Appendix H – Preliminary Ecological Appraisal

Armagh East Link

Preliminary Ecological Appraisal

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Contents

1 Introduction

1.1 Background

Mouchel was commissioned by Transport Northern Ireland to undertake a Preliminary Ecological Appraisal (PEA) of the proposed Armagh East Link Road scheme. The scheme is for the provision of a new single carriageway road intended to link the A28 Markethill Road in the south to the A3 Portadown Road in the north, incorporating a new junction with the A51 Hamiltonsbawn Road. Three route options are currently under consideration: the 2007 Option, Option 12 and Option 16.

This report presents the results of the PEA undertaken in June 2016, identifies ecological issues that may be constraints to the works, within 1km of the proposed routes, and makes recommendations for further survey work and/or avoidance or mitigation measures as appropriate.

1.2 Site Location

The three route options are all located on the eastern fringes of Armagh, Northern Ireland. The proposed alignment of each route option is as follows:

- 2007 Option: This option follows the route of the existing Ardmore Road, extending northwards from the junction at the A28 Markethill Road. It crosses the A51 Hamiltonsbawn Road at the Hamiltonsbawn Road Industrial Estate and continues northwards to the junction at the A3 Portadown Road at Linseys Hill

- Option 12: This option runs from the existing junction of the Edenaveys Industrial Estate, crossing the A51 Hamiltonsbawn Road to the east of the Hamiltonsbawn Road Industrial Estate and ties in to the existing roundabout on the A3 Portadown Road.

- Option 16: This option is an alternative to the 2007 Option and bypasses the existing Ardmore housing estate at the southern end via Edenaveys Industrial Estate Road and existing junction location as a tie-in point to the A28 Markethill Road.

1.3 Study Objectives

A study area, extending up to 1km from the site was surveyed in order to determine impacts and likely constraints to the proposed scheme. The study set out to:

- Consult records of statutory protected sites within 1km of the scheme;

- Identify habitats and species present or likely to be present that are ecologically important and/or have legal protection;

- Identify invasive species that might be present on site.

2 Methods

2.1 Desk Study

The following sources were consulted to collate historical ecological records within the study area. Records were limited to statutory and non-statutory ecological designations and species records within the study area.

- Northern Ireland Environment Agency;
- Centre for Environmental Data and Recording (the Local Records Centre for Northern Ireland);

2.2 Field Survey

A walkover survey, undertaken broadly in accordance with standard Phase 1 habitat survey methodology[1], was carried out on 6th and 7th June 2016. Habitat types were identified and mapped, with target notes made of features of interest. The suitability of habitats within the site to support legally protected, valuable or controlled species was assessed with incidental field signs or sightings of species recorded as seen.

2.3 Limitations

Because of access restrictions, not all of the study area could be directly surveyed. Where this was the case, land was surveyed from vantage points where appropriate and safe to do so. Sufficient ecological data was obtained from the accessible land to provide an accurate description of the survey area for the purposes of this assessment.

[1] *Joint Nature Conservancy Council (JNCC) (2007). Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit. Peterborough, UK*

3 Results

3.1 Desk Study Results

3.1.1 Statutory Designated Sites

There are no statutorily designated sites within the study area.

3.1.2 Non-Statutory Designated Sites

Sites of Local Nature Conservation Interest (SLNCIs) are designated by the local authority. At the time of writing, information on the location of these designations was not available. However, no SLNCIs were identified within the study area during previous ecological desk studies undertaken for the scheme.

3.1.3 Amphibians

The data returned from CEDaR did not include any records of amphibians from within the 1km study area.

3.1.4 Reptiles

The data returned from CEDaR did not include any records of reptiles from within the 1km study area.

3.1.5 Mammals

The data returned from CEDaR did not include any records of mammals from within the 1km study area.

3.1.6 Birds

The data returned from CEDaR included a single record of a grey heron *Ardea cinerea*, a Schedule 1 species, from within the 1km study area. Species listed on Schedule 1 of the Wildlife (Northern Ireland) Order 1985 (as amended) are protected by special penalties at all times of the year.

3.1.7 Invertebrates

The data returned from CEDaR included a single record of holly blue *Celastrina argiolus*, a butterfly species which is protected through its inclusion on Schedule 5 of the Wildlife (Northern Ireland) Order 1985 (as amended). The data also included a number of records of Priority Species, including 27 moth, 3 butterfly and 2 beetle species.

3.1.8 Plants

The data returned from CEDaR included a number of plant species, however none of these are protected or notable within Northern Ireland.

3.2 Field Survey Assessments

3.2.1 Habitat Assessments

3.2.1.1 Improved Grassland

Improved grazing pasture is the most abundant habitat type within the survey area. This habitat type is characterised by a heavily nutrient-enriched sward dominated by

perennial rye grass *Lolium perenne* with few herb species including daisy *Bellis perennis*, dandelion *Taraxacum officinale agg.*, dock *Rumex* sp., meadow buttercup *Ranunculus acris*, ribwort plantain *Plantago lanceolata*, spear thistle *Cirsium vulgare* and white clover *Trifolium repens*.

The improved grassland within the site is of negligible biodiversity value at the site level.

3.2.1.2 Semi-improved Grassland

There are some areas of more diverse grassland, including a small area to the west of Linseys Heights. The grassland here is of a longer sward and supports a greater diversity of herb species including alternate-leave golden saxifrage *Chryosplenium alternifolium*, cleavers *Galium aparine*, cow parsley *Anthriscus sylvaticus*, greater stitchwort *Stellaria holostea*, meadow buttercup, meadowsweet *Filipendula ulmaria*, silverweed *Potentilla anserina*, tufted vetch *Vicia cracca* and wood speedwell *Veronica montana*.

Two small areas of damp grassland, characterised by abundant soft rush *Juncus effusus* are present to the north of the industrial estates on Hamiltonsbawn Road and Edenaveys Road.

Small areas of amenity grassland are present, largely in the form of road-side verges. For the most part, these are of a short sward and appear to be regularly mown. Species recorded include cock's-foot *Dactylis glomerata*, perennial rye grass, daisy, dandelion, dock, red clover *Trifolium pratense* and ribwort plantain. In places where management is less frequent, a greater diversity of species is present, including bramble *Rubus fruticosa agg.*, common hogweed *Heracleum sphondylium*, common nettle *Urtica diocia*, common ragwort *Senecio jacobaea*, cuckoo flower *Cardamine pratensis*, hedge bindweed *Calystegia sepium*, herb Robert *Geranium robertanium* and nipplewort *Lapsana communis*.

The semi-improved grassland within the site is of low biodiversity value at the local level.

3.2.1.3 Hedgerows

A large number of hedgerows are present across the study area, primarily forming the boundaries of the improved grazing pasture. The majority of the hedgerows are dense and mature and many contain mature or semi-mature standard trees. Some hedgerows are associated with damp ditches and raised banks. Typically, the hedgerows are diverse with a range of species including ash *Fraxinus excelsior*, blackthorn *Prunus spinosa*, elder *Sambucus nigra*, field maple *Acer campestre*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, holly *Ilex aquifolim* and oak *Quercus rober*.

The hedgerows across the site are relatively diverse in structure and composition and provide both foraging and shelter opportunities for a number of faunal species. They are also likely to form connective corridors across the wider area, particularly

for badgers and bats. Accordingly, the hedgerows within the study area are of moderate biodiversity value at the local level.

3.2.1.4 Trees

The majority of trees across the scheme are found as standards within hedgerows, many of which are mature specimens. A number of other mature trees are present within land to the north of Hamiltonsbawn Road, in the east of the study area. Species recorded include ash, beech *Fagus sylvatica*, horse chestnut *Aesculus hippocastanum*, oak and sycamore *Acer pseudoplatanus*. Many of these have features which are suitable for roosting bats including holes, split limbs, lifted bark and dense ivy covering.

A number of young and semi-mature trees are present within the study area. These include an area of tree planting on either side of Ardmore Road, and trees on either side of the watercourse at Linsey's Hill. Species present include beech, elder *Sambucus nigra*, elm *Ulmus* sp., hawthorn, larch *Larix decidua*, Leyland cypress *Cupressus x leylandii*, silver birch *Betula pendula*, sycamore and willow *Salix* sp.

The trees across the study area, particularly the mature specimens, are suitable to support a number of faunal species and have their own intrinsic value within the local area. Accordingly, the trees across the study area are of moderate biodiversity value at the local level.

3.2.1.5 Hardstanding

A number of existing tarmac roads and pavements are present within the study area. There is very little vegetation in these areas, save for the occasional colonising grass species. Areas of hardstanding across the study area are of negligible biodiversity value.

3.2.1.6 Watercourse

A number of watercourses are present throughout the study area. The majority of these are damp ditches, mainly associated with field margins. Some of these had a shallow depth of water at the time of survey.

The watercourse at Linsey's Hill is variable in character along its length, with some sections damp and muddy and others with a slow flow.

The watercourse which flows beneath Edenaveys Road close to the Edenaveys Industrial Estate is shallow, with a slow flow over a stony base.

The watercourses are of low biodiversity value at the local level.

3.2.1.7 Invasive Species

A single stand of Japanese knotweed *Fallopia japonica* measuring approximately 3m x 3m, is present within an area of amenity planting at Linsey's Hill. This is an invasive species, the spread of which is controlled under Northern Ireland legislation.

3.2.2 Species Assessments

3.2.2.1 Amphibians

No waterbodies were recorded within the study area during the survey work undertaken. A number of damp ditches, some with a shallow depth of water, are present within the study area, although it is anticipated that these are likely to dry out on a regular basis, reducing their suitability to support breeding amphibians.

The terrestrial habitats within the site are dominated by improved grassland, which is unsuitable for amphibians. The long-sward semi-improved grassland and the network of hedgerows across the site provide shelter and foraging opportunities, so are more suitable for amphibians, however, these habitats are not extensive. Accordingly, the suitability of the study area for amphibians is low.

3.2.2.2 Reptiles

The majority of the grassland across the site comprises improved grazing pasture which is largely unsuitable for reptiles, lacking suitable foraging and shelter opportunities. The areas of long-sward semi-improved grassland are more suited to reptiles, being more diverse in structure with suitable refugia including rubble and brash piles present. However, this habitat is limited in extent and not connected to any areas of suitable offsite habitat. Accordingly, the suitability of the study area for reptiles is low.

3.2.2.3 Mammals

A number of semi-mature and mature trees are present across the study area, largely found as standards in hedgerows. Many of the trees were noted to have features which are suitable for use by roosting bats, including holes, splits, lifted bark and dense ivy. All trees were assessed for their suitability to support roosting bats in line with criteria set out within the Bat Conservation Trust's good practice guidelines[2]. Trees with high, medium and low suitability to support roosting bats are all present throughout the study area. In addition, the habitats across the site, most notably the network of hedgerows and mature trees, are likely to be used by foraging and commuting bats.

Five mammal holes, ascribed to badger *Meles meles*, were found within a field margin to the south of A51 Hamilstonsbawn Road. The holes are set within a bank at the edge of the field and are relatively large, with large spoil mounds. A single badger hair was found in one entrance and old bedding in another. Two of the entrances appeared not to be in current use, as they were overgrown by vegetation.

In addition, several badger tracks were noted along Ballynahonemore Road.

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[2] *Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London*

3.2.2.4 Birds

A number of bird species were recorded within the study area, including black headed gull *Chroicocephalus ridibundus*, blue tit *Cyanistes caeruleus*, bullfinch *Pyrrhula pyrrhula*, blackbird *Turdus merula*, buzzard *Buteo buteo*, chiffchaff *Phylloscopus collybita*, carrion crow *Corvus corone*, goldfinch *Carduelis carduelis*, great tit *Parus major*, house sparrow *Passer domesticus*, jackdaw *Corvus monedula*, meadow pipit *Anthus pratensis*, mistle thrush *Turdus viscivorus*, pied wagtail *Motacilla alba*, skylark *Alauda arvensis*, song thrush *Turdus philomelos*, starling *Sturnus vulgaris*, swallow *Hirundo rustica*, robin *Erithacus rubecula*, rook *Corvus frugilegus*, wood pigeon *Columba palumbus* and wren *Troglodytes troglodytes*.

Habitats throughout the study area including hedgerows, trees and long-sward grassland are suitable for use by nesting birds.

3.2.2.5 Invertebrates

No evidence of any invertebrate species that are protected by law or otherwise of particular nature conservation importance was recorded during the survey work undertaken.

4 Evaluation & Recommendations

4.1 Statutory Designated and Non-Statutory Protected Sites

There are no statutory or non-statutory designations within the study area. Therefore, the scheme is unlikely to affect any site that has such a designation.

4.2 Habitats

The habitats within the study area are dominated by improved grazing pasture of negligible biodiversity value. Habitats of elevated value within the scheme include the hedgerows and trees, which provide shelter and foraging opportunities for a number of faunal species and are likely to act as corridors for the movement of wildlife. The watercourses and small areas of semi-improved grassland are also likely to be of some value. The proposed scheme will result in the loss of sections of these habitats, and it is recommended that this loss is reduced as far as possible.

Although no further habitat surveys are recommended at this time, it is recommended that the faunal surveys detailed below are undertaken in order to assess the value of the habitats within the site to the species which may be using them.

4.3 Species

4.3.1 Japanese Knotweed

The area of Japanese knotweed should be controlled before works commence to minimise the risk of spreading this invasive species. It is recommended that a full management plan is prepared, in line with 'The Knotweed Code of Practice'[3], and implemented as soon as possible.

Until such a plan can be implemented, it is recommended that a 7m buffer be established around the Japanese knotweed to avoid contamination of other areas of the site. Access to this area should be restricted until the management plan is in place.

4.3.2 Amphibians and Reptiles

The habitats within the study are considered to be of low suitability for amphibians and reptiles, with limited opportunities for foraging, shelter and hibernation. Accordingly, no further surveys for amphibians or reptiles are recommended at this time. However, it is recommended that a watching brief is maintained during other ecological surveys within the study area, and any incidental sightings of amphibians or reptiles are recorded.

[3] *Environment Agency (2006) The Knotweed Code of Practice – Managing Japanese Knotweed on Development Sites. Version 3, amended in 2013*

4.3.3 Birds

Habitats across the study area are suitable for breeding birds. No further surveys are recommended at this stage, however in order to minimise the risk of disturbing breeding birds, mitigation measures may be required at a later stage.

4.3.4 Mammals

A large number of trees across the study area were noted to have features suitable for roosting bats. The network of hedgerows and watercourses across the site may be used by bats for commuting, while the areas of open grassland may be used for foraging. As such, it is recommended that surveys are undertaken to establish use of the study area by bats to allow an assessment of the likely impact of the scheme to be made and inform any mitigation measures which may be required.

Evidence of badger activity was recorded within the study area, including five sett entrances to the south of Hamiltonsbawn Road. The proposals could result in the damage or disturbance to this sett(s) and others which may be present within the study area. The proposals may also result in a loss of foraging areas and impact on different territories. It is therefore recommended that further surveys are undertaken to establish use of the study area by badgers to allow an assessment of the likely impact of the scheme to be made and inform any mitigation measures which may be required.

We have used our reasonable endeavours to provide information that is correct and accurate and have discussed above the reasonable conclusions that can be reached on the basis of the information available. We would recommend that in order to obtain more secure results, the additional work outlined above should be commissioned.