



Derbyshire
Wildlife Trust



Chesterfield Borough Council - Biodiversity Net-Gain Opportunities

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1. Introduction

The purpose of this report is to record and describe the nature conservation interest of the habitats found across the selected sites, and provide recommendations for habitat improvement with the aim of creating sites of high ecological value.

The sites were selected through spatial analysis on GIS and in consultation with Chesterfield Borough Council (CBC). The potential opportunity sites, provided by CBC, were initially sifted using the Natural England's Combined Habitats Network data to identify locations that provided the greatest opportunity for potential network enhancement and expansion. Following this, the selected sites were assessed against a number of other spatial criteria, such as proximity to designated sites and flood risk, in order to identify the sites which offered the greatest opportunity to deliver against multiple natural capitals and extend existing habitat corridors. Please see Appendix 1 for the results of the desk-based assessment. The final site selection was made using professional judgement and guidance from both CBC and Derbyshire Wildlife Trust (DWT).

The desk-based research indicated that the following sites were most suited for biodiversity net gain (BNG) and had the potential to deliver other benefits including natural flood management and nature recovery network expansion:

- Inkersall Sites (285, 284, 283, 162)
- Loundsley Green Road Amenity Space (259)
- Coniston Road and Rydal Close Open Space (132)
- Wingerworth Way Open Space (147)

The sites were surveyed in October 2021, outside of the optimal survey period, and focused on the areas of lowest biodiversity value (e.g. areas of modified grassland), where most net gain could be achieved. Notes were taken on the adjoining habitats, and Loundsley Green Road Amenity Space which had greater biodiversity value than the desk-study indicated, however detailed species lists and quality scoring was not undertaken for these habitats as they were judged to be inappropriate sites for BNG.



2. Inkersall Sites

2.1 Site Summary

Table 1: Overview of Inkersall Sites	
Site Codes	285, 284, 283, 162 (see Figure 1)
Central grid reference	SK 41793 72606
Area	Total – 4.5 ha (2.2ha, 0.5ha, 0.4ha, 1.4ha)
District	Chesterfield Borough Council
Summary of ecological features	Ancient woodland (~0.54ha) in the north of Site 285 and small area of woodland in the south of Site 284. Remaining habitat consists of low to moderate quality modified grassland.
Designations	The broadleaf woodland in the north of site (285) falls partially within West Wood and Parkers Wood LWS (CH007) and partially within West Wood Ancient Woodland.
Date of walkover survey	15.10.21
Surveyors	Phoebe Cox and Hollie Fisher

2.2 Site Description

The Inkersall sites (including sites 285, 284, 283, 162) are public sites, used for amenity and recreation. The sites are dominated by open modified grassland with low to moderate species diversity. The sites also contain mature, standing trees and two areas of broadleaf woodland, one of which falls partially within an Ancient Woodland and LWS designation.



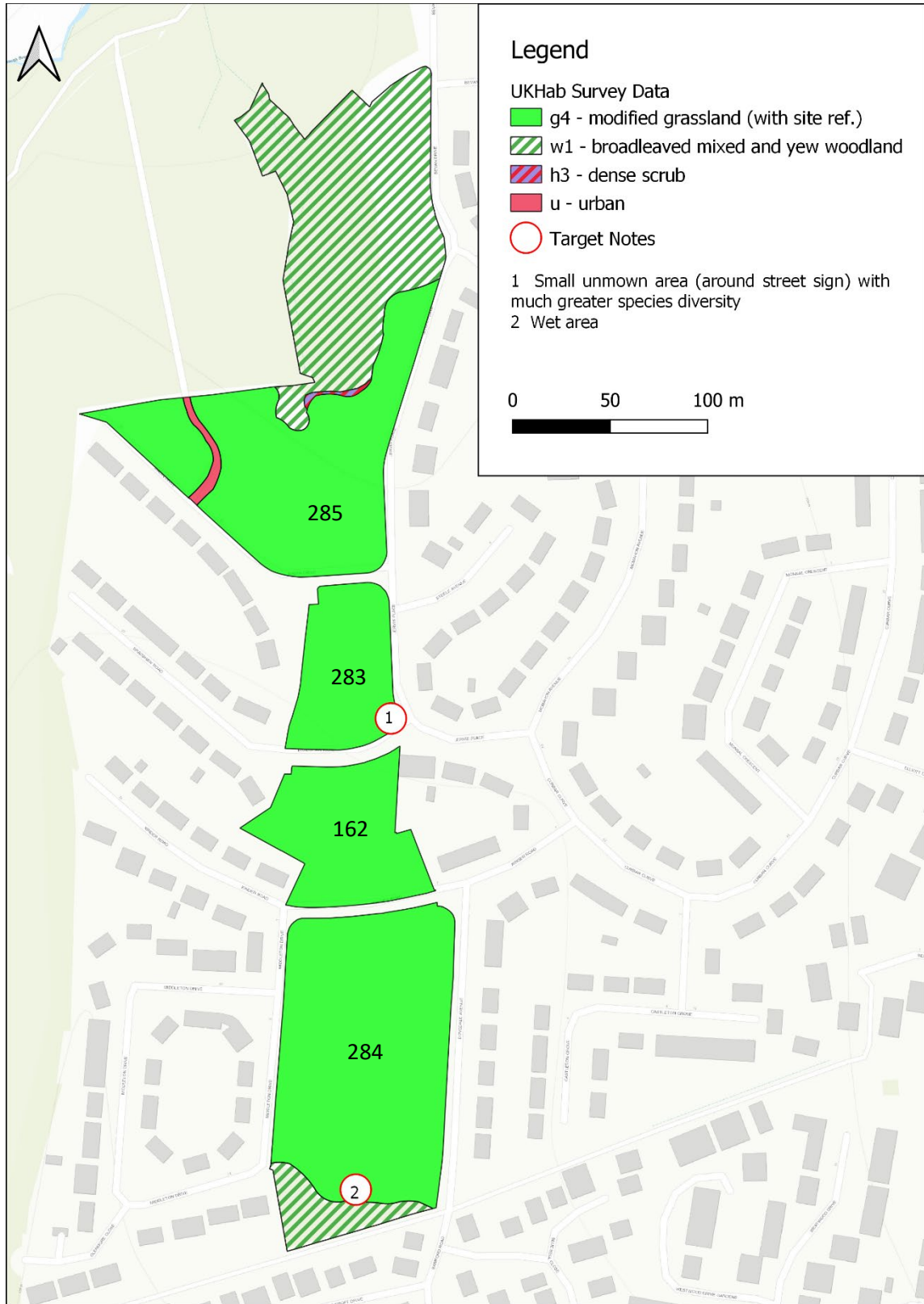


Figure 1: Inkersall Sites Habitat Plan



The Inkersall sites are in the east of the Chesterfield Borough. The habitats within the surrounding landscape consist of a sizeable woodland corridor (West and Parker's Woods) with a small stream and an area of allotments to the west. To the south and east, the landscape is dominated by suburban housing. Beyond the immediate housing estate, the area around Inkersall is predominantly agricultural land.

The Inkersall sites could act as the key aspect of a Nature Recovery Network across the landscape, extending the existing habitats of West and Parker's Woods and connecting other important habitats, allowing species the space to move freely, enabling the creation of both metapopulations and species dispersal through the landscape.



Image 1: Site 285 – looking north towards woodland.





Image 2: Site 162 – looking north towards site 283 and 285.

2.3 Key features

The sites are dominated by low to moderate quality modified grassland with two areas of broadleaf woodland, of which the area in the north is designated Ancient Woodland and a Local Wildlife Site (LWS). Images 1 and 2 and Figure 1 Habitat Plan depict the layout of the habitats on site, as covered in further detail below.

Modified Grassland

The grassland across all four sites consists of low to moderate quality, modified grassland with species including perennial rye grass, daisy, white clover, yarrow, and plantain (Site 285). The grassland is maintained for amenity purposes and as such the sward is short and mostly uniform. A small area at Target Note 1 was subject to lower management intensity, creating a slightly longer sward and providing greater levels of species diversity.

The ground at the south of Site 284, at Target Note 2, was considerably wetter than the rest of the sites.



Mixed Broadleaf Woodland

The native broadleaf woodland in the north of Site 285, falls partially within West Wood and Parker's Wood LWS (CH007) and partially within West Wood Ancient Woodland (0.54ha). Ash dieback was present within this woodland and along the woodland's southern border; bramble scrub is beginning to encroach and dominate.

A smaller area of broadleaf woodland is also present in the south of Site 284.

Standing Trees

A low number of scattered, mature standing trees are present at the perimeter of the sites.

2.4 Nature Conservation Value

The site is dominated by modified grassland used for amenity purposes and therefore these areas have limited nature conservation value.

The broadleaf woodland and scrub provide resources and habitat niches for a range of birds including dunnock, finches and corvids. In addition, the area of woodland in Site 285, will provide further value for a range of fauna species, with many of the splits and gaps in the broken stems providing key features for invertebrates, nesting birds and roosting bats.

2.5 Management Recommendations

Site 285

Natural Regeneration

As Site 285 has mature, native woodland established in north of the site, it poses the perfect opportunity for natural woodland colonisation or 'rewilding'. Using natural colonisation on appropriate non-wooded sites is preferable to planting as it results in a more accurate match to the natural woodlands in the area and will benefit from guaranteed local provenance. It also allows the development of ecotones between the different habitats.

Low levels of scrub are beneficial to numerous species and should be allowed to develop. However, a dense area of bramble scrub encroachment is currently present on the southern boundary of the woodland and will need to be managed and kept at a low level to prevent the bramble scrub suppressing the regeneration of other species. The bramble should either be continuously managed by being repeatedly cut back before it becomes dense (no woody material can be removed during nesting bird



season (March – September inclusive) or, with sections of it removed completely. To completely remove the bramble, without using chemicals, the plant needs to be cut back and the roots dug out, again outside of nesting bird season.

As Site 285 is in a residential location and rewilding is inherently ‘messy’ looking, we would recommend fencing around the site and displaying signage explaining the value of natural regeneration and urban rewilding. Derbyshire Wildlife Trust would be able to support you with messaging around this subject, if required.

Once the current amenity mowing regime is halted and the bramble scrub has been controlled, we would expect to see saplings appearing across the site within the first two to three years, and by year 10, approximately 100 tree stems per hectare.

Ash dieback

Ash dieback is present in the woodland at Site 285. To reduce the spread of spores, branches of trees most impacted should be felled and removed, this should be conducted during winter, to both avoid nesting bird season and reduce spore count. Through removing the branches and crowning the tree as opposed to felling it completely, the tree remains a habitat feature, able to age and create standing deadwood whilst reducing the spread of dieback.

Standing and fallen deadwood

Both standing and fallen deadwood are key habitat features, supporting many species and should be retained wherever possible. Where standing deadwood or standing trees need to be removed for safety issues, as is required at the site entrance, best practice should be followed:

- Wherever possible, avoid removing the whole tree, instead removing the affected branches. The stump can then either be left to regrow or, features can be manually created by cutting lines and gaps into the newly cut stump as opposed to leaving it flat.
- If the removed limb is not diseased it should be retained on site as fallen deadwood.
- All removal must be done outside of nesting bird season. However, where this is not possible the tree must be checked by a suitably experienced ecologist before removal, in order to comply with the Wildlife and Countryside Act. Failure to comply has reputational and legal risks.



Sites 283, 162 and 284

Sites 283, 162 and 284 are set slightly further back from the woodland so natural colonisation would take longer here. Additionally, if similarly, dense woodland was created at these sites, it would block the distant countryside views and may be looked on unfavorably by local residents. Hence, across these sites we recommend the planting of scattered trees and introducing a relaxed mowing regime. This would extend the current woodland habitat corridor and provide an 'edge' type habitat with more open spaces than the current woodlands. These habitats are particularly important and rare in Derbyshire.

Tree Planting

The best time to plant trees is between November and March when they are dormant for the winter and can be moved without damage. Avoid planting in waterlogged or frozen ground, as this will damage the root system.

The best trees to plant are young trees, less than 1m tall, known as 'whips'. Whips establish themselves easily, grow quickly and are cheaper to buy. They do not need staking and are a less obvious target for vandals. Larger, older trees and shrubs can be planted to create an immediate, visual effect. However, they are much more expensive and will need supporting with stakes until the root system becomes established, usually until the third spring, after planting out.

To create the appearance of scattered trees, we recommend a planting rate of 10-15 trees per hectare. The species we recommend for this includes sessile oak, pedunculate oak, sycamore, silver birch, small leaved lime, cherry, apple, sweet chestnut and rowan.

It is important to use locally sought native plants to conserve genetic characteristics. Locally sourced trees and shrubs will be better adapted to the local soil and weather conditions.

Grass Management

If possible, relax the mowing regime in some areas of the sites, aiming retain corridors of long grass for hedgehogs and other small mammals to commute through the sites. Please refer to Section 3.5 of this report for more detailed recommendations on timings of grassland cutting regimes and recommendations.

As the grassland is of relatively low species diversity, it may also be beneficial to look into sward scarifying and/or seed spreading to increase species diversity. Please refer



to Section 5.5 of this report for more detailed recommendations of increasing species diversity across modified grassland sites.



3. Loundsley Green Road Amenity Space

3.1 Site summary

Site Code	259
Central grid reference	SK 35911 72213
Area	2.7 ha
District	Chesterfield Borough Council
Summary of ecological features	Two areas of neutral grassland (managed), one area of neutral grassland exhibiting signs of succession; dense scrub and standing trees surrounding a naturally wet area dominated by tall ruderal vegetation.
Designations	No Statutory Designations. Site is one of Chesterfield Borough Council's 'Wild Areas'.
Date of walkover survey	15.10.21
Surveyors	Phoebe Cox and Hollie Fisher

3.2 Site Description

Loundsley Green Road Amenity Space is a public site, used for amenity and recreation. The site is dominated by natural grassland in differing stages of succession. The site also contains an area of dense scrub with young and mature, standing trees surrounding a wetter area of the site.

Loundsley Green Road Amenity Space is in the west of the Chesterfield borough. The site is within 100m of Ashgate Plantation LWS and is within the Holme Hall and Newbold Green Wedge. The surrounding landscape consist of a suburban housing



estate and a range of open spaces and semi-natural habitats including Holmebrook Valley Park.

The site could act as a key aspect of a Nature Recovery Network across the landscape, extending and enhancing the habitat connectivity between other important habitats and sites allowing species the space to move freely, enabling the creation of both metapopulations and species dispersal through the landscape.

3.3 Key features

The site is dominated by grassland, consisting of other neutral grassland, an area of modified grassland and an area of dense and scattered scrub with a number of mature, standing trees surrounding a wet basin as shown in images 3 and 4, and Figure 2, the Habitat Plan which depicts the layout of the habitats on site, as covered in further detail below.



Figure 2: Loundsley Green Road Amenity Space Habitat Plan





Image 3: Loundsley Green Road Amenity Space – managed grassland (Target Note 5)



Image 4: Loundsley Green Road Amenity Space – wet basin area (Target Note 3)



Other Neutral Grassland

Other neutral grassland, consisting of rank and unmanaged sward is present across the majority of the site. The grassland within the areas with Target Notes 5 and 6, contained approximately 8 species indicative of high value grassland (Note: the walkover survey conducted outside of optimal survey window and vegetation had been cut across 90% of the site, a full habitat survey within optimal season would be required to determine true value). These areas of grassland were frequented by perennial rye, meadow foxtail, creeping buttercup, sorrel, soft rush, fescue, creeping soft grass, yorkshire fog and ragwort. No one species dominated these areas, instead the sward contains a mixture of species in low density.

The area to the east, labelled with Target Note 4, is in an early successional stage, between woodland and grassland. The area of other neutral grassland to the south of this, labelled with Target Note 3, is located within a naturally wet basin in the site and is dominated by tall ruderal vegetation, including creeping thistle and willow herb. A small number of young saplings (including willow and oak) are also present in this area.

Dense Scrub

An area of dense, bramble dominated, scrub with a mix of young and mature standing trees (including oak, hawthorn and willow) surrounds the wet basin area of the site.

Modified Grassland

A small area of amenity grassland is present in the north-east of the site, the grassland has been classified as low quality, modified grassland dominated by perennial rye grass. The grassland is maintained for amenity purposes, as such the sward is short and mostly uniform.

3.4 Nature Conservation Value

The mixture of mature, standing trees and sections of dense scrub interspersed within grassland provides resources and habitat niches for a range of species.

The site is dominated by neutral grassland which appeared to have a mowing regime that allowed the grasses to grow tall and flower over the spring and summer season. Grassland areas such as this provide vital resources and shelter for a broad range of invertebrates, small mammals and reptiles. Further, the dense scrub and wooded habitat provides resources and habitat niches for a range of bird species.



3.5 Management Recommendations

Grassland

The grassland should be cut on a rotational basis, aiming to cut roughly half of the site one year and another half the next to mimic the natural, alternating grazing patterns that historically would have occurred over grasslands, creating a mosaic of sward. Additionally, it is preferable to leave some areas uncut each year to provide refuge for invertebrates. Additional measures to reduce the impact of mowing on invertebrates is to set the mower blade as high as possible and mow from the inside of the field outwards. Ideally, cutting should be undertaken with a cutter bar or rotary mower, rather than a flail mower.

The timings for grass cutting should be varied, with cuts taking place in late summer / early autumn (August to October) with a particularly late cut every three years to allow full flowering and seeding of plants, especially late bloomers, and to minimise disturbance to invertebrates. The later in the year that the cutting is left, the more plants will have the opportunity to set their seeds. Once cut, all cuttings must be removed to prevent the dead material from forming a thatch and smothering any new growth.

If possible, the cuttings should be left on the ground for a minimum of one day before being removed to allow small mammals and invertebrates to leave the vegetation and allow remaining seeds to drop. This management technique will encourage greater floristic diversity and may reduce the density of some of the more dominant species including rank grasses. The collected cuttings can then be used as a tool for habitat creation, creating a small pile of the cuttings within the undergrowth of the boundary scrub, providing a feature for invertebrates, small mammals and reptiles.

Species diversity

Under the above management regime, species diversity of the grasslands should increase over time. Diversity should be monitored over the next 3 – 5 years to assess change as a result of the updated mowing regime. Ideally, human intervention should remain minimal, instead allowing nature to lead and species to naturally move in. However, if after year 5 no clear increase in species diversity is observed, it is recommended that further management is implemented.

In this occurrence, yellow rattle is to be sown within the areas where grass is most dominant as this species is semi-parasitic and will stunt grass growth by up to 60%, opening the canopy and allowing flowering species to move in. Yellow rattle must be



sown on bare soil, either by scarifying an area or using sections which are naturally bare such as mole hills. In addition, native wildflower seeds are to be collected from a local source and sown on areas of scarified or bare ground, in the event that diversity does not naturally increase.

Wetland Habitat Creation

The wetter area of Other Neutral Grassland (Target Note 3) which is presently dominated by tall ruderal herbs, provides a perfect opportunity for wetland creation in urban Chesterfield. During the site identification phase of the project this area of the site was also identified to have high surface water flood risk.

Wetland creation would enhance the biodiversity value of the site and surrounding areas, and could also improve the appearance and use of the site, if features such as a board walk or viewing platforms were installed.

Ground clearance and re-grading of land

The design of a wetland will affect its use as a wildlife habitat. Integrating a pond into the wetland habitat will further increase the sites biodiversity value. The pond should be designed with an irregular edge, containing bays to provide shelter and habitats for different wildlife. Extending the margins and creating gently sloping banks will allow easy access for wildlife, as will keeping some areas less vegetated than others.

The initial re-grading of the land should provide the necessary stripping of vegetation to bare soil. As with grassland, high nutrient levels in wetlands can be detrimental to the establishment of young plants and seeds.

Vegetation establishment

If wetland plants are to establish, competition from vigorous weeds must be kept to a minimum. Hand weeding, ploughing, rotavating and flooding are all methods that can be used.

The simplest way to create a new wetland site is to provide the correct conditions and allow natural regeneration of wetland species. However, as the site is not in close proximity to another wetland there is no guaranteed local seed source.

Planting a seed mixture across the site is a good method of re-introducing species that may have been lost from the seed bank. When sowing a seed mixture there are several factors to consider:

- Sow in still wind conditions and bulk the seed with sand to make sowing easier.



- Ensure soil is saturated but not flooded.
- Sow on a flat, vegetation free bed or specially prepared fine ridge and furrow.
- Avoid sowing on low points or depressions.
- Sow during April or May when daytime temperatures are in the range 10-25°C and nights are frost-free.
- For bankside vegetation that includes reeds and large marginal species, sow 20-125 viable seeds per square m.
- Try to avoid flooding until the seedlings are established to a height of 10-20 cm. The bed may then be flooded to a depth of 5 cm.
- It will be difficult to sow submerged and free-floating plants as seed. These are best introduced into the wetland as young plants.

The use of pot grown plants increases the chances of success in establishing the wetland. Although it is a more expensive method, it can turn out to be more cost effective due to the greater success achieved. These must still be native and local provenance plants. Plugs can be purchased from a commercial supplier

Rhizomes and stem cuttings, sourced from pond clearance on nearby wetlands, are another method of establishing vegetation. This method has a good success rate, with failure usually due to the rhizomes drying out. Rhizomes are usually clumped together in tight mats in the soil. They will have to be dug out and the soil spread over the site at a depth of around 25-30 cm deep. This is best carried out in November to February before shoots develop.

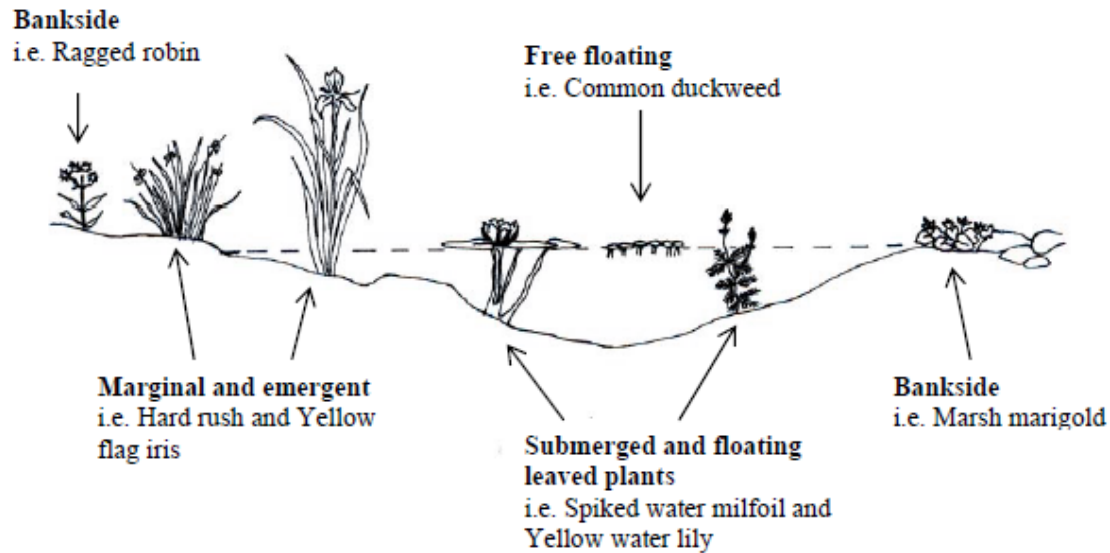
Planting

There are four zones, which can be identified on a wetland site, shown in the diagram below:

- Bankside – marshy plants found further away from the water e.g. ragged robin.
- Marginal and emergent – plants which are very wet tolerant and can stand in water at the margins of the water body e.g. yellow flag iris.



- Submerged and floating leaved – plants that are rooted under the water, around the fringes of the water body and sometimes have floating leaves e.g. white-water lily.



Species Recommendations:

Bankside Species:

Angelica sylvestris wild angelica, *Epilobium hirsutum* great willow herb, *Epilobium palustre* marsh willowherb, *Filipendula ulmaria* meadowsweet, *Galium palustre* common marsh bedstraw, *Lythrum salicaria* purple loosestrife, *Myosotis laxa caespitosa* tufted forget-me-not, *Ranunculus flammula* lesser spearwort, *Ranunculus sceleratus* celery leaved buttercup

Marginal and emergent species:

Caltha palustris marsh marigold, *Eleocharis palustris* common spike rush, *Glyceria fluitans* floating sweet grass, *Glyceria notata* plicate sweet grass, *Iris pseudacorus* yellow flag iris, *Lycopus europaeus* gipsywort, *Mentha aquatica* water mint, *Myosotis scorpioides* water forget-me-not, *Phalaris arundinacea* reed canary grass, *Phragmites australis* common reed, *Sagittaria sagittifolia* arrowhead, *Scirpus lacustris* common club rush, *Veronica beccabunga* brooklime, *Juncus acutiflorus* sharp-flowered rush, *Juncus articulatus* jointed rush, *Juncus conglomeratus* compact rush, *Juncus effusus* soft rush, *Juncus inflexus* hard rush, *Carex acutiformis* lesser pond sedge, *Carex riparia* greater pond sedge



Submerged and floating leaved plants species:

Hydrocotyle vulgaris marsh penny wort, *Myriophyllum spicatum* spiked water milfoil,
Nuphar lutea yellow water lily, *Persicaria amphibia* amphibious bistort

Free floating species:

Ceratophyllum demersum rigid hornwort, *Lemna minor* common duckweed



4. Coniston Road and Rydal Close Open Space

4.1 Site summary

Site Code	132
Central grid reference	SK 37137 73967
Area	2.2 ha
District	Chesterfield Borough Council
Summary of ecological features	Moderate quality modified grassland with four small areas of broadleaf woodland.
Designations	N/A
Date of walkover survey	15.10.21
Surveyors	Phoebe Cox and Hollie Fisher

4.2 Site Description

Coniston Road and Rydal Close Open Space is a public site. The site is dominated by open modified grassland with moderate species diversity and five small areas of mature, standing trees along the site's boundary.

Coniston Road and Rydal Close Open Space is in the north of the Cheresterfield borough and is adjacent to the Dunstone and Sheepbridge Green Wedge. The site is surrounded by a suburban housing estate and Chesterfield Panthers Rugby Club Pitches to the east. The site is approximately 500m south of large agricultural area.

The site could act as a key aspect of a Nature Recovery Network across the landscape, extending and enhancing the habitat connectivity between other important



habitats and sites allowing species the space to move freely, enabling the creation of both metapopulations and species dispersal through the landscape.



Figure 3: Coniston Road and Rydal Close Open Space Habitat Plan

4.3 Key features

The site consists of large areas of modified, amenity grassland with five small areas of mature, standing trees and woodland, shown in Image 5 and the Habitat Plan (figure 5) which depicts the layout of the habitats on site, as covered in further detail below.

Modified Grassland

The grassland across the site consists of moderate quality, modified grassland with species including perennial rye grass, daisy, white clover, yarrow, plantain,



hawksbeard and speedwell. The grassland is maintained for amenity purposes, and as such the sward is short and mostly uniform.



Image 5: Coniston Road and Rydal Close Open Space

Mixed Broadleaf Woodland

Five small areas of broadleaf woodland and standing trees are present along the site's northern boundary, with species including field maple, lime, whitebeam (only native to southern England), silver birch, horse chestnut, sycamore, elder and hawthorn.

4.4 Nature Conservation Value

The site is dominated by modified grassland and therefore has a limited nature conservation value. The small areas of woodland and standing trees have ecological value through providing resources and habitat for a range of birds.



4.5 Management Recommendations

Woodland Creation

During the site identification phase of the project, Coniston Road and Rydal Close Open Space was identified to have high surface water flood risk and fall within Flood Zone 2. In addition to this, the site was also already identified by CBC as a potential site for tree planting.

Woodland creation here, as well as increasing habitat connectivity and the site's biodiversity value, would increase interception and infiltration of rainwater, reducing run off - acting as a natural flood management measure. The site therefore poses the perfect opportunity for woodland creation which if well designed to include footpaths and to maximise water absorption, would be an asset to the local community.

All of the trees currently present on site, excluding one silver birch, are slow growing and poor seeding species; to get the positive impacts of woodland creation, planting would be preferable at this site.

Woodland Planning:

A combination of planted clumps and open areas should be used. Open areas (rides and glades) should make up around 20% of the area of the wood.

The main variables are:

- Species composition of clumps.
- Clump size.
- Spacing of trees and shrubs within clumps.
- Size of gap between clumps.
- Gradations of planted edges.
- Position, width and length of paths through the woodland.
- Size and location of larger open areas.
- Eventual height of the clumps when the trees are mature.



Variations of all these factors within the woodland will increase diversity and provide a higher number of habitat niches which different species can exploit, thus increasing the nature conservation value of the woodland. The aim should be to get a self-sustaining canopy layer, shrub layer and ground layer.

Early successional and fast-growing species such as birch and rowan will be prominent in the early years, and create pleasant, light, airy woodlands after 12-15 years. Slow growing species such as oak will take around 50-80 years to reach maturity and will eventually replace much of the early canopy species.

Tree Planting:

Trees should be planted at intervals of between 2 and 5 m, in irregular groups of 5 - 50 individuals, made up of the same species or 2 - 3 compatible species. It is important not to plant fast growing species, such as birch, close to slow growing species, such as oak. Shrubs can be planted closer together than trees, 1 or 2 metres from the trees and other shrubs is suitable.

The best time to plant trees is between November and March when they are dormant for the winter and can be moved without damage. Avoid planting in waterlogged or frozen ground, as this will damage the root system.

The best trees to plant are young trees, less than 1m tall, known as 'whips'. Whips establish themselves easily, grow quickly and are cheaper to buy. They do not need staking and are a less obvious target for vandals. Larger, older trees and shrubs can be planted to create an immediate, visual effect. However, they are more expensive and will need supporting with stakes until the root system becomes established, usually until the third spring, after planting out.

Species Recommendations:

Canopy (50%):

Betula pendula silver birch, *Quercus petraea* sessile oak, *Quercus robur* pedunculate oak

Understorey (20%)

Major: *Betula pubescens* downy birch, *Ilex aquifolium* holly

Minor: *Sorbus aucuparia* rowan, *Acer campestre* field maple, *Prunus padus* bird cherry, *Malus sylvestris* crab apple

Shrubs (10%):

Major: *Corylus avellana* hazel and *Crataegus monogyna* hawthorn



Minor: *Frangula alnus* alder buckthorn, *Prunus spinosa* blackthorn, *Rosa canina* dog rose and *Viburnum opulus* guelder rose

Open space (20%)



5. Wingerworth Way Open Space

5.1 Site summary

Table 4: Overview of Wingerworth Way Open Space	
Site Code	147
Central grid reference	SK 37944 69050
Area	1.1 ha
District	Chesterfield Borough Council
Key ecological features	Moderate quality modified grassland with a small area of native trees in the east of the site.
Designations	N/A
Date of walkover survey	15.10.21
Surveyors	Phoebe Cox and Hollie Fisher

5.2 Site Description

Wingerworth Way Open Space is a public site, used primarily by local residents and dog walkers for amenity purposes. The site is dominated by open modified grassland with moderate species diversity. The site contains a small area of mature, standing trees in the eastern corner and around the sites margin a range of vegetation including scattered scrub, ephemeral perennials and 'garden escapees' can be found.

Wingerworth Way Open Space is in the south of the Chesterfield Borough. The site is surrounded by a suburban housing estate but it within 500m of larger open areas including a sports field, golf course and agricultural land.

The site could act as a key aspect of a Nature Recovery Network across the landscape, extending and enhancing the habitat connectivity between other important habitats and sites allowing species the space to move freely, enabling the creation of both metapopulations and species dispersal through the landscape.



5.3 Key features

The site consists of large areas of modified, amenity grassland with five small areas of mature, standing trees and woodland, shown in Image 6 and the habitat plan (Figure 4) which depicts the layout of the habitats on site, as covered in further detail below.

Modified Grassland

The grassland across the site consists of moderate quality, modified grassland with species including perennial rye grass, daisy, white clover and yarrow. The grassland is maintained for amenity purposes and as such the sward is short and mostly uniform.

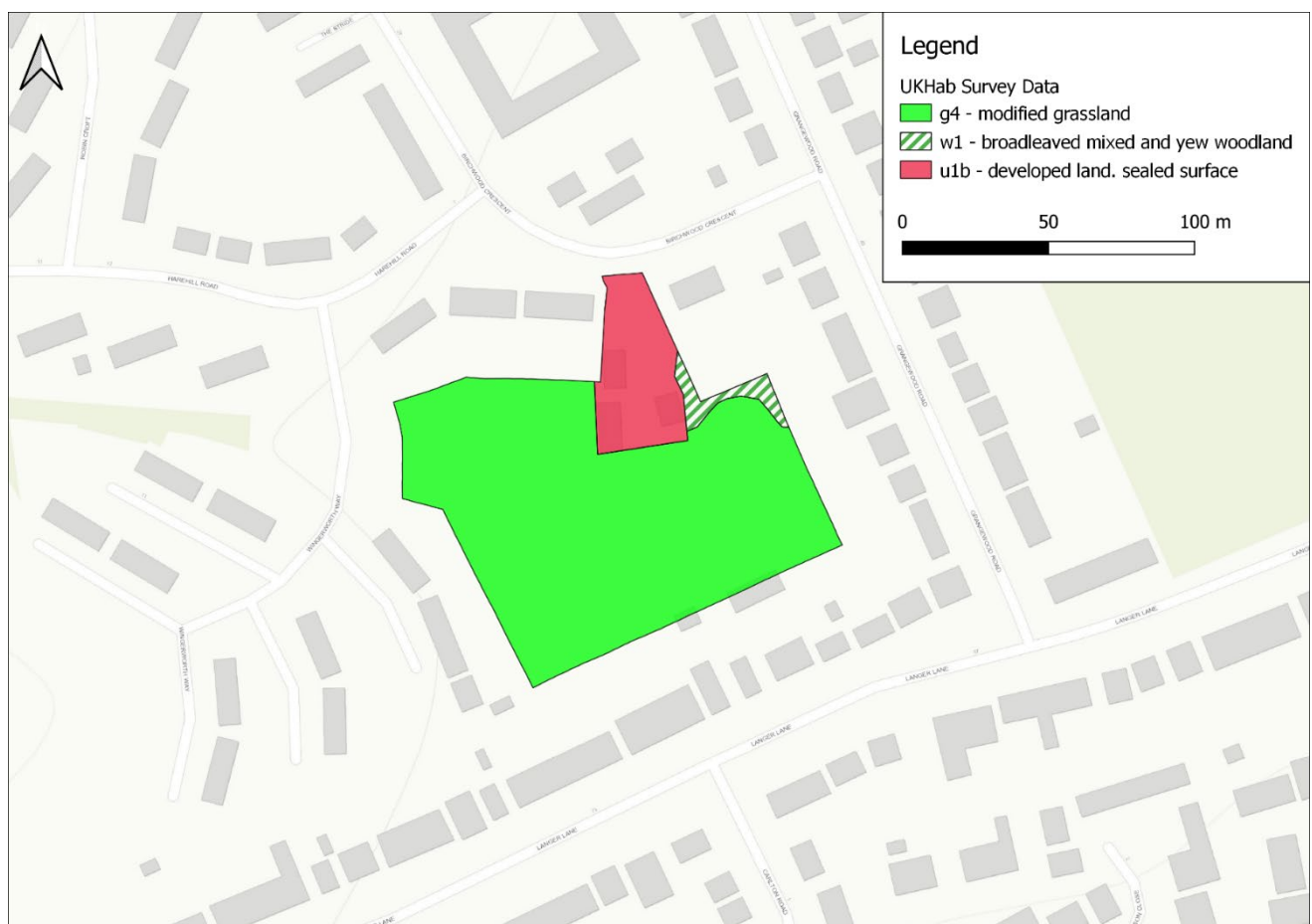


Figure 4: Wingerworth Way Open Space Habitat Plan

Ephemeral short perennials, dominated by rank species such as broadleaved dock and nettle, were found around the site's margin. In addition, other species such as buttercup, cow parsley, cleavers and wood avens were present in some of the



marginal areas. There is potential that in the summer months, more tall ruderal species could be present at the site, but this would need to be confirmed with a survey within the optimal survey window.

A few patches of marginal scrub and a number of 'garden escapees' are also present around the site's margins, including a small dug out garden area in the NE of the site.

Mixed Broadleaf Woodland

One small area of broadleaf woodland and standing trees are present along the site's eastern boundary, with species including elder, damson, cherry laurel (garden escapee).



Image 6: Wingerworth Way Open Space

5.4 Nature Conservation Value

The site is dominated by modified grassland used for amenity purposes and therefore has a limited nature conservation value.



The small area of standing trees and sporadic marginal scrub may provide resources and habitat niches for a range of birds, however only a limited number of species were noted whilst on site.

The ephemeral perennials around the sites margin will provide ecological value for invertebrate species and in turn create a food base for primary consumers. However, a survey within the optimal survey window would be required to access the true range of species present and the value they provide.

5.5 Management Recommendations

Grassland Management

Species rich grassland is one of the most commonly lost habitat types from development. As the grassland at Wingerworth Way Open Space is modified grassland with a relatively low species diversity it offers the perfect opportunity to create a species rich grassland in an urban area.

Seeding into the existing grassland is one option for increasing species diversity, although results for this are often unsuccessful without a associated change in the management regime. The development of an appropriate mowing regime on established grassland will encourage wildflowers and result in a more species-rich meadow, as it will reduce soil nutrient levels over time.

To support establishment of the sown seeds, the existing grass should be cut back hard prior to sowing and harrowed and raked or scarified to expose soil. Turf and soil can also be removed in areas or strips to reduce nutrient levels. This also removes some of the seed bank from which cultivated weeds and coarse grasses may regenerate. Any plant material raked up should be removed.

Sowing in the early autumn is advisable because the warm, moist soil, followed by a cold winter, aids germination. Seeds will naturally germinate in late autumn and in spring, so sowing in autumn will produce early results for the meadow. Recommended sowing rates vary from around 10-30kg/ha (kilogram/hectare) for a meadow, depending on the fertility of the site (the more fertile, the higher the rate). After sowing, the soil should be lightly raked and compacted with a roller to maximise seed/soil contact and encourage germination. It can sometimes be difficult to achieve an even spread of all species at low sowing rates. This is why it's a good idea to mix the seeds with an inert carrier such as sand, untreated sawdust or ground barley meal.



Proportions are not critical but a range of volumes e.g. 10-20 kg carrier: 1kg seed mix, give good results.

Species Recommendations:

The seed mix should contain around 5-10 grasses (e.g. Common bent, Sweet vernal grass, Meadow foxtail, Quaking grass, Crested dog's tail, Red fescue) and 15-20 species of wildflower in a meadow mix. The proportion of grass to flowers in a usual seed mix is around 70% grass to 30% wild flowers. However, wildflower meadows in urban areas need to be enjoyed and accepted by the people who live around them. With this in mind there can be more scope for the plants chosen, although you still need to consider the natural area that the habitat lies within. This can be achieved by using a seed mixture, which has a greater percentage of wildflowers to grasses (e.g. 25% grasses: 75% wildflowers) and selecting more colourful flower varieties, like cornfield annuals (e.g. corn poppy, ox-eye daisy, cornflower, corn cockle, Corn marigold). Further to this, unlike most wildflowers, cornfield annuals can flourish on fertile soil.

Good quality seed mixes can be sourced from a range of sources, including www.naturescape.co.uk and <https://wildseed.co.uk/>.

Other suitable species: (L=late flowering species)

Grasses:

Agrostis capillaris common bent L, *Anthoxanthum odoratum* sweet vernal grass, *Alopecurus pratensis* meadow foxtail, *Briza media* quaking grass L, *Cynosurus cristatus* crested dog's tail, *Festuca rubra* red fescue, *Phleum pratense* timothy

Major herbs:

Achillea millefolium yarrow L, *Alchemilla vulgaris* Lady's mantle, *Centaurea nigra* black knapweed L, *Conopodium majus* pignut, *Hypochoeris radicata* common cat's ear, *Knautia arvensis* field scabious, *Lathyrus pratensis* meadow vetchling L, *Leontodon autumnalis* autumn hawkbit L, *Leucanthemum vulgare* ox eye daisy, *Lotus corniculatus* common bird's-foot-trefoil, *Trifolium pratense* red clover, *Vicia cracca* tufted vetch

Minor Herbs:

Galium verum Lady's bedstraw, *Listera ovata* common twayblade L, *Pimpinella saxifraga* burnet saxifrage, *Potentilla erecta* tormentil L, *Primula veris* cowslip, *Prunella*



vulgaris self heal, *Sanguisorba officinalis* great burnet L, *Stachys officinalis* betony L, *Trifolium dubium* lesser trefoil, *Vicia sativa* common vetch, *Vicia sepium* bush vetch, *Vicia linifolius* bitter vetch, *Carex flacca* glaucous sedge

Mowing Regime

Grasslands must be managed by cutting if they are to retain high species diversity. Regular cutting in the first half of the first year will prevent the meadow becoming dominated by coarse grasses. After meadows are cut, material should then be raked off to prevent the smothering of other plants and increased fertility that results when the material rots down.

After year one, the grassland should be cut on a rotational basis, aiming to cut roughly half of the site one year and another half the next to mimic the natural, alternating grazing patterns that historically would have occurred over grasslands, creating a mosaic of sward. Additionally, it is preferable to leave some areas uncut each year to provide refuges for invertebrates. Additional measures to reduce the impact of mowing on invertebrates is to set the mower blade as high as possible and mow from the inside of the site outwards, ideally using a c.

The timings for grass cutting should be varied, with cuts taking place late summer / early autumn (August to October) with a particularly late cut every three years to allow full flowering and seeding of plants, especially late bloomers, and to minimise disturbance to invertebrates. The later in the year that the cutting is left, the more plants will have the opportunity to set their seeds. Once cut, all cuttings must be removed to prevent the dead material from forming a thatch and smothering any new growth.

If possible, the cuttings should be left on the ground for a minimum of one day before being removed to allow small mammals and invertebrates to leave the vegetation and allow remaining seeds to drop. This management technique will encourage greater floristic diversity and may reduce the density of some of the more dominant species including rank grasses. The collected cuttings can then be used as a tool for habitat creation, creating a small pile of the cuttings within the undergrowth of the boundary scrub, providing a feature for invertebrates, small mammals and reptiles.

To accommodate existing site users who use the site to walk their dogs, an area of the site could continue to maintain the existing, more intense management regime.



Hedgerow Creation

To further increase the biodiversity value of the site, native trees and hardy hedge species could be planted around the site's boundary. Hedgerows have huge potential benefits for wildlife, both as a food and shelter resource and as corridors along which birds, mammals and invertebrates can move to other habitats.

When planning a hedge use only locally common native species, as this will increase its value for wildlife. No one species should comprise more than 75% of the species used. As a general rule: 75% should comprise hawthorn and / or blackthorn and 25% a mix of other locally common species (e.g. holly, hazel, field maple, alder buckthorn, dog rose, guelder rose)

All planting should take place between November to March, but avoid waterlogged or frozen soil conditions that would damage the roots of new plants. To achieve a thick hedge, it is advisable to plant in double staggered rows, with 6 - 8 plants per m. Ensure that the plants are well watered and if possible, they should be watered well in their first summer. Weed control can be achieved by using a mulch mat around the base of the whip, or through regular weeding.

Suitable hedge plants to buy are bare rooted two-year-old whips (small plants up to 80cm), which will establish better than larger and older plants. When planting out ensure that the roots of the plants are never exposed as they are easily damaged.

In the first spring after planting you can cut the hedge plants back to a height of 45-60 cm to promote bushy growth resulting in a thicker hedge. Also, remember to replace any dead plants in the hedge line to prevent gaps. All management on hedges should take place between November and March, but the later you can leave it the better. Cut the hedge on a rotation of every two to three years as fruit will only develop on two-year-old growth. Also try to cut different hedges in different years to leave some hedges undisturbed. The thicker and taller the hedge is, the better for wildlife.

To improve the wildlife value of the hedge you are planting, include trees in the hedge line. Plant trees every 10 to 20 m, particularly at junctions with other hedges. These act as song posts for birds and add habitat interest. Suitable tree species for hedgerows include sessile oak, pedunculate oak, rowan, field maple and hazel.





Appendix 1

Table A.1: Potential sites – analysis summary.

KKP_Ref	Site Name	Land Use	Shape Area (ha)	Sift	Flood Risk				Green Wedge	AW	Priority Habitat	LWS	Notes
					EA FZ2	EA FZ3	SWFR (1 in 30)	SWFR (1 in 1000)					
125	Netherthorpe Recreation Ground	Amenity greenspace	0.94	Round 2 - NEZ2				X	X				
126	Land to West of St Philips Drive	Amenity greenspace	0.37	Round 2 - NEZ2									
132	Coniston Road and Rydal Close	Amenity greenspace	2.15	Round 1 - NEZ1	X		X	X	X				FZ2, high surface water flood risk. Large site – good BNG potential.
147	Wingerworth Way Open Space	Amenity greenspace	1.14	Round 2 - NEZ2	X		X	X					FZ2, high surface water flood risk
160	Tansley Drive Woodland	Semi / Natural greenspaces	1.38	Round 3 - NEZ			X	X					Band of high SWFR
162	Dovedale Avenue	Amenity greenspace	1.39	Round 2 - NEZ2									Forms part of a chain of sites (284, 285, 283, 162).
163	Cottage Close	Amenity greenspace	0.63	Round 3 - NEZ			X	X			DW		Site adjacent to deciduous woodland priority habitat - potential natural regeneration site. Low SWFR
165	Haddon Close 2 Amenity Space	Amenity greenspace	0.72	Round 3 - NEZ			X	X			DW		Low to medium SWFR.
227	Land Adjacent Baines Wood Close	Amenity greenspace	0.29	Round 3 - NEZ									
252	Hassop Road Amenity Space	Amenity greenspace	0.81	Round 1 - NEZ1	X		X	X					Only very small areas of flood risk on the periphery of the site.
259	Loundsley Green Road Amenity Space	Amenity greenspace	2.71	Round 1 - NEZ1			X	X	X				Close proximity to priority lowland meadows habitat. High SWFR in southernmost corner. Largest site - greatest BNG potential?
260	Brushfield Road Amenity Greenspace	Amenity greenspace	0.18	Round 2 - NEZ2					X				Site adjacent to Traditional Orchard.

265	Hasland Green Corridor	Semi / Natural greenspaces	1.75	Round 1 - NEZ1			X	X				TO	
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