

**A38 Derby Junctions**

**TR010022**

**Volume 6**

**6.3 Environmental Statement  
Appendices**

**Appendix 8.1: Summary of Ecological  
Surveys and Studies to date**

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**

A38 Derby Junctions  
Development Consent Order 202[ ]

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**6.3 Environmental Statement Appendices**

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<b>Regulation Number</b>	Regulation 5(2)(a)
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## Appendix 8.1: Summary of ecological studies and surveys carried out across the Scheme (in date ascending order)

Study/survey	Survey date	Study area	Description	Report reference <sup>1</sup>
Desk Study	January 2015	International statutory designated sites up to 30km from the 2015 Scheme boundary <sup>2</sup> for sites designated at an international level for bats. All other statutory and non-statutory designated sites and non-designated sites of interest, and protected/notable species records up to 2km from the 2015 Scheme boundary.	A desk-based study with Derbyshire Wildlife Trust and other specialist groups, to identify international, national and other statutory designated sites, non-statutory local sites and non-designated sites of interest within proximity to the Scheme. Online resources also reviewed.	47071319-URS-05-RP-EN-003 (Extended Phase 1 Report) 47071319-URS-05-RP-EN-019 (HRA - Assessment of Implications on European Sites)
Extended Phase 1	January/ February 2015	Up to 50m from the 2015 Scheme boundary.	Extended Phase 1 habitat survey to map habitat types, and assess the potential for protected species and/or habitats or species groups of nature conservation importance to occur on and within close proximity to the 2015 Scheme. Included an assessment of features on and adjacent to the 2015 Scheme site for bat roost potential. The location and extent of invasive plant species was also recorded as part of these vegetation surveys.	47071319-URS-05-RP-EN-003
Breeding bird surveys	April, May and June 2015	Up to 500m from the 2015 Scheme boundary (although habitats within 50m of the 2015 Scheme were given greater emphasis).	Breeding bird surveys to specifically identify any notable/Schedule 1 bird species or assemblages of bird species within the extent or immediate vicinity of the 2015 Scheme.	47071319-URS-05-RP-EN-008
Great crested newt surveys	mid-April to May 2015	Up to 500m from the 2015 Scheme boundary.	Great crested newt survey of ponds located within 500m of the 2015 Scheme to determine the presence/likely absence of great crested newts.	47071319-URS-05-RP-EN-009
Reptile surveys	June 2015	Up to 50m from the 2015 Scheme boundary.	Reptile surveys at discrete locations that were considered to be potentially suitable to support this species group.	47071319-URS-05-RP-EN-010
Botanical survey	June 2015	Up to 50m from the 2015 Scheme boundary.	Botanical survey of selected areas of grassland, hedgerows and other habitats comprising broadleaved woodland, plantation, scrub, ditch and standing water.	47071319-URS-05-RP-EN011
Badger surveys	January 2015	Up to 50m from the 2015 Scheme boundary (extended up to 500m from the Scheme boundary (where access allowed) to check those badger records identified from the desk study data search).	Badger survey also included ongoing monitoring in the 2015 ecology survey season to determine the presence of badger setts, and other badger field signs, across the Scheme.	47071319-URS-05-RP-EN-012
Terrestrial invertebrate surveys	June and August 2015	Up to 50m from the 2015 Scheme boundary for terrestrial invertebrates.	Terrestrial invertebrate survey of selective areas of suitable habitat within and adjacent to the Scheme.	47071319-URS-05-RP-EN-013
Water vole and otter surveys	March and May 2015	Up to 250m from the 2015 Scheme boundary.	Water vole and otter surveys on watercourses within and adjacent to the Scheme considered suitable to support these species groups.	47071319-URS-05-RP-EN-014
River habitat and river corridor survey	May 2015	Up 500m from the 2015 Scheme boundary.	River habitat and river corridor survey of watercourses that may be crossed or potentially directly impacted by the Scheme.	47071319-URS-05-RP-EN-015
White-clawed crayfish surveys	July and August 2015	At least 50m from the 2015 Scheme boundary (extended further where necessary to take into account a 100 - 200 m sampling site within a 500m section of watercourse).	White-clawed crayfish surveys on watercourses identified as potentially suitable to support this species group.	47071319-URS-05-RP-EN-017
Aquatic macro-invertebrate survey	Spring, Summer and Autumn 2015	Up to 250m from the 2015 Scheme boundary for aquatic macroinvertebrates.	Aquatic macro-invertebrate survey on watercourses that would be most likely affected by the Scheme.	47071319-URS-05-RP-EN-018

<sup>1</sup> Refer to report for details on methodology used.

<sup>2</sup> The 2015/ 2016/ 2017 Scheme boundary is referred to as/ where applicable .The 'Scheme boundary' otherwise refers to the 2018 Scheme boundary which the impact assessment as reported in the Environmental Statement is based upon.

Study/survey	Survey date	Study area	Description	Report reference <sup>1</sup>
Bat surveys	May to September 2015	Up to 50m from the 2015 Scheme boundary.	Bat surveys on trees and structures, which were identified as having potential to support roosting bats during the Extended Phase 1, to determine the presence/likely absence of bats roosting. Bat activity surveys, comprising walked transect and static detector surveys, and bat trapping surveys, were also undertaken across the Scheme.	47071319-URS-05-RP-EN-020
Wintering bird surveys	September 2015 to March 2016	Targeted areas within and adjacent to the 2015 Scheme boundary only up to 100m.	Wintering bird surveys to identify any notable wetland bird species or assemblages within the extent of the Scheme.	47071319-URS-05-RP-EN-022
Updated Desk Study	September 2016	Statutory and non-statutory designated sites and non-designated sites of interest 2km from the 2016 Scheme boundary.	An updated desk study was carried out for the Scheme, plus 19 Additional Sites identified as potential flood compensation; borrow pits; construction compounds; and/or ecological compensation areas.	47071319-URS-05-TN-EN-023
Extended Phase 1 Habitat Survey	September/October 2016	Up to 50m from the boundary of each of the 19 Additional Sites identified beyond the 2016 Scheme boundary.	Extended Phase 1 habitat surveys were carried out across 19 Additional Sites identified as potential flood compensation; borrow pits; construction compounds; and/or ecological compensation areas.	47071319-URS-05-TN-EN-023
Wintering Bird Survey	September 2016 to March 2017	Targeted areas within and adjacent to the 2016/17 Scheme boundary up to 100m.	Wintering bird surveys to identify any notable wetland bird species or assemblages within the extent of Additional Sites 7a, 7b, 10, 21, 19a, 19b and 19c, which were not previously surveyed.	HE514503-ACM-GEN-A38_SW_PR_ZZ-TN-EG-0001
Extended Phase 1 Habitat Survey	February to June 2017	Up to 50m from the 2017 Scheme boundary.	Extended Phase 1 habitat survey to resurvey the habitats previously surveyed in 2015 and 2016, and survey new areas identified in 2017 as a result of Scheme boundary changes. This defined the scope of surveys for 2017 and 2018 (as listed below).	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0004
Breeding Bird Survey	March to July 2017	Up to 50m from the 2017 Scheme boundary. (Only 50m in comparison to 500m. The 2017 surveys were an update to the 2015 surveys. The surveys in 2015 were based on the road development (with potentially further ranging impacts). The additional sites, which concern storage areas, flood compensation/ecological compensation areas, were considered to not have as wider scale impacts. Schedule 1 species were however regarded adjacent to the sites).	As the 2015 breeding bird survey results were approaching two years old, those areas with the highest potential for breeding birds were resurveyed in 2017 to provide an update to determine whether the breeding bird assemblage remained comparable to that identified in 2015. Furthermore additional areas (for potential construction compounds, flood storage and ecological compensation) were added to the Scheme boundary, and required a full suite of breeding bird surveys in 2017.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0009
Great Crested Newt Survey	Mid-April to May 2017	Up to 500m from the 2017 Scheme boundary.	Great crested newt survey of ponds located within 500m of the 2017 Scheme to determine the presence/likely absence of great crested newts. New ponds identified which were not previously surveyed. Additionally, although a negative result in 2015, age of data was approaching 3 breeding seasons old and recommended to be updated.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0003
Reptile Survey	September to October 2017	Targeted areas within and adjacent to the 2017 Scheme boundary up to 50m.	Reptile surveys at discrete locations that were considered to be potentially suitable to support this species group which were not previously surveyed in 2015. The new grassland habitats within Sites 8, 10 and 19 were identified to have potential to support reptile populations.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0012
Botanical Survey	July 2017	Targeted areas within and adjacent to the 2017 Scheme boundary up to 50m.	Resurvey of A38 Roundabout LWS and Alfreton Road Grassland LWS given the data from 2015 was approaching two years old. Survey of the A38 Scrub Site of Interest, a new designated site and area of woodland identified in 2017 due to Scheme boundary changes. Updated vegetation survey of species-rich areas and seven new grassland areas identified in 2017 due to Scheme boundary changes. One new hedgerow H8 species-rich also identified for further survey.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0007

Study/survey	Survey date	Study area	Description	Report reference <sup>1</sup>
Badger Territory Analysis	January to February 2017	Up to 50m from the 2017 Scheme boundary (extended up to 500m from the Scheme boundary (where access allowed) to check those badger records identified from the desk study data search).	Updated badger survey and territory analysis based on the 2017 Scheme boundary.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0010
Water Vole and Otter Survey	May to September 2017	Up to 250m from the 2017 Scheme boundary.	As the 2015 water voles survey results were approaching two years old, it was recommended that these waterbodies are re-surveyed. Lower reaches of Bramble Brook, upper and lower reaches of the River Derwent, lower reaches of Watermeadows Ditch, Bottle Brook and Pb1 were new watercourses/stretches of watercourse identified for survey as a result of Scheme boundary changes.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0002
White-clawed Crayfish Survey	July 2017	At least 50m from the 2017 Scheme boundary at Little Eaton only (extended further where necessary to take into account a 100 - 200m sampling site within a 500m section of watercourse).	In 2015 AECOM recorded white-clawed crayfish on the Dam Brook. Potential for this species to be present within other watercourses and waterbodies which exist within or adjacent to the Scheme at Little Eaton Junction only. Data approaching two years old therefore updated survey recommended. As a result of the AECOM 2015 survey findings and the close proximity of signal crayfish further white-clawed crayfish surveys in the Markeaton and Kingsway junctions were not considered necessary and were discounted from further survey in 2017. Bottle Brook was a new watercourse not previously surveyed in 2015.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0011
Aquatic Macroinvertebrate Survey	May and November 2017	Targeted areas from the 2017 Scheme boundary up to 250m.	Bottle Brook was a new watercourse identified as a result of Scheme boundary changes and subject to spring, summer and autumn aquatic macroinvertebrate surveys.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0013
Bat Trapping and Radio-tracking	June and September 2017	Targeted areas within and adjacent to the 2017 Scheme boundary at Markeaton.	Targeted bat trapping and radio-tracking surveys on tree roosting bat species within and adjacent to the Scheme boundary at Markeaton (Markeaton Park and Mill Ponds). Also carried out to assist with determining population dynamics given high habitat valuation for bats at Markeaton.	Davidson-Watts Ecology (2017)
Tree Climbing Bat Assessment	March to July 2017	Up to 50m from the 2017 Scheme boundary.	PRF assessment on trees with potential to be impacted by the Scheme and not previously surveyed in 2015.	HE514503-ACM-EBD-A38_SW_PR_ZZ-TN-EG-0002
Bat Roost Survey – Buildings and Structures	February to September 2017	Up to 50m from the 2017 Scheme boundary (confirmed roosts only or new features not previously surveyed in 2015).	External and internal survey assessments for the 17 residential properties at the Markeaton junction section of the Scheme, and subsequent dusk emergence and dawn re-entry surveys (where required). Bat roost presence/absence surveys for confirmed roost sites at buildings and structures identified from the 2015 and 2016. This was to aim to gain up to date and more detailed survey information to further characterise the roosts, to support the ecological impact assessment of the Scheme and feed into any potential draft licence applications. Dusk emergence/dawn return surveys recommended for the new potential roost features identified during the 2017 PRF assessment with potential to be impacted by the Scheme, and not previously surveyed in 2015.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0006
Bat Activity Survey	April to October 2017	Up to 50m from the 2017 Scheme boundary.	Significant change in habitat suitability for bats recorded in 2017; in comparison to 2015. This was based on the bat survey results from 2015, desk study data records, and updated survey guidance. Kingsway junction – Low (requiring spring, summer and autumn transects). Markeaton junction – Moderate to High (recommended for bat trapping and radio tracking and transects alongside the Kingsway surveys). Little Eaton junction – Moderate value (requiring monthly transect surveys April to October).	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0005



Study/survey	Survey date	Study area	Description	Report reference <sup>1</sup>
Wintering Bird Survey	October 2017 to March 2018	Targeted areas within and adjacent to the Scheme boundary at Little Eaton only up to 100m.	Wintering bird surveys to identify any notable wetland bird species or assemblages within the extent of the Scheme at Little Eaton.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0015
Badger Survey	March 2018	Up to 50m from the 2015 Scheme boundary (extended up to 500m from the Scheme boundary (where access allowed) to check those badger records identified from the desk study data search).	This survey focused on obtaining up-to-date survey information on known badger setts which may be directly or indirectly impacted and identify any new setts.	HE514503-ACM-EBD-A38_SW_PR_ZZ-TN-EG-0007
Reptile Survey	April to June 2018	Targeted areas within and up to 50m from the Scheme boundary.	Targeted surveys on two sites that could not be accessed for survey in 2017.	HE514503-ACM-EBD-A38_SW_PR_ZZ-TN-EG-0006
Botanical Survey	June 2018	Up to 50m from the Scheme boundary.	Updated botanical surveys of targeted areas previously surveyed in 2015 and/or 2017.	HE514503-ACM-EBD-A38_SW_PR_ZZ-TN-EG-0003
River Habitat Survey	May to August 2018	Up to 500m from the Scheme boundary.	Updated river habitat survey of watercourses that may be crossed or potentially directly impacted by the Scheme.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0020
Barn Owl Survey	August 2018	Targeted area within and adjacent to the Scheme boundary at Little Eaton only up to 50m.	Barn owl inspection of previously known tree nest site and barn owl box located at Little Eaton junction.	Reported in the Environmental Statement.
Fish Survey	August 2018	Up to 100m from the Scheme boundary (focusing specifically on Dam Brook watercourse which is to be directly impacted by the Scheme).	Targeted fish surveys at Dam Brook (to be directly impacted from construction activities) and Watermeadows ditch (to identify its suitability as a donor watercourse for the fish population in Dam Brook).	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0021
White-clawed crayfish Survey	2018	At least 50m from the Scheme boundary at Little Eaton only (extended further where necessary to take into account a 100 - 200 m sampling site within a 500m section of watercourse).	Targeted surveys at Dam Brook to determine the latest status of white-clawed crayfish.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0019
Water Vole and Otter Survey	April to September 2018	Up to 250m from the Scheme boundary.	Surveys focused on those areas not previously accessible for survey in 2017.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0018
Terrestrial Invertebrate Survey	June to August 2018	Up to 50m from the Scheme boundary.	Terrestrial invertebrate surveys were carried out in 2018 to take into account amendments to the Scheme boundary and also to provide up to date survey information on those areas previously surveyed in 2015 (where applicable), given the data was over two years old.	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0023
Aquatic Invertebrate Survey	May and September 2018	Up to 250m from the Scheme boundary.	Aquatic macroinvertebrate surveys were carried out in the spring and autumn of 2018. This included updated surveys of those sites previously surveyed in 2015, given the data was over two years old (River Derwent, Markeaton Brook, Bramble Brook and Dam Brook); and a new site Middle Brook due to Scheme boundary changes.	Unpublished
Bat Roost Survey	May to September 2018	Up to 50m from the Scheme boundary.	<p>Previous bat surveys in 2015, 2016, 2017 and updated extended Phase 1 Habitat surveys in early 2018 defined the scope of bat work for 2018. This included:</p> <p>Potential roost feature assessments of; previously inaccessible buildings and structures likely to be affected by the Scheme; assessment of buildings due to proposed scheme boundary changes; Assessments of additional buildings due to the Scheme boundary changes; updated assessment of confirmed and potential roost sites at bridges; and trees not previously assessed due to proposed scheme boundary changes.</p> <p>Tree climbing of trees not previously accessed for survey.</p> <p>Hibernation assessment of buildings, structures and trees across the Scheme.</p> <p>Emergence (dusk) and re-entry (dawn) roost surveys were undertaken to include previously inaccessible areas, new areas, updates to known confirmed roosts and repeats of 2015 surveys.</p>	HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0022

Study/survey	Survey date	Study area	Description	Report reference <sup>1</sup>
Markeaton Construction Compound Extended Phase 1 Habitat Survey	May 2018	Up to 50m from the Scheme boundary at the proposed Markeaton Construction Compound Site (Note: compound at Markeaton is no longer being proposed as part of the Scheme).	The purpose of the extended Phase 1 Habitat survey was to ecologically assess Markeaton Construction Compound (Site 25), which was added to the Scheme boundary in 2018 as a result of design changes.  Habitat types were mapped, and habitat assessed for the potential for protected species and/or habitats or species groups of nature conservation importance to occur on and within close proximity to the site. Included an assessment of features on and adjacent to the site for bat roost potential. The location and extent of invasive plant species was also recorded as part of these vegetation surveys.	HE514503-ACM-EBD-A38_SW_PR_ZZ-TN-EG-0005
Survey of the proposed road sign locations	September and October 2018	Up to 50m from the Scheme boundary.	The purpose of the extended Phase 1 Habitat survey was to ecologically assess the proposed road signs locations which were added to the Scheme boundary in 2018 as a result of design changes.  Habitat types were mapped, and habitat assessed for the potential for protected species and/or habitats or species groups of nature conservation importance to occur on and within close proximity to the site. Included an assessment of features on and adjacent to the site for bat roost potential. The location and extent of invasive plant species was also recorded as part of these vegetation surveys.	Included in the Environmental Statement
Updated Desk Study	August 2018	Statutory and non-statutory designated sites and non-designated sites of interest, and protected/notable species records up to 2km from the 2018 Scheme boundary.	A desk-based study with Derbyshire Wildlife Trust and other specialist groups, to identify international, national and other statutory designated sites, non-statutory local sites and non-designated sites of interest within proximity to the Scheme.  Online resources also reviewed.	Included in the ES HE514503-ACM-EBD-A38_SW_PR_ZZ-RP-EG-0017 (HRA - Assessment of Implications on European Sites Report)