with all relevant best practice guidelines (CIEEM *et al.*, 2019; BSI, 2021). The 10 'Principles of Biodiversity Net Gain (CIEEM, *et al.*, 2019) were followed:

- Principle 1 – Apply the mitigation hierarchy
- Principle 2 – Avoid losing biodiversity that cannot be offset by gains elsewhere
- Principle 3 – Be inclusive and equitable
- Principle 4 – Address risks
- Principle 5 – Make a measurable net gain
- Principle 6 – Achieve the best outcomes for biodiversity
- Principle 7 – Be additional
- Principle 8 – Create a net gain legacy
- Principle 9 – Optimise sustainability
- Principle 10 – Be transparent

Methodology

- 3.2.2 To calculate the net impact on biodiversity as a result of the proposals, the DEFRA Biodiversity Metric 4.0 (Natural England, 2023a) was completed in accordance with the accompanying user guide and technical supplements (Natural England, 2023b). The Metric calculation was completed with baseline data from a PEA and site and proposals data from the proposed landscape scheme.
- 3.2.3 A site visit was undertaken to collect baseline data on the existing habitats and their condition within the site. In accordance with the Biodiversity Metric 4.0 user guide (Natural England, 2023b) no specific minimum mappable unit was used; baseline data was collected on site on 26 August 2022 and during an update walkover on 31st May 2023 and digitised using Ordnance Survey mapping and google satellite imagery during July-August at a scale of 1:250 using

professional judgement, site notes and experience in cases where feature boundaries were not readily apparent.

- 3.2.4 Proposed habitats were manually digitised using an image file of Landscape Strategy – planting Typologies 17/05/24 Revision D_ 1:1250 @ A3 (Appendix 1) georeferenced using QGIS version 3.34 ‘Georeferencer’ plugin; the georeferenced raster file is available on request in various formats. Full details of the habitat classifications are outlined within the biodiversity metrics submitted alongside this report and accompanying GIS shapefiles available on request in various formats.
- 3.2.5 In order to avoid rounding errors, area and length values were entered into the DEFRA 4.0 metric to the level of accuracy calculated by the QGIS 3.34 function \$area/\$length as a decimal (‘real’) number attribute.
- 3.2.6 Existing and proposed habitats were categorised based on the UK Habitats Classification Scheme (Butcher *et al.*, 2020) and conditions were assessed in accordance with the accompanying guidelines for the DEFRA 4.0 metric (Annex 1 to Natural England, 2023b).
- 3.2.7 The personnel were suitably qualified to conduct the assessment, as detailed in Section 2.6.

3.3 Limitations and Constraints

- 3.3.1 Industry standard principles were employed for the biodiversity impact assessment where appropriate to the current project. Any deviation from best practice was circumstantial and minor and did not have a significant impact on the conclusions made which are considered valid and robust. A full break down of the industry standard principles involved and any justifiable deviation is available on request if required.

4 Results and Interpretation

4.1.1 Baseline and proposed habitat condition assessments are recorded within the DEFRA 4.0 Metric submitted alongside this report and accompanying GIS shapefiles (available on request in various formats).

4.1 Habitats Baseline

4.1.1 The baseline habitats and their retention category (lost/retained/enhanced) are illustrated on Figures EBD_2511_DR001 - EBD_2511_DR002 at Appendix 2 and detailed within Table 4.1 below. Detailed condition assessment results are presented alongside justification in Appendix 4.

Table 4.1: *Habitat types identified during the baseline condition assessment*

Habitat type	UKHabs code	Description
Modified grassland	g4	Modified grassland subject to frequent applications of fertiliser spans much of the site. In the west perennial ryegrass (<i>Lolium perenne</i>) is dominant with occasional cock's-foot (<i>Dactylis glomerata</i>), dandelion (<i>Taraxacum</i> sp.), broad-leaved dock (<i>Rumex obtusifolius</i>) and creeping buttercup (<i>Ranunculus repens</i>). Within the biodiversity enhancement area in the east, the grassland is dominated by perennial ryegrass, with rarely occurring Yorkshire fog (<i>Holcus lanatus</i>), soft brome (<i>Bromus hordeaceus</i>), meadow foxtail (<i>Alopecurus pratensis</i>), couch (<i>Elymus repens</i>), false oat grass (<i>Arrhenatherum elatius</i>), creeping bent (<i>Agrostis stolonifera</i>) and Italian ryegrass (<i>Lolium multiflorum</i>). Herbs are rarely occurring comprising wood dock (<i>Rumex sanguineus</i>) and creeping buttercup (<i>Ranunculus repens</i>). Both grassland areas are in poor condition.
Other neutral grassland- tall herb	g3c, 16	Along the northern and western boundaries and southwest corner of the site other neutral grassland is present, with tall herb species present throughout the sward. Species present include false oat grass (<i>Arrhenatherum elatius</i>), tufted hair grass (<i>Deschampsia caespitosa</i>), Italian rye grass (<i>Lolium multiflorum</i>), creeping thistle (<i>Cirsium arvense</i>), vetch (<i>Vicia</i> sp.), prickly sow thistle (<i>Sonchus asper</i>), bristly ox-tongue (<i>Helminthotheca echioides</i>), bittersweet (<i>Solanum dulcamara</i>), mugwort (<i>Artemisia vulgaris</i>), hogweed (<i>Heracleum sphondylium</i>), ragwort (<i>Jacobaea vulgaris</i>), spear thistle (<i>Cirsium vulgare</i>), wild carrot (<i>Daucus carota</i>), colt's-foot (<i>Tussilago farfara</i>), field bindweed (<i>Convolvulus arvensis</i>) and dove's-foot cranesbill (<i>Geranium molle</i>). In damper areas of grassland to the west of the site patches of locally dominant areas of rush (<i>Juncus</i> sp.) were present within a narrow drainage ditch. The grassland is in poor condition.
Bramble scrub	h3d	An area of scrub, dominated by bramble (<i>Rubus fruticosus</i> agg.) is present to the north of the site. Other species throughout this

		scrub include tall herb species as present in the tall ruderal species outlined above.
Mixed scrub	h3h	Areas of mixed scrub on site are dominated by blackthorn, with other species present including bramble, mugwort and creeping thistle in poor condition.
Hedgerow with trees	h2a	H1- Hedge 1 (the central hedge) is 0.234 km length and comprised of blackthorn (<i>Prunus spinosa</i>), hawthorn (<i>Crataegus monogyna</i>), hazel (<i>Corylus avellana</i>), apple (<i>Malus</i> sp.), elder (<i>Sambucus nigra</i>) and bramble (<i>Rubus fruticosus</i> sp.) Tree species present were dominated by elm (<i>Ulmus</i> sp.). The hedgerow is in moderate condition. H2- Hedge 2 (the western hedge) is 0.099 km length and comprised of blackthorn, hawthorn, field maple (<i>Acer campestre</i>), bramble and <i>Rosa</i> sp.. Tree species present include oak (<i>Quercus</i> sp.), crack willow (<i>Salix x fragilis</i>), and elm (<i>Ulmus</i> sp.). The hedgerow is in moderate condition. H3- Hedge 3 (off-site eastern hedge) is 0.059 km length and comprised of predominantly of blackthorn with cherry plum (<i>Prunus cerasifera</i>), hawthorn, bramble, and elm present. Ground floral species comprise false oat grass, nettle, creeping thistle, docks (<i>Rumex</i> sp.) and cow parsley (<i>Anthriscus sylvestris</i>). The hedgerow is in moderate condition. H4- Hedge 4 (the south-eastern hedge) is 0.065 km length and is of similar composition to H3 with mature oak (<i>Quercus</i> sp.) trees also present. The hedgerow is in good condition.
Hardstanding	u1b6	The B4005 and associated laybys are present to the south of the site boundary. The road is to be retained unaffected as part of the proposals.
Grassland (assumed modified)	g4	A strip of grassland is present to the north of the B3005, which was not surveyed (being originally outside of the redline boundary). A small area of this grassland is to be lost to accommodate access in to the site. It is assumed to be in good condition.
Woodland	w1g7	To the south of the B4005 a block of woodland is present. This woodland was not surveyed but is being retained unaffected as part of the proposals. It is assumed to be in good condition.

4.1.2 Overall, the site has a baseline habitat value of:

- 17.45 habitat units;
- 5.18 hedgerow units; and

4.1.3 No river habitats are within or adjacent to the site so the metric does not include an assessment of river habitats.

4.2 Retained/Enhanced/Lost Habitats

4.2.1 The retention category of baseline habitats (retained/enhanced/lost) is illustrated on Drawing EBD_2511_DR002 at Appendix 2.

Retained/Lost

- 4.2.2 The B-Road to the south of the site is to be retained. The woodland present to the south of the site boundary was not surveyed and is not to be impacted by the proposals. For the calculations, it has been assumed that the woodland is currently in good condition and will be retained as such. It is possible the condition of the woodland is of poorer condition, however for the purposes of being risk adverse it has been assumed that the woodland is of good condition.
- 4.2.3 Furthermore, the areas of grassland on either side of the B-Road to the south of the site were not surveyed however it is assumed that the grassland is in good condition for the purpose of the calculation. A very small area of this grassland (<0.02ha) is to be lost to accommodate the new roundabout. It is possible the condition of the grassland is of poorer condition, however for the purposes of being risk adverse it has been assumed that the grassland is of good condition.
- 4.2.4 All of the modified grassland throughout the site in the main field and the eastern field are to be lost under the proposals. Notably, the grassland in the eastern field is to be lost for the creation of other neutral grassland (to be proposed in good condition).
- 4.2.5 In the south-east of the site 0.0542ha of modified grassland will be lost and utilised for surface water drainage works. It is likely this area will become vegetated, however this cannot be guaranteed therefore for the purpose of the metric it is identified as artificial, unvegetated unsealed surface.
- 4.2.6 All of the hedgerows within the site (H1, H2, H4) are to be retained under the proposals. A gap of 5m is to be created in the north of H1 and of 20m in the south of H1.

Enhanced

- 4.2.7 None of the habitats within the site boundary are to be enhanced.

4.3 Proposed Habitats

- 4.3.1 Site layout proposals used to inform the proposals are provided at Appendix 1; our interpretation of these habitats for input into the metric is illustrated on drawing EBD_2511_DR001 at Appendix 2. Detailed condition assessments for the proposed habitats are provided at Appendix 5 alongside justification.
- 4.3.2 To achieve the condition assessments and habitat classifications detailed below, implications to the necessary management regime have been agreed with Beech Design Ltd in conjunction with Smith Jenkins Ltd. These implications are included, where relevant, within the

recommendations in Section 5; these recommendations will need to inform the detailed Biodiversity Net Gain Management and Monitoring Plan (BMMP) for the site.

- 4.3.3 The habitats proposed within the site are detailed below.

Developed Land

- 4.3.4 Much of the site will comprise building and hardstanding covering approximately 3.79 ha for which no condition assessment is required.

Trees (moderate condition)

- 4.3.5 11 small trees are proposed to be planted throughout the western field within areas of other neutral grassland. The trees proposed will be native species, all of which will be immature (small in size) and are proposed oversailing areas of other neutral grassland. It is assumed that the trees will be pruned to maintain a manicured appearance. It is not considered that over the management period the trees will reach mature size, nor will the trees supports ecological niches such as deadwood or cavities.

Introduced shrub (condition N/A)

- 4.3.6 All areas marked as formal soft landscaping within the proposals have been considered to comprise 'introduced shrub'. This assumption has been agreed with the design team who have confirmed that the intention will be for these areas to be formal in appearance and management, likely comprising predominantly non-native species.

Mixed scrub (poor condition)

- 4.3.7 Mixed scrub in poor condition is proposed around the boundaries of the western field, as well as pockets of mixed scrub within the western field within the areas of hardstanding.
- 4.3.8 The scrub will comprise more than 80% native scrub , exceeding three native woody species. The scrub is not proposed to have clearings, glades or rides present. Whilst some margins of the scrub will have an edge habitat with a margin of grassland (particularly to the south of the site in line with the SuDs). It is assumed that a diversity of age structure (e.g. seedlings, saplings, young shrubs and mature shrubs), will not be supported, with the scrub to be managed to provide a clear edge barrier to the site.
- 4.3.9 The mixed scrub will be assumed to achieve only poor condition to be risk adverse, however it is possible that a condition of moderate could achieved if a diversity of age structure within the scrub is achieved.

SuDS (moderate condition)

- 4.3.10 Several SuDS ponds are proposed throughout the site (comprising 0.29ha of the site) with larger drainage features running through the middle of the site and along the southern edge of the western field. The species proposed will comprise native species, with no invasive plant species proposed and the habitat will be managed to prevent the establishment of the species. It is assumed that the vegetation structure will not be notably varied such that a manicured appearance will be favoured.

Hedge planting (good condition)

- 4.3.11 The proposals include the planting of a species rich native hedgerow with trees 0.112km in length in the north of the biodiversity enhancement area. It is considered that the hedgerow will achieve a condition of good given appropriate management. The hedgerow will be >1.5m in height and width along the whole length, the hedgerow will be managed to ensure the gap between the ground and base of the canopy is less than 0.5m (more 90%+ of the hedgerow length). No canopy gaps within the hedgerow are proposed.

Other neutral grassland (poor condition)

- 4.3.12 The proposed other neutral grassland surrounding the newly proposed SuDS is proposed to be other neutral grassland in poor condition.
- 4.3.13 The grassland will be managed to ensure non-native plant species will establish, and such that bracken and scrub will not encroach within the grassland. The grassland in this area is to have a more manicured appearance than the grassland within the eastern field, such that the sward height will not be managed to be variable and patches of bare ground are unlikely to be present. Whilst a species diverse grassland mix will be utilised, 10+ species/m² may not be achieved due to more intensive management, with the habitat type unlikely to be a good representation of the UKHab habitat type 'Other neutral grassland'. The grassland is proposed to achieve poor condition in order to be risk adverse.

Other neutral grassland (moderate condition)

- 4.3.14 An area of other neutral grassland in moderate condition is proposed in the north-east of the biodiversity enhancement area. Turf will be stripped from the southern section of the eastern field and roughly banded in the north within a 20m strip to create some dry ground to improve conditions for reptiles. This will be sown with a species-rich tussock-forming seed mix.
- 4.3.15 The grassland will be managed to ensure non-native plant species will establish, and such that bracken and scrub will not encroach within the grassland. The sward height will not be managed to be variable but patches of bare ground will be created to provide basking areas

for reptiles. The grassland will be a good representation of the UKHab habitat type 'Other neutral grassland'.

Other neutral grassland (good condition)

- 4.3.16 Other neutral grassland in good condition is to be created within the southern section of the eastern field, replacing the existing modified grassland. This field will be accessible for maintenance through a gap (<5m) to be created through hedgerow 1.
- 4.3.17 Turf-stripping will be beneficial in removing nutrients, improving the success of wildflower planting. The grassland will be managed to ensure non-native plant species will establish, and such that bracken and scrub will not encroach within the grassland. The grassland will be managed to ensure bare ground is achieved between 1-5%, and the grassland will be managed to ensure the sward height is variable (20% > 7cm, 20% < 7cm). The species within the planting proposals will be representative of those within the UKHabs description for 'Other neutral grassland', to achieve 10 species/m² are supported excluding invasives and undesirable species such as docks, nettles, plantains, and cow parsley.

Further Enhancements

- 4.3.18 Enhancement features such as bird boxes and bat boxes are not considered within the biodiversity metric calculation but will be incorporated within the site which will further enhance the site for wildlife, as detailed within the Ecological Chapter (Ecology by Design, 2023).

4.4 Metric Calculation Result

- 4.4.1 Completion of DEFRA's Biodiversity Metric 4.0: Calculation tool provides a baseline biodiversity value of 17.45 habitat units and a post development value of 20.34 habitat units indicating an increase of + 2.89 habitat units, or the equivalent to + 16.58% (see Figure 1). The site also has a baseline value of 5.18 hedgerow units and post development value of 5.87 hedgerow units indicating a gain of 0.69 units, equivalent to +13.29%. There are no river units within or adjacent to the site. The metric also indicates that rules relating to 'trading down' have been satisfied.

Figure 1: Biodiversity Metric Headline Calculator Summary

On-site baseline	Habitat units	17.45	
	Hedgerow units	5.18	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	20.34	
	Hedgerow units	5.87	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	2.89	16.58%
	Hedgerow units	0.69	13.29%
	Watercourse units	0.00	0.00%
Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	2.89	
	Hedgerow units	0.69	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	2.89	
	Hedgerow units	0.69	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	16.58%	
	Hedgerow units	13.29%	
	Watercourse units	0.00%	
Trading rules satisfied?	Yes ✓		

5 Recommendations

5.1 Biodiversity Net Gain Management and Monitoring Plan (BMMP)

5.1.1 In order for the anticipated net gain in biodiversity to be realised, a Biodiversity Net Gain Management and Monitoring Plan (BMMP) must be created and adopted prior to works commencing. A BMMP could be secured as a suitably worded pre-commencement condition and would need to be referenced by a legal agreement (S106, conservation covenant or similar) to secure the habitat creation/enhancement needed to achieve the net gain in biodiversity.

5.1.2 The BMMP must include the details outlined below:

Habitat Creation and Management

5.1.3 The BMMP must include details of individually referenceable parcels/habitats that are to be created and managed to contribute towards the net gain in biodiversity. The BMMP may make reference to a LEMP (or similar) or include detailed habitat creation and management prescriptions within its contents.

Timeframe

5.1.4 The BMMP must cover a period of at least 30 years.

5.1.5 The 'times to target condition' must accord with the details outlined in Appendix 5.

Scope

5.1.6 The BMMP will cover creation and management of any habitats contributing towards the biodiversity net gain result described above with the exception of the following habitat types which are better addressed within a separate Landscape and Ecology Management Plan (LEMP) or similar:

- Formal landscaping/introduced shrub; and
- Buildings and hardstanding.

5.1.7 Where habitat parcels are described within both a LEMP and a BMMP, the creation/management prescriptions must align precisely.

Responsible Bodies

5.1.8 The BMMP must outline necessary qualifications/experience for ecologists undertaking monitoring surveys, and must also name responsible bodies for:

- Creation and management of the habitats; and
- Review of monitoring reports.

Monitoring

- 5.1.9 The BMMP must include provision for independent ecological monitoring and progress reporting over the lifetime of the management period, with provision for rectification works if required. Ecological monitoring must take place yearly as a minimum for five years, with monitoring reports produced to document:
- Commissioned client, site name and purpose of report;
 - Background and timeline for project;
 - Project description, as built;
 - Aims/objectives/scope of monitoring survey;
 - Reference to original aims described within this report;
 - Survey methods;
 - Evidence of technical competence and experience;
 - Limitations;
 - Clear statements on whether biodiversity unit targets are being met; and
 - Details of any rectification works and implications necessary.
- 5.1.10 The frequency of monitoring will likely be decreased (e.g. to years 5, 10, 15, 25, 30) after five years at the monitoring ecologists' discretion if targets are being consistently met and risk of deviation is considered low.

Condition

- 5.1.11 The BMMP must make clear which condition criteria (e.g. DEFRA 4.0) are targeted for each individual habitat so that ecological monitoring reports have a benchmark against which to measure. It may be appropriate to update condition criteria assessment as new versions of the metric are made available; any deviation from the version used within this report should be highlighted and justified.

5.2 Broad Management Prescriptions

- 5.2.1 The BMMP should be based on the below broad management prescriptions which have been agreed with Beech Design Ltd in conjunction with Smith Jenkins Ltd during the design stage. Parcel references within the below refer to those on drawing EBD_2511_DR003 (proposed habitats) at Appendix 2.

Retained hedgerows, newly proposed mixed scrub (poor condition) and newly proposed hedgerow (good condition)

- 5.2.2 The hedgerows retained within the application site, the newly retained hedgerows and the newly proposed mixed scrub will require no specific management beyond periodic brush-cutting and replacement of dead/damaged areas to maintain their current extent.

SuDs (moderate condition)

- 5.2.3 The SuDS must be managed to ensure that the diversity of flowering species (to be proposed within the planting mix) are maintained. It will be ensured that no invasive species establish within the SuDS.

Newly planted scattered trees (small, moderate condition)

- 5.2.4 The proposed trees must be watered as required during the first year, and then will require minimal ongoing management with the exception of inspections, restorative pruning, and replacement of damaged/failed individuals

Newly created other neutral grassland (moderate and good condition)

- 5.2.5 It is assumed that all of the modified grassland within the eastern field is to be lost under the proposals.
- 5.2.6 The grassland on site will be removed such that 100% bare ground is created prior to establishment of other neutral grassland.
- 5.2.7 The turf strip from the southern section of the biodiversity enhancement area will be roughly banded within a 20m strip in the north to create a gently sloping south-facing bund. The bund will be sown with a species-rich tussock-forming grass mix to benefit reptiles. The northern section will be managed by strimming by hand rotationally (a third once every year on a three-year rotation) to a minimum of 150mm height, primarily to prevent scrub colonisation. Small patches (c. 1m square) will be hand pulled to create areas of bare ground suitable for basking.
- 5.2.8 Habitat creation and management in the southern section of the biodiversity enhancement area will entail :
- 1) sowing with an appropriate species-rich meadow mixture at an appropriate rate;
 - 2) the sward should then be mown once per month to 5mm height with arisings removed between August and October inclusive;
 - 3) mow once to 10mm height in early April and remove arisings;
 - 4) leave unmown to flower between mid-April and late July/early August;

- 5) take a hay cut to 15mm in late July/early August, leave arisings *in-situ* to dry, turning occasionally to shed seed and then removed after c. one week;
- 6) mow monthly to 5mm height and remove arisings August-October inclusive; and
- 7) repeat steps 3-6 yearly.

6 References

BSI (2021). *BS 8683:2021 Process for designing and implementing Biodiversity Net Gain – Specification*. The British Standards Institution Ltd., London.

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). UK Habitat Classification– Habitat Definitions V1.1. at <http://ukhab.org>

CIEEM, CIRIA, IEMA (2019). *Biodiversity net gain. Good practice principles for development. A practical guide*. CIRIA C776a. London, 2019.

Ecology by Design (2023). *M4 Junction 16 – Environmental Statement Chapter 10: Biodiversity*. Ecology by Design, Chalgrove.

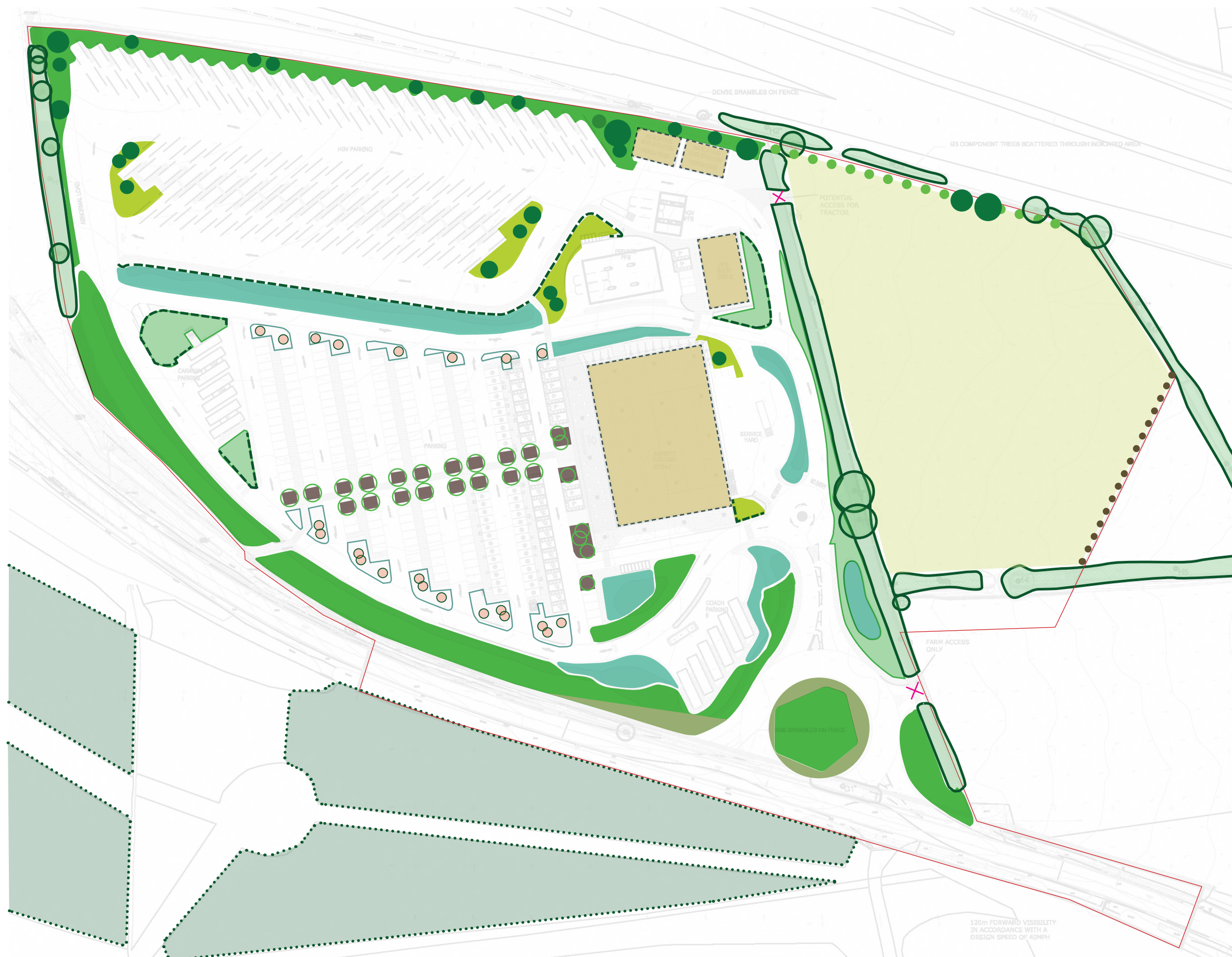
MHCLG (2021). *National Planning Policy Framework*. Ministry of Housing Communities and Local Government

Natural England (2023a). Biodiversity Metric 4.0: Calculation tool (spreadsheet). Natural England

Natural England and other parties (2023b). Biodiversity Metric 4.0 User Guide. Natural England Joint Publication JP039. Natural England.

Appendix 1 - Site Proposals

(overleaf)



Legend

- Existing Trees / Hedgerows retained
- Existing Plantation Woodland
- Hedge Removal required to allow maintenance access
- Native Woodland / Tree Planting ~ 6027 m2
- Native Woodland Edge shrub planting ~ 523 m2
- Species Rich Wildflower Meadow ~ 945 m2
- Species Rich Wetland Meadow ~ 2,580m2
- Native scrub ~ 3,285m2
- Ornamental shrub ~ 275m2
- Rain Garden ~ 940m2
- Native mixed species maintained hedgerow ~ 370 l/m
- Native mixed species field hedgerow ~ 105 l/m
- Boundary demarcation field hedgerow (not part of BNG)
- Native Trees ~ 26Nos
- Native Shrubs ~ 22No
- Ornamental Trees ~ 31No
- Wildflower Meadow Green Roof ~ 28,95m2
- Grassland and Ecology focused measures ~ 13,110m2

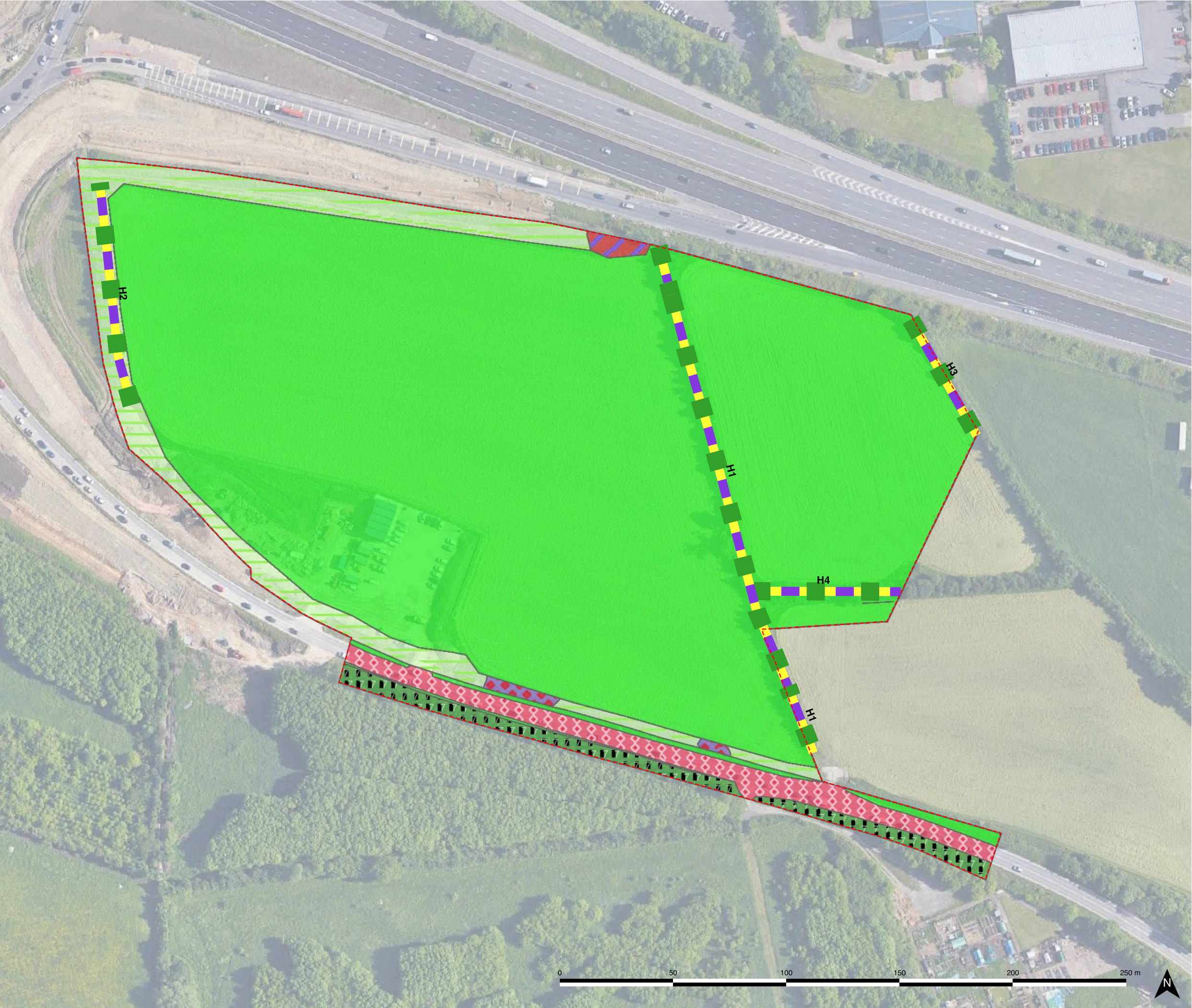


0m 20m 50m

Appendix 2 - Figures

- EBD_2511_1 – BIA Baseline Habitats
- EBD_2511_2 – BIA Impacts
- EBD_2511_3 – BIA Proposed Habitats

(overleaf)



LEGEND

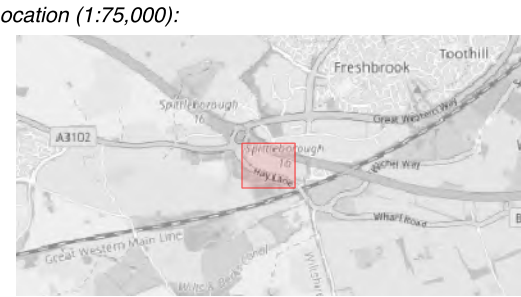
Site boundary (7.33 ha)

Hedgerows

- h2a - Hedgerow (priority habitat) - with trees (0.46 km)

Habitats

- g3c - other neutral grassland (0.57 ha)
- g4 - modified grassland (6.3 ha)
- h3d - bramble scrub (0.02 ha)
- h3h - mixed scrub (0.02 ha)
- u1b6 - hardstanding (0.25 ha)
- w1g7 - other broadleaved woodland types (0.17 ha)



Project:
Swindon Services

Client:
Smith Jenkins Ltd

Drawing Title:
Baseline Habitats

Drawing No.:	Scale (@A3):
EBD_2511_DR001	1:1,600
Central Eastings, Northings:	Date Drawn:
410511, 182657	11/09/2023
Drawn by:	Approved by:
OH	BG

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LEGEND

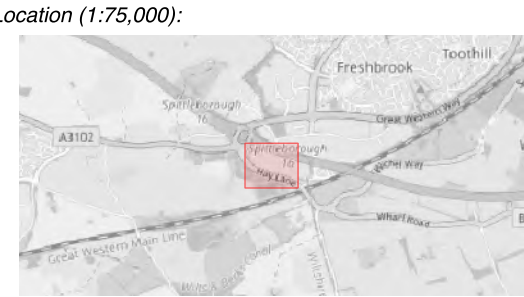
Site boundary (7.33 ha)

Hedgerows
Impacts - DEFRA 3.0 hedges

- Retained
- Native Hedgerow with trees (0.44 km)
- Lost
- Native Hedgerow with trees (0.02 km)

Habitats
Impacts - UKHabs Habs

- Retained
- g4 - modified grassland (0.07 ha)
- u1b6 - hardstanding (0.22 ha)
- w1g7 - other broadleaved woodland types (0.17 ha)
- Lost
- g3c - other neutral grassland (0.57 ha)
- g4 - modified grassland (6.23 ha)
- h3d - bramble scrub (0.02 ha)
- h3h - mixed scrub (0.02 ha)
- u1b6 - hardstanding (0.02 ha)



Project:
Swindon Services

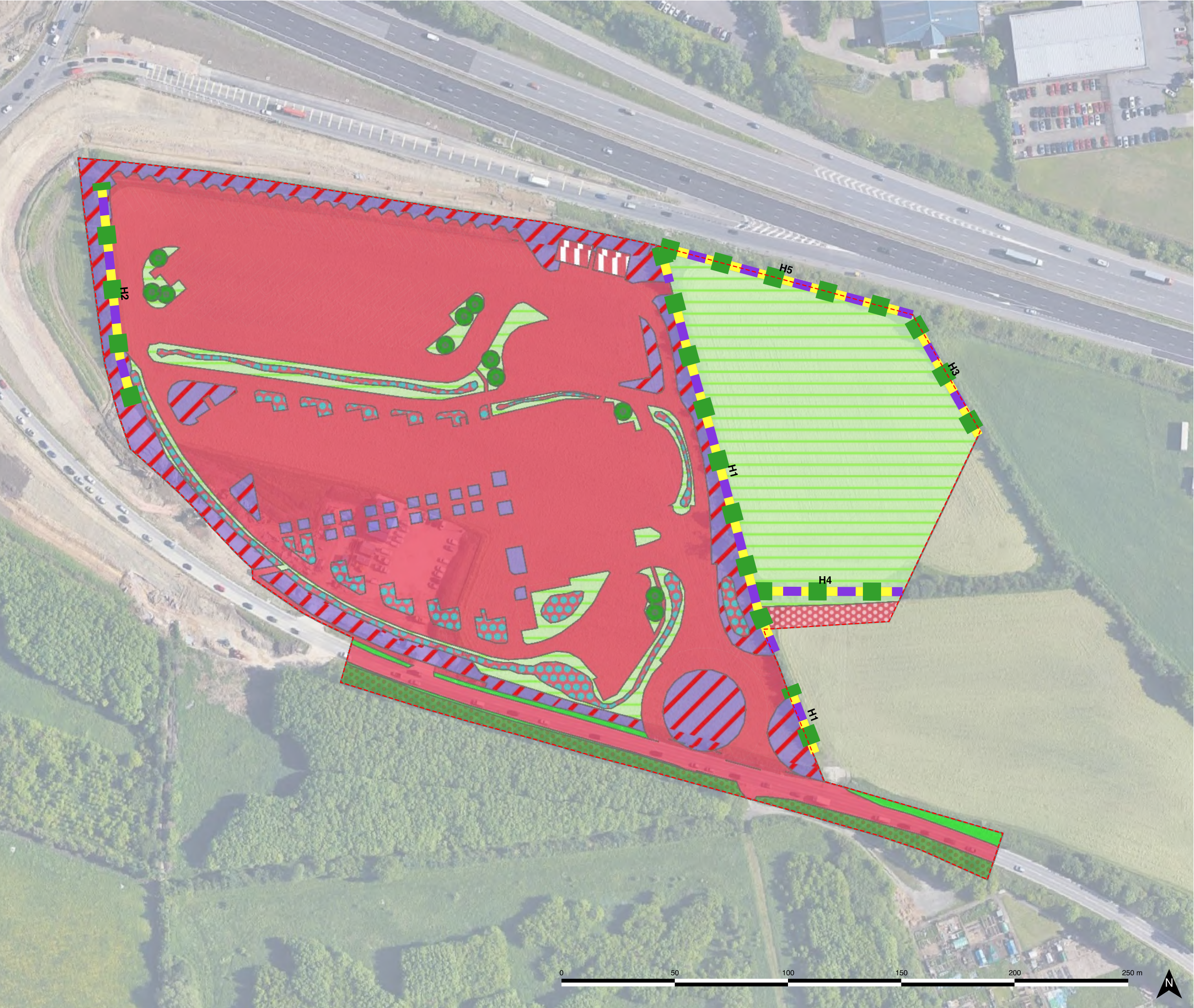
Client:
Smith Jenkins Ltd

Drawing Title:
Impacts

Drawing No.:	Scale (@A3):
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Central Eastings, Northings:	Date Drawn:
410511, 182657	11/09/2023
Drawn by:	Approved by:
OH	BG

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LEGEND

Site boundary (7.33 ha)

Hedgerows

Native Hedgerow with trees (0.56 km)

Habitats

Artificial unvegetated, unsealed surface (0.05 ha)

Built linear features (4 ha)

Developed land; sealed surface (0.03 ha)

Introduced shrub (0.06 ha)

Mixed scrub (0.83 ha)

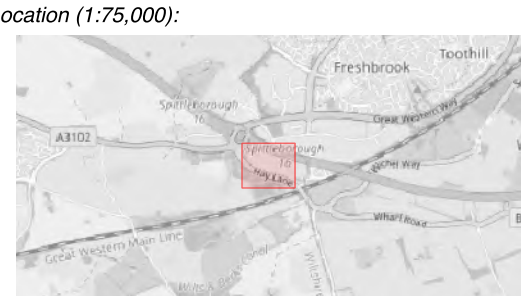
Modified grassland (0.07 ha)

Other neutral grassland (1.83 ha)

Other woodland; broadleaved (0.17 ha)

Sustainable urban drainage feature (0.29 ha)

Urban Tree (illustrative purposes, not necessarily to scale)



Project:
Swindon Services

Client:
Smith Jenkins Ltd

Drawing Title:
Proposed Habitats

Drawing No.:	Scale (@A3):
EBD_2511_DR003	1:1,600
Central Eastings, Northings:	Date Drawn:
410511, 182657	11/09/2023
Drawn by:	Approved by:
OH	BG

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Appendix 3 - Photographs

Photograph 1: Modified grassland



Photograph 2: Other neutral grassland



Photograph 3: Hedgerow with trees



Photograph 4: Bramble scrub



Photograph 5: Tree 1 (T1)



Photograph 6: Tree 2 (T2)



Appendix 4 - Baseline Condition Assessment Tables

Overleaf

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Modified grassland			
Site name and location	Swindon Services	On-site or off-site	On-Site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	
Habitat Description			
Existing modified grassland			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please	N	Dominated by perennial ryegrass
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	N	All c. 40cm sward height
C	Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	N	Bare ground in excess of 10%
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y	
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Y	
Essential criterion achieved (Yes or No)			N
Number of criteria passed			4
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved x/□	
Passes 6 or 7 criteria including passing essential criterion A	Good (3)		
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)		
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	Y	
Suggested enhancement interventions to improve condition score			
Footnotes			
Footnote 1 – Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover. Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.			

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Modified grassland			
Site name and location	Swindon Services	On-site or off-site	On-Site
Limitations (if applicable)	Not surveyed therefore assumed to be in good condition	Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	Grassland on road verges
Habitat Description			
Existing modified grassland			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant	Y	Assumed to pass
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Y	Assumed to pass
C	Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	Assumed to pass
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	Assumed to pass
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	Y	Assumed to pass
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y	Assumed to pass
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Y	Assumed to pass
Essential criterion achieved (Yes or No)			Y
Number of criteria passed			7
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved x/□	
Passes 6 or 7 criteria including passing essential criterion A	Good (3)	Y	
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)		
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)		
Suggested enhancement interventions to improve condition score			
Footnotes			
Footnote 1 – Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover. Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.			

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Lowland calcareous grassland Grassland - Lowland dry acid grassland Grassland - Lowland meadows Grassland - Other lowland acid grassland Grassland - Other neutral grassland Grassland - Tall herb communities (H6430) [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland'] [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.] Grassland - Upland acid grassland Grassland - Upland calcareous grassland Grassland - Upland hay meadows Sparsely vegetated land - Calaminarian grassland			
Site name and location	Swindon Services	On-site or off-site	On-Site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	Western field boundary
Habitat Description			
Existing other neutral grassland in west of site			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	N	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	N	
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Y	
E	Combined cover of species indicative of sub-optimal condition ² and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.	Y	
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	N	
All criterion for Good condition achieved (for non-acid grassland) (Yes or No)		N	
Number of criteria passed		2	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/	
Acid Grassland Types (Result out of 5 criteria)			
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)		
Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)		
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)		

Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)	Y	
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover. Footnote 2 - Species indicative of sub-optimal condition for this habitat type include:creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . There may be additional relevant species local to the region and or site. Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement. Footnote 4 – Wildlife and Countryside Act 1981 (as amended).			

Condition Sheet: SCRUB Habitat Type			
UK Habitat Classification (UKHab) Habitat Type			
Heathland and shrub - Blackthorn scrub Heathland and shrub - Gorse scrub Heathland and shrub - Hawthorn scrub Heathland and shrub - Hazel scrub Heathland and shrub - Mixed scrub Heathland and shrub - Dunes with sea buckthorn (H2160) Heathland and shrub - Willow scrub			
Habitat Description			
Existing mixed scrub			
For Dunes with sea buckthorn see:		Dunes with sea-buckthorn (Dunes with Hippophae rhamnoides) - Special Areas of Conservation (jncc.gov.uk)	
For other scrub types see:		ukhab – UK Habitat Classification	
Site name and location	Swindon Services	On-site or off-site	On-site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	Southern boundary of field
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species¹, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover).	N	
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran ²) shrubs are all present.	N	
C	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.	Y	
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N	
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	
Number of criteria passed			1
Condition Assessment Result (out of 5 criteria)	Condition Assessment Score	Score Achieved ×/□	
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)	Y	
Suggested enhancement interventions to improve condition score			
Footnotes			
Footnote 1 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) <i>Hedgerow Survey Handbook: A standard procedure for local surveys in the UK</i>. 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk). Footnote 2 - See gov.uk standing advice on ancient and veteran species. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)			

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Footnote 5 - Species indicative of sub-optimal condition for this habitat type may include: non-native conifers, tree-of-heaven *Alanthus altissima* , holm oak *Quercus ilex* , European turkey oak *Quercus cerris* , cherry laurel *Prunus laurocerasus* , snowberry *Symphoricarpos* spp., shallon *Gaultheria shallon* , American skunk cabbage *Lysichiton americanus* , buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* and hybrid bluebells *Hyacinthoides x massartiana* . There may be additional relevant species local to the region and or site.

Condition Sheet: WOODLAND Habitat Type						
UK Habitat Classification (UKHab) Habitat Type(s)						
Woodland and forest - Lowland beech and yew woodland						
Habitat Description						
Other broadleaved woodland on southern boundary of site						
ukhab – UK Habitat Classification						
This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here: Woodland Wildlife Toolkit (sylva.org.uk)						
IMPORTANT: This biodiversity metric woodland condition assessment must be used to assess woodland being input into the biodiversity metric. The						
Site name and location	Swindon Services		On-site or off-site	On-site		
Limitations (if applicable)	Not impacted by development and not surveyed therefore assumed to be in good condition		Survey reference (if relating to a wider survey)			
Grid reference			Habitat parcel reference	Southern boundary		
Condition Assessment Criteria						
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	3	
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	
C	Invasive plant species	No invasive species ³ present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	Rhododendron or cherry laurel present, or other invasive species ³ >10% cover.	3	
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	3	
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	3	
F	Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	3	
G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	3	
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	3	
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	3	
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	3	
K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	3	

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england)

and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions)

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter.

Appendix 5 - Proposed Condition Assessment Tables

Overleaf

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Lowland calcareous grassland Grassland - Lowland dry acid grassland Grassland - Lowland meadows Grassland - Other lowland acid grassland Grassland - Other neutral grassland Grassland - Tall herb communities (H6430) [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland'] [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.] Grassland - Upland acid grassland Grassland - Upland calcareous grassland Grassland - Upland hay meadows Sparsely vegetated land - Calaminarian grassland			
Site name and location	Swindon Services	On-site or off-site	On-site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	Scattered parcels of other neutral grassland within Service Station area
Habitat Description			
Proposed other neutral grassland with Service Station verges			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	N	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	N	
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Y	
E	Combined cover of species indicative of sub-optimal condition ² and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.	N	
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	N	
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		N	
Number of criteria passed		1	
Condition Assessment Result	Condition Assessment Score	Score Achieved ×/	
Acid Grassland Types (Result out of 5 criteria)			
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)		
Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)		
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)		

Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)	Y	
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover. Footnote 2 - Species indicative of sub-optimal condition for this habitat type include:creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . There may be additional relevant species local to the region and or site. Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement. Footnote 4 – Wildlife and Countryside Act 1981 (as amended).			

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Lowland calcareous grassland Grassland - Lowland dry acid grassland Grassland - Lowland meadows Grassland - Other lowland acid grassland Grassland - Other neutral grassland Grassland - Tall herb communities (H6430) [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland'] [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.] Grassland - Upland acid grassland Grassland - Upland calcareous grassland Grassland - Upland hay meadows Sparsely vegetated land - Calaminarian grassland			
Site name and location	Swindon Services	On-site or off-site	On-site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	Biodiversity enhancement area in north-east
Habitat Description			
Proposed other neutral grassland in biodiversity enhancement area in north-east			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	Y	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Y	
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	N	
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Y	
E	Combined cover of species indicative of sub-optimal condition ² and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.	Y	
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	Y	
Additional criterion for Good condition achieved (for non-acid grassland) (Yes or No)		Y	
Number of criteria passed		5	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/	
Acid Grassland Types (Result out of 5 criteria)			
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)		
Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)	5	
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)		

Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover. Footnote 2 - Species indicative of sub-optimal condition for this habitat type include:creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . There may be additional relevant species local to the region and or site. Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement. Footnote 4 – Wildlife and Countryside Act 1981 (as amended).			

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Lowland calcareous grassland			
Grassland - Lowland dry acid grassland			
Grassland - Lowland meadows			
Grassland - Other lowland acid grassland			
Grassland - Other neutral grassland			
Grassland - Tall herb communities (H6430) [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland']			
[Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.]			
Grassland - Upland acid grassland			
Grassland - Upland calcareous grassland			
Grassland - Upland hay meadows			
Site name and location	Swindon Services	On-site or off-site	On-site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	Grassland as reptile receptor in north-east
Habitat Description			
Proposed other neutral grassland with Service Station verges			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	Y	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	N	
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Y	
E	Combined cover of species indicative of sub-optimal condition ² and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.	Y	
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	N	
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		Y	
Number of criteria passed		3	
Condition Assessment Result	Condition Assessment Score	Score Achieved %/✓	
Acid Grassland Types (Result out of 5 criteria)			
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)		
Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)		
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)	Y	
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.			
Footnote 2 - Species indicative of sub-optimal condition for this habitat type include: creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . There may be additional relevant species local to the region and or site.			
Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.			
Footnote 4 – Wildlife and Countryside Act 1981 (as amended).			

Condition Sheet: SCRUB Habitat Type			
UK Habitat Classification (UKHab) Habitat Type			
Heathland and shrub - Blackthorn scrub Heathland and shrub - Gorse scrub Heathland and shrub - Hawthorn scrub Heathland and shrub - Hazel scrub Heathland and shrub - Mixed scrub Heathland and shrub - Dunes with sea buckthorn (H2160) Heathland and shrub - Willow scrub			
Habitat Description			
Proposed mixed scrub			
For Dunes with sea buckthorn see:		Dunes with sea-buckthorn (Dunes with Hippophae rhamnoides) - Special Areas of Conservation (jncc.gov.uk)	
For other scrub types see:		ukhab – UK Habitat Classification	
Site name and location		Swindon Services	On-site or off-site On-site
Limitations (if applicable)			Survey reference (if relating to a wider survey)
Grid reference			Habitat parcel reference Boundaries of Service Station
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species ¹ , with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100% cover).	Y	
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran ²) shrubs are all present.	N	
C	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.	Y	
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N	
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	
Number of criteria passed			2
Condition Assessment Result (out of 5 criteria)		Condition Assessment Score	Score Achieved ×/□
Passes 5 criteria		Good (3)	
Passes 3 or 4 criteria		Moderate (2)	
Passes 2 or fewer criteria		Poor (1)	Y
Suggested enhancement interventions to improve condition score			
Footnotes			
Footnote 1 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) <i>Hedgerow Survey Handbook: A standard procedure for local surveys in the UK</i>. 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk). Footnote 2 - See gov.uk standing advice on ancient and veteran species. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)			

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Footnote 5 - Species indicative of sub-optimal condition for this habitat type may include: non-native conifers, tree-of-heaven *Alanthus altissima* , holm oak *Quercus ilex* , European turkey oak *Quercus cerris* , cherry laurel *Prunus laurocerasus* , snowberry *Symphoricarpos* spp., shallon *Gaultheria shallon* , American skunk cabbage *Lysichiton americanus* , buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* and hybrid bluebells *Hyacinthoides x massartiana* . There may be additional relevant species local to the region and or site.

Condition Sheet: URBAN Habitat Type			
Habitat Type			
Where a parcel contains areas of higher distinctiveness habitats within it, then the area of higher distinctiveness habitat must be separated and recorded and assessed as such. Sparsely vegetated land - Ruderal/Ephemeral Sparsely vegetated land – Tall forbs Urban – Allotments Urban – Biodiverse green roof Urban - Bioswale Urban - Cemeteries and churchyards Urban - Facade-bound green wall Urban - Ground based green wall Urban - Intensive green roof Urban - Open mosaic habitats on previously developed land Urban - Rain garden Urban - Sustainable drainage system (SuDS) Urban - Vacant or derelict land Urban – Bare ground			
Habitat Description			
SUDS feratures			
See Biodiversity Metric 4.0 User Guide for green roofs and UK Habitat Classification (UKHab) for other			
Site name and location	Swindon Services	On-site or off-site	On-site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	SUDS features within the Service Station
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for all urban habitat types :			
A	vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	Y	
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	Y	
C	Invasive non-native plant species (listed on Schedule 9 of WCA ¹) and others which are to the detriment of native wildlife (using professional judgement) ² cover less than 5% of the total vegetated area ³ . Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	N	The potential for invasive species to colonise is considered reasonably high due to being a high-use area
Additional Criteria - must be assessed for Open mosaic habitat on previously developed land only:			
D1	The parcel shows spatial variation and forms a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.		
D2	The parcel contains pools of water such as permanent and ephemeral waterbodies.		
Additional Criteria - must be assessed for Bioswale and SuDS habitat types only:			
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife ⁴ .	Y	
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.	Y	
Additional Criterion - must be assessed for Intensive green roofs only:			
F	The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).		
Additional Criterion - must be assessed for Biodiverse green roofs only:			
G	The roof has a varied depth of 80 – 150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc are present.		

Essential criteria relevant for habitat type achieved (Yes or No)			
		Number of criteria passed	
Condition Assessment Result	Condition	Assessment Score Achieved x/□	
Results for habitats requiring assessment of 3 core criteria only (all listed urban habitats except Open			
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C.	Good (3)		
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)		
• Passes 0 or 1 of 3 core criteria.	Poor (1)		
Results for Green roofs (requiring assessment of 4 criteria only - core criteria plus additional criterion			
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes additional criterion relevant to specific habitat type (F or G).	Good (3)		
• Passes 2 or 3 of 4 criteria; OR • Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)		
• Passes 0 or 1 of 4 criteria.	Poor (1)		
Results for Open mosaic habitat on previously developed land, Bioswale or SuDS (requiring			
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes all additional criteria relevant to specific habitat type (Group D or Group E)	Good (3)		
• Passes 3 or 4 of 5 criteria; OR • Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)	Y	
• Passes 2 or fewer of 5 criteria.	Poor (1)		
Suggested enhancement interventions to improve condition score			
Footnotes			
Footnote 1 – Wildlife and Countryside Act 1981 (as amended). Footnote 2 – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNSS) website: Home » NNSS (nonnativespecies.org) and Natural England Access to Evidence page should also be checked for up-to-date information: Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk) For criterion C – For green roof habitat types only – buddleia <i>Buddleja davidii</i> should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years. Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement. Footnote 4 – Use professional judgement. Sources of information about non-native species that are not detrimental to native wildlife can be found on the GBNNSS website: Alternative plants » NNSS (nonnativespecies.org)			

Condition Sheet: INDIVIDUAL TREES Habitat Type			
Habitat Type(s)			
Individual trees – Urban trees			
Individual trees – Rural trees			
Habitat Description			
Proposed trees within Service Station landscaping			
Individual trees (description applied to the urban or rural environment).			
Young trees over 7.5 cm in diameter at breast height whose canopies are not touching.			
Site name and location		Swindon Services	On-site or off-site
Limitations (if applicable)			On-site
Survey reference (if relating to a wider survey)			
Grid reference			Proposed trees within Service Station landscaping
Habitat parcel reference			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The tree is a native species (or at least 70% within the block are native species).	Y	
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	N	
C	The tree is mature (or more than 50% within the block are mature).	N	
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their	Y	
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	
Number of criteria passed		3	
Condition Assessment Result (out of 6 criteria)		Condition Assessment Score	Score Achieved ✖/□
Passes 5 or 6 criteria		Good (3)	
Passes 3 or 4 criteria		Moderate (2)	Y
Passes 2 or fewer criteria		Poor (1)	
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.			
Suggested enhancement interventions to improve condition score			
Footnotes			
Footnote 1 - See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and: Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)			

Condition Sheet: WOODLAND Habitat Type						
UK Habitat Classification (UKHab) Habitat Type(s)						
Woodland and forest - Lowland beech and yew woodland						
Habitat Description						
Other broadleaved woodland on southern boundary of site						
ukhab – UK Habitat Classification						
This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here: Woodland Wildlife Toolkit (sylva.org.uk)						
IMPORTANT: This biodiversity metric woodland condition assessment must be used to assess woodland being input into the biodiversity metric. The						
Site name and location	Swindon Services		On-site or off-site	On-site		
Limitations (if applicable)	Not impacted by development and not surveyed therefore assumed to be in good condition		Survey reference (if relating to a wider survey)			
Grid reference			Habitat parcel reference	Southern boundary		
Condition Assessment Criteria						
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	3	
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	
C	Invasive plant species	No invasive species ³ present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	Rhododendron or cherry laurel present, or other invasive species ³ >10% cover.	3	
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	3	
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	3	
F	Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	3	
G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	3	
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	3	
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	3	
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	3	
K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	3	

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england)

and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions)

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter.