Ecological Appraisal Report

Ravenscraig Infrastructure Access South

Airbles Road/Hamilton Road and Windmillhill

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1 Introduction

1.1 Background

Sweco UK Ltd was commissioned by North Lanarkshire Council to provide environmental assessment and support for the Ravenscraig Access Infrastructure (South) project which includes two separate proposals:

- Junction and carriageway improvements on Airbles Road at Hamilton Road (A723) (hereafter referred to as the Airbles Road/Hamilton Road proposed scheme); and
- A planning application for a new dual carriageway from Windmillhill Junction to the sports facility within the Ravenscraig Ltd site, including a West Coast Main Line (WCML) underbridge crossing (hereafter referred to as the Windmillhill proposed scheme).

This report provides an ecological appraisal for both proposals and throughout the report they are referred to as either Airbles Road/Hamilton Road or Windmillhill to differentiate between the two proposals.

1.2 Scheme descriptions

1.2.1 Airbles Road/Hamilton Road

The proposed scheme comprises junction improvement at the Hamilton Road junction, online dualling of Airbles Road up to the existing dualling (approximately Airbles Farm Road) and new junction layouts at Greenacres and Tinkers Lane. The Airbles Road/Hamilton Road proposed scheme will necessitate the removal of some roadside trees and verges which will be surfaced as part of the dualling work.

1.2.2 Windmillhill

The proposed scheme involves a reconfigured junction at Windmillhill Street/Airbles Road and a new dual carriageway which crosses the WCML via an underbridge and crosses the former Ravenscraig site, joining an existing roundabout junction at the sports facility. The proposed scheme will necessitate the demolition of a number of properties and businesses around Orbiston Street, Rose Street, Windmillhill Street and Manse Road, tree clearance on the WCML embankments and at the boundary with Liberty Steelworks, and vegetation clearance on the former steelworks site.

1.3 Purpose of this report

This report documents the methods used and results of desk study and ecological field surveys undertaken across the study areas of both proposed schemes.

This report also incorporates the results of the ecological survey undertaken by Arup in December 2020[1]. Their study area focused on Network Rail land where the proposed scheme passes under the WCML.

[1] Arup (2021). Ravenscraig Grip 4 Preliminary Ecological Appraisal. Prepared on behalf of Bam Nuttall Ltd.

2 Methodology

2.1 Study area

The study area for background data searches focused on statutory and non-statutory designated sites and protected or notable species within a 2km buffer of the proposed schemes. The study area is shown in **Figure 1**.

The study area for field surveys incorporated both red line boundaries (as shown on **Figure 2a, 2b, 3, 4 and 5**) and a study area of between 50m and 500m. The study area adopted for a particular habitat or species group is included within the methodology for each in the following sections.

Due to the urban nature of the Airbles Road/Hamilton Road proposed scheme, only Phase 1 habitat surveys and bat (tree roost) surveys were undertaken within this study area. All species groups were surveyed within the Windmillhill study area.

2.2 Background data search

The desk study involved conducting database searches for statutory[2] and non-statutory[3], [4] designated sites including ancient and native woodland[5],[6] as well as protected and/or notable flora and fauna within a 2km radius of the Site. Surveys previously completed and reported in 2019 were also used to inform this report. The baseline conditions are based on a review of existing available information including:

- Baseline Ecological Constraints Report for Ravenscraig South Access Road, Motherwell (prepared by Sweco in February 2019)[7];
- Ecology report for the Ravenscraig Masterplan (prepared by Heritage Environment Ltd in 2019)[8];

[2] Such as Internationally important Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites; nationally important Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).
[3] Such as Sites of Importance to Nature Conservation (SINC) as declared by North Lanarkshire Council. Details of SINCs were provided by Kirsty Mooney – Biodiversity Projects Officer at NLC. Areas which are listed in the Ancient Woodland Inventory (AWI) as being continually forested since early mapping in the 1750s and which are valuable for their antiquated seed banks, are included in this category.
[4] Local Nature Reserves (LNR) are statutory (they are protected by statute) Section 21 of the National Parks Access to the Countryside Act 1949 (as amended), but they are only for ecological value.
[5] Woodlands listed in the Ancient Woodland Inventory (AWI) are recognised as holding greater natural heritage value and the AWI is widely used for woodland management, local planning and strategic policy development. The AWI identifies currently afforested areas that were mapped as forests as long ago as the 1750 'Roy' maps (Ancient Woodland) or which first appear on the earliest OS maps in c.1860 (Long-established woodlands; apparently arising between 1750 and 1860).
[6] The Native Woodland Survey of Scotland (NWSS) was set up by Forestry Commission Scotland (now Forestry and Land Scotland) to identify and map the location, extent, type and condition of all of Scotland's native woodlands and unlike the AWI characterises the woodland's current condition. https://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/native-woodland-survey-of-scotland-nwss.
[7] Sweco (2019). Ravenscraig South Access Road: Baseline Ecological Constraints Report. Prepared on behalf of North Lanarkshire Council.
[8] Heritage Environment Ltd. (2018). Revision of Ravenscraig Masterplan: Ecology Report. Heritage Environment Ltd., Perthshire. 84pp.

- Ecology report for the Ravenscraig Active Travel Link (prepared by Heritage Environmental Ltd in 2020)[9]. Whilst the RATL site is over 500m to the east of the Windmillhill site the study areas overlap for some ecological features;
- Scotland`s Environment Web Map[10];
- NBN Atlas Scotland[11].

A summary of the key environmental legislation and policy with regard to sites with nature conservation designations, habitats and species is provided in **Appendix I**.

2.3 Phase 1 habitat survey update

A Phase 1 habitat survey is a standardised method of recording and mapping characteristic vegetation and habitat types in accordance with JNCC guidelines[12].

The 2019 Phase 1 survey was conducted in February and outside of the recommended JNCC Phase 1 habitat survey season between March and October. Consequently, the Phase 1 habitat survey was updated in 2020 within the recommended survey design.

Where accessible, the 50m buffer surrounding the two proposed schemes were surveyed during daylight hours to ascertain whether there were any notable changes to the findings of the previous 2019 report. Species lists for the recorded habitats along with details on habitat structure, condition and extent were recorded. These were supplemented by thorough and descriptive target notes of key areas with notable floral assemblage.

The results of the 2020 Phase 1 habitat survey are shown on **Figure 2 (Airbles Road/Hamilton Road) and Figure 3 (Windmillhill).**

2.4 Great Crested Newt (GCN) Survey

2.4.1 Pond location

Online mapping tools including ArcGIS, detailed aerial imagery, and OS Maps were used to identify the locations of water bodies within 500m of the Windmillhill proposed scheme. These water bodies were assessed and only those which would be considered as “ponds” by Pond Conservation[13] (e.g. a non-flowing water body which holds water for greater than 4 months out of the year, and which is between 1m^2 and 2000m^2 in area) were included in the list for assessment (**Figure 4**).

[9] HEL (2020). Ravenscraig Active Travel Link: Preliminary Ecological Appraisal and Yellow Bird’s-nest Species Protection Plan. Prepared for NLC in November 2020.
[10] https://map.environment.gov.scot/sewebmap/
[11] https://scotland.nbnatlas.org/
[12] JNCC. (2010). *Handbook for Phase 1 habitat survey - a technique for environmental audit*. 3rd Edition
[13] Biggs, J. Williams, P., Whitfield, M., Nicolet, P., & Weatherby, A. (2005). 15 years of pond assessment in Britain: results and lessons learned from the work of Pond Conservation. *Aquatic Conservation: Marine and Freshwater Ecosystems* 15: 693-714.

2.4.2 Habitat Suitability Index Assessment

Identified ponds were assessed against the habitat suitability index (HSI scoring system using the Oldham *et al*. (2000)[14] guidance as amended by ARG-UK (2010)[15] and O'Brien *et al*. (2017)[16].

The GCN HSI is a ten-factor numeric index with each factor relating to an aspect of habitat which affects the relative likelihood of that habitat supporting GCN populations. The HSI scores each factor between 0.01 and 1 based on their suitability for supporting the species. The ten factors included within the GCN HSI and the method by which the appropriate data are collected are summarised in **Table 2.1** below and are derived from the ARG-UK Guidance[15].

Table 2.1. The ten suitability index (SI) factors for GCN habitat occupancy and the means by which the relevant data are collected.

SI Factor	Description
SI_1 Location	Geographic location scored from a map which was recently updated[16] and brought in line with currently understood GCN distribution in Scotland.
SI_2 Pond area	Pond surface area to nearest $50m^2$ to a maximum of $2000m^2$. Ponds larger than this are evaluated without this SI factor.
SI_3 Pond Drying	In-field estimate or confirmation from landowner of the number of years in 10 that a pond dries.
SI_4 Water Quality	In-field estimation based on invertebrate assemblage and vegetation assemblage.
SI_5 Shade	In-field estimation of the percentage of the perimeter of the pond shaded to at least 1m from the edge.
SI_6 Fowl	In-field estimation of the ponds' use by wildfowl.
SI_7 Fish	In-field estimation, or confirmation through surveys, of the presence of fish.
SI_8 Pond Count	Measured from a map, the number of ponds within 1km not separated by barriers to dispersal (e.g. roads or rivers).
SI_9 Terrestrial Habitat	In-field assessment of the quality and extent of habitat surrounding the pond for great crested newt (e.g. presence of rough grassland, mature woodlands).
SI_{10} Macrophyte Cover	In-field assessment of the percentage of a ponds surface covered by macrophytes.

In-field HSI assessments were undertaken in March 2020 and scores were calculated utilising the ARG-UK guidance[15] (**Table 2.2**).

Table 2.2. ARGUK HSI scoring categories

Score	ARGUK (2010) Category
<0.5	Poor
0.5-0.59	Below Average
0.6-0.69	Average

[14] Oldham, R.S., Keeble, J., Swan, M.J.S., & Jeffcote, M. (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal*, 10(4): 143-155.
[15] ARGUK. (2010). *ARGUK Advice Note 5: Great Crested Newt Habitat Suitability Index*. Amphibian and Reptile Groups of the United Kingdom.
[16] O'Brien, D. Hall, J., Miró, A., & Wilkinson, J. (2017). Testing the validity of a commonly-used habitat suitability index at the edge of a species' range: great crested newt *Triturus cristatus* in Scotland. *Amphibia-Reptilia* 38: 265-273.

Score	ARGUK (2010) Category
0.7-0.79	Good
>0.8	Excellent

Ponds were selected for presence/absence survey if they: achieved a score of 0.6 or greater.

2.4.3 Presence/Absence Survey

An environmental DNA (eDNA) sample of all ponds containing water (with an HSI score of 0.6 or above) was collected on 17 June 2020 in line with the instructions provided by the eDNA kit suppliers (RSK ADAS) and were undertaken by, or under the supervision of, a licensed GCN surveyor. The eDNA analysis was undertaken by RSK ADAS in accordance with standard testing procedures.

2.5 Reptile Survey

2.5.1 Habitat Assessment

The 2019 baseline ecological report highlighted that many habitats within the Windmillhill study area offer suitability for reptiles. Open grassland habitats with regenerating scrub and varied aspect offers reptiles opportunities at all stages of the lifecycle. These habitats are found throughout the Ravenscraig Ltd. site.

2.5.2 Presence/Absence Survey

A total of 75 artificial cover objects (ACOs) were placed in suitable habitat within 50m of the Windmillhill proposed scheme in the Ravenscraig Ltd site on 11 March 2020. These were then checked between 10 July 2020 and 8 September 2020 during appropriate weather conditions (temperatures between 9 and 20^{o}C, full sun or partial cloud, dry, and with minimal wind[17]). The locations of the ACOs are shown in **Figure 4**.

2.6 Badger Survey

Incidental signs of badgers or their signs within 50m of the Airbles Road/Hamilton Road proposed scheme were gathered as part of the Phase 1 habitat survey. No specific badger survey was undertaken because this proposed scheme is primarily an online improvement in an urban area.

Part of the Windmillhill proposed scheme is within a built-up urban area and railway line but the easternmost part of the Windmillhill proposed scheme encompasses the former Ravenscraig Ltd site (brownfield) and badger surveys were conducted within accessible areas up to 500m of the Windmillhill proposed scheme and within the Ravenscraig Ltd site between 10 July and 8 September 2020. During all surveys signs of badger, including setts (defined as “any structure or place which displays signs indicating current use by badger”), badger paths, latrines/dung and hair were identified following current best practice guidance[18].

[17] Froglife. (1999). *Froglife Advice Sheet 10: Reptile Survey.* Froglife, Peterborough, 12pp.
[18] Harris, S., Cresswell, P. and Jefferies, D. (1989). *Surveying Badgers*. Mammal Society.

Table: 2.3 Badger Sett Types

Sett Type	Description
Main	Several holes with large spoil heaps and obvious paths emanating from and between sett entrances.
Annexe	Normally less than 150m from main sett, comprising several holes. May not be in use all the time, even if main sett is very active.
Subsidiary	Usually at least 50m from main sett with no obvious paths connecting to other setts. May only be used intermittently.
Outlier	Little spoil outside holes. No obvious paths connecting to other setts and only used sporadically. May be used by foxes and rabbits.
Sett Classification	**During a survey, each sett entrance is classified according to its usage**
Active	Clear of debris and vegetation, sides are worn smooth but not necessarily excavated recently
Partially Active	Not in regular use and have debris e.g. twigs and leaves in teh entrance. They could be used after only a minmal amount of clearance
Disused/inactive	Not in use for some time, are partially blocked and could not be used without considerable effort by the badger to re-excavate

2.7 Little Ringed Plover Survey

A reference to the potential presence of little ringed plover (*Charadrius dubius*) in the Heritage Environmental Ltd reports[7,8] indicated that the former Ravenscraig Ltd. site may have historically had suitability for this species. Wildlife Consulting Ltd undertook a survey on 24 June 2020, to record the presence of any suitable habitat for supporting little ringed plover and to record the bird themselves using the Brown and Shepherd method[19]. A predetermined route was walked so all points could be reached within 100m with 20-25 minutes spent surveying at each point (see **Appendix H**).

2.8 Bat Survey

A ground and aerial inspection was carried out on trees and structures between 29 July and 10 August 2020 by Echoes Ecology Ltd within 50m of both Airbles Road and Windmillhill proposed schemes (where accessible). Trees and structures which would be affected or removed to facilitate the new carriageway were assessed for their bat roosting or hibernating potential as per the current BCT guidelines[20]. Areas and broad habitats which presented opportunities to support roosting, foraging, and commuting bats were also noted.

[19] A. F. Brown & Shepherd (1993) A method for censusing upland breeding waders, Bird Study 40:3, 189-195, DOI.
[20] Collins, J. (2016). Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust, London.

Table 2.3. Bat roost suitability categories for trees and structures (from BCT best practice guidance).

Suitability	Description
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity of hibernation). A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.

2.8.1 Trees and Structures

Trees were surveyed by a mix of ladder-based endoscopy and at-height assessment using Polekams^{R} or tree-climbing undertaken by Echoes Ecology Ltd. between July and August 2020 on both Airbles Road/Hamilton proposed scheme and Windmillhill proposed scheme area. The methods and details of these surveys can be found in **Appendices E and F**.

Structures within the site and 50m (where accessible) were assessed for their bat roost and hibernation site potential and assigned a category as per the current BCT guidelines (**Table 2.3**)**Error! Bookmark not defined.**. Areas and broad habitats which support roosting, foraging, and commuting bats were also noted.

2.8.1.1 Presence/Absence Surveys

Following the assessment of each structure and tree, and their assignment of a bat roosting potential (BRP) category, these were subject to roost presence/absence surveys.

A total of 31 trees were assessed within both Airbles Road/Hamilton Road proposed scheme and Windmillhill proposed scheme area. One dawn re-entry survey was completed on these trees on 22 September at Windmillhill proposed scheme and 23 September at Airbles Road/Hamilton Road proposed scheme area.

A survey of two disused railway tunnels located under the WCML, one situated within the Windmillhill Site on the former Ravenscraig Ltd land and one within 50m to the north of this on Liberty Steelworks land, was undertaken on 18 August 2020. The tunnels were identified as having bat hibernation roost potential and they were surveyed by licenced bat surveyor Claire Hopkins on 16 December 2020 and 13

January 2021 using high-powered torch, binoculars and endoscope for bats or signs of bats. A single AnaBat Swift static detector was deployed into each tunnel on 16 December and set to record bat activity during the winter period. The detectors were collected on 13 January after 1 month of recording.

2.9 Survey Limitations

Presence/absence surveys for great crested newt were delayed during 2020 as a result of the Coronavirus pandemic. The original plan had been to undertake a suite of traditional method samples using torchlight, netting, and egg-searching to determine presence or likely absence. However, Covid-19 delays to site access rendered this unsuitable. As a consequence, eDNA samples were used.

We acknowledge the inherent risks associated with eDNA sampling raised by recent studies on its efficacy, particularly in Scotland[21] and that numerous factors[22,23] can result in its failure as a presence/absence technique. However, in respect of the seasonal constraints of GCN survey being functionally missed due to the Covid-19 pandemic, and the presence of a negative survey result in the background data search for the site, this is not considered a significant limitation to the survey effort.

Due to the time of year in which presence/absence surveys for bats at Airbles Road/Hamilton Road proposed scheme and Windmillhill proposed site were completed, potential roost features could have been missed due to trees being in full leaf. It has been noted however, that it is unlikely any trees with moderate to high potential have been missed.

Due to the proximity of some trees to a nearby trainline at the Windmillhill proposed site, a small number of trees could not be fully inspected. However, these trees were noted to be very small and unlikely to contain any roost features.

At Airbles Road/Hamilton Road proposed scheme, due to the time of year in which work was appointed to Echoes Ecology Ltd. it was only possible to carry out one activity survey in the bat activity survey period of April to September inclusive. Therefore, presence of a roost in trees 787, 794 and 795 at Airbles Road/Hamilton Road proposed scheme and trees 907 and 909 at Windmillhill proposed scheme cannot be ruled out until further surveys are completed in accordance with survey guidance. It is best practice to complete bat surveys within a single calendar year, and for licensing purposes the surveys must be completed as close as possible in time to clearance works. Recommendations for further surveys can be found in the Echoes Ecology reports in **Appendices E and F**.

Hibernation bat surveys undertaken at the railway tunnels during winter 2020-21 were completed for two weeks per month for December and January. Guidance[18] recommends inclusion of February but this was not possible due to the timing of reporting. One of the detectors (southern tunnel) only recorded for 3 nights during the monitoring period therefore the presence of bat activity in the tunnel outside that period cannot be known. The other detector (northern tunnel) functioned for the entire survey period. There were features within both tunnels which, due to their accessibility/height above ground/depth of cavities could not be fully surveyed and instead surveyors checked for potential signs of access such as disturbed spiders'

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[21] Minting, P. & Loth, A. 2017. *Great Crested Newt Detectives Survey results 2016 and 2017*. Amphibian and Reptile Conservation (ARC), Bournemouth. 19pp.
[22] Buxton, A.S., Groombridge, J.J., & Griffiths, R.A. (2018). Seasonal variation in environmental DNA detection in sediment and water samples. *PLoS ONE,* 13(1):e0191737
[23] Buxton, A.S., Groombridge, J.J., Zakaria, N., & Griffiths, R.A. (2017). Seasonal variation in environmental DNA in relation to population size and environmental factors, *Scientific Reports*, 7:46294.

webs or indicators of unsuitability such as running water or debris. The implications for the proposed Windmillhill scheme are discussed below.

Construction work relating to the consented planning application for the Ravenscraig Masterplan commenced in Autumn 2020. During the recent surveys it was noted that there was a construction site with a temporary access track and hardstanding. Topsoil and vegetation have also been excavated from the site including the addition of early stage drainage therefore habitats and wildlife which previously existed in this area have been destroyed. This report however notes the habitats and species as they were recorded at the time of Phase 1 habitat survey in 2020 prior to construction activities commencing.

3 Results

3.1 Background Data Search

Records for protected and notable species have been gathered from surveys completed for the entire Ravenscraig Masterplan site by Heritage Environment Ltd (HEL)[7] in 2018 and also the Baseline Ecological Constraints Report by Sweco in 2019[7] and the Arup survey of the WCML adjacent to Ravenscraig in 2020[1] (see **Table 3.1** below).

A recent survey of the Ravenscraig Active Travel Link (RATL) by HEL in 2020[9] indicates that evidence of badger has been recorded in the wider site including to the east of the Windmillhill Proposed Scheme at Ravenscraig Railway Sidings SINC (further information provided in 3.3.4).

Table 3.1. Background Data Search Results.

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
Statutory Designated Sites	Scotland's Environment Web Map[10]	There are no statutory designated sites within the vicinity of the proposed scheme and no international sites (such as Special Protection Areas, Special Areas of Conservation or Ramsar sites) within 2km of the proposed scheme. Hamilton Low Parks Site of Special Scientific Interest (SSSI) is located 224m west of the proposed scheme (see **Figure 1**). This SSSI comprises an area of ash-elm gorge woodland (with an unfavourable, no change condition in 2009)[24] and two separate areas of parkland oaks. The area has a rich beetle assemblage, particularly dead-wood species (with a favourable maintained condition) dwelling within what is considered to be an ancient woodland	The desk study revealed no statutory sites within 2km of Windmillhill proposed scheme.

[24] https://sitelink.nature.scot/site/760

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
		mixed with wood pasture and parkland (with a favourable maintained condition in 2015)**Error! Bookmark not defined.**.	
Non-statutory designated sites		The desk study revealed three Sites of Importance to Nature Conservation (SINCs) within a 2km radius of the Airbles/Hamilton Road proposed scheme (see **Figure 1**). Barons Haugh RSPB reserve and Muirhouse Marsh (117.7ha) is a wetland and loch adjacent to the River Clyde which is important for seasonal migrants and wading birds. The reserve is 1.2km south-west of the proposed scheme. The habitats found within the RSPB reserve are primarily open water (water levels are managed to benefit biodiversity), wet and cattle-grazed grassland and muddy edges. The area associated with Strathclyde Country Park including Strathclyde Loch is a SINC designated for its open water and emergent vegetation habitats and species. This habitat is situated approximately 500m to the west of the proposed scheme. The woodland corridor associated with the South Calder Water: Forgewood Viaduct – Calder Park is designated as a SINC for its geological interest (man-made deposits) and nature conservation value and includes woodlands listed on the AWI (e.g. Bothwell Haugh Plantation – see below). These habitats are more than 1km north of the proposed scheme.	The desk study revealed four SINCs within a 2km radius of the Windmillhill proposed scheme (see **Figure 1**). The woodland corridor associated with the South Calder Water: Forgewood Viaduct – Calder Park, Todhole Burn & Ravenscraig Railway is situated approximately 500m north of the proposed scheme and is indirectly linked via regenerating woodlands on the outskirts of the former Ravenscraig Steelworks. The SINC is also designated for its geological interest (man-made deposits and geomorphology). Approximately 750m to the east of the proposed scheme are SINC-designated woodland, grassland and running water habitats including woodlands listed on the AWI (Garden Wood and Wishawhill Wood – see below) associated with Carfin, Dalzel Park, Ravenscraig Gorge and Templehall Plantation. These are not connected to the proposed scheme and are partly designated for their geological interest (coal measures). The Ravenscraig Railway Sidings (West and East) SINCs (4.9ha in total) are located approximately 500m east of the proposed scheme and whilst primarily designated for

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
		There is little or no overlap between the habitats found within these SINCs and those found on the Airbles/Hamilton Road Proposed Scheme which are urban/amenity in character.	their geological interest they support mature secondary broad-leaved semi-natural woodland (see HEL 2020 report). There is some linkage between the SINC and the proposed scheme via newly planted woodlands alongside Robberhall Road although the road network does provide a barrier. The Baron's Haugh RSPB reserve is 1.3km to the south of the proposed scheme. There is limited overlap with the habitats found on the Windmillhill Proposed Scheme which has small ponds/pools of standing water and unmanaged grassland habitats but has low value to foraging wading or migratory bird species.
Ancient and Native woodland	Scotland's Environment Web Map[10]	Several woodlands within 2km of the Airbles Road/Hamilton Road proposed scheme are listed on the Ancient Woodland Inventory (AWI); these are shown in **Figure 1**. None of these woodlands are within Airbles Road/Hamilton Road proposed scheme boundary and the closest is 500m west of the proposed scheme. NS73515636 - Other on Roy Map - 500m west, 2.27Ha NS73085776 - Long-established of plantation origin - 1.5km north-west, 9.45Ha	Several woodlands within 2km of the Windmillhill proposed scheme are listed on the Ancient Woodland Inventory (AWI); these are shown in **Figure 1**. No AWI sites are within the Windmillhill proposed scheme however there are two within the 2km boundary of the Site. There are also two Native Woodland Survey of Scotland (NWSS) woodlands within the 2km search radius, the closest of which is 200m north of the proposed scheme.

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
		NS74705585 - Ancient of semi-natural origin - 964m south-east NS74485563 - Ancient of semi-natural origin - 941m south-east Bothwellhaugh Plantation - Long-established of plantation origin - 1.9km north-west, 24.25Ha	NS76165643 (NWSS) - Broadleaved woodland - 200m north, 4.8Ha NS76195694 (NWSS) - Young trees - 280m north, 3.46Ha - 860m south, 42.03Ha Adders Gill Wood (AWI) - Broadleaved woodland - 860m south, 42.03Ha Garden and Wishawhill Wood (AWI) - Broadleaved woodland - 1.1km east, 176Ha
Habitats	HEL (2018 survey)	No notable species of native flora were recorded.	No notable species of native flora were recorded.
	Sweco (2019 survey)	No notable species of native flora were recorded.	No notable species of native flora were recorded.
Protected Species	HEL (2018 survey)	Badger: No signs of badger were documented.	Badger: Badger setts were recorded north of South Calder Water however; all are outside of the development area of Windmillhill proposed scheme area.
		Bats: 17 buildings were identified as providing potential for roosting bats.	Bats: 19 trees were identified to be within the development area of Windmillhill proposed scheme area.
		Breeding birds: No Schedule 1 birds were identified however, habitat suitability for breeding birds is present within wooded areas within 50m of the Airbles/Hamilton Road proposed scheme area.	Breeding birds: No Schedule 1 birds were identified however, habitat suitability for breeding birds is present throughout the Windmillhill proposed scheme area.
		Water Vole: No evidence of water vole.	Water Vole: Water vole was concluded to be not present on site after surveys completed in

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
			2017 and there are no records within South Calder water from past studies including Ravenscraig First Release Programme Ecological Baseline Study and Impact Assessment (Halcrow Crouch in association with North Ecological Service and Gillespies, December 1999). During a systematic search of this species none were documented other than their habitat suitability.
		Otter: No evidence of otter.	Otter: No evidence of otter. However, riparian woodland associated with the South Calder water to the north provides abundant opportunities.
	HEL (2018 survey) & Sweco (2019 survey)	Great Crested Newts: No evidence of GCN.	Great Crested Newts: According to HEL desk-based study, GCN were, under license, translocated from a pond within the footprint of New Lanarkshire College to the future community Nature Park and Ravenscraig in 2000. Since then a number of surveys were completed at Ravenscraig where there have been no positive results.
	Sweco (2019 survey)	Badger: No evidence of badger.	Badger: Two holes were noted on the north side of the railway embankment to the north of the site which were of a size and shape consistent with badger. These were checked by Sweco surveyors in 2020 and were concluded to be made by another mammal.

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
		Bats: The majority of structures assessed during the survey provide negligible potential to support roosting bats.	Bats: Several notable trees were noted to contain features of interest to roosting bats. Habitats within Windmillhill proposed scheme area provide suitable foraging opportunities
		Breeding birds: A number of birds were noted in the 2019 and 2020 walkover including: magpie (*Pica pica*); wood pigeon (*Columba palumbus*); jackdaw (*Corvua monedula*); herring gull (*Larus argentatus*); blackbird (*Turdus merula*); feral pigeon (*Columba livia*).	Breeding birds: A number of birds were noted in the 2019 and 2020 walkover including: magpie (*Pica pica*); wood pigeon (*Columba palumbus*); jackdaw (*Corvua monedula*); blue tit (*Cyanistes caeruleus*); carrion crow (*Corvus corone*); robin (*Erithacus rubecula*); starling (*Sturnus vulgaris*); herring gull (*Larus argentatus*); blackbird (*Turdus merula*); feral pigeon (*Columba livia*); song thrush (*Turdus philomelos*); black-headed gull (*Chroicocephalus ridibundus*); longtailed tit (*Aegithalos caudatus*); chaffinch (*Fringilla coelebs*); snipe (*Gallinago gallinago*); great tit (*Parus major*); woodcock (*Scolopax rusticola*); goldfinch (*Carduelis carduelis*); greenfinch (*Carduelis chloris*); siskin (*Spinus spinus*); water rail (*Rallus aquaticus*); mallard duck (*Anas platyrhynchos*); mute swan (*Cygnus olor*); and buzzard (*Buteo buteo*). Habitats within Windmillhill proposed scheme area provides ample foraging and nesting opportunities.
		Water Vole: No evidence of water vole.	Water Vole: No evidence of water vole.
		Otter: No evidence of otter.	Otter: No evidence of otter.

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
		Other: N/A	Other: During the 2019 survey an ad hoc conversation with the Estates Manager for Ravenscraig Ltd., it was mentioned that there had previously been American Mink (*Neovision vision*) and pine marten (Martes martes) noted on the site, including a record of a pine marten killed on the nearby road. The veracity of this record has not been confirmed.
	Arup (2021)	N/A	Badger: two potential badger setts were recorded on the eastern side of the railway line. No other signs of badger activity such as latrines, footprints, hairs or mammal trails were identified within the lineside study area. Bats: Two railway underpasses and three trees with bat roost potential were recorded within 30m of the lineside study area. These features are covered as part of the Sweco surveys.. Breeding birds: habitats suitable for supporting nesting birds were recorded within the lineside study area.
Invasive Species	HEL (2018 survey)	No evidence of invasive species found	Several invasive species were noted within Windmillhill proposed scheme area – these include sea buckthorn (*Hippohae rhamnoides*); snowberry (*symphoricarpos albus*); rhododendron (*Rhododendron ponticum*); giant hogweed (*Heracluem*

Background Data Search	Source	Airbles/Hamilton Road Proposed Scheme	Windmillhill Proposed Scheme
			mantegazzianum); and Japanese knotweed (*Fallopia japonica*).
	Sweco (2019 survey)	Several stands of Rhododendron (*Rhododendron ponticum*) were noted during the 2019 survey including within the patch of semi-natural broad-leaved woodland at the western end of Airbles Road/Hamilton Road proposed scheme area.	Several plants of butterfly bush (*Buddleja davidii*) were noted throughout.

3.2 Field Survey Results - Airbles Road/Hamilton Road Proposed Scheme

3.2.1 Phase 1 Habitat Survey

Target notes can be found in **Appendix C.1.** Airbles Road/Hamilton Road proposed scheme is located within a heavily urbanised area of Motherwell with buildings, some parks and amenity grasslands. To the west there is Strathclyde Loch, Hamilton Low Parks (also a SSSI) and the River Clyde flows east-west approximately 400m south and parallel to Airbles Road. Within this section of the scheme there were a total of 8 habitat types; broadleaved woodland – semi-natural, mixed woodland – semi-natural, broadleaved woodland parkland/scattered trees, coniferous parkland/scattered trees, standing water, cultivated/disturbed land – amenity grassland, buildings and bare ground. A full species list can be found in **Appendix D**.

3.2.1.1 Broad-leaved woodland – semi natural (A1.1.1)

A few stands of semi-natural broadleaved woodland comprising of willow (*Salix* spp.), beech (*Fagus sylvatica*), and birch (*Betula* spp).

3.2.1.2 Mixed woodland – semi-natural (A1.3.1)

Mixed woodland is present on Site comprising a mix of birch, sitka spruce (*Picea sitchensis*), and scots pine (*Pinus sylvestris*).

3.2.1.3 Broadleaved woodland parkland/scattered trees (A.3.1)

A few small areas of amenity grassland surrounding factories are planted with scattered mixed trees, mostly comprising birch and scots pine.

3.2.1.4 Coniferous parkland/scattered trees (A3.2)

A small area towards the southern end of Airbles road is planted with scattered Sitka spruce and Scots pine trees.

3.2.1.5 Standing water (G1)

There are several areas of standing water present on Site, most too small for mapping. However, some sizeable areas are present within man-made drainage basins (SuDs).

3.2.1.6 Cultivated/disturbed land – amenity grassland (J1.2)

All of the open grassland within Motherwell, by the edges of Airbles Road are well-maintained, species poor amenity grassland.

3.2.1.1 Miscellaneous (J3 and J4)

Caravan site (J3.4), buildings (J3.6), spoil and bare ground (J4) are found throughout the Airbles Road/Hamilton Road proposed scheme.

3.2.2 Badger Survey

Two active badger setts with latrines containing fresh dung were identified within the study area - see **Figure 2b** which shows sett locations and **Appendix C.1** for full Target Notes and photographs. The setts were located on very slight mounds with the spoil located at the sett entrances including waste material and broken glass. The surrounding lower land was noted as being waterlogged with occasional pools of stagnant water and not considered suitable for the creation of setts and therefore it has been concluded that the badgers present within these setts are highly constrained by the lack of suitable habitat and the surrounding built up environment. It was concluded that the setts are abnormal in their location and size and despite surveyor experience it was not possible to confidently identify the type of sett based on current guidance.

3.2.3 Bat Survey

There are no buildings within the footprint of the Airbles Road/Hamilton Road proposed scheme therefore no building surveys have been undertaken. A Preliminary Roost Assessment (PRA) and Potential Roost Feature (PRF) inspection of trees was carried out by Echoes Ecology Ltd (See **Appendix E** for full report). 19 trees were identified with bat roost potential (BRP), of which 13 had low potential for roosting, 5 trees had moderate potential and 1 had high potential. The PRF inspection results discovered no bats, nor any evidence of bats however 3 trees could not be fully inspected and will require further surveys (Tree Tag 787, 794 and 795) (see Section 4 Mitigation and Requirements and Limitations). The single dawn survey completed by Echoes Ecology Ltd recorded low bat activity levels with no observations of bats roosting. See **Appendix E** for detailed results and figures.

3.3 Field Survey Results - Windmillhill Proposed Scheme

3.3.1 Phase 1 Habitat Survey

Target notes can be found in **Appendix C.2**

Windmillhill proposed scheme encompasses an industrial estate between the eastern end of Airbles Road and the WCML and centred around Orbiston Street/Rose Street/Meadow Road where large warehouses, showrooms and workshops dominate the landscape. The former Ravenscraig Steelworks site on the eastern side of the WCML has historically been the site of heavy industry and clean-up operations continued for a number of years post-closure in the late '60s. Since completion a mosaic of grassland and woodland habitats have been able to grow up. The Windmillhill proposed scheme also includes part of the Liberty Steelworks industrial landscape which now has regenerating woodland on the southern boundary.

There are eight broad habitat types within Windmillhill proposed scheme area: broadleaved woodland – semi-natural, broadleaved woodland – plantation; scrub – scattered, neutral grassland – unimproved, marsh/marshy grassland, standing water, cultivated/disturbed land – amenity grassland, buildings and bare ground.

3.3.1.1 Broadleaved woodland – Semi-natural (A1.1.1)

Throughout Windmillhill proposed scheme area there are small stands of naturally regenerating and pioneer broadleaved woodland and along the access track in the centre of the scheme (TN 15) this habitat is dominated by birch and alder. These stands are varying in height but not more than 5m in most areas reflecting their young age. A larger area of broadleaved woodland can be found near and within the boundary of the steelworks to the north (TN 5 & 6).

3.3.1.2 Broadleaved woodland – Plantation (A1.1.2)

Areas of plantation broadleaved woodland are common within the Site. Plantation woodland is present along the WCML embankment on both sides of the railway line and creating a boundary between the brownfield site and the Liberty Steelworks to the north (TN2). Plantation woodland can also be noted throughout the brownfield site surrounding SuDs ponds (TN6).

3.3.1.3 Scrub – Scattered (A2.2)

Small patches of scrub are found throughout the Site, of which much of it is too small to map. Scattered around a dry SuDs basin, naturally regenerating gorse scrub and birch, willow and alder seedlings is evident (TN 10).

3.3.1.4 Neutral Grassland – Unimproved (B2.1)

The majority of Windmillhill proposed scheme area to the east of the WCML is dominated by unimproved grassland (TN10). These areas are marked with man-made embankments, drainage channels, SuDS basins and occasional piles of rubble, spoil and electricity poles which are a reminder of the site's industrial past. The site is

frequented by dog walkers and other recreational users and parts are being succeeded by small stands of scrub/young trees (birch, willow).

3.3.1.5 Marsh/Marshy Grassland (B5)

There is an area of wet ground and marshy grassland within the former steelworks site which has *Juncus* sp„rush and reedmace (*Typha* sp.) present with willow encroaching on the wet areas. The marshy grassland habitat is situated in comparatively low-lying land between the WCML and the SuDs ponds (TN 9 & 10).

3.3.1.6 Standing Water (G1)

There are several areas of standing water present on Site, most too small for mapping. However, there are some sizeable man-made and lined SuDs ponds (TN 9 & 10) which are of value to amphibians (see section 3.3.4).

3.3.1.7 Cultivated /Disturbed Land – Amenity Grassland (J1.2)

All open grassland, located at the eastern end of the scheme, are of well maintained, species poor amenity grassland. The only area within the 50m buffer surveyed where this habitat is found is surrounding the roundabout between New Craig Road and O`Donnell Way.

3.3.1.8 Miscellaneous (J4)

Bare ground and road associated with the roundabout between New Craig Road and O'Donnell Way is present within the 50m survey buffer.

3.3.2 Great Crested Newt Survey

3.3.2.1 Pond location

Searches on online mapping platforms and of the existing 2019 Phase 1 habitat data in addition to walkovers of the Site revealed a total of 18 different ponds within the 500m study area.

3.3.2.2 Habitat Suitability Index Assessment

Access could be gained to all 18 of the identified ponds in the study area for the purposes of HSI calculation. Of these ponds, all 18 were found to contain water and thus be suitable for HSI survey during the survey. Detailed pond descriptions and HSI scores can be found within **Appendix B.**

Table 3.5. Habitat Suitability Index score categories at ponds along the Scheme.

Score Category	Number of Ponds
Poor	1
Below Average	1
Average	4
Good	10
Excellent	2

3.3.2.3 Presence/Absence survey

Of the 16 ponds which were identified as providing average or above habitat suitability for GCN, only six contained water at the time of the eDNA survey visit (17 June 2020) and these were sampled for eDNA surveys (see **Figure 4** for pond locations).

The results of the GCN eDNA survey showed that no ponds were positive for GCN DNA presence, four (ponds 1, 4, 13, and 17) were negative for GCN DNA presence, and two (ponds 14 and 6) were inconclusive for GCN DNA presence.

The ponds which tested as inconclusive for GCN DNA were received by RSK ADAS with a white residue which is believed to have inhibited the qPCR process (i.e.

reduced its efficacy making it impossible to obtain a statistically conclusive result). After discussion with ADAS eDNA specialists it was concluded that the presence of chemicals within the water may have reacted with the solvents which maintain the DNA during transit (Sodium Acetate) and resulted in the formation of the precipitate. The receipt of predominantly negative results suggests that great crested newt may not be present within the Site. In addition, the close proximity of each pond to other sampled ponds would suggest that any of those which returned indeterminate results were positive, that GCN would likely be present also in those ponds where GCN presence was not detected. Whilst the presence of great crested newt cannot be discounted entirely, no positive records for GCN have been returned therefore it is assumed for the purpose of this report that this species is not currently present.

3.3.3 Reptile Survey

No reptiles were observed under any of the reptile mats during the 6 surveys in Summer-Autumn 2020 nor were any witnessed by chance within the study area during other surveys. The habitat within the study area is very good for reptiles as it is structurally variable. This Site contains a mixture of vegetation structures which vary in height and densities with many – sometimes rocky – bare patches and south facing slopes with little tree coverage, soft soils and ample hiding opportunities. The Site has been surrounded by housing developments, the nearby steelworks and roads which have created a barrier, hampering their movements in and out of the area. The relatively nascent semi-natural habitats are only just starting to become suitable for reptiles and it is considered that the Site has been isolated for too long to have been colonised by reptiles. Reptile species are therefore assumed to be absent.

3.3.4 Badger Survey

No evidence for badgers within the 500m buffer of the proposed scheme area was recorded. Habitats within the study area are suitable for badgers however the former Ravenscraig site has only recently become suitable for colonisation by badger (since the demolition of the former steelworks and with the encroachment of scrub and regenerating woodland habitats) and is surrounded by a largely urbanised area which restricts the potential access routes to the WCML embankments and road corridors. Active badger setts have been recorded within the Ravenscraig Railway Sidings SINC which is a short distance to the east of the edge of the study area (HEL, 2020[8]) and although Robberhall Road presents a partial barrier to movement of badgers into the study area from the east there are woodland habitats alongside Robberhall Road and hedgerows alongside Enterprise Way which could feasibly offer cover for dispersing badgers to move into the area. Two potential badger setts were recorded within the WCML lineside area by Arup ecologists in December 2020[1] although no additional evidence of badger activity was identified and the presence or level of use of these burrows has not been confirmed. The habitat is variable enough with woodland, grassland and undulating terrain which could be appropriate for badgers to dig into for food or to create burrows/setts. The ground itself however is variable in its consistency – hard soils, marshy and with few softer soils suitable for burrowing which may reduce the likelihood of badgers using the site. This species may occasionally use the site (particularly the WCML embankments) therefore it is considered further below.

3.3.5 Breeding and nesting birds

Little ringed plover breed in open gravel habitats near freshwater and nest on the ground on stones where there is very little or no vegetation. The habitat on this site was determined to be not suitable for the wading bird. This site comprises of rocky ground which has recently become vegetated with tall ruderals and dense scrub. Areas which were open water in the past have now become choked with vegetation, making it hard to access for the bird. Little ringed plovers forage in areas where there is shallow mud surrounding waterbodies however, this site has very few locations which would be deemed a good foraging zone for wading birds. A wet area adjacent to the railway embankment which has formed from flooded grassland offers no gravel or

mud foraging habitat. It has therefore been determined that this species is not present on this site. In addition the HEL 2020 report[8] also concluded that former derelict land is no longer suitable for this species due to the encroachment of trees.

Birds recorded incidentally during surveys completed by Sweco and Wildlife Consulting include; Jackdaw, goldfinch (of which flocks of over 20 were documented), stone chat, robin, common gull, blue tit, great tit, coat tit, wood pigeon, siskin, song thrush, black bird and carrion crow.

3.3.6 Bat Survey

A Preliminary Roost Assessment (PRA) and Potential Roost Feature (PRF) Inspection was carried out by Echoes Ecology Ltd. 12 trees were identified with BRP, of which 7 trees had low potential for roosting bats, 4 trees had moderate and 1 tree had high potential. The PRF Inspection results discovered no bats, nor any evidence of bats however 2 trees could not be full inspected and will require further surveys (tree tag 907 and 909) (see Mitigation and Requirements). The single dawn survey completed by Echoes Ecology Ltd recorded low bat activity levels with no observations of bats roosting. See **Appendix F** for detailed results and figures.

A Preliminary Roost Assessment (PRA) of buildings directly affected by the Scheme and located within or partially within the footprint was completed by Sweco in 2020 following standard BCT guidelines as outlined in Section 2.8. Seven commercial and/or industrial buildings were surveyed (see **Figure 5**) with four identified as providing negligible Bat Roost Potential (BRP) and three as providing low potential with results and descriptions shown in **Appendix G**. No bats or evidence of bats was recorded at any of the surveyed buildings.

Winter hibernation roost surveys of two railway tunnels situated beneath the WCML on the northern edge of the Windmillhill Site were undertaken on 16 December 2020 and 13 January 2021. No hibernating bats or signs of bats were recorded on either visit despite a search of girders, barrel arch, wing walls and accessible cavities and crevices. As stated in the limitations section not all features were possible to be fully surveyed therefore hibernating bats may have been missed. Single AnaBat Swift detectors were deployed in each tunnel and the southern tunnel (closest to the proposed Scheme) functioned for 3 nights during that period. A single species – common pipistrelle *Pipistrellus pipistrellus* – was recorded on five occasions during the 3-night period - consistent with a single individual visiting during afternoon of 16 December and on four occasions on morning of 18 December (see **Table 3.6**). The detector inside the northernmost tunnel functioned for the entire month. The pattern of echolocation calls was consistent with a single individual visiting on 9 occasions intermittently during the month of recording. On each occasion calls were condensed into a short block of up to 15 minutes of activity, with no overlapping calls which might indicate more than one individual. All calls were recorded during hours of darkness. The presence of bats echolocating within the tunnels within this time does not provide conclusive evidence of hibernation behaviour - only direct observation of hibernating bats can provide this evidence – but it does indicate that the tunnels are used intermittently for foraging by individuals/small numbers of common pipistrelles during periods of activity during the hibernation period. No evidence of other species using the tunnels has been found.

Table 3.6. Static bat detector survey results – WCML railway tunnels, winter 2020-21.

SOUTHERN TUNNEL			
Date	**Time**	**Species**	**Number of echolocation passes**
16/12/2020	16:40	Common pip	4

16/12/2020	16:41	Common pip	7
16/12/2020	16:45	Common pip	2
16/12/2020	16:46	Common pip	5
18/12/2020	00:11	Common pip	5
18/12/2020	00:12	Common pip	2
18/12/2020	01:55	Common pip	3
18/12/2020	03:20	Common pip	2
18/12/2020	03:21	Common pip	4
18/12/2020	03:22	Common pip	2
18/12/2020	06:42	Common pip	5

NORTHERN TUNNEL			
Date	**Time**	**Species**	**Number of echo location passes**
16/12/2020	16:39	Common pip	2
16/12/2020	16:45	Common pip	1
18/12/2020	01:54	Common pip	1
18/12/2020	18:53	Common pip	1
18/12/2020	18:54	Common pip	3
19/12/2020	21:00	Common pip	3
19/12/2020	21:12	Common pip	3
27/12/2020	01:28	Common pip	4
27/12/2020	01:29	Common pip	4
27/12/2020	01:30	Common pip	1
01/01/2021	17:04	Common pip	3
01/01/2021	17:32	Common pip	4
01/01/2021	17:33	Common pip	6
01/01/2021	17:34	Common pip	3
04/01/2021	23:37	Common pip	1
10/01/2021	17:41	Common pip	1
11/01/2021	18:44	Common pip	7

4 Assessment, Mitigations and Requirements

4.1 Airbles Road/Hamilton Road Proposed Scheme

4.1.1 Designated sites

The proposed scheme would not be expected to result in any land take from the statutory or non-statutory designated sites as listed in Section 3 or to result in more disturbance compared with routine road maintenance work.

The proposed scheme does not overlap with any woodlands listed on the AWI or NWSS.

4.1.2 Habitats

Within Airbles Road/Hamilton Road proposed scheme area no protected species of flora were recorded and there are no habitats with high biodiversity value or rarity based on surveys completed by Sweco in 2020, 2019 and by HEL in 2018 with most of the area surveyed dominated by an urban setting. However, towards the west of the scheme area there are patches of broadleaved woodland and amenity grassland which have the potential to support breeding birds, flowering plants and a variety of invertebrates (**Figure 2a**). These habitats are found within the 50m buffer of the proposed scheme boundary and therefore have potential to be negatively impacted or lost due the works. It is **recommended** that where possible, these habitats are retained so to reduce the overall environmental impact and if this is not possible it should be suitably replaced like-for-like.

None of the habitats identified within the Airbles Road/Hamilton Road proposed scheme are listed in the North Lanarkshire Local Biodiversity Action Plan (NLBAP – see **Appendix I**) as priority habitats however the scheme is immediately adjacent to Strathclyde Country Park (a park created from land reclamation for wintering waterfowl and visitor recreation)[25]. The proposed works are outside the park boundary and will not require any land-take or vegetation clearance. The proposed scheme would not be expected to result in more disturbance compared with routine road maintenance work.

4.1.3 Badgers

Two active badger setts (eight holes and two holes respectively) were identified within the study area but these setts are over 50m from the proposed scheme and would not be subjected to any more disturbance compared with routine road maintenance and operation work.

Badgers and their setts are offered protection under the Protection of Badgers Act 1992. Consequently, a pre-works survey for badgers must be undertaken by a suitably qualified ecologist within 50m of the Airbles Road/Hamilton Road proposed scheme prior to any works in order to identify the presence and current status of any setts within this distance. If any setts are found, then a licence may need to be sought from NatureScot to facilitate works and a badger protection plan established.

During works, it is **recommended** that all excavations be covered and/or suitably fenced to prevent mammals from becoming entrapped. A means of escape must be provided, and this constitutes a slope of a gradient no greater than 45 degrees (either a graded edge or wide plank).

[25] https://mars.northlanarkshire.gov.uk/egenda/images/att36511.pdf

4.1.4 Bats

All bat species and their roosts are protected under the Habitats Regulations 1994 (as amended) as European Protected Species. All nine species of bats present in Scotland are also listed on the Scottish Biodiversity List (SBL – see **Appendix I**).

Echoes Ecology Ltd reported 19 trees with bat roost suitability which will be lost or negatively impacted (pruned or disturbed due to increased noise levels or artificial lighting) as a result of the proposed work. It is **recommended** that trees are retained where it is possible to do so. Where tree removal is unavoidable it is recommended that trees are replaced with the equivalent number of heavy standards within the reinstated amenity areas for the conservation of the local biodiversity. Planted trees should be locally sourced native trees.

Although no confirmed bat roosts were found during tree inspection surveys or activity surveys, further surveys are needed to be confident in a negative result. Three trees (Tree Tag 787, 794 and 795) could not be fully assessed during the initial inspection/activity survey – one tree had high roost potential and two had moderate potential. One activity survey was completed on each of these trees on 23 September 2020. In order to comply with survey standards trees with bat roost potential must be surveyed in accordance with survey guidance. It is best practice to complete bat surveys within a single calendar year, and for licensing purposes the surveys must be completed as close as possible in time to clearance works. Recommendations for further surveys can be found in the Echoes Ecology report in **Appendix E**.

It is **recommended** that the trees in question are retained, as these form a unique feature within the landscape and there is an opportunity to further enrich the value of the Site for bats by including artificial bat roosts (such as bat boxes within suitable trees outwith the Site (e.g. within Strathclyde Country Park).

The proposed scheme will result in the dualling of an existing road. Bats are susceptible to collisions with vehicles however it is considered likely that bat populations within the local vicinity are already well adapted to the urban environment.

It is **recommended** that night working is avoided during construction of the proposed scheme and that any artificial lights used during construction are directed away from wooded areas and commuting corridors in order to reduce disturbance, in particular along Hamilton Road. If lighting is required, then low impact solutions should be used to minimise light spill. Further guidance on bats and lighting is available from the Bat Conservation Trust (BCT)20.

4.2 Windmillhill Proposed Scheme

4.2.1 Designated sites

There are no international or statutory designated sites within the Windmillhill proposed scheme or 2km search radius and no impacts are anticipated.

There are woodlands listed on the Native Woodland Survey of Scotland (NWSS) immediately to the north of the proposed scheme and these regenerating habitats which comprise lowland mixed deciduous woodland, form a natural boundary between the Ravenscraig site and the Liberty Steel site. Woodland habitats form a linear corridor along the WCML and around the Liberty Steel site which provide connectivity on a local scale around Motherwell including indirectly towards Baron's Haugh RSPB reserve and the River Clyde to the south and the River South Calder to the east.

There is a presumption against development in woodland (with reference to the Scottish Government's policy on the control of woodland removal[26]) with a hierarchy of woodland sensitivity starting with ancient woodland, long-established woodland of plantation origin (LEPO) where this overlaps with the Native Woodland Survey of Scotland (NWSS), and non-native LEPO; NWSS woodland with younger trees typically has lower biodiversity value. It is generally accepted that ancient woodland cannot be translocated or replaced and, as such, it is an irreplaceable and valuable resource which must be preserved[27]. As such, it is **recommended** that vegetation clearance and felling be minimised within the NWSS woodland and adjacent woodland habitat along the WCML and Liberty Steel boundary.

An arboricultural assessment of trees to be retained may be required in order that Root Protection Areas (RPA) remain intact; exclusion fencing should be used to mark the perimeters of the RPA and felling area[28].

There is an **opportunity** to provide biodiversity enhancements by encouraging woodland planting along the proposed scheme, in particular planting woodland and scrub habitat which improves connectivity along the existing woodland corridors (i.e. adjacent to the WCML and Liberty Steel boundary) and to create new linear corridors either side of the new road.

4.2.2 Habitats

Within Windmillhill proposed scheme area there were no protected species of flora recorded during desk-based studies and field surveys by Sweco in 2020, 2019 or by HEL in 2018. Habitats at this site are not protected or rare at the national level but do have increased value due to the scarcity of large-scale undisturbed grassland habitats locally in the context of North Lanarkshire and Motherwell in particular. While most of this area is a brownfield site with a polluted past, the habitats here have naturally regenerated and succession from bare ground through to pioneer hardy grassland species is present. This has created a diverse mosaic of woodland, grassland, scrub and even small-scale wetland and pond habitats which in turn support several species of birds and invertebrates. This is a setting which is not very common considering its location in the centre of a growing urbanised area meaning that it is important for local wildlife and for the people that use it.

If felling or vegetation clearance is required, it would be **advantageous** to cut felled branches or trunks to variable lengths and create log piles. Log piles within woodland or shaded areas will provide suitable habitat for wet rot-adapted invertebrate species and within open sunny dry areas will provide additional habitat for species adapted to dry decaying wood such as beetles[29]. Such features will also provide additional benefits for mammals including hedgehogs[30] and amphibians as a result of the increased invertebrate diversity and improved habitat.

It is **recommended** that where possible, these habitats are retained so as to reduce the overall environmental impact and if this is not possible it should be suitably replaced like-for-like.

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[26] https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument

[27] Ryan, L. (2013). Translocation and Ancient Woodland. The Woodland Trust.

[28] British Standard BS5837:2012 Trees in relation to design, demolition and construction.

[29] How to Manage your Hedges for Dead Wood Insects (n.d) Hedgelink. http://www.hedgelink.org.uk/cms/cms_content/files/32_dead_wood_insects_%26_hedges_leaflet.pdf. Accessed 10/03/2020

[30] https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/animals/mammals/hedgehog/. Accessed 09/02/2020

There is an **opportunity** to provide diverse wetland features within the proposed drainage network including permanently wet attenuation basins planted with reed, rush and grass species adjacent to the road, which tie in with woodland and grassland planting proposals recommended above.

4.2.3 Great Crested Newts

HEL noted the translocation of GCN from a pond to Ravenscraig in 2000 with follow-up surveys providing no positive results of their presence.

The Sweco 2020 eDNA survey of 6 ponds within the Windmillhill study area did not result in any positive results. Due to the nature of eDNA surveys the presence of GCN cannot be completely discounted however as no positive records were obtained it is considered that this species is not present on site and is not considered further within this report.

4.2.4 Reptiles

There are no desk study records of this species included within previous HEL or Sweco 2019 reports. No reptiles were recorded during ACO surveys undertaken in 2020 survey. Although the habitats present within the Windmillhill proposed scheme are suitable for supporting populations of reptiles as they include rock piles, undulating ground, abundant invertebrate food and places to hide, bask and hibernate, it is considered that they have been separated from other potential suitable habitat and/or reptile sites for sufficiently long (during the operation of the steelworks) for this species to be assumed absent and therefore they are not considered further in this report.

4.2.5 Badgers

No active badger setts were recorded within the 500m study area and no signs of badger were returned from surveys. Burrows recorded in earlier surveys and reported in the desk study results from the embankment of the WCML (e.g. Arup 2021) were not conclusively found to have been used by badger although this species may occasionally use the WCML habitats for foraging and dispersal. Active badger setts recorded by HEL within the Ravenscraig Railway Sidings SINC, a short distance outside the 500m study area to the east of the proposed scheme, are separated from the Windmillhill proposed scheme by Robberhall Road at College Roundabout which is well lit and may act as a barrier; although badgers that do safely negotiate the road crossing would be able to find shelter and foraging habitat within the Windmillhill proposed scheme area. Otherwise the proposed scheme is generally inaccessible to badgers except for corridors created by the WCML and the woodland bordering the Liberty Steel site. Badgers are capable of adapting to highly disturbed urban environments but the absence of signs indicates that this species is not regularly active at the time of reporting.

Badgers and their setts are protected under the Protection of Badgers Act 1982 (as amended - see **Appendix I**) and the range of activities associated with the construction of a new road, including vegetation clearance, excavation, drilling and vehicle movements have the potential to result in an offence under this legislation.

It is a **requirement** that further surveys are completed prior to the beginning of any works to ensure that badger are not present and to inform any licence application that may be required if badger setts are found within 30m of the works area. It is **recommended** that burrows identified on the WCML are monitored using camera traps to understand current use by badger and to inform any requirement for sett exclusion and closure under licence which may be required.

4.2.6 Little Ringed Plovers

Wild birds and their nests and eggs legally protected under the Wildlife and Countryside Act 1981 (as amended). Some species – listed on Schedule 1 of the Act and including little ringed plover – are also protected against disturbance.

The survey completed by Wildlife Consulting Ltd provided no evidence nor was there any suitable habitat to support little ringed plover at the Windmillhill proposed scheme area. Therefore, this species is not considered further within this report.

For a full list of birds documented incidentally throughout all studies within this site see **Table 3.1**.

As **opportunities** for nesting birds have been observed within the Site, it is a mandatory requirement to ensure that nesting birds (or their nests or eggs), including ground nesting birds would not be killed or injured or their active nests destroyed.

It is **recommended** that vegetation clearance works and ground investigations be undertaken outwith the nesting bird season (which is March to August inclusive) and if the works programme cannot be amended to facilitate this, that a pre-works check for nesting birds be undertaken by a suitably qualified ecologist no more than 48 hours prior to works. If active nests were found, there would be no other option but to delay works until chicks have fledged which could be a period of up to ten weeks.

4.2.7 Bats

All bat species and their roosts are protected under the Habitats Regulations 1994 (as amended) as European Protected Species. All nine species of bats present in Scotland are also listed on the Scottish Biodiversity List (SBL – see **Appendix I**).

Echoes Ecology Ltd reported 12 trees with bat roost suitability which will be lost or negatively impacted (pruned or disturbed due to increased noise levels or artificial lighting) as a result to the proposed work. It is recommended that where possible, trees are retained. Where trees are to be removed it would be beneficial for the conservation of the local biodiversity to plant trees of the same species in suitable locations nearby.

Two trees (tag numbers 907 and 909) could not be fully assessed during the initial inspection and therefore are subject to further surveys – one tree had high potential and the other had moderate potential. One activity survey was completed on these trees on 22 September 2020. In order to comply with survey standards trees with bat roost potential must be surveyed in accordance with survey guidance. It is best practice to complete bat surveys within a single calendar year, and for licensing purposes the surveys must be completed as close as possible in time to clearance works. Recommendations for further surveys can be found in the Echoes Ecology reports in **Appendices E and F**.

It is **recommended** that the trees in question are retained, as these form a unique feature within the landscape and there is an **opportunity** to further enrich the value of the Site for bats by including artificial bat roosts (such as bat boxes) within woodlands to be retained along the base of the WCML embankment and along the Liberty Steelworks boundary.

A total of seven buildings and two structures (railway bridges) were assessed for their bat roost potential, of which four buildings were assessed as providing negligible potential, three with low potential and the railway bridge structures as high winter hibernation potential. Following inspection in December 2020 and January 2021 and a month of static detector surveys within this period (which was incomplete in the southernmost tunnel) no hibernating bats or signs of bats were recorded within either

tunnel, however a single species, common pipistrelle, was recorded during this period. The number and pattern of calls was consistent with a single individual, or several individuals on different occasions, using the tunnels for foraging or drinking during periods of milder weather but it could not be concluded whether the structures themselves are used for hibernation.

It is not known at the time of writing if the southern tunnel will be infilled as part of the works (neither tunnel performs a function at present with respect to enabling passage under the WCML). Infilling the tunnel would result in the permanent loss of hibernation habitat. It is **recommended** that the adjacent tunnel to the north (within Liberty Steelworks) is modified with the addition of bat bricks, chimney roosts and other features which bats can use for roosting in order to directly offset the loss of hibernation potential within the southern tunnel. In addition if infilling is required, this must be undertaken outside the hibernating months which are November to March inclusive (longer if persistent cold or wintry weather persists) in order to avoid potential harm during the vulnerable hibernation period.

It is **recommended** that night working is avoided during construction of the proposed development and that any artificial lights used during construction are directed away from wooded areas and commuting corridors in order to reduce disturbance. As the current area is unlit, the proposed development should also be designed in such a way that lights are avoided, in order to enable bats (and other species) to use the area undisturbed. If lighting is required, then low impact solutions should be used to minimize light spill. Further guidance on bats and lighting is available from the Bat Conservation Trust (BCT)[31].

Where buildings are to be demolished which contain bat roost potential **it is a legal requirement** that survey work is undertaken during the bat activity period of April – September inclusive to ensure that the buildings are not used by roosting bats and to inform the requirement for additional survey effort and/or a NatureScot licence application if bats are found to be using it. It is **recommended** that bat boxes are provided in trees to be retained as detailed above, and there is an **opportunity** to enhance the bat roost capability by creating a new building or structure supporting heated bat boxes, to replicate the roost opportunities that would be found in a building[32].

[31] https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting
[32] E.g. Mitchell-Jones, A.J. (2004) Bat Mitigation Guidelines English Nature, Peterborough

Appendix A – Figures

Figure 1: Statutory and Non-Statutory Designated Sites

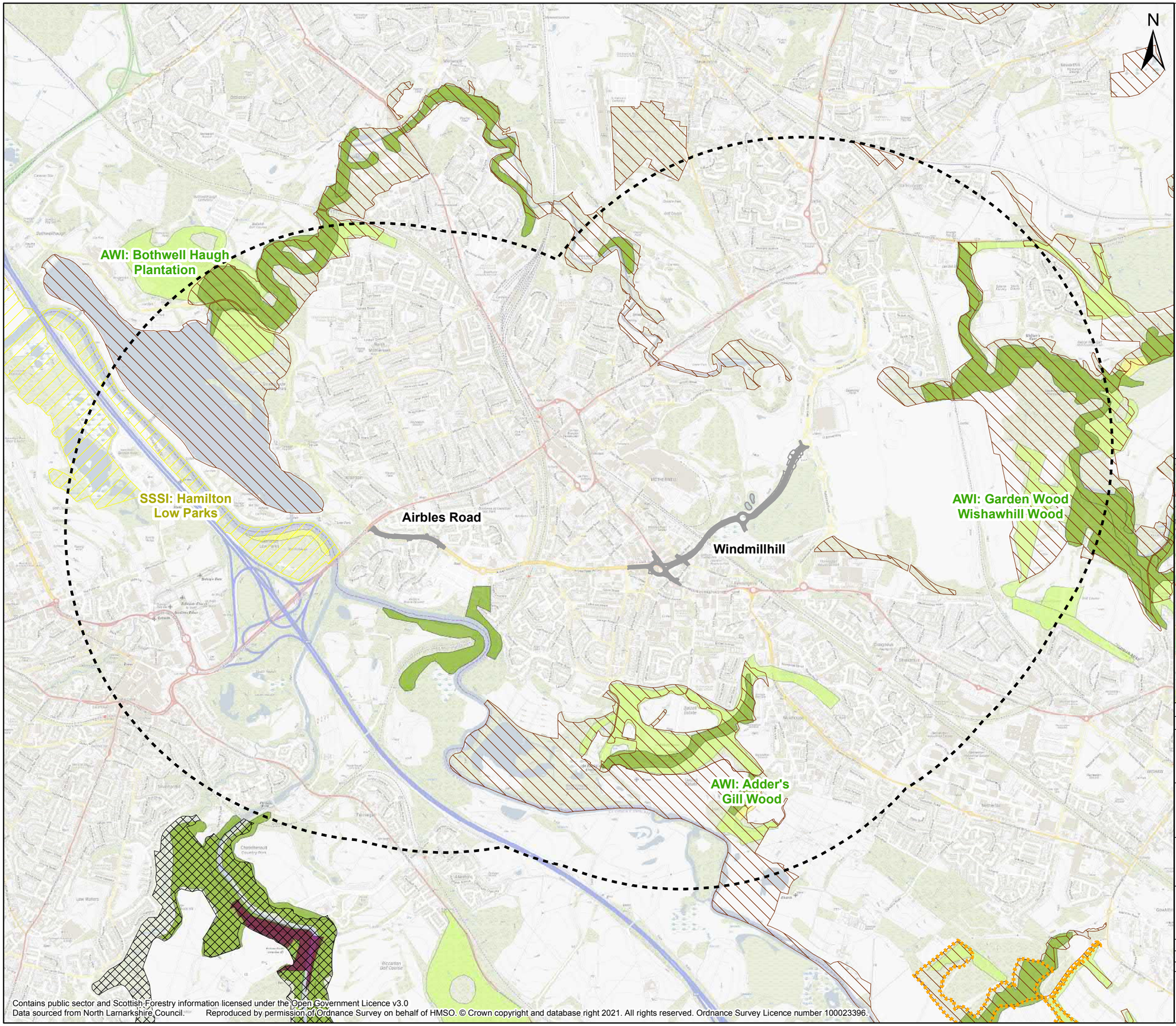
Figure 2a: Phase 1 Habitat Map (Airbles Road)

Figure 2b: CONFIDENTIAL Badger Survey Map (Airbles Road)

Figure 3: Phase 1 Habitat Map (Windmillhill)

Figure 4: Reptile/GCN Survey Map

Figure 5: Bat Roost Potential (Structures)



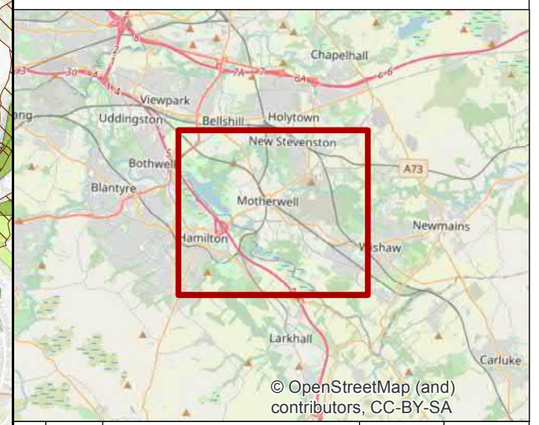
Legend

- Proposed Schemes
- Proposed Schemes - 2km Buffer
- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation
- Site of Nature Conservation Interest (SINC)
- Local Nature Reserve (LNR)
- National Nature Reserve (NNR)

Ancient Woodland (AWI)

- Ancient (of semi-natural origin)
- Long-Established (of plantation origin)
- Other (on Roy map)

0 0.5 1 Km



Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
P01	17/02/2021	For Information	JB	SMS

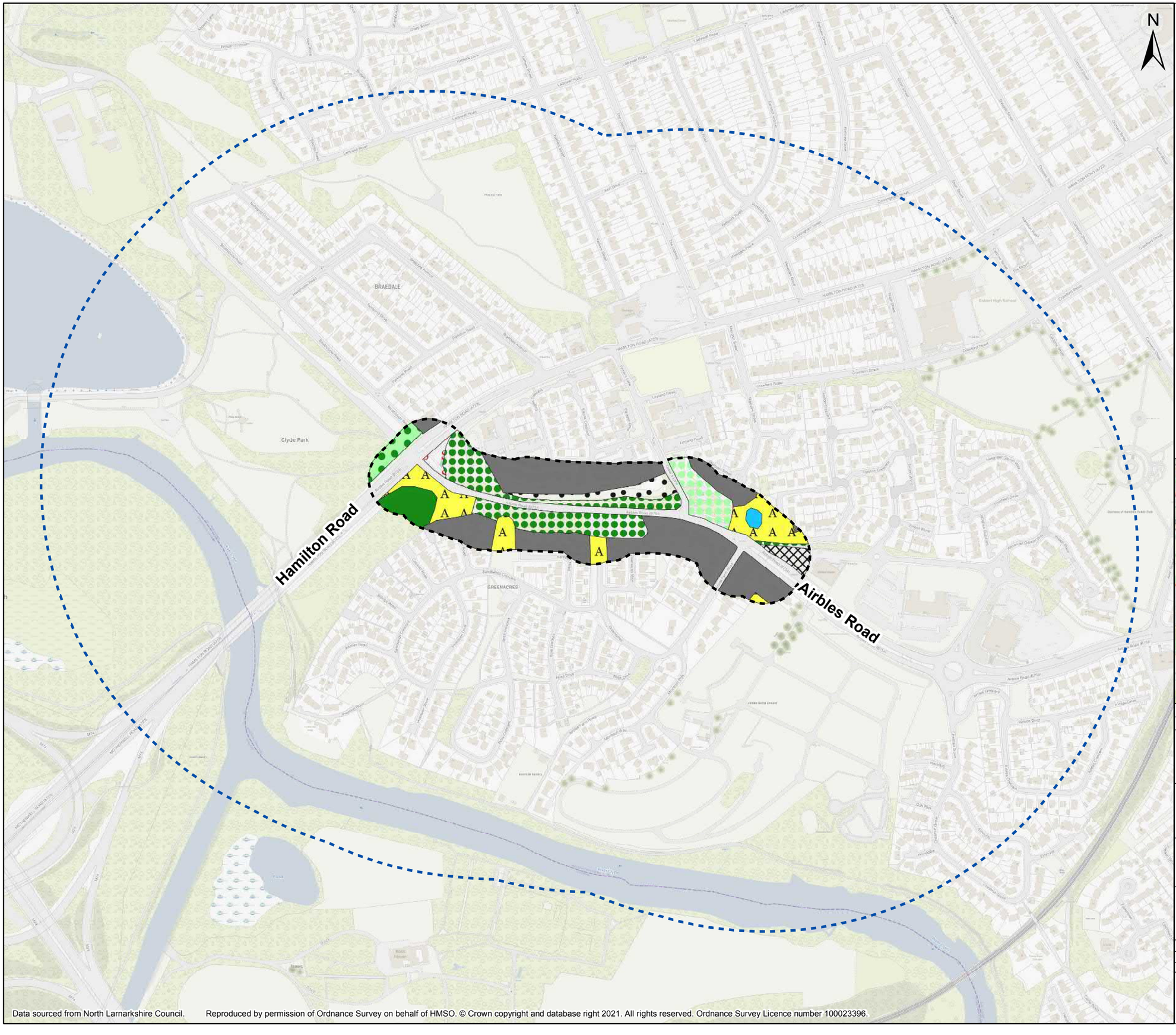
SWECO
Sweco UK Limited, 2nd Floor Quay 2, 139 Fountainbridge, Edinburgh, EH3 9QG
Tel: +44 131 550 6300

Client: North Lanarkshire Council

Project: Ravenscraig Infrastructure Access South (RIAS)

Drawing Title: Figure 1 - Statutory and Non-Statutory Sites

Scale @ A3	1:24,000	DO NOT SCALE	
Project No.	65200711	Status	S0
BIM No.			



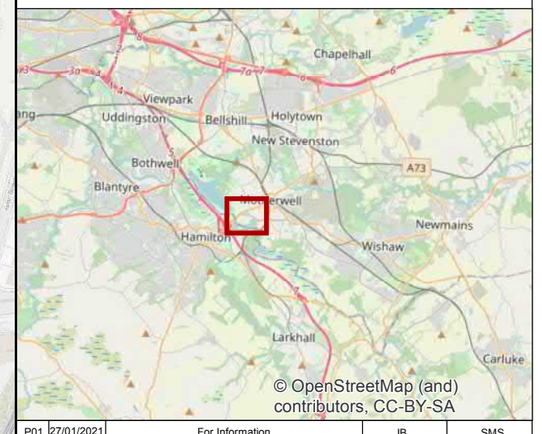
Legend

- Proposed Scheme - 50m Buffer
- Proposed Scheme - 500m Buffer

Phase 1 Habitat Survey

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.3.1 - Mixed woodland - semi-natural
- A3.1 - Broadleaved Parkland/scattered trees
- A3.2 - Coniferous Parkland/scattered trees
- G1 - Standing water
- I2.2 - Spoil
- J1.2 - Cultivated/disturbed land - amenity grassland
- J3.4 - Caravan site
- J3.6 - Buildings
- J4 - Bare ground

0 100 200 Metres



Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
P01	27/01/2021	For Information	JB	SMS

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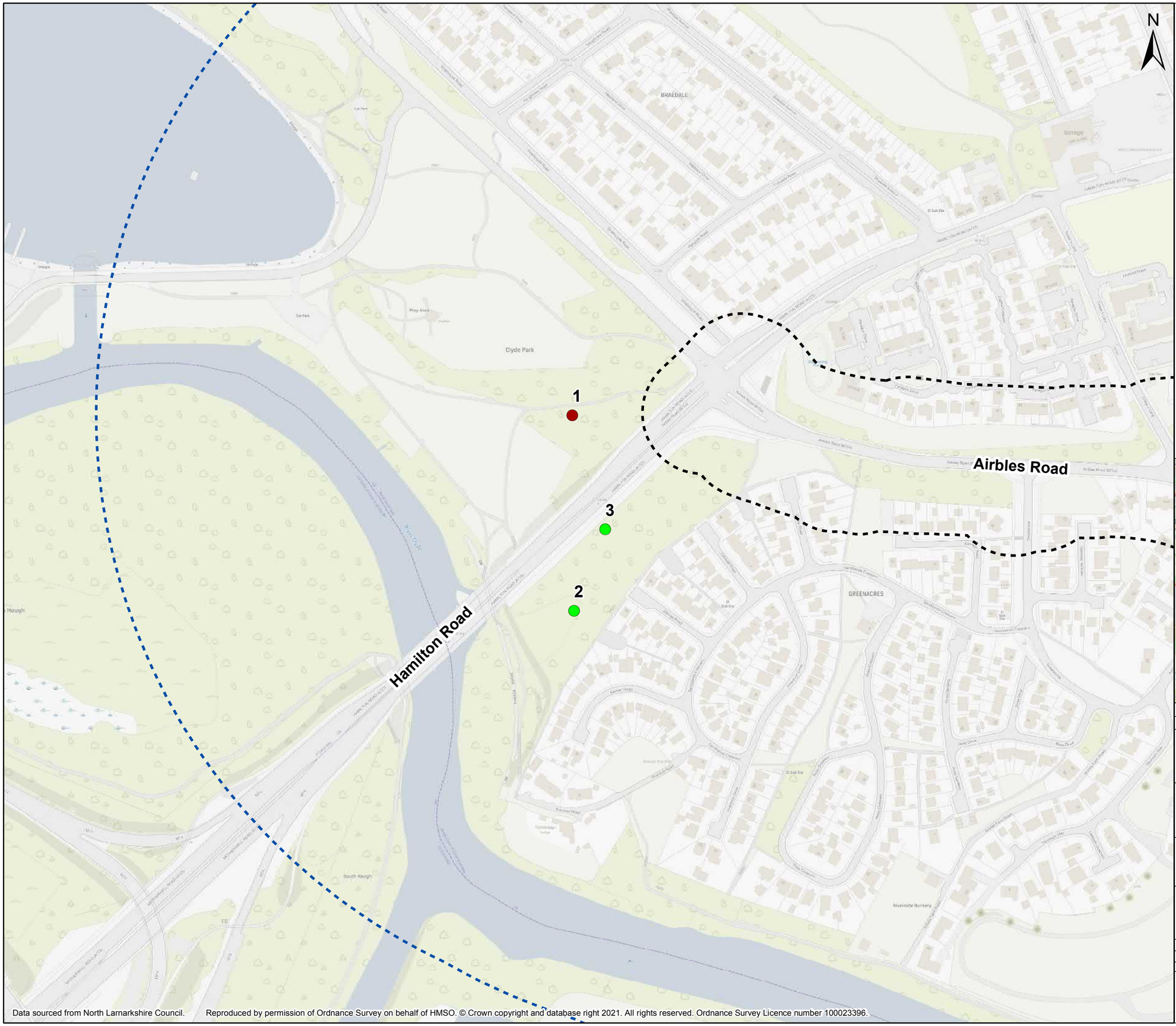
Tel: +44 131 550 6300

Client: North Lanarkshire Council

Project: Ravenscraig Infrastructure Access South (RIAS)

Drawing Title: Figure 2a - Phase 1 Habitat Map (Airbles Road/Hamilton Road)

Scale @ A3	1:5,000	DO NOT SCALE	
Project No.	65200711	Status	S0
BIM No.			



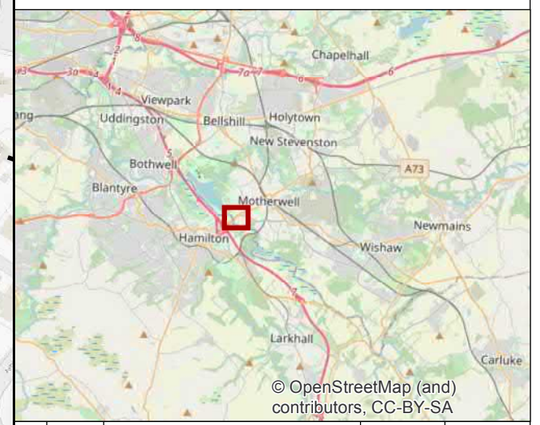
Legend

- Proposed Scheme - 50m Buffer
- Proposed Scheme - 500m Buffer

Badger Survey

- Mammal Path
- Setts

0 50 100 Metres



Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
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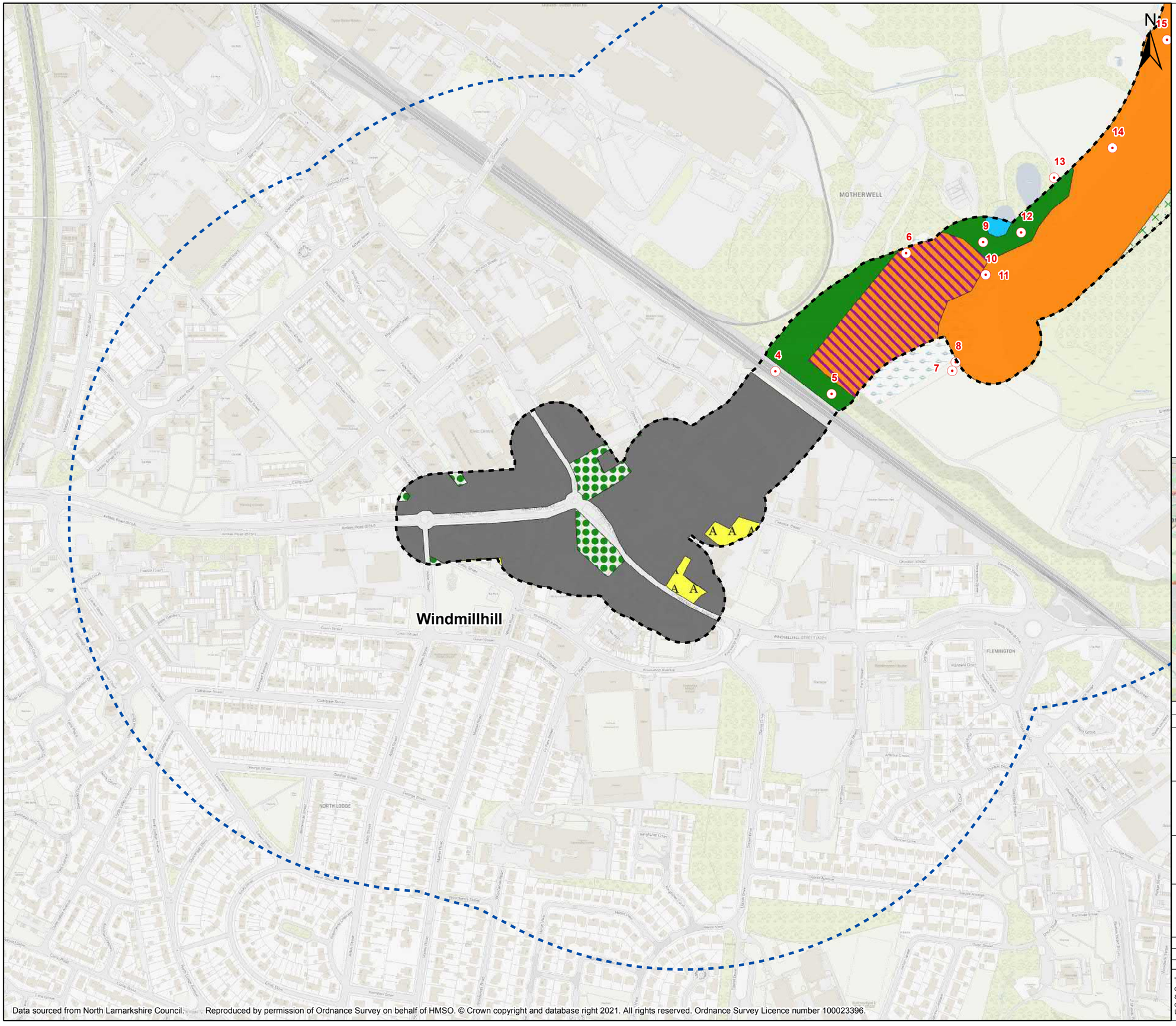
Tel: +44 131 550 6300

Client: North Lanarkshire Council

Project: Ravenscraig Infrastructure Access South (RIAS)

Drawing Title: Figure 2b - Badger Map (CONFIDENTIAL)

Scale @ A3	1:5,000	DO NOT SCALE	
Project No.	65200711	Status	S0
BIM No.			



Legend

- Proposed Scheme - 50m Buffer
- Proposed Scheme - 500m Buffer

Phase 1 Habitat Survey

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland – plantation
- A2.2 - Scrub – scattered
- A3.1 - Broadleaved Parkland/scattered trees
- B2.1 - Neutral grassland - unimproved
- B5 - Marsh/marshy grassland
- G1 - Standing water
- J1.2 - Cultivated/disturbed land - amenity grassland
- J3.6 - Buildings
- Target note

0 100 200 Metres

Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
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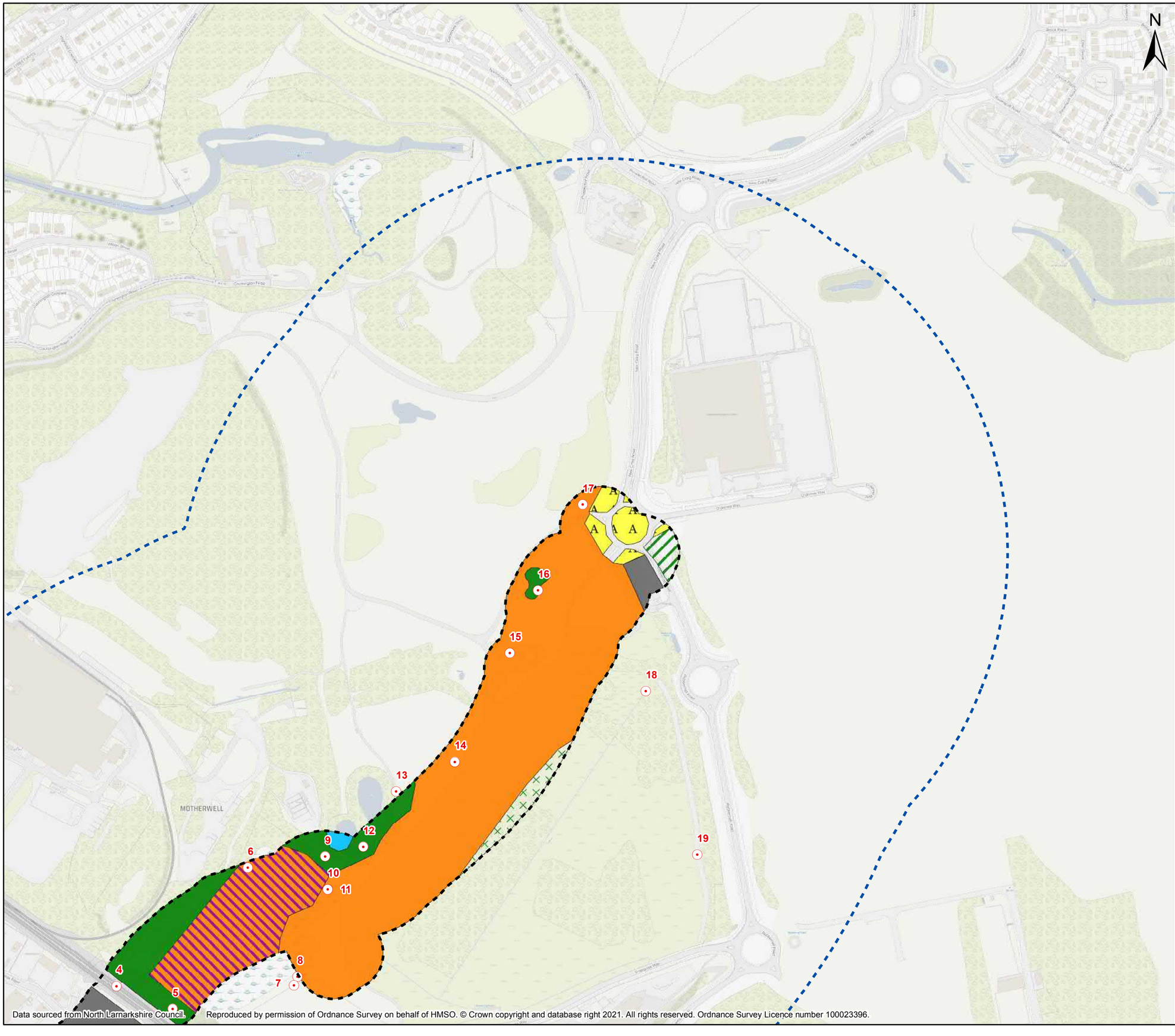
Client: North Lanarkshire Council

Project: Ravenscraig Infrastructure Access South (RIAS)

Drawing Title: Figure 3 - Phase 1 Habitat Map (Windmillhill)

Sheet 1 of 2

Scale @ A3	1:5,000	DO NOT SCALE	
Project No.	65200711	Status	S0
BIM No.			



Legend

- Proposed Scheme - 50m Buffer
- Proposed Scheme - 500m Buffer

Phase 1 Habitat Survey

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland – plantation
- A2.2 - Scrub – scattered
- A3.1 - Broadleaved Parkland/scattered trees
- B2.1 - Neutral grassland - unimproved
- B5 - Marsh/marshy grassland
- G1 - Standing water
- J1.2 - Cultivated/disturbed land - amenity grassland
- J3.6 - Buildings
- Target note

0 100 200 Metres

Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
P01	27/01/2021	For Information	JB	SMS

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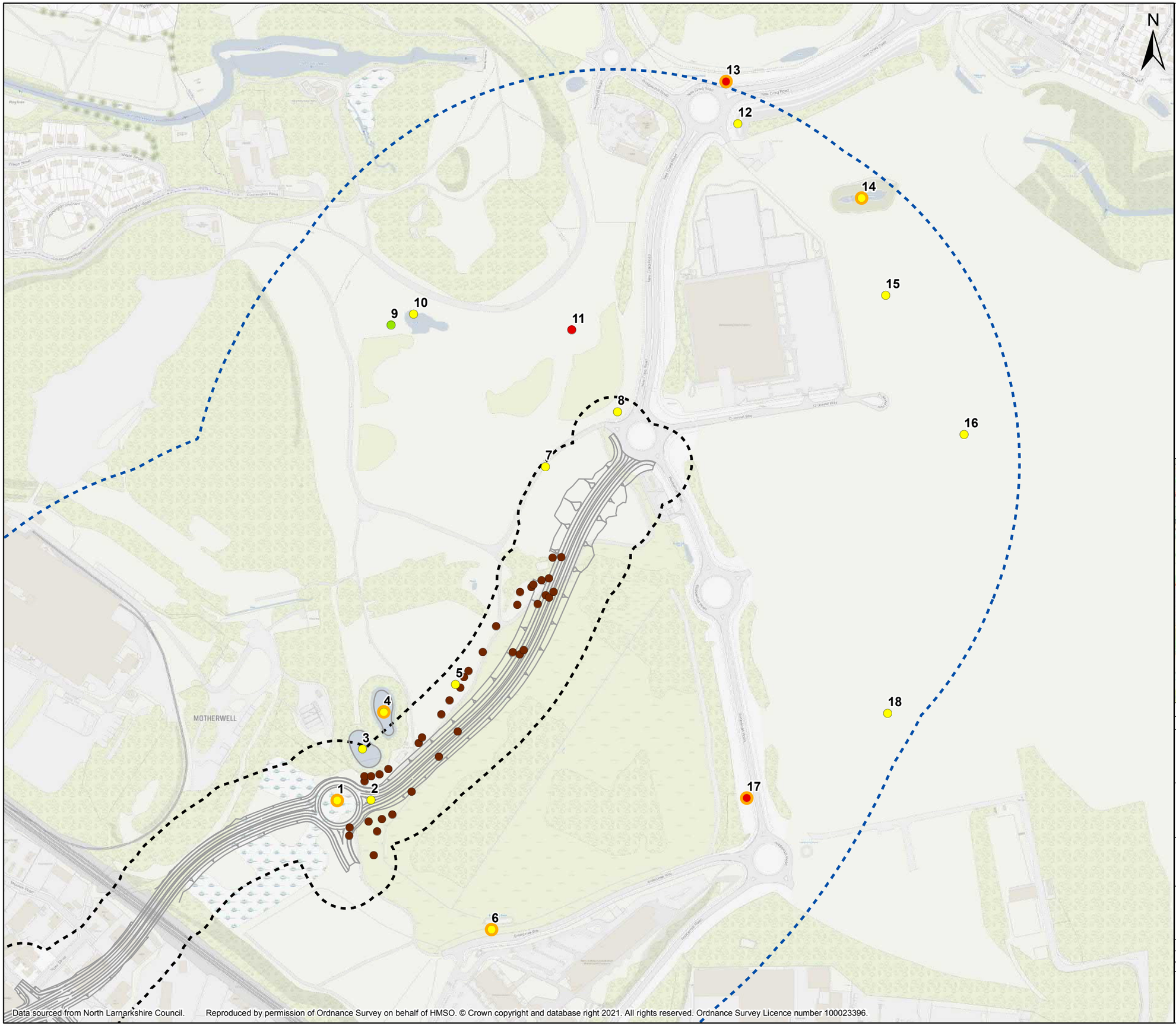
Project: Ravenscraig Infrastructure Access South (RIAS)

Drawing Title: Figure 3 - Phase 1 Habitat Map (Windmillhill)

Sheet 2 of 2

Scale @ A3	1:5,000	DO NOT SCALE	
Project No.	65200711	Status	S0
BIM No.			



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Legend

- Proposed Scheme
- Proposed Scheme - 50m Buffer
- Proposed Scheme - 500m Buffer
- Reptile ACO

GCN HSI Location

- Good
- Moderate
- Poor
- Subject to eDNA

0 100 200 Metres

Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
P01	27/01/2021	For Information	JB	SMS

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Tel: +44 131 550 6300

Client: North Lanarkshire Council

Project: Ravenscraig Infrastructure Access South (RIAS)

Drawing Title: Figure 4 - Great Crested Newt (GCN) Habitat Suitability Index (HSI) & Reptile Artificial Covering Object (ACO) Assessment

Scale @ A3	1:5,000	DO NOT SCALE	
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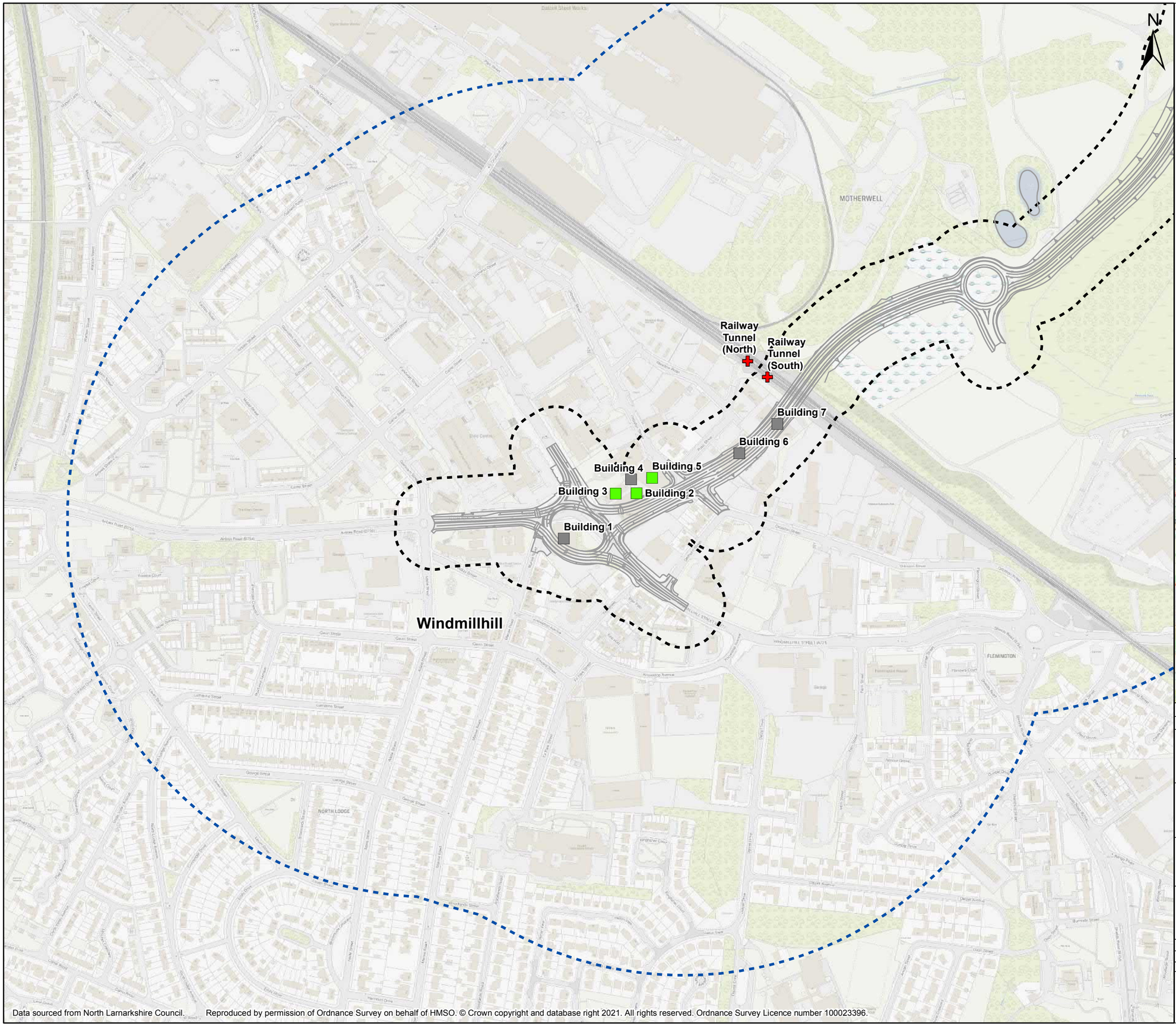
BIM No.			



Legend

- Proposed Scheme
- Proposed Scheme - 50m Buffer
- Proposed Scheme - 500m Buffer

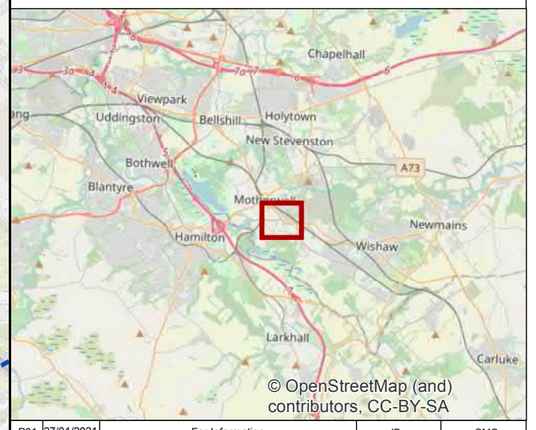
Bat Roost Potential (Railway)

- High

Bat Roost Potential (Buildings)

- Low
- Negligible

0 100 200 Metres



Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
P01	27/01/2021	For Information	JB	SMS

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Tel: +44 131 550 6300

Client: North Lanarkshire Council

Project: Ravenscraig Infrastructure Access South (RIAS)

Drawing Title: Figure 5 - Bat Roost Potential: Structures

Scale @ A3	1:5,000	DO NOT SCALE	
Project No.	65200711	Status	S0
BIM No.			

Appendix B – Detailed GCN HSI Scores

Pond No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	17
Geographic Location	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Area	26856	60	1300	1800	410	280	900	220	230	940	6900	200	340	490	150	590	620	200
	OMIT	0.01	0.904	0.824	0.8	0.4	0.968	0.4	0.4	0.968	OMIT	0.4	0.6	0.8	0.2	1	1	0.4
Permanence	Never dries	Sometimes dries	Sometimes dries	Rarely dries	Rarely dries	Sometimes dries	Rarely dries	Sometimes dries	Sometimes dries	Sometimes dries	sometimes dries	rarely dries	rarely dries	rarely dries	rarely dries	rarely dries	sometimes dries	dries anually
	0.9	0.5	0.5	1	1	0.5	1	0.5	0.5	0.5	0.5	1	1	1	1	1	0.5	0.1
Water Quality	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Good	Moderate	Poor	Moderate	Poor	Moderate	Moderate	Moderate	Moderate	Poor
	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	1	0.67	0.33	0.67	0.33	0.67	0.67	0.67	0.67	0.33
Shade	50	0	10	100	0	0	40	0	0	0	0	5	20	0	0	0	0	0
	1	1	1	0.2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Waterfowl	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor
	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Fish	absent	absent	absent	absent	absent	absent	possible	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent
	1	1	1	1	1	1	0.67	1	1	1	1	1	1	1	1	1	1	1
Pond Count	11	11	13	17	17	13	21	22	19	20	22	18	17	18	20	20	20	20
	0.95	0.95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrestrial Habitat	good	moderate	good	good	moderate	moderate	moderate	poor	moderate	moderate	moderate	moderate	moderate	moderate	moderate	moderate	moderate	moderate
	1	0.67	1	1	0.67	0.67	0.67	0.33	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Macrophytes	90	60	80	0	70	50	20	85	50	100	80	60	50	30	40	40	70	40
	0.9	0.9	1	0.3	1	0.8	0.5	0.95	0.8	0.8	1	0.9	0.8	0.6	0.7	0.7	1	0.7
HSI SCORE		**0.48**	**0.80**	**0.64**	**0.81**	**0.69**	**0.74**	**0.65**	**0.72**	**0.75**		**0.75**	**0.72**	**0.77**	**0.68**	**0.80**	**0.77**	**0.54**
Suitability		**Poor**	**Good**	**Average**	**Excellent**	**Average**	**Good**	**Average**	**Good**	**Good**		**Good**	**Good**	**Good**	**Average**	**Good**	**Good**	**Below Average**
HSI SCORE (No area)	**0.85**	**0.78**	**0.82**	**0.68**	**0.84**	**0.78**	**0.76**	**0.74**	**0.80**	**0.78**	**0.74**	**0.84**	**0.78**	**0.81**	**0.82**	**0.82**	**0.79**	**0.62**
Suitability	**Excellent**	**Good**	**Excellent**	**Average**	**Excellent**	**Good**	**Good**	**Good**	**Excellent**	**Good**	**Good**	**Excellent**	**Good**	**Excellent**	**Excellent**	**Excellent**	**Good**	**Average**

Appendix C – Target Notes

Appendix D – Full Species List

Common Name	Latin Name
Great mullein	*Verbascum thapsus*
Vipers bugloss	*Echium vulgare*
Rosebay willow herb	*Chamaenerion*
Eyebright	*Euphrasia officinalis*
Creeping thistle	*Cirsium arvense*
Butterbur	*Petasites hybridus*
Common St Johns wort	*Hypericum perforatum*
Birds foot trefoil	*Lotus corniculatus*
White clover	*Trifolium repens*
Red clover	*Trifolium pratense*
Meadow vetchling	*Lathyrus pratensis*
Horsetail	*Equisetum arvense*
Common ragwort	*Senecio jacobaea*
Oxeye daisy	*Leucanthemum vulgare*
Creeping buttercup	*Ranunculus repens*
Meadow buttercup	*Ranunculus acris*
Self-heal	*Prunella vulgaris*
Silver birch	*Betula pendula*
Downy birch	*Betula pubescens*
Crack willow	*Salix fragilis*
Goat willow	*Salix caprea*
White willow	*Salix alba*
Oak	*Quercus*

Common Name	Latin Name
Yellow rattle	*Rhinanthus minor*
False oat grass	*Arrhenatherum elatius*
Lady's mantle	*Alchemilla*
Common hogweed	*Heracleum sphondylium*
Wild strawberry	*Fragaria vesca*
Silverweed	*Argentina anserina*
Nettle	*Urtica dioica*
Cleavers	*Galium aparin*
Tufted hair grass	*Deschampsia cespitosa*
Buddleia	*Buddleja*
Cocks foot	*Dactylis glomerata*
Yorkshire fog	*Holcus lanatus*
Common kidney vetch	*Anthyllis vulnerari*
Soft rush	*Juncus effuses*
Bulrush	*Typha*
Common spotted orchid	*Dactylorhiza fuchsii*
Grey alder	*Alnus incana*
Hawthorn	*Crataegus*
Rowan	*Sorbus aucuparia*
Wild cherry	*Prunus avium*
Hazel	*Corylus*
Sycamore	*Acer pseudoplatanus*
Ragweed	*Asteraceae*
Cats ear	*Hypochaeris radicata*

Common Name	Latin Name
Ribwort plantain	*Plantago lanceolata*
King’s clover	*Trifolium kingii*
Lady's bedstraw	*Galium verum*
Broadleaved willow herb	*Epilobium montanum*
Barbers brush	*Scirpus microcarpus*
Blackthorn	*Prunus spinosa*
Water lily	*Nymphaeaceae*
Raspberry	*Rubus idaeus*
Curled dock	*Rumex crispus*
Broad leaved dock	*Rumex obtusifolius*
Common male fern	*Dryopteris filix-mas*

Appendix E – Bat Survey Report – Airbles Road/Hamilton Road proposed scheme

Appendix F – Bat Survey Report – Windmillhill Proposed Scheme

Appendix G – Bat Roost Potential - Structures

Appendix H – Little Ringed Plover Report

Appendix I – Legislation

European Union (Withdrawal Agreement) Act (2020)

The European Union Withdrawal Act sets out the legislative procedure that the UK will follow until a withdrawal agreement with the European Council has been reached. In respect of protected species and Sites, the legislation as set out below remains enacted as it stands until amended.

Bern Convention (1982)

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the EC Birds Directive (1979) and the EC Habitats Directive (1992). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985, Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).

Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species (Amendment) Regulations 2012 in England, and Wales, and via the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland. In Scotland the Habitats Directive is transposed by The Conservation (Natural Habitats &c.) Regulations 1994, see below for details.

Birds Directive

The EC Directive on the Conservation of Wild Birds (791409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

The Conservation (Natural Habitats, &c.) Regulations (1994) as amended in Scotland (EPS)

The Habitats Regulations 1994 (as amended in Scotland) implement the species protection requirements of the European Directive 92/43/EEC on the conservation of natural habitats (the Habitats Directive) in Scotland on land and inshore waters (0-12 nautical miles). Following a European Court of Justice ruling against the UK Member State in 2005, there have been several amendments to the Regulations which apply only to Scotland (made in 2004, 2007, 2008(a) and 2008(b)).

This regulation makes it an offence to deliberately or recklessly disturb European protected Species. Their places of shelter are fully protected, and it is an offence to damage, destroy or obstruct access to or otherwise deny the animal use of a breeding site or resting place, whether deliberate or not. It is also an offence to disturb in a manner that is likely to significantly affect the local distribution or abundance of the species; impair its ability to survive, breed or reproduce or rear its young.

Wildlife and Countryside Act (EU Exit) (1981) and Nature Conservation (Scotland) Act (2004) (WCA-Sch*)

The Wildlife and Countryside Act (1981) is the main piece of legislation pertaining to biodiversity in the UK and forms the basis for most of the other wildlife and biodiversity legislation that has come into being over recent years. In Scotland, it was updated in 2004 by the Nature Conservation (Scotland) Act. The W&C Act makes it an offence to intentionally:

- kill, injure, or take any wild animal or bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built;
- take or destroy an egg of any wild bird;

For species listed under Schedule one of the act it is an offence to disturb:

- any bird while it is building a nest;
- any bird while is in, on, or near a nest containing eggs or young; or
- the dependent young of any bird.

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection by a wild animal;
- intentionally disturb animals occupying such places;
- The Act also prohibits certain methods of killing, injuring, or taking wild animals.

A provision is made within the Act for the granting of licences that allow above actions to be made legal in certain situations. Finally, the Act makes it an offence to intentionally:

- pick, uproot or destroy any wild plant listed in Schedule 8; or any seed or spore attached to any such wild plant unless authorised;
- uproot any wild plant not included in Schedule 8,
- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Part 14 of the Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9.

The Nature Conservation (Scotland) Act (2004) strengthens the above legislation by including reckless" acts, which means that in Scotland, not knowing about the above is not a permissible defence for committing an illegal act. This Act also strengthens the designated sites legislation by enhancing the protection for SSSIs and puts a Biodiversity Duty on every public body.

Nature Conservation (Scotland) Act 2004

The Act places duties on public bodies in relation to the conservation of biodiversity, increases protection for SSSI, amends legislation on Nature Conservation Orders, provides for Land Management Orders for SSSIs and associated land, strengthens wildlife enforcement legislation, and requires the preparation of a Scottish Fossil Code and a Scottish Marine Wildlife Watching Code. It also amends the legislation for protected species, introducing new conditions to the 'incidental results of a lawful operation' defence for all wild birds and certain species of animal and plant.

The Act places a duty on every public body to further the conservation of biodiversity consistent with the proper exercise of their functions.

It also requires Scottish Ministers to designate one or more strategies for the conservation of biodiversity as the Scottish Biodiversity Strategy, and to publish lists of species of flora and fauna and habitats of principal importance.

Wildlife and Natural Environment (Scotland) Act 2011

This Act has brought in new provisions governing the introduction of non-native species in Scotland. Non-native species (those plants and animals which have found their way to a new habitat through human activity) can be harmful to our environment. Some non-native species may become invasive, damaging or displacing native species.

The Protection of Badgers Act (1992)

The Protection of Badgers Act 1992 (as amended by the Nature Conservation (Scotland) Act 2004) comprehensively protects badgers and their setts. Offences under the act include killing, injuring or taking a badger, or to damage, destroy or obstruct setts or to disturb badgers in a sett. Licences are available for specific purposes, including development, to allow some of these actions to be carried out legally.

Scottish Biodiversity List (SBL)

The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. The Scottish Biodiversity List was published in 2005 to satisfy the requirement under Section C Appendix C - Legislation 2(4) of The Nature Conservation (Scotland) Act 2004.

The purpose of the list is to help public bodies carry out their Biodiversity Duty by identifying the species and habitats which are the highest priority for biodiversity conservation in Scotland. The Scottish Biodiversity List has been updated to take account of changes to the UKBAP priorities list.

UK Biodiversity Action Plan (UKBAP)

The UK Biodiversity Action Plan (UKBAP)[33] set out a framework for the conservation of priority habitats and species, and action plans for the conservation of these resources. Local Biodiversity Action Plans (LBAPs) were created to help implement the national priorities identified in the UKBAP and to identify and address local priorities for the habitats and species of particular value.

North Lanarkshire Local Biodiversity Action Plan (NLBAP)

North Lanarkshire Biodiversity Action Plan (NLBAP) 2015-2020[34] outlines the species and habitats that are important within the area along with actions that can be taken to protect them. As part of the NLBAP a biodiversity audit gathered information on where and when important species had been found within the region.

Scotland's Forest Strategy (SFS)

Scotland's Forestry strategy 2019-2029[35] outlines the presumption in favour of protecting woodland with high ecological, cultural and landscape value and that removal should only be permitted where it would achieve significant and clearly defined public benefits. The policy on woodland removal has a strong presumption against removal of the following woodland types:

- Semi-natural woodland[36];
- Woodland integral to value of designated or special sites;
- Areas supporting priority habitats and species listed on the UKBAP;
- Woodland critical to water catchment management or erosion control;
- Woodlands listed as Plantations on Ancient Woodland Sites (PAWS); and
- Woodlands with scheduled monuments, part of National Scenic Areas or listed in Inventory of Gardens and Designed Landscapes.

[33] https://jncc.gov.uk/our-work/uk-bap/
[34] https://www.northlanarkshire.gov.uk/index.aspx?articleid=34222 Accessed 07/09/2020
[35] https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/ Accessed: 19/03/2020
[36] Including woodlands listed on the Ancient Woodland Inventory (AWI) and Native Woodland Survey of Scotland (NWSS).