

A38 Derby Junctions

TR010022

Volume 6

**6.3 Environmental Statement
Appendices**

**Appendix 8.4b: Botanical Survey in
2017**

Regulation 5(2)(a)

Planning Act 2008

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

April 2019

Infrastructure Planning

Planning Act 2008

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

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6.3 Environmental Statement Appendices Appendix 8.4b: Botanical Survey in 2017

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A38 Derby Junctions

Vegetation and Hedgerow Survey Report

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August 2018

Contents

1	Introduction	1
1.1	Background and Scope	1
1.2	Site and Study Area	1
1.3	Relevant Legislation and Biodiversity Strategies.....	2
2	Methodology.....	4
2.1	Desk-Based Study	4
2.2	Grassland Survey.....	4
2.3	Hedgerow Survey.....	4
2.4	Additional Survey of Other Habitats	4
2.5	Habitat Assessment	5
2.6	Survey Limitations.....	5
3	Survey Results	6
3.1	Grassland Survey Results	6
3.2	Hedgerow Survey Results	8
3.3	Woodland Survey Results	9
4	Summary and Recommendations	10
5	References	11

List of Appendices

Appendix A	Figures
Appendix B	Legislation and Planning Policy
Appendix C	Habitat Assessment Criteria
Appendix D	Grassland Species List
Appendix E	Photographs
Appendix F	Hedgerow Survey Results

1 INTRODUCTION

1.1 Background and Scope

- 1.1.1 AECOM Infrastructure & Environment UK Limited (AECOM) has been commissioned by Highways England to provide design services with regards to the A38 Derby Junctions scheme (referred to as the proposed scheme herein).
- 1.1.2 The proposed scheme concerns the grade separation of three junctions on the A38 in Derby, namely:
- A38/ A61 Little Eaton junction;
 - A38/ A52 Markeaton junction; and
 - A38/ A5111 Kingsway junction.
- 1.1.3 These three junctions are located along an approximate 5.5km length of the A38 national trunk road, to the west and north of Derby.
- 1.1.4 To assist with the assessment of the proposed scheme's potential environmental effects, a range of environmental surveys has been undertaken to define prevailing baseline conditions. AECOM will be preparing an Environmental Statement which will assess whether the proposed scheme has the potential to result in significant environmental effects, taking into account impact avoidance measures that are embedded into the proposed scheme design, as well as standard management activities that will be adopted. To support the ecological impact assessment, in 2015 AECOM undertook an extended Phase 1 habitat survey along the route of the proposed scheme (AECOM report 47071319-URS-05-RP-EN-003). The results of the extended Phase 1 Habitat surveys were used to identify areas of hedgerow, scrub, plantation woodland and grassland where further surveys were undertaken to inform the Environmental Impact Assessment process (see AECOM report 47071319-URS-05-RP-EN-011).
- 1.1.5 The proposed scheme boundary was updated in 2017 to include additional areas proposed for potential flood storage, construction compounds and ecological compensation. The results of an extended Phase 1 habitat survey (AECOM, 2017 Unpub.) informed the selection of additional areas requiring further survey and also included a re-survey of 2 of the species-rich grassland areas identified in 2015, 7 new grassland areas, 1 woodland area (noted as a 'site of interest' by the Local Wildlife Trust) and one hedgerow.

1.2 Site and Study Area

- 1.2.1 The proposed scheme under appraisal encompasses the Kingsway and Markeaton junctions, west of the City of Derby (Centroid SK 32801 36103) and Little Eaton junction north of Derby (SK 36402 39990). A plan showing the proposed scheme boundary is presented in Figure 1, Appendix A. The ecological study area as referred to herein extends up to 50m beyond the proposed scheme boundary.
- 1.2.2 The A38 is a busy arterial 'A' road carrying traffic around the west and north of the City of Derby. South of Kingsway junction, the road enters a cutting and is bordered by semi-improved grassland and scrub covered verges. The central reservation south of Kingsway junction and the junction island in this location support a mosaic of habitat types, including semi-improved neutral grassland and native broadleaved

woodland. Bramble Brook flows from the west of the proposed scheme in this location through culverts located under the north-bound carriageway and the central reservation before connecting with further culverts located between the junction islands. North of Kingsway junction there is an area of mixed plantation represented by semi-mature trees on embankment.

- 1.2.3 Markeaton junction is bordered to the east by residential properties and to the west by parkland with veteran trees. The outfall from Markeaton Lake and Markeaton Brook flows through culverts beneath the existing A38 at the northern extent of the proposed scheme at Markeaton junction.
- 1.2.4 The western boundary of the proposed scheme at Little Eaton junction borders the road bridge over the River Derwent. The existing A38 is on embankment in this location, with the embankments themselves represented by areas of scrub and immature broadleaved plantation habitats. A variety of grassland habitats exist at the base of the embankments in this location.

1.3 Relevant Legislation and Biodiversity Strategies

- 1.3.1 The botanical survey sought to identify the presence of protected or notable habitats and plant species, which in this case are covered under one or more of the following pieces of legislation:
- The Natural Environment and Rural Communities (NERC) Act 2006;
 - The Wildlife and Countryside Act (1981) as amended (WCA);
 - The EC Habitats Directive (Directive 92/43/ECC) as translated into UK law by The Habitats and Species Regulations 2017 (as amended);
 - The Hedgerow Regulations 1997; and
 - Section 41 of the NERC Act (2006).
- 1.3.2 Further details on Legislation and Policy are given in Appendix B.
- 1.3.3 The Post-2010 Biodiversity Framework covers the period 2011 – 2020 and replaces the UK Biodiversity Action Plan (UK BAP); which was launched in 1994 with the main aim *'To conserve and enhance biological diversity within the UK, and to contribute to the conservation of global biodiversity through all appropriate mechanisms'*.
- 1.3.4 The Lowland Derbyshire Local Biodiversity Action Plan (LBAP) contains all the plant species and habitats that are identified as being in need of assistance in Derbyshire (outside the Peak District). The habitat action plans (HAP) listed under the LBAP are the semi-natural grassland HAP and the floodplain grazing marsh HAP.
- 1.3.5 Highways England, through the national Road Investment Strategy (RIS), has set an aspiration that the operation, maintenance, and enhancement of the Strategic Road Network (SRN) should move to a position that reduces no net loss of biodiversity by 2020; and, in the long term, Highways England should deliver a net gain in biodiversity across its broader range of works by 2040. Highways England published a Biodiversity Plan in 2015 to show how it will work with service providers to halt overall biodiversity loss, and maintain and enhance habitats and ecological networks. The Government requires Highways England to demonstrate progress against the 2015 Biodiversity Plan, to secure an ongoing annual reduction in the loss of net biodiversity due to its activities. The 2015 Biodiversity Plan provides a general plan to

protect and increase biodiversity. The 2015 Biodiversity Plan supersedes the preceding 2002 Highways Agency (now Highways England) Biodiversity Action Plan (Highways BAP 2002), which still however carries some relevance as it lists specific habitats and species of conservation concern.

2 METHODOLOGY

2.1 Desk-Based Study

- 2.1.1 The results of the 2017 Phase 1 habitat survey and the 2015 Phase 1 habitat and vegetation surveys undertaken in relation to this development were used to identify areas of semi-natural grassland and hedgerows and other habitats that required further surveys.

2.2 Grassland Survey

- 2.2.1 Nine grassland areas were surveyed at Little Eaton junction (See Figure 1 for junction location). The location of these grassland areas is given in Figure 2 in Appendix A as Areas 2E, 2H, 2K, 2L, 2M, 2N, 2O, 2P and 2Q. Areas 2E and 2K were repeat surveys of areas surveyed in 2015.

- 2.2.2 Each of the 9 grassland areas was visited by a suitably experienced ecologist.

- 2.2.3 Photographs were taken of the grassland swards and notes taken on the grassland species composition including an indication of abundance for each species based on the DAFOR scale (given below).

D: Dominant

A: Abundant

F: Frequent

O: Occasional

R: Rare

- 2.2.4 Additional notes collected are as follows:

- The presence of invasive weed species such as broad leaved dock (*Rumex obtusifolius*) as well as the presence of scrub and trees. The locations of stands of any previously unrecorded invasive non-native plant species were also noted.
- Any signs of management or relevant site usage such as fly-tipping, grazing were also noted.

2.3 Hedgerow Survey

- 2.3.1 The hedgerow survey was carried out based on the standard methods devised for the Hedgerow Regulations 1997. One hedgerow was surveyed on 27 July 2017 and the location is given in Figure 2 as H8.

2.4 Additional Survey of Other Habitats

- 2.4.1 A survey was undertaken of woodland lacking any baseline survey data identified in the desk studies as being of interest (Site DE050/3). Species data was gathered on this woodland and the site was photographed. The woodland was surveyed on 27 July 2017 and the location is given in Figure 2 as W1.

- 2.4.2 The woodland was surveyed to confirm the habitat type and define further survey requirements.

2.5 Habitat Assessment

Grassland Assessment

- 2.5.1 The grasslands were assessed using criteria taken from the Derbyshire Wildlife Trust (2003, revised 2011) Local Wildlife Assessment Guidance. The criteria used are based on scoring the number of grassland indicator species in a habitat stand and if a score of 8 or more is attained, then the grassland is worthy of consideration for local wildlife status. Further details are given in Appendix C. The indicator species are indicated in the results table in Appendix D.

Hedgerow Assessment

- 2.5.2 The hedgerow was assessed using the assessment criteria defined in relation to the 1997 Hedgerow Regulations which are given in Appendix C.

Woodland Assessment

- 2.5.3 The woodland plot did not support characteristic woodland flora; it was grazed as woodland pasture and largely comprised young to medium aged trees and so it was not recommended for further detailed woodland surveys.

2.6 Survey Limitations

Grassland

- 2.6.1 The grassland surveys were undertaken on 20 and 27 July 2017, which is a suitable time of year and no survey constraints were identified. Survey access was not possible for Area 2L and so it was viewed from over a fence. The Area was occupied by a solar farm with tall unmanaged species-poor mesotrophic sward between and under the solar panels and the lack of access is unlikely to have significantly affected the survey results.
- 2.6.2 The LWS at the Kingsway roundabout was aimed to be re-surveyed however due to access restrictions it was not possible. An updated survey will still be required.

Hedgerows

- 2.6.3 The hedgerow survey was undertaken in July, which is a suitable time of year for the woody species but does limit to a degree the assessment of the hedgerow ground flora. In this instance, based on the survey results and location of the hedgerow it is considered very unlikely that woodland flora (as defined in the Hedgerow Regulations 1997) would have been recorded in the hedgerow bottom and the species-poor nature of the hedgerow made that information irrelevant to the assessment of whether the hedgerow was 'important' under the Regulations. Therefore no survey constraints were identified.

Woodland

- 2.6.4 The woodland survey was undertaken in July 2017 when some of the characteristic vernal, ground layer woodland species may not have been evident. In this instance the woodland plot was found to be managed as pasture woodland and so it is very unlikely that a spring survey would have revealed any additional characteristic ancient woodland species due to the effects of grazing pressure. Therefore, no survey constraints were identified.

3 SURVEY RESULTS

3.1 Grassland Survey Results

- 3.1.1 Descriptions of the nine grassland areas surveyed are given below, with the locations of these areas shown on Figure 2 in Appendix A. Appendix D provides the Grassland Species list and Appendix F comprises site photographs. The grassland Local Wildlife Sites indicator species (see Appendix C) are highlighted in the grassland species list given in Appendix D.

Area 2E

- 3.1.2 Area 2E survey was a re-survey from 2015 to ascertain if any change had taken place. This is still a horse-grazed field, with local stands of perennial weeds such as common nettle *Urtica dioica*, creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare*. The field was variously inundated through the seasons and the invasive New-Zealand pigmyweed *Crassula helmsii* was locally dominant. There was an area of open water with a draw down zone at the southern end of the field which was not re-surveyed in 2017 because it now lies outside the area that will be affected by the development.
- 3.1.3 Creeping bent *Agrostis stolonifera* and red fescue *Festuca rubra* dominated the grasses, with lesser amounts of marsh foxtail *Alopecurus geniculatus* Yorkshire-fog *Holcus lanatus*, cock's-foot *Dactylis glomerata* and smooth meadow-grass *Poa pratensis*, perennial rye-grass *Lolium perenne* was a minor grass component.
- 3.1.4 The effects of heavy horse-grazing meant the frequent occurrence of daisy *Bellis perennis*, silverweed *Potentilla anserina*, common ragwort *Senecio jacobaea* and creeping buttercup *Ranunculus repens*.
- 3.1.5 Meadow buttercup *Ranunculus acris*, ribwort plantain *Plantago lanceolata*, meadowsweet *Filipendula ulmaria*, meadow crane's-bill *Geranium pratensis*, red clover *Trifolium pratense* were also noted, along with small amounts of more diminutive herbs, such as common mouse-ear *Cerastium fontanum*, cut-leaved crane's-bill *Geranium dissectum* and dove's-foot crane's-bill *Geranium molle*.
- 3.1.6 This area supported 3 grassland indicator species: water forget-me-not *Myosotis scorpioides*, meadowsweet and meadow crane's bill.

Area 2H

- 3.1.7 Area 2H survey was a re-survey from 2015 to ascertain if any change had taken place. This area was still a tall unmanaged and physically dense grassland sward that was overwhelmingly dominated by Yorkshire fog, with lesser amounts of other robust grass species. Herbs were still a very minor component of the sward.
- 3.1.8 Common bent was locally frequent with abundant false oat-grass *Arrhenatherum elatius* and frequent meadow foxtail *Alopecurus pratensis*. Other grasses recorded included smooth meadow-grass, cock's-foot and perennial rye-grass.
- 3.1.9 Herbs recorded included occasional cleavers *Galium aparine*, hogweed *Heracleum spondylium*, oxeye daisy *Leucanthemum vulgare*, meadow buttercup, common vetch *Vicia sativa* ssp *sativa* and bush vetch *Vicia sepium*.
- 3.1.10 This area still supported 2 grassland indicator species: oxeye daisy and common vetch.

Area 2K

- 3.1.11 The Area 2K survey was a re-survey from 2015 to check if any change had taken place. This unmanaged species-rich grassland sward occurs on a steep slope near a sewage works on the A38. There was extensive scrub and encroachment from trees including ash *Fraxinus excelsior* and common hawthorn *Crataegus monogyna*. It was dominated by tall grasses, but also still supported a range of indicator species; although weed species such as stinging nettle *Urtica dioica* were locally frequent. Evidence of ash dieback was noted on ash saplings within area 2K.
- 3.1.12 The grassland was dominated by false oat-grass, with frequent Yorkshire-fog. Other grasses recorded included cock's-foot, red fescue, smooth meadow-grass, common bent *Agrostis capillaris* and the less widely recorded yellow oat-grass *Trisetum flavescens*.
- 3.1.13 There was locally frequent oxeye daisy with scattered meadow vetchling *Lathyrus pratensis*, common bird's-foot-trefoil *Lotus corniculatus*, lupin *Lupinus* sp., burnet-saxifrage *Pimpinella saxifraga*, meadow buttercup, common sorrel *Rumex acetosa*, goat's-beard *Tragopogon pratensis* and smooth tare *Vicia tetrasperma*.
- 3.1.14 Yarrow *Achillea millefolium*, bladder campion *Silene vulgaris*, germander speedwell *Veronica chamaedrys*, common knapweed *Centaurea nigra*, ribwort plantain *Plantago lanceolata* and bush vetch were also recorded.
- 3.1.15 This area supported 10 grassland indicator species: germander speedwell, oxeye daisy, yellow oat-grass, common knapweed, burnet-saxifrage, selfheal *Prunella vulgaris*, common bird's-foot-trefoil, common vetch, and meadow vetchling. Zig Zag clover *Trifolium medium* recorded in 2015 was not re-found in 2017, but salad burnet *Poterium sanguisorba* was a new record for 2017.

Area 2L

- 3.1.16 This tall unmanaged species-poor grassland forms part of a solar farm. It was dominated by false oat grass with hogweed, cow parsley *Anthriscus sylvestris* and locally frequent creeping thistle and ragwort. The invasive Himalayan balsam *Impatiens glandulifera* was recorded and just 1 indicator species common vetch was recorded.

Area 2M

- 3.1.17 This tall unmanaged grassland had Yorkshire fog and cock's-foot co-dominant with lesser amounts of common bent, smooth meadow grass and false oat grass. Weedy species such as stinging nettle, creeping thistle, spear thistle and the invasive Himalayan balsam were prominent generally and also locally abundant. There was some willow *Salix* spp. scrub.
- 3.1.18 The sward was not diverse but herbs recorded included bush vetch, common mouse-ear and 4 grassland indicator species selfheal, meadow cranesbill, bird's foot trefoil and narrow leaved vetch *Vicia sativa* ssp. *nigra*.

Area 2N

- 3.1.19 Area 2N comprised several sheep grazed fields with species-poor neutral grassland dominated by perennial rye grass with Yorkshire fog and lesser amounts of common bent, red fescue, cock's-foot with few herbs including white clover *Trifolium repens*,

creeping buttercup *Ranunculus repens*, and locally frequent creeping thistle and stinging nettle. No indicator species were found.

Area 2O

- 3.1.20 Area O was a closely sheep grazed valley grassland along the River Derwent.
- 3.1.21 The species recorded included abundant common bent and Yorkshire-fog; frequent yarrow, creeping thistle, crested dog's-tail *Cynosurus cristatus*, perennial rye-grass; occasional smooth hawk's-beard *Crepis capillaris*, cock's-foot, common cat's-ear *Hypochaeris radicata*, mouse-ear-hawkweed *Pilosella officinarum* agg., ribwort plantain, creeping cinquefoil *Potentilla reptans*, meadow and creeping buttercup, common sorrel and dandelion *Taraxacum officinale* agg.
- 3.1.22 There is a flood bund present in the field with a more herb-rich grassland community on the slopes, but bird's-foot trefoil, found in small amounts on the flood bund, was the only grassland indicator species.

Area 2P

- 3.1.23 Area 2P was a ryegrass ley with occasional records of annual meadow grass *Poa annua*, Yorkshire fog, red fescue and yarrow.
- 3.1.24 No grassland indicator species were recorded.

Area 2Q

- 3.1.25 Area 2Q is a very disturbed area of grassland which has established on a restored landfill site. Some areas were open, short rabbit grazed herb dominated and other areas were taller and grass dominated. The grassland surrounded a hard standing area used for storage of old shipping containers. There was evidence of off-road biking and vehicle movements across much of the area especially the western half.
- 3.1.26 There were stands of scrub included bramble, rose *Rosa* spp., and willow and plantation woodland within the grassland; as well as large stands of ruderals such as rosebay willow herb *Chamerion angustifolium*, stinging nettle and wild teasel *Dipsacus fullonum*. Marsh woundwort *Stachys palustris*, a grassland indicator species, was occasionally recorded within areas of impeded drainage with species such as teasel and great hairy willowherb *Epilobium hirsutum*. The invasive non-native Japanese knotweed *Fallopia japonica* was growing along the western part of the area and Himalayan balsam was also recorded.
- 3.1.27 False oat grass, common couch *Elytrigia repens*, red fescue, Yorkshire fog and creeping bent were typical of the grasses recorded and taller herbs recorded included black knapweed, ox eye daisy and yarrow.
- 3.1.28 10 grassland indicator species were recorded; self-heal, oxeye daisy, common knapweed, bird's foot trefoil, lesser trefoil, common vetch, meadow vetchling, germander speedwell, marsh woundwort and tufted vetch *Vicia cracca*.

3.2 Hedgerow Survey Results

- 3.2.1 Refer to Appendix A Figure 2 for survey location, Appendix E for photographs and Appendix F for survey results.

- 3.2.2 One hedgerow H8, 143m in length was surveyed and found to have dominant hawthorn *Crataegus monogyna*, with ash, holly *Ilex aquifolium*, dog-rose *Rosa canina* agg., bramble, elderberry *Sambucus nigra* and English elm *Ulmus procera* also present. Most of the hawthorns present were old mature multi-stemmed trees and gaps were <4.5 %. The hedge connects to other hedgerows at both ends and surrounded by grazed improved grassland. The mean number of species/30m length was 4.5, slightly less than the target of 5. There were no hedgerow indicator species in the ground flora.

3.3 Woodland Survey Results

- 3.3.1 Refer to Appendix A, Figure 2 for survey location, Appendix E for photographs.
- 3.3.2 W1 was the only woodland surveyed it comprised broad-leaved pasture woodland with fairly even-aged ash and pedunculate oak *Quercus robur* with a few being veteran trees. The understorey was grazed grassland with local willow scrub and occasional patches of the invasive Himalayan balsam. The species-poor grassland included abundant perennial rye grass, Yorkshire fog, creeping bent and occasional soft rush *Juncus effusus* and stinging nettle. Few herbs were present. No further detailed botanical survey was undertaken because the woodland ground flora was species-poor grassland and the diversity of shrubs and trees was also poor.

4 SUMMARY AND RECOMMENDATIONS

- 4.1.1 Botanical surveys were carried out on 9 areas of grassland, and 2 other habitat areas; a hedgerow and a broad-leaved pasture woodland, on the 20 and 27 July 2017.
- 4.1.2 The nature conservation assessment of the grassland used the criteria devised by DWT (2003, revised 2011). Each of the indicator species recorded during the surveys was only worth 1 point in the assessment system. No species valued at 2 points were recorded. The grasslands were all largely species-poor, apart from Area 2K and 2Q, which each with 10 indicator species recorded, easily satisfies the minimum species requirement of 8 for consideration to be taken forward for LWS assessment. As neutral grasslands neither of them qualify as target habitats under the NERC 41.
- 4.1.3 Area 2K is a small (0.25ha), steep, unmanaged slope with grassland, succeeding to scrub. If left unmanaged this grassland area would become covered by scrub within five to ten years, leading to a reduction and subsequent loss of grassland including the indicator species. The ash trees were showing signs of ash dieback, which could slow down the development of the scrub, but could also have implications for translocation of plant material as part of any mitigation.
- 4.1.4 Area 2Q is a disturbed grassland mosaic which has developed on restored landfill. The hedgerow surveyed on 27 July 2017 does not qualify as 'important' under the 1997 Regulations ecology criteria. The hedgerow had a mean of 4.5 species per 30m sample, which is less than 5 (the qualifying number). H8 supported many very old mature multi-stemmed hawthorn trees. However, being composed of all native species, this hedgerow qualifies as being important under S41 of the NERC Act.
- 4.1.5 Recommendations for mitigation and/ or enhancement of the proposed scheme with regard to grasslands and hedgerows will be considered and reported in the Environmental Statement.

5 REFERENCES

AECOM (2015) A38 Junction - Extended Phase 1 Habitat survey (Report number 47071319-URS-05-RP-EN-003).

AECOM (2017) A38 Junction - Extended Phase 1 Habitat survey (Unpublished).

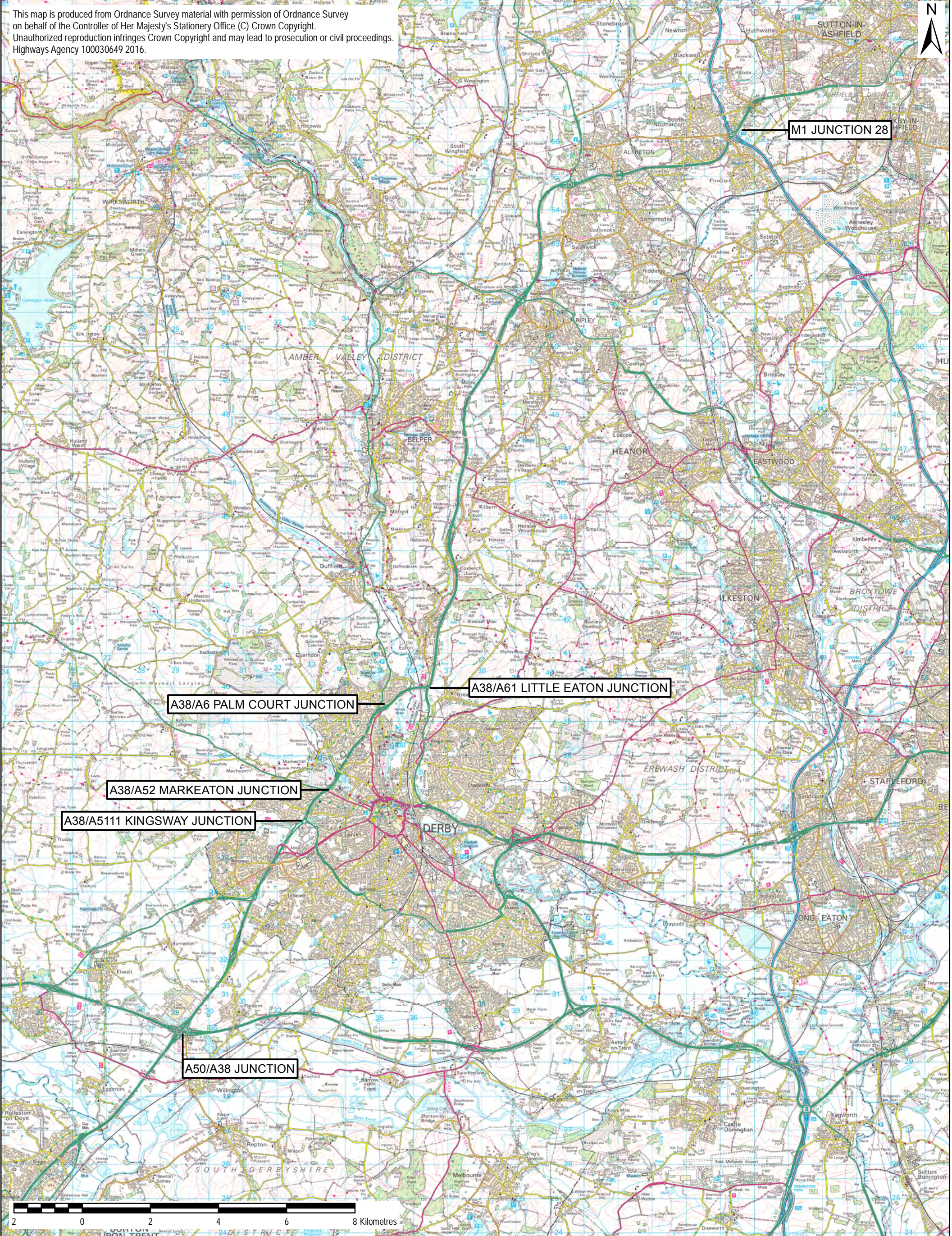
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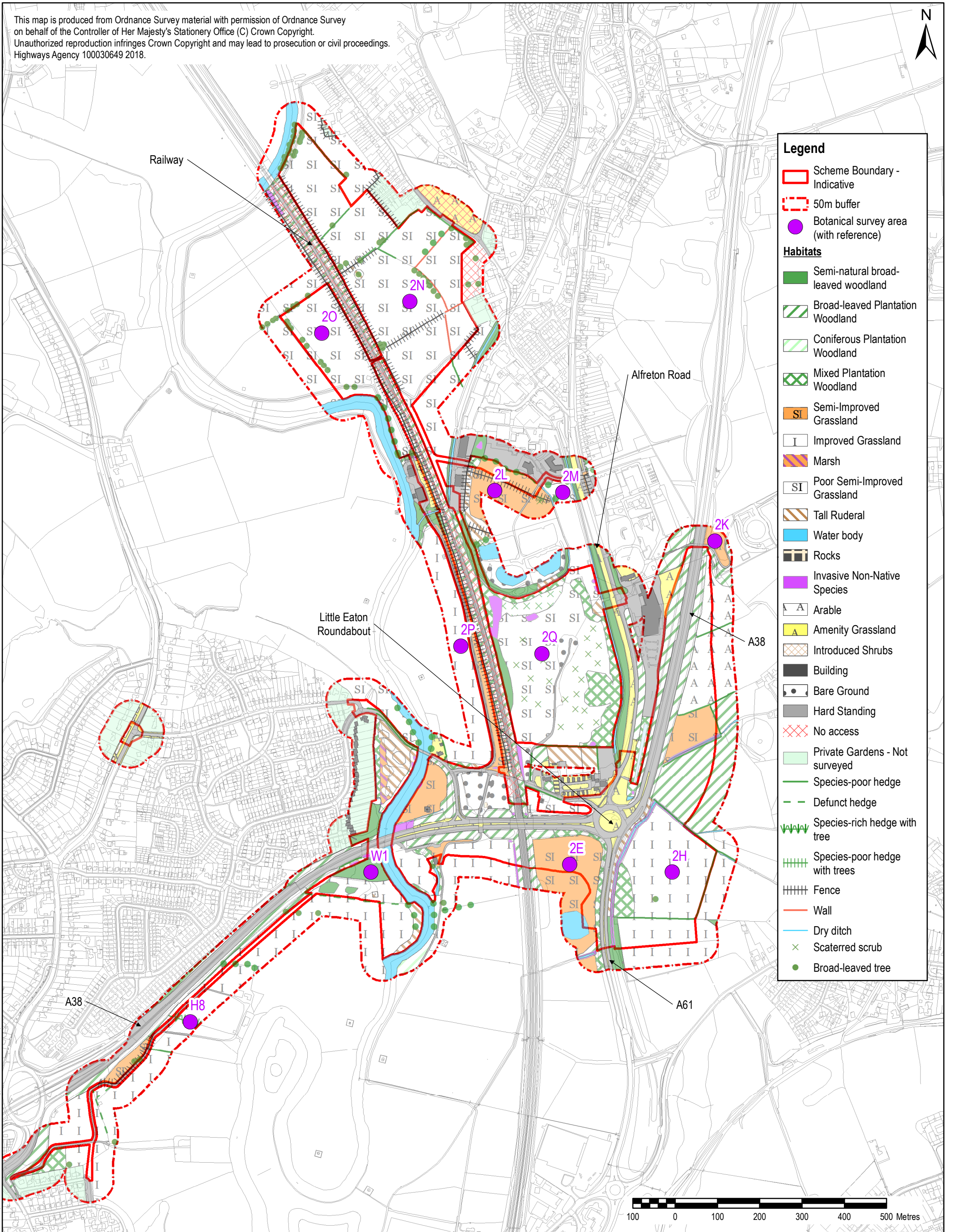
Appendix A Figures





Project Title/Drawing Title			AECOM Internal Project Number 60533462			<div></div> <div></div>
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Appendix B Legislation and Planning Policy

Legislation Relating to Invasive Species

Schedule 9 of the 1981 Wildlife and Countryside Act (as amended) covers the control of invasive plants and animals.

Legislation Relating to Plants

All wild plants are protected against unauthorised removal or uprooting under Section 13 of the Wildlife and Countryside Act (WCA) 1981 (as amended). Plants listed on Schedule 8 of the Act are afforded additional protection against picking, uprooting, destruction and sale.

The Conservation of Habitats and Species Regulations 2017 consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4.

Legislation Relating to Hedgerows

Under the Hedgerows Regulations 1997 it is against the law to remove or destroy hedgerows that qualify as 'important' without permission from the local planning authority. The local planning authority is the enforcement body for offences created by the Regulations.

Planning Policy

The National Planning Policy Framework (NPPF) sets out the Government planning policies for England and how these are expected to be applied. The key points relevant to biodiversity are given below:

“The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”;

“to minimise impacts on biodiversity and geodiversity through planning policies”; and

“when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity.”

Appendix C Habitat Assessment Criteria

Hedgerow Assessment Criteria (Ecological); Hedgerow Regulations 1997

- (1) Subject to sub-paragraph (2), the hedgerow includes:
- (a) at least 7 woody species;
 - (b) at least 6 woody species, and has associated with it at least 3 of the features specified in sub-paragraph (4);
 - (c) at least 6 woody species, including one of the following—
black-poplar tree (*Populus nigra ssp betulifolia*);
large-leaved lime (*Tilia platyphyllos*);
small-leaved lime (*Tilia cordata*);
wild service-tree (*Sorbus torminalis*); or
 - (d) at least 5 woody species, and has associated with it at least 4 of the features specified in sub-paragraph (4),
and the number of woody species in a hedgerow shall be ascertained in accordance with sub-paragraph (3).
- (2) Where the hedgerow in question is situated wholly or partly in the county (as constituted on 1st April 1997) of the City of Kingston upon Hull, Cumbria, Darlington, Durham, East Riding of Yorkshire, Hartlepool, Lancashire, Middlesbrough, North East Lincolnshire, North Lincolnshire, Northumberland, North Yorkshire, Redcar and Cleveland, Stockton-on-Tees, Tyne and Wear, West Yorkshire or York (14), the number of woody species mentioned in paragraphs (a) to (d) of sub-paragraph (1) is to be treated as reduced by one.
- (3) For the purposes of sub-paragraph (1) (and those of paragraph 8(b)):
- (a) where the length of the hedgerow does not exceed 30 metres, count the number of woody species present in the hedgerow;
 - (b) where the length of the hedgerow exceeds 30 metres, but does not exceed 100 metres, count the number of woody species present in the central stretch of 30 metres;
 - (c) where the length of the hedgerow exceeds 100 metres, but does not exceed 200 metres, count the number of woody species present in the central stretch of 30 metres within each half of the hedgerow and divide the aggregate by two;
 - (d) where the length of the hedgerow exceeds 200 metres, count the number of woody species present in the central stretch of 30 metres within each third of the hedgerow and divide the aggregate by three.
- (4) The features referred to in sub-paragraph (1)(b) and (d) (which include those referred to in paragraph 8(b)) are:
- (a) a bank or wall which supports the hedgerow along at least one half of its length;
 - (b) gaps which in aggregate do not exceed 10% of the length of the hedgerow;
 - (c) where the length of the hedgerow does not exceed 50 metres, at least one standard tree;

- (d) where the length of the hedgerow exceeds 50 metres but does not exceed 100 metres, at least 2 standard trees;
 - (e) where the length of the hedgerow exceeds 100 metres, such number of standard trees (within any part of its length) as would when averaged over its total length amount to at least one for each 50 metres;
 - (f) at least 3 woodland species within one metre, in any direction, of the outermost edges of the hedgerow;
 - (g) a ditch along at least one half of the length of the hedgerow;
 - (h) connections scoring 4 points or more in accordance with sub-paragraph (5);
 - (i) a parallel hedge within 15 metres of the hedgerow.
- (5) For the purposes of sub-paragraph (4)(h) a connection with another hedgerow scores one point and a connection with a pond or a woodland in which the majority of trees are broad-leaved trees scores 2 points; and a hedgerow is connected with something not only if it meets it but also if it has a point within 10 metres of it and would meet it if the line of the hedgerow continued.

8. The hedgerow:

- (a) is adjacent to a bridleway or footpath, within the meaning of the Highways Act 1980(15), a road used as a public path, within the meaning of section 54 (duty to reclassify roads used as public paths) of the Wildlife and Countryside Act 1981(16), or a byway open to all traffic, within the meaning of Part III of the Wildlife and Countryside Act 1981(17), and
- (b) includes at least 4 woody species, ascertained in accordance with paragraph 7(3) and at least 2 of the features specified in paragraph 7(4)(a) to (g).

Grassland Assessment Criteria

The following grassland assessment is taken from DWT (2003, revised 2011).

“Gr2 Areas of semi-natural grassland including grassland mosaics that score the following values from the plant species within Table 2 (see below):

8 or more if in the following National Character Areas or in the Derby area:

- Needwood and South Derbyshire Claylands
- Potteries and Churnet Valley
- Mease/Sence Lowlands
- Melbourne Parklands
- Trent Valley Washlands
- Leicestershire & South Derbyshire Coalfield
- Nottinghamshire, Derbyshire & Yorkshire Coalfield (the survey area) “
- Grassland Indicator species

Table C1. Vascular Plant species of semi-natural grasslands in Derbyshire taken from DWT (2003, revised 2011).

All species score 1 with the exception of those species in **bold** which score 2; these species are listed in Derbyshire Vascular Plant Red Data List Species - 2009

Scientific Name	Common Name
<i>Antennaria dioica</i>	Mountain everlasting
<i>Anthyllis vulneraria</i>	Kidney Vetch
<i>Aphanes australis</i>	Slender Parsley-piert
<i>Aquilegia vulgaris</i>	Columbine
<i>Arabis hirsuta</i>	Hairy Rock-cress
<i>Arenaria serpyllifolia</i>	Thyme-leaved Sandwort
<i>Astragalus glycyphyllos</i>	Wild Liquorice
<i>Betonica officinalis</i>	Betony
<i>Blackstonia perfoliata</i>	Yellow-wort
<i>Blysmus compressus</i>	Flat Sedge
<i>Botrychium lunaria</i>	Moonwort
<i>Briza media</i>	Quaking Grass
<i>Bromopsis erectus</i>	Upright Brome
<i>Bromus racemosus</i>	Smooth Brome
<i>Calluna vulgaris</i>	Heather
<i>Caltha palustris</i>	Marsh Marigold
<i>Campanula glomerata</i>	Clustered Bellflower
<i>Campanula rotundifolia</i>	Harebell
<i>Cardamine pratensis</i>	Cuckoo Flower
<i>Carduus nutans</i>	Musk Thistle
<i>Carex acutiformis</i>	Lesser Pond-sedge
<i>Carex binervis</i>	Green-ribbed sedge
<i>Carex caryophyllea</i>	Spring Sedge
<i>Carex demissa</i>	Common Yellow Sedge
<i>Carex disticha</i>	Brown Sedge
<i>Carex echinata</i>	Star Sedge
<i>Carex ericetorum</i>	Rare Spring-sedge
<i>Carex flacca</i>	Glaucous Sedge
<i>Carex hostiana</i>	Tawny Sedge
<i>Carex laevigata</i>	Smooth-stalked Sedge
<i>Carex leporina</i>	Oval Sedge
<i>Carex montana</i>	Soft-leaved Sedge
<i>Carex muricata</i> ssp. <i>lamprocarpa</i>	Prickly Sedge
<i>Carex nigra</i>	Common Sedge
<i>Carex panicea</i>	Carnation Sedge
<i>Carex pilulifera</i> =	Pill Sedge

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<i>Carex pulicaris</i>	Flea Sedge
<i>Carex spicata</i>	Spiked Sedge
<i>Carlina vulgaris</i>	Carlina Thistle
<i>Catapodium rigidum</i>	Fern Grass
<i>Centaurea nigra</i>	Common Knapweed
<i>Centaurea scabiosa</i>	Greater Knapweed
<i>Centaureum erythraea</i>	Common Centaury
<i>Cerastium arvense</i>	Field Mouse-ear
<i>Cirsium acaule</i>	Dwarf Thistle
<i>Cirsium dissectum</i>	Meadow Thistle
<i>Cirsium eriophorum</i>	Woolly Thistle
<i>Cirsium heterophyllum</i>	Melancholy Thistle
<i>Clinopodium acinos</i>	Basil Thyme
<i>Clinopodium vulgare</i>	Wild Basil
<i>Coeloglossum viride</i>	Frog Orchid
<i>Colchicum autumnale</i>	Meadow Saffron
<i>Conopodium majus</i>	Pignut
<i>Crepis capillaris</i>	Smooth Hawk's-beard
<i>Crepis paludosa</i>	Marsh Hawk's-beard
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid
<i>Dactylorhiza hybrids</i>	Hybrid orchids
<i>Dactylorhiza incarnata</i>	Early Marsh-orchid
<i>Dactylorhiza maculata</i>	Heath-spotted-orchid
<i>Dactylorhiza praetermissa</i>	Southern Marsh-orchid
<i>Dactylorhiza purpurella</i>	Northern Marsh-orchid
<i>Danthonia decumbens</i>	Heath-grass
<i>Daucus carota</i>	Wild Carrot
<i>Deschampsia flexuosa</i>	Wavy Hair-grass
<i>Dianthus deltoides</i>	Maiden Pink
<i>Digitalis purpurea</i>	Foxglove
<i>Eleocharis palustris</i>	Common Spike-rush
<i>Epilobium palustre</i>	Marsh Willowherb
<i>Epilobium parviflorum</i>	Hoary Willowherb
<i>Epipactis atrorubens</i>	Dark-red Helleborine
<i>Epipactis palustris</i>	Marsh Helleborine
<i>Equisetum palustre</i>	Marsh Horsetail
<i>Equisetum sylvaticum</i>	= Wood Horsetail
<i>Erica cinerea</i>	Bell-heather

Table C1. Vascular Plant species of semi-natural grasslands in Derbyshire taken from DWT (2003, revised 2011).

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<i>Erica tetralix</i>	Cross-leaved Heather
<i>Erigeron acris</i>	Blue Fleabane
<i>Erodium cicutarium</i>	Common Stork's-bill
<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Euphrasia anglica</i>	Eyebright
<i>Euphrasia confusa</i>	Eyebright
<i>Euphrasia nemorosa</i>	Eyebright
<i>Euphrasia officinalis ssp. pratensis</i>	Eyebright
<i>Festuca ovina</i>	Sheep's fescue
<i>Ficaria verna</i>	Lesser Celandine
<i>Filago vulgaris</i>	Common Cudweed
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Filipendula vulgaris</i>	Dropwort
<i>Fragaria vesca</i>	Wild Strawberry
<i>Galeopsis angustifolia</i>	Red Hemp-nettle
<i>Galium cruciata</i>	Crosswort
<i>Galium palustre</i>	Common Marsh-bedstraw
<i>Galium saxatile</i>	Heath Bedstraw
<i>Galium sternerii</i>	Limestone Bedstraw
<i>Galium uliginosum</i>	Fen Bedstraw
<i>Galium verum</i>	Lady's Bedstraw
<i>Genista anglica</i>	Petty Whin
<i>Genista tinctoria</i>	Dyer's Greenweed
<i>Gentianella amarella</i>	Autumn Gentian
<i>Gentianella campestris</i>	Field Gentian
<i>Geranium columbinum</i>	Long-stalked Crane's-bill
<i>Geranium pratense</i>	Meadow Crane's-bill
<i>Geranium pusillum</i>	Small-flowered Crane's-bill
<i>Geranium sanguineum</i>	Bloody Crane's-bill
<i>Geum rivale</i>	Water Avens
<i>Gnaphalium sylvaticum</i>	Heath Cudweed
<i>Gymnadenia conopsea</i>	Fragrant Orchid
<i>Helianthemum nummularium</i>	Common Rock-rose
<i>Helictotrichon pratensis</i>	Meadow Oat-grass
<i>Helictotrichon pubescens</i>	Downy Oat-grass
<i>Hieracium</i> spp.	any Hawkweed
<i>Hippocrepis comosa</i>	Horseshoe Vetch
<i>Hordeum secalinum</i>	Meadow Barley

Table C1. Vascular Plant species of semi-natural grasslands in Derbyshire taken from DWT (2003, revised 2011).

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<i>Hyacinthoides non-scripta</i>	Bluebell
<i>Hydrocotyl vulgaris</i>	Marsh Pennywort
<i>Hypericum hirsutum</i>	Hairy St John's-wort
<i>Hypericum humifusum</i>	Trailing St John's-wort
<i>Hypericum maculatum</i>	Imperforate St John's-wort
<i>Hypericum montanum</i>	Pale St John's-wort
<i>Hypericum perforatum</i>	Perforate St John's-wort
<i>Hypericum pulchrum</i>	Slender St John's-wort
<i>Hypericum tetrapterum</i>	Square-stalked St John's-wort
<i>Hypochaeris radicata</i>	Cat's-ear
<i>Inula conyzae</i>	Ploughman's Spikenard
<i>Isolepis setacea</i>	Bristle Club-rush
<i>Jasione montana</i>	Sheep's-bit
<i>Juncus acutiflorus</i>	Sharp-flowered Rush
<i>Juncus bulbosus</i>	Bulbous Rush
<i>Juncus compressus</i>	Round-fruited Rush
<i>Leontodon saxatilis</i>	Lesser Hawkbit
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Linum catharticum</i>	Fairy Flax
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil
<i>Lotus pedunculatus</i>	Large Bird's-foot-trefoil
<i>Lotus tenuis</i>	Narrow-leaved Bird's-foot-trefoil
<i>Luzula campestris</i>	Field Wood-rush
<i>Luzula multiflora</i>	Heath Wood-rush
<i>Lysimachia nummularia</i>	Creeping Jenny
<i>Malva moschata</i>	Musk Mallow
<i>Medicago lupulina</i>	Black Medick
<i>Mentha aquatica</i>	Water Mint
<i>Molinia caerulea</i>	Purple Moor-grass
<i>Myosotis discolor</i>	Changing Forget-me-not
<i>Myosotis ramosissima</i>	Early Forget-me-not
<i>Myosotis scorpiodes</i>	Water Forget-me-not
<i>Myosotis secunda</i>	Creeping Forget-me-not
<i>Narcissus pseudonarcissus</i>	Daffodil
<i>Nardus stricta</i>	Mat-grass
<i>Neotina ustulata</i>	Burnt Orchid
<i>Neottia ovata</i>	Common Twayblade

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<i>Ononis repens</i>	Common Restharrow
<i>Ononis spinosa</i>	Spiny Restharrow
<i>Ophioglossum vulgatum</i>	Adder's-tongue Fern
<i>Ophrys apifera</i>	Bee Orchid
<i>Ophrys insectifera</i>	Fly Orchid
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed
<i>Pimpinella major</i>	Greater Burnet-saxifrage
<i>Pimpinella saxifraga</i>	Burnet-saxifrage
<i>Plantago media</i>	Hoary Plantain
<i>Platanthera chlorantha</i>	Greater Butterfly Orchid
<i>Poa compressa</i>	Flattened Meadow-grass
<i>Poa humilis</i>	Spreading Meadow-grass
<i>Polemonium caeruleum</i>	Jacob's-ladder
<i>Polygala serpyllifolia</i>	Heath Milkwort
<i>Polygala vulgaris</i>	Common Milkwort
<i>Potentilla anglica</i>	Trailing Tormentil
<i>Potentilla anserina</i>	Silverweed
<i>Potentilla argentea</i>	Hoary Cinquefoil
<i>Potentilla crantzii</i>	Alpine Cinquefoil
<i>Potentilla erecta</i>	Tormentil
<i>Potentilla neumanniana</i>	Spring Cinquefoil
<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Potentilla sterilis</i>	Barren Strawberry
<i>Poterium sanguisorba</i>	Salad Burnet
<i>Primula veris</i>	Cowslip
<i>Primula vulgaris</i>	Primrose
<i>Prunella vulgaris</i>	Selfheal
<i>Pulicaria dysenterica</i>	Common Fleabane
<i>Ranunculus bulbosus</i>	Bulbous Buttercup
<i>Ranunculus flammula</i>	Lesser Spearwort
<i>Rhinanthus minor</i>	Hay Rattle
<i>Rumex acetosella</i>	Sheep's sorrel
<i>Sagina nodosa</i>	Knotted Pearlwort
<i>Sanguisorba officinalis</i>	Great Burnet
<i>Saxifraga granulata</i>	Meadow Saxifrage
<i>Saxifraga tridactylites</i>	Rue-leaved saxifrage
<i>Scabiosa columbaria</i>	= Small Scabious
<i>Scorzoneroide autumnalis</i>	Autumn Hawkbit

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<i>Scutellaria galericulata</i>	Skullcap
<i>Sedum acre</i>	Biting Stonecrop
<i>Sedum anglicum</i>	English Stonecrop
<i>Senecio aquaticus</i>	Marsh Ragwort
<i>Senecio erucifolius</i>	Hoary Ragwort
<i>Serratula tinctoria</i>	Saw-wort
<i>Silaum silaus</i>	Pepper-saxifrage
<i>Silene flos-cuculi</i>	Ragged Robin
<i>Solidago virgaurea</i>	Goldenrod
<i>Stachys palustris</i>	Marsh Woundwort
<i>Stellaria alsine</i>	Bog Stitchwort
<i>Stellaria graminea</i>	Lesser Stitchwort
<i>Stellaria palustris</i>	Marsh Stitchwort
<i>Succissa pratensis</i>	Devil's-bit Scabious
<i>Teucrium scorodonia</i>	Wood Sage
<i>Thalictrum flavum</i>	Common Meadow-rue
<i>Thalictrum minus</i>	Lesser Meadow-rue
<i>Thymus polytrichus</i>	Wild Thyme
<i>Tragopogon pratensis</i>	Goat's-beard
<i>Trifolium arvense</i>	Hare's-foot Clover
<i>Trifolium campestre</i>	Hop Trefoil
<i>Trifolium medium</i>	Zigzag Clover
<i>Trifolium micranthum</i>	Slender Trefoil
<i>Trifolium striatum</i>	Knotted Clover
<i>Trifolium subterranean</i>	Subterranean Clover
<i>Triglochin palustris</i>	Marsh Arrowgrass
<i>Trisetum flavescens</i>	Yellow Oat Grass
<i>Trollius europaeus</i>	Globe Flower
<i>Vaccinium myrtillus</i>	Bilberry
<i>Valeriana officinalis</i>	Common Valerian
<i>Veronica chamaedrys</i>	Germander Speedwell
<i>Veronica officinalis</i>	Heath Speedwell
<i>Veronica scutellata</i>	Marsh Speedwell
<i>Vicia cracca</i>	Tufted Vetch
<i>Vicia sativa</i> ssp. <i>sativa</i>	Common Vetch
<i>Vicia sativa</i> subsp. <i>nigra</i>	Narrow-leaved Vetch
<i>Viola canina</i> =	Heath Dog-violet

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<i>Viola hirta</i>	Hairy Violet
<i>Viola lutea</i>	Mountain Pansy
<i>Viola reichenbachiana</i>	Early Dog-violet
<i>Viola riviniana</i>	Common Dog-violet

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Appendix D Grassland Species List



		Area Number								
Scientific name	English name	2E	2H	2K	2L	2M	2N	2O	2P	2Q
<i>Achillea millefolium</i>	Yarrow		R	O	R			F	R	O
<i>Elytrigia repens</i>	Common couch									O
<i>Agrostis capillaris</i>	Common Bent	F	LF	O		O	O	F		R
<i>Agrostis stolonifera</i>	Creeping Bent	A			O			O		LD
<i>Alliaria petiolata</i>	Garlic Mustard									R
<i>Alopecurus geniculatus</i>	Marsh Foxtail	O								
<i>Alopecurus pratensis</i>	Meadow Foxtail		F							
<i>Angelica sylvestris</i>	Angelica									LO
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass			R						
<i>Anthriscus sylvestris</i>	Cow Parsley				LF					
<i>Arctium lappa</i>	Greater Burdock									R
<i>Armoracia rusticana</i>	Horse-radish	R								LF
<i>Arrhenatherum elatius</i>	False Oat-grass		A	D	D	O	R			F-LD
<i>Artemisia vulgaris</i>	Mugwort									O
<i>Bellis perennis</i>	Daisy	F			R					
<i>Bromus hordeaceus</i>	Soft-Brome		R							
<i>Cardamine flexuosa</i>	Wavy Bitter-cress									R
<i>Carex hirta</i>	Hairy sedge									LF
<i>Carex otrubae</i>	False fox Sedge									O
<i>Carex pendula</i>	Pendulous sedge									R
<i>Centaurea nigra</i>	Common Knapweed			F						O-LF
<i>Cerastium fontanum</i>	Common Mouse-ear	R		R		R				R
<i>Chamerion angustifolium</i>	Rosebay Willowherb									LA
<i>Cirsium arvense</i>	Creeping Thistle	LD	R	O	A	LD	LF	LF		
<i>Cirsium vulgare</i>	Spear Thistle	LD			R	LD		LF		
<i>Conium maculatum</i>	Hemlock									R
<i>Convolvulus arvensis</i>	Field Bindweed			LF						
<i>Crassula helmsii</i>	New Zealand Pigmyweed	LD								
<i>Crataegus monogyna</i>	Hawthorn			F						F
<i>Crepis capillaris</i>	Smooth hawksbeard			R				O		
<i>Cynosurus cristatus</i>	Crested Dog's-tail							F		
<i>Dactylis glomerata</i>	Cock's-foot	O	O	LF	O	D	F	O		
<i>Deschampsia caespitosa</i>	Tufted Hair-Grass									R
<i>Dipsacus fullonum</i>	Wild Teasel									LF
<i>Elymus repens</i>	Couch grass				R					O
<i>Elitrigia repens</i>										O
<i>Epilobium hirsutum</i>	Great Willowherb									LF
<i>Epilobium parvifolius</i>	Hoary Willowherb									LF
<i>Equisetum arvense</i>	Field horsetail									R
<i>Festuca rubra</i>	Red Fescue	LF		F	O	O			O	
<i>Filipendula ulmaria</i>	Meadowsweet	LD								
<i>Fraxinus excelsior</i>	Ash			O						




		Area Number								
Scientific name	English name	2E	2H	2K	2L	2M	2N	2O	2P	2Q
<i>Galium aparine</i>	Cleavers		R		O					
<i>Galium verum</i>	Ladies bedstraw			R						
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill									O
<i>Geranium molle</i>	Dove's-foot Crane's-bill	R								
<i>Geranium pratense</i>	Meadow Crane's-bill	O				O				
<i>Heracleum sphondylium</i>	Hogweed		R	R	O	O				
<i>Holcus lanatus</i>	Yorkshire-fog	O	D	F	O	D	D	F	O	
<i>Hypericum perforatum</i>	Perforate St John's-wort			R						
<i>Hypochaeris radicata</i>	Cat's ear							O		
<i>Impatiens glandulifera</i>	Himalayan Balsam				F	LD				O
<i>Juncus effusus</i>	Soft-rush									O
<i>Juncus inflexus</i>	Hard Rush									O
<i>Lathyrus pratensis</i>	Meadow Vetchling			LO						R
<i>Leucanthemum vulgare</i>	Oxeye Daisy		R	LF						LF
<i>Lolium perenne</i>	Perennial rye-grass	R	O	R	F		D	A	D	O
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil			O		O		R		LF
<i>Lupinus sp.</i>	Lupin sp.			O						
<i>Lysamachia vulgaris</i>	Yellow loosestrife									R
<i>Lythrum salicaria</i>	Purple-loosestrife									O
<i>Medicago lupulina</i>	Black Medick									O-LF
<i>Melilotus officinalis</i>	Common mellilot									LF
<i>Myosotis scorpioides</i>	Water forget-me-not	O								
<i>Odonites verna</i>	Red bartsia									R
<i>Phleum pratense</i>	Timothy		R							
<i>Helmithotheca echioides</i>	Bristly Oxtongue									O
<i>Pilosella officinarum</i>	mouse-ear hawkweed			R				LR		R
<i>Pimpinella saxifraga</i>	Burnet-saxifrage			R						
<i>Phalaris arundinacea</i>	Reed canary grass									LF
<i>Plantago lanceolata</i>	Ribwort Plantain	O-F		O	O			O		O
<i>Polygonum amphibium</i>	Amphibious bistort									LF
<i>Poa annua</i>	Annual Meadow-grass								R	R
<i>Poa pratensis</i>	Smooth Meadow-grass	O-F	R	O		O				O
<i>Poa trivialis</i>	Rough Meadow-grass					O				O
<i>Potentilla anserina</i>	Silverweed	LF								R
<i>Potentilla reptans</i>	Creeping Cinquefoil			R				R		R
<i>Poterium sanguisorba</i>	Salad burnet			R						
<i>Prunella vulgaris</i>	Selfheal			O		R				R
<i>Ranunculus acris</i>	Meadow Buttercup	A	R	O			R			
<i>Ranunculus repens</i>	Creeping Buttercup	A					O	O		LF

		Area Number								
Scientific name	English name	2E	2H	2K	2L	2M	2N	2O	2P	2Q
<i>Rosa canina</i> agg.	Dog-rose									LA
<i>Rubus fruticosus</i> agg.	Bramble				R					LA-F
<i>Rumex acetosa</i>	Common Sorrel			O				O		
<i>Rumex obtusifolius</i>	Broad-leaved Dock				O	O	O	O		O
<i>Salix</i> sp.	Willow spp.					O				LF
<i>Senecio jacobaea</i>	Common Ragwort	F			F			R		O-LF
<i>Senecio vulgaris</i>	Groundsel									O
<i>Scorophularia auriculata</i>	Common figwort									R
<i>Silene vulgaris</i>	Bladder Campion			R						
<i>Stachys palustris</i>	Marsh woundwort									LO
<i>Stachys sylvatica</i>	Hedge Woundwort									R
<i>Tanacetum vulgare</i>	Tansy									R
<i>Taraxacum officinale</i> agg.	Dandelion	O	O	R	O	O	R	O	O	O
<i>Tragopogon pratensis</i>	Goat's-beard			O						
<i>Trifolium dubium</i>	Lesser trefoil									R
<i>Trifolium pratense</i>	Red Clover	O								LF
<i>Trifolium repens</i>	White Clover							O		LF
<i>Trisetum flavescens</i>	Yellow Oat-grass			R						
<i>Tussilago farfara</i>	Colt's-foot									R
<i>Urtica dioica</i>	Common Nettle	LFD	R	LF	O		O	LF		LD
<i>Veronica chamaedrys</i>	Germander Speedwell			R						LF
<i>Vicia cracca</i>	Tufted Vetch									O-LF
<i>Vicia hirsuta</i>	Hairy Tare			R						
<i>Vicia sativa</i> ssp <i>nigra</i>	Narrow leaved vetch					R				
<i>Vicia sativa</i> ssp <i>sativa</i>	Common Vetch		R	R	R					O
<i>Vicia sepium</i>	Bush Vetch		R	R		R				
<i>Vicia tetrasperma</i>	Smooth Tare			O						O
TOTAL NUMBER OF LOCAL WILDLIFE SITE GRASSLAND INDICATOR SPECIES (all score 1 in Table 2 in Derbyshire Wildlife Trust 2003 rev 2011) (i.e. Species shown in red in the table)		3	2	10	1	4	0	1	0	10

Appendix E Photographs

<p>2E a horse-grazed field with perennial weeds</p>	
<p>2H grassland area by A38</p>	
<p>2K grassland area on steep slope with extensive scrub encroachment</p>	
<p>2L grazed grassland</p>	

<p>2M solar farm with managed semi-improved grassland. High levels of Himalayan balsam border this area</p>	
<p>2N poor semi-improved grassland dominated this area and was grazed by sheep and cattle</p>	
<p>2O short grazed grassland adjacent to River Derwent</p>	
<p>2P perennial rye-grass field</p>	

<p>2Q grassland on restored landfill site with scattered scrub. Bike trails evident in background</p>	
<p>W1 pasture woodland</p>	
<p>H8</p>	

Appendix F Hedgerow Survey Results

Number	Grid reference (start – finish)	Dimensions and planting	Adjacent land-use and scoring features	Average woody species in 30 m samples	Presence of trees	% gap	Scoring species in Hedge bottom flora	Species- rich (5 species minimum)	Hedgerow regulations assessment
H8	SK 35358 39530 to 35517 39091	153 m long and 5 m< high Width 6-8m wide Single line	Improved grassland (grazed) 2 hedgerow connections at each end (4 points)	4.5 species mean from 2 samples. Dominant hawthorn, with ash, holly, dog-rose, blackberry, elder and English elm also present.	Two mature ash and over ten multi stemmed mature hawthorn trees	<4.5 % (7m)	None	Yes (but at 4.5 species failed minimum of 5 species) Upgraded due to large number of old multi stemmed hawthorns	Not important (lacks sufficient woody species in 30m samples)