

Land at Manchester Road, Hollins Green

Technical Appendix

Peel L&P Holdings (UK) Ltd

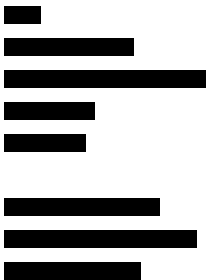
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THE ENVIRONMENT PARTNERSHIP



LAND AT HOLLINS GREEN WARRINGTON PRELIMINARY ECOLOGICAL ASSESSMENT



Offices in Warrington, Market Harborough, Gateshead, London and Cornwall

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Author	Ian Holland
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Checked	Linda Swankie
Approved	Anne Pritchard

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APPENDICES

- APPENDIX A: Proposed Development
- APPENDIX B: Desk Study
- APPENDIX C: Target Notes

DRAWING

G6929.01.007 Phase 1 Habitat Plan

Executive Summary

- 1.1 TEP was commissioned by Peel L&P Holdings (UK) Limited (Peel) in April 2018 to carry out an ecological assessment of Land at Hollins Green, to inform release of this site for development as part of the new Warrington Local Plan. Based on the findings of this report there is not thought to be any ecological reason which would prevent sustainable development of this site.
- 1.2 The site is located off Manchester Road in Hollins Green and is composed of three arable fields bisected by vegetated brooks. There are also small areas of woodland in the south and west of site. The site has good connectivity to the wider area along the Manchester Ship Canal, which runs along the south eastern boundary of the site.
- 1.3 A constraints and opportunities report was produced by TEP for this site in September 2017 which also included an extended Phase 1 Habitat Survey and desktop assessment. This Ecological Assessment is based on the findings of those surveys.
- 1.4 Rixton Clay Pits SAC, SSSI and LNR is located approximately 700m south west of the site. To avoid any indirect impacts from increased public pressure, suitable walking routes and public open space have been included within the development proposals. Although there are a number of other internationally designated sites within 10km of the site, none of these will be impacted by its development.
- 1.5 An Arboricultural report has been produced by TEP, all recommendations made in this report will be adhered to in order to prevent any negative impacts on retained trees or woodland. Woodland, ponds, hedgerows and mature trees will be retained where possible and any losses mitigated through the creation of replacement habitat on site.
- 1.6 New bridges are to be created on site. These will be designed so as to impose minimal impacts on protected species and habitats.
- 1.7 Himalayan balsam is present across the site. A management plan will be produced detailing measures required to prevent its spread during development.
- 1.8 The hedgerow along the western boundary of the site will be checked for the presence of native bluebell at an appropriate time of year, prior to removal of a small section for site access. If native bluebell are identified they will be translocated to an area of retained suitable habitat on site.
- 1.9 There are trees present on site with potential to support roosting bats and the site boundaries offer foraging and commuting potential to local bat species. Further survey will be undertaken to determine the use of the site by foraging, commuting and roosting bats. Should bats be present and likely to be impacted by development, mitigation measures and/or a licence from Natural England may be required. Should mitigation be required there is a number of retained mature trees and areas of open green space within which mitigation measures can be cited.

- 1.10 A single pond is present in the north west of the site. This will be subject to further survey to confirm the presence or absence of great crested newts. If great crested newts are present it is likely a licence will be required from Natural England. Any mitigation required can be included on site within retained areas of open green space.
- 1.11 Otter and water vole surveys will be undertaken to inform any development within close proximity to the banks of the two ditches running across the site, particularly the location of the two proposed bridge crossings. Should otter or water vole be present, suitable mitigation measures will be undertaken on site and a licence may be needed from Natural England.
- 1.12 A single badger sett has been identified on site. If development is to come within 30m of this sett further survey will be undertaken. Initially the occupation status of the sett must be confirmed and, if it is found to be in use, it will be closed under licence from Natural England.
- 1.13 The habitats present on site are suitable to support nesting birds. If vegetation clearance cannot be undertaken outside the nesting bird season (March - August inclusive) checks must first be undertaken by a suitably qualified ecologist.
- 1.14 Wintering bird surveys will also be undertaken to confirm the importance of the site to this group and to fully assess the potential impacts of development.
- 1.15 A Reasonable Avoidance Method Statement will be produced detailing how harm to both brown hare and hedgehog will be avoided during site clearance works.
- 1.16 Biodiversity enhancement measures suitable for this site are set out in Section 7.28.
- 1.17 To date no biodiversity net gain assessment, to calculate the change in ecological value, has been undertaken with regard to this site and there is currently no legislation or policy which requires this to be undertaken. However, The Environment Bill is currently passing through parliament, and it is considered likely that this will pass into law prior to commencement of a detailed planning application for this site. The Environment bill will require a minimum 10% net gain on this site.
- 1.18 Therefore, submission of a detailed planning application for this site will be supported through completion of a Biodiversity Net Gain assessment undertaken using Biodiversity Metric 3.0 and a minimum 10% net gain will be achieved for the development. The methods for this are detailed in the recommendations section of this report.

1.0 Introduction

- 1.1 TEP was commissioned by Peel in April 2018 to carry out an ecological assessment of Land at Hollins Green, to inform potential future residential development of the site.
- 1.2 Warrington Council undertook a review of their local plan in 2019. As part of this there was a call for sites which were capable of supporting new residential development and Peel put forward this site for release. On 20th September 2021 the Council approved an Updated Proposed Submission Version Local Plan for public consultation in accordance with Regulation 19 of The Town and Country Planning (Local Planning) (England) Regulations 2012 (as amended). Within the updated Local Plan this site has been omitted.
- 1.3 TEP undertook a constraints and opportunities assessment for this site in September 2017 (Ref: 6612.01.002). This included an extended phase 1 habitat survey and desk based assessment. An Arboricultural Constraints report has also been produced for the site (TEP Ref: 6929.02.005) and should be read in conjunction with this report. Site proposals are included at Appendix A.
- 1.4 The assessment has been informed by the following surveys:
 - Desk study;
 - Extended Phase 1 habitat survey; and
 - Ground-based inspection of trees for bat roost potential.
- 1.5 The objectives of this assessment are to:
 - Describe the existing vegetation and give an overview of the habitats present;
 - Identify any features of conservation value such as designated sites and protected or notable habitats and species within the site or the wider zone of influence;
 - Advise on further survey or mitigation requirements that may be needed to inform the evolving proposals; and
 - Outline opportunities for biodiversity enhancement in line with the requirements of the National Planning Policy Framework.

2.0 Site Overview

- 2.1 The site is located off Manchester Road in Hollins Green, Warrington. It is composed of three arable fields separated by narrow watercourses. There are woodland blocks present in the south and west of site and a facilities substation is located in the southern corner of the site.
- 2.2 The site is located directly south of the village of Hollins Green and is bounded to the east by the Manchester Ship Canal, to the south by Warburton Bridge Road and to the west by Manchester Road with arable fields beyond. The wider area is made up of residential development and farmland.



Figure 1. Site Location Plan (Contains Ordnance Survey data © Crown copyright and database right 2018).

3.0 Methods

Desk Study

- 3.1 Information regarding designated sites, notable habitats and existing protected and notable species records from the past decade, within a 1km minimum radius of the site (distances as specified in table), were gathered from the sources listed in Table 1. Relevant policies from the local plan(s) relating to biodiversity were also identified (Table 1).

Table 1. Desk Study Information Sources

Source	Nature of Information
MAGIC Map ¹	Statutory protected sites and priority habitats to 1km from the site boundary, with international sites to 10km.
Local Environmental Records Centre	Local wildlife sites and citations, species records to 1km from the site boundary.
Local Plan	Any planning policy allocations on the site. Relevant biodiversity policies, local wildlife site designations, wildlife corridors.
Local Biodiversity Action Plan	Local habitat and species action plans

Limitations

- 3.2 Species records can provide a useful indication of the species present within the search area, although the absence of a given species from the dataset cannot be taken to represent actual absence.

Extended Phase 1 Habitat Survey

- 3.3 A Phase 1 Habitat Survey was completed by Ian Holland ACIEEM in September 2017 using the standard JNCC Phase 1 habitat assessment method (2010)². This method records the habitat types present in and immediately surrounding the site, based on the JNCC descriptions. Plant species are identified in accordance with Stace (2010)³ and recorded as target notes using the DAFOR⁴ scale.

¹ Multi-Agency Geographic Information for the Countryside - Searchable mapping website

² JNCC (2010) Handbook for Phase 1 Habitat Survey: A technique for environmental audit. Joint Nature Conservation Committee, Peterborough

³ Stace, C. (2010) New Flora of the British Isles. 3rd Ed. Cambridge University Press

⁴ DAFOR = Dominant, Abundant, Frequent, Occasional & Rare

- 3.4 The survey method was extended through the additional recording of specific features indicating the presence, or potential presence, of protected species or other species of nature conservation significance, including invasive species, in accordance with Guidelines for Preliminary Baseline Ecological Appraisal (CIEEM, 2013⁵).

Limitations

- 3.5 The site survey was undertaken during the optimum time period of April to October and the whole site could be accessed, there are therefore no limitations to the survey.

Bats

Ground-based Inspection of Trees

- 3.6 A ground-based inspection of trees was carried out alongside the Phase 1 Habitat Survey, looking for signs of bat activity and features suitable for roosting in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) (Collins, 2016)⁶.
- 3.7 Potential roost features (PRF) include rot holes, splits, snags and flaking or lifted bark. Ivy cover can be suitable for roosting, for example, where the stems are overlapping and matted to form a crevice feature beneath. Ivy cover that is not sufficiently established to offer roosting opportunities, but which may mask other suitable features on a tree, is noted separately as a potential constraint.
- 3.8 Each tree was then categorised, based on the findings of the inspection. In parallel with this, the proposed working areas were considered for their value to support foraging and dispersal by bats, taking into account the habitats present, their position in the wider landscape of the estate and connectivity to surrounding habitat features. The categories used are as listed in Table 2 (based on Collins, 2016, Table 4.1).
- 3.9 The findings of the daytime inspections are used to determine the scope of any further nocturnal surveys to ascertain whether a roost is present and, if so, the species and status.

Limitations

- 3.10 The survey was undertaken in September when the trees were still in leaf, this limits the surveyor's ability to see small cracks and crevices within the tree canopy.

Table 2. Categorisation of Trees and Habitats for Bats

Category of Suitability	Description of Roosting Habitat	Description of Habitat for Foraging & Dispersal
Confirmed roost	Roosting bats or evidence thereof identified.	Habitats known to be used by bats entering or exiting the roost, or which support associated foraging or commuting behaviour.

⁵ Chartered Institute of Ecology and Environmental Management. Guidelines for Preliminary Ecological Appraisal. (CIEEM <http://www.cieem.net/>), 2013.

⁶ Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)

Category of Suitability	Description of Roosting Habitat	Description of Habitat for Foraging & Dispersal
High suitability	A tree possessing potential roost features (PRF) that is/are suitable for use by larger numbers of bats on a regular basis and potentially for longer periods of time, due to their size, shelter, protection and surrounding habitat.	Continuous high quality habitat that is strongly connected with the wider landscape and is likely to be used regularly by commuting or dispersing bats (e.g. river valley, vegetated stream, woodland edge, hedgerows with trees), or by foraging bats (e.g. broadleaved woodland, grazed parkland, tree-lined watercourses or ponds).
Moderate suitability	A tree with PRF that could be used by bats but which is unlikely to support a roost of high conservation status with respect to roost type i.e. maternity or hibernation. Note: Roosts of high conservation status with respect to species can only be determined once presence is confirmed.	Continuous habitat connected to the wider landscape that could be used by bats for commuting (e.g. lines of trees or scrub or linked back gardens), or foraging bats (e.g. trees, scrub, water, grassland).
Low suitability	A tree with PRF that could be used by individual bats on an opportunistic basis, but which do not offer sufficient space, shelter, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.	Habitat that could be used by small numbers of commuting bats (e.g. a gappy hedgerow or un-vegetated stream) or foraging bats (e.g. a lone tree or small patch of scrub) but which is not well connected to the surrounding countryside.
Negligible suitability	Inspected tree with no/exceptionally poor suitability PRF.	No, or exceptionally poor quality, habitat features on site that are likely to be used by foraging, commuting or dispersing bats. A general lack of linear features and low habitat structural or floristic diversity.

Water Vole/ Otter

- 3.11 No detailed survey for water vole and otter was undertaken, however, any watercourses present on site were subject to a visual assessment from the banks of the watercourse for their potential to support these species.

Badger

3.12 A detailed badger survey was undertaken alongside the Phase 1 Habitat Survey. The standard methodology as recommended by Harris, Cresswell and Jefferies (1989) was followed to complete a thorough search for evidence which would indicate the presence of badgers, both on the site and locally. Evidence of badger occupation and activity sought included:

- Setts: including earth mounds, evidence of bedding and pathways between setts;
- Latrines: often located close to setts, at territory boundaries or adjacent to favoured feeding areas;
- Prints and paths or trackways;
- Hairs caught on rough wood or fencing;
- Other evidence: including snuffle holes, feeding and playing areas and scratching posts.

Limitations

3.13 All areas of the site could be suitably accessed during the survey. There were no specific limitations.

4.0 Results

Planning Context

- 4.1 Relevant extracts of local planning policy are provided in the desk study (Appendix B). In summary, the site lies within the greenbelt in the Warrington Borough Council Local Plan Core Strategy (adopted July 2014).
- 4.2 Ecological policies relevant to the site include Policy QE5 'Biodiversity and Geodiversity', which sets out the council's aim to protect and, where possible, enhance sites of recognised nature and geological value, and Policy QE6 'Environment and Amenity Protection' which states that the council will only support development which would not lead to an adverse impact on the environment or amenity of future occupiers or those currently occupying adjoining or nearby properties, or does not have an unacceptable impact on the surrounding area.

Designated Sites

- 4.3 Rixton Clay Pits is the closest internationally and nationally protected site and lies approximately 700m south west of the site. Rixton Clay Pits is designated as a Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI), and as a Local Nature Reserve (LNR) for its population of great crested newts and rich mosaic of wet grassland and woodland. No other nationally designated sites are present within 1km.
- 4.4 There are a further three internationally designated sites within 10km. Manchester Mosses SAC is composed of a number of different sites and is designated for its degraded raised bog habitat which is still capable of natural regeneration. The closest part of the SAC (Risley Moss) lies approximately 2.5km to the north west of the site. Rostherne Mere is located 7km south east of the site and is designated as a SSSI, National Nature Reserve (NNR) and Ramsar site. It is designated for its peatland mere and for its internationally and nationally important bird populations. Midland Meres and Mosses Phase 1 is located 8.5km south of the site and is a Ramsar designated for its diverse range of wetland habitats, rare plant species and assemblage of rare wetland invertebrates.
- 4.5 The site falls within two SSSI Impact Risk Zones (IRZ), but it is not clear exactly which site this is for as there are a number within close proximity. IRZs highlight the potential for effects on a SSSI if certain types of development are planned within a specified radius of it. Potentially relevant developments include:
- Residential - Residential development of 100 units or more.
 - Rural Residential - Any residential development of 50 or more houses outside existing settlements/urban areas.

Habitats and Flora

- 4.6 The desk study (Appendix B) identified the following notable habitats and flora. Notable habitats identified on the MAGIC Map dataset on or adjacent to site are as follows:

- Deciduous woodland is present both on site, adjacent to the western boundary and immediately outside the southern and western boundaries.

4.7 Records of the following flora were also returned within 1km of the site:

- Protected and notable species: Bluebell *Hyacinthoides non-scripta*
- Non-native invasive species: Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandulifera*, Giant hogweed *Heracleum mantegazzianum* and yellow archangel *Lamium galeobdolon* subsp *argentatum*.

4.8 Habitats present in and around the site are described below and illustrated in TEP drawing G6929.01.007. Target notes are provided in Appendix C. Photographs are included in this report.

Woodland, Trees and Scrub Habitats



Figure 2 - Woodland block at western boundary

- 4.9 A block of semi natural broadleaved woodland is present along the western boundary (TN6). This lines both sides of a wet depression and contains abundant sycamore *Acer pseudoplatanus*, ivy *Hedera helix* and crack willow *Salix fragilis*. Large amounts of the non-native invasive species Himalayan balsam are also present which is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This habitat qualifies as a S41 habitat of principal importance.
- 4.10 To the south of site is an area of plantation broad leaved woodland (TN5) growing on the side of an embankment. This is dominated by sycamore and again contains a large amount of Himalayan balsam. Other tree species present include osier *Salix viminalis*, silver birch *Betula pendula*, hawthorn *Crataegus monogyna* and ash *Fraxinus excelsior*.

- 4.11 Scattered trees are present across the wider site, particularly along the route of the two ditches which bisect the site and along the site boundaries. Species present include sycamore, silver birch, ash, English oak *Quercus robur* and wych elm *Ulmus glabra*.
- 4.12 The northern site boundary along Manchester road is defined by a mature species poor intact hedgerow (TN7) dominated by hawthorn. This is a S41 habitat of principal importance but does not appear to qualify as important under 'The Hedgerow Regulations 1997'. A small amount of scattered scrub is also present on site, dominated by hawthorn.

Grassland Habitats

- 4.13 The site is dominated by three arable fields, which had been recently cut at the time of the survey. The boundaries of each field are defined by bands of tall ruderal vegetation mixed with bramble scrub *Rubus fruticosus agg* (TN1). This habitat is dominated by nettle *Urtica dioica* with abundant bindweed *Calystegia sp* and grass species including perennial ryegrass *Lolium perenne* and rough meadow grass *Poa trivialis*.



Figure 3 - Arable field with tall ruderal margins.

Wetland Habitats

- 4.14 A single pond is present in the north of site within the woodland habitat. This waterbody is heavily shaded with no emergent vegetation.



Figure 4 - pond in the west of site.

- 4.15 There are two flowing ditches which run west to east across the site and empty into the Manchester Ship Canal which is located immediately east of the site. These ditches are heavily vegetated, being bounded by tall ruderal vegetation, and have a general water depth of less than 0.5m and are approximately 1m wide.

Other Habitats

- 4.16 There is a facilities substation located in the south of the site with a small area of bare ground and ephemeral vegetation immediately outside it (TN4). The substation contains a small building and a series of pipework within a fenced enclosure on hardstanding.

Protected and Invasive Flora

- 4.17 Himalayan balsam is present across the site, with a heavy infestation present along the southern woodland edge. No protected plant species were identified, although bluebell would not have been visible at the time of the survey.

Connectivity with the Wider Landscape

- 4.18 The Hollins Green site has excellent connectivity to the wider area along the Manchester Ship canal which runs adjacent to the eastern boundary.

Fauna

Bats

- 4.19 Pipistrelle species *Pipistrellus sp*, common pipistrelle *Pipistrellus pippistrellus*, myotis species *Myotis Sp* and brown long eared bat *Plecotus auritus* have been recorded within 1km. The closest record is for a pipistrelle species 300m south east of the site.

- 4.20 Trees on site were subject to a ground based inspection for their potential to support roosting bats. The results of this inspection are shown in the Phase 1 Habitat drawing (G6929.01.007). In summary there is a row of dying/dead wych elm along the watercourse in the north of the site which, although had no obvious visible potential, may contain cracks or crevices in the crown suitable to support bats.
- 4.21 Within the woodland block in the west of the site is a number of mature trees with extremely heavy ivy cover. This ivy had formed a dense mat behind which bats could roost. These trees are deemed as having high potential to support roosting bats. An example is shown in Figure 5 below.



Figure 5 Heavily ivy clad tree in the east of site.

- 4.22 The site offers bat roosting potential in trees and foraging and commuting potential along the site boundaries.

Amphibians

- 4.23 Common toad, common frog, smooth newt and great crested newt (GCN) have been recorded within 1km of the site boundary. The closest records are associated with the Rixton Clay Pits site, 700m south west of the site.
- 4.24 There is a single pond on site associated with the woodland in the west which may be suitable to support breeding amphibians. There is also habitat present which offers foraging and hibernation potential.

Otter and water vole

- 4.25 Records of otter or water vole have been returned in the desktop study. These were again associated with Rixton Clay Pits.
- 4.26 The watercourses running west to east across the site contain habitat suitable to support water vole. They are unlikely, given their size, to support breeding otter but may offer foraging and commuting potential.

Badger

- 4.27 Records of badger *Meles meles* have been returned within 1km. The location of badger setts is protected and so is not documented within this report.
- 4.28 A single badger hole was identified on site and is thought to be an outlier sett, its exact location can be provided to the council if requested. The site offers foraging and sett building potential for badgers.

Birds

- 4.29 Extensive bird records have been recorded within 1km of site including birds listed under Birds of Conservation Concern, S41 priority species and those listed under Schedule 1 of the Wildlife and Countryside Act 1981 (As amended). Schedule 1 birds include barn owl *Tyto alba*, fieldfare *Turdus pilaris*, goldeneye *Bucephala clangula* and Scaup *Aythya marila*. Full details of bird species within 1km are presented in Appendix B.
- 4.30 There is no suitable breeding habitat for any of the Schedule 1 species but the trees, scrub, hedgerows and woodland are likely to support a range of common nesting species. The arable fields may also support wintering bird species, including fieldfare, a Schedule 1 species.

Other Fauna

- 4.31 Numerous invertebrate records, including S41 species of principal importance here returned within 1km. However, the site lacks any significant areas of flowering plants suitable to support an important invertebrate population.
- 4.32 One record of a common lizard was returned within 1km. However, the site lacks any significant habitat suitable to support reptiles. There are few areas suitable for basking and no significant populations of invertebrates to sustain a reptile population.
- 4.33 The site has potential to support both brown hare and hedgehog (S41), although no records were returned within 1km.

5.0 Discussion and Conclusions

- 5.1 This section discusses the potential impacts on ecological receptors associated with the proposed development plan (Appendix A). Consideration is given to the 'mitigation hierarchy', i.e. that impacts are first avoided or where this is not practicable, mitigated and as a final resort, compensated (off-set).

Designated Sites

- 5.2 Rixton Clay Pits is the closest internationally and nationally protected site and lies approximately 700m south west of the site. Rixton Clay Pits is designated as a Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI), and as a Local Nature Reserve (LNR).
- 5.3 Rixton clay pits is separated from the site by the A57, a busy road with high kerbs which will act as a barrier to migration of terrestrial species. No impact is predicted on terrestrial species associated with Rixton Clay Pits, although bird and bat species may commute between the Manchester Ship Canal and Rixton Clay Pits across the Hollins Green site.
- 5.4 There is no direct connectivity between the Hollins Green site and Rixton Clay Pits site, therefore there is unlikely to be any development impact from light spill or pollution incidents. The A57 is likely to be the key access route for construction traffic but, given the current high levels of use, no impacts from construction traffic are predicted.
- 5.5 Development at Hollins Green may create increased public pressure on Rixton Clay Pits for recreational use and dog walking. Mitigation measures which will be implemented to avoid increased pressure are discussed in Section 7.0.

Habitats and Flora

- 5.6 The habitats of highest importance on site are the blocks of deciduous woodland, the pond and the hedgerow along Manchester Road. These are all S41 habitats of principal importance and are to be retained throughout development as shown in the proposals at Appendix A. A small section of hedgerow is to be removed to allow access to the site. Prior to removal, the hedgerow will be checked for the presence of native bluebell, at the appropriate time of year, to confirm it does not qualify as Important under the Hedgerow Regulations. If bluebell is not present, the loss of a small section of hedgerow will be mitigated through the creation of new woodland and hedgerow planting on site.
- 5.7 The watercourses crossing the site are also of ecological value as they offer foraging, commuting and breeding opportunity for a range of species. These watercourses are to be retained. However, a single crossing point on each watercourse will be required.
- 5.8 The arable land across the site is to be lost to development, however this is of little ecological value.
- 5.9 Himalayan balsam is present across the site. A management plan for removal of this species will be produced to prevent spread during development.

Fauna

Bats

- 5.10 All British bats are European protected species, afforded full protection under the Conservation of Habitats & Species Regulations 2010 (as amended) and partial protection under the Wildlife and Countryside Act 1981 (as amended). Bats are protected from killing or injury, and from disturbance at the place of rest. Bat roosts are also protected from obstruction, damage or destruction (whether or not a bat is in occupation at the time).
- 5.11 There are a number of trees on site with both low and high potential to support roosting bats. Further survey of these trees will be undertaken as detailed in Section 7.0.
- 5.12 The trees, hedgerows and woodland along the site boundary, and the Manchester ship canal immediately east of site, offer foraging and commuting potential for bats. Bat activity surveys will be undertaken to determine the use of the site by the local bat population as discussed in Section 7.0.

Amphibians

- 5.13 GCN and their habitats are protected under the Conservation of Habitats & Species Regulations 2010 (as amended) and the Wildlife & Countryside Act 1981 (as amended).
- 5.14 A single pond is present on site. There is a known population of GCN at Rixton Clay Pits 700m south west of site, although there is no connectivity with this area. Further survey of this pond will be undertaken to determine the presence or absence of GCN as discussed in Section 7.0. Common toad and frog may also be present within the pond.

Otter and water vole

- 5.15 The otter is a European protected species (EPS) and also has partial protection under Schedule 5 of the Wildlife and Countryside Act 1981. The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species.
- 5.16 The watercourses running across the site have potential to support breeding water vole and may be used for foraging and commuting by otter. Further survey for these species will be undertaken as detailed in Section 7.0.

Badger

- 5.17 Badgers are fully protected under 'The protection of Badgers Act 1992'. A badger sett containing a single hole was found to be present on site. Its current occupation status will be determined through further survey as discussed in Section 7.0. Further mitigation or licensing may be required if badgers are found to be present.

Birds

- 5.18 Native nesting birds, their nests and eggs are protected under the Wildlife & Countryside Act 1981 (as amended) from damage and destruction, from the time of nest construction to fledging of the young. This is a risk if scrub clearance, hedgerow removal, tree felling or lopping is carried out in the nesting period (generally considered to be between March to August inclusive, although some species nest outside this period).
- 5.19 The site contains habitat suitable to support wintering bird species. Further survey for wintering birds will be undertaken as discussed in Section 7.0

Other

- 5.20 The site has suitability to support both brown hare and hedgehog. Reasonable avoidance measures will be undertaken to ensure no negative effects on these species during site clearance works.

6.0 Recommendations

- 6.1 This section sets out appropriate recommendations for impact avoidance, mitigation and enhancement. Any requirement for further surveys are also described, where relevant.
- 6.2 The site is currently being considered for release in the new Warrington local plan. This information relates to further survey, mitigation, avoidance and enhancement measures required should the site be taken forward for a detailed planning application.
- 6.3 These recommendations are based on the conceptual masterplan (Ref: 630DF-09) shown in Appendix A. Current proposals show that there are to be three areas of new housing separated by retained hedgerows and waterways on site. Existing woodland vegetation is to be retained along the site boundaries and a large section of green public open space is to be created in the east of site along the boundary with the Manchester Ship Canal.

Designated Sites

- 6.4 Rixton Clay Pits SAC, SSSI and LNR lies approximately 700m south west of the site. No direct impacts are predicted on this site, however there may be increased public pressure on the site for amenity use and for dog walking by new residents. This has been mitigated for through creation of a large area of public open space along the Manchester Ship Canal in the east of site and further footpaths around the western boundary and across the retained waterways on site.

Habitats and Flora

- 6.5 The habitats of highest importance on site are the blocks of deciduous woodland, the pond in the north of the site, the ditches present across site and the hedgerow along Manchester Road. All these habitats are to be retained during development.
- 6.6 An Arboricultural has been produced by TEP. All recommendations made in this report will be adhered to in order to ensure all retained trees and woodland is appropriately protected during development.
- 6.7 A site entrance will be created through the hedgerow present along Manchester Road. The loss of this small section of hedgerow will be mitigated for through the creation of a new species rich native hedgerow within the site boundary, equal to or greater than the length to be lost.
- 6.8 A new bridge will be required to cross each of the two watercourses on site. These will be designed with wildlife in mind, avoiding mature trees and other features of ecological value. Their placement will also take into account the results of the otter and water vole survey as discussed below.

Invasive Species

- 6.9 Himalayan balsam is present across the site. A site specific management plan will be produced detailing the management and removal of this species prior to development.

Bats

- 6.10 There are a number of trees with bat roosting potential on site. Prior to submission of a detailed planning application, an updated ground based assessment of trees with bat roosting potential will be undertaken to confirm the status of trees on site has not altered.
- 6.11 Trees identified as containing low potential to support roosting bats can be felled under the supervision of a licensed bat consultant. Trees with moderate or high potential should ideally be retained. However if removal is necessary these will first be climbed, if possible, under supervision of a licensed bat consultant to further investigate any features suitable to support roosting bats using an endoscope.
- 6.12 If an aerial survey is inconclusive, or not feasible, and trees are still identified as having moderate or high potential to support roosting bats, dusk emergence or dawn re-entry surveys will be undertaken. Trees with moderate potential will require two surveys and those with high potential will require three surveys in line with advice provided in the Bat Conservation Trust Guidelines 2016. Should dusk emergence or dawn re-entry surveys be required these can only be undertaken between May and October.
- 6.13 Should trees with confirmed roosting potential be present on site and need removal, a licence would first need to be gained from Natural England. Any mitigation required can be undertaken on site within retained woodland blocks or on retained mature trees.
- 6.14 There are a number of tree lines and waterways across the site and the Manchester Ship Canal runs along the south eastern boundary. Further survey will be undertaken prior to development to determine if these are important foraging routes for bats.
- 6.15 The habitats on site have moderate suitability to support bats. Therefore, one dusk or dawn transect survey visit per month will be undertaken (April to October) including at least one survey incorporating both dusk and dawn within a 24hr period. Static monitoring will also be required at two locations per transect and must record activity for five consecutive nights in suitable weather conditions.
- 6.16 If important bat foraging and commuting routes are identified on site a detailed mitigation strategy will be produced prior to development. This will include details on retention of important habitats, creation of suitable mitigation measures and details on a suitable lighting strategy for the site.

Great Crested Newt

- 6.17 A single pond is present in the north west of site. This will be subject to further survey prior to development. Initially an eDNA assessment of the pond will be undertaken. This involves water samples being collected from the pond by a suitably licensed ecologist and sent to a lab for testing. This survey would confirm the presence or absence of GCN. This survey can be undertaken between 15th April and 30th June only.

- 6.18 Should the eDNA analysis confirm the presence of GCN then traditional surveys involving bottle trapping, egg searching and torchlight survey would be undertaken. A total of six surveys are required across April to June to confirm the population size, with three surveys during the peak season of mid-April to mid-May.
- 6.19 If GCN are found to be present on site a licence would be required from Natural England to enable works. There have recently been a number of new policies introduced by Natural England in relation to GCN mitigation. The most appropriate method for mitigating newts on site should be reviewed at the time of submittal for planning.
- 6.20 Should on-site mitigation be required it is felt that there is adequate space within the areas of retained open greenspace to support mitigation measures including the creation of new ponds.

Otter and water vole

- 6.21 The majority of development on site will contain a 5m buffer between the banks of the watercourses and closest development, avoiding any potential impacts. However, two crossings are required across the water courses to allow connection of new roads. To ensure there are no adverse impacts on water vole or otter, detailed survey of the watercourses will be undertaken to inform siting of the new crossings.
- 6.22 Otter surveys can be undertaken at any time but water vole surveys require two visits, with one undertaken between mid-April and June and the other between July and September, with the surveys undertaken at least two months apart.
- 6.23 If any evidence of otter or water vole is found, the first step should be to adjust the crossing location to avoid impacts on either of these species. The bridge would also need to be designed in such a way as to not limit commuting for either otter or water vole along the watercourse. If this is not possible and either of these species are to be directly impacted by development, a licence may be required from Natural England.

Badger

- 6.24 A single badger sett was identified on site. Badger are highly transient, therefore prior to submittal of a detailed planning application an updated survey for presence of badger activity on site will be undertaken. No development should take place within 30m of a badger sett. Where this is not possible the activity status of each sett entrance must first be established. The activity survey involves monitoring each hole identified on site for a period of four weeks using sand and hair traps and camera traps to determine if the holes are in use. If holes are found to be present within 30m of the proposed development, and are found to be active during the monitoring period, they may then need to be closed under licence from Natural England.
- 6.25 As this sett is not currently considered to be a main sett, no on site mitigation is likely to be required for closure of this sett.

Birds

- 6.26 To avoid adverse impact on birds which may nest within the scrub, or trees to be felled or lopped to accommodate the site entrance, works should be completed outside of the nesting period (typically taken to be March to August inclusive). Where this is not practicable, a nesting bird check must be carried out by a suitably qualified ecologist a maximum of 24 hours in advance of works to confirm no active nests are present. In the event that an active nest is identified, works within the surrounding area (radius dependent on species and context) must halt until the chicks have fledged.
- 6.27 Given the presence of arable fields on site and its excellent connectivity to the Manchester Ship Canal, the site is determined to be suitable for supporting wintering bird species. A full winter bird survey will be undertaken on this site prior to submittal of a detailed planning application. Winter bird surveys involve a total of five surveys across September to April. Surveys will cover the entire site, as well as land within 500m of the site. Each survey will take place for one hour either side of high tide, when birds are more likely to be feeding/roosting on farmland.
- 6.28 Should an important population of wintering birds be identified on site, then mitigation will be required. It is unlikely that suitable space will be present on site to support mitigation. Therefore, suitable land within close proximity to the site would need to be identified for mitigation and would need to be managed to support the bird species identified on site.

Hedgehog and Brown hare

- 6.29 There is potential for both brown hare and hedgehog to use this site. A Reasonable Avoidance Method Statement (RAMS) will be produced to ensure that there are no negative impacts on either of these species during site clearance works.

Biodiversity Enhancement

- 6.30 Potential biodiversity enhancement measures which could be implemented on the site include:
- Installing a selection of bird boxes on the site will enhance nesting opportunities for a range of birds.
 - Enhancement of roosting opportunities could be provided via the installation of bat boxes around the site. A range of bat boxes could be installed on retained trees or, where feasible, within the structure of the new build.
 - Landscaping proposals should consider provision of pockets of wildflower/grassland planting. The new planting mix should include an appropriate native grassland/wildflower seed mix which should enhance the ecological value of the site.
 - Any ornamental/landscape planting should aim to include berry-bearing and nectar rich species which are native or of known wildlife value. These can provide a foraging resource for a range of wildlife species including invertebrates, and will also provide a foraging resource for birds and bats.

Biodiversity net gain

- 6.31 It is considered likely that prior to submission of a detailed planning application for this site the Environment Bill will pass through parliament and will be written into law. There will be a requirement within this that each development site achieves a minimum 10% net gain in biodiversity. Therefore, any detailed planning application for this site will be accompanied by a completed biodiversity metric using the methods set out below.

Site survey

- 6.32 A site survey will be undertaken in line with the requirements of the Biodiversity Metric 3.0, using methodologies provided in both the Biodiversity Metric 3.0 user guide⁷ and Technical Supplement⁸.
- 6.33 In brief the site survey comprises an assessment of the habitats present on using the UKHAB survey methodology to determine the type of habitats present. Alongside this a condition assessment of each individual habitat is undertaken using the condition assessment sheets within the technical supplement.

Completion of the metric

- 6.34 The habitat information (type and size) and condition are then fed into the Biodiversity Metric 3.0 for habitats pre and post development, split out between area and linear habitats. An assessment of the sites strategic significance is then undertaken and also entered into the metric for each habitat.
- 6.35 Once all the above data is entered the Biodiversity Metric 3.0 will provide a value for the loss or gain in biodiversity units.
- 6.36 A report will be produced detailing the methods and outcome of the assessment and will also identify, in scenarios where there is a loss of habitat units, the best approach to gain credits.

Mitigating for habitat loss

- 6.37 Where there is a loss of biodiversity units on site or 10% gain is not achieved the first approach will be to develop the landscape scheme for the site to gain additional credits. In general species rich meadow grassland, mixed native scrub and woodland planting should be targeted as these achieve a high score post development and offer significant foraging, commuting and in the case of new trees nesting/roosting potential to local species. There are however trading rules within Metric 3.0 which specify like for like replacement for habitats of high value, these would be adhered to during any mitigation proposals.

⁷ STEPHEN PANKS A, NICK WHITE A, AMANDA NEWSOME A, JACK POTTER A, MATT HEYDON A, EDWARD MAYHEW A, MARIA ALVAREZ A, TRUDY RUSSELL A, SARAH J. SCOTT B, MAX HEAVER C, SARAH H. SCOTT C, JO TREWEEK D, BILL BUTCHER E and DAVE STONE A 2021. Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide. Natural England.

⁸ STEPHEN PANKS A, NICK WHITE A, AMANDA NEWSOME A, JACK POTTER A, MATT HEYDON A, EDWARD MAYHEW A, MARIA ALVAREZ A, TRUDY RUSSELL A, SARAH J. SCOTT B, MAX HEAVER C, SARAH H. SCOTT C, JO TREWEEK D, BILL BUTCHER E and DAVE STONE A 2021. Biodiversity metric 3.0: Auditing and accounting for biodiversity – Technical Supplement. Natural England.

- 6.38 If following review of the landscape scheme the required number of credits cannot be achieved on site then there will be a requirement for offsite mitigation. Offsite mitigation should be undertaken on land within the same ecological network where possible. When using offsite mitigation, the area to be used must first be subject to its own biodiversity net gain assessment to determine its baseline habitat units and those which can be delivered following enhancement. The presence of protected sites, habitats and species must also be considered when identifying suitable offsite mitigation.
- 6.39 If onsite and offsite mitigation have been maximised then purchase of units from a habitat bank would be undertaken to enable the required 10% gain to be met.
- 6.40 Regardless of the outcome of the assessment there is a commitment to achieving a minimum of 10% net gain across this site using a combination of onsite, offsite and where required purchase of units to meet their target.

APPENDIX A: Proposed Development



KEY:

-  Site boundary
-  Existing buildings
-  Existing vegetation
-  Proposed woodland planting
-  Proposed avenue trees
-  Green infrastructure
-  Proposed development area
-  Potential focal square
-  Proposed primary road
-  Proposed secondary roads
-  Proposed private drives
-  Proposed vehicular access
-  Proposed footpaths

NB: Masterplan subject to change following detailed survey work.



**Land off Manchester Road,
 Hollins Green**

Conceptual Masterplan and Vision

Total Area: 12.24ha
 Development Area : 6.63ha
 Spine Road Area: 0.78ha
 Green Infrastructure: 4.83ha

Potential Yield
 @30 dph 199 units
 @35 dph 232 units

Drwg No: 630DF-09
 Drawn by: AH
 Rev by:
 QM Status: Checked
 Scale: 1: 5,000 @ A3

Date: 22.09.17
 Checker: CAW
 Rev checker:
 Product Status:
 Confidential Review

NOTE:

APPENDIX B: Desk Study

**Desk Based Ecology Assessment
Peel Sites Warrington – Hollins Green
Approximate Central Grid Reference: SJ 69624 90550**

Contents

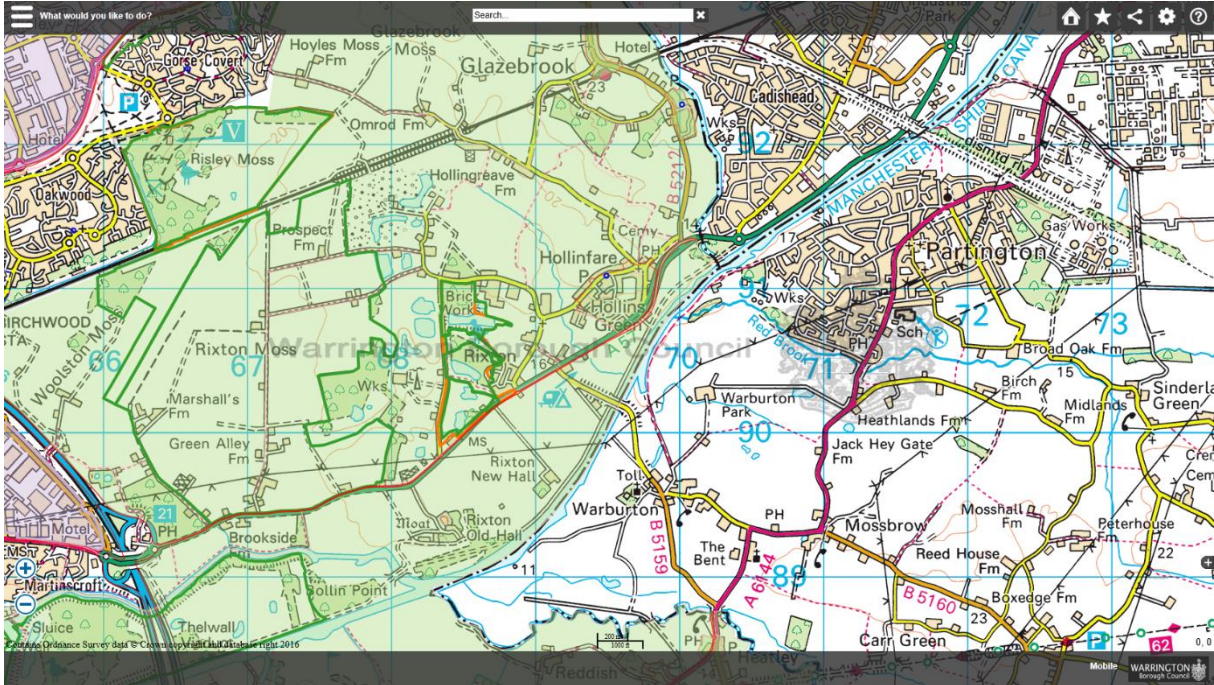
- **Site Location Plan**
- **Extract from Local Plan**
- **Extracts of Relevant Planning Policies**
- **SSSI Impact Risk Zones**
- **International Site Designations**
- **National Site Designations**
- **Habitat Inventory Records**
- **Local Site Designations**
- **Local Species Records**
- **Wildlife Site Citations**

Site Location Plan



Contains Ordnance Survey data © Crown copyright and database right 2017

Extract of Warrington Borough Council Local Plan Core Strategy (adopted July 2014) and Supporting Key



Hollins Green as shown in the Interactive Map for Warrington Borough Council, with the Local Plan Core Strategy layer turned on. This shows the proposed development site to be within the designated Green Belt.

This map is available in full online at:

https://www.warrington.gov.uk/info/200564/planning_policy/1903/local_plan
[accessed 30 August 2017].

Extracts of Relevant Planning Policies and Supplementary Planning Guidance

Extracted from the Warrington Borough Council Local Plan Core Strategy (adopted July 2014), available online at:

https://www.warrington.gov.uk/info/200564/planning_policy/1903/local_plan
[accessed 30 August 2017].

Policy CS 5

Overall Spatial Strategy - Green Belt

The Council will maintain the general extent of the Green Belt for as far as can be seen ahead and at least until 2032, in recognition of its purposes:

- to check the unrestricted sprawl of large built-up areas;
- to prevent neighbouring towns from merging into one another;
- to assist in safeguarding the countryside from encroachment; and
- to assist in urban regeneration by encouraging the recycling of derelict and other urban land.

The boundaries of the Green Belt in Warrington, which is contiguous with the Green Belt in Merseyside, Greater Manchester, and North Cheshire, are shown on the Policies Map.

The strategic locations and proposals set out in Policy CS2 - Quantity and Distribution of Development provide for significant growth throughout and beyond the plan period. There is therefore no need to review Strategic Green Belt boundaries during the plan period.

A minor detailed change to the approved Green Belt boundary in the Warrington Unitary Development Plan has been made at Bents Garden Centre, Glazebury.

Development Proposals within the Green Belt will be approved where they accord with relevant national policy.

Policy CS 6

Overall Spatial Strategy – Strategic Green Links

The Council will work with partners to develop and adopt a strategic approach to the care and management of the borough's Green Infrastructure. A key focus of these efforts will be on reinforcing, and maximising the environmental and socio-economic benefits from, those Strategic Green Links which connect the borough to the wider sub-region such as:

- The Bridgewater Canal
- The Mersey Valley;
- The River Bollin;
- Sankey Valley Park and St. Helens Canal;
- The Transpennine Trail; and
- Bold Forest Park

The Council is committed to supporting wider programmes and initiatives which seek to connect the borough's Strategic Green Links with employment areas, residential communities, and Green Infrastructure Assets including the Manchester Mosses, Mersey Forest, Walton Hall Estate and the potential significant country park in the Arpley area when landfill operations have finished and restoration is complete.

In accordance with Policy QE3 the Development Management Process will contribute to the objectives of this Policy.

Policy QE 3

Green Infrastructure

The Council will work with partners to develop and adopt an integrated approach to the provision, care and management of the borough's Green Infrastructure. Joint working and the assessment of applications will be focussed on:

- protecting existing provision and the functions this performs;
- increasing the functionality of existing and planned provision especially where this helps to mitigate the causes of and addresses the impacts of climate change;
- improving the quality of existing provision, including local networks and corridors, specifically to increase its attractiveness as a sport, leisure and recreation opportunity and its value as a habitat for biodiversity;
- protecting and improving access to and connectivity between existing and planned provision to develop a continuous right of way and greenway network and integrated ecological system;
- securing new provision in order to cater for anticipated increases in demand arising from development particularly in areas where there are existing deficiencies assessed against standards set by the Council.

Policy QE 5

Biodiversity and Geodiversity

The Council will work with partners to protect and where possible enhance sites of recognised nature and geological value. These efforts will be guided by the principles set out in National Planning Policy and those which underpin the strategic approach to the care and management of the borough's Green Infrastructure in its widest sense.

Sites and areas recognised for their nature and geological value are shown on the Policies Map and include:

- European Sites of International Importance
- Sites of Special Scientific Interest
- Regionally Important Geological Sites
- Local Nature Reserves
- Local Wildlife Sites
- Wildlife Corridors

The specific sites covered by the above designations at the time of publication are detailed in Appendix 3.

Proposals for development which may affect **European Sites of International Importance** will be subject to the most rigorous examination in accordance with the Habitats Directive. Development or land use change not directly connected with or necessary to the management of the site and which is likely to have significant effects on the site (either individually or in combination with other plans or projects) and which would affect the integrity of the site, will not be permitted unless the Council is satisfied that;

- there is no alternative solution; and
- there are imperative reasons of over-riding public interest for the development or land use change.

Proposals for development in or likely to affect **Sites of Special Scientific Interest (SSSI)** will be subject to special scrutiny. Where such development may have an adverse effect, directly or indirectly, on the SSSI it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.

Proposals for development likely to have an adverse effect on **regionally and locally designated sites** will not be permitted unless it can be clearly demonstrated that there are reasons for the development which outweigh the need to safeguard the substantive nature conservation value of the site or feature.

Proposals for development which may adversely affect the integrity or continuity of **UK Key habitats or other habitats of local importance, or adversely affect EU Protected Species, UK Priority Species or other species of local importance, or which are the subject of Local Biodiversity Action Plans** will only be permitted if it can be shown that the reasons for the development clearly outweigh the need to retain the habitats or species affected and that mitigating measures can be provided which would reinstate the habitats or provide equally viable alternative refuge sites for the species affected.

All development proposals affecting protected sites, wildlife corridors, key habitats or priority species (as identified in Local Biodiversity Action Plans) should be accompanied by information proportionate to their nature conservation value including;

- a site survey where necessary to identify features of nature and geological conservation importance; an assessment of the likely impacts of the proposed development proposals for the protection and management of features identified for retention;
- an assessment of whether the reasons for the development clearly outweigh the nature conservation value of the site, area or species; and
- proposals for compensating for features damaged or destroyed during the development process

Where development is permitted, the Council will consider the use of conditions or planning obligations to ensure the protection and enhancement of the site's nature conservation interest and/or to provide appropriate compensatory measures.

Policy CC 1

Inset and Green Belt Settlements

The following settlements are Inset (that is excluded) from the Green Belt:

Appleton Thorn	Grappenhall Heys
Burtonwood	Hollins Green
Croft	Lymm
Culcheth	Oughtrington
Glazebury	Winwick

Within these settlements new build development, conversions and redevelopment proposals will be allowed providing they comply with national planning policy and are sustainable in terms of Policy CS1.

The following are Green Belt settlements (that is washed over) within the Green Belt:

Broomedge	Heatley/Heatley Heath
Collins Green	Higher Walton
Cuerdley Cross	Mee Brow/Fowley Common
Glazebrook	New Lane End
Grappenhall Village	Stretton
Hatton	Weaste Lane

Within these settlements development proposals will be subject to Green Belt policies set out in national planning policy. New build development may be appropriate where it can be demonstrated that the proposal constitutes limited infill development of an appropriate scale, design and character in that it constitutes a small break between existing development which has more affinity with the built form of the settlement as opposed to the openness of the Green Belt; unless the break contributes to the character of the settlement.

The boundaries of Inset and Green Belt villages are shown on the Policies Map.

Policy QE 6

Environment and Amenity Protection

The Council, in consultation with other Agencies, will only support development which would not lead to an adverse impact on the environment or amenity of future occupiers or those currently occupying adjoining or nearby properties, or does not have an unacceptable impact on the surrounding area. The Council will take into consideration the following:

- The integrity and continuity of tidal and fluvial flood defences;
- The quality of water bodies, including canals, rivers, ponds and lakes;
- Groundwater resources in terms of their quantity, quality and the ecological features they support;
- Land quality;
- Air quality;
- Noise and vibration levels and times when such disturbances are likely to occur;
- Levels of light pollution and impacts on the night sky;
- Levels of odours, fumes, dust, litter accumulation and refuse collection / storage.
- The need to respect the living conditions of existing neighbouring residential occupiers and future occupiers of new housing schemes in relation to overlooking/loss of privacy, outlook, sunlight, daylight, overshadowing, noise and disturbance;
- The effect and timing of traffic movement to, from and within the site and car parking including impacts on highway safety;
- The ability and the effect of using permitted development rights to change use within the same Use Class (as set out in the in the Town and Country Planning (General Permitted Development Order) without the need to obtain planning consent.

Proposals may be required to submit detailed assessments in relation to any of the above criteria to the Council for approval.

Where development is permitted which may have an impact on such considerations, the Council will consider the use of conditions or planning obligations to ensure any appropriate mitigation or compensatory measures are secured.

Development proposals on land that is (or is suspected to be) affected by contamination or ground instability or has a sensitive end use must include an assessment of the extent of the issues and any possible risks. Development will only be permitted where the land is, or is made, suitable for the proposed use.

Additional guidance to support the implementation of this policy is provided in the Design and Construction and Environmental Protection Supplementary Planning Documents.

Warrington Updated Proposed Submission Version Local Plan 2021 - 2038 (September 2021)
– Relevant Policies

Policy GB1 - Green Belt

General Principles

1. The Council will maintain the general extent of the Borough's Green Belt, as defined on the Local Plan Policies Map, throughout the Plan Period and to at least 2050.
2. The Council will plan positively to enhance the beneficial use of the Green Belt as part of Warrington's Green Infrastructure Network.

Policy DC3 – Green Infrastructure

Strategic Green Infrastructure

1. The Council, in partnership with other agencies and stakeholders will adopt a strategic approach to the care and management of all the Borough's green infrastructure and seek to protect, enhance and extend the multifunctional network in order to maintain and develop the wider public health, active travel, flood management, climate change, ecological and economic benefits it provides.

Green Infrastructure Opportunities

2. A key focus of these efforts will be on reinforcing and maximising the environmental and socio-economic benefits from, the following strategic green links which connect the Borough to the wider sub-region:
 - a. The Mersey Valley;
 - b. Sankey Valley Park and St. Helens Canal;
 - c. The Bridgewater Canal;
 - d. The River Bollin; and
 - e. The Trans Pennine Trail
3. The Council is committed to supporting wider programmes and initiatives which seek to connect the Borough's Strategic Green Infrastructure assets with residential communities, employment areas and other green infrastructure assets both within and outside of the Borough, including:
 - a. Great Manchester Wetlands Nature Improvement Area;
 - b. Bold Forest Park;
 - c. Walton Hall Estate;
 - d. The Mersey Forest;
 - e. The Circular Parklands; and
 - f. The River Mersey frontage where it passes through the Town Centre.
4. The Council will work with partners to strengthen and expand the network of ecological sites, corridors and stepping stone habitats to:
 - a. secure a net gain in biodiversity;
 - b. to expand tree cover in appropriate locations across the Borough;
 - c. to improve landscape character, water and air quality;
 - d. to help adapt to flood risk and mitigate the impacts of climate change;

- e. to contribute to the development of the Mersey Forest;
- f. to contribute to the wider regional nature recovery network of wetland sites by enhancing the wetlands across Warrington; and
- g. to support the retention of underused farmland for habitat creation and management.

Development Proposals affecting Green Infrastructure

5. . All development proposals should, as appropriate to their nature and scale:
 - a. protect existing green infrastructure and the functions it performs, especially where this helps to mitigate the causes of and addresses the impacts of climate change;
 - b. increase the functionality of existing and planned green infrastructure especially where this helps to mitigate the causes of and addresses the impacts of climate change;
 - c. improve the quality of existing green infrastructure, including local networks and corridors, specifically to increase its attractiveness as a sport, leisure and recreation opportunity and its value as a habitat for biodiversity;
 - d. protect and improve access to and connectivity between existing and planned green infrastructure to develop a continuous right of way and greenway network and integrated ecological system/network;
 - e. secure new green infrastructure in order to cater for anticipated increases in demand arising from development particularly in areas where there are existing deficiencies assessed against standards set by the Council in accordance with Policy DC5; and
 - f. provide long-term management arrangements for new and enhanced green infrastructure within development sites.
6. Where a loss of, or negative impact on green infrastructure functionality or ecological system/network is unavoidable, development proposals should demonstrate what mitigation measures are proposed and/or replacement green infrastructure will be provided. Any replacement or mitigation measure should seek to secure a net gain in biodiversity assessed against the latest version of the DEFRA Metric and be deployed as closely as possible to the affected green infrastructure asset.

Policy DC4 – Ecological Network

1. The Council will work with partners to conserve, restore and enhance biodiversity and secure a measurable net gain for biodiversity and enhance public access to nature across the Plan area. These efforts will be guided by the principles set out in the National Planning Policy Framework and those which underpin the strategic approach to the care and management of the Borough's Green Infrastructure in its widest sense contained in Policy DC3.
2. Sites and areas that make up the Borough's ecological network and are recognised for their nature and geological value are shown on the Policies Map and include:
 - a. European Sites of International Importance
 - b. Sites of Special Scientific Interest
 - c. Regionally Important Geological Sites
 - d. Local Nature Reserves
 - e. Local Wildlife Sites
 - f. Wildlife Corridors/Natural Improvement Areas

The specific sites covered by the above designations at the time of publication are detailed

in Appendix 4 of the draft local plan.

Development affecting Sites of International Importance

3. Proposals for development which may affect European Sites of International Importance will be subject to the most rigorous examination in accordance with the Habitats Directive. Development or land use change not directly connected with or necessary to the management of the site and which is likely to have significant effects on the site (either individually or in combination with other plans or projects) and which would affect the integrity of the site, will not be permitted unless the Council is satisfied that;
 - a. there is no alternative solution; and
 - b. there are imperative reasons of over-riding public interest for the development or land use change and where suitable mitigation or compensatory provision has been made. Any mitigation or compensatory provision must be assessed in a project-related Habitats Regulations Assessment and be fully functional before any likely adverse effect arises.

Development affecting Sites of National Importance

4. Proposals for development in or likely to affect Sites of Special Scientific Interest (SSSI) will be subject to special scrutiny. Where such development may have an adverse effect, directly or indirectly, on the SSSI it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites and the loss can be mitigated through off-site habitat creation to achieve a measurable net gain in biodiversity/geodiversity assessed against the latest version of the DEFRA metric.

Development affecting Sites of Regional and Local Importance

5. Proposals for development likely to have an adverse effect on regionally and locally designated sites will not be permitted unless it can be clearly demonstrated that there are reasons for the development which outweigh the need to safeguard the substantive nature conservation value of the site or feature and the loss can be mitigated through off-site habitat creation to achieve a measurable net gain in biodiversity/geodiversity assessed against the latest version of the DEFRA metric.

Development affecting Protected and/or Priority Species and Priority Habitats

6. Proposals for development which may adversely affect the integrity or continuity of UK priority habitats, irreplaceable habitats, or other habitats of local importance, or adversely affect EU Protected Species, UK Priority Species or other species of local importance, or which are the subject of Local Biodiversity Action Plans will only be permitted if it can be shown that the reasons for the development clearly outweigh the need to retain the habitats or species affected and that mitigating measures can be provided which would reinstate the habitats or provide equally viable alternative refuge sites for the species affected.
7. All development proposals affecting protected sites, wildlife corridors, priority habitats, irreplaceable habitats, EU Protected Species or priority species (as identified in Local Biodiversity Action Plans) should be accompanied by information proportionate to their nature conservation value including;

- a. a site survey carried out by suitably qualified or experienced person to establish the presence, extent and density of these species and identify features of nature and geological conservation importance; an assessment of the likely impacts of the development proposals for the protection and management of features identified for retention;
- b. an assessment of whether the reasons for the development clearly outweigh the nature conservation value of the site, area or species; and
- c. proposals for compensating for features damaged or destroyed during the development process, including mitigation through habitat creation to achieve a measurable net gain in biodiversity/geodiversity assessed against the DEFRA metric.
- d. proposals for compensating for any negative impacts on species during the development process, including mitigation through off-site habitat creation.

Where development is permitted, the Council will consider the use of conditions or planning obligations to ensure the protection and enhancement of the site's nature conservation interest and/or to provide appropriate compensatory measures.

MAGIC Map 10km Search Zone for Internationally Designated Wildlife Sites – Map

MAGiC International Designations



Legend

- Ramsar Sites (England)
- Special Areas of Conservation (England)

0 3.5 7
km

Projection = OSGB36
 xmin = 346400
 ymin = 378200
 xmax = 391900
 ymax = 402200

Map produced by MAGIC on 28 June, 2018.
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 Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

MAGIC Map 10km Search Zone for Internationally Designated Wildlife Sites - Report

Ramsar Sites (England) - points

Name
 ROSTHERNE MERE
Reference
 UK11060
Hectares
 79.76

Ramsar Sites (England)

Name
 ROSTHERNE MERE
Reference
 UK11060
Hectares
 79.76
Name
 MIDLAND MERES & MOSSES - PHASE 1
Reference
 UK11043
Hectares
 513.35

Special Areas of Conservation (England) - points

Name
 RIXTON CLAY PITS
Reference
 UK0030265
Hectares
 13.5
Hyperlink
<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030265>

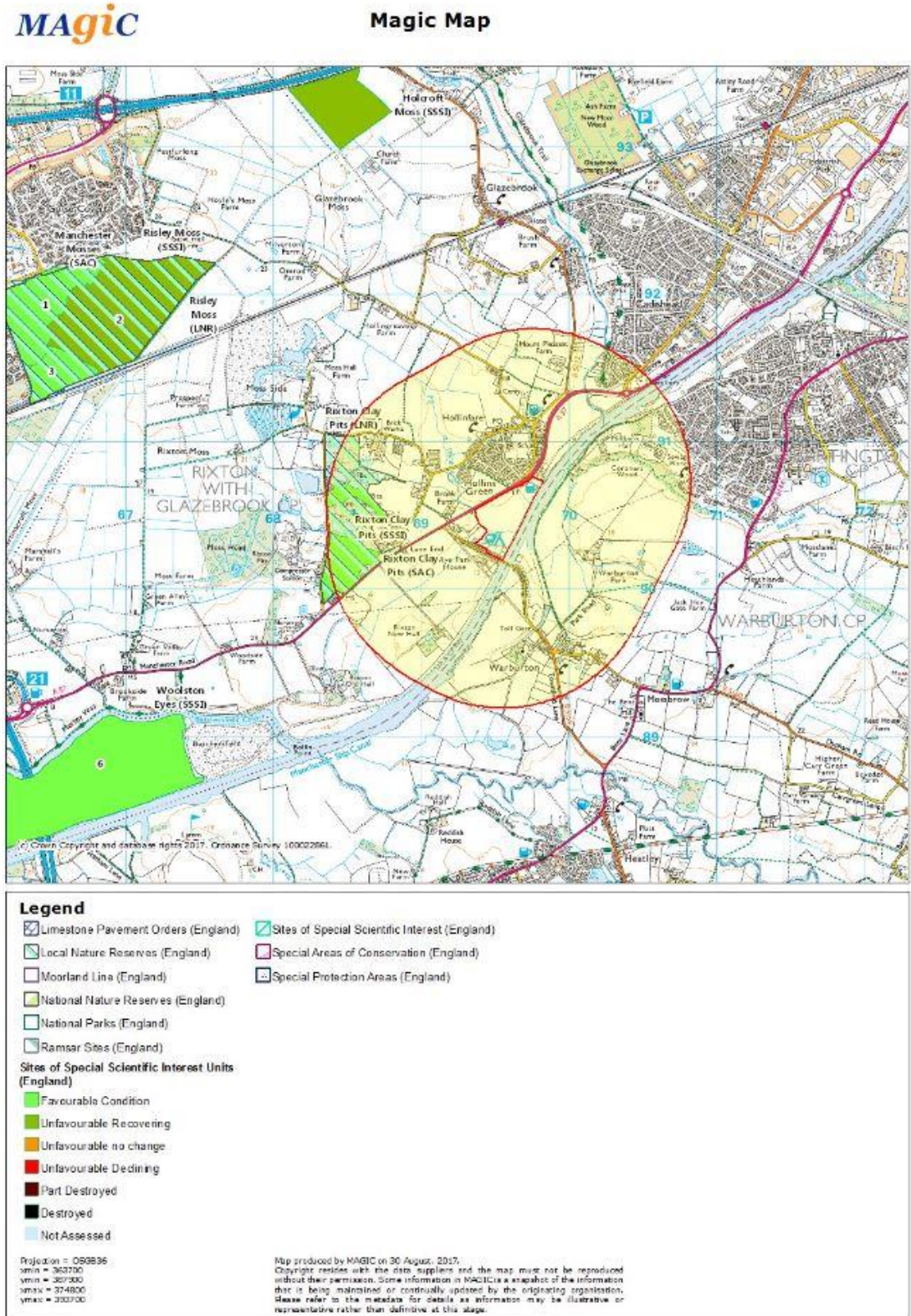
Name
 MANCHESTER MOSSES
Reference
 UK0030200
Hectares
 171.52
Hyperlink
<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030200>

Special Areas of Conservation (England)

Name
 RIXTON CLAY PITS
Reference
 UK0030265
Hectares
 13.5
Hyperlink
<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030265>

Name
 MANCHESTER MOSSES
Reference
 UK0030200
Hectares
 171.52
Hyperlink
<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030200>

MAGIC Map 1km Search Zone for Designated Wildlife Sites - Map



MAGIC Map 1km Search Zone for Designated Wildlife Sites - Report

Local Nature Reserves (England) - points

Reference

1009103

Name

RIXTON CLAY PITS

Hectares

33.57

Hyperlink
http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1009103

Local Nature Reserves (England)

Reference

1009103

Name

RIXTON CLAY PITS

Hectares

33.57

Hyperlink
http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1009103

Sites of Special Scientific Interest Units (England) - points

Name

RIXTON CLAY PITS

Reference

1056001

Site Unit Condition

FAVOURABLE

Citation

1011662

Hectares

9.87

Hyperlink
<http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011662>
Name

RIXTON CLAY PITS

Reference

1056002

Site Unit Condition

FAVOURABLE

Citation

1011663

Hectares

3.63

Hyperlink
<http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011663>

Sites of Special Scientific Interest Units (England)

Name

RIXTON CLAY PITS

Reference

1056001

Site Unit Condition

FAVOURABLE

Citation

1011662

Hectares

9.87

Hyperlink
<http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011662>
Name

RIXTON CLAY PITS

Reference

1056002

Site Unit Condition

FAVOURABLE

Citation

1011663

Hectares

3.63

Hyperlink

<http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011663>

Sites of Special Scientific Interest (England) - points

Name

Rixton Clay Pits SSSI

Reference

1002021

Natural England Contact

PAUL THOMAS

Natural England Phone Number

0845 600 3078

Hectares

13.5

Citation

1003514

Hyperlink

<http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1003514>

Sites of Special Scientific Interest (England)

Name

Rixton Clay Pits SSSI

Reference

1002021

Natural England Contact

PAUL THOMAS

Natural England Phone Number

0845 600 3078

Hectares

13.5

Citation

1003514

Hyperlink

<http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1003514>

Special Areas of Conservation (England) - points

Name

RIXTON CLAY PITS

Reference

UK0030265

Hectares

13.5

Hyperlink

<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030265>

Special Areas of Conservation (England)

Name

RIXTON CLAY PITS

Reference

UK0030265

Hectares

13.5

Hyperlink

<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030265>

National Nature Reserves (England) - points

No Features found

National Nature Reserves (England)

No Features found

Ramsar Sites (England) - points

No Features found

Ramsar Sites (England)

No Features found

Special Protection Areas (England) - points

No Features found

Special Protection Areas (England)

No Features found

MAGIC Map Search for SSSI Impact Risk Zones for Site Only

SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)

1. DOES PLANNING PROPOSAL FALL INTO ONE OR MORE OF THE CATEGORIES BELOW?

2. IF YES, CHECK THE CORRESPONDING DESCRIPTION(S) BELOW. LPA SHOULD CONSULT NATURAL ENGLAND ON LIKELY RISKS FROM THE FOLLOWING:

All Planning Applications

Infrastructure

Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

Wind & Solar Energy

Minerals, Oil & Gas

Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.

Rural Non Residential

Residential

Residential development of 100 units or more.

Rural Residential

Any residential development of 50 or more houses outside existing settlements/urban areas.

Air Pollution

Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, pig & poultry units, slurry lagoons > 200m² & manure stores > 250t).

Combustion

General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

Waste

Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.

Composting

Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.

Discharges

Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).

Water Supply

Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .

Notes

GUIDANCE – How to use the Impact Risk Zones

[/Metadata_for_magic/SSSI IRZ User Guidance MAGIC.pdf](#)

1. DOES PLANNING PROPOSAL FALL INTO ONE OR MORE OF THE CATEGORIES BELOW?

2. IF YES, CHECK THE CORRESPONDING DESCRIPTION(S) BELOW. LPA SHOULD CONSULT NATURAL ENGLAND ON LIKELY RISKS FROM THE FOLLOWING:

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Infrastructure

Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

Wind & Solar Energy

Minerals, Oil & Gas

Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.

Rural Non Residential

Residential

Rural Residential

Air Pollution

Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, pig & poultry units, slurry lagoons > 200m² & manure stores > 250t).

Combustion

General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

Waste

Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.

Composting

Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.

Discharges

Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).

Water Supply

Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.

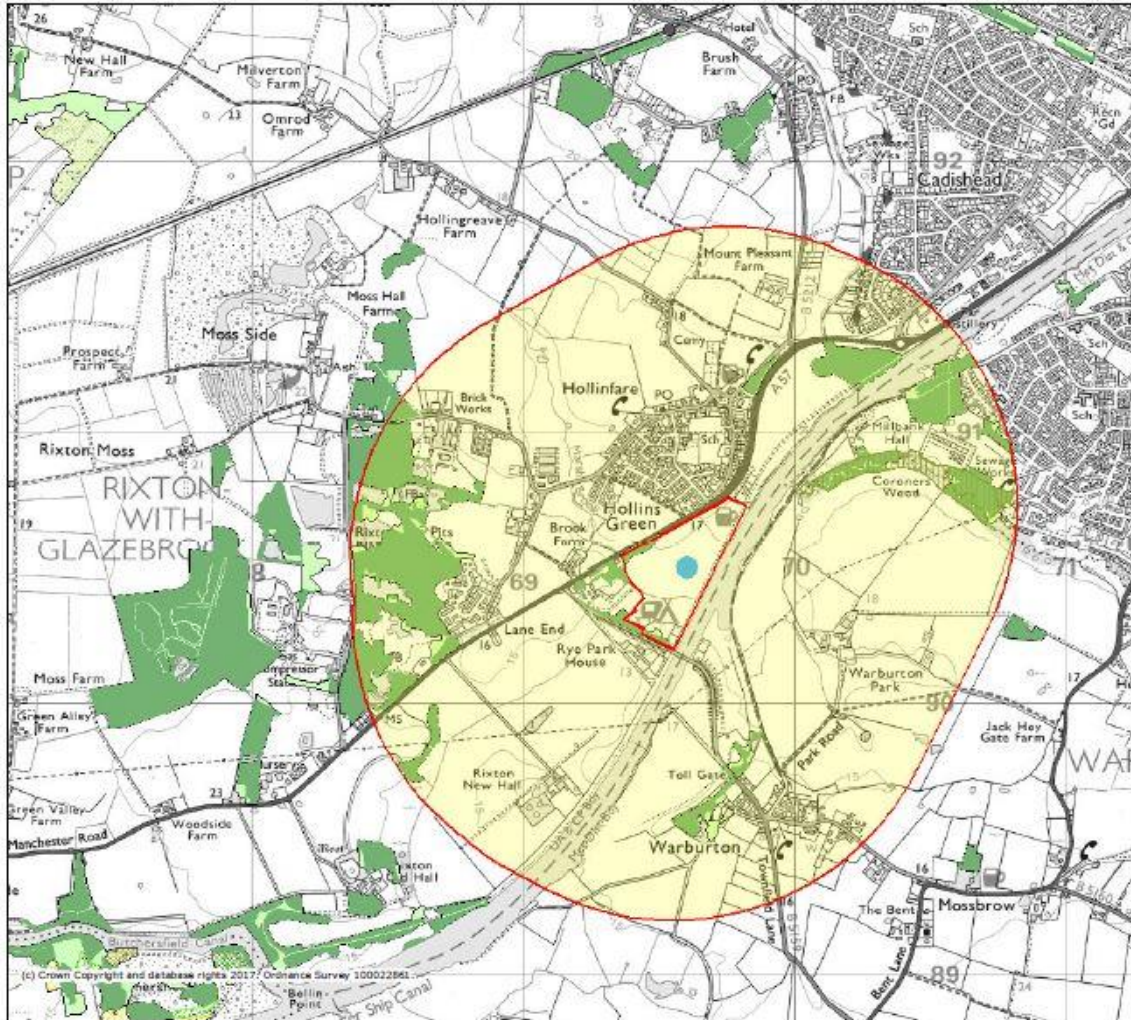
Notes

GUIDANCE – How to use the Impact Risk Zones

[/Metadata_for_magic/SSSI IRZ User Guidance MAGIC.pdf](#)

MAGIC Map 1km Search Zone for Habitat Inventory Data

Magic Map



Legend

- | | |
|---|--------------------------|
| Ancient Woodland (England) | Low density |
| Ancient and Semi-Natural Woodland | Mixed mainly broadleaved |
| Ancient Replanted Woodland | Mixed mainly conifer |
| Priority Habitat Inventory - Deciduous Woodland (England) | Shrub |
| National Forest Inventory (GB) | Uncertain |
| Assumed woodland | Windthrow |
| Broadleaved | Young trees |
| Cloud \ shadow | |
| Conifer | |
| Coppice | |
| Coppice with standards | |
| Felled | |
| Felled | |
| Ground prep | |

Projection = OSGB36
 xmin = 365420
 ymin = 388700
 xmax = 373000
 ymax = 392700

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MAGIC Map 10km Search Zone for Protected Sites



Hollins Green



Legend

- Areas of Outstanding Natural Beauty (England)
- Special Protection Areas (England)
- Local Nature Reserves (England) - points
- National Nature Reserves (England) - points
- Ramsar Sites (England)
- Sites of Special Scientific Interest Units (England)**
- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed
- Special Areas of Conservation (England)

Projection = OSGB36
 xmin = 320700
 ymin = 369200
 xmax = 413200
 ymax = 414700

Map produced by MAGIC on 6 September, 2017.
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Site Check Report Report generated on Wed Sep 6 2017
 You selected the location: Centroid Grid Ref: SJ695904
 The following features have been found in your search area:

Local Nature Reserves (England) - points

Reference	1009103
Name	RIXTON CLAY PITS
Hectares	33.57
Hyperlink	http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1009103
Reference	1421783
Name	PADDINGTON MEADOWS
Hectares	34.56
Hyperlink	http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1421783
Reference	1009099
Name	RISLEY MOSS
Hectares	82.42
Hyperlink	http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1009099

National Nature Reserves (England) - points

Name	ROSTHERNE MERE
Reference	1006125
Hyperlink	http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/nnr/1006125.aspx
Hectares	152.49

National Nature Reserves (England)

Name	ROSTHERNE MERE
Reference	1006125
Hectares	152.49
Hyperlink	http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/nnr/1006125.aspx

Ramsar Sites (England) - points

Name	ROSTHERNE MERE
Reference	UK11060
Hectares	79.76

Ramsar Sites (England)

Name	MIDLAND MERES & MOSSES - PHASE 1
Reference	UK11043
Hectares	513.35

Name	ROSTHERNE MERE
Reference	UK11060
Hectares	79.76

Sites of Special Scientific Interest Units (England) - points

Name	BROOKKEYS COVERT
Reference	1056326
Site Unit Condition	FAVOURABLE
Citation	1011473
Hectares	2.37
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011473

Name	DUNHAM PARK
Reference	1056340
Site Unit Condition	FAVOURABLE
Citation	1011691
Hectares	14.99
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011691

Name	HIGHFIELD MOSS
Reference	1056406
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011608
Hectares	4
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011608

Name	THE MERE, MERE
Reference	1056136
Site Unit Condition	UNFAVOURABLE NO CHANGE

Citation	1015882
Hectares	3.71
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1015882
Name	THE MERE, MERE
Reference	1056137
Site Unit Condition	UNFAVOURABLE NO CHANGE
Citation	1015883
Hectares	15.7
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1015883
Name	DUNHAM PARK
Reference	1056341
Site Unit Condition	FAVOURABLE
Citation	1011692
Hectares	43.81
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011692
Name	HIGHFIELD MOSS
Reference	1056407
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011611
Hectares	1.32
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011611
Name	DUNHAM PARK
Reference	1056342
Site Unit Condition	FAVOURABLE
Citation	1011694
Hectares	20.38
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011694
Name	HIGHFIELD MOSS
Reference	1056408
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011600
Hectares	14.84
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011600
Name	ROSTHERNE MERE
Reference	1056157
Site Unit Condition	FAVOURABLE
Citation	1020542
Hectares	17.83
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020542
Name	ROSTHERNE MERE
Reference	1056158
Site Unit Condition	FAVOURABLE
Citation	1020555
Hectares	34.84
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020555
Name	ROSTHERNE MERE
Reference	1056159
Site Unit Condition	UNFAVOURABLE NO CHANGE
Citation	1020554
Hectares	55.94
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020554
Name	ROSTHERNE MERE
Reference	1056160
Site Unit Condition	FAVOURABLE
Citation	1020556
Hectares	20.82
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020556
Name	WOOLSTON EYES
Reference	1082711
Site Unit Condition	FAVOURABLE
Citation	1028509
Hectares	269.82
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1028509
Name	ROSTHERNE MERE
Reference	1056161
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1023076

Hectares	23.05
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1023076
Name	RIXTON CLAY PITS
Reference	1056001
Site Unit Condition	FAVOURABLE
Citation	1011662
Hectares	9.87
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011662
Name	RIXTON CLAY PITS
Reference	1056002
Site Unit Condition	FAVOURABLE
Citation	1011663
Hectares	3.63
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011663
Name	RISLEY MOSS
Reference	1056138
Site Unit Condition	FAVOURABLE
Citation	1011725
Hectares	22.81
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011725
Name	HOLCROFT MOSS
Reference	1056141
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011492
Hectares	19.04
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011492
Name	ASTLEY & BEDFORD MOSSES
Reference	1056401
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011458
Hectares	19.01
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011458
Name	RISLEY MOSS
Reference	1056139
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011727
Hectares	50.57
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011727
Name	ASTLEY & BEDFORD MOSSES
Reference	1056402
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011459
Hectares	37.09
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011459
Name	RISLEY MOSS
Reference	1056140
Site Unit Condition	FAVOURABLE
Citation	1011726
Hectares	9.9
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011726
Name	ASTLEY & BEDFORD MOSSES
Reference	1056403
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011460
Hectares	12.99
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011460
Name	ASTLEY & BEDFORD MOSSES
Reference	1056404
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011461
Hectares	21.61
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011461
Name	ASTLEY & BEDFORD MOSSES
Reference	1056405
Site Unit Condition	FAVOURABLE
Citation	1019394
Hectares	1.3

Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1019394
Sites of Special Scientific Interest Units (England)	
Name	BROOKKEYS COVERT
Reference	1056326
Site Unit Condition	FAVOURABLE
Citation	1011473
Hectares	2.37
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011473
Name	DUNHAM PARK
Reference	1056340
Site Unit Condition	FAVOURABLE
Citation	1011691
Hectares	14.99
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011691
Name	HIGHFIELD MOSS
Reference	1056406
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011608
Hectares	4
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011608
Name	THE MERE, MERE
Reference	1056136
Site Unit Condition	UNFAVOURABLE NO CHANGE
Citation	1015882
Hectares	3.71
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1015882
Name	THE MERE, MERE
Reference	1056137
Site Unit Condition	UNFAVOURABLE NO CHANGE
Citation	1015883
Hectares	15.7
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1015883
Name	DUNHAM PARK
Reference	1056341
Site Unit Condition	FAVOURABLE
Citation	1011692
Hectares	43.81
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011692
Name	HIGHFIELD MOSS
Reference	1056407
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011611
Hectares	1.32
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011611
Name	DUNHAM PARK
Reference	1056342
Site Unit Condition	FAVOURABLE
Citation	1011694
Hectares	20.38
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011694
Name	HIGHFIELD MOSS
Reference	1056408
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011600
Hectares	14.84
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011600
Name	ROSTERNE MERE
Reference	1056157
Site Unit Condition	FAVOURABLE
Citation	1020542
Hectares	17.83
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020542
Name	ROSTERNE MERE
Reference	1056158
Site Unit Condition	FAVOURABLE
Citation	1020555

Hectares	34.84
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020555
Name	ROSTHERNE MERE
Reference	1056159
Site Unit Condition	UNFAVOURABLE NO CHANGE
Citation	1020554
Hectares	55.94
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020554
Name	ROSTHERNE MERE
Reference	1056160
Site Unit Condition	FAVOURABLE
Citation	1020556
Hectares	20.82
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1020556
Name	WOOLSTON EYES
Reference	1082711
Site Unit Condition	FAVOURABLE
Citation	1028509
Hectares	269.82
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1028509
Name	ROSTHERNE MERE
Reference	1056161
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1023076
Hectares	23.05
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1023076
Name	RIXTON CLAY PITS
Reference	1056001
Site Unit Condition	FAVOURABLE
Citation	1011662
Hectares	9.87
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011662
Name	RIXTON CLAY PITS
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Citation	1011663
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Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011663
Name	RISLEY MOSS
Reference	1056138
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Reference	1056141
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011492
Hectares	19.04
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011492
Name	ASTLEY & BEDFORD MOSSES
Reference	1056401
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011458
Hectares	19.01
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011458
Name	RISLEY MOSS
Reference	1056139
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011727
Hectares	50.57
Hyperlink	http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011727
Name	ASTLEY & BEDFORD MOSSES
Reference	1056402
Site Unit Condition	UNFAVOURABLE RECOVERING
Citation	1011459
Hectares	37.09

Hyperlink <http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011459>

Name RISLEY MOSS
Reference 1056140
Site Unit Condition FAVOURABLE
Citation 1011726
Hectares 9.9
Hyperlink <http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011726>

Name ASTLEY & BEDFORD MOSSES
Reference 1056403
Site Unit Condition UNFAVOURABLE RECOVERING
Citation 1011460
Hectares 12.99
Hyperlink <http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011460>

Name ASTLEY & BEDFORD MOSSES
Reference 1056404
Site Unit Condition UNFAVOURABLE RECOVERING
Citation 1011461
Hectares 21.61
Hyperlink <http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1011461>

Name ASTLEY & BEDFORD MOSSES
Reference 1056405
Site Unit Condition FAVOURABLE
Citation 1019394
Hectares 1.3
Hyperlink <http://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1019394>

Special Areas of Conservation (England) - points

Name MANCHESTER MOSSES
Reference UK0030200
Hectares 171.52
Hyperlink <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030200>

Name RIXTON CLAY PITS
Reference UK0030265
Hectares 13.5
Hyperlink <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030265>

Special Areas of Conservation (England)

Name MANCHESTER MOSSES
Reference UK0030200
Hectares 171.52
Hyperlink <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030200>

Name RIXTON CLAY PITS
Reference UK0030265
Hectares 13.5
Hyperlink <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030265>

Areas of Outstanding Natural Beauty (England)

No Features found

Special Protection Areas (England) - points

No Features found

Special Protection Areas (England)

No Features found

Map provided by RECORD of Site Designations within 1km

Site Boundary Report

Local Sites

Local Wildlife Sites

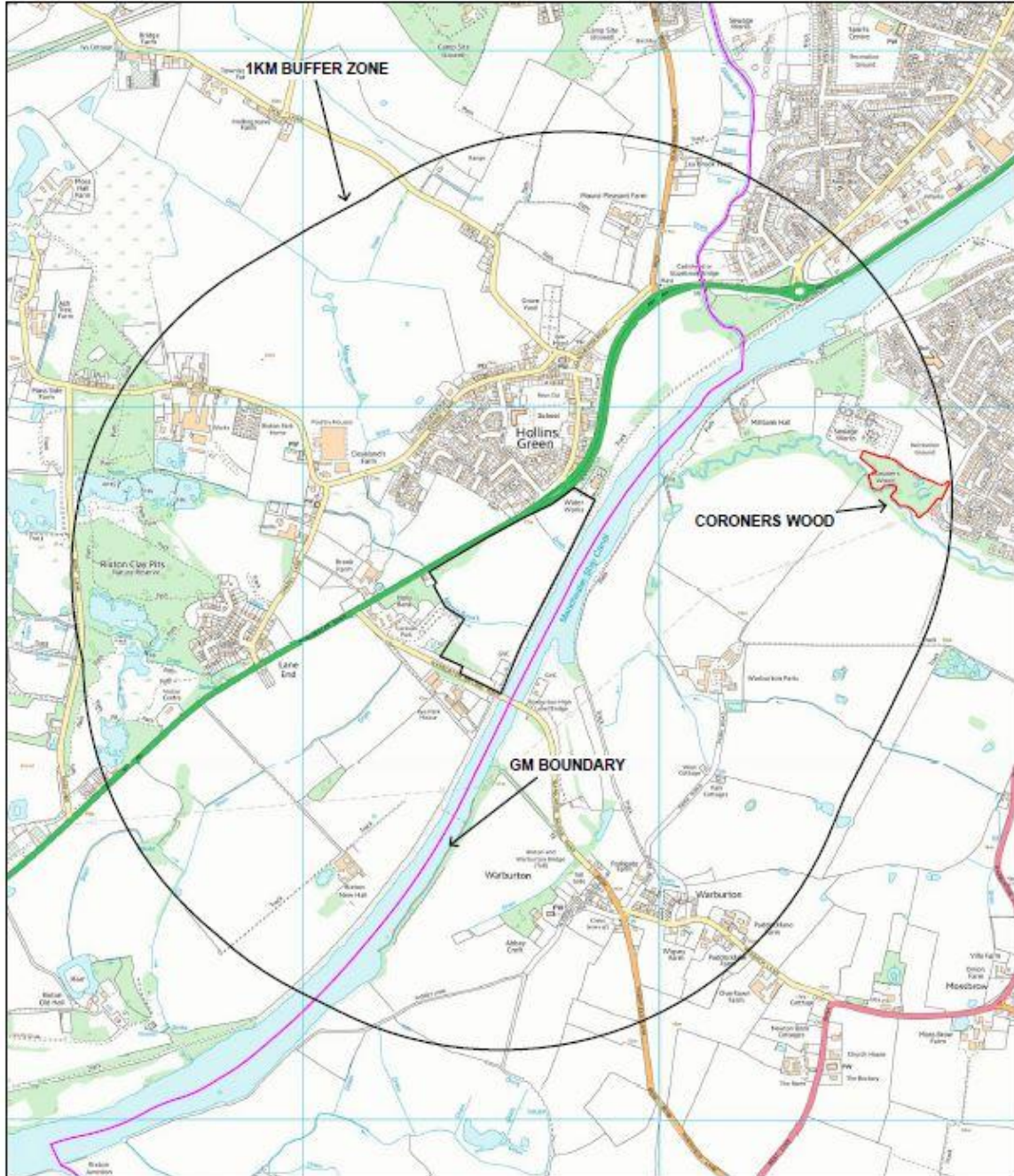
Rixton Brickworks / WA027

Map

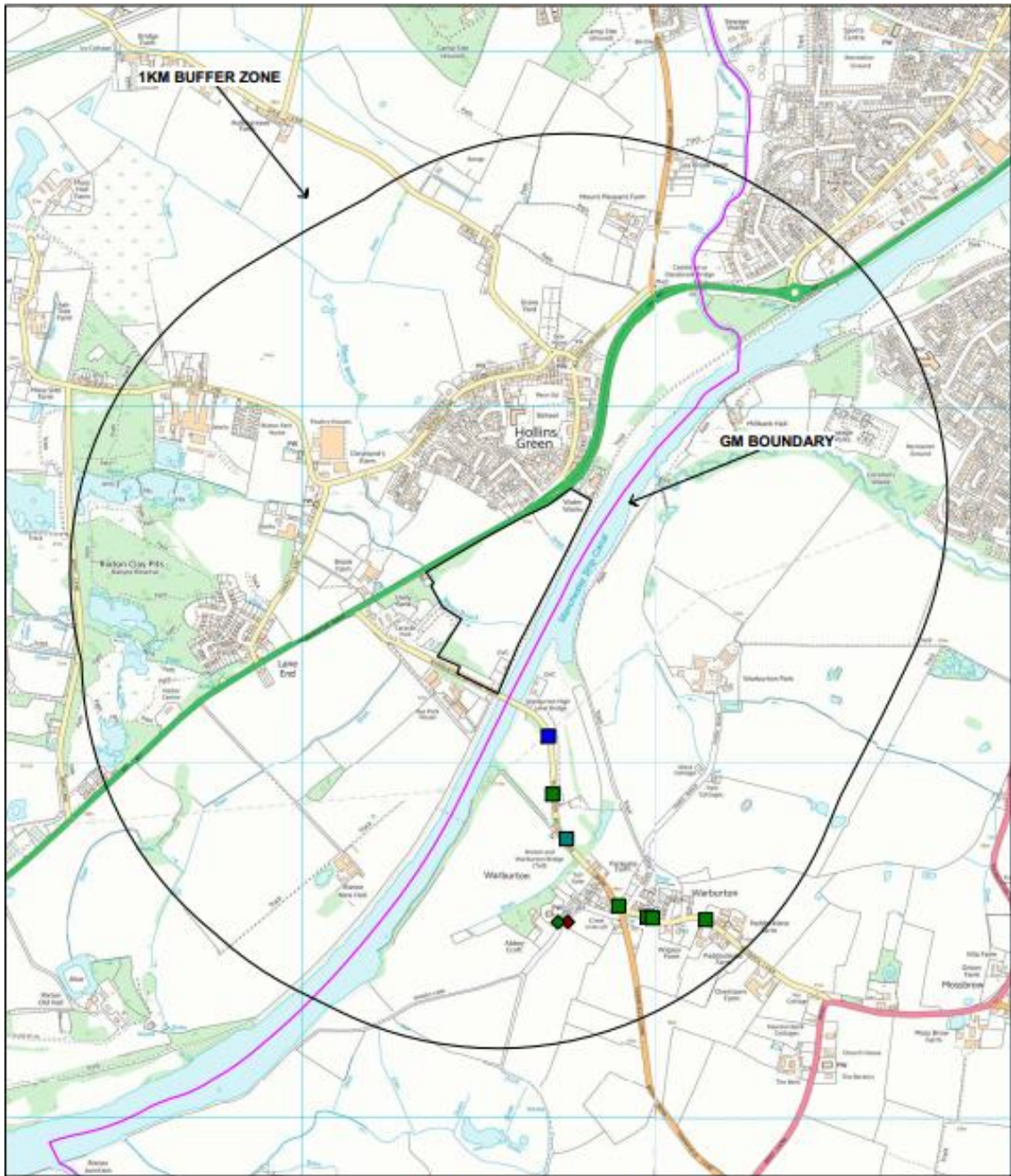


Site name	Rixton Brickworks
Site code	WA027
Authority	Warrington Local Wildlife Sites Partnership
Site centroid	SJ685990607

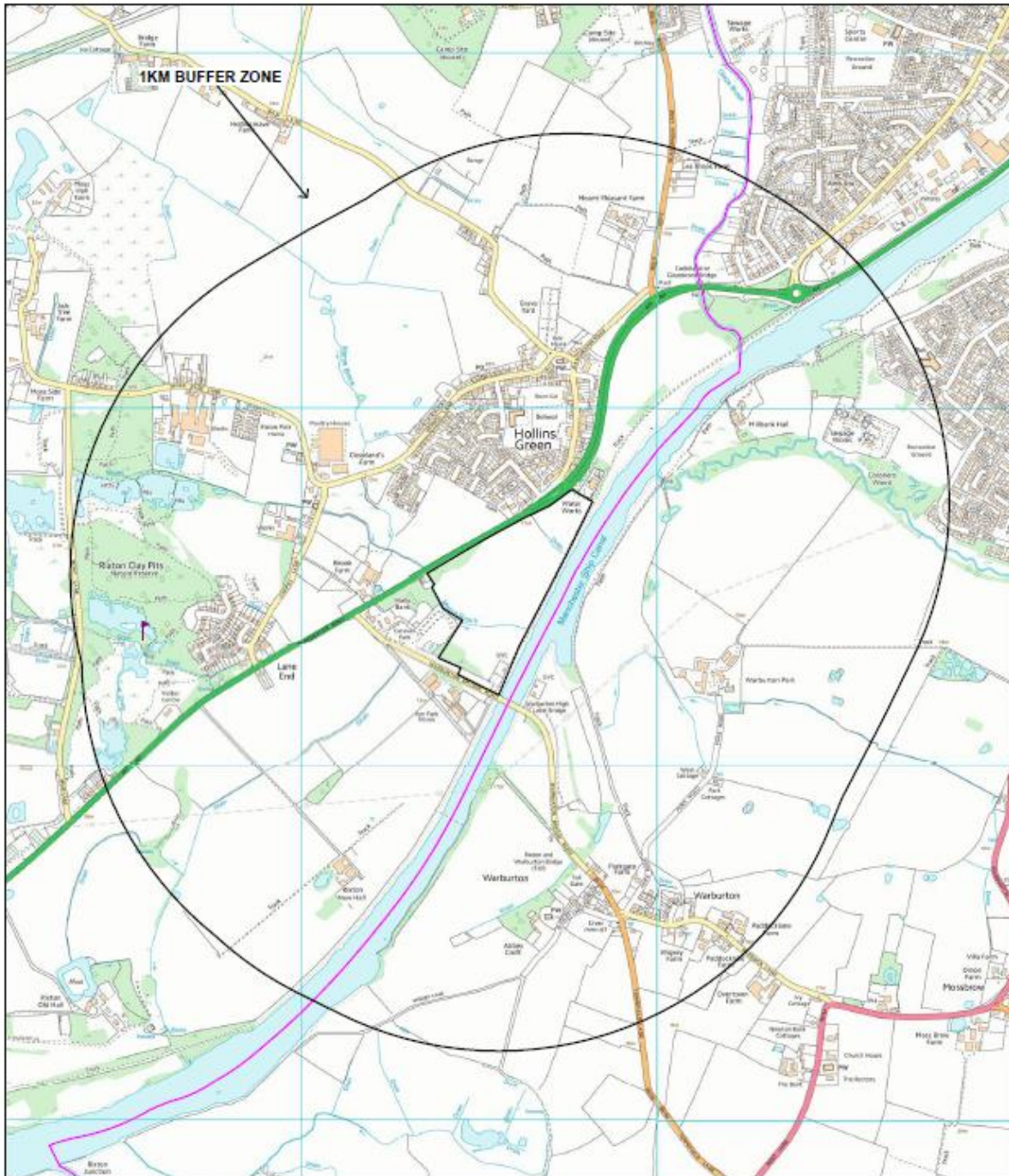
Maps provided by GMEU of Site Designations and protected species within 1km



<p>KEY SITE OF BIOLOGICAL IMPORTANCE SBI BOUNDARY</p>	<p>GREATER MANCHESTER ECOLOGY UNIT ECOLOGICAL SEARCH - SJ6960490556 HOLLINS GREEN - MAP 1</p>	
<p>SCALE 1:10,000</p>		
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		<p>Greater Manchester Ecology Unit</p>
		<p>Telephone 0161 342 4408 Email: gmeu@tameside.gov.uk</p>
		<p>Date Produced: 06/09/2017</p>



<p>KEY</p> <p>BAT ROOSTS</p> <p>◆ BROWN LONG-EARED BA</p> <p>◆ COMMON PIPISTRELLE</p> <p>BATS OTHER SIGNS</p> <p>■ COMMON PIPISTRELLE</p> <p>■ MYOTIS SP</p> <p>■ PIPISTRELLE SP</p>	<p>GREATER MANCHESTER ECOLOGY UNIT</p> <p>ECOLOGICAL SEARCH - SJ6960490556</p> <p>HOLLINS GREEN - MAP 3</p> <p>SCALE 1:10,000</p> <p>BAT DATA COURTESY OF SOUTH LANCs BAT GROUP</p> <p>THE MAP IS BASED UPON ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HMSO ©CROWN COPYRIGHT</p> <p>UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS</p> <p>TAMESIDE MBC LICENCE NO LA100022697, 2017</p>	<p>Greater Manchester Ecology Unit</p> <p>Telephone 0161 342 4409</p> <p>Email: gmeu@tameside.gov.uk</p> <p>Date Produced: 05/09/2017</p>
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KEY
GREAT CRESTED NEWT
GM BOUNDARY

GREATER MANCHESTER ECOLOGY UNIT
 ECOLOGICAL SEARCH - SJ6960490556
 HOLLINS GREEN - MAP 2

SCALE 1:10,000

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Greater Manchester Ecology Unit

Telephone 0161 342 4409
 Email: gmeu@tameside.gov.uk
 Date Produced: 05/09/2017

Extract of Species Data provided by RECORD within 1km

Designated Species Summary

Taxa	Designation Name	Occurrence in Cheshire tetrads between 2006-2017 (%)	Occurrence in Cheshire tetrads all years (%)
Barn Owl (<i>Tyto alba</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber, Wildlife and Countryside Act Schedule 9	23%	58%
Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	Birds of Conservation Concern [RSPB] - Amber	23%	41%
Bluebell (<i>Hyacinthoides non-scripta</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 8	31%	69%
Bullfinch (<i>Pyrrhula pyrrhula</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Amber, NERC S41	20%	70%
Canada Goose (<i>Branta canadensis</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	26%	53%
Cinnabar (<i>Tyria jacobaeae</i>)	NERC S41, UK BAP Priority Species	13%	30%
Common Frog (<i>Rana temporaria</i>)	Wildlife and Countryside Act - Schedule 5	33%	63%
Common Lizard (<i>Zootoca vivipara</i>)	Wildlife and Countryside Act - Schedule 5, NERC S41, UK BAP Priority Species	5%	9%
Common Tern (<i>Sterna hirundo</i>)	Birds of Conservation Concern [RSPB] - Amber	3%	13%
Common Toad (<i>Bufo bufo</i>)	Wildlife and Countryside Act - Schedule 5, NERC S41, UK BAP Priority Species	23%	41%
Duncock (<i>Prunella modularis</i>)	Birds of Conservation Concern [RSPB] - Amber, NERC S41	29%	84%
Eastern Grey Squirrel (<i>Sciurus carolinensis</i>)	Wildlife and Countryside Act Schedule 9	31%	54%
Eurasian Badger (<i>Meles meles</i>)	Protection of Badgers Act 1992	59%	74%
European Otter (<i>Lutra lutra</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, NERC S41, Conservation (Habs and Sp) Regulations 2010 - Schedule 2, UK BAP Priority Species	11%	22%
European Water Vole (<i>Arvicola amphibius</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, NERC S41, UK BAP Priority Species	13%	52%
Fieldfare (<i>Turdus pilaris</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Red	19%	39%
Gadwall (<i>Anas strepera</i>)	Birds of Conservation Concern [RSPB] - Amber	6%	12%

Giant Hogweed (<i>Heracleum mantegazzianum</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	5%	10%
Goldeneye (<i>Bucephala clangula</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber	6%	14%
Great Crested Newt (<i>Triturus cristatus</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, NERC S41, Conservation (Habs and Sp) Regulations 2010 - Schedule 2, UK BAP Priority Species	20%	37%
Green Woodpecker (<i>Picus viridis</i>)	Birds of Conservation Concern [RSPB] - Amber	12%	45%
Grey Wagtail (<i>Motacilla cinerea</i>)	Birds of Conservation Concern [RSPB] - Amber	14%	45%
House Martin (<i>Delichon urbicum</i>)	Birds of Conservation Concern [RSPB] - Amber	23%	67%
House Sparrow (<i>Passer domesticus</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41, UK BAP Priority Species	35%	84%
Indian Balsam (<i>Impatiens glandulifera</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	24%	36%
Japanese Knotweed (<i>Fallopia japonica</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	18%	31%
Kestrel (<i>Falco tinnunculus</i>)	Birds of Conservation Concern [RSPB] - Amber	35%	80%
Lapwing (<i>Vanellus vanellus</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41, UK BAP Priority Species	28%	79%
Large Tortoiseshell (<i>Nymphalis polychloros</i>)	Wildlife and Countryside Act - Schedule 5	<1%	<1%
Latticed Heath (<i>Chiasmia clathrata</i>)	NERC S41, UK BAP Priority Species	<1%	12%
Little Grebe (<i>Tachybaptus ruficollis</i>)	Birds of Conservation Concern [RSPB] - Amber	11%	29%
Mallard (<i>Anas platyrhynchos</i>)	Birds of Conservation Concern [RSPB] - Amber	42%	82%
Mistle Thrush (<i>Turdus viscivorus</i>)	Birds of Conservation Concern [RSPB] - Amber	23%	82%
Oystercatcher (<i>Haematopus ostralegus</i>)	Birds of Conservation Concern [RSPB] - Amber	13%	23%
Reed Bunting (<i>Emberiza schoeniclus</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Amber, NERC S41, UK BAP Priority Species	19%	73%
Ruddy Duck (<i>Oxyura jamaicensis</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	3%	14%
Scaup (<i>Aythya marila</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation	3%	9%

	Concern [RSPB] - Red, NERC 541, UK BAP Priority Species		
Shaded Broad-bar (<i>Scotopteryx chenopodiata</i>)	NERC 541, UK BAP Priority Species	3%	18%
Shoveler (<i>Anas clypeata</i>)	Birds of Conservation Concern [RSPB] - Amber	8%	18%
Smooth Newt (<i>Lissotriton vulgaris</i>)	Wildlife and Countryside Act - Schedule 5	14%	35%
Song Thrush (<i>Turdus philomelos</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red	33%	87%
Starling (<i>Sturnus vulgaris</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC 541	30%	86%
Swallow (<i>Hirundo rustica</i>)	Birds of Conservation Concern [RSPB] - Amber	44%	87%
Swift (<i>Apus apus</i>)	Birds of Conservation Concern [RSPB] - Amber	22%	81%
Tufted Duck (<i>Aythya fuligula</i>)	Birds of Conservation Concern [RSPB] - Amber	13%	31%
White-letter Hairstreak (<i>Satyrus w-album</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, IUCN Global Red List - Endangered, NERC 541, UK BAP Priority Species	5%	16%
Whitethroat (<i>Sylvia communis</i>)	Birds of Conservation Concern [RSPB] - Amber	17%	70%
Willow Warbler (<i>Phylloscopus trochilus</i>)	Birds of Conservation Concern [RSPB] - Amber	18%	83%
Yellow Archangel (<i>Lamium galeobdolon</i> subsp. <i>argentatum</i>)	Wildlife and Countryside Act Schedule 9	7%	13%
Yellowhammer (<i>Emberiza citrinella</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC 541, UK BAP Priority Species	14%	77%

Detailed species provided by RECORD within 1km

Taxon group	Common name	Scientific name	Location	Grid reference	Date	Year	Abundance	Sex/Stage	Designations	Designation groups
FLOWERING PLANT	Hoary Willowherb	Epilobium parviflorum	Rixton.	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hoary Willowherb	Epilobium parviflorum	Hollins Green.	SJ7091	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
HORSETAIL	Field Horsetail	Equisetum arvense	Warburton Bridge, vc59.	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
HORSETAIL	Field Horsetail	Equisetum arvense	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
HORSETAIL	Field Horsetail	Equisetum arvense	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
HORSETAIL	Field Horsetail	Equisetum arvense	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
HORSETAIL	Field Horsetail	Equisetum arvense	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Migrant Hawker	Aeshna mixta	Rixton Clay Pits	SJ685902	04/05/2006	2006	22+	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Migrant Hawker	Aeshna mixta	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	1	Adult	IUCN LC	European/National Importance
BIRD	Lesser Redpoll	Acanthis cabaret		SJ6889	06/03/2010	2010	2	None		
BIRD	Tufted Duck	Aythya fuligula	Compartment Group B (Rixton Clay Pits)	SJ684905	24/12/2006	2006	100	None	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	3	Adult	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Rixton & Woolston - CP, Pool to W of Moat Lane	SJ683907	13/01/2013	2013	Numerous	Adult	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	33	Adult	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	5	Adult	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Rixton Clay Pits	SJ684905	05/06/2010	2010	Two	Adult	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Moat Lane Pool (North)	SJ683908	05/06/2010	2010	Eight	Male	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Moat Lane Pool (North)	SJ683908	05/06/2010	2010	Three	Female	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula		SJ6889	30/01/2010	2010	30	None	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	Present	None	BAm [RSPB]	European/National Importance
BIRD	Tufted Duck	Aythya fuligula		SJ6890	12/06/2007	2007	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus	agricultural field off A57 nr Rixton clay pits	SJ684898	19/10/2009	2009	1	None	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	1	Adult	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Adult	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus		SJ6890	27/06/2015	2015	1	Adult	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus		SJ6889	06/03/2010	2010	4	None	BAm [RSPB]	European/National Importance



BIRD	Kestrel	Falco tinnunculus		SJ6889	27/02/2010	2010	1	None	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus		SJ687903	21/09/2008	2008	2	Juvenile	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus	Compartment Group B (Rixton Clay Pits)	SJ684905	24/12/2006	2006	1	None	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus		SJ6889	30/01/2010	2010	2	None	BAm [RSPB]	European/National Importance
BIRD	Kestrel	Falco tinnunculus		SJ685901	30/07/2010	2010	1	None	BAm [RSPB]	European/National Importance
TERRESTRIAL MAMMAL	European Otter	Lutra lutra	Rixton & Woolston - CP, Glazebrook.	SJ7091	17/04/2015	2015	1	None	LBAP, WCA5, S41, HabRegs2, UKBAP	Local Importance, European and UK Legal Protection
TERRESTRIAL MAMMAL	European Otter	Lutra lutra	Rixton clay Pits	SJ685904	01/12/2010	2010	1	Tracks	LBAP, WCA5, S41, HabRegs2, UKBAP	Local Importance, European and UK Legal Protection
FLOWERING PLANT	Red Dead-nettle	Lamium purpureum	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Spear Thistle	Cirsium vulgare	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Dogwood	Cornus sanguinea	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Dogwood	Cornus sanguinea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cock's-foot	Dactylis glomerata	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ground-elder	Aegopodium podagraria	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ground-elder	Aegopodium podagraria	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ground-elder	Aegopodium podagraria	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Ground-elder	Aegopodium podagraria		SJ6890	12/06/2007	2007	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Ground-elder	Aegopodium podagraria	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ground-elder	Aegopodium podagraria	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Mouse-ear	Cerastium fontanum	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Mouse-ear	Cerastium fontanum	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Mouse-ear	Cerastium fontanum	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Mouse-ear	Cerastium fontanum	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wild Cherry	Prunus avium	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Tall Fescue	Festuca arundinacea	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cut-leaved Crane's-bill	Geranium dissectum	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance



FLOWERING PLANT	Broad-leaved Dock	Rumex obtusifolius	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Broad-leaved Dock	Rumex obtusifolius	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Broad-leaved Dock	Rumex obtusifolius	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Thistle	Cirsium arvense	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Thistle	Cirsium arvense	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Garden Privet	Ligustrum ovalifolium	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Daisy	Bellis perennis	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Daisy	Bellis perennis		SJ6890	27/06/2015	2015	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Daisy	Bellis perennis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Daisy	Bellis perennis	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Daisy	Bellis perennis	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Daisy	Bellis perennis	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Japanese Knotweed	Fallopia japonica	SJ79A	SJ7090	03/05/2007	2007	Present	None	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
FLOWERING PLANT	Japanese Knotweed	Fallopia japonica	Hollins Green	SJ7091	24/01/2009	2009	Present	None	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
FLOWERING PLANT	Lesser Burdock	Arctium minus	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Lesser Burdock	Arctium minus	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Lesser Burdock	Arctium minus	Warburton Bridge VC59	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Lesser Burdock	Arctium minus	Warburton Bridge VC59	SJ6989	12/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Lesser Burdock	Arctium minus	Hollins Green	SJ7091	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Dove's-foot Crane's-bill	Geranium molle	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Prickly Sow-thistle	Sonchus asper	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Prickly Sow-thistle	Sonchus asper	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Tutsan	Hypericum androsaemum	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Tutsan	Hypericum androsaemum		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Beech	Fagus sylvatica	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Nipplewort	Lapsana communis	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Nipplewort	Lapsana communis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Nipplewort	Lapsana communis		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Ivy	Hedera helix subsp. helix	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hybrid Oak	Quercus petraea x robur = Q. x rosacea	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Shepherd's-purse	Capsella bursa-pastoris	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Plantain	Plantago major	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Plantain	Plantago major	Rixton & Woolston -	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance

			CP, Rixton Clay Pits							
FLOWERING PLANT	Greater Plantain	Plantago major	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Plantain	Plantago major	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Mustard	Sisymbrium officinale	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Shining Crane's-bill	Geranium lucidum	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	Warburton Bridge	SJ6989	12/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	A57 near Warburton Bridge	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ash	Fraxinus excelsior	Manchester Road	SJ6991	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Danish Scurvygrass	Cochlearia danica	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Danish Scurvygrass	Cochlearia danica	Marsh Brook	SJ69269050	02/05/2012	2012	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Danish Scurvygrass	Cochlearia danica	A57 Near Warburton Bridge	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Danish Scurvygrass	Cochlearia danica	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Sweet Cicely	Myrrhis odorata	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Sweet Cicely	Myrrhis odorata	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None		
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	A57 Near to Warburton Bridge	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	Manchester Road	SJ6991	07/04/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Garlic Mustard	Alliaria petiolata	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Few-Flowered Fumitory	Fumaria muralis subsp. boraei	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Broom	Cytisus scoparius	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Bluebell	Hyacinthoides non-scripta x hispanica = H. x massartiana	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Goat Willow	Salix caprea	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Goat Willow	Salix caprea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance

FLOWERING PLANT	Russian Comfrey	<i>Symphytum officinale</i> x <i>asperum</i> = <i>S. x uplandicum</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Russian Comfrey	<i>Symphytum officinale</i> x <i>asperum</i> = <i>S. x uplandicum</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering		
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	warburton bridge vc59	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	warburton bridge vc59	SJ6989	12/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	A57 (Near Warburton Bridge)	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hawthorn	<i>Crataegus monogyna</i>	A57 at Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Taraxacum aggregate	Taraxacum aggregate	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Elder	<i>Sambucus nigra</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Elder	<i>Sambucus nigra</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Elder	<i>Sambucus nigra</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Elder	<i>Sambucus nigra</i>		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Elder	<i>Sambucus nigra</i>	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Bud	IUCN LC	European/National Importance
FLOWERING PLANT	Elder	<i>Sambucus nigra</i>		SJ6891	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Black Medick	<i>Medicago lupulina</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Black Medick	<i>Medicago lupulina</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Lesser Trefoil	<i>Trifolium dubium</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Lesser Trefoil	<i>Trifolium dubium</i>	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Lesser Trefoil	<i>Trifolium dubium</i>	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>	A57 near Warburton Bridge	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>	Rixton	SJ6890	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Mugwort	<i>Artemisia vulgaris</i>	Hollins Green	SJ7091	24/01/2009	2009	Present	None	IUCN LC	European/National Importance



FLOWERING PLANT	Holly	Ilex aquifolium	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Holly	Ilex aquifolium	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Holly	Ilex aquifolium	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
FLOWERING PLANT	Crack-willow	Salix fragilis	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Crack-willow	Salix fragilis	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Crack-willow	Salix fragilis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Sycamore	Acer pseudoplatanus	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Sycamore	Acer pseudoplatanus	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None		
FLOWERING PLANT	Sycamore	Acer pseudoplatanus	Warburton Bridge	SJ6989	13/06/2009	2009	Present	None		
FLOWERING PLANT	Sycamore	Acer pseudoplatanus	Warburton Bridge	SJ6989	12/04/2006	2006	Present	None		
FLOWERING PLANT	Sycamore	Acer pseudoplatanus	A57 near Warburton Bridge	SJ6990	24/01/2009	2009	Present	None		
FLOWERING PLANT	Sycamore	Acer pseudoplatanus	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None		
FLOWERING PLANT	Procumbent Pearlwort	Sagina procumbens	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Lime	Tilia platyphyllos x cordata = T. x europaea	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Soft-rush	Juncus effusus	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FERN	Male-fern	Dryopteris filix-mas	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FERN	Male-fern	Dryopteris filix-mas	Rixton.	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FERN	Male-fern	Dryopteris filix-mas	A57 (Hollins Green)	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	False Oat-grass	Arrhenatherum elatius	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	False Oat-grass	Arrhenatherum elatius	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	False Oat-grass	Arrhenatherum elatius	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	False Oat-grass	Arrhenatherum elatius	Warburton Bridge VC59	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Annual Meadow-grass	Poa annua	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Annual Meadow-grass	Poa annua	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Foxglove	Digitalis purpurea	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Foxglove	Digitalis purpurea	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Foxglove	Digitalis purpurea		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Foxglove	Digitalis purpurea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Foxglove	Digitalis purpurea	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Foxglove	Digitalis purpurea		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Foxglove	Digitalis purpurea	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Red Campion	Silene dioica	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Campion	Silene dioica	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Campion	Silene dioica	Rixton & Woolston -	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance



			CP, Rixton Clay Pits.							
FLOWERING PLANT	Red Campion	<i>Silene dioica</i>		SJ6890	27/06/2015	2015	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Red Campion	<i>Silene dioica</i>	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Red Campion	<i>Silene dioica</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Red Campion	<i>Silene dioica</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bramble	<i>Rubus fruticosus</i> agg.	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Bramble	<i>Rubus fruticosus</i> agg.		SJ6890	27/06/2015	2015	Frequent	Fruiting	IUCN LC	European/National Importance
FLOWERING PLANT	Bramble	<i>Rubus fruticosus</i> agg.	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Bramble	<i>Rubus fruticosus</i> agg.	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hemlock Water-dropwort	<i>Oenanthe crocata</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hemlock Water-dropwort	<i>Oenanthe crocata</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow Archangel	<i>Lamium galeobdolon</i> subsp. <i>argentatum</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	WCA9	European and UK Legal Protection
FLOWERING PLANT	Sticky Mouse-ear	<i>Cerastium glomeratum</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Sticky Mouse-ear	<i>Cerastium glomeratum</i>	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Celandine	<i>Chelidonium majus</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Celandine	<i>Chelidonium majus</i>	Warburton	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Celandine	<i>Chelidonium majus</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Butterbur	<i>Petasites hybridus</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Butterbur	<i>Petasites hybridus</i>	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Butterbur	<i>Petasites hybridus</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Butterbur	<i>Petasites hybridus</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Nettle	<i>Urtica dioica</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Nettle	<i>Urtica dioica</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Nettle	<i>Urtica dioica</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Broad-leaved Willowherb	<i>Epilobium montanum</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Broad-leaved Willowherb	<i>Epilobium montanum</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Broad-leaved Willowherb	<i>Epilobium montanum</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Ribwort Plantain	<i>Plantago lanceolata</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ribwort Plantain	<i>Plantago lanceolata</i>	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ribwort Plantain	<i>Plantago lanceolata</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ribwort Plantain	<i>Plantago lanceolata</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ribwort Plantain	<i>Plantago lanceolata</i>	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Ribwort Plantain	<i>Plantago lanceolata</i>		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance



FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>	Rixton	SJ6889	17/05/2009	2009	59	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>	Warburton Bridge VC59	SJ6989	12/04/2006	2006	59	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>	Rixton	SJ6890	17/05/2009	2009	59	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cow Parsley	<i>Anthriscus sylvestris</i>	Manchester Road	SJ6991	07/04/2006	2006	59	None	IUCN LC	European/National Importance
FLOWERING PLANT	Petty Spurge	<i>Euphorbia peplus</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Forget-me-not	<i>Myosotis sylvatica</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Forget-me-not	<i>Myosotis sylvatica</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Forget-me-not	<i>Myosotis sylvatica</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Indian Balsam	<i>Impatiens glandulifera</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
FLOWERING PLANT	Indian Balsam	<i>Impatiens glandulifera</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
FLOWERING PLANT	Cleavers	<i>Galium aparine</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cleavers	<i>Galium aparine</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cleavers	<i>Galium aparine</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cleavers	<i>Galium aparine</i>		SJ6890	27/06/2015	2015	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cleavers	<i>Galium aparine</i>	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
FERN	Lady-fern	<i>Athyrium filix-femina</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FERN	Lady-fern	<i>Athyrium filix-femina</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Rusty Willow	<i>Salix cinerea</i> subsp. <i>oleifolia</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Rusty Willow	<i>Salix cinerea</i> subsp. <i>oleifolia</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Norway Maple	<i>Acer platanoides</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None		
FLOWERING PLANT	Norway Maple	<i>Acer platanoides</i>	Rixton	SJ6889	17/05/2009	2009	Present	None		
FLOWERING PLANT	Field Maple	<i>Acer campestre</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Field Maple	<i>Acer campestre</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hairy Bitter-cress	<i>Cardamine hirsuta</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hairy Bitter-cress	<i>Cardamine hirsuta</i>	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hairy Bitter-cress	<i>Cardamine hirsuta</i>	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Alder	<i>Alnus glutinosa</i>	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Alder	<i>Alnus glutinosa</i>	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Alder	<i>Alnus glutinosa</i>	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance



FLOWERING PLANT	Barren Brome	Bromus sterilis	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Barren Brome	Bromus sterilis	Wrburton bridge VC59	SJ6989	13/06/2009	2009	59	None	IUCN LC	European/National Importance
FLOWERING PLANT	Barren Brome	Bromus sterilis	Manchester Road	SJ6991	07/04/2006	2006	59	None	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Buttercup	Ranunculus acris	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Buttercup	Ranunculus acris	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Buttercup	Ranunculus acris		SJ6890	27/06/2015	2015	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Buttercup	Ranunculus acris	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Buttercup	Ranunculus acris		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Buttercup	Ranunculus acris	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Wall Speedwell	Veronica arvensis	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Buttercup	Ranunculus repens	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Buttercup	Ranunculus repens	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Abundant	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Buttercup	Ranunculus repens		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Buttercup	Ranunculus repens	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Buttercup	Ranunculus repens	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Buttercup	Ranunculus repens	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Groundsel	Senecio vulgaris	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cuckooflower	Cardamine pratensis	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cuckooflower	Cardamine pratensis	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cuckooflower	Cardamine pratensis	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cuckooflower	Cardamine pratensis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cuckooflower	Cardamine pratensis		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cuckooflower	Cardamine pratensis	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hogweed	Heracleum sphondylium	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hogweed	Heracleum sphondylium	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hogweed	Heracleum sphondylium	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hogweed	Heracleum sphondylium	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hogweed	Heracleum sphondylium		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Ragwort	Senecio jacobaea	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Ragwort	Senecio jacobaea	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Ragwort	Senecio jacobaea	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance



FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium	A57 near Warburton Bridge	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Rosebay Willowherb	Chamerion angustifolium	Manchester Road	SJ6991	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Fescue	Festuca rubra agg.	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Fescue	Festuca rubra agg.	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Fescue	Festuca rubra agg.	Warburton Bridge VC59	SJ6989	12/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Fescue	Festuca rubra agg.	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Fescue	Festuca rubra agg.	Hollins Green.	SJ7091	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Herb-Robert	Geranium robertianum	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Herb-Robert	Geranium robertianum		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Herb-Robert	Geranium robertianum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Herb-Robert	Geranium robertianum	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Herb-Robert	Geranium robertianum		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Herb-Robert	Geranium robertianum	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Aspen	Populus tremula	SJ79A	SJ7090	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Aspen	Populus tremula	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
MOSS	Pointed Spear-moss	Calliergonella cuspidata	Rixton & Woolston - CP, A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None		
BIRD	Sparrowhawk	Accipiter nisus	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	1	Adult		
BIRD	Sparrowhawk	Accipiter nisus		SJ6889	30/01/2010	2010	3	None		
BIRD	Long-tailed Tit	Aegithalos caudatus	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	10	Adult		
BIRD	Long-tailed Tit	Aegithalos caudatus	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	8	Adult		
BIRD	Long-tailed Tit	Aegithalos caudatus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	10	Adult		
BIRD	Long-tailed Tit	Aegithalos caudatus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	10	None		
BIRD	Long-tailed Tit	Aegithalos caudatus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Long-tailed Tit	Aegithalos caudatus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Long-tailed Tit	Aegithalos caudatus	Rixton Claypits	SJ68469036	04/03/2006	2006	Present	None		
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Compartment C37, Rixton	SJ684905	06/09/2012	2012	1	Adult		

			Clay Pits, Rixton Clay Pits						
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/07/2014	2014	10	Adult	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	16/09/2014	2014	1	Adult	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	03/09/2014	2014	1	Adult	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	04/09/2013	2013	15	None	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	28/02/2013	2013	1	None	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton Claypits	SJ6890	22/03/2012	2012	1	None	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton Claypits	SJ6890	09/10/2012	2012	1	None	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton Claypits	SJ6890	01/09/2012	2012	19	None	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton Claypits	SJ6890	23/08/2011	2011	12	None	
INSECT - BUTTERFLY	Small Tortoiseshell	Aglais urticae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	17/10/2013	2013	1	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	1	Adult	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Adult	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton Claypits	SJ6890	04/08/2012	2012	122	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton Claypits	SJ6890	24/03/2012	2012	1	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton Claypits	SJ6890	19/09/2012	2012	1	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/09/2014	2014	1	Adult	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton & Woolston - CP, Rixton Claypits	SJ685905	15/04/2014	2014	1	Adult	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton & Woolston - CP, Rixton Claypits	SJ685905	08/04/2014	2014	63	Adult	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton & Woolston - CP, Rixton Claypits	SJ6890	01/08/2013	2013	262	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton & Woolston - CP, Rixton Claypits	SJ6890	27/04/2013	2013	1	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton Claypits	SJ6890	26/07/2011	2011	77	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton & Woolston - CP, Rixton Claypits	SJ6890	04/10/2013	2013	2	None	
INSECT - BUTTERFLY	Green-veined White	Pieris napi	Rixton Nature Reserve	SJ686904	31/07/2010	2010	5	Adult	
BIRD	Buzzard	Buteo buteo	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	4	Adult	
BIRD	Buzzard	Buteo buteo		SJ685902	03/03/2012	2012	1	None	
BIRD	Buzzard	Buteo buteo	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	1	Adult	
BIRD	Buzzard	Buteo buteo	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	2	Adult	
BIRD	Buzzard	Buteo buteo	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	
BIRD	Buzzard	Buteo buteo		SJ6889	27/02/2010	2010	3	None	
BIRD	Buzzard	Buteo buteo		SJ6889	06/03/2010	2010	8	None	



BIRD	Buzzard	Buteo buteo		SJ6890	27/06/2015	2015	1	Adult		
BIRD	Buzzard	Buteo buteo	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	1	Adult		
BIRD	Buzzard	Buteo buteo		SJ6889	30/01/2010	2010	4	None		
BIRD	Buzzard	Buteo buteo		SJ685901	31/07/2010	2010	Present	None		
BIRD	Buzzard	Buteo buteo		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	Buzzard	Buteo buteo	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Adult		
BIRD	Buzzard	Buteo buteo	Rixton & Woolston - CP, Holcroft Lane	SJ700914	30/01/2014	2014	1	Adult		
BIRD	Goldfinch	Carduelis carduelis	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	8	Adult		
BIRD	Goldfinch	Carduelis carduelis	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	3	Adult		
BIRD	Goldfinch	Carduelis carduelis	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	5	Adult		
BIRD	Goldfinch	Carduelis carduelis	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Adult		
BIRD	Greenfinch	Chloris chloris	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	3	Adult		
BIRD	Greenfinch	Chloris chloris	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Adult		
INSECT - DRAGONFLY (ODONATA)	Azure Damselfly	Coenagrion puella	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	10	Adult	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Azure Damselfly	Coenagrion puella	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Azure Damselfly	Coenagrion puella		SJ687905	03/06/2014	2014	1	Adult Male	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Azure Damselfly	Coenagrion puella	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Azure Damselfly	Coenagrion puella		SJ685901	11/04/2011	2011	Present	Nymph	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Azure Damselfly	Coenagrion puella	Rixton Clay pits	SJ685907	31/05/2011	2011	1	None	IUCN LC	European/National Importance
BIRD	Jay	Garrulus glandarius	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	2	Adult		
BIRD	Jay	Garrulus glandarius	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	2	Adult		
BIRD	Jay	Garrulus glandarius	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Jay	Garrulus glandarius	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	1	None		
BIRD	Swallow	Hirundo rustica	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	5	Adult	BAm [RSPB]	European/National Importance
BIRD	Swallow	Hirundo rustica	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	2	Adult	BAm [RSPB]	European/National Importance
BIRD	Swallow	Hirundo rustica	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Swallow	Hirundo rustica	Rixton Clay Pits	SJ684905	05/06/2010	2010	3	Adult	BAm [RSPB]	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Common Darter	Sympetrum striolatum	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	2	Adult	IUCN LC	European/National Importance
INSECT - DRAGONFLY	Common Darter	Sympetrum striolatum	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult	IUCN LC	European/National Importance

Y (ODONATA)										
INSECT - DRAGONFL Y (ODONATA)	Common Darter	Sympetrum striolatum	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Nymph	IUCN LC	European/Na tional Importance
BIRD	Chaffinch	Fringilla coelebs	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	3	Adult		
BIRD	Chaffinch	Fringilla coelebs	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	4	Adult		
BIRD	Chaffinch	Fringilla coelebs	Rixton Clay Pits	SJ684905	05/06/2010	2010	3	Adult Male		
BIRD	Chaffinch	Fringilla coelebs	Rixton Clay Pits	SJ684905	05/06/2010	2010	3	Male		
TERRESTRI AL MAMMAL	European Rabbit	Oryctolagus cuniculus	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Adult		
TERRESTRI AL MAMMAL	European Rabbit	Oryctolagus cuniculus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Adult		
TERRESTRI AL MAMMAL	European Rabbit	Oryctolagus cuniculus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
TERRESTRI AL MAMMAL	European Rabbit	Oryctolagus cuniculus	Hollinfare	SJ6989119	02/05/2012	2012	1	None		
TERRESTRI AL MAMMAL	European Rabbit	Oryctolagus cuniculus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
TERRESTRI AL MAMMAL	European Rabbit	Oryctolagus cuniculus	Rixton Claypits	SJ68481901 65	16/07/2008	2008	1	None		
TERRESTRI AL MAMMAL	European Rabbit	Oryctolagus cuniculus	Rixton Clay Pits, Rixton and Woolston	SJ68481901 65	05/12/2009	2009	1	None		
BIRD	Willow Tit	Poecile montana	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	1	Adult		
BIRD	Willow Tit	Poecile montana		SJ6889	30/01/2010	2010	1	None		
BIRD	Nuthatch	Sitta europaea	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	06/09/2012	2012	1	Adult		
BIRD	Nuthatch	Sitta europaea	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	2	Adult		
BIRD	Nuthatch	Sitta europaea		SJ684903	31/07/2010	2010	Present	None		
BIRD	Nuthatch	Sitta europaea	Rixton Clay Pits	SJ684905	05/06/2010	2010	One	Adult		
BIRD	Nuthatch	Sitta europaea	Rixton Claypits	SJ68469036	04/03/2006	2006	2	None		
BIRD	Oystercatche r	Haematopus ostralegus	Moat Lane Pool (North)	SJ683908	05/06/2010	2010	2	Adult	BAm [RSPB]	European/Na tional Importance
BIRD	Oystercatche r	Haematopus ostralegus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	BAm [RSPB]	European/Na tional Importance
BIRD	Grey Heron	Ardea cinerea	Rixton & Woolston - CP, Pool to W of Moat Lane	SJ683907	13/01/2013	2013	1	Adult		
BIRD	Grey Heron	Ardea cinerea	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	2	Adult		
BIRD	Grey Heron	Ardea cinerea	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Adult		
BIRD	Grey Heron	Ardea cinerea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Grey Heron	Ardea cinerea		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	Little Grebe	Tachybaptus ruficollis	Rixton & Woolston - CP, Pool to W of Moat Lane	SJ683907	13/01/2013	2013	1	Adult	BAm [RSPB]	European/Na tional Importance
BIRD	Little Grebe	Tachybaptus ruficollis		SJ6889	06/03/2010	2010	1	None	BAm [RSPB]	European/Na tional Importance



BIRD	Mallard	Anas platyrhynchos	Rixton & Woolston - CP, Pool to W of Moat Lane	SJ683907	13/01/2013	2013	Numerous	Adult	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	10	Adult	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	30	Adult	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	4	Adult	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	5	None	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Moat Lane Pool (North)	SJ683908	05/06/2010	2010	2	Adult	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	Present	None	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Rixton Claypits	SJ68489043	04/03/2006	2006	Present	None	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos	Rixton Claypits	SJ68539031	04/03/2006	2006	Present	None	BAm [RSPB]	European/National Importance
BIRD	Mallard	Anas platyrhynchos		SJ6890	12/06/2007	2007	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Mute Swan	Cygnus olor	Rixton & Woolston - CP, Pool to W of Moat Lane	SJ683907	13/01/2013	2013	1 Or 2	Adult		
BIRD	Mute Swan	Cygnus olor		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	Coot	Fulica atra	Rixton & Woolston - CP, Pool to W of Moat Lane	SJ683907	13/01/2013	2013	Numerous	Adult		
BIRD	Coot	Fulica atra	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	10	Adult		
BIRD	Coot	Fulica atra	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	4	None		
BIRD	Coot	Fulica atra	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None		
BIRD	Coot	Fulica atra	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Coot	Fulica atra	Compartment Group B (Rixton Clay Pits)	SJ684905	24/12/2006	2006	69	Adult		
BIRD	Coot	Fulica atra	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	Present	None		
BIRD	Coot	Fulica atra	Rixton Claypits	SJ68489043	04/03/2006	2006	Present	None		
BIRD	Coot	Fulica atra	Rixton Claypits	SJ68539031	04/03/2006	2006	Present	None		
BIRD	Coot	Fulica atra		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	Canada Goose	Branta canadensis	Rixton & Woolston - CP, Pool to W of Moat Lane	SJ683907	13/01/2013	2013	Numerous	Adult	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
BIRD	Canada Goose	Branta canadensis	Rixton Claypits	SJ684905	24/12/2006	2006	3	None	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
BIRD	Canada Goose	Branta canadensis	Compartment Group B (Rixton Clay Pits)	SJ684905	24/12/2006	2006	3	Adult	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
BIRD	Canada Goose	Branta canadensis	Rixton Claypits	SJ684905	24/12/2006	2006	3	Adult	INNS, WCA9	Invasive Non-Native, European and UK

										Legal Protection
BIRD	Canada Goose	<i>Branta canadensis</i>		SJ6890	12/06/2007	2007	Occasional	Adult	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
BIRD	Coal Tit	<i>Pariparus ater</i>	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Adult		
INSECT - TRUE BUG (HEMIPTERA)	<i>Cymus glandicolor</i>	<i>Cymus glandicolor</i>	Rixton & Woolston - CP, Rixton Claypits, on grasslands	SJ686902	11/08/2012	2012	2	Adult		
INSECT - TRUE FLY (DIPTERA)	<i>Sphegina clunipes</i>	<i>Sphegina clunipes</i>	Rixton & Woolston - CP, Rixton Claypits, wood	SJ687902	05/07/2013	2013	1	Female		
INSECT - TRUE FLY (DIPTERA)	<i>Helophilus pendulus</i>	<i>Helophilus pendulus</i>	Rixton & Woolston - CP, Rixton Claypits	SJ687902	05/07/2013	2013	1	Adult		
INSECT - TRUE FLY (DIPTERA)	<i>Helophilus pendulus</i>	<i>Helophilus pendulus</i>	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Male		
INSECT - TRUE FLY (DIPTERA)	<i>Sphaerophoria scripta</i>	<i>Sphaerophoria scripta</i>	Rixton & Woolston - CP, Rixton Claypits	SJ685901	05/07/2013	2013	1	Male		
INSECT - TRUE FLY (DIPTERA)	<i>Neoscia tenur</i>	<i>Neoscia tenur</i>	Rixton & Woolston - CP, Rixton Claypits	SJ685901	05/07/2013	2013	1	Female		
INSECT - TRUE FLY (DIPTERA)	<i>Parhelophilus versicolor</i>	<i>Parhelophilus versicolor</i>	Rixton & Woolston - CP, Rixton Claypits	SJ685901	05/07/2013	2013	1	Male		
INSECT - TRUE FLY (DIPTERA)	<i>Parhelophilus frutetorum</i>	<i>Parhelophilus frutetorum</i>	Rixton & Woolston - CP, Rixton Claypits, car park	SJ688902	05/07/2013	2013	1	Male		
INSECT - TRUE FLY (DIPTERA)	<i>Xylota segnis</i>	<i>Xylota segnis</i>	Rixton & Woolston - CP, Rixton Claypits, car park	SJ688902	05/07/2013	2013	1	Adult		
INSECT - TRUE FLY (DIPTERA)	<i>Episyrphus balteatus</i>	<i>Episyrphus balteatus</i>	Rixton & Woolston - CP, Rixton Claypits, car park	SJ688902	05/07/2013	2013	1	Adult		
INSECT - TRUE FLY (DIPTERA)	<i>Syrirta pipiens</i>	<i>Syrirta pipiens</i>	Rixton & Woolston - CP, Rixton Claypits, car park	SJ688902	05/07/2013	2013	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Gorse Weevil	<i>Exapion (Ulapius) ulicis</i>	Rixton Clay Pits	SJ686904	05/04/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Perapion (Perapion) hydrolapathi	<i>Perapion (Perapion) hydrolapathi</i>	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Oxystoma subulatum</i>	<i>Oxystoma subulatum</i>	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Oxystoma subulatum</i>	<i>Oxystoma subulatum</i>	Rixton Clay Pits	SJ686904	02/08/2009	2009	1	Adult		
BIRD	Bullfinch	<i>Pyrrhula pyrrhula</i>	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Adult	LBAP, BAm [RSPB], S41	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Bullfinch	<i>Pyrrhula pyrrhula</i>	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	1	Adult	LBAP, BAm [RSPB], S41	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Bullfinch	<i>Pyrrhula pyrrhula</i>		SJ6889	27/02/2010	2010	1	None	LBAP, BAm [RSPB], S41	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Bullfinch	<i>Pyrrhula pyrrhula</i>	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	2	None	LBAP, BAm [RSPB], S41	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Goldcrest	<i>Regulus regulus</i>	Compartment C37, Rixton Clay Pits,	SJ684905	03/03/2012	2012	1	Adult		



			Rixton Clay Pits							
TERRESTRIAL MAMMAL	European Mole	Talpa europaea	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Adult		
TERRESTRIAL MAMMAL	European Mole	Talpa europaea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Song Thrush	Turdus philomelos	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Male	LBAP, BRd [RSPB]	Local Importance, European/National Importance
BIRD	Song Thrush	Turdus philomelos	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	LBAP, BRd [RSPB]	Local Importance, European/National Importance
BIRD	Song Thrush	Turdus philomelos	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	None	LBAP, BRd [RSPB]	Local Importance, European/National Importance
BIRD	Song Thrush	Turdus philomelos		SJ6889	30/01/2010	2010	8	None	LBAP, BRd [RSPB]	Local Importance, European/National Importance
BIRD	Song Thrush	Turdus philomelos		SJ6890	12/06/2007	2007	Occasional	Adult	LBAP, BRd [RSPB]	Local Importance, European/National Importance
BIRD	Mistle Thrush	Turdus viscivorus	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	2	Adult	BAm [RSPB]	European/National Importance
BIRD	Mistle Thrush	Turdus viscivorus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	12/05/2009	2009	1	Adult	BAm [RSPB]	European/National Importance
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton Claypits	SJ6890	24/08/2012	2012	6	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton Claypits	SJ6890	18/06/2012	2012	1	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton Clay Pits	SJ684905	05/06/2010	2010	1	Adult		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton Claypits	SJ6890	07/09/2012	2012	1	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	07/12/2014	2014	15	Adult		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	18/11/2014	2014	1	Adult		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	29/04/2014	2014	1	Adult		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	2	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/08/2013	2013	60	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	23/04/2013	2013	1	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton Claypits	SJ6890	13/07/2011	2011	7	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	The right hand path after the car park	SJ68469069	14/08/2010	2010	2	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	03/10/2013	2013	1	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/10/2013	2013	1	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	The right hand path after the car park	SJ68589067	14/08/2010	2010	4	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	The right hand path after the car park	SJ68489069	14/08/2010	2010	2	None		
INSECT - BUTTERFLY	Large White	Pieris brassicae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2013	2013	2	None		
BIRD	Delichon urbicum subsp. urbicum	Delichon urbicum subsp. urbicum	Rixton Clay Pits	SJ684905	05/06/2010	2010	1	Adult		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton Clay Pits	SJ684905	05/06/2010	2010	15	Adult		



INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	09/11/2014	2014	1	Adult		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	15/05/2014	2014	1	Adult		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	08/04/2014	2014	42	Adult		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton & Woolston - CP, Rixton Clay Pits	SJ6890	21/09/2013	2013	1	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton & Woolston - CP, Rixton Clay Pits	SJ6890	07/08/2013	2013	74	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton & Woolston - CP, Rixton Clay Pits	SJ6890	03/06/2013	2013	1	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus	Rixton Nature Reserve	SJ686904	31/07/2010	2010	2	Adult		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Male		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	13/05/2012	2012	8	None		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	17/04/2014	2014	49	Adult		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	04/01/2014	2014	1	Adult		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton & Woolston - CP, Rixton Clay Pits	SJ6890	07/05/2013	2013	19	None		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton & Woolston - CP, Rixton Clay Pits	SJ6890	19/04/2013	2013	1	None		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton Clay Pits	SJ6890	19/04/2011	2011	37	None		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton Clay Pits	SJ6890	26/03/2012	2012	1	None		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton Clay Pits	SJ6890	12/05/2012	2012	6	None		
INSECT - BUTTERFLY	Orange-tip	Anthocharis cardamines	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	13/05/2013	2013	8	None		
INSECT - BUTTERFLY	Painted Lady	Vanessa cardui	Rixton Clay Pits	SJ684905	05/06/2010	2010	1	Adult		
INSECT - BUTTERFLY	Painted Lady	Vanessa cardui	Rixton Clay Pits	SJ6890	24/08/2012	2012	1	None		
INSECT - BUTTERFLY	Painted Lady	Vanessa cardui	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	31/07/2014	2014	1	Adult		
INSECT - BUTTERFLY	Painted Lady	Vanessa cardui	Rixton & Woolston - CP, Rixton Clay Pits	SJ685905	08/04/2014	2014	3	Adult		
INSECT - BUTTERFLY	Painted Lady	Vanessa cardui	Rixton & Woolston - CP, Rixton Clay Pits	SJ6890	21/09/2013	2013	1	None		
INSECT - BUTTERFLY	Painted Lady	Vanessa cardui	Rixton & Woolston - CP, Rixton Clay Pits	SJ6890	14/05/2013	2013	1	None		
INSECT - BUTTERFLY	Painted Lady	Vanessa cardui	Rixton Clay Pits	SJ6890	26/09/2011	2011	1	None		
TERRESTRIAL MAMMAL	Eastern Grey Squirrel	Sciurus carolinensis	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/06/2010	2010	1	Adult	WCA9	European and UK Legal Protection
TERRESTRIAL MAMMAL	Eastern Grey Squirrel	Sciurus carolinensis		SJ6890	12/06/2007	2007	Occasional	Adult	WCA9	European and UK Legal Protection
BIRD	Fieldfare	Turdus pilaris	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	12/05/2009	2009	30	Adult	WCA1, BRd [RSPB]	European and UK Legal Protection, European/National Importance
FLOWERING PLANT	Creeping Cinquefoil	Potentilla reptans	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Cinquefoil	Potentilla reptans	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance



FLOWERING PLANT	Creeping Cinquefoil	Potentilla reptans		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
BIRD	Grey Wagtail	Motacilla cinerea	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	1	Adult	BAm [RSPB]	European/National Importance
FLOWERING PLANT	Skullcap	Scutellaria galericulata	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Skullcap	Scutellaria galericulata		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Avens	Geum urbanum	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Avens	Geum urbanum		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Avens	Geum urbanum	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Avens	Geum urbanum		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bittersweet	Solanum dulcamara	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Bittersweet	Solanum dulcamara		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bittersweet	Solanum dulcamara	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bittersweet	Solanum dulcamara		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bittersweet	Solanum dulcamara	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow Iris	Iris pseudacorus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow Iris	Iris pseudacorus		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow Iris	Iris pseudacorus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow Iris	Iris pseudacorus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow Iris	Iris pseudacorus		SJ6890	12/06/2007	2007	Locally Frequent	Flowering	IUCN LC	European/National Importance
BIRD	Great Spotted Woodpecker	Dendrocopos major	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	12/05/2009	2009	1	Adult		
BIRD	Great Spotted Woodpecker	Dendrocopos major	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	1	Adult		
BIRD	Great Spotted Woodpecker	Dendrocopos major	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None		
BIRD	Great Spotted Woodpecker	Dendrocopos major	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Adult		
BIRD	Great Spotted Woodpecker	Dendrocopos major		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	Gadwall	Anas strepera	Compartment C37, Rixton Clay Pits, Rixton Clay Pits	SJ684905	03/03/2012	2012	8	Adult	BAm [RSPB]	European/National Importance
BIRD	Shoveler	Anas clypeata	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	2	Adult	BAm [RSPB]	European/National Importance
BIRD	Shoveler	Anas clypeata	Rixton Claypits	SJ68539031	04/03/2006	2006	Present	None	BAm [RSPB]	European/National Importance
FLOWERING PLANT	Common Bird's-foot-trefoil	Lotus corniculatus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Bird's-foot-trefoil	Lotus corniculatus		SJ6890	27/06/2015	2015	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Bird's-foot-trefoil	Lotus corniculatus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Bird's-foot-trefoil	Lotus corniculatus		SJ6890	12/06/2007	2007	Locally Frequent	Flowering	IUCN LC	European/National Importance



FLOWERING PLANT	Common Bird's-foot-trefoil	Lotus corniculatus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Flowering	IUCN LC	European/National Importance
BIRD	Blackcap	Sylvia atricapilla	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	4	Adult Male		
BIRD	Blackcap	Sylvia atricapilla	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None		
BIRD	Blackcap	Sylvia atricapilla	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Blackcap	Sylvia atricapilla	Rixton Clay Pits	SJ684905	05/06/2010	2010	1	Male		
FLOWERING PLANT	Bush Vetch	Vicia sepium	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Bush Vetch	Vicia sepium	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Bush Vetch	Vicia sepium	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bush Vetch	Vicia sepium	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Celery-leaved Buttercup	Ranunculus sceleratus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Celery-leaved Buttercup	Ranunculus sceleratus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Celery-leaved Buttercup	Ranunculus sceleratus		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
BIRD	Chiffchaff	Phylloscopus collybita	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	3	Adult Male		
BIRD	Chiffchaff	Phylloscopus collybita	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None		
BIRD	Chiffchaff	Phylloscopus collybita	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Chiffchaff	Phylloscopus collybita	Moat Lane Pool (North)	SJ683908	05/06/2010	2010	2	Adult Male		
BIRD	Chiffchaff	Phylloscopus collybita	Rixton Clay Pits	SJ684905	05/06/2010	2010	Two	Male		
BIRD	Chiffchaff	Phylloscopus collybita	Moat Lane Pool(North)	SJ683908	05/06/2010	2010	One	Male		
BIRD	Chiffchaff	Phylloscopus collybita		SJ6890	12/06/2007	2007	Occasional	Adult		
TERRESTRIAL MAMMAL	Brown Rat	Rattus norvegicus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	1	Adult		
FLOWERING PLANT	Common Vetch	Vicia sativa	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Vetch	Vicia sativa		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Curled Dock	Rumex crispus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Curled Dock	Rumex crispus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Curled Dock	Rumex crispus		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
INSECT - HYMENOPTERAN	Early Bumble Bee	Bombus (Pyrobombus) pratorum	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	1	Worker		
INSECT - HYMENOPTERAN	Early Bumble Bee	Bombus (Pyrobombus) pratorum	Rixton Claypits	SJ6848190165	16/07/2008	2008	1	None		
FLOWERING PLANT	Greater Spearwort	Ranunculus lingua	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Woundwort	Stachys sylvatica	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Woundwort	Stachys sylvatica		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Woundwort	Stachys sylvatica	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance



FLOWERING PLANT	Hedge Woundwort	Stachys sylvatica	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Woundwort	Stachys sylvatica	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Woundwort	Stachys sylvatica		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Woundwort	Stachys sylvatica	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Giant Hogweed	Heracleum mantegazzianum	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
BIRD	House Martin	Delichon urbicum	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	1	Adult	BAm [RSPB]	European/National Importance
BIRD	House Martin	Delichon urbicum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	BAm [RSPB]	European/National Importance
BIRD	House Martin	Delichon urbicum		SJ6890	27/06/2015	2015	Few	Adult	BAm [RSPB]	European/National Importance
FLOWERING PLANT	Marsh Thistle	Cirsium palustre	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Marsh Thistle	Cirsium palustre		SJ6890	27/06/2015	2015	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Marsh Thistle	Cirsium palustre	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Marsh Thistle	Cirsium palustre		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Marsh Thistle	Cirsium palustre	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Crane's-bill	Geranium pratense	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None		
FLOWERING PLANT	Meadow Crane's-bill	Geranium pratense	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Meadow Crane's-bill	Geranium pratense		SJ6890	12/06/2007	2007	Occasional	Flowering		
FLOWERING PLANT	Oxeye Daisy	Leucanthemum vulgare	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Oxeye Daisy	Leucanthemum vulgare		SJ6890	27/06/2015	2015	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Oxeye Daisy	Leucanthemum vulgare	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Oxeye Daisy	Leucanthemum vulgare		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Ragged-Robin	Silene flos-cuculi	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Frequent	None		
FLOWERING PLANT	Ragged-Robin	Silene flos-cuculi		SJ6890	27/06/2015	2015	Locally Frequent	Flowering		
FLOWERING PLANT	Ragged-Robin	Silene flos-cuculi	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering		
FLOWERING PLANT	Ragged-Robin	Silene flos-cuculi	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Frequent	Flowering		
FLOWERING PLANT	Ragged-Robin	Silene flos-cuculi		SJ6890	12/06/2007	2007	Locally Frequent	Flowering		
FLOWERING PLANT	Ragged-Robin	Silene flos-cuculi	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Flowering		
FLOWERING PLANT	Red Clover	Trifolium pratense	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Abundant	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Clover	Trifolium pratense	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Clover	Trifolium pratense	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Red Clover	Trifolium pratense		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance



FLOWERING PLANT	Red Clover	Trifolium pratense	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Red Clover	Trifolium pratense		SJ6890	12/06/2007	2007	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Red Clover	Trifolium pratense	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Frequent	Flowering	IUCN LC	European/National Importance
BIRD	Reed Warbler	Acrocephalus scirpaceus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	1	Adult Male		
BIRD	Reed Warbler	Acrocephalus scirpaceus	Rixton Clay Pits	SJ684905	05/06/2010	2010	One	Male		
BIRD	Rook	Corvus frugilegus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	2	Adult		
FLOWERING PLANT	Silverweed	Potentilla anserina	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None		
FLOWERING PLANT	Silverweed	Potentilla anserina	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Silverweed	Potentilla anserina		SJ6890	12/06/2007	2007	Occasional	Flowering		
FLOWERING PLANT	Silverweed	Potentilla anserina	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering		
FLOWERING PLANT	Southern Marsh-orchid	Dactylorhiza praetermissa	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
BIRD	Swift	Apus apus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	4	Adult	BAm [RSPB]	European/National Importance
BIRD	Swift	Apus apus	Rixton Clay Pits	SJ684905	05/06/2010	2010	Three	Adult	BAm [RSPB]	European/National Importance
BIRD	Swift	Apus apus		SJ6890	12/06/2007	2007	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Swift	Apus apus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Adult	BAm [RSPB]	European/National Importance
FLOWERING PLANT	Tufted Vetch	Vicia cracca	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Tufted Vetch	Vicia cracca		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Tufted Vetch	Vicia cracca	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Tufted Vetch	Vicia cracca		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Tufted Vetch	Vicia cracca	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	White Clover	Trifolium repens	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	Abundant	None	IUCN LC	European/National Importance
FLOWERING PLANT	White Clover	Trifolium repens	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	White Clover	Trifolium repens	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	White Clover	Trifolium repens	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	White Clover	Trifolium repens		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
BIRD	Whitethroat	Sylvia communis	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	2	Adult Male	BAm [RSPB]	European/National Importance
BIRD	Whitethroat	Sylvia communis	Rixton & Woolston - CP, Rixton Clay Pits	SJ688902	11/07/2015	2015	Present	None	BAm [RSPB]	European/National Importance
BIRD	Whitethroat	Sylvia communis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Whitethroat	Sylvia communis		SJ6890	12/06/2007	2007	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Willow Warbler	Phylloscopus trochilus	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	14/06/2015	2015	1	Adult Male	BAm [RSPB]	European/National Importance



BIRD	Willow Warbler	Phylloscopus trochilus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Willow Warbler	Phylloscopus trochilus		SJ6890	12/06/2007	2007	Occasional	Adult	BAm [RSPB]	European/National Importance
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria subsp. tircis	Rixton Claypits	SJ6890	15/10/2012	2012	1	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria subsp. tircis	Rixton Claypits	SJ6890	01/09/2012	2012	17	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria subsp. tircis	Rixton Claypits	SJ6890	22/05/2012	2012	1	None		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton Claypits	SJ6890	03/09/2012	2012	1	None		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton Claypits	SJ6890	22/07/2012	2012	13	None		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton Claypits	SJ6890	07/07/2012	2012	1	None		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/07/2014	2014	1	Adult		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	22/09/2014	2014	1	Adult		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	31/08/2014	2014	7	Adult		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton & Woolston - CP, Rixton Claypits	SJ6890	16/07/2013	2013	1	None		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton & Woolston - CP, Rixton Claypits	SJ6890	01/08/2013	2013	13	None		
INSECT - BUTTERFLY	Purple Hairstreak	Favonius quercus	Rixton Claypits	SJ6890	13/07/2011	2011	95	None		
INSECT - TRUE FLY (DIPTERA)	Herina frondescentiae	Herina frondescentiae	Rixton Claypits	SJ684901	03/06/2014	2014	1 Or 2	None		
INSECT - TRUE FLY (DIPTERA)	Herina frondescentiae	Herina frondescentiae	Rixton Claypits	SJ684902	03/06/2014	2014	2 Or 3	None		
INSECT - TRUE FLY (DIPTERA)	Herina frondescentiae	Herina frondescentiae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	03/06/2014	2014	Present	Adult		
INSECT - TRUE FLY (DIPTERA)	Stratiomys potamida	Stratiomys potamida	Rixton Claypits	SJ684901	20/07/2014	2014	Present	None		
INSECT - TRUE FLY (DIPTERA)	Stratiomys potamida	Stratiomys potamida	Compartment C37, Rixton Clay Pits, Rixton Claypits	SJ686904	20/07/2014	2014	1	None		
INSECT - TRUE FLY (DIPTERA)	Nemotelus nigrinus	Nemotelus nigrinus	Rixton Claypits	SJ684901	03/06/2014	2014	Present	None		
INSECT - TRUE FLY (DIPTERA)	Rhagio scolopaceus	Rhagio scolopaceus	Rixton Claypits	SJ684901	03/06/2014	2014	Present	None		
INSECT - TRUE FLY (DIPTERA)	Rhagio scolopaceus	Rhagio scolopaceus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	Abundant	Male		
INSECT - TRUE FLY (DIPTERA)	Rhagio scolopaceus	Rhagio scolopaceus	Rixton Clay Pits	SJ685906	03/06/2014	2014	1	None		
INSECT - TRUE FLY (DIPTERA)	Rhagio scolopaceus	Rhagio scolopaceus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	None		
TERRESTRIAL MAMMAL	European Water Vole	Arvicola amphibius	Rixton Clay Pits	SJ684901	04/06/2009	2009	Present	None	LBAP, WCA5, S41, UKBAP	Local Importance, European and UK Legal Protection
TERRESTRIAL MAMMAL	European Water Vole	Arvicola amphibius	Rixton Clay Pits	SJ684903	22/06/2011	2011	1	None	LBAP, WCA5, S41, UKBAP	Local Importance, European and UK Legal Protection
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton Claypits	SJ6890	01/03/2012	2012	1	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton Claypits	SJ6890	13/09/2012	2012	1	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton Claypits	SJ6890	22/07/2012	2012	2	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton & Woolston - CP, Rixton Claypits	SJ685905	06/11/2014	2014	1	Adult		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/07/2014	2014	7	Adult		



INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton & Woolston - CP, Rixton Claypits	SJ685905	18/11/2014	2014	1	Adult		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton & Woolston - CP, Rixton Claypits	SJ6890	10/11/2013	2013	1	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton & Woolston - CP, Rixton Claypits	SJ6890	01/08/2013	2013	5	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton Claypits	SJ6890	13/07/2011	2011	6	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	The right hand path after the car park	SJ68469069	14/08/2010	2010	1	None		
INSECT - BUTTERFLY	Red Admiral	Vanessa atalanta	Rixton Claypits	SJ6890	12/07/2012	2012	2	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus subsp. britanniae	Rixton Claypits	SJ6890	04/08/2012	2012	101	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus subsp. britanniae	Rixton Claypits	SJ6890	12/07/2012	2012	1	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus subsp. britanniae	The right hand path after the car park	SJ68489069	14/08/2010	2010	3	None		
INSECT - BUTTERFLY	White-letter Hairstreak	Satyrrium w-album	Rixton Claypits	SJ6890	22/07/2012	2012	6	None	LBAP, WCA5, IUCN En, S41, UKBAP	Local Importance, European and UK Legal Protection, European/National Importance
INSECT - BUTTERFLY	White-letter Hairstreak	Satyrrium w-album	Rixton & Woolston - CP, Rixton Claypits	SJ685905	31/08/2014	2014	1	Adult	LBAP, WCA5, IUCN En, S41, UKBAP	Local Importance, European and UK Legal Protection, European/National Importance
INSECT - BUTTERFLY	White-letter Hairstreak	Satyrrium w-album	Rixton Claypits	SJ6890	13/07/2011	2011	5	None	LBAP, WCA5, IUCN En, S41, UKBAP	Local Importance, European and UK Legal Protection, European/National Importance
INSECT - BUTTERFLY	White-letter Hairstreak	Satyrrium w-album	Rixton Claypits	SJ6890	21/07/2012	2012	1	None	LBAP, WCA5, IUCN En, S41, UKBAP	Local Importance, European and UK Legal Protection, European/National Importance
INSECT - BUTTERFLY	White-letter Hairstreak	Satyrrium w-album	Rixton Nature Reserve	SJ686904	31/07/2010	2010	3	Adult	LBAP, WCA5, IUCN En, S41, UKBAP	Local Importance, European and UK Legal Protection, European/National Importance
INSECT - BUTTERFLY	Small Skipper	Thymelicus sylvestris	Rixton Claypits	SJ6890	22/07/2012	2012	11	None		
INSECT - BUTTERFLY	Small Skipper	Thymelicus sylvestris	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BUTTERFLY	Small Skipper	Thymelicus sylvestris	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/07/2014	2014	79	Adult		
INSECT - BUTTERFLY	Small Skipper	Thymelicus sylvestris	Rixton & Woolston - CP, Rixton Claypits	SJ6890	12/07/2013	2013	63	None		
INSECT - BUTTERFLY	Small Skipper	Thymelicus sylvestris	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/07/2013	2013	1	None		
INSECT - BUTTERFLY	Small Skipper	Thymelicus sylvestris	Rixton Claypits	SJ6890	13/07/2011	2011	20	None		
INSECT - BUTTERFLY	Small Skipper	Thymelicus sylvestris	Rixton Claypits	SJ6890	07/07/2012	2012	1	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus subsp. mariscolore	Rixton Claypits	SJ6890	19/09/2012	2012	1	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus subsp. mariscolore	Rixton Claypits	SJ6890	23/05/2012	2012	1	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus subsp. mariscolore	Rixton Claypits	SJ6890	27/05/2012	2012	31	None		
INSECT - TRUE FLY (DIPTERA)	Chrysops relictus	Chrysops relictus	Rixton & Woolston - CP, Rixton Claypits, near Visitors Centre	SJ686901	11/08/2012	2012	1	Adult		

INSECT - TRUE FLY (DIPTERA)	Chrysops relictus	Chrysops relictus	Rixton & Woolston - CP, Rixton Claypits, car park	SJ687902	05/07/2013	2013	1	Female		
INSECT - TRUE FLY (DIPTERA)	Tipula oleracea	Tipula oleracea	Rixton & Woolston - CP, Rixton Claypits, near Visitors Centre	SJ686901	11/08/2012	2012	1	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Tipula oleracea	Tipula oleracea	Rixton & Woolston - CP, Rixton Claypits, on grasslands	SJ686902	11/08/2012	2012	1	Adult Female		
TERRESTRIAL MAMMAL	Fallow Deer	Dama dama	manchester rd vis centre	SJ686901	02/11/2011	2011	1	None		
INSECT - BEETLE (COLEOPTERA)	7-spot Ladybird	Coccinella septempunctata		SJ686901	07/09/2013	2013	1	Adult		
INSECT - BEETLE (COLEOPTERA)	7-spot Ladybird	Coccinella septempunctata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Larvae		
INSECT - BEETLE (COLEOPTERA)	7-spot Ladybird	Coccinella septempunctata		SJ684903	03/06/2014	2014	1	Adult		
INSECT - BEETLE (COLEOPTERA)	7-spot Ladybird	Coccinella septempunctata		SJ68569016	05/12/2009	2009	20	Adult		
INSECT - BEETLE (COLEOPTERA)	7-spot Ladybird	Coccinella septempunctata	Rixton & Woolston - CP, Cornfield annual patch on roadside verge	SJ699913	05/09/2013	2013	Present	Adult		
INSECT - BEETLE (COLEOPTERA)	Cream-spot Ladybird	Calvia quatuordecimguttata		SJ686901	07/09/2013	2013	1	Adult		
INSECT - BEETLE (COLEOPTERA)	14-spot Ladybird	Propylea quatuordecimpunctata		SJ686901	07/09/2013	2013	1	Adult		
INSECT - BEETLE (COLEOPTERA)	14-spot Ladybird	Propylea quatuordecimpunctata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Larvae		
INSECT - BEETLE (COLEOPTERA)	14-spot Ladybird	Propylea quatuordecimpunctata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BEETLE (COLEOPTERA)	14-spot Ladybird	Propylea quatuordecimpunctata		SJ684903	03/06/2014	2014	1	Adult		
INSECT - BEETLE (COLEOPTERA)	14-spot Ladybird	Propylea quatuordecimpunctata	Rixton & Woolston - CP, Cornfield annual patch on roadside verge	SJ699913	05/09/2013	2013	Present	Adult		
INSECT - TRUE FLY (DIPTERA)	Microchrysa flavicornis	Microchrysa flavicornis	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Female		
INSECT - TRUE FLY (DIPTERA)	Molophilus appendiculatus	Molophilus appendiculatus	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Male		
INSECT - TRUE FLY (DIPTERA)	Molophilus griseus	Molophilus griseus	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	2	Male		
INSECT - TRUE FLY (DIPTERA)	Tipula paludosa	Tipula paludosa	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Female		
INSECT - TRUE BUG (HEMIPTERA)	Common Flower Bug	Anthocoris nemorum	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Male		
INSECT - TRUE BUG (HEMIPTERA)	Common Flower Bug	Anthocoris nemorum	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Female		
INSECT - TRUE BUG (HEMIPTERA)	Common Flower Bug	Anthocoris nemorum	Rixton & Woolston - CP, Area 4, Rixton Claypits	SJ684909	25/03/2015	2015	1	Female		
INSECT - TRUE BUG (HEMIPTERA)	Deraeocoris (Knightcapsus) lutescens	Deraeocoris (Knightcapsus) lutescens	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Female		
INSECT - TRUE BUG (HEMIPTERA)	Common Green Capsid	Lygocoris (Lygocoris) pabulinus	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	2	Male		
INSECT - TRUE BUG (HEMIPTERA)	Bracken Bug	Monalocoris (Monalocoris) filicis	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Female		
INSECT - TRUE BUG (HEMIPTERA)	Orthops (Orthops) campestris	Orthops (Orthops) campestris	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Male		
INSECT - TRUE BUG	Temnostethus	Temnostethus	Rixton & Woolston -	SJ686901	07/09/2013	2013	1	Male		

(HEMIPTER A)	(Montandoni ella) pusillus	(Montandoni ella) pusillus	CP, Rixton Claypits							
INSECT - TRUE BUG (HEMIPTER A)	Green Shieldbug	Palomena prasina	Rixton & Woolston - CP, Rixton Claypits	SJ686901	07/09/2013	2013	1	Adult		
BIRD	Robin	Erithacus rubecula	Rixton Clay Pits, Rixton, Warrington	SJ68629016	05/12/2009	2009	1	Adult		
BIRD	Robin	Erithacus rubecula	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Robin	Erithacus rubecula	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Robin	Erithacus rubecula	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	1	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton Claypits	SJ6890	19/10/2012	2012	1	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton Claypits	SJ6890	24/08/2012	2012	3	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	09/12/2014	2014	1	Adult		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	07/12/2014	2014	1	Adult		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/07/2014	2014	7	Adult		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	01/08/2013	2013	57	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	17/05/2013	2013	1	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton Claypits	SJ6890	26/07/2011	2011	2	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	The right hand path after the car park	SJ68469069	14/08/2010	2010	6	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	Rixton & Woolston - CP, Rixton Claypits	SJ6890	17/10/2013	2013	1	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	The right hand path after the car park	SJ68589067	14/08/2010	2010	4	None		
INSECT - BUTTERFLY	Small White	Pieris rapae	The right hand path after the car park	SJ68489069	14/08/2010	2010	5	None		
FLOWERING PLANT	American Willowherb	Epilobium ciliatum		SJ6890	27/06/2015	2015	Occasional	Flowering		
FLOWERING PLANT	Yellow-rattle	Rhinanthus minor		SJ6890	27/06/2015	2015	Occasional	Fruiting	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow-rattle	Rhinanthus minor	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow-rattle	Rhinanthus minor	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton Claypits	SJ6890	15/10/2012	2012	1	None		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton Claypits	SJ6890	22/07/2012	2012	3	None		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton Claypits	SJ6890	23/03/2012	2012	1	None		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/07/2014	2014	6	Adult		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton & Woolston - CP, Rixton Claypits	SJ685905	03/09/2014	2014	1	Adult		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton & Woolston - CP, Rixton Claypits	SJ685905	11/05/2014	2014	1	Adult		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton & Woolston - CP, Rixton Claypits	SJ6890	17/10/2013	2013	1	None		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton & Woolston -	SJ6890	07/08/2013	2013	5	None		

			CP, Rixton Claypits							
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton & Woolston - CP, Rixton Claypits	SJ6890	16/04/2013	2013	1	None		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton Claypits	SJ6890	19/04/2011	2011	3	None		
INSECT - BUTTERFLY	Comma	Polygonia c-album	Rixton Claypits	SJ6890	13/07/2011	2011	3	None		
INSECT - BUTTERFLY	Comma	Polygonia c-album	The right hand path after the car park	SJ68489069	14/08/2010	2010	1	None		
FLOWERING PLANT	Northern Marsh-orchid	Dactylorhiza purpurella		SJ6890	27/06/2015	2015	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Northern Marsh-orchid	Dactylorhiza purpurella	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Northern Marsh-orchid	Dactylorhiza purpurella		SJ6890	12/06/2007	2007	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Northern Marsh-orchid	Dactylorhiza purpurella	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Crested Dog's-tail	Cynosurus cristatus		SJ6890	27/06/2015	2015	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Crested Dog's-tail	Cynosurus cristatus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Crested Dog's-tail	Cynosurus cristatus	Warburton Bridge vc59	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Crested Dog's-tail	Cynosurus cristatus		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Crested Dog's-tail	Cynosurus cristatus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cyperus Sedge	Carex pseudocyperus		SJ6890	27/06/2015	2015	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cyperus Sedge	Carex pseudocyperus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cyperus Sedge	Carex pseudocyperus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Abundant	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cyperus Sedge	Carex pseudocyperus		SJ6890	12/06/2007	2007	Locally Abundant	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cyperus Sedge	Carex pseudocyperus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yorkshire-fog	Holcus lanatus		SJ6890	27/06/2015	2015	Abundant	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Selfheal	Prunella vulgaris		SJ6890	27/06/2015	2015	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Selfheal	Prunella vulgaris	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Selfheal	Prunella vulgaris	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Selfheal	Prunella vulgaris		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow-wort	Blackstonia perfoliata		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow-wort	Blackstonia perfoliata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow-wort	Blackstonia perfoliata	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow-wort	Blackstonia perfoliata		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Rose	Rosa		SJ6890	27/06/2015	2015	Occasional	Flowering		
FLOWERING PLANT	Marsh-bedstraw	Galium palustre		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Marsh-bedstraw	Galium palustre	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance



FLOWERING PLANT	Marsh-bedstraw	Galium palustre	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Marsh-bedstraw	Galium palustre		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Vetchling	Lathyrus pratensis		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Vetchling	Lathyrus pratensis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Vetchling	Lathyrus pratensis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Vetchling	Lathyrus pratensis		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadow Vetchling	Lathyrus pratensis	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hemp-agrimony	Eupatorium cannabinum		SJ6890	27/06/2015	2015	Occasional	Inleaf	IUCN LC	European/National Importance
FLOWERING PLANT	Hemp-agrimony	Eupatorium cannabinum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hemp-agrimony	Eupatorium cannabinum	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Forget-Me-Not	Myosotis		SJ6890	27/06/2015	2015	Occasional	Flowering		
FLOWERING PLANT	Indet. Comfrey	Symphytum		SJ6890	27/06/2015	2015	Occasional	Flowering		
FLOWERING PLANT	Bee Orchid	Ophrys apifera		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Eyebright	Euphrasia		SJ6890	27/06/2015	2015	Occasional	Flowering		
FLOWERING PLANT	Honeysuckle	Lonicera periclymenum		SJ6890	27/06/2015	2015	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Honeysuckle	Lonicera periclymenum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Honeysuckle	Lonicera periclymenum	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Honeysuckle	Lonicera periclymenum		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Gorse	Ulex europaeus		SJ6890	27/06/2015	2015	Occasional	Fruiting	IUCN LC	European/National Importance
FLOWERING PLANT	Gorse	Ulex europaeus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Gorse	Ulex europaeus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Gorse	Ulex europaeus		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Gorse	Ulex europaeus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Garden Angelica	Angelica archangelica	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None		
INSECT - BEETLE (COLEOPTERA)	Water Ladybird	Anisosticta novemdecim punctata	Rixton & Woolston - CP, Rixton Claypits, Area 3	SJ684902	25/03/2015	2015	1	Adult Male		
INSECT - BEETLE (COLEOPTERA)	Water Ladybird	Anisosticta novemdecim punctata		SJ68569016	05/12/2009	2009	1	Adult		
INSECT - TRUE FLY (DIPTERA)	Lonchoptera lutea	Lonchoptera lutea	Rixton & Woolston - CP, Area 3, Rixton Claypits	SJ684902	25/03/2015	2015	1	Female		
INSECT - TRUE FLY (DIPTERA)	Lispocephala erythrocerata	Lispocephala erythrocerata	Rixton & Woolston - CP, Area 3, Rixton Claypits	SJ684902	25/03/2015	2015	2	Female		
INSECT - TRUE FLY (DIPTERA)	Lispocephala erythrocerata	Lispocephala erythrocerata	Rixton & Woolston - CP, Area 4, Rixton Claypits	SJ684909	25/03/2015	2015	1	Female		

INSECT - BEETLE (COLEOPTERA)	Haliplus (Haliplus) obliquus	Haliplus (Haliplus) obliquus		SJ685901	11/04/2011	2011	Present	None		
INSECT - TRUE FLY (DIPTERA)	Oplodontha viridula	Oplodontha viridula	Rixton & Woolston - CP, Rixton Claypits	SJ685901	05/07/2013	2013	1	Male		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus subsp. britanna	Rixton Claypits	SJ6890	24/08/2012	2012	6	None		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus subsp. britanna	Rixton Claypits	SJ6890	08/05/2012	2012	1	None		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus subsp. britanna	Rixton Claypits	SJ6890	26/07/2011	2011	4	None		
FLOWERING PLANT	Osier	Salix viminalis	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Osier	Salix viminalis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Silver Birch	Betula pendula	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Silver Birch	Betula pendula	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wild Angelica	Angelica sylvestris	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wild Angelica	Angelica sylvestris	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wild Angelica	Angelica sylvestris	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Wild Angelica	Angelica sylvestris		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cat's-ear	Hypochaeris radicata	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Cat's-ear	Hypochaeris radicata	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Cat's-ear	Hypochaeris radicata		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton Claypits	SJ6890	24/03/2012	2012	1	None		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton Claypits	SJ6890	07/09/2012	2012	1	None		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton & Woolston - CP, Rixton Claypits	SJ685905	28/08/2014	2014	1	Adult		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton & Woolston - CP, Rixton Claypits	SJ685905	15/04/2014	2014	8	Adult		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton & Woolston - CP, Rixton Claypits	SJ685905	03/09/2014	2014	1	Adult		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/05/2013	2013	6	None		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton & Woolston - CP, Rixton Claypits	SJ6890	16/04/2013	2013	1	None		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton Claypits	SJ6890	19/04/2011	2011	2	None		
INSECT - BUTTERFLY	Brimstone	Gonepteryx rhamni	Rixton & Woolston - CP, Rixton Claypits	SJ6890	08/10/2013	2013	1	None		
FERN	Bracken	Pteridium aquilinum	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	White Dead-nettle	Lamium album	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Apple	Malus pumila	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None		
FLOWERING PLANT	Reed Canary-grass	Phalaris arundinacea	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Reed Canary-grass	Phalaris arundinacea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Stitchwort	Stellaria holostea	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance

FLOWERING PLANT	Common Sorrel	Rumex acetosa	Rixton & Woolston - CP, SJ689V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
INSECT - TRUE BUG (HEMIPTERA)	Licoris tripustulatus	Licoris tripustulatus	Rixton & Woolston - CP, Rixton Claypits, near Visitors Centre	SJ687902	11/08/2012	2012	1	Adult		
INSECT - TRUE FLY (DIPTERA)	Tipula lateralis	Tipula lateralis	Rixton & Woolston - CP, Rixton Claypits, on grasslands	SJ686902	11/08/2012	2012	1	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Molophilus obscurus	Molophilus obscurus	Rixton & Woolston - CP, Rixton Claypits, on grasslands	SJ686902	11/08/2012	2012	3	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Phylidorea ferruginea	Phylidorea ferruginea	Rixton & Woolston - CP, Rixton Claypits, on grasslands	SJ686902	11/08/2012	2012	1	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Prionocera turcica	Prionocera turcica	Rixton & Woolston - CP, Rixton Claypits, on grasslands	SJ686902	11/08/2012	2012	2	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Tipula couckeii	Tipula couckeii	Rixton & Woolston - CP, Rixton Claypits, on grasslands	SJ686902	11/08/2012	2012	1	Adult Female		
INSECT - TRUE FLY (DIPTERA)	Chloromyia formosa	Chloromyia formosa	Rixton & Woolston - CP, Rixton Claypits, car park	SJ687902	05/07/2013	2013	1	Female		
INSECT - TRUE BUG (HEMIPTERA)	Forest Bug	Pentatoma rufipes	Rixton & Woolston - CP, Rixton Claypits, car park	SJ687902	05/07/2013	2013	1	None		
INSECT - TRUE BUG (HEMIPTERA)	Forest Bug	Pentatoma rufipes	Rixton & Woolston - CP, Rixton Claypits, car park	SJ687902	05/07/2013	2013	1	Final Instar		
INSECT - TRUE FLY (DIPTERA)	Beris morrisii	Beris morrisii	Rixton & Woolston - CP, as above	SJ686902	03/06/2014	2014	3	None		
INSECT - MOTH	Cinnabar	Tyria jacobaeae	Rixton & Woolston - CP, Rixton Claypits, car park	SJ687902	11/08/2012	2012	1	Larvae	S41, UKBAP	European and UK Legal Protection
INSECT - MOTH	Cinnabar	Tyria jacobaeae	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Larvae	S41, UKBAP	European and UK Legal Protection
INSECT - MOTH	Cinnabar	Tyria jacobaeae	Rixton Clay pits	SJ685907	31/05/2011	2011	1	None	S41, UKBAP	European and UK Legal Protection
INSECT - MOTH	Cinnabar	Tyria jacobaeae		SJ686901	03/06/2014	2014	1	Adult	S41, UKBAP	European and UK Legal Protection
INSECT - HYMENOPTERAN	Vestal Cuckoo Bee	Bombus (Psithyrus) vestalis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Wild Teasel	Dipsacus fullonum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Common Blue Damselfly	Enallagma cyathigerum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Female	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Common Blue Damselfly	Enallagma cyathigerum		SJ6890	27/06/2015	2015	Many	Adult	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Common Blue Damselfly	Enallagma cyathigerum		SJ6890	12/06/2007	2007	Occasional	Adult	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Common Blue Damselfly	Enallagma cyathigerum	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult	IUCN LC	European/National Importance
FLOWERING PLANT	Bog-myrtle	Myrica gale	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Knapweed	Centaurea nigra	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Knapweed	Centaurea nigra	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Knapweed	Centaurea nigra	Warburton Bridge	SJ6989	12/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Knapweed	Centaurea nigra	Warburton Bridge	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Knapweed	Centaurea nigra	Hollins Green	SJ7091	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Red Bartsia	Odontites vernus	Rixton & Woolston -	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance

			CP, Rixton Clay Pits.							
FLOWERING PLANT	Wych Elm	Ulmus glabra	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Burdock	Arctium lappa	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Burdock	Arctium lappa	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Bird's-foot-trefoil	Lotus pedunculatus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Greater Bird's-foot-trefoil	Lotus pedunculatus	Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Jointed Rush	Juncus articulatus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Southern Hawker	Aeshna cyanea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Southern Hawker	Aeshna cyanea		SJ68519018	31/07/2010	2010	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Southern Hawker	Aeshna cyanea	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult	IUCN LC	European/National Importance
FERN	Hart's-tongue	Phyllitis scolopendrium	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FERN	Hart's-tongue	Phyllitis scolopendrium	Rixton & Woolston - CP, Rixton Claypits, Area 1	SJ685904	25/03/2015	2015	Frequent	Inleaf	IUCN LC	European/National Importance
FERN	Hart's-tongue	Phyllitis scolopendrium	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
FERN	Hart's-tongue	Phyllitis scolopendrium		SJ6890	12/06/2007	2007	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood-sedge	Carex sylvatica	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Eyebright	Euphrasia nemorosa	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Eyebright	Euphrasia nemorosa	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Eyebright	Euphrasia nemorosa		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Grey Alder	Alnus incana	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Colt's-foot	Tussilago farfara	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Colt's-foot	Tussilago farfara	Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Amphibious Bistort	Persicaria amphibia	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Amphibious Bistort	Persicaria amphibia	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Yellow Water-lily	Nuphar lutea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Redshank	Persicaria maculosa	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Slender Rush	Juncus tenuis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Common Dog-violet	Viola riviniana	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance

FLOWERING PLANT	Thyme-leaved Speedwell	Veronica serpyllifolia	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Purple Moor-grass	Molinia caerulea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Bindweed	Calystegia sepium	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Bindweed	Calystegia sepium	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Hedge Bindweed	Calystegia sepium		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Monk's-hood	Aconitum napellus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - MOTH	Shaded Broad-bar	Scotopteryx chenopodiata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	S41, UKBAP	European and UK Legal Protection
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ685905	10/03/2014	2014	1	Adult		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ685905	09/08/2014	2014	42	Adult		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ685905	15/04/2014	2014	1	Adult		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ6890	06/05/2013	2013	1	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton Claypits	SJ6890	23/08/2011	2011	30	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ6890	04/09/2013	2013	38	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Compartment C37, Rixton Clay Pits	SJ685905	03/06/2014	2014	1	Adult		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria		SJ6890	27/06/2015	2015	Few	Adult		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ6890	30/09/2013	2013	1	None		
INSECT - BUTTERFLY	Speckled Wood	Pararge aegeria	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2013	2013	1	None		
FLOWERING PLANT	Bog Stitchwort	Stellaria alsine	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Soft-grass	Holcus mollis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Brooklime	Veronica beccabunga	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - HYMENOPTERAN	Honey Bee	Apis mellifera	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BEETLE (COLEOPTERA)	Common Red Soldier Beetle	Rhagonycha fulva	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BEETLE (COLEOPTERA)	Common Red Soldier Beetle	Rhagonycha fulva	Rixton Nature Reserve	SJ686904	31/07/2010	2010	10	Adult		
FLOWERING PLANT	False Fox-sedge	Carex otrubae	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	False Fox-sedge	Carex otrubae	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	False Fox-sedge	Carex otrubae		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	False Fox-sedge	Carex otrubae	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance

INSECT - TRUE BUG (HEMIPTERA)	Grypocoris (Lophyromiris) stysi	Grypocoris (Lophyromiris) stysi	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - HYMENOPTERAN	Large Red Tailed Bumble Bee	Bombus (Melanobombus) lapidarius	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Hard Rush	Juncus inflexus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hard Rush	Juncus inflexus	Compartment C37, Rixton Clay Pits.	SJ6890	08/06/2010	2010	1	Flowering	IUCN LC	European/National Importance
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	17/07/2014	2014	286	Adult		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	07/01/2014	2014	1	Adult		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	Rixton & Woolston - CP, Rixton Claypits	SJ6890	26/07/2013	2013	504	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	Rixton & Woolston - CP, Rixton Claypits	SJ6890	25/06/2013	2013	1	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	Rixton Claypits	SJ6890	26/07/2011	2011	198	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	The right hand path after the car park	SJ68469069	14/08/2010	2010	3	None		
INSECT - BUTTERFLY	Hedge Brown	Pyronia tithonus	Rixton Nature Reserve	SJ686904	31/07/2010	2010	4	Adult		
FLOWERING PLANT	Zigzag Clover	Trifolium medium	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Zigzag Clover	Trifolium medium	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Zigzag Clover	Trifolium medium		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
INSECT - MOTH	Latticed Heath	Chiasmia clathrata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	S41, UKBAP	European and UK Legal Protection
INSECT - MOTH	Silver Y	Autographa gamma	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - HYMENOPTERAN	Robin's Pin-Cushion Gall	Diplolepis rosae	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Dog-rose	Rosa canina	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Field-rose	Rosa arvensis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Field-rose	Rosa arvensis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Field-rose	Rosa arvensis		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
LICHEN	Physcia airolia	Physcia airolia	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Tufted Hair-Grass	Deschampsia cespitosa	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Water Figwort	Scrophularia auriculata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Water Figwort	Scrophularia auriculata	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
HARVESTMAN (OPILIONES)	Dicranopalpus ramosus	Dicranopalpus ramosus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Gypsywort	Lycopus europaeus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance

FLOWERING PLANT	Blackthorn	Prunus spinosa	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Blackthorn	Prunus spinosa	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
MOSS	Atrichum undulatum var. undulatum	Atrichum undulatum var. undulatum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Sweet Chestnut	Castanea sativa	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Sweet Chestnut	Castanea sativa	Warburton	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
INSECT - ORTHOPTERAN	Common Green Grasshopper	Omocestus viridulus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - MOTH	Clouded Border	Lomaspilis marginata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
ACARINE (ACARI)	Aceria nalepai	Aceria nalepai	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BEETLE (COLEOPTERA)	Leptura quadrifasciata	Leptura quadrifasciata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - TRUE BUG (HEMIPTERA)	Meadow Plant Bug	Leptopterna dolabrata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - TRUE FLY (DIPTERA)	Oxycera rara	Oxycera rara	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Sneezewort	Achillea ptarmica	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Water Mint	Mentha aquatica	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Water Mint	Mentha aquatica	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Abundant	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water Mint	Mentha aquatica		SJ6890	12/06/2007	2007	Locally Abundant	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water Mint	Mentha aquatica	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Flowering	IUCN LC	European/National Importance
BIRD	Carrion Crow	Corvus corone	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Carrion Crow	Corvus corone	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
INSECT - DRAGONFLY (ODONATA)	Blue-tailed Damselfly	Ischnura elegans	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Blue-tailed Damselfly	Ischnura elegans	Compartment C37, Rixton Clay Pits	SJ685905	03/06/2014	2014	1	Adult Male	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Blue-tailed Damselfly	Ischnura elegans	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Blue-tailed Damselfly	Ischnura elegans	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult	IUCN LC	European/National Importance
INSECT - HYMENOPTERAN	Common Carder Bee	Bombus (Thoracobombus) pascuorum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - HYMENOPTERAN	Common Carder Bee	Bombus (Thoracobombus) pascuorum	Rixton Clay Pits.	SJ684905	16/07/2014	2014	>2	Worker		
INSECT - HYMENOPTERAN	Common Carder Bee	Bombus (Thoracobombus) pascuorum	Rixton Claypits	SJ6848190165	16/07/2008	2008	1	None		
INSECT - HYMENOPTERAN	Common Carder Bee	Bombus (Thoracobombus) pascuorum	Rixton Claypits	SJ6848190165	16/07/2008	2008	1	Male		
INSECT - DRAGONFLY (ODONATA)	Emperor Dragonfly	Anax imperator	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance



INSECT - DRAGONFLY (ODONATA)	Emperor Dragonfly	Anax imperator	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Male	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Emperor Dragonfly	Anax imperator	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Female	IUCN LC	European/National Importance
BIRD	Reed Bunting	Emberiza schoeniclus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Male	LBAP, BAm [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Reed Bunting	Emberiza schoeniclus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	LBAP, BAm [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Reed Bunting	Emberiza schoeniclus	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Male	LBAP, BAm [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
INSECT - DRAGONFLY (ODONATA)	Black Darter	Sympetrum danae	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Four-spotted Chaser	Libellula quadrimaculata	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Four-spotted Chaser	Libellula quadrimaculata	Rixton Clay pits	SJ685907	31/05/2011	2011	1	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Four-spotted Chaser	Libellula quadrimaculata	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Male	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Four-spotted Chaser	Libellula quadrimaculata	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Female	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Four-spotted Chaser	Libellula quadrimaculata	Rixton Claypits	SJ685907	27/05/2010	2010	4	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Banded Demoiselle	Calopteryx splendens	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Brown Hawker	Aeshna grandis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Brown Hawker	Aeshna grandis	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult	IUCN LC	European/National Importance
INSECT - BEETLE (COLEOPTERA)	Alder Leaf Beetle	Agelastica alni	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BEETLE (COLEOPTERA)	Alder Leaf Beetle	Agelastica alni		SJ686906	03/06/2014	2014	Present	Adult		
INSECT - BEETLE (COLEOPTERA)	Alder Leaf Beetle	Agelastica alni		SJ6890	27/06/2015	2015	Few	Adult		
INSECT - BEETLE (COLEOPTERA)	Alder Leaf Beetle	Agelastica alni	Rixton Clay Pits, Rixton, Warrington	SJ686904	08/05/2010	2010	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Alder Leaf Beetle	Agelastica alni	Rixton Nature Reserve	SJ686904	31/07/2010	2010	2	Larvae		
INSECT - BEETLE (COLEOPTERA)	Alder Leaf Beetle	Agelastica alni	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Adult		
FLOWERING PLANT	Yarrow	Achillea millefolium	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Yarrow	Achillea millefolium	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Yarrow	Achillea millefolium	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Yarrow	Achillea millefolium	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Ivy	Hedera helix	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Black Bryony	Dioscorea communis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance



FLOWERING PLANT	Meadowsweet	Filipendula ulmaria	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Meadowsweet	Filipendula ulmaria		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Dandelion	Taraxacum officinale agg.	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering		
AMPHIBIAN	Common Frog	Rana temporaria	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	WCA5	European and UK Legal Protection
AMPHIBIAN	Common Frog	Rana temporaria		SJ6890	27/06/2015	2015	1	Adult	WCA5	European and UK Legal Protection
AMPHIBIAN	Common Frog	Rana temporaria		SJ6890	12/06/2007	2007	Occasional	Adult	WCA5	European and UK Legal Protection
AMPHIBIAN	Common Toad	Bufo bufo	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Juvenile	WCA5, S41, UKBAP	European and UK Legal Protection
INSECT - HYMENOPTERAN	White/Buff-tailed Bumblebee workers	Bombus lucorum/terrestris	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
AMPHIBIAN	Smooth Newt	Lissotriton vulgaris	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	WCA5	European and UK Legal Protection
BIRD	Woodpigeon	Columba palumbus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Woodpigeon	Columba palumbus		SJ6889	05/02/2010	2010	350	None		
BIRD	Woodpigeon	Columba palumbus		SJ6889	30/01/2010	2010	1300	None		
BIRD	Woodpigeon	Columba palumbus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Woodpigeon	Columba palumbus		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	Woodpigeon	Columba palumbus	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Adult		
INSECT - TRUE BUG (HEMIPTERA)	Pondskater	Gerris	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Hazel	Corylus avellana	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hazel	Corylus avellana	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Hazel	Corylus avellana	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
FLOWERING PLANT	Bulrush	Typha latifolia	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Bulrush	Typha latifolia	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bulrush	Typha latifolia	Visitor Centre area, Rixton Clay Pits, Rixton, Warrington	SJ68619013	20/09/2011	2011	Local	Fruiting	IUCN LC	European/National Importance
FLOWERING PLANT	Bulrush	Typha latifolia		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bulrush	Typha latifolia		SJ6890	08/06/2010	2010	Present	Bud	IUCN LC	European/National Importance
FLOWERING PLANT	Hairy Tare	Vicia hirsuta	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Giant Bellflower	Campanula latifolia	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
BIRD	Moorhen	Gallinula chloropus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
BIRD	Moorhen	Gallinula chloropus	Rixton Claypits	SJ68489043	04/03/2006	2006	Present	None		
BIRD	Moorhen	Gallinula chloropus	Rixton Claypits	SJ68539031	04/03/2006	2006	Present	None		
BIRD	Moorhen	Gallinula chloropus		SJ6890	12/06/2007	2007	Occasional	Adult		

INSECT - BEETLE (COLEOPTERA)	Harlequin Ladybird	Harmonia axyridis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BEETLE (COLEOPTERA)	Harlequin Ladybird	Harmonia axyridis		SJ685906	03/06/2014	2014	1	Adult		
FLOWERING PLANT	Imperforate St John's-wort	Hypericum maculatum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
INSECT - MOTH	Narrow-bordered Five-spot Burnet	Zygaena lonicerae	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FUNGUS	Blackening Waxcap	Hygrocybe conica	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Lady's Bedstraw	Galium verum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Dock	Rumex sanguineus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Wood Dock	Rumex sanguineus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FERN	Scaly Male-fern	Dryopteris affinis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FERN	Scaly Male-fern	Dryopteris affinis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
FLOWERING PLANT	Great Willowherb	Epilobium hirsutum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Great Willowherb	Epilobium hirsutum	Warburton Bridge VC59	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Great Willowherb	Epilobium hirsutum	A57 near Warburton Bridge	SJ6990	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Great Willowherb	Epilobium hirsutum		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Great Willowherb	Epilobium hirsutum	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Great Willowherb	Epilobium hirsutum	Hollins Green	SJ7091	24/01/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Great Willowherb	Epilobium hirsutum	Manchester Road	SJ6991	07/04/2006	2006	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Remote Sedge	Carex remota	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Remote Sedge	Carex remota	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Remote Sedge	Carex remota		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Remote Sedge	Carex remota	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Pendulous Sedge	Carex pendula	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Dog's Mercury	Mercurialis perennis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Dog's Mercury	Mercurialis perennis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Dog's Mercury	Mercurialis perennis		SJ6890	12/06/2007	2007	Locally Frequent	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Raspberry	Rubus idaeus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Fruiting	IUCN LC	European/National Importance
FLOWERING PLANT	Perforate St John's-wort	Hypericum perforatum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Perforate St John's-wort	Hypericum perforatum	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance



INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Rixton & Woolston - CP, Rixton Claypits	SJ685905	07/12/2014	2014	285	Adult		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Rixton & Woolston - CP, Rixton Claypits	SJ685905	06/11/2014	2014	1	Adult		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Rixton & Woolston - CP, Rixton Claypits	SJ6890	24/09/2013	2013	1	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/08/2013	2013	279	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Rixton & Woolston - CP, Rixton Claypits	SJ6890	23/06/2013	2013	1	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina		SJ6890	27/06/2015	2015	10	Adult		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	The right hand path after the car park	SJ68469069	14/08/2010	2010	4	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	Rixton Nature Reserve	SJ686904	31/07/2010	2010	5	Adult		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina	The right hand path after the car park	SJ68489069	14/08/2010	2010	2	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina		SJ6890	12/06/2007	2007	Occasional	Adult		
INSECT - MOTH	Six-spot Burnet	Zygaena filipendulae	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
INSECT - MOTH	Six-spot Burnet	Zygaena filipendulae		SJ6890	27/06/2015	2015	Few	Adult		
INSECT - MOTH	Six-spot Burnet	Zygaena filipendulae	Rixton Clay pits	SJ685907	31/05/2011	2011	1	None		
INSECT - MOTH	Six-spot Burnet	Zygaena filipendulae	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Larvae		
INSECT - MOTH	Six-spot Burnet	Zygaena filipendulae	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Pupa/Pupal Cocoon		
FLOWERING PLANT	Field Forget-me-not	Myosotis arvensis	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Fleabane	Pulicaria dysenterica	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Fleabane	Pulicaria dysenterica	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
FLOWERING PLANT	Common Fleabane	Pulicaria dysenterica	Visitor Centre area, Rixton Clay Pits, Rixton, Warrington	SJ68619015	20/09/2011	2011	Locally Frequent	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Centaury	Centaurium erythraea	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Centaury	Centaurium erythraea	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Centaury	Centaurium erythraea		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Black-tailed Skimmer	Orthetrum cancellatum	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Male	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Black-tailed Skimmer	Orthetrum cancellatum	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Male	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Black-tailed Skimmer	Orthetrum cancellatum	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Female	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Black-tailed Skimmer	Orthetrum cancellatum	Rixton Claypits	SJ685907	27/05/2010	2010	1	Female	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Black-tailed Skimmer	Orthetrum cancellatum	Rixton Claypits	SJ685907	27/05/2010	2010	Present	None	IUCN LC	European/National Importance



FLOWERING PLANT	Glaucous Sedge	Carex flacca	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Tormentil	Potentilla erecta	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Tormentil	Potentilla erecta		SJ6890	27/06/2015	2015	Locally Frequent	Flowering	IUCN LC	European/National Importance
BONY FISH (ACTINOPTERYGII)	Rudd	Scardinius erythrophthalmus	Rixton & Woolston - CP, Rixton Clay Pits.	SJ688902	11/07/2015	2015	Present	None		
FLOWERING PLANT	Common Vetch	Vicia sativa subsp. segetalis	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Sweet Vernal-grass	Anthoxanthum odoratum	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Sweet Vernal-grass	Anthoxanthum odoratum	Warburton	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Pedunculate Oak	Quercus robur	Rixton & Woolston - CP, SJ69V	SJ6890	03/05/2007	2007	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Pedunculate Oak	Quercus robur	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
INSECT - TRUE FLY (DIPTERA)	Diastata adusta	Diastata adusta	Rixton & Woolston - CP, Rixton Claypits, Area 1	SJ685906	25/03/2015	2015	1	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Ptychoptera contaminata	Ptychoptera contaminata	Rixton & Woolston - CP, Rixton Claypits	SJ686904	30/08/2015	2015	1	Female		
INSECT - TRUE FLY (DIPTERA)	Helina evecta	Helina evecta	Rixton & Woolston - CP, Area 1, Rixton Claypits	SJ685906	25/03/2015	2015	1	Male		
INSECT - BEETLE (COLEOPTERA)	Orange Ladybird	Halyzia sedecimguttata	Rixton & Woolston - CP, Rixton Claypits, Area 4	SJ684909	25/03/2015	2015	1	Adult		
INSECT - TRUE BUG (HEMiptERA)	Birch Catkin Bug	Kleidocerys resedae	Rixton & Woolston - CP, Area 4, Rixton Claypits	SJ684909	25/03/2015	2015	1	Male		
INSECT - BEETLE (COLEOPTERA)	Cantharis nigra	Cantharis nigra	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Thistle Tortoise Beetle	Cassida rubiginosa	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Thistle Tortoise Beetle	Cassida rubiginosa	Rixton Clay Pits	SJ686904	02/08/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Altica lythri	Altica lythri	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Altica lythri	Altica lythri	Rixton Nature Reserve	SJ686904	31/07/2010	2010	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Blue Willow Beetle	Phratora vulgatissima	Rixton Clay Pits	SJ686904	22/06/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Brown Willow Beetle	Galerucella lineola	Rixton Clay Pits	SJ686904	05/04/2009	2009	4	Adult		
INSECT - BEETLE (COLEOPTERA)	Hypera (Hypera) nigrirostris	Hypera (Hypera) nigrirostris	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Dorytomus rufatus	Dorytomus rufatus	Rixton Clay Pits	SJ686904	22/06/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Trichosirocalus troglodytes	Trichosirocalus troglodytes	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Meadow Cranesbill Weevil	Zacladus geranii	Rixton Clay Pits	SJ686904	02/08/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Ocys harpaloides	Ocys harpaloides	Rixton Clay Pits	SJ686904	05/04/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Carabus (Carabus) granulatus	Carabus (Carabus) granulatus	Rixton Clay Pits	SJ686904	16/04/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Bembidion (Philochthus) biguttatum	Bembidion (Philochthus) biguttatum	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		

INSECT - BUTTERFLY	Clouded Yellow	Colias croceus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	09/08/2014	2014	1	Adult		
INSECT - BUTTERFLY	Clouded Yellow	Colias croceus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	31/08/2014	2014	3	Adult		
INSECT - BUTTERFLY	Clouded Yellow	Colias croceus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	16/06/2014	2014	1	Adult		
INSECT - BUTTERFLY	Clouded Yellow	Colias croceus	Rixton & Woolston - CP, Rixton Claypits	SJ6890	15/08/2013	2013	1	None		
INSECT - TRUE FLY (DIPTERA)	Leucozona lucorum	Leucozona lucorum	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	None		
INSECT - TRUE FLY (DIPTERA)	Eristalis tenax	Eristalis tenax	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	None		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton & Woolston - CP, Rixton Claypits	SJ685905	10/02/2014	2014	1	Adult		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton & Woolston - CP, Rixton Claypits	SJ685905	29/04/2014	2014	1	Adult		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton & Woolston - CP, Rixton Claypits	SJ685905	08/04/2014	2014	3	Adult		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/08/2013	2013	10	None		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton & Woolston - CP, Rixton Claypits	SJ6890	25/05/2013	2013	1	None		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton Claypits	SJ6890	23/08/2011	2011	5	None		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	The right hand path after the car park	SJ68469069	14/08/2010	2010	3	None		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/10/2013	2013	1	None		
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	05/02/2014	2014	1	Adult		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	31/08/2014	2014	2	Adult		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	09/12/2014	2014	1	Adult		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	None		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus	Rixton & Woolston - CP, Rixton Claypits	SJ6890	07/08/2013	2013	3	None		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus	Rixton & Woolston - CP, Rixton Claypits	SJ6890	25/05/2013	2013	1	None		
INSECT - BUTTERFLY	Holly Blue	Celastrina argiolus	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2013	2013	1	None		
INSECT - MOTH	Green Long-horn	Adela reaumurella	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	None		
INSECT - DRAGONFLY (ODONATA)	Large Red Damselfly	Pyrrhosoma nymphula	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	None	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Large Red Damselfly	Pyrrhosoma nymphula	Rixton Claypits	SJ685907	31/05/2011	2011	1	None	IUCN LC	European/National Importance
INSECT - TRUE FLY (DIPTERA)	St Marks Fly	Bibio marci	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	2	Male		
INSECT - TRUE FLY (DIPTERA)	Tipula lunata	Tipula lunata	Rixton & Woolston - CP, Rixton Claypits	SJ685905	13/05/2012	2012	1	Male		
BIRD	Lapwing	Vanellus vanellus		SJ6889	27/02/2010	2010	36	None	LBAP, BRd [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Lapwing	Vanellus vanellus		SJ6889	06/03/2010	2010	20	None	LBAP, BRd [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection



										UK Legal Protection
BIRD	Lapwing	Vanellus vanellus		SJ6890	12/06/2007	2007	Occasional	Adult	LBAP, BRd [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Goldeneye	Bucephala clangula		SJ6889	05/02/2010	2010	2	None	WCA1, BAm [RSPB]	European and UK Legal Protection, European/National Importance
BIRD	Goldeneye	Bucephala clangula		SJ6889	30/01/2010	2010	1	Adult Male	WCA1, BAm [RSPB]	European and UK Legal Protection, European/National Importance
BIRD	Black-headed Gull	Chroicocephalus ridibundus		SJ6889	05/02/2010	2010	200	None	BAm [RSPB]	European/National Importance
BIRD	Black-headed Gull	Chroicocephalus ridibundus		SJ6890	12/06/2007	2007	Occasional	Adult	BAm [RSPB]	European/National Importance
BIRD	Green Woodpecker	Picus viridis		SJ6889	30/01/2010	2010	1	None	BAm [RSPB]	European/National Importance
BIRD	Green Woodpecker	Picus viridis		SJ685901	31/07/2010	2010	Present	None	BAm [RSPB]	European/National Importance
BIRD	Siskin	Spinus spinus		SJ6889	30/01/2010	2010	10	None		
BIRD	Feral Pigeon/Rock Dove	Feral Pigeon/Rock Dove		SJ6889	30/01/2010	2010	35	None		
BIRD	Starling	Sturnus vulgaris		SJ6889	30/01/2010	2010	60	None	LBAP, BRd [RSPB], S41	Local Importance, European/National Importance, European and UK Legal Protection
FLOWERING PLANT	Bramble	Rubus tuberculatus	Whatcroft	SJ6889	22/09/2007	2007	Present	Flowering		
FLOWERING PLANT	Horse-chestnut	Aesculus hippocastanum	Rixton & Woolston - CP, rixton	SJ6889	17/05/2009	2009	Present	None		
FLOWERING PLANT	Horse-chestnut	Aesculus hippocastanum	rixton	SJ6889	17/05/2009	2009	Present	None		
BIRD	Common (Mealy) Redpoll	Acanthis flammea		SJ6889	06/03/2010	2010	2	None		
FLOWERING PLANT	Lesser Soft-Brome	Bromus hordeaceus	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Creeping Bent	Agrostis stolonifera	Rixton	SJ6889	17/05/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Purple-loosestrife	Lythrum salicaria	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Purple-loosestrife	Lythrum salicaria		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Spotted-orchid	Dactylorhiza fuchsii	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Spike-rush	Eleocharis palustris	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Spike-rush	Eleocharis palustris	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
HORSETAIL	Marsh Horsetail	Equisetum palustre	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	None	IUCN LC	European/National Importance
FLOWERING PLANT	Marsh Woundwort	Stachys palustris	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Wild Strawberry	Fragaria vesca	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Figwort	Scrophularia nodosa	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance



FLOWERING PLANT	Common Figwort	Scrophularia nodosa		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Figwort	Scrophularia nodosa	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
BIRD	Jackdaw	Corvus monedula	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Jackdaw	Corvus monedula		SJ6890	12/06/2007	2007	Occasional	Adult		
FLOWERING PLANT	Wavy Bittercress	Cardamine flexuosa	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Tufted Forget-me-not	Myosotis laxa	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Tufted Forget-me-not	Myosotis laxa		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water Forget-me-not	Myosotis scorpioides	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water Forget-me-not	Myosotis scorpioides		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Comfrey	Symphytum officinale	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Common Comfrey	Symphytum officinale		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - BEETLE (COLEOPTERA)	Wasp Beetle	Clytus arietis		SJ686906	03/06/2014	2014	1	Adult		
FLOWERING PLANT	Smooth Hawk's-beard	Crepis capillaris	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - TRUE FLY (DIPTERA)	Coenosia tigrina	Coenosia tigrina	Car Park	SJ687902	03/06/2014	2014	1	Adult Female		
INSECT - TRUE FLY (DIPTERA)	Opomyza germinationis	Opomyza germinationis		SJ686902	03/06/2014	2014	1	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Opomyza germinationis	Opomyza germinationis		SJ684901	03/06/2014	2014	1	Adult Female		
INSECT - TRUE FLY (DIPTERA)	Opomyza germinationis	Opomyza germinationis		SJ685906	03/06/2014	2014	1	Adult Male		
INSECT - TRUE FLY (DIPTERA)	Opomyza germinationis	Opomyza germinationis		SJ685905	03/06/2014	2014	1	Adult Female		
FLOWERING PLANT	Ribbed Melilot	Mellilotus officinalis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering		
FLOWERING PLANT	Wild Teasel	Dipsacus fullonum	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering		
FLOWERING PLANT	Wild Teasel	Dipsacus fullonum		SJ6890	08/06/2010	2010	Present	Bud		
FLOWERING PLANT	Wild Teasel	Dipsacus fullonum		SJ6890	12/06/2007	2007	Occasional	Flowering		
FLOWERING PLANT	Wood Speedwell	Veronica montana	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Reed Sweet-grass	Glyceria maxima	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water Dock	Rumex hydrolapathum	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water Dock	Rumex hydrolapathum		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bog Pondweed	Potamogeton polygonifolius	Compartment C37, Rixton Clay Pits	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance

			Rixton & Woolston - CP							
FLOWERING PLANT	Lesser Spearwort	Ranunculus flammula	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Dog Rose	Rosa canina agg.	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering		
FLOWERING PLANT	Dog Rose	Rosa canina agg.		SJ6890	12/06/2007	2007	Occasional	Flowering		
BIRD	Cormorant	Phalacrocorax carbo	Rixton & Woolston - CP, Rixton Clay Pits	SJ684905	05/12/2009	2009	1	Adult		
BIRD	Cormorant	Phalacrocorax carbo	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	1	None		
INSECT - BUTTERFLY	Common Blue	Polyommatus icarus subsp. icarus	Rixton Claypits	SJ6890	04/05/2011	2011	25	None		
BIRD	Great Crested Grebe	Podiceps cristatus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Great Crested Grebe	Podiceps cristatus		SJ6889	30/01/2010	2010	1	None		
BIRD	Dunnock	Prunella modularis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	BAm [RSPB], S41	European/National Importance, European and UK Legal Protection
BIRD	Blackbird	Turdus merula	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
BIRD	Blackbird	Turdus merula	Rixton Clay Pits, Rixton and Woolston	SJ6848190165	05/12/2009	2009	Present	None		
BIRD	Blackbird	Turdus merula		SJ6890	12/06/2007	2007	Occasional	Adult		
SPIDER (ARANEAE)	Enoplognatha ovata	Enoplognatha ovata	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult		
FLOWERING PLANT	Three-nerved Sandwort	Moehringia trinervia	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina subsp. splendida	Rixton Claypits	SJ6890	13/07/2011	2011	127	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina subsp. splendida	Rixton Claypits	SJ6890	04/08/2012	2012	138	None		
INSECT - BUTTERFLY	Meadow Brown	Maniola jurtina subsp. splendida	Rixton Claypits	SJ6890	18/06/2012	2012	1	None		
INSECT - TRUE FLY (DIPTERA)	Xylota sylvorum	Xylota sylvorum	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Anotylus rugosus	Anotylus rugosus	Rixton Clay Pits	SJ686904	02/08/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Stenus (Hypostenus) similis	Stenus (Hypostenus) similis	Rixton Clay Pits	SJ686904	02/08/2009	2009	3	Adult		
INSECT - BEETLE (COLEOPTERA)	Stenus (Hypostenus) similis	Stenus (Hypostenus) similis	Rixton Clay Pits	SJ686904	22/06/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Stenus (Hypostenus) similis	Stenus (Hypostenus) similis	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Stenus (Hypostenus) fulvicornis	Stenus (Hypostenus) fulvicornis	Rixton Clay Pits	SJ686904	02/08/2009	2009	1	Adult		
FLOWERING PLANT	Ivy-leaved Duckweed	Lemna trisulca	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Inleaf	IUCN LC	European/National Importance
FLOWERING PLANT	Ivy-leaved Duckweed	Lemna trisulca		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Ivy-leaved Duckweed	Lemna trisulca	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Present	Flowering	IUCN LC	European/National Importance

FLOWERING PLANT	Goat's-beard	Tragopogon pratensis	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Goat's-beard	Tragopogon pratensis		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - HYMENOPTERAN	Small Garden Bumble Bee	Bombus (Megabombus) hortorum	Rixton Clay Pits.	SJ684905	16/07/2014	2014	1	Worker		
TERRESTRIAL MAMMAL	Eurasian Common Shrew	Sorex araneus		SJ6889	06/03/2010	2010	1	Dead		
BIRD	Barn Owl	Tyto alba	Machester rd verge Rixton	SJ68448991	28/03/2010	2010	1	None	LBAP, WCA1, BAm [RSPB], WCA9	Local Importance, European and UK Legal Protection, European/National Importance
FLOWERING PLANT	Common Bistort	Persicaria bistorta	warburton	SJ6989	13/06/2009	2009	Present	None	IUCN LC	European/National Importance
FLOWERING PLANT	Common Water-Starwort	Callitriche stagnalis	Warburton Bridge	SJ6989	13/06/2009	2009	Present	None		
FLOWERING PLANT	Meadow Foxtail	Alopecurus pratensis	Warburton Bridge VC59	SJ6989	13/06/2009	2009	59	None	IUCN LC	European/National Importance
INSECT - HYMENOPTERAN	Buff-Tailed Bumble Bee	Bombus (Bombus) terrestris		SJ6890	12/06/2007	2007	Occasional	Adult		
AMPHIBIAN	Great Crested Newt	Triturus cristatus	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Adult	LBAP, WCA5, S41, HabRegs2, UKBAP	Local Importance, European and UK Legal Protection
AMPHIBIAN	Great Crested Newt	Triturus cristatus		SJ684901	28/03/2010	2010	600	None	LBAP, WCA5, S41, HabRegs2, UKBAP	Local Importance, European and UK Legal Protection
FLOWERING PLANT	Water-plantain	Alisma plantago-aquatica	Compartment C37, Rixton Clay Pits, Rixton & Woolston - CP	SJ6890	23/06/2009	2009	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water-plantain	Alisma plantago-aquatica		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Water-plantain	Alisma plantago-aquatica	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
INSECT - BUTTERFLY	Small Copper	Lycaena phlaeas subsp. hibernica	Rixton Claypits	SJ6890	24/08/2012	2012	2	None		
INSECT - MOTH	Old Lady	Mormo maura		SJ685901	30/07/2010	2010	2	None		
INSECT - MOTH	Ruby Tiger	Phragmatobia fuliginosa		SJ685901	30/07/2010	2010	Present	None		
INSECT - BEETLE (COLEOPTERA)	Curculio	Curculio	Rixton Nature Reserve	SJ686904	31/07/2010	2010	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Curculio	Curculio	Rixton Clay Pits	SJ686904	02/08/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Heterocerus fenestratus	Heterocerus fenestratus	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Cereal Leaf Beetle	Oulema rufocyanea	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - TRUE FLY (DIPTERA)	Scaeva pyrastris	Scaeva pyrastris	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Oxystoma cerdo	Oxystoma cerdo	Rixton Clay Pits	SJ686904	22/06/2009	2009	5	Adult		
INSECT - BEETLE (COLEOPTERA)	Oxystoma cerdo	Oxystoma cerdo	Rixton Clay Pits	SJ686904	02/08/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	Neocrepidodera transversa	Neocrepidodera transversa	Rixton Clay Pits	SJ686904	22/06/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Dorytomus taeniatus	Dorytomus taeniatus	Rixton Clay Pits	SJ686904	22/06/2009	2009	6	Adult		
INSECT - BEETLE (COLEOPTERA)	Bembidion (Trepanes) articulatum	Bembidion (Trepanes) articulatum	Rixton Nature Reserve	SJ686904	31/07/2010	2010	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Bembidion (Philochthus) lunulatum	Bembidion (Philochthus) lunulatum	Rixton Nature Reserve	SJ686904	31/07/2010	2010	2	Adult		
BIRD	Collared Dove	Streptopelia decaocto	Rixton Clay Pits	SJ684905	05/06/2010	2010	Two	Adult		



BIRD	Scaup	<i>Aythya marila</i>	Rixton Clay Pits	SJ684905	05/06/2010	2010	2	Adult	WCA1, BRd [RSPB], S41, UKBAP	European and UK Legal Protection, European/National Importance
BIRD	Scaup	<i>Aythya marila</i>	Moat Lane Pool (North)	SJ683908	05/06/2010	2010	11	Adult	WCA1, BRd [RSPB], S41, UKBAP	European and UK Legal Protection, European/National Importance
INSECT - BEETLE (COLEOPTERA)	<i>Bembidion (Nepha) illigeri</i>	<i>Bembidion (Nepha) illigeri</i>	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Ocyopus (Matidus) brunripes</i>	<i>Ocyopus (Matidus) brunripes</i>	Rixton Clay Pits	SJ686904	05/04/2009	2009	1	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Hypera (Hypera) plantaginis</i>	<i>Hypera (Hypera) plantaginis</i>	Rixton Clay Pits	SJ686904	02/08/2009	2009	4	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Ceutorhynchus typhae</i>	<i>Ceutorhynchus typhae</i>	Rixton Clay Pits	SJ686904	02/08/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Crepidodera fulvicornis</i>	<i>Crepidodera fulvicornis</i>	Rixton Clay Pits	SJ686904	22/06/2009	2009	2	Adult		
INSECT - BEETLE (COLEOPTERA)	Willow Flea Beetle	<i>Crepidodera aurata</i>	Rixton Clay Pits	SJ686904	22/06/2009	2009	3	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Pterostichus (Pseudomasus) nigrita</i>	<i>Pterostichus (Pseudomasus) nigrita</i>	Rixton Clay Pits	SJ686904	02/08/2009	2009	1	Adult		
INSECT - TRUE BUG (HEMIPTERA)	Blue Shieldbug	<i>Zicrona caerulea</i>	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult		
INSECT - DRAGONFLY (ODONATA)	Emerald Damselfly	<i>Lestes sponsa</i>	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Adult	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Common Hawker	<i>Aeshna juncea</i>	Rixton Nature Reserve	SJ686904	31/07/2010	2010	1	Nymph	IUCN LC	European/National Importance
MOLLUSC	Great Pond Snail	<i>Lymnaea stagnalis</i>		SJ685901	11/04/2011	2011	Present	None		
MOLLUSC	Wandering Snail	<i>Radix peregra</i>		SJ685901	11/04/2011	2011	Present	None		
MOLLUSC	Great Ramshorn Snail	<i>Planorbis corneus</i>		SJ685901	11/04/2011	2011	Present	None		
INSECT - MAYFLY (EPHEMEROPTERA)	<i>Cloeon dipterum</i>	<i>Cloeon dipterum</i>		SJ685901	11/04/2011	2011	Present	None		
INSECT - MOTH	Brown China-mark	<i>Elophila nymphaeata</i>		SJ685901	11/04/2011	2011	Present	None		
INSECT - TRUE BUG (HEMIPTERA)	<i>Hesperocorixa sahlbergi</i>	<i>Hesperocorixa sahlbergi</i>		SJ685901	11/04/2011	2011	Present	None		
INSECT - TRUE BUG (HEMIPTERA)	<i>Hesperocorixa linnaei</i>	<i>Hesperocorixa linnaei</i>		SJ685901	11/04/2011	2011	Present	None		
INSECT - TRUE BUG (HEMIPTERA)	Water Scorpion	<i>Nepa cinerea</i>		SJ685901	11/04/2011	2011	Present	None		
INSECT - CADDIS FLY (TRICHOPTERA)	<i>Limnephilus marmoratus</i>	<i>Limnephilus marmoratus</i>		SJ685901	11/04/2011	2011	Present	Larvae		
INSECT - DRAGONFLY (ODONATA)	Broad-bodied Chaser	<i>Libellula depressa</i>	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Male	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Broad-bodied Chaser	<i>Libellula depressa</i>	Rixton Claypits	SJ685907	22/06/2010	2010	Present	Adult Female	IUCN LC	European/National Importance
INSECT - DRAGONFLY (ODONATA)	Broad-bodied Chaser	<i>Libellula depressa</i>	Rixton Claypits	SJ685907	27/05/2010	2010	1	Male	IUCN LC	European/National Importance
INSECT - TRUE BUG (HEMIPTERA)	<i>Chilacis typhae</i>	<i>Chilacis typhae</i>	Visitor Centre area, Rixton Clay Pits, Rixton, Warrington	SJ68619013	20/09/2011	2011	4	Adult		
INSECT - BEETLE (COLEOPTERA)	<i>Leiopus nebulosus</i>	<i>Leiopus nebulosus</i>		SJ685903	06/07/2011	2011	1	None		
REPTILE	Common Lizard	<i>Zootoca vivipara</i>	rixton clay pits	SJ685902	26/08/2009	2009	2	None	WCA5, S41, UKBAP	European and UK Legal Protection
INSECT - BUTTERFLY	Large Tortoiseshell	<i>Nymphalis polychloros</i>	The right hand path after the car park	SJ68489069	14/08/2010	2010	5	None	WCA5	European and UK Legal Protection
BIRD	Common Tern	<i>Sterna hirundo</i>	Moat Lane Pool, North	SJ683908	05/06/2010	2010	One	Adult	BAm [RSPB]	European/National Importance

BIRD	Lesser Whitethroat	<i>Sylvia curruca</i>	Moat Lane Poll, North	SJ683908	05/06/2010	2010	One	Male		
BIRD	Great Tit	<i>Parus major</i>	Rixton Claypits	SJ68419039	04/03/2006	2006	Present	None		
BIRD	Great Tit	<i>Parus major</i>	Rixton Claypits	SJ68469036	04/03/2006	2006	Present	None		
BIRD	Blue Tit	<i>Cyanistes caeruleus</i>	Rixton Claypits	SJ68419039	04/03/2006	2006	Present	None		
BIRD	Treecreeper	<i>Certhia familiaris</i>	Rixton Claypits	SJ68469036	04/03/2006	2006	Present	None		
FLOWERING PLANT	Smooth Sow-thistle	<i>Sonchus oleraceus</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FERN	Broad Buckler-fern	<i>Dryopteris dilatata</i>		SJ6890	08/06/2010	2010	Present	Spores	IUCN LC	European/National Importance
FLOWERING PLANT	Wild Marjoram	<i>Origanum vulgare</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Bluebell	<i>Hyacinthoides non-scripta</i>		SJ6890	12/06/2007	2007	Occasional	Flowering	LBAP, WCA8, IUCN LC	Local Importance, European and UK Legal Protection, European/National Importance
FLOWERING PLANT	Fine-leaved Water-dropwort	<i>Oenanthe aquatica</i>		SJ6890	12/06/2007	2007	Present	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Fine-leaved Water-dropwort	<i>Oenanthe aquatica</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
BIRD	Ruddy Duck	<i>Oxyura jamaicensis</i>		SJ6890	12/06/2007	2007	Occasional	Adult	INNS, WCA9	Invasive Non-Native, European and UK Legal Protection
BIRD	Yellowhammer	<i>Emberiza citrinella</i>		SJ6890	12/06/2007	2007	Occasional	Adult	LBAP, BRd [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	Wren	<i>Troglodytes troglodytes</i>		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	Wren	<i>Troglodytes troglodytes</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Adult		
BIRD	Garden Warbler	<i>Sylvia borin</i>		SJ6890	12/06/2007	2007	Occasional	Adult		
BIRD	House Sparrow	<i>Passer domesticus</i>		SJ6890	12/06/2007	2007	Occasional	Adult	LBAP, BRd [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
BIRD	House Sparrow	<i>Passer domesticus</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Adult	LBAP, BRd [RSPB], S41, UKBAP	Local Importance, European/National Importance, European and UK Legal Protection
FLOWERING PLANT	Common Sedge	<i>Carex nigra</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	Occasional	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Compact Rush	<i>Juncus conglomeratus</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Flowering	IUCN LC	European/National Importance
FLOWERING PLANT	Heath Wood-rush	<i>Luzula multiflora</i>	Compartment C37, Rixton Clay Pits	SJ6890	08/06/2010	2010	1	Flowering	IUCN LC	European/National Importance
MOSS	Capillary Thread-moss	<i>Bryum capillare</i>	A57 Hollins Green	SJ7091	07/04/2006	2006	Present	None		
FLOWERING PLANT	Butterfly-bush	<i>Buddleja davidii</i>	Rixton & Woolston - CP, Rixton and Glazebrook Community Hall, Manchester Road, Hollins Green, Rixton	SJ69829113	10/01/2015	2015	Local	None		
BIRD	Pied Wagtail	<i>Motacilla alba subsp. yarrellii</i>	Rixton & Woolston - CP, Rixton and Glazebrook Community Hall, Manchester Road, Hollins Green, Rixton	SJ69829112	10/01/2015	2015	1	Adult		

N.B: All above records are Field Records. The data source for all records is RECORD.

Wildlife Site Citations

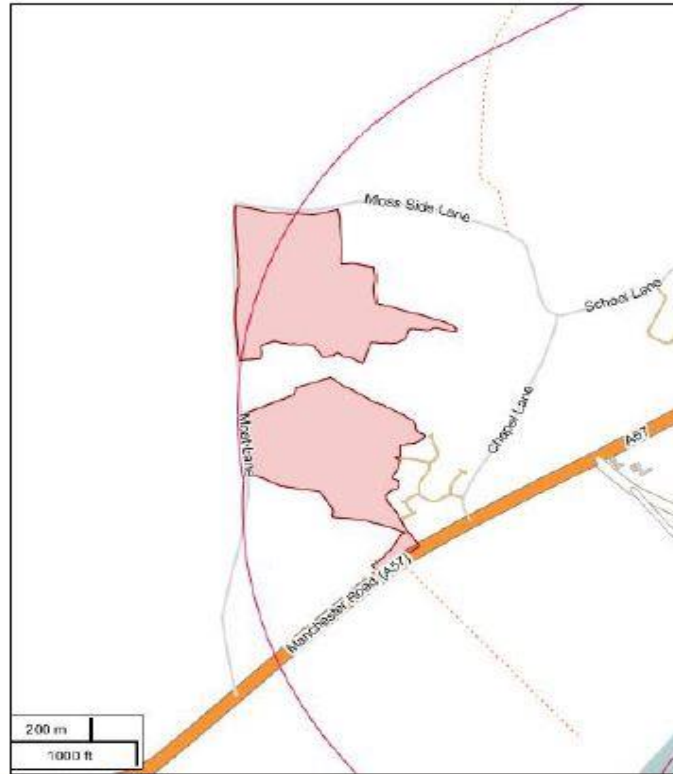
Site Boundary Report

Local Sites

Local Wildlife Sites

Rixton Brickworks / WA027

Map



Site name	Rixton Brickworks
Site code	WA027
Authority	Warrington Local Wildlife Sites Partnership
Site centroid	SJ6859990607

Regionally Important Geodiversity Sites

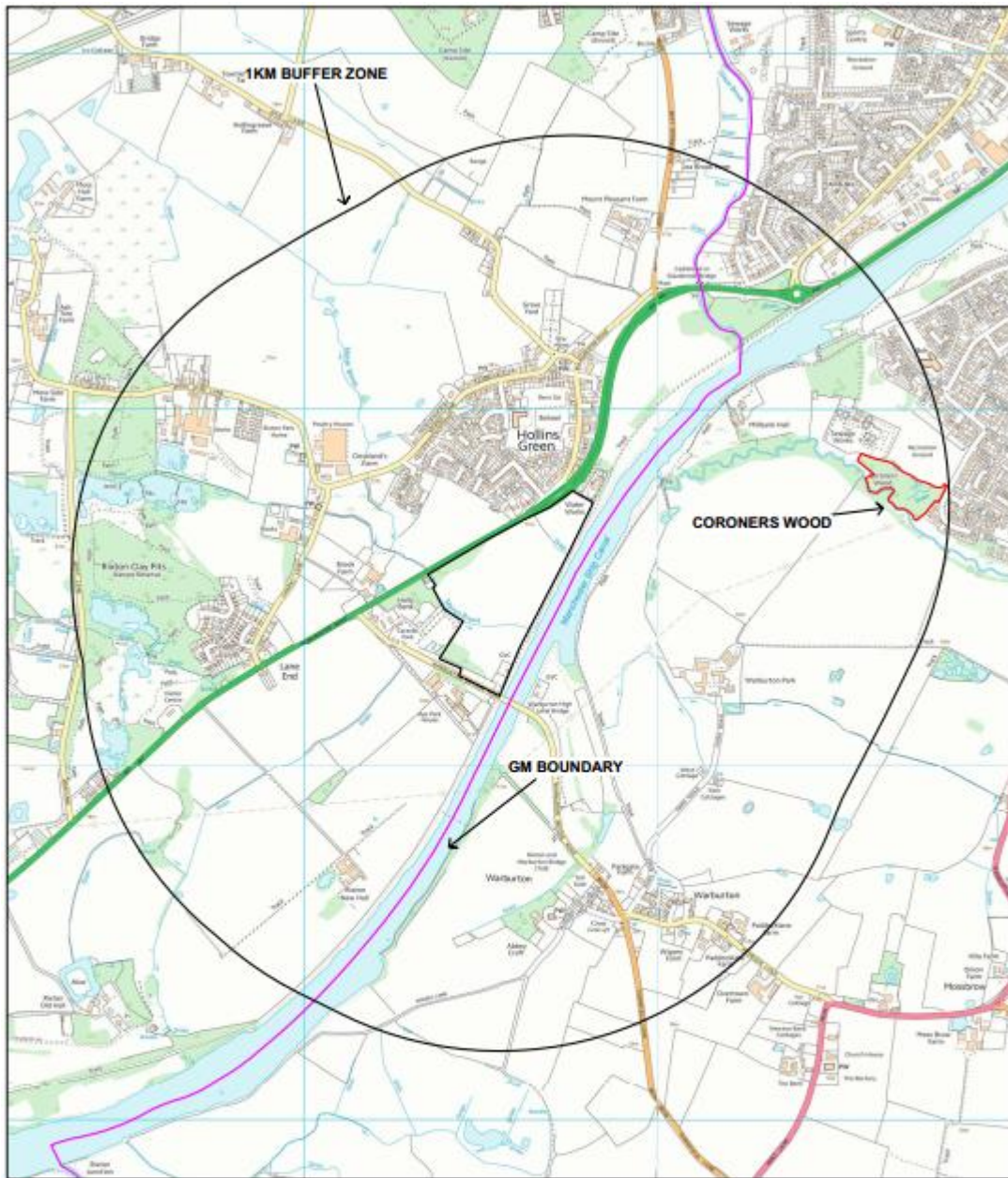
There are no Cheshire Regionally Important Geodiversity Sites within this search area.

Statutory Sites

Due to changes to the NBN we are currently unable to provide Statutory Site location maps. You can access these by visiting the NBN Atlas: <https://spatial.nbnatlas.org/> or MagioMap <http://www.natureonthemap.naturalengland.org.uk/MagioMap.aspx> (please be aware of the NBN Atlas guidance for using data <https://nbnatlas.org/help/guidance-using-data/>).

Other Sites of Conservation Interest

There are no Other Sites of Conservation Interest within this search area.



<p>KEY</p> <p>SITE OF BIOLOGICAL IMPORTANCE</p> <p> SBI BOUNDARY</p>	<p>GREATER MANCHESTER ECOLOGY UNIT ECOLOGICAL SEARCH - SJ0960490556 HOLLINS GREEN - MAP 1</p> <p>SCALE 1:10,000</p> <p><small>THE MAP IS BASED UPON ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HMSO ©CROWN COPYRIGHT UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS</small></p> <p><small>TAMESIDE MBC LICENCE NO LA100022697, 2017</small></p>	<p>Greater Manchester Ecology Unit</p> <p>Telephone 0161 342 4409 Email: gmeu@tameside.gov.uk Date Produced: 05/09/2017</p>
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N.B: The citations for these sites have not been purchased as due to their distance from site, based on current plans, no impacts are predicted.

APPENDIX C: Target Notes

Target Notes Report

HOLLINS

Target Note HOLLINST001

A band of tall ruderal vegetation runs along the north and eastern boundaries for the site. This has varying amounts of dense and scattered scrub along its length.

<i>Urtica dioica</i>	Nettle	D
<i>Calystegia sp.</i>	Bindweed species	A
<i>Lolium perenne</i>	Perennial Ryegrass	A
<i>Poa trivialis</i>	Rough Meadow-grass	A
<i>Rubus fruticosus agg.</i>	Bramble	A
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Trisetum aestivum</i>	Wheat	F
<i>Artemisia vulgaris</i>	Mugwort	O
<i>Buddleja davidii</i>	Buddleia	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Conyza canadensis</i>	Canadian Fleabane	O
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Equisetum arvense</i>	Field Horsetail	O
<i>Fallopia baldschuanica</i>	Russian Vine	O
<i>Galium aparine</i>	Cleavers	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Lythrum salicaria</i>	Purple Loosestrife	O
<i>Stachys sylvatica</i>	Hedge Woundwort	O
<i>Brassica napus</i>	Rape	R
<i>Cirsium vulgare</i>	Spear Thistle	R
<i>Crataegus monogyna</i>	Hawthorn	R
<i>Dipsacus fullonum</i>	Teasel	R
<i>Geranium robertianum</i>	Herb-Robert	R
<i>Myosotis sp.</i>	Forget-me-not species	R
<i>Rosa arvensis</i>	Field Rose	R
<i>Saponaria officinalis</i>	Soapwort	R

Target Note HOLLINST002

There are two ditches running through the site which are dominated by tall ruderal vegetation.

<i>Phalaris arundinacea</i>	Reed Canary-grass	D
<i>Rubus fruticosus agg.</i>	Bramble	A
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Avena sativa</i>	Oat	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Lolium perenne</i>	Perennial Ryegrass	F
<i>Urtica dioica</i>	Nettle	F
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Trisetum aestivum</i>	Wheat	O
<i>Cardamine sp.</i>	Bitter-cress Species	R
<i>Pteridium aquilinum</i>	Bracken	R

Target Note HOLLINST003

A short section of hawthorn dominated intact hedgerow.

<i>Crataegus monogyna</i>	Hawthorn	D
<i>Fraxinus excelsior</i>	Ash	R

KEY - D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note HOLLINST004

Bare ground and ephemeral vegetation to the south east of site.

<i>Hypericum maculatum</i>	Imperforate St John's-wort	D
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Geranium molle</i>	Dove's-foot Cranesbill	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Senecio jacobaea</i>	Common Ragwort	R

Target Note HOLLINST005

To the south of site outside the arable field is an area which begins as tall ruderal vegetation and succeeds into mature woodland as it heads south.

<i>Acer pseudoplatanus</i>	Sycamore	D
<i>Impatiens glandulifera</i>	Himalayan Balsam	D
<i>Chamerion angustifolium</i>	Rosebay Willowherb	A
<i>Dactylis glomerata</i>	Cock's-foot	A
<i>Epilobium hirsutum</i>	Great Willowherb	A
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Salix viminalis</i>	Osier	F
<i>Betula pendula</i>	Silver Birch	O
<i>Carex pendula</i>	Pendulous Sedge	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Hieracium sp.</i>	Hawkweed species	O
<i>Matricaria chamomilla</i>	Scented Mayweed	O
<i>Prunella vulgaris</i>	Selfheal	O
<i>Quercus robur</i>	English Oak	O
<i>Rubus fruticosus agg.</i>	Bramble	O
<i>Salix cinerea</i>	Grey Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Senecio jacobaea</i>	Common Ragwort	O
<i>Trifolium pratense</i>	Red Clover	O

Target Note HOLLINST006

In the south west corner of site is an area of semi natural broadleaved woodland which lines either side of a shallow wet depression.

<i>Acer pseudoplatanus</i>	Sycamore	A
<i>Hedera helix</i>	Ivy	A
<i>Impatiens glandulifera</i>	Himalayan Balsam	A
<i>Salix fragilis</i>	Crack Willow	A
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Calystegia sp.</i>	Bindweed species	F
<i>Chamerion angustifolium</i>	Rosebay Willowherb	F
<i>Ulmus glabra</i>	Wych Elm	F
<i>Urtica dioica</i>	Nettle	F
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	O
<i>Pteridium aquilinum</i>	Bracken	O
<i>Rubus fruticosus agg.</i>	Bramble	O
<i>Salix viminalis</i>	Osier	O
<i>Sambucus nigra</i>	Elder	O
<i>Pyrus communis</i>	Pear	R

Target Note HOLLINST007

Mature species poor intact hedgerow running along the northern boundary.

<i>Crataegus monogyna</i>	Hawthorn	D
---------------------------	----------	---

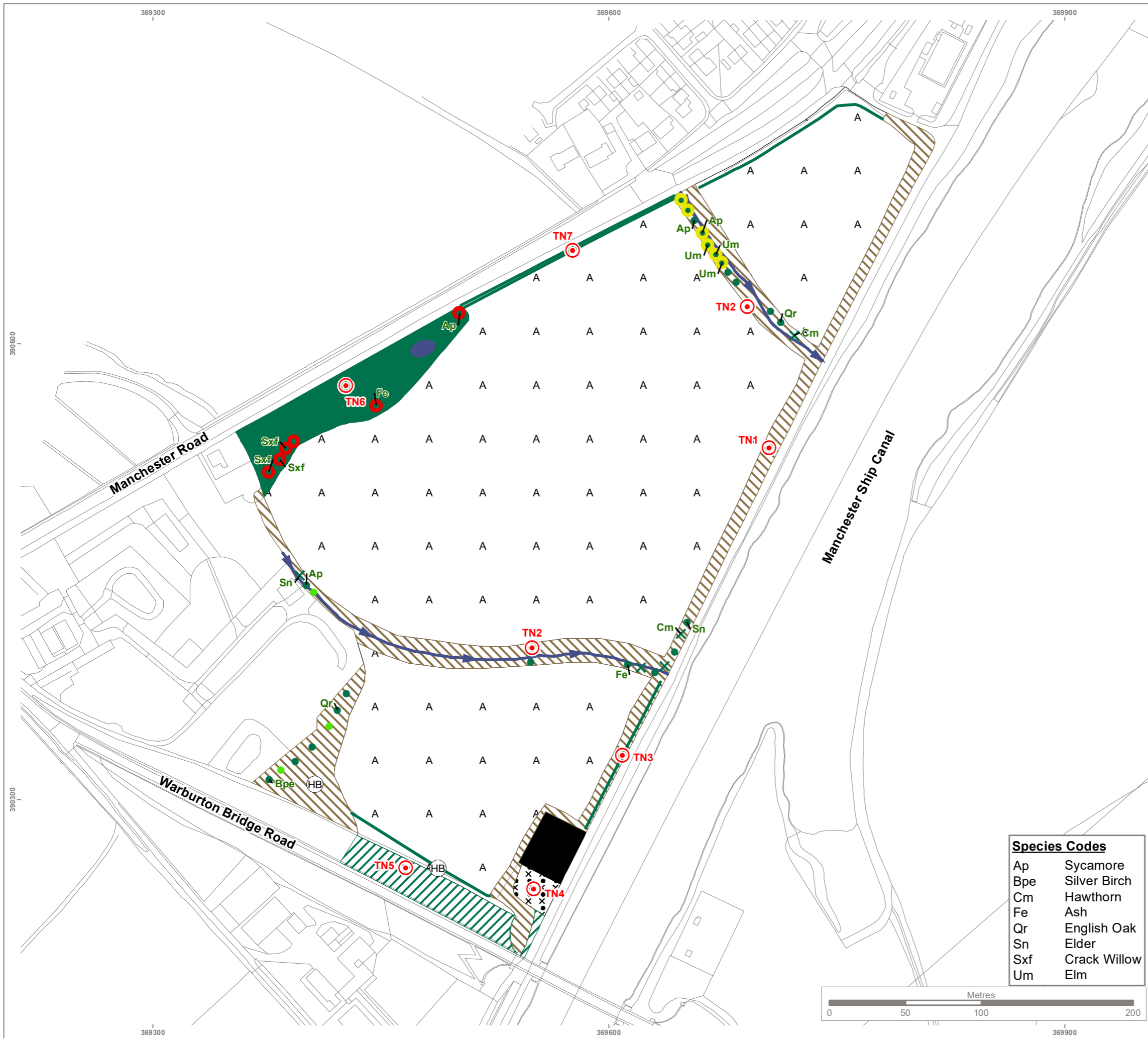
KEY - D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Urtica dioica
Acer pseudoplatanus
Ilex aquifolium

Nettle
Sycamore
Holly

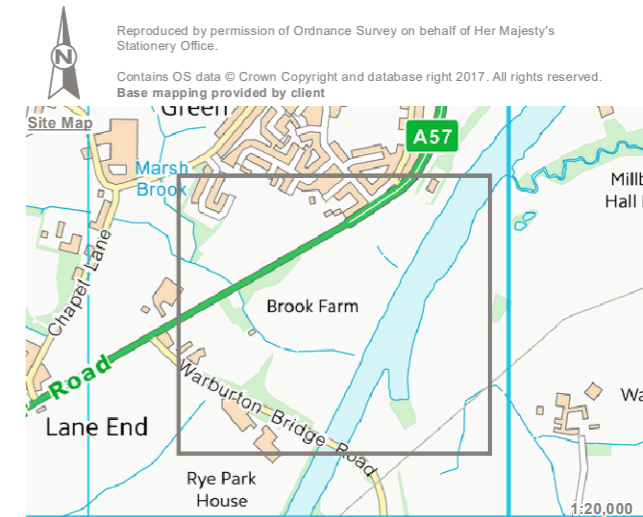
F
O
R

DRAWING



KEY

- HB Himalayan Balsam
- Target Notes
- ✕ Scattered Scrub
- Scattered Broad-leaved Trees
- Scattered Coniferous Trees
- Broad-leaved Tree with Low Bat Potential
- Broad-leaved Tree with High Bat Potential
- Running Water
- Species-poor Intact Hedge
- Semi-natural Broad-leaved Woodland
- Plantation Broad-leaved Woodland
- Tall Ruderal
- Standing Water
- Arable
- Buildings
- Bare Ground/Ephemeral Mix



Rev	Description	Drawn	Approved	Date

Species Codes

Ap	Sycamore
Bpe	Silver Birch
Cm	Hawthorn
Fe	Ash
Qr	English Oak
Sn	Elder
Sxf	Crack Willow
Um	Elm

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Peel Sites, Warrington - Hollins Green

Title
Phase 1 Habitat Survey

Drawing Number
G6929.01.007

Drawn	Checked	Approved	Scale	Date
JS	AP	AP	1:2,500 @ A3	28/06/2018

Heritage Appraisal

Warrington Local Plan – Land at Hollins Green

June 2018 (Updated November 2021)

Introduction

1. This Heritage Appraisal has been prepared on behalf of Peel L&P Holdings (UK) Limited in connection with Land at Hollins Green (the 'Appraisal Site'). It identifies heritage assets with potential to be affected by development of the Appraisal Site and broadly describes their significance and setting. The appraisal identifies whether there are heritage constraints to development and how these constraints could be resolved or mitigated.
2. This Appraisal was originally prepared in July 2018. It has since been updated to refer to the revised NPPF (2021) and provides a review of the proposed masterplan (Development Prospectus, November 2021) in light of the key heritage considerations originally identified.

The Appraisal Site

3. This Appraisal Site consists of a roughly triangular plot of land, bounded by the Manchester Ship Canal to the south east and Manchester Road to the north west. At the far north western end, where the Appraisal Site ends, is a 20th century water works. To the south west of the Appraisal Site is Warburton Bridge Road and the bridge itself. The site consists of three open agricultural fields divided by mature trees, hedgerows and brooks. Further to the east, beyond the Manchester Ship Canal is the grade II listed timber framed farm building at Warburton Park Farmyard.
4. Historically, the Appraisal Site and the surrounding area consisted of open agricultural fields on the outskirts of Hollins Green to the south. This arrangement is illustrated on the 1847 Ordnance Survey Map and shows the site as including a residential dwelling fronting Manchester Road and a footpath leading to a wooden bridge providing access across the River Mersey. To the north east of the site, adjacent to the river, was a building identified as 'Hollins Ferry'.
5. By the late 19th century, the Manchester Ship Canal was constructed to the south eastern boundary of the site with the crossing; Warburton Bridge and its associated road, constructed to the south of the Appraisal Site. This involved raising the land to provide sufficient height for transport boats to move goods along the canal. The buildings, Holly Bank and Rye Park (to the west and south respectively), were constructed during this time. Hollins Ferry to the north east of the site appears to have been altered or rebuilt and is identified as an 'inn' by this time.
6. In the early 20th century there were few changes to the site and the surrounding area. By c.1938, the inn to the north east of the site was demolished by a water works in the mid to late 20th century. The area around Hollins Green, to its south, was also developed with housing during this time, together with road widening works to the south east (now the A57). More recently, the grounds of Holly Bank are now in use as a caravan park. With the exception of some additional

built development in and around existing farmsteads, there appears to have been few other changes to the site and the surrounding area from this point.

The Heritage Assets

7. The NPPF (2021) defines a heritage asset as:

“A building, monument, site, place, area, or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest”¹.

8. The setting of a heritage asset is defined by the NPPF (2021) as:

“The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral”.²

9. A site visit was completed on 29 May 2018 to assess the potential for designated and non-designated heritage assets to be affected by future development of the Appraisal Site for residential use. These assets are set out below and are followed by a broad assessment of their significance (including the contribution made by setting and the Appraisal Site).

Asset Name	Grade (if applicable)	Location, relative to Appraisal Site
Timber Framed Building to Warburton Park Farmyard	Grade II listed	Outside the site, to the east (beyond the Manchester Ship Canal)
Holly Bank House and Mounting Block, Warburton Bridge Road	Locally Listed	Outside the site, to the south western boundary
Barn to Holly Bank, Warburton Bridge Road	Locally Listed	Outside the site, to the south western boundary

Timber Framed Building to Warburton Park Farmyard (Grade II Listed)

Special Architectural and Historic Interest

10. The timber framed farm building to the south side of Warburton Park Farmyard dates to the 17th century. It is of box framed construction with stone plinth, brick nogging with a slate roof. The building has a one cell plan form, with 1x2 bays. One side of the building has been altered through the insertion of a large double door. The other sides retain the majority of their original timbers which are in square panels with diagonal braces and built off the plinth.³ Some parts of the building have been completely rebuilt in brick. Above the building, the roof is adorned with a cast iron weather vane. The building holds historic interest as an outbuilding to a former 17th century farmstead.

¹ MHCLG (2021) National Planning Policy Framework (NPPF) – Annex 2: Glossary

² MHCLG (2021) National Planning Policy Framework (NPPF) – Annex 2: Glossary

³ Historic England (1989) List Entry Description for Timber Framed Building to Warburton Park Farmyard

Contribution made by Setting to Significance

Physical Surroundings

11. The timber framed building at Warburton Park Farmyard historically formed part of a wider working agricultural farmstead on the banks of the River Mersey during the 17th and 18th century. In the 19th century, the farmstead was extended with a courtyard style arrangement of outbuildings to the north and north east. The farmhouse was located to the east. Much of the surrounding area was in use as open agricultural fields, with a brook and sluice gate cutting across the site. As found today, the building sits within a similar rural context, albeit the outbuildings and farmhouse have been altered and adapted in the late 20th century.

Experience of the Asset

12. The timber framed building is primarily experienced from within the Warburton Park Farmyard where its role and function as an outbuilding to the former farmstead remains appreciable. It is here that it is experienced amongst the courtyard arrangement of other outbuildings, together with the farmhouse. This is a key aspect of the buildings setting where it is appreciated within its rural context. Due to intervening buildings, there are limited/restricted views of the building from the north.
13. The listed building is experienced from the surrounding area to the south and south west due to the relative flat topography of the land. The building is also appreciable in raised and distanced views from the embankments of the Warburton Bridge to the west of the listed building where it is seen within the context of the wider farmstead.

Associative Attributes

14. The building has strong associations with the wider farmhouse and outbuildings on the Warburton Park Farmyard due to their shared historic, functional and visual relationship. It also holds a minor association with the surrounding agricultural fields to the immediate east, reinforcing its former use and function.

Contribution made by the Appraisal Site

15. Historically, the Appraisal Site has always been distanced and separated from the listed building by the River Mersey and later the Manchester Ship Canal. There does not appear to have been any functional or historic relationship between the site and the listed building. Any visual relationship has since been lost through later tree planting and the maturing of existing planting. Overall, the Appraisal Site is considered to make a neutral contribution to the significance of the listed building.

Locally Listed Buildings (Non-Designated Heritage Assets)

16. As set out above, there are a number of locally listed buildings within and proximate to the Appraisal Site. These are set out within Appendix 4 of the Warrington Borough Council Core Strategy which was adopted in 2014.
17. A broad overview of their significance and setting is provided below, culminating in an assessment of the contribution made by the site to their significance. For clarity, there is no clear guidance or existing assessment by Warrington Borough Council as to why these buildings or structures are formally locally listed.

- **Holly Bank House and Mounting Block:** The building is a detached residential dwelling constructed in the late 19th century. It is two storeys, constructed from red brick and symmetrically executed with a central door flanked by windows to each floor. The windows have been replaced in the mid-20th century with timber casements. It is believed that there is an extant mounting block to one side of the building. The setting of the building is largely defined by the junction of Warburton Bridge Road (to the south west) and Manchester Road (to the north west) to the west and the modern caravan park to the east. It is primarily experienced from the west and north. The extant barn (discussed below) to the south east allows for its former agricultural use to remain appreciable.
- **Barn to Holly Bank:** The building is a large detached outbuilding constructed in the late 19th century as part of Holly Bank House. It is rectangular in plan and constructed from red brick with two large arched openings either side. At its centre is a doorway with a window above which is a centred roundel window. The building is currently in a poor state of repair. As aforementioned, the setting of the building is inter-linked with Holly Bank and is defined by the existing road infrastructure to the west and the modern caravan park to the east. It is primarily experienced from the west along Warburton Park Road.

Contribution made by the Appraisal Site

18. Historically, the Appraisal Site may have held an historic and functional relationship with Holly Bank House and Barn due to its proximity and their former use as an agricultural farmstead. This relationship is however no longer legible due to the redevelopment of the land to the south of the site as a caravan park which severs any former connection. Any visual relationship has since been lost through later tree planting and the maturing of existing planting. Overall, the Appraisal Site is considered to make a neutral contribution to the significance of the locally listed buildings.

Overview of Legislation, Key National Planning Policy Considerations and Guidance

Statutory Duty (1990 Act)

19. Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 states that:

“In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses.”

20. The concept of ‘preserve’ has been interpreted through case law to mean ‘to cause no harm’.

The National Planning Policy Framework, revised 2021

21. Conservation areas are 'designated heritage assets' within the meaning of the NPPF. Paragraph 190 of the NPPF states that local planning authorities should set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. In developing this strategy, local planning authorities should take into account of:

- The desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- The wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;

- The desirability of new development making a positive contribution to local character and distinctiveness; and
- Opportunities to draw on the contribution made by the historic environment to the character of a place.

22. Paragraph 195 sets out the principles guiding the determination of applications affecting designated and non-designated heritage assets, and states that:

'Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal . . . They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.'

23. Paragraph 197 elaborates that local planning authorities should take account of the desirability of sustaining and enhancing the significance of heritage assets, putting them into viable uses consistent with their conservation, as well as the desirability of new development making a positive contribution to local character and distinctiveness.

24. Paragraph 199 requires when considering the impact of a Proposed Development on the significance of a designated heritage asset, that great weight should be given to the asset's conservation and the more important the asset, the greater that weight should be. Paragraph 200 confirms that significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting and any harm or loss requires clear and convincing justification.

25. In the event that harm is perceived to arise from proposals, the NPPF provides a policy framework at paragraphs 201 and 200 within which such harm can then be weighed against public benefits (202) or substantial public benefits (201) bearing in mind the considerable importance and weight that should be attached to the statutory duty of the Act.

26. Paragraph 203 of the NPPF states that the effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

27. Paragraph 206 requires local planning authorities look for opportunities for new development within the setting of heritage assets to better reveal their significance. With respect to setting, the policy notes that proposals that preserve those elements of setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.

28. Paragraph 206 of the NPPF also states that local planning authorities should look for opportunities for new development within conservation areas to enhance or better reveal their significance.

Good Practice Advice Note 3: The Setting of Heritage Assets, Historic England (2017)

29. Historic England has published guidance in respect of the setting of heritage assets, providing detail on understanding setting and the associated assessment of the impact of any changes. The

guidance confirms that setting is not a heritage asset, nor a heritage designation, rather its importance lies in what it contributes to the significance of the relevant heritage asset itself.

Key Heritage Considerations

30. There are no heritage constraints to redevelopment of the Appraisal Site. As set out, the site is not considered to fall within the setting and/or contribute to the significance of the nearby listed buildings. In addition, the nearby locally listed buildings are suitably screened.
31. A Masterplan (Appendix 1) has been prepared for the Appraisal Site. As set out, there are no heritage constraints to the redevelopment of the site. Development of the type and arrangement identified in the Masterplan will sustain the significance of nearby heritage assets.

Appendix 1: Masterplan



KEY:

-  Site boundary
-  Existing buildings
-  Existing vegetation
-  Proposed woodland planting
-  Proposed avenue trees
-  Green infrastructure
-  Proposed development area
-  Potential focal square
-  Proposed primary road
-  Proposed secondary roads
-  Proposed private drives
-  Proposed vehicular access
-  Proposed footpaths

NB: Masterplan subject to change following detailed survey work.



**Land off Manchester Road,
 Hollins Green**

Conceptual Masterplan and Vision

Total Area: 12.24ha
 Development Area : 6.63ha
 Spine Road Area: 0.78ha
 Green Infrastructure: 4.83ha

Potential Yield
 @30 dph 199 units
 @35 dph 232 units

Drwg No: 630DF-09
 Drawn by: AH
 Rev by:
 QM Status: Checked
 Scale: 1: 5,000 @ A3

Date: 22.09.17
 Checker: CAW
 Rev checker:
 Product Status:
 Confidential Review

NOTE:



**LAND AT HOLLINS GREEN
WARRINGTON**



FLOOD RISK AND UTILITIES APPRAISAL

Shepherd Gilmour Infrastructure Ltd.





Report Title: Land at Hollins Green, Warrington
Flood Risk and Utilities Appraisal

Client: Peel Investments (North) Ltd



Report Status: Version Rev V3

Date of First Issue: 5th September 2017

Date of Last Issue: 4th July 2018

Prepared by: 
Natalia Marsden BA (Hons)

Checked & Approved: _____
Dean O'Reilly BSc (Hons)

Version	Date	Initials	Comments
-	05.09.2017	NM	First Issue
	05.09.2017	NM	Revised to reflect amended masterplan.
V2	28.09.2017	NM	Revised to reflect amended masterplan.
V3	04.07.2018	DOR	Updated masterplan.
			



Limitations

All findings, recommendations and conclusions contained in this report are based on information provided to us during investigations. Shepherd Gilmour Infrastructure Ltd. has created the report based on the assumption that all the information is accurate and accepts no liability should additional information exist or become available.

Unless otherwise requested by the client, Shepherd Gilmour Infrastructure Ltd. is not obliged to and disclaims any obligation to update the report for events taking place after the date noted on the report.

Shepherd Gilmour Infrastructure Ltd. makes no representation whatsoever concerning the legal significance of its findings or the [REDACTED] report. The information presented and conclusions drawn are based on statistical data and are for guidance purposes only. The study provides no guarantee against the flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates, and associated probabilities.

This report has been prepared for the sole use of the client. No other third parties may rely upon or reproduce the contents of this report without the written permission of Shepherd Gilmour Infrastructure Ltd.

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]



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APPENDIX F HSE PRE- [REDACTED]



SECTION I INTRODUCTION

I.1. Shepherd Gilmour Infrastructure Ltd (SGi) has been engaged by Peel Investments (North) Limited (hereafter “the Applicant”) to provide a Flood Risk and Utilities Appraisal in support of development known as Land at Hollins Green in the forthcoming representations to the Warrington Local Plan.

SITE LOCATION

I.2. The proposed site is located in the village of Hollins Green in Warrington. The site is approximately 12.24ha in total and consists of three agricultural fields and two watercourses.

- Nearest Postcode: WA3 6HY
- OS Coordinates: [REDACTED]
- OS Grid Referen [REDACTED]



Figure I.1 Red Line Boundary



TOPOGRAPHY

- I.3. Based on the Ordnance survey maps the site ranges in level between 10-15m AOD. The site appears to generally falls in level from the A57 Manchester Road (northern boundary) to the Manchester Ship Canal (southern boundary).

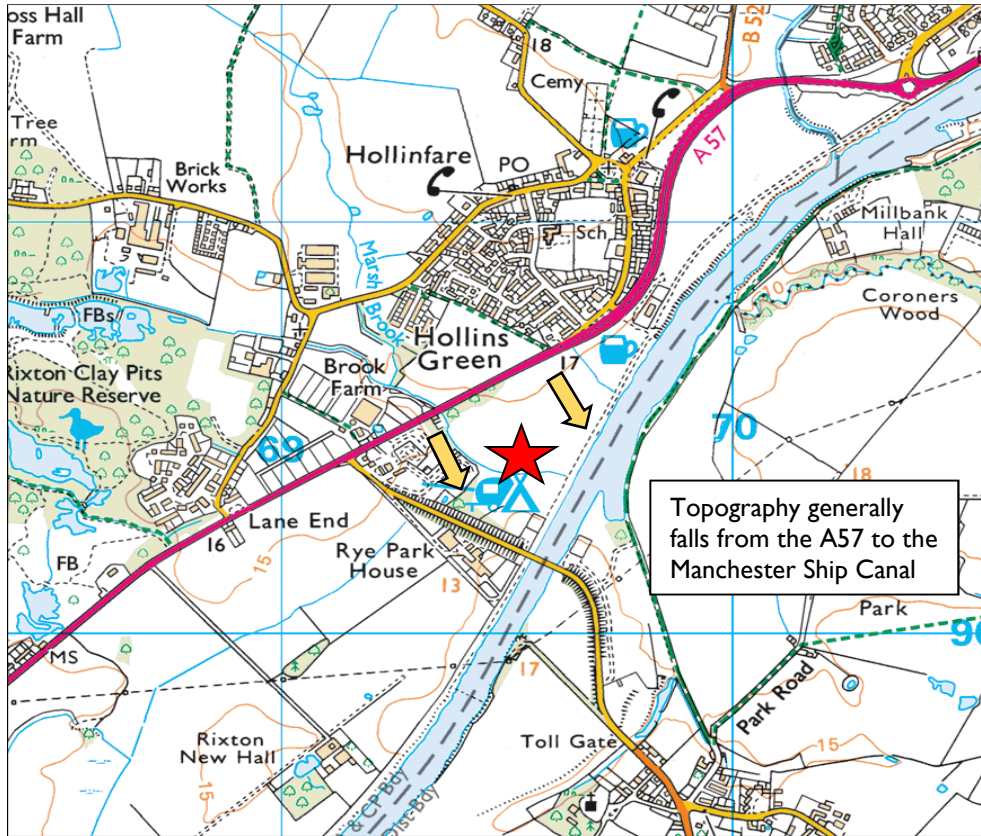


Figure I.2 Site Plan (OS Map)



PRELIMINARY PROPOSALS

- I.4. The client's conceptual masterplan is shown in **Figure 1.3** proposes up to 232 dwellings with associated infrastructure works and landscape buffers.
- I.5. A full-sized plan of the below is included in **Appendix A**.



Figure 1.3 Conceptual Masterplan (Randall Thorp)



SECTION 2 PRELIMINARY FLOOD RISK ADVICE

GOV.UK PLANNING ADVICE MAPS

2.1. The Gov.UK online Flood Map for Planning provides initial information on any flood zoning onsite. This map indicate that the majority of site is located within Flood Zone 2 (medium probability of fluvial flooding) with some small areas of Flood Zone 1 (low probability of fluvial flooding).

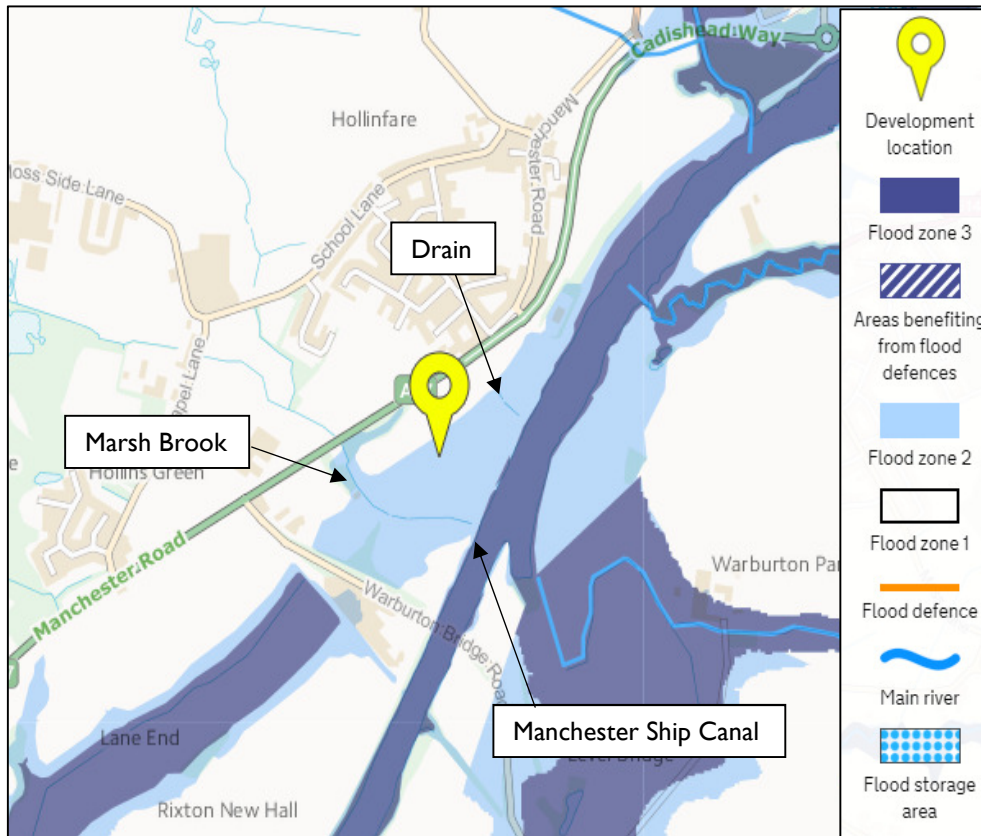


Figure 2.1 Gov.UK Flood Map

ENVIRONMENT AGENCY DATA

2.2. The latest flood data and maps has been requested from the Environment Agency (EA) and indicate similar flood zoning (**Figure 2.2**). The data also includes estimated flood levels which can be used in conjunction with a topographical survey during the detailed design stage. This information has been included within **Appendix B**.

██████████
██████████
██████████
██



Figure 2.2 Detailed Flood Map (EA)

FLOOD ZONE GUIDANCE

2.3. The Flood Risk and Coastal Change Guidance indicates which, development type is suitable for each Flood Zone as shown in **Table 2.1 & 2.2.**

Flood Zone	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
1	✓	✓	✓	✓	✓
2	✓	Exception Test Required	✓	✓	✓
3a	Exception Test Required	x	Exception Test Required	✓	✓
3b	Exception Test Required	x	x	x	✓

Table 2.1 Flood Risk Classification



Highly Vulnerable	<ul style="list-style-type: none"> • Police stations, Ambulance stations and Fire stations and Command Centres. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes & park homes intended for permanent residential use. • Installations requiring hazardous substances consent.
More Vulnerable	<ul style="list-style-type: none"> • Hospitals. • Residential institutions • Residential dwelling, student halls, drinking establishments/nightclubs and hotels. • Non-residential - Health services, nurseries and educational establishments. • Landfill and sites used for waste management facilities for hazardous waste.
Less Vulnerable	<ul style="list-style-type: none"> • Police, ambulance and fire stations which are not required during a flood. • Shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non-residential institutions not included in 'more vulnerable'; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment during times of flood. • Sewage treatment

Table (act)

- 2.4. The conceptual masterplan indicates that all residential developments (i.e. more vulnerable development) will be located within low and medium probability areas (Flood Zone 1 & 2). Therefore, the client's preliminary proposals meet the requirements of the NPPF at this stage.
- 2.5. The estimated flood levels and detailed development proposals will require further analysis once a topographical survey is available.



SECTION 3 EXISTING DRAINAGE INFRASTRUCTURE

PUBLIC SEWERS

3.1. The public sewers in the vicinity of the proposed site are owned and maintained by United Utilities (UU). Copies of their records have been requested and are included in **Appendix C** of this report.

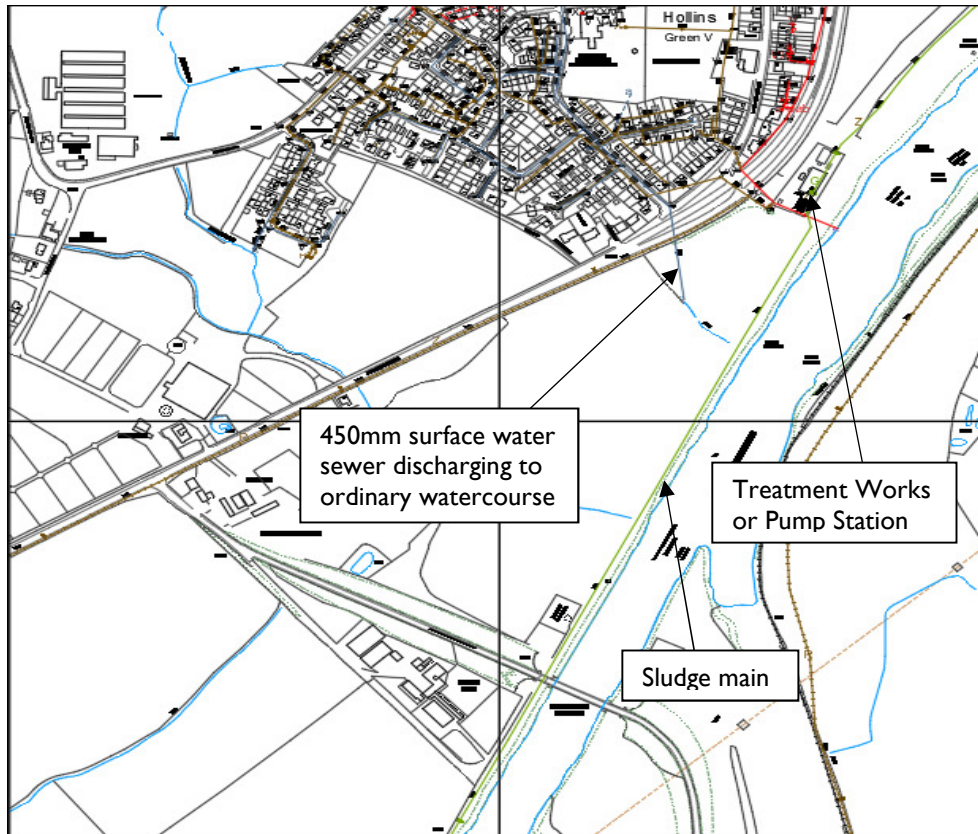


Figure 3.1 Combined UU Sewer Plan

Surface Water Sewers

3.2. According to United Utilities records there is a surface water sewer which connects to the Manchester Ship Canal via an onsite waterbody. The sewer appears to serve all of the residential development located to the north of the site.

3.3. Based on the information available the 450mm sewer is likely to require a 4m offset each side of the centreline of the sewer (Sewers for Adoption 6th Edition).

Foul Water Sewers

3.4. United Utilities records show a 225mm foul water sewer which may encroach on the northernmost point of the site. The foul water sewer serves the development to the north and discharges into the adjacent treatment works/pump station via a combined water sewer.



- 3.5. Based on the information available the 225mm sewer is likely to require a 3m offset each side of the centreline of the sewer (Sewers for Adoption 6th Edition).

Combined Water Sewers

- 3.6. Records indicate a 225mm diameter combined sewer at the northernmost point of the site. The sewer discharges into the treatment works/pump station and has an overflow to the Manchester Ship Canal. The sewer appears to miss the site but is likely to require a 3m offset each side of the centreline of the sewer (Sewers for Adoption 6th Edition).

PRIVATE DRAINAGE

- 3.7. There is no known private drainage onsite.

PRELIMINARY DEVELOPMENT

Surface Water Drainage

- 3.8. Based on the topography and development proposals/location it should be possible to discharge any runoff from the development into the onsite waterbodies and/or the Manchester Ship Canal. This strategy is in accordance with the runoff destination hierarchy set out in Paragraph 080 of the Flood Risk and Coastal Change Guidance document.
- 3.9. Note that any surface water runoff rates must be agreed by the Lead Local Flood Authority and/or the Manchester Ship Canal Company.

Foul Water Drainage

- 3.10. Foul effluent generated by the development should be able to connect into the adjacent treatment works/pump station. At the stage the need for off-site reinforcement is unknown and United Utilities should be consulted as soon as practically possible.

Sewer Diversions

- 3.11. At this preliminary stage, it is difficult to assess if any sewer diversions would be required. More information is required and any diversion can be addressed at a later stage.






SECTION 4 UTILITIES INFRASTRUCTURE

ELECTRICITY

- 4.1. The electricity in the area is supplied by Electricity North West (ENW) and Scottish Power Manweb.
- 4.2. The ENW records identify a 11kV supply along the western boundary and 6/6.6 kV supply within Manchester Rd (northern boundary). There are also a number of LV supplies in the vicinity which serve the existing residential areas.
- 4.3. The need for any offsite reinforcement to meet the power demands of the development is unknown. Discussions with ENW should be undertaken as soon as practically possible.

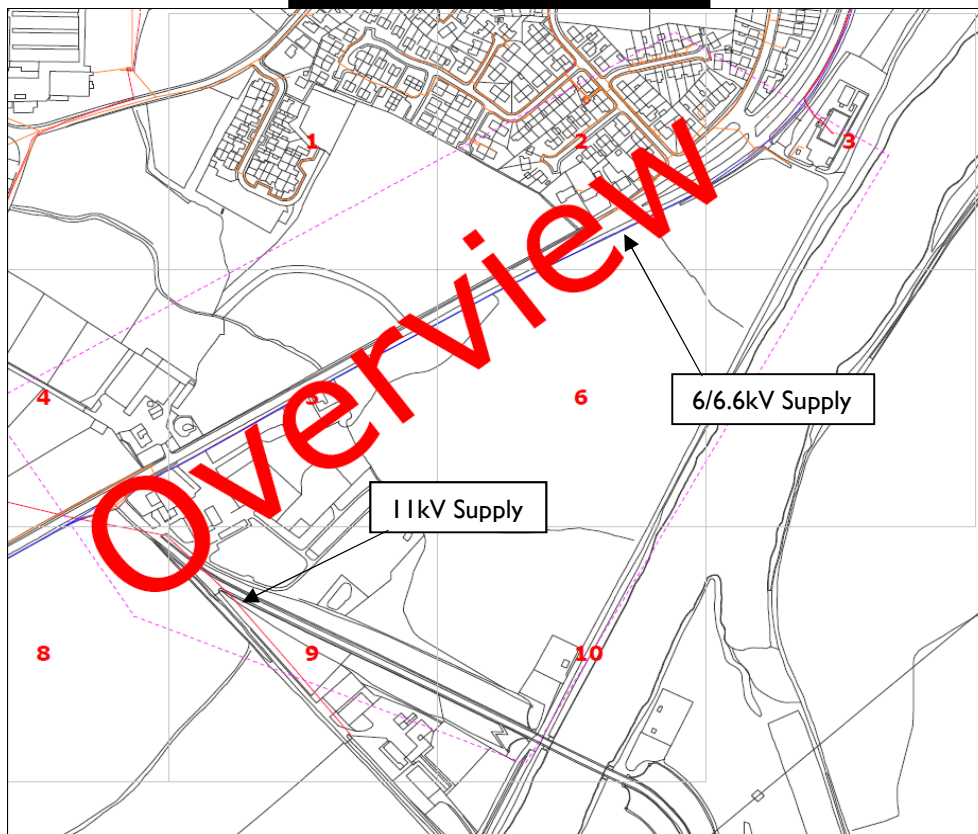


Figure 4.1 Electricity Infrastructure (ENW)

- 4.4. A copy of the ENW and Scottish Power Manweb records has been included within **Appendix D**.

TELECOMMUNICATIONS

- 4.5. [REDACTED] reach records show a number of assets in the vicinity of the site which serve [REDACTED] existing dwellings. A supply from the existing infrastructure might be possible [REDACTED]

but there may not be sufficient capacity. Discussions with Openreach should be undertaken as soon as practically possible.

4.6. A copy of Openreach records has been included within **Appendix E**.

MAINS WATER

4.7. United Utilities records indicate a 160mm water main within Manchester Road (northern boundary). The need for offsite reinforcement to meet the water supply demands of the development is unknown. Discussions with UU should be undertaken as soon as practically possible.

4.8. A copy of United Utilities records has been included within **Appendix C**.

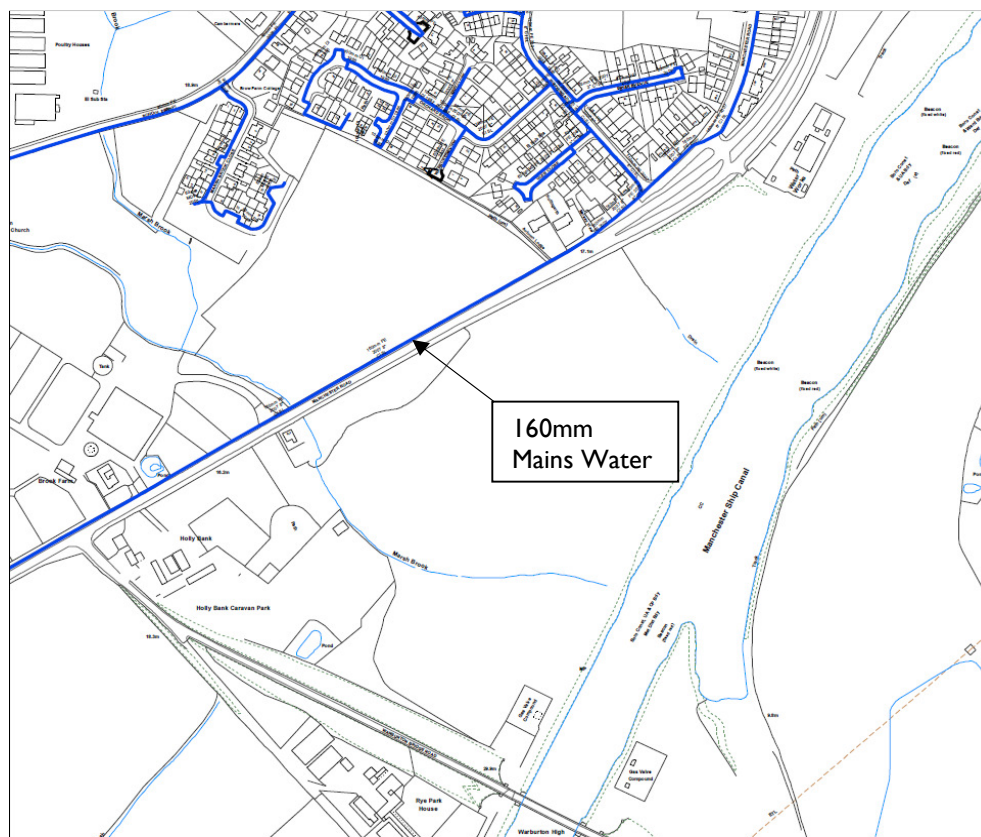


Figure 4.2 UU Record Plans

GAS

4.9. Cadent/National Grid records indicate two Local High Pressure mains crossing through the site from the Manchester Ship Canal. The first main crosses through the southern section of the site in a southwest direction. The second main follows the Manchester Ship Canal in a north-east direction.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- 4.10. Due to the scale/quality of the records any further information such as size, depth etc. is obscured. The other mains are Low Pressure mains and serve the existing dwellings in the area.
- 4.11. The LHP mains are likely to have an associated legal easement but the exact dimensions are unknown at this stage.
- 4.12. The need for offsite reinforcement to meet the gas supply demands of the proposed development is unknown. Discussions with Cadent/National Grid should be undertaken as soon as practically possible.

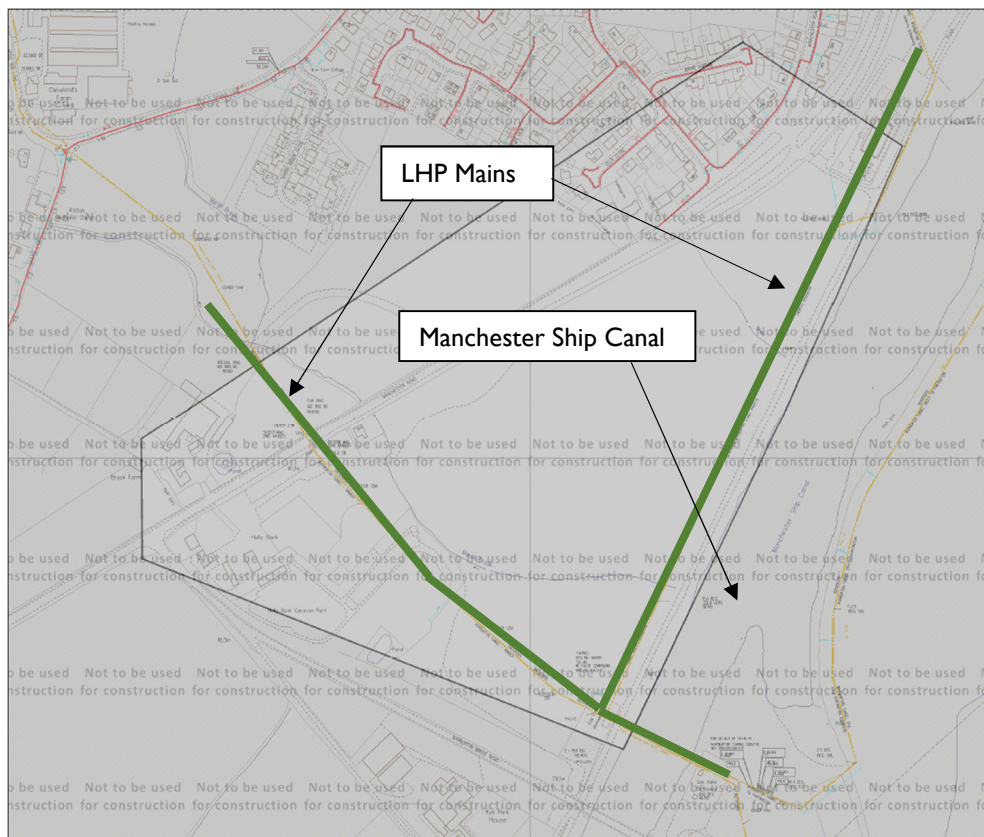


Figure 4.3 Cadent Gas Record Plans

- 4.13. A copy of Cadent/National Grid records has been included within **Appendix F**.

Level of Sensitivity	Developments in Inner Zone	Development in Middle Zone	Development in Outer Zone
1	Don't Advise Against	Don't Advise Against	Don't Advise Against
2	Advise Against	Don't Advise Against	Don't Advise Against
3	Advise Against	Advise Against	Don't Advise Against
4	Advise Against	Advise Against	Advise Against

Table 5.1 HSE Decision Matrix

Development Type	Examples	Development Detail and Size	Justification
DT2.1 Housing	Houses, flats, retirement flats / bungalows, residential caravans, holiday homes	Developments up to and including 30 dwelling units and at a density of no more than 40 dwelling units per hectare	Development where people live or are temporarily resident. It may be difficult to organise people in the event of an emergency
	Exclusions		
	Very small developments including infill and back land developments	DT2.1 x 1 Developments of 1 or 2 dwelling units (Level 1)	Minimal increase in numbers at risk
	Larger housing developments	DT2.1 x 2 Larger developments for more than 30 dwelling units (Level 3)	Substantial increase in numbers at risk
DT2.1 x 3 Any developments for more than 2 dwelling units at a density of more than 40 dwelling units per hectare (Level 3)		High density development	

Table 5.2 HSE Development Classification

- 5.4. The residential proposals for the development would be considered a **Level 3** “type” and as such should only occur in the outer zone.
- 5.5. The conceptual masterplan (**Appendix A**) indicates that the residential development parcels avoid the onsite gas mains and lie outside of the Inner zone and can therefore be considered to be in the outermost zone. This therefore satisfies the HSE condition.

SECTION 6 CONCLUSION

6.1. This flood risk and utilities appraisal provides an overview of the existing infrastructure on or around the proposed site and evaluates flood risk issues that may potentially influence the conceptual masterplan. In summary, the statement confirms that;

- a) That majority of the proposed residential areas are within Flood Zone 2 (medium probability). In accordance with the Flood Risk and Coastal Change Guidance these proposals are acceptable in this zone.
- b) The proposed surface water runoff generated by the proposals should discharge to one or more of the onsite waterbodies. Flow rates to be agreed with the Lead Local Flood Authority or Manchester (depending on waterbody).
- c) The proposed foul water should be discharged to United Utilities adjacent treatment works/pump station. Flow rates and any offsite/onsite upgrade works are to be agreed with United Utilities.
- d) Any surface water sewer diversions should be investigated further once the masterplan layout is fixed.
- e) Early discussions with Electricity North West are required to establish the proposed electricity route(s) to the site.
- f) The existing Openreach infrastructure that surrounds the site could be able to cater for the site proposals. However early discussions with Openreach should be undertaken to confirm whether this is the case.
- g) Early discussions with United Utilities are required to establish the proposed mains water route(s) to the site.
- h) Early discussions with Cadent/National Grid are required to confirm the onsite easement associated with the LHP mains and establish the future proposed gas main route(s) to the site.
- i) Early discussions with Health and Safety Executive are required to confirm the [REDACTED] distances associated with the LHP pipelines. Once confirmed the conceptual [REDACTED] plan can be adjusted to suit if necessary and therefore avoid any future [REDACTED] objections during the planning process.
[REDACTED]



Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

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APPENDIX A





KEY:

-  Site boundary
-  Existing buildings
-  Existing vegetation
-  Proposed woodland planting
-  Proposed avenue trees
-  Green infrastructure
-  Proposed development area
-  Potential focal square
-  Proposed primary road
-  Proposed secondary roads
-  Proposed private drives
-  Proposed vehicular access
-  Proposed footpaths

NB: Masterplan subject to change following detailed survey work.



Land off Manchester Road, Hollins Green

Conceptual Masterplan and Vision

Total Area: 12.24ha
Development Area : 6.63ha
Spine Road Area: 0.78ha
Green Infrastructure: 4.83ha

Potential Yield
@30 dph 199 units
@35 dph 232 units

Drwg No: 630DF-09
Drawn by: AH
Rev by:
QM Status: Checked
Scale: 1: 5,000 @ A3

Date: 22.09.17
Checker: CAW
Rev checker:
Product Status:
Confidential Review

NOTE:



Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

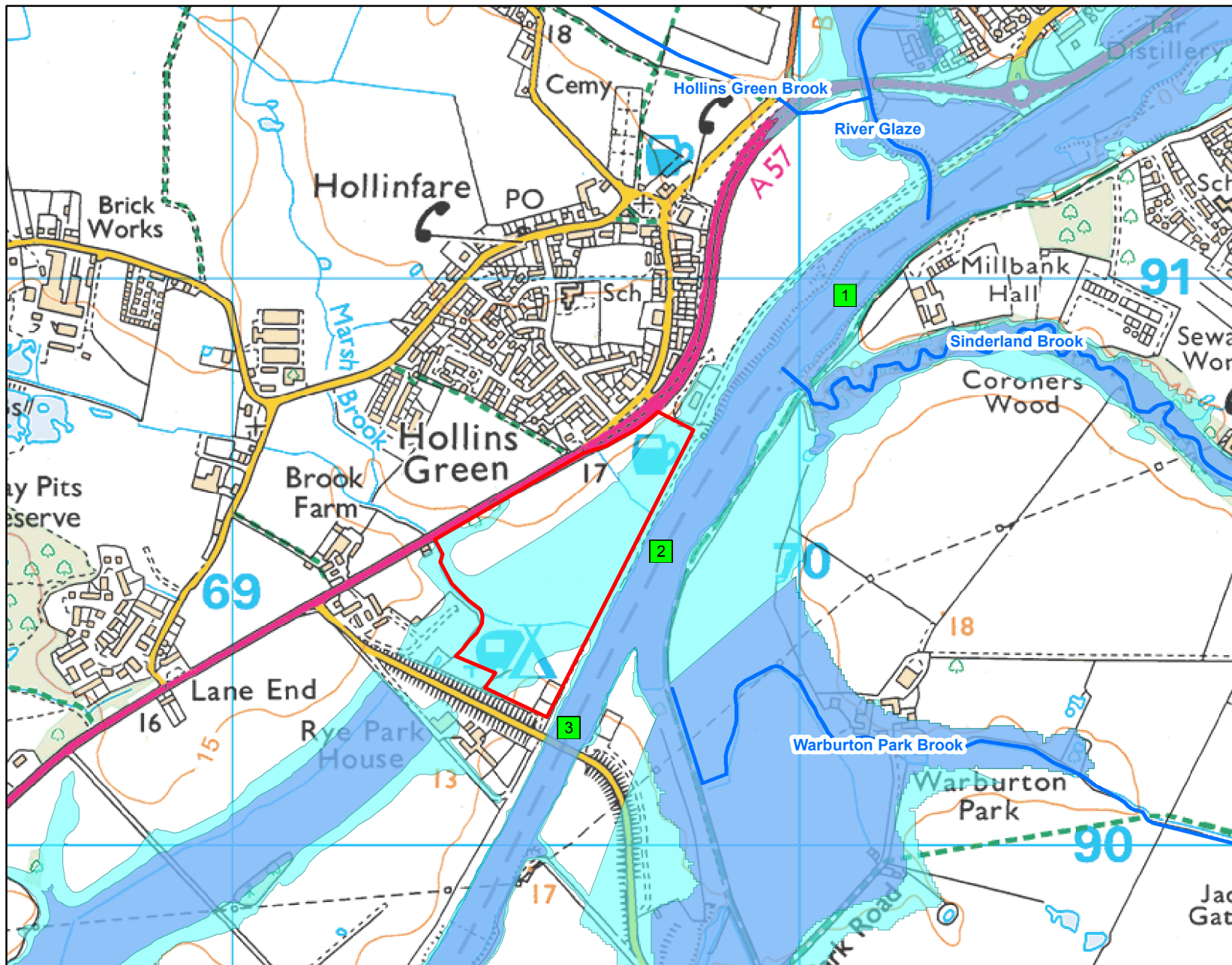
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APPENDIX B



Detailed Flood Map centred on Hollins Green, Warrington, WA3 6HY. Created on 11/08/2017 [GMMC55920CC]



1:10,001



Legend

- Site Location
- Model Measurements
- Main River
- Flood Zone 2
- Flood Zone 3

Map Reference	Model Node Reference	Easting	Northing	Data	Model run is representative of a single gate failure on every set of sluice structures. Maximum gate opening height is set to 2.4m.						Model run is representative of present conditions and all gates are operational as per the agreed automated protocol. Maximum gate opening height is set to 2.4m. This run is the same as used in the flood map products.					
					2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + Climate Change*	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + Climate Change*	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)
1	ea013_Model_MSCCO6_131	370082	390970	Modelled Water Level (m aodN)	11.65	11.85	11.98	12.62	12.30	14.44	11.66	11.86	12.00	12.68	12.34	14.43
				Modelled Flow (cumecs)	941.09	983.44	1016.26	1180.17	1096.39	1752.85	941.69	990.55	1029.21	1195.91	1112.14	1744.86
2	ea013_Model_MSCCO6_134	369758	390518	Modelled Water Level (m aodN)	11.57	11.76	11.89	12.52	12.20	14.36	11.58	11.77	11.91	12.58	12.23	14.34
				Modelled Flow (cumecs)	939.44	982.38	1015.00	1178.59	1094.87	1750.30	940.11	989.43	1027.88	1194.08	1110.41	1742.72
3	ea013_Model_MSCCO6_137	369595	390207	Modelled Water Level (m aodN)	11.48	11.68	11.82	12.48	12.14	14.35	11.49	11.70	11.84	12.54	12.18	14.34
				Modelled Flow (cumecs)	937.42	981.18	1013.44	1176.60	1092.93	1747.03	938.70	988.16	1026.10	1191.79	1108.38	1739.76

Model data taken from Manchester Ship Canal (2010) Study

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

Notes: *Climate Change Scenario - 20% increase in flow. We only hold climate change measurements based on the previous climate change guidance. The new climate change guidance is available at <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment. For further guidance on climate change within the GMMC area please see the attachment 'Flood risk assessments: Climate change allowances'. Particularly section 3, table B which shows the Local precautionary allowances for potential climate change impacts.



Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX C





United Utilities Water Limited

Shepherd Gilmour Infrastructure
[Redacted]
[Redacted]

FAO: Natalia Marsden

Dear Sirs

Location: Land at Hollins Green Warrington WA3 6HY

I acknowledge with thanks your request dated 08/08/17 for information on the location of our services.

Please find enclosed plans showing the approximate position of our apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read our access statement before you start work to check how it will affect our network.

<http://www.unitedutilities.com/work-near-asset.aspx>

I trust the above meets with you requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please telephone us on 0370 7510101.

Yours Faithfully,

[Redacted Signature]

Karen McCormack
Property Searches Manager

[Redacted]
[Redacted]
[Redacted]

Your Ref: LAND AT HOLLINS GREEN
Our Ref: 1316670
Date: 10/8/2017

[Redacted]

[Redacted]

Extract from Map of Water Mains

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available

The actual positions may be different from those shown on the plan, private service pipes may be shown where a known record is available.

United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown. Crown copyright and database rights [2016] Ordnance Survey 100022432.

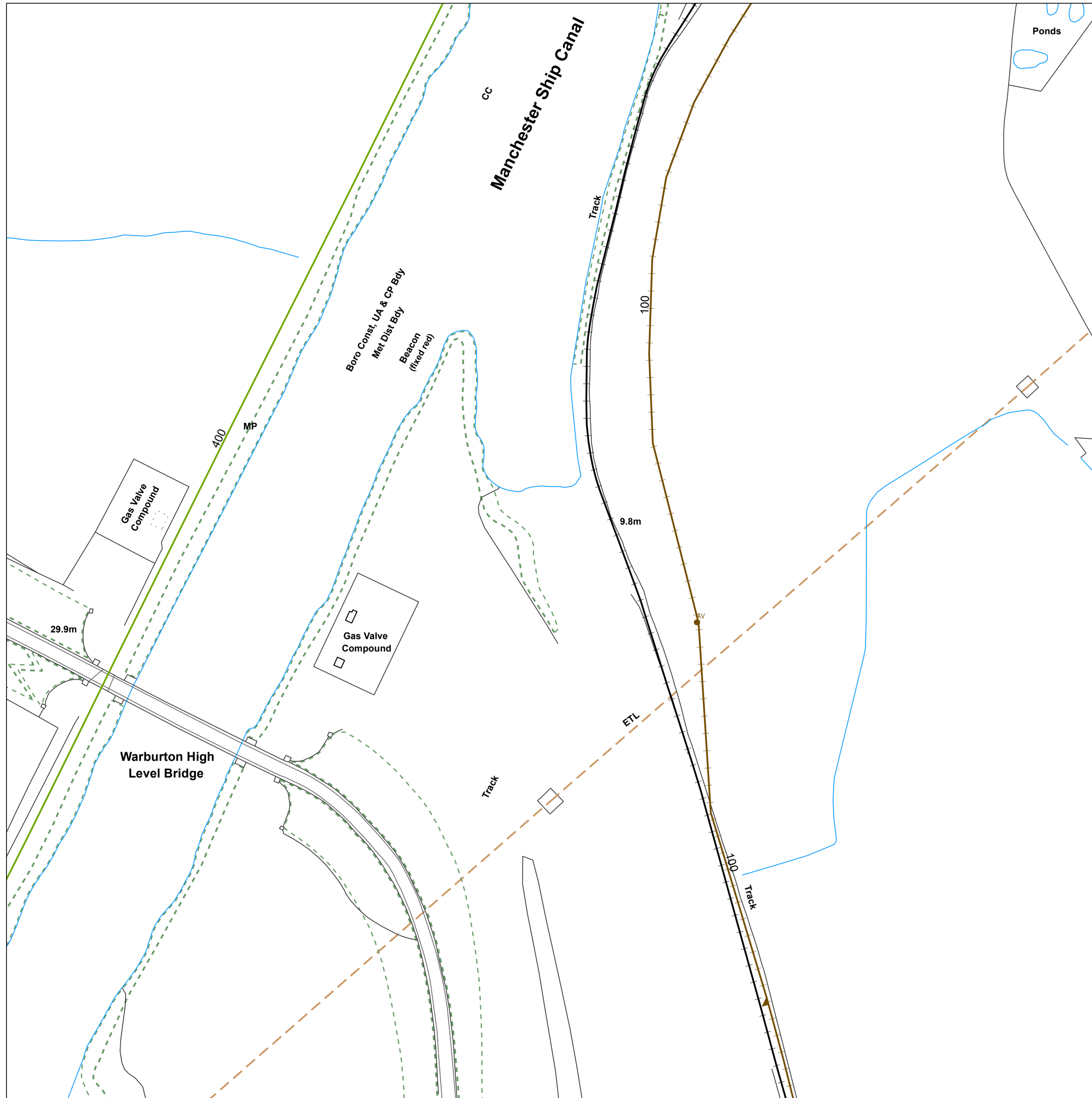
United Utilities Water Limited 2014
The plan is based upon the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office. Crown and United Utilities copyrights are reserved. Unauthorised reproduction will infringe these copyrights.

**Land at Hollins Green
Warrington
WA3 6HY**

Printed By: Property Searches Date: 10/08/2017

DO NOT SCALE
Approximate Scale: 1:5000





Ratno	Cover	Func	Invert	Size	Shape	Mat	Length	Grad	Ratno	Cover	Func	Invert	Size	Shape	Mat	Length	Grad
8201		FO															

WASTE WATER SYMBOLOGY

Foul	Surface	Combined	Overflow	Manhole
				Manhole
				MainSewer, Side Entry
				MainSewer, Public
				MainSewer, Private
				MainSewer, S104
				Rising Main, Public
				Rising Main, Private
				Rising Main, S104
				Highway Drain, Private

Foul	Surface	Combined	Overflow	Manhole

LEGEND

MANHOLE FUNCTION	
FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE	
CI	Circular
EG	Egg
OV	Oval
FT	Flat Top
RE	Rectangular
SQ	Square
TR	Trapezoidal
AR	Arch
BA	Barrel
HO	HorseShoe
UN	Unspecified

SEWER MATERIAL	
AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic/Steel Composite
GRC	Glass Reinforced Concrete
GRP	Glass Reinforced Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

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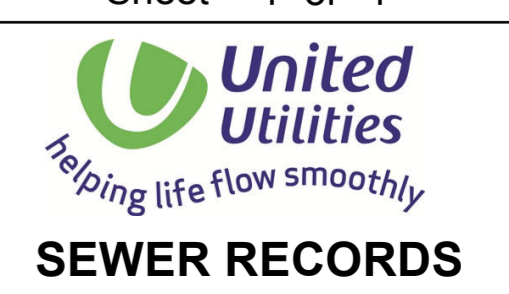
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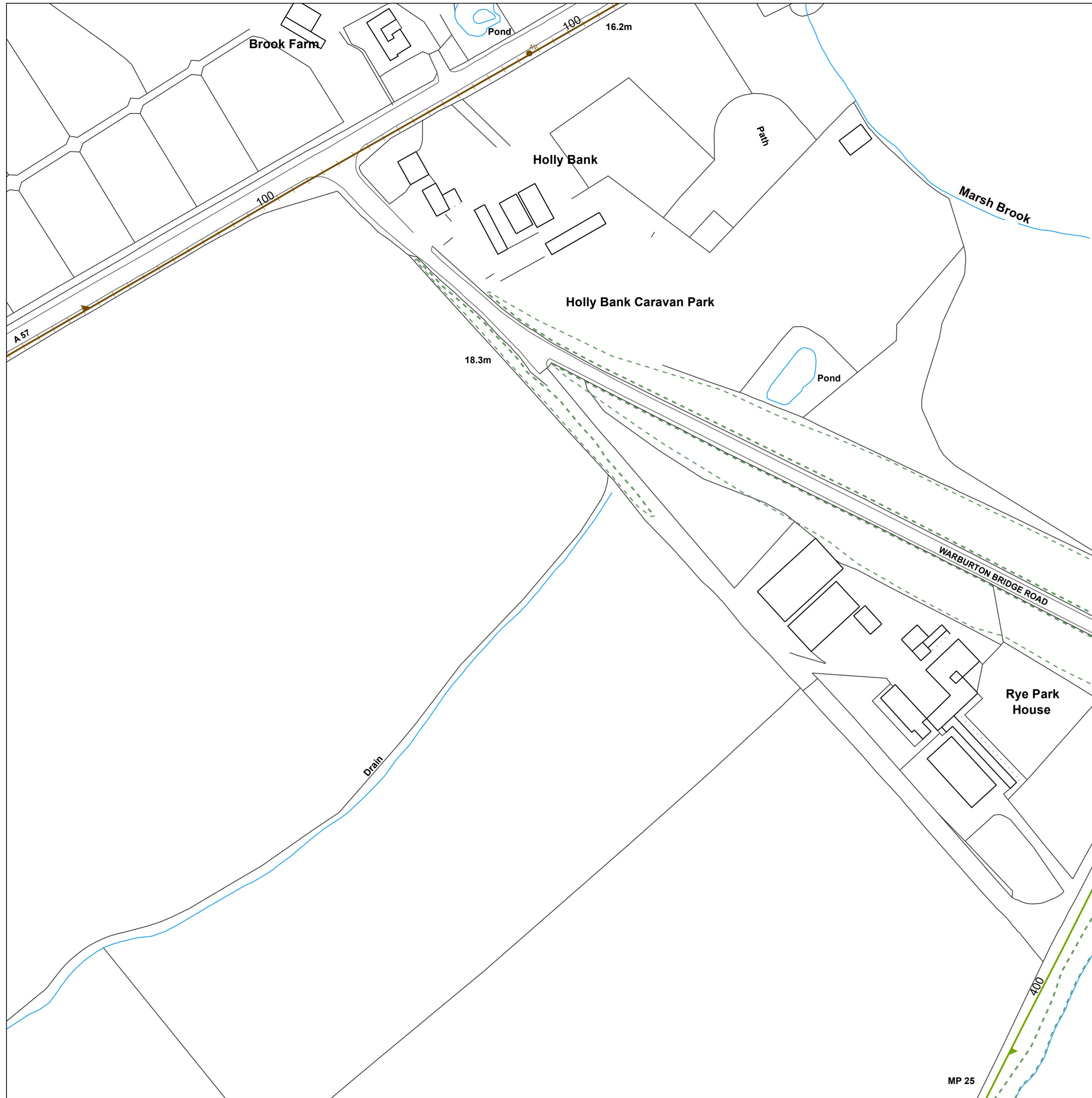
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OS Sheet No: SJ6990SE

Scale: 1:1250 Date: 10/08/2017

1 Nodes
Sheet 1 of 1





Reho	Cover	Func	Invert	Size	x	Size	y	Shape	Mat	Length	Grad	Reho	Cover	Func	Invert	Size	x	Size	y	Shape	Mat	Length	Grad
7700																							

WASTE WATER SYMBOLOGY

Foul	Surface	Combined	Overflow	Manhole
				Manhole
				Manhole, Side Entry
				MainSewer, Public
				MainSewer, Private
				MainSewer, S104
				Rising Main, Public
				Rising Main, Private
				Rising Main, S104
				Highway Drain, Private

Foul	Surface	Combined	Sludge Main, Public	Sludge Main, Private	Sludge Main, S104
			Sludge Main, Public	Sludge Main, Private	Sludge Main, S104

ABANDONED PIPE

	MainSewer
	Rising Main
	Highway Drain
	Sludge Main

	WW Site Termination
	Air Valve
	Cascade
	Non Return Valve
	Extent of Survey
	Flow Meter
	Gulley
	Hatch Box
	Head of System
	Hydrobrake / Vortex
	Inlet
	Inspection Chamber
	Bifurcation
	Catchpit
	Contaminated Surface Water
	WW Pumping Station
	Sludge Pumping Station
	Sewer Overflow
	T Junction/Saddle
	LampHole
	Oil Interceptor
	PenStock
	Pump
	RoddingEye
	Soakaway
	Summit
	Valve
	Valve Chamber
	Washout Chamber
	DropShaft
	WW Treatment Works
	Septic Tank
	Vent Column
	Network Storage Tank
	Orifice Plate
	Vortex Chamber
	Penstock Chamber
	Blind Manhole
	Screen Chamber
	Discharge Point
	Outfall
	Control Kiosk
	Unspecified

LEGEND

MANHOLE FUNCTION	
FO Foul	
SW Surface Water	
CO Combined	
OV Overflow	
SEWER SHAPE	
CI Circular	TR Trapezoidal
EG Egg	AR Arch
OV Oval	BA Barrel
FT Flat Top	HO HorseShoe
RE Rectangular	UN Unspecified
SQ Square	
SEWER MATERIAL	
AC Asbestos Cement	DI Ductile Iron
BR Brick	PVC Polyvinyl Chloride
PE Polyethylene	CI Cast Iron
RP Reinforced Plastic Matrix	SI Spun Iron
CO Concrete	ST Steel
CSB Concrete Segment Bolted	VC Vitrified Clay
CSU Concrete Segment Unbolted	PP Polypropylene
CC Concrete Box Culverted	PF Pitch Fibre
PSC Plastic/Steel Composite	MAC Masonry, Coursed
GRC Glass Reinforced Concrete	MAR Masonry, Random
GRP Glass Reinforced Plastic	U Unspecified

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OS Sheet No: SJ6990SW

Scale: 1:1250 Date: 10/08/2017

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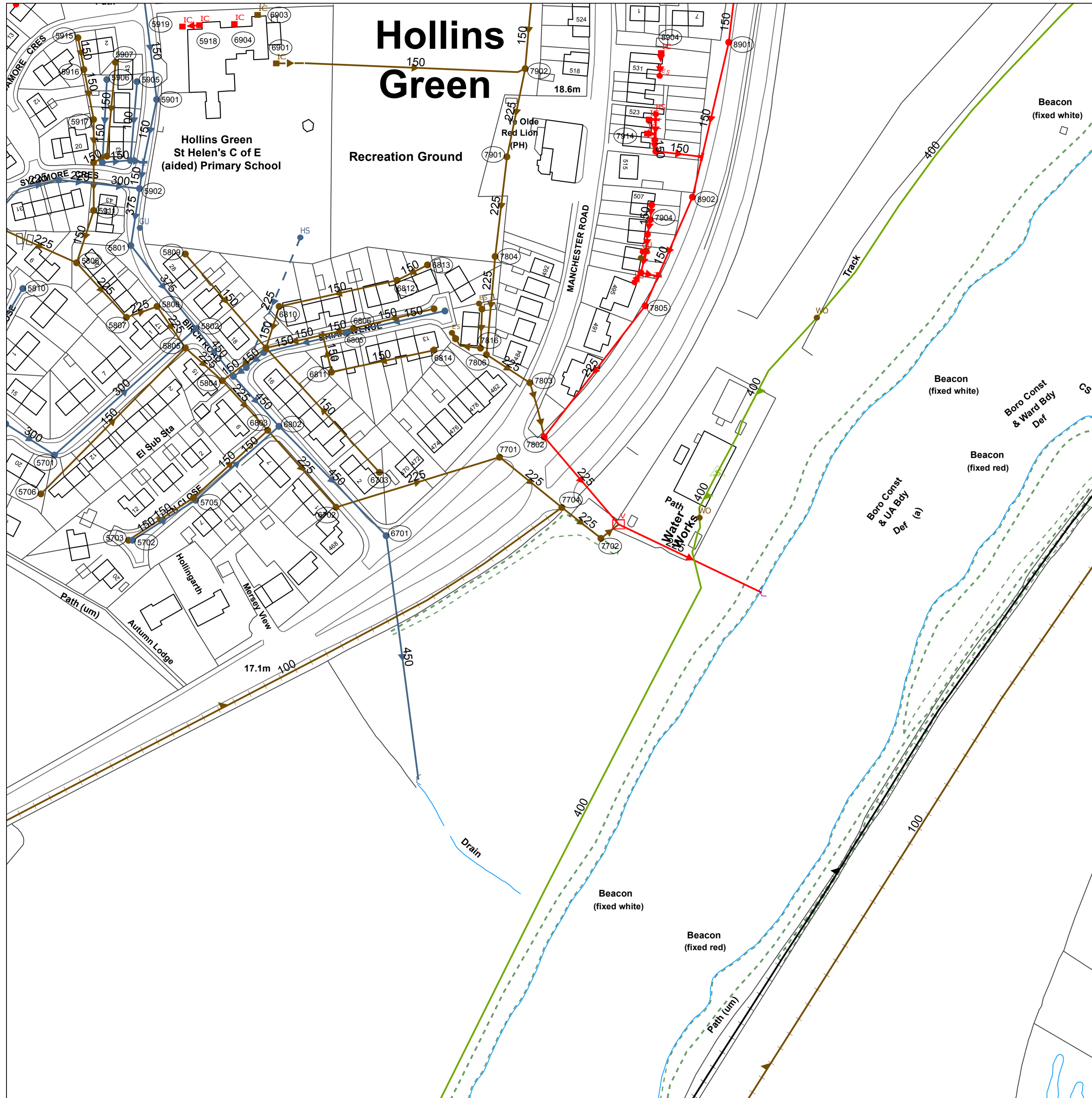
Sheet 1 of 1

OS Sheet No: SJ6990SW

Scale: 1:1250 Date: 10/08/2017

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Refo	Cover	Func	Invert	Size	Size	Shape	Mat	Length	Grad	Refo	Cover	Func	Invert	Size	Size	Shape	Mat	Length	Grad	
5701	18.13	SW	15.8	300		CO	CO	87.11	156											
5702	16.84	SW	15.47	150		CI	VC	34.18	86											
5703	16.83	FO	15.69	150		CI	VC	35.46	131											
5704	16.64	FO	15.4	150		CI	VC	46.02	79											
5705	16.62	SW	15.06	150		CI	VC	50.99	94											
5706	18.37	FO	17.72	150		CI	VC	94.12	53											
5801	17.13	SW	15.21	375		CI	CO	48.41	131											
5802	16.7	SW																		
5804	16.65	FO	14.89	225		CI	CO	30.81	280											
5905	16.82	FO	14.96	225		CI	CO	22.87	334											
5806		FO	0	225																
5907	17.07	FO																		
5808	17.18	FO	15.23	225		CI	VC	33.88	484											
5809	17.12	FO	16.31	150		CI	VC	56.72	56											
5810	17.83	SW	16.83	150		CI	VC	53.24	113											
5901	19.26	SW	17.1	150		CI	VC	29.5												
5902	17.68	SW	15.3	375		CI	CO	26.31	329											
5903	18.12	SW	16.19	225		CI	VC	19.07	49											
5904	18.11	FO	16.87	150		CI	VC	22	42											
5905	19.34	SW	18.52	100		CI	VC	36.1	23											
5906	19.35	SW	18.36	150		CI	VC	38.95												
5907	19.82	FO	18.47	150		CI	VC	43.19	37											
5908	18.22	SW																		
5909		SW																		
5910	18.5	SW	17.26	150		CI	VC	6.71	26											
5911	17.39	FO	16.35	150		CI	VC	25.26	194											
5916		FO	0	150		CI	VC	14.73												
5917		FO	0	150		CI	VC	23.42												
5918		FO	0	150		CI	VC	19.65												
5919		CO																		
6701	16.83	SW				CI	CO	78.45												
6702	16.73	FO	0	225		CI	CO	78.45												
6703	16.78	FO	15.98	150		CI	VC	77.1	109											
6801	16.58	SW	14.51	450		CI	CO	31.03	125											
6802	16.5	SW	14.25	450		CI	CO	70.12	85											
6803	16.49	FO	14.78	225		CI	CO	47.59	125											
6804	17.31	FO	16.03	150		CI	VC	38.08	89											
6805	16.97	SW	15.17	150		CI	VC	39.95	150											
6806	17.03	FO	15.58	150		CI	VC	14.32												
6807	16.72	FO																		
6808	16.68	SW																		
6809	16.57	SW																		
6810	16.95	FO	15.85	150		CI	VC	19.93	35											
6811	17.01	FO	16.12	150		CI	VC	17.46												
6812	17.31	FO	0	150		CI	VC	55.32												
6813		FO	0	150		CI	VC	15.65												
6814		FO	0	150		CI	VC	48.55												
6903		FO																		
6904		CO																		
7701	16.92	FO																		
7702	15.04	FO																		
7704		FO																		
7901	17.33	SW																		
7902	16.7	CO																		
7903	16.94	FO																		
7904	18.12	FO																		
7905	17.11	CO																		
7906	17.27	FO																		
7908		CO		150		CI	VC	7.7												
7909		CO		100		CI	VC	10.16												
7910		FO		100		CI	VC	7.81												
7916		FO		100		CI	VC	13.21												
7917		FO		100		CI	VC	3.24												
7918		FO		100		CI	VC	3.24												
7901	18.17	FO	16.13	225		CI	CO	45.97	62											
7902	19.72	FO																		
7903		CO		150		CI	VC	6.82												
7904		CO		150		CI	VC	6.91												
7907		CO		150		CI	VC	5.83												
7908		CO		150		CI	VC	21.23												
7912		CO																		
7914		CO		17.7		CI	VC	17.7												
8901	17.7	FO																		
8902	17.39	CO	15.16	150		CI	VC	54.42	113											
8904		SW																		
5912		SW																		
5914		SW	15.8	300		CI	VC	18.12	46											
6816		SW		225		CI	VC	64.52												
6902		FO		150		CI	PF	101.46												
7807		CO																		
7811		CO																		
7813		FO																		
7814		FO																		
7905		CO		100		CI	VC	5.42												
7915		CO																		
7916		CO																		
5913		SW	0	150		CI	VC	12.17												
6815		FO	0	150		CI	VC	26.69												
7812		CO																		
7906		CO																		
7908		CO																		
8903		CO																		
7703		FO																		
8703	12	FO	10.8	400		CI	DI	22.67												

WASTE WATER SYMBOLOGY

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ABANDONED PIPE

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MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement	DI	Ductile Iron
BR	Brick	PVC	Polyvinyl Chloride
PE	Polyethylene	CI	Cast Iron
RP	Reinforced Plastic Matrix	SI	Spun Iron
CO	Concrete	ST	Steel
CSB	Concrete Segment Bolted		



Refno	Cover	Func	Invert	Size	Shape	Mat	Length	Grad
2701	18.11	SW	14.65	225	CI	PVC	9.46	95
2702	17.71	SW	13.97	225	CI	PVC	9.13	91
2703	17.3	SW	13.97	225	CI	PVC	9.13	91
2705	18.66	SW	15.84	150	CI	PVC	44.38	39
2706	17.71	FO	17.71	150	CI	PVC	15.01	50
2801	19.46	SW	19.46	150	CI	PVC	15.01	50
2802	19.31	FO	19.31	150	CI	PVC	15.01	50
2803	19.47	FO	19.47	150	CI	PVC	15.01	50
2804	19.36	FO	15.55	750	CI	CO	37.03	132
3701	18.56	SW	15.27	750	CI	CO	15.09	216
3702	18.2	SW	15.2	750	CI	CO	46.82	116
3703	18.08	SW	14.71	150	CI	PVC	12.05	62
3705	18.15	FO	18.21	225	CI	VC	14.76	77
3801	19.94	FO	18.4	225	CI	VC	13.89	77
3802	19.93	SW	18.2	225	CI	VC	20.25	135
3803	19.74	FO	18.2	225	CI	VC	20.25	135
3804	19.73	SW	16.47	225	CI	CO	21.02	162
3805	19.44	FO	0	150	CI	VC	41.84	47
3806	19.46	SW	17.31	150	CI	PVC	46.14	47
3807	19.38	FO	17.41	150	CI	PVC	8.23	82
3808	19.66	FO						
3809	FO							
3810	FO							
3811	19.71	SW	17.01	150	CI	VC	9.38	0
3812	19.68	SW	17.3	150	CI	VC	26.71	1
3813	19.72	FO	0	150	CI	VC	26.4	
3814	19.69	FO						
3815	19.42	FO						
3816	FO							
3817	FO							
3818	FO							
3819	10.08	FO						
3902	19.06	FO						
3903	18.79	FO						
3904	18.77	FO	17.01	150	CI	VC	9.38	0
3905	19.19	FO	17.3	150	CI	VC	26.71	1
3906	FO		0	150	CI	VC	26.4	
3907	FO							
3908	FO							
4701	18.94	SW	17.25	150	CI	VC	45.63	152
4801	18.64	FO						
4802	18.39	SW						
4803	18.86	FO						
4804	19.01	SW						
4805	18.86	FO						
4806	19.52	FO	17.64	225	CI	VC	38.01	100
4807	19.49	SW	18.03	225	CI	VC	37.59	54
4808	19.28	FO	16.14	225	CI	CO	33.25	98
4809	19.26	SW	17.07	225	CI	VC	31.92	100
4810	18.66	FO						
4811	18.16	FO						
4812	17.93	FO						
4813	SW		225	CI	CO	22.8		
4815	FO							
4816	FO							
4817	FO		225	CI	CO	16.28		
4818	FO							
4821	FO							
4900	FO		100	CI	VC	6.57		
4901	19.36	SW	18.15	150	CI	VC	18.12	44
4902	19.18	SW	17.72	150	CI	VC	30.9	162
4903	18.99	SW						
4904	18.68	SW						
4905	20.21	FO						
4906	18.82	FO	17.47	150	CI	VC	25.39	98
4907	FO		0	150	CI	VC	30.64	
4909	FO		0	150	CI	VC	4.27	
4910	FO		0	150	CI	UN	19.98	
4911	FO		0	150	CI	UN	15.24	
4912	FO		0	150	CI	UN	15.24	
4913	FO		225	CI	CO	22.76		
4915	CO		0	150	CI	VC	37.22	
4916	CO		0	150	CI	VC	28.92	
4917	CO							
4919	CO							
4921	FO							
4922	FO							
5003	18.24	SW						
5008	FO							
5010	FO							
4814	FO							
4819	FO		0	225	CI	CO	27.37	
4908	FO		0	150	CI	VC	75.65	
4918	CO		0	150	CI	VC	12.02	
4924	SW							
4927	SW							
4928	FO							
4914	FO							
4920	FO							
4923	FO							
4925	FO							
4926	FO							
4929	FO							
4930	FO							
3704	FO		0	150	CI	DI	143.86	
3704	FO		0	150	CI	DI	4.05	

WASTE WATER SYMBOLOGY

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ABANDONED PIPE

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MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
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BR	Brick	PVC	Polyvinyl Chloride
PE	Polyethylene	CI	Cast Iron
RP	Reinforced Plastic Matrix	SI	Spun Iron
CO	Concrete	ST	Steel
CSB	Concrete Segment Bolted	VC	Vitrified Clay
CSU	Concrete Segment Unbolted	PP	Polypropylene
CC	Concrete Box Culverted	PF	Pitch Fibre
PSC	Plastic/Steel Composite	MAC	Masonry, Coursed
GRC	Glass Reinforced Concrete	MAR	Masonry, Random
GRP	Glass Reinforced Plastic	U	Unspecified

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown. Crown copyright and database rights [2016] Ordnance Survey 100022432.

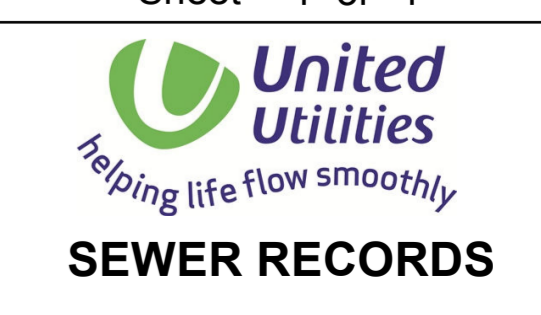
OS Sheet No: SJ6990NW

Scale: 1:1250 Date: 10/08/2017

Printed By: Property Searches

OS Sheet No: SJ6990NW
Scale: 1:1250 Date: 10/08/2017

94 Nodes
Sheet 1 of 1



TERMS AND CONDITIONS - WASTERWATER & WATER DISTRIBUTION PLANS

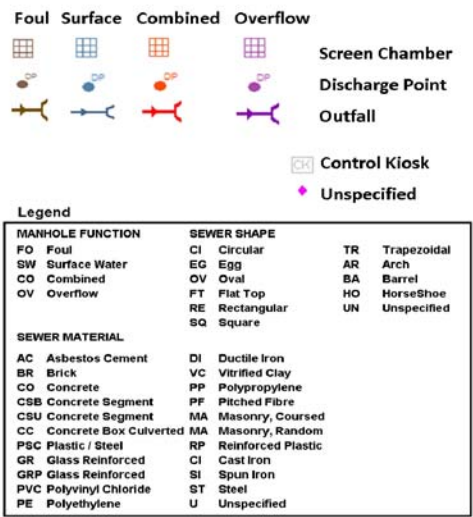
These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self-construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

1. This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
2. This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
3. In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only and given in accordance with the best information available. The nature of the relevant system and/or its actual position may be different from that shown on the plan and UUWL is not liable for any damage caused by incorrect information provided save as stated in section 199 of the Water Industry Act 1991. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
4. The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
5. The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
6. This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
7. No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
8. If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
9. This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

WASTE WATER SYMBOLOGY

<p>Foul</p> 	<p>Surface</p> 	<p>Combined</p> 	<p>Overflow</p> 	<p>Foul</p> 	<p>Surface</p> 	<p>Combined</p> 
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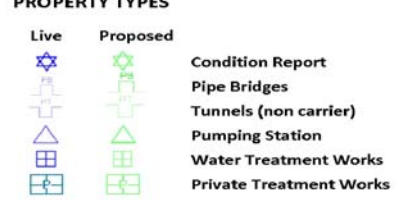
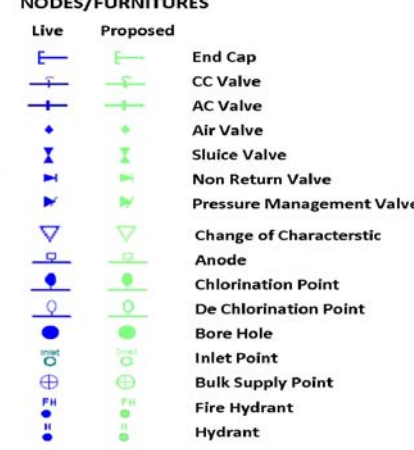
<p>Foul</p> 	<p>Surface</p> 	<p>Combined</p> 
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<p>Foul</p> 	<p>Surface</p> 	<p>Combined</p> 	<p>Overflow</p> 
--	---	--	---

MANHOLE FUNCTION		SEWER SHAPE	
FO	Foul	CI	Circular
SW	Surface Water	EG	Egg
CO	Combined	OV	Oval
OV	Overflow	FT	Flat Top
		RE	Rectangular
		SQ	Square
		TR	Trapezoidal
		AR	Arch
		BA	Barrel
		HO	HorseShoe
		UN	Unspecified

SEWER MATERIAL	
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BR	Brick
CO	Concrete
CSB	Concrete Segment
CSU	Concrete Segment
CC	Concrete Box Culverted
PSC	Plastic / Steel
GR	Glass Reinforced
GRP	Glass Reinforced
PVC	Polyvinyl Chloride
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PF	Pitched Fibre
MA	Masonry, Coursed
MA	Masonry, Random
RP	Reinforced Plastic
CI	Cast Iron
SI	Spun Iron
ST	Steel
U	Unspecified

CLEAN WATER SYMBOLOGY

<p>PIPE WORK</p> <p>Live Proposed</p> 	<p>ABANDONED PIPE</p> 	<p>PROPERTY TYPES</p> <p>Live Proposed</p> 	<p>NODES/FURNITURES</p> <p>Live Proposed</p> 	<p>Legend</p> <table border="1"> <thead> <tr> <th>MATERIAL TYPES</th> <th>LINING TYPES</th> </tr> </thead> <tbody> <tr> <td>AC ASBESTOS CEMENT</td> <td>CL CEMENT LINING</td> </tr> <tr> <td>CI CAST IRON</td> <td>TB TAR OR BITUMEN</td> </tr> <tr> <td>CU COPPER</td> <td>ERL EPOXY RESIN</td> </tr> <tr> <td>CO CONCRETE</td> <td></td> </tr> <tr> <td>DI DUCTILE IRON</td> <td></td> </tr> <tr> <td>GI GALVANISED IRON</td> <td></td> </tr> <tr> <td>GR GREY IRON</td> <td></td> </tr> <tr> <td>OT OTHERS</td> <td></td> </tr> <tr> <td>PB LEAD</td> <td></td> </tr> <tr> <td>PV UPVC</td> <td></td> </tr> <tr> <td>SI SPUN IRON</td> <td></td> </tr> <tr> <td>ST STEEL</td> <td></td> </tr> <tr> <td>UN UNKNOWN</td> <td></td> </tr> <tr> <td>PE POLYETHYLENE</td> <td></td> </tr> <tr> <td></td> <td>INSERTION TYPES</td> </tr> <tr> <td></td> <td>DD DIE DRAWN</td> </tr> <tr> <td></td> <td>DR DIRECTIONAL DRILLING</td> </tr> <tr> <td></td> <td>MO MOLING</td> </tr> <tr> <td></td> <td>PI PIPELINE</td> </tr> <tr> <td></td> <td>SL SLIP LINED</td> </tr> </tbody> </table>	MATERIAL TYPES	LINING TYPES	AC ASBESTOS CEMENT	CL CEMENT LINING	CI CAST IRON	TB TAR OR BITUMEN	CU COPPER	ERL EPOXY RESIN	CO CONCRETE		DI DUCTILE IRON		GI GALVANISED IRON		GR GREY IRON		OT OTHERS		PB LEAD		PV UPVC		SI SPUN IRON		ST STEEL		UN UNKNOWN		PE POLYETHYLENE			INSERTION TYPES		DD DIE DRAWN		DR DIRECTIONAL DRILLING		MO MOLING		PI PIPELINE		SL SLIP LINED
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Shepherd Gilmour
Consulting Engineers

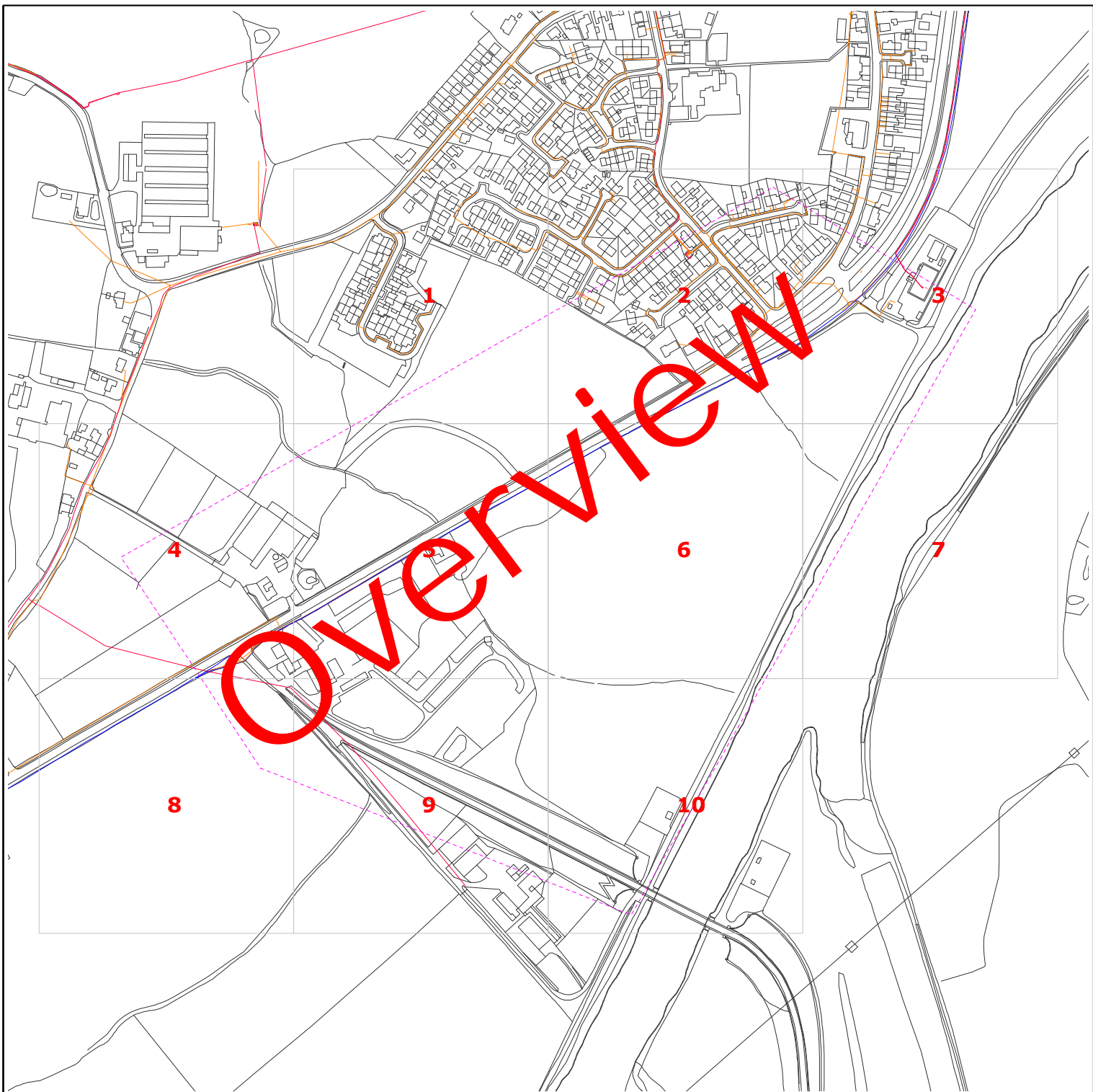
Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX D





Requested by: Shepherd Gilmour
 Company: Shepherd Gilmour Infrastructure L^t
 Date Requested: 08/08/2017
 Job Reference: 10979080
 Your Scheme/Reference: Land at Hollins Gre

Operating Voltage	Colour Code	Line Colour
132kV	Black	
33kV	Green	
22kV-25kV	Yellow	
11kV	Red	
6kV-6.6kV	Blue	
1kV-6kV	Violet	
LV	Orange	
Unknown Voltage	Brown	



Dig Sites:
 Area Line

Data Management
 Electricity North West
 Linley House
 Dickinson Street
 Manchester, M1 4LF
 Phone: 0800 195 4141
 Email: planrequest@enwl.co.uk

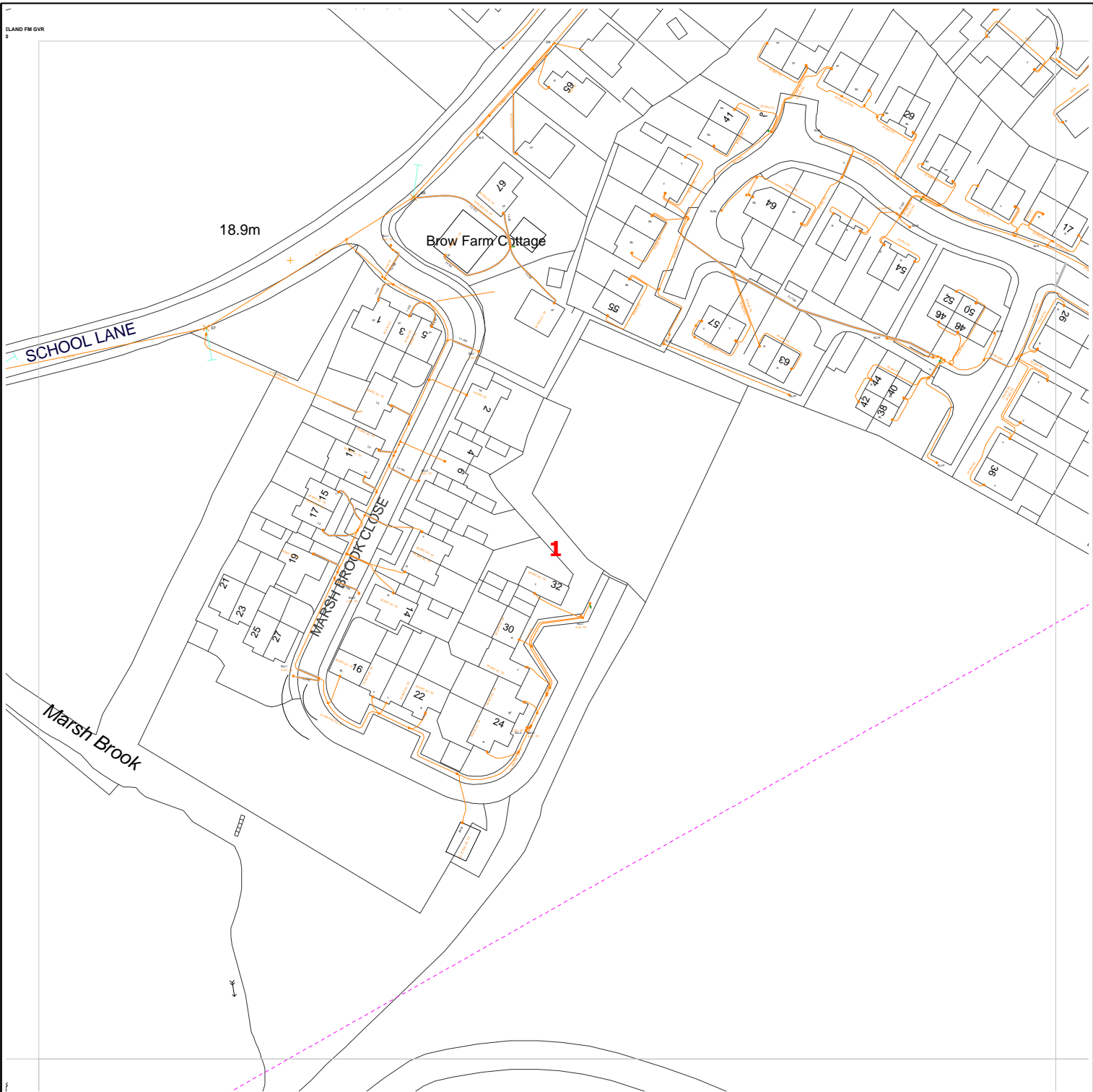
Unless otherwise indicated the depth of Electricity North West Limited cables are in accordance with NJUG (450mm for Low Voltage & 600mm for 11kV cables) 33kV and 132kV cables are laid at depths as marked. The depth and positions of Electricity North West Limited equipment was accurate as shown when the equipment was installed. However third parties may have altered the level & other reference data. Therefore Electricity North West Limited accept no responsibility for the position of Electricity North West Limited equipment being different from shown. No person, body or company, shall be relieved from liability for damage caused to Electricity North West Limited equipment by reason of being located differently to the indications on this drawing. Service cables are not necessarily shown but must be assumed to exist to all premises, streetlights and signs. There may be other Electricity North West Limited apparatus in the vicinity which is not indicated on the cable records. Other apparatus may also be present which is owned by a third party other than Electricity North West Limited.

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Electricity North West Limited 304 Bridgewater Place, Birchwood Park, Warrington WA3 6XG. Registered in England and Wales. Registered No 02366949

Scales on A4 paper:
 1:1250 Area dig site
 1:250 Line dig site



Requested by: Shepherd Gilmour
 Company: Shepherd Gilmour Infrastructure L
 Date Requested: 08/08/2017
 Job Reference: 10979080
 Your Scheme/Reference: Land at Hollins Gre

Dig Sites:
 Area Line

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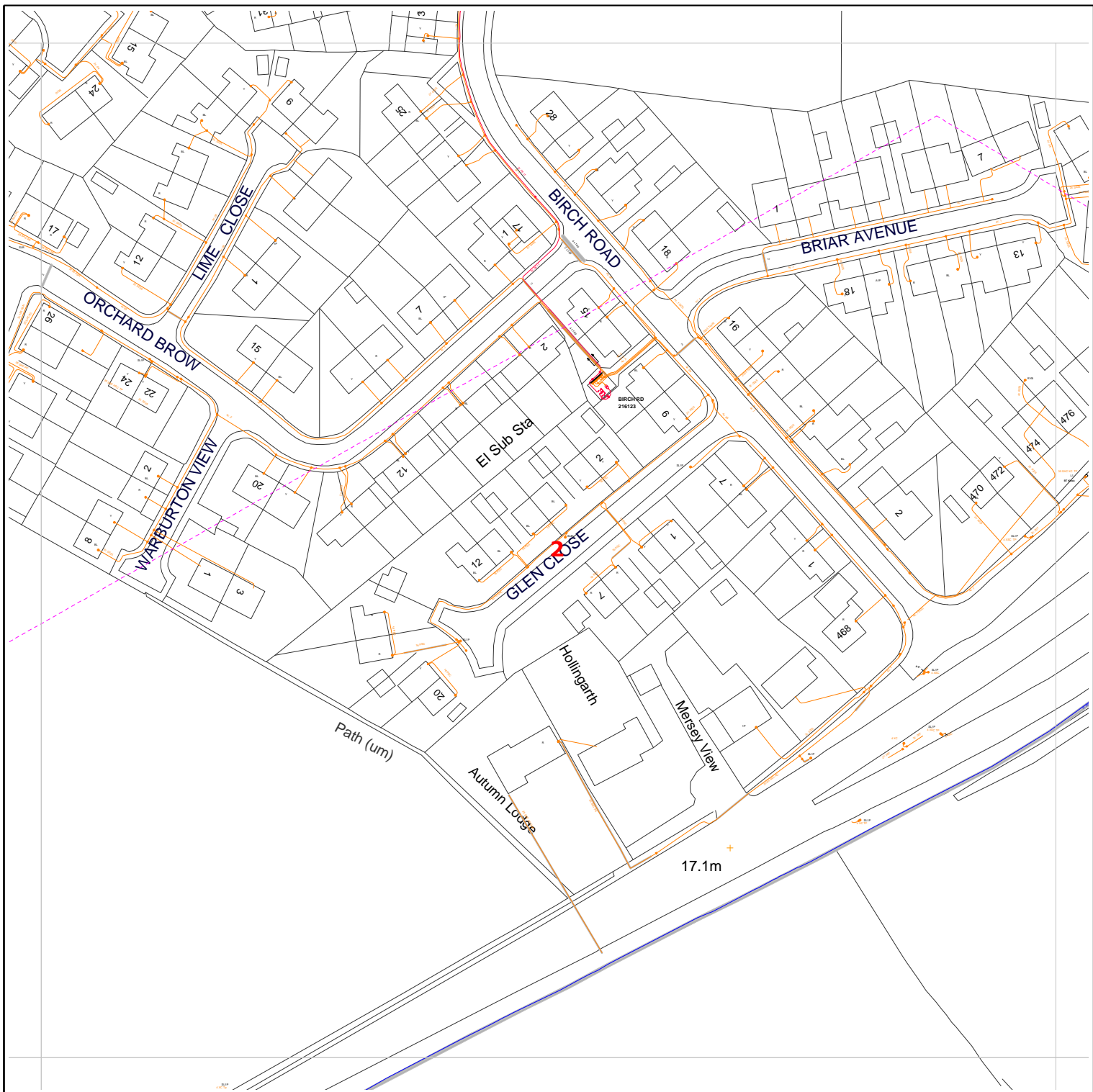
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Requested by: Shepherd Gilmour
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 Your Scheme/Reference: Land at Hollins Gre

Operating Voltage	Colour Code	Line Colour
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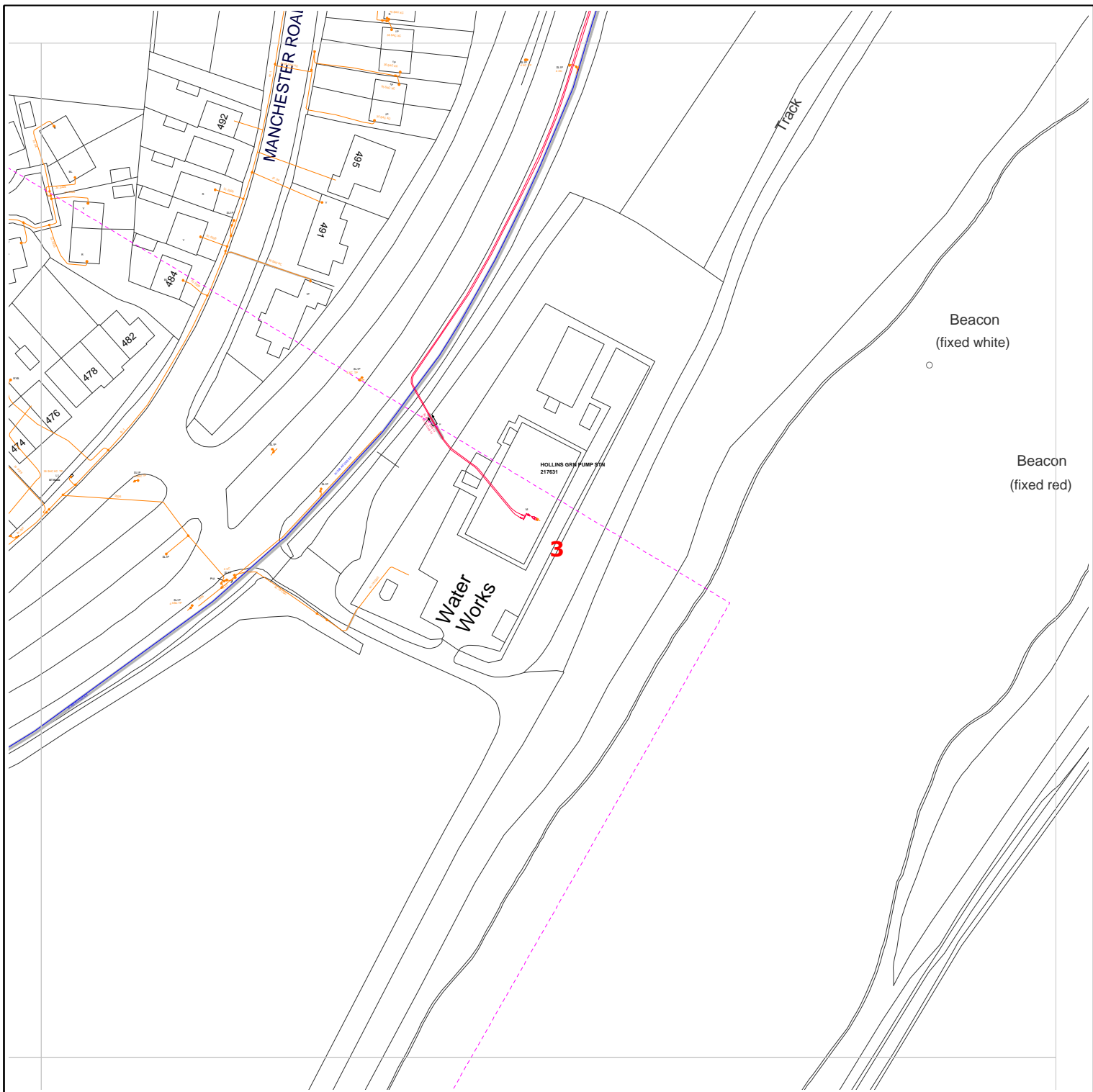
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 Job Reference: 10979080
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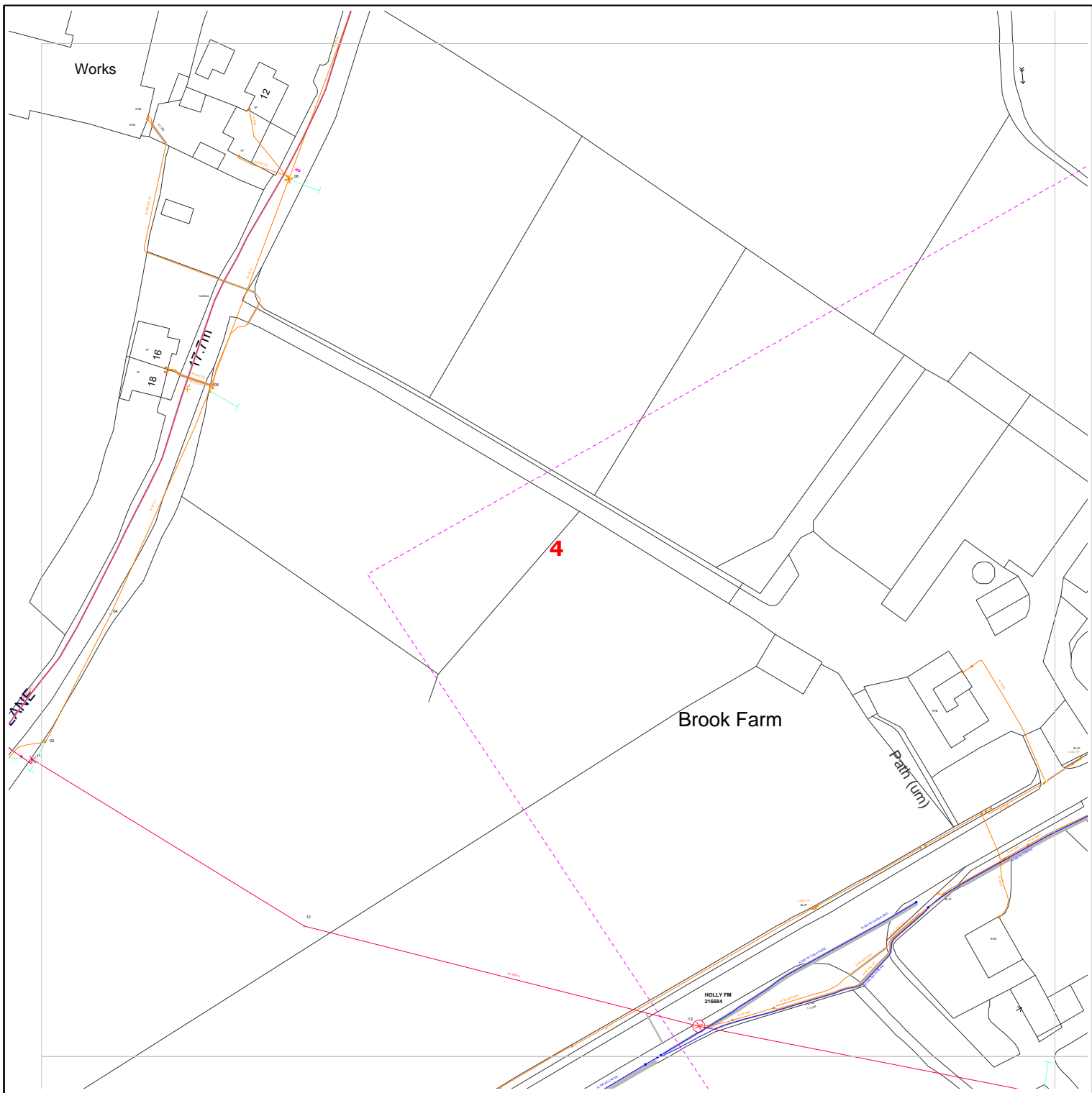
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Dig Sites:
 Area Line

Data Management
 Electricity North West
 Linley House
 Dickinson Street
 Manchester, M1 4LF
 Phone: 0800 195 4141
 Email: planrequest@enwl.co.uk

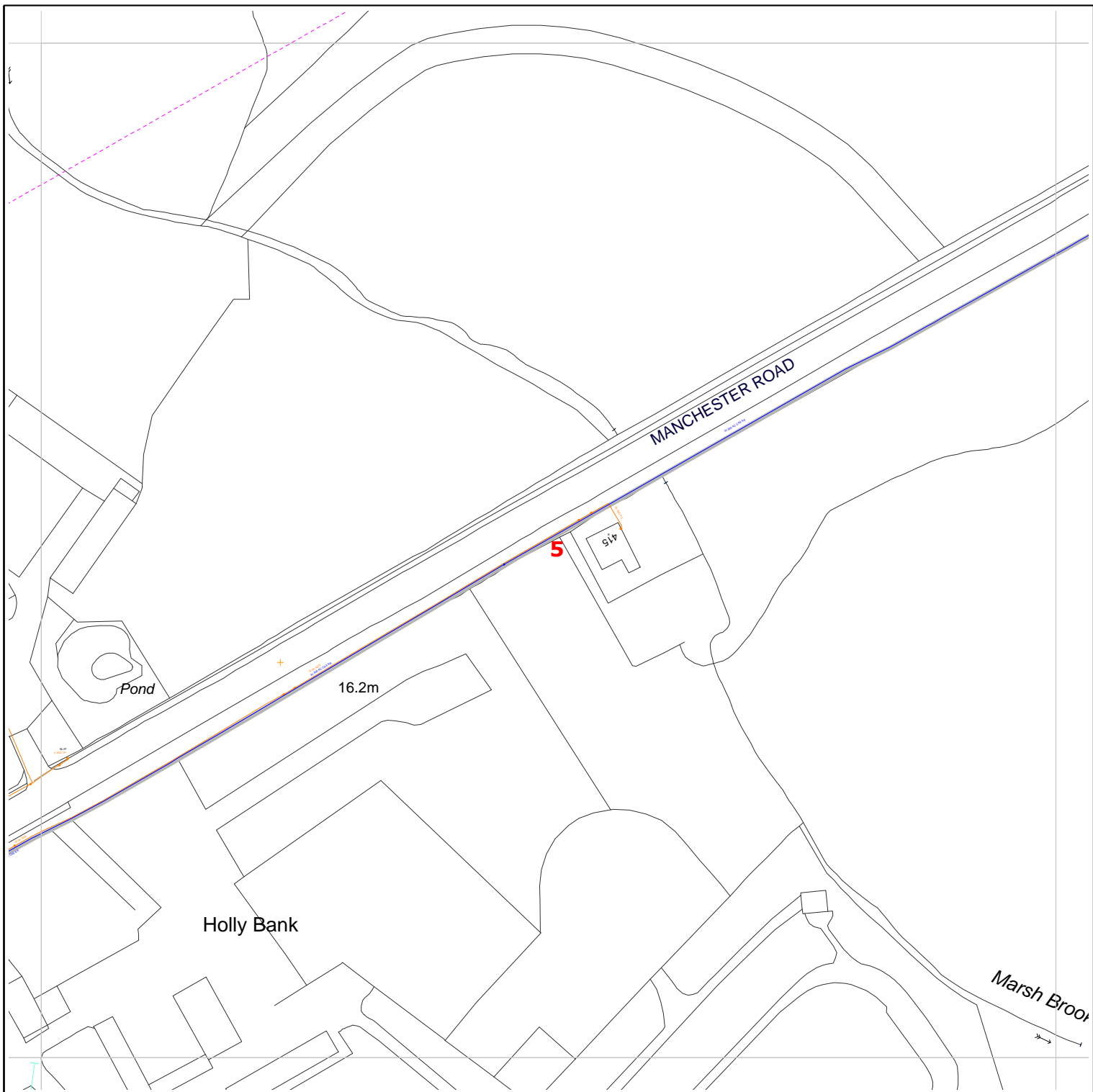
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Reference should be made to HSE Guidance, HS(G)47 "Avoiding Danger from Underground Services" and GS6 "Avoidance of Danger from Overhead Power Lines".

Electricity North West Limited 304 Bridgewater Place, Birchwood Park, Warrington WA3 6XG. Registered in England and Wales. Registered No 02366949

Scales on A4 paper:
 1:1250 Area dig site
 1:250 Line dig site



Requested by: Shepherd Gilmour
 Company: Shepherd Gilmour Infrastructure L
 Date Requested: 08/08/2017
 Job Reference: 10979080
 Your Scheme/Reference: Land at Hollins Gre

Operating Voltage	Colour Code	Line Colour
132kV	Black	
33kV	Green	
22kV-25kV	Yellow	
11kV	Red	
6kV-6.6kV	Blue	
1kV-6kV	Violet	
LV	Orange	
Unknown Voltage	Brown	



Dig Sites:
 Area Line

Data Management
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 Dickinson Street
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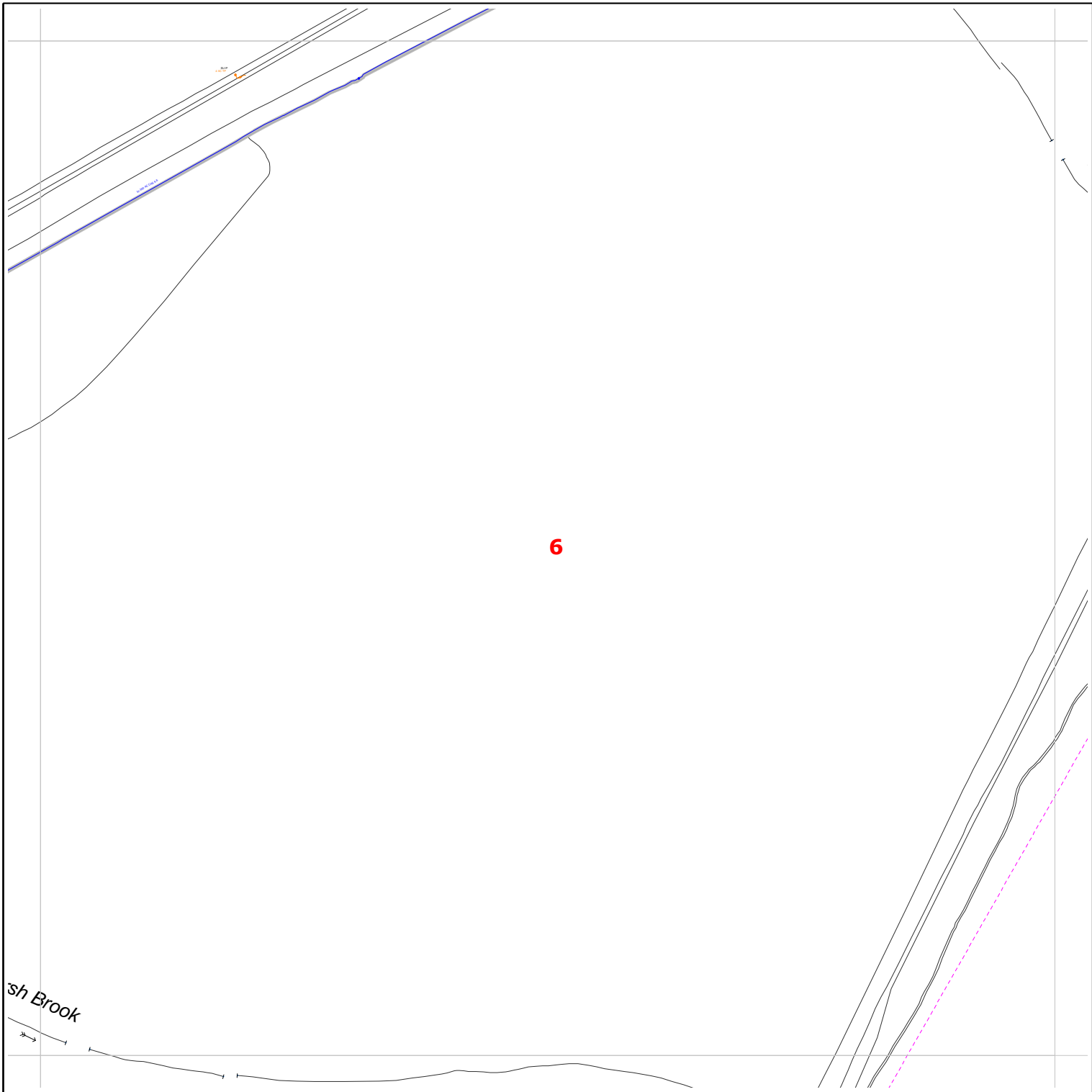
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 1:250 Line dig site

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6

sh Brook

Requested by: Shepherd Gilmour
 Company: Shepherd Gilmour Infrastructure L
 Date Requested: 08/08/2017
 Job Reference: 10979080
 Your Scheme/Reference: Land at Hollins Gre

Dig Sites:
 Area  Line 

Operating Voltage	Colour Code	Line Colour
132kV	Black	
33kV	Green	
22kV-25kV	Yellow	
11kV	Red	
6kV-6.6kV	Blue	
1kV-6kV	Violet	
LV	Orange	
Unknown Voltage	Brown	



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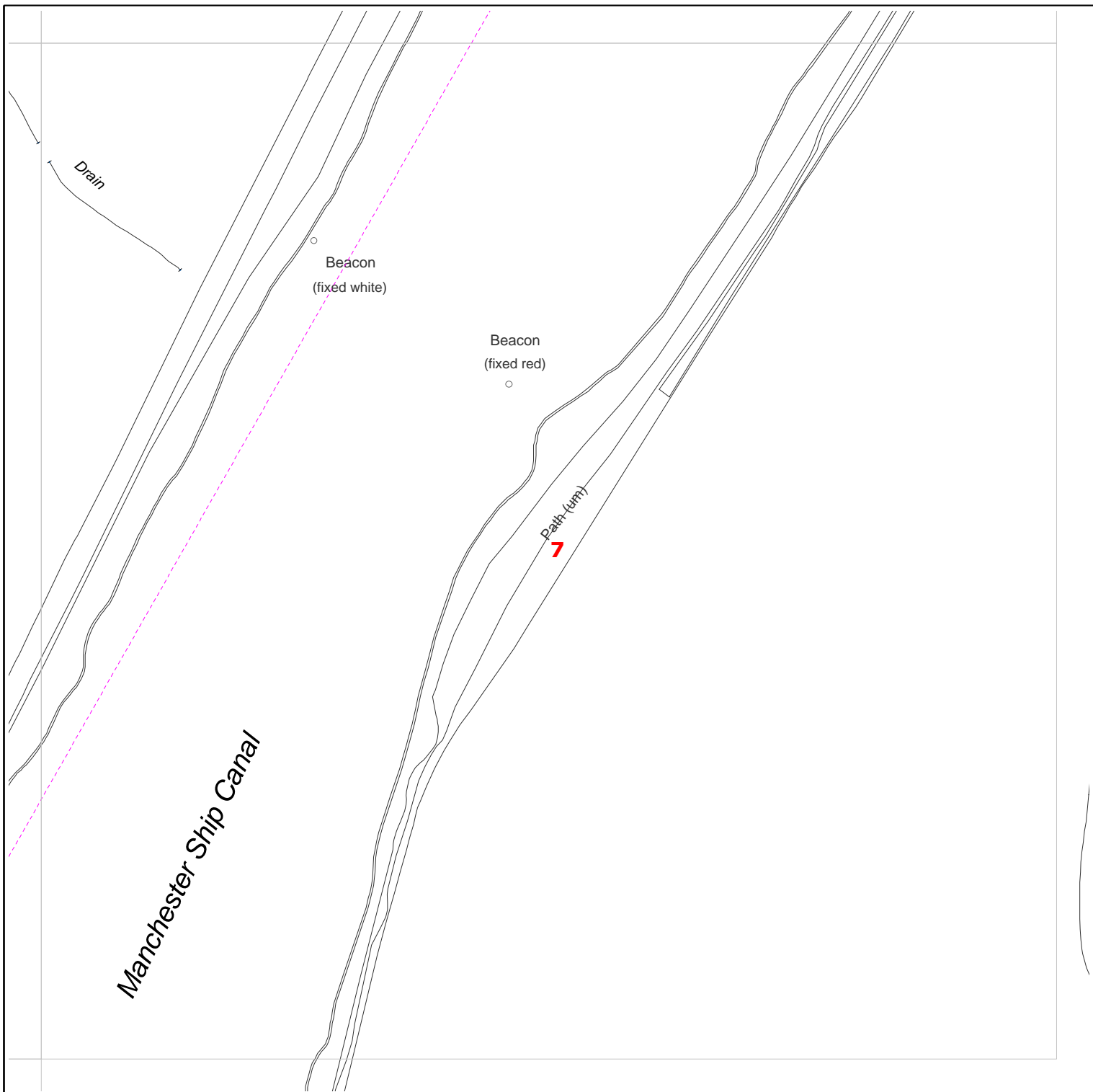
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Scales on A4 paper:
 1:1250 Area dig site
 1:250 Line dig site



Requested by: Shepherd Gilmour
 Company: Shepherd Gilmour Infrastructure L
 Date Requested: 08/08/2017
 Job Reference: 10979080
 Your Scheme/Reference: Land at Hollins Gre

Dig Sites:
 Area Line

Operating Voltage	Colour Code	Line Colour
132kV	Black	
33kV	Green	
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11kV	Red	
6kV-6.6kV	Blue	
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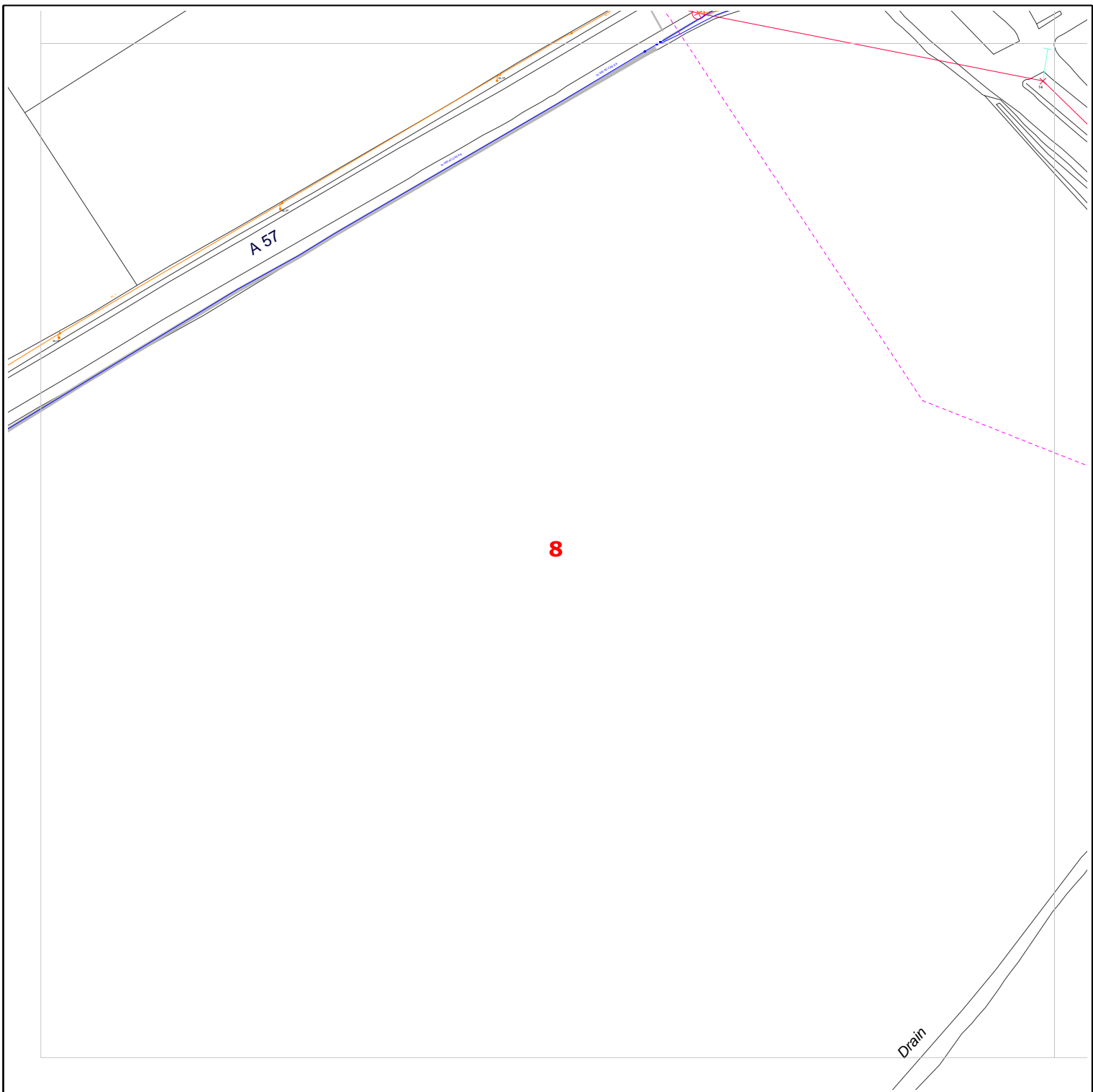
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Scales on A4 paper:
 1:1250 Area dig site
 1:250 Line dig site



Requested by: Shepherd Gilmour
 Company: Shepherd Gilmour Infrastructure L
 Date Requested: 08/08/2017
 Job Reference: 10979080
 Your Scheme/Reference: Land at Hollins Gre

Dig Sites:
 Area  Line 

Operating Voltage	Colour Code	Line Colour
132kV	Black	
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11kV	Red	
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Unknown Voltage	Brown	



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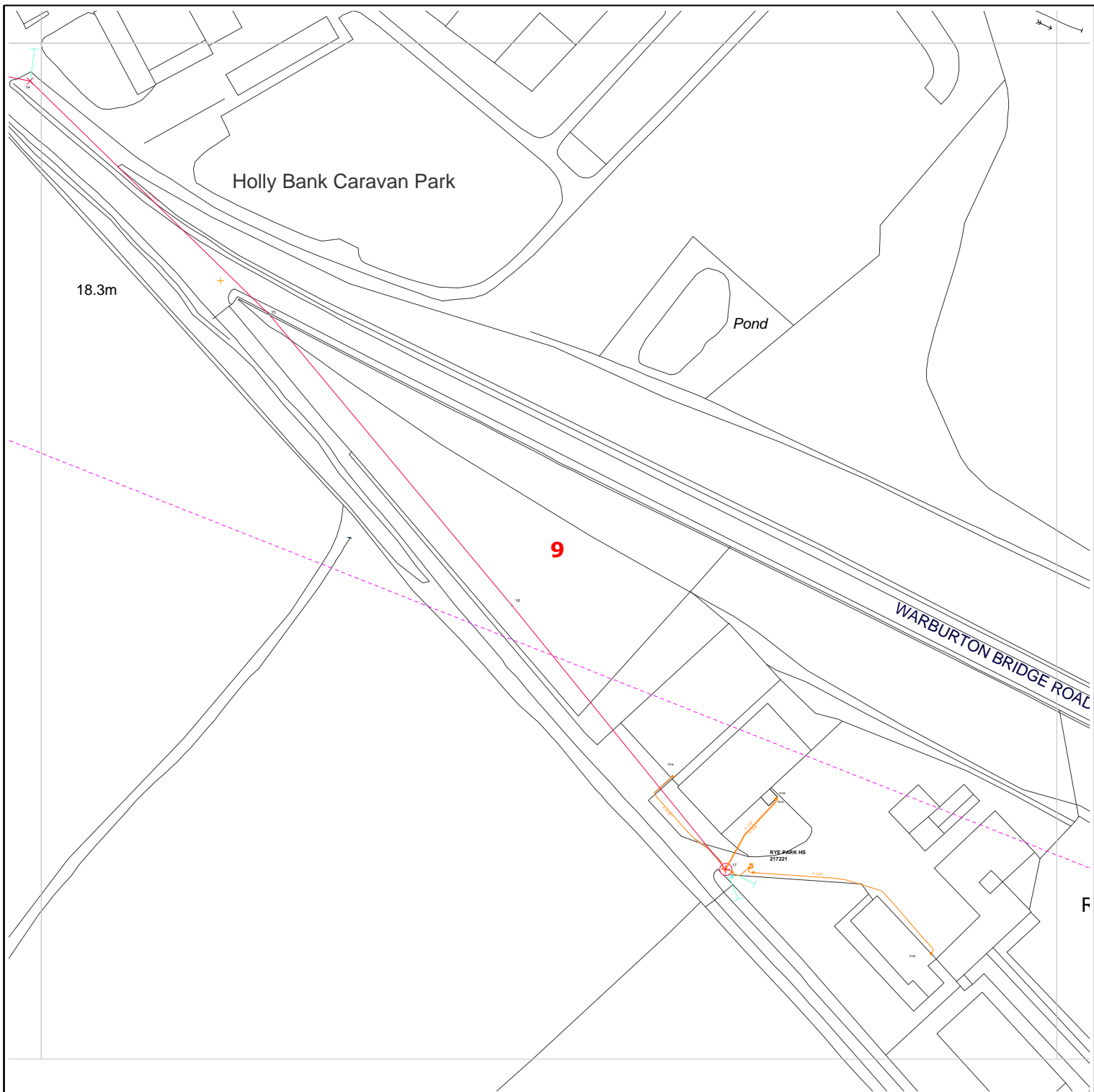
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 Company: Shepherd Gilmour Infrastructure L'
 Date Requested: 08/08/2017
 Job Reference: 10979080
 Your Scheme/Reference: Land at Hollins Gre

Dig Sites:
 Area Line

Operating Voltage	Colour Code	Line Colour
132kV	Black	
33kV	Green	
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Unknown Voltage	Brown	



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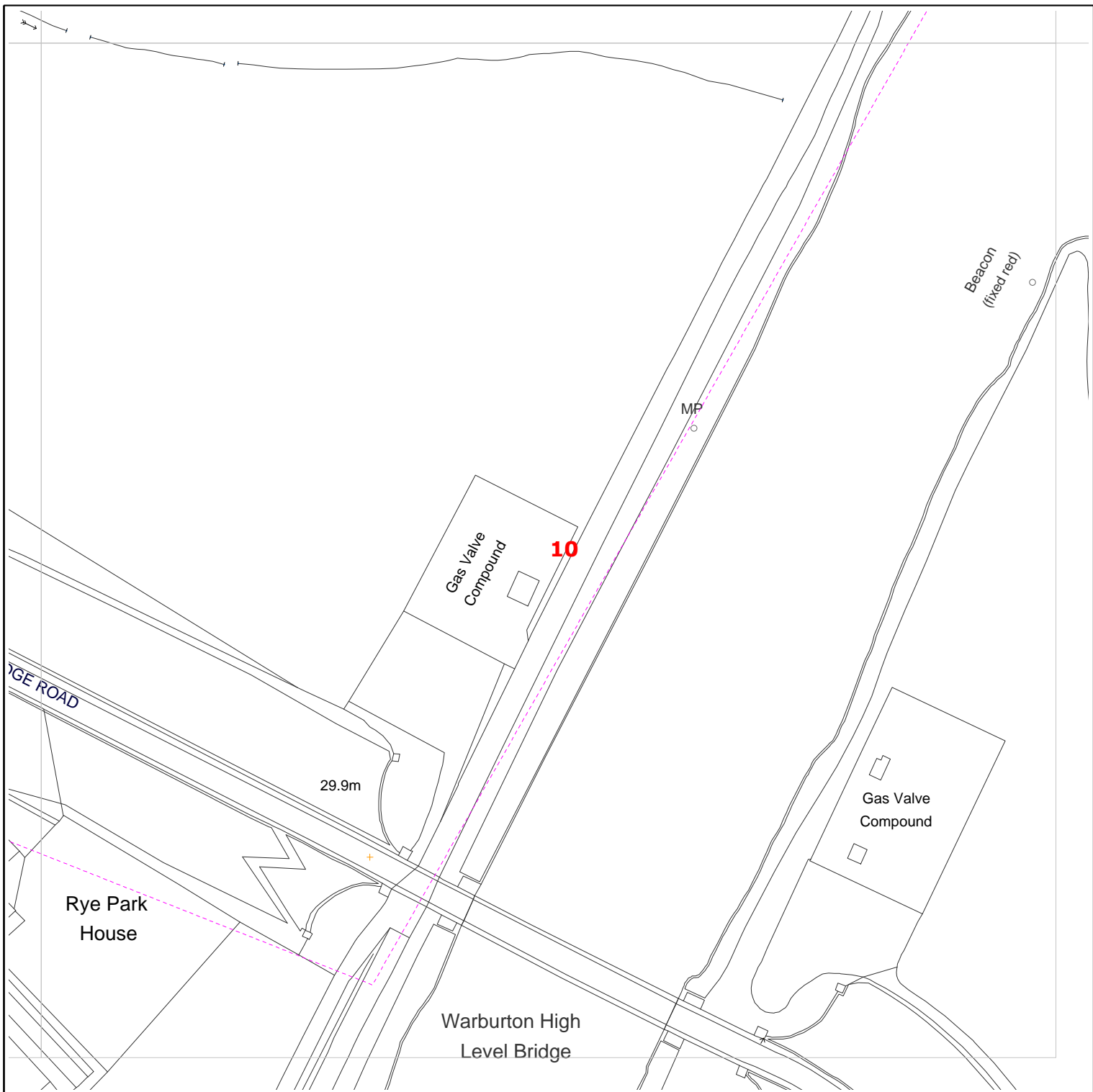
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1kV-6kV	Violet	
LV	Orange	
Unknown Voltage	Brown	



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Scales on A4 paper:
 1:1250 Area dig site
 1:250 Line dig site



The position and depths of underground and overhead apparatus as indicated on this plan are approximate and are intended for guidance only. The depths may have changed if the land surface levels have altered. You are also informed that the plan may not show, or may inaccurately show, individual property services and services to street lighting installations. The onus of locating the apparatus precisely before commencing any excavations or other works in the immediate vicinity therefore rests entirely upon the person undertaking or responsible for those works. Before any such works are undertaken the precise location of the apparatus and cables should therefore be ascertained by suitable means. In the event of an emergency or for further assistance please contact 0800-092-9290 (Scottish Power area) or 0800-001-5400 (SP Manweb area).

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SP ENERGY NETWORKS
On behalf of SP Manweb plc

SP Manweb plc
Registered Office: c/o PowerSystems
3 Prenton Way, Prenton, CH43 3ET
Registered in England and Wales No 2366937

OVERHEAD LINE

UNDERGROUND CABLES

In Use

Out of Use

Assumed route

VOLTAGE COLOUR KEY

EHV	132kV	BLUE
HV	33kV	GREEN
LV		RED
		BROWN

Where cables have been laid SINCE 1 OCTOBER 1988, the following depths in mm apply (to the tops of cables or ducts) UNLESS OTHERWISE SHOWN, but see comments. (TO TOP OF CABLE, ADD 75mm FOR BOTTOM OF TRENCH)

	EHV	HV	LV
IN FOOTPATHS :	775	600	450
ACROSS ROADS :	775	700	600
ALONG ROADS :	775	700	600
AGRICULTURAL :	910	910	910

Your attention is drawn to the Health and Safety Executive Booklet HSG47, available from HSE.

DATE: 15/09/2017

SCALE: 1 : 2,500

MAP REFERENCE: 369,517 390,503

0 5 10 20 30 40 Metres



Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX E



Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.

It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08.00 to 17.00)
www.openreach.co.uk/cbyd

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KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation



BT Ref : EJ110503A

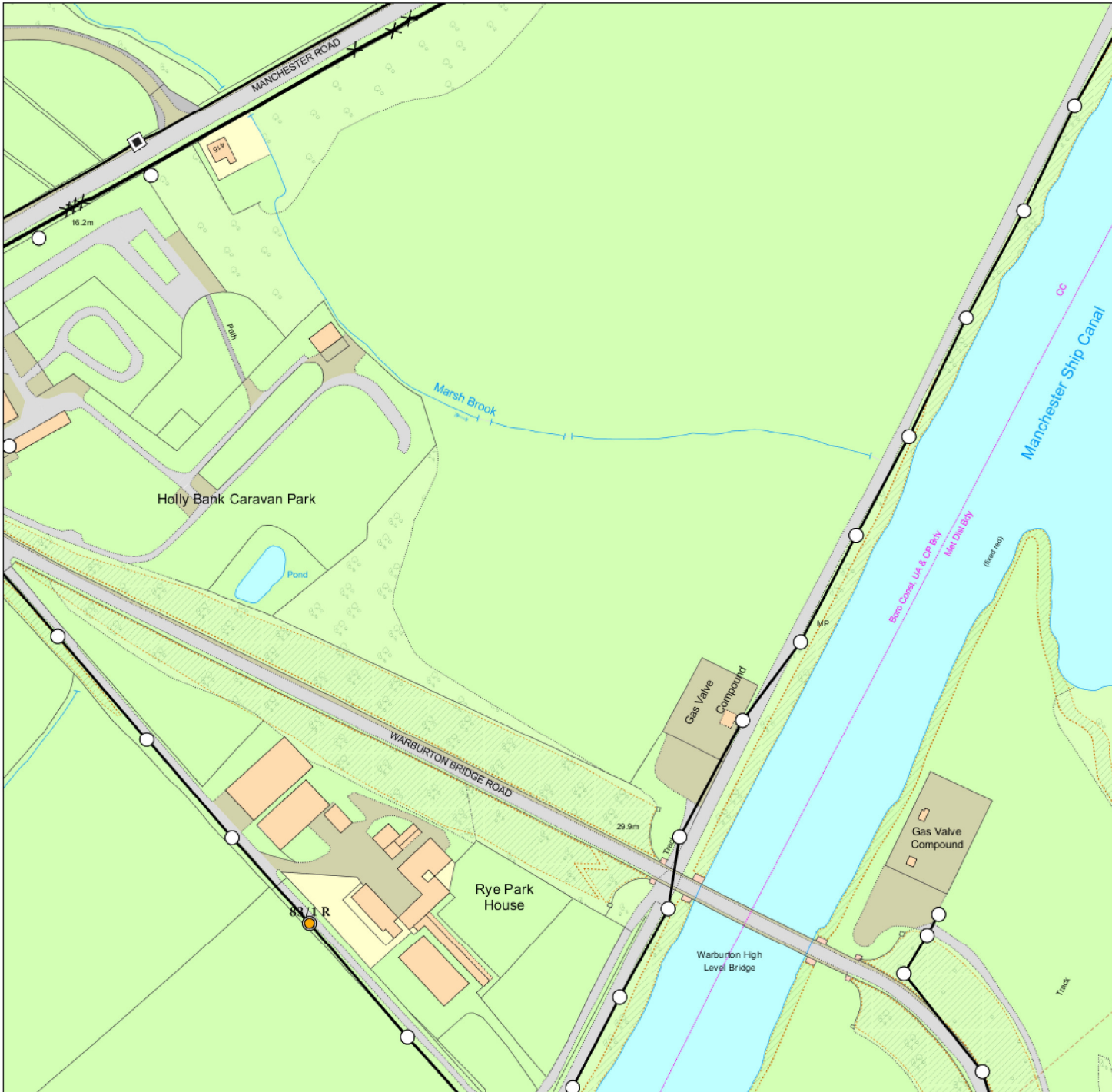
Map Reference : (centre) SJ6937890514

Easting/Northing : (centre) 369378,390514

Issued : 08/08/2017 10:50:25

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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openreach
BT

CLICK BEFORE YOU DIG

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KEY TO BT SYMBOLS

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Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

openreach
a BT Group business

BT Ref : WXG11038Y

Map Reference : (centre) SJ6949490342

Eastings/Northing : (centre) 369494,390342

Issued : 08/08/2017 11:03:28

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Maps by email Plant Information Reply



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BT

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KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

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a BT Group business

BT Ref : CIM11057C

Map Reference : (centre) SJ6969190570

Easting/Northing : (centre) 369691,390570

Issued : 08/08/2017 11:06:08

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Maps by email Plant Information Reply



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KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

openreach
a BT Group business

BT Ref : DFN11063Y

Map Reference : (centre) SJ6955490634

Easting/Northing : (centre) 369554,390634

Issued : 08/08/2017 11:07:05

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Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX F



Natalia Marsden

[Redacted]

[Redacted]

[Redacted]

Date: 09/08/2017

[Redacted]

RE: Proposed Works, Land at Hollins Green, Warrington

Thank you for your enquiry which was received on 08/08/2017.
Please note this response and any attached map(s) are valid for 28 days.

An assessment has been carried out with respect to Cadent Gas Ltd, National Grid Electricity Transmission plc's and National Grid Gas plc's apparatus. Please note it does not cover the items listed in the section "Your Responsibilities and Obligations", including gas service pipes and related apparatus.
For details of Network areas please see the Cadent website (<http://cadentgas.com/Digging-safely/Dial-before-you-dig>) or the enclosed documentation.

As your works are at a "proposed" stage, any maps and guidance provided are for information purposes only. This is not approval to commence work. You must submit a "Scheduled Works" enquiry at the earliest opportunity and failure to do this may lead to disruption to your plans and works. Plant Protection will endeavour to provide an initial assessment within 14 days of receipt of a Scheduled Works enquiry and dependent on the outcome of this, further consultation may be required.

In any event, for safety and legal reasons, works must not be carried out until a Scheduled Works enquiry has been completed and final response received.

Your Responsibilities and Obligations

The "Assessment" Section below outlines the detailed requirements that must be followed when planning or undertaking your scheduled activities at this location.

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near Cadent and/or National Grid's apparatus, e.g. as contained within the Construction (Design and Management) Regulations.

This assessment solely relates to Cadent Gas Ltd, National Grid Electricity Transmission plc (NGET) and National Grid Gas plc (NGG) and apparatus. This assessment does **NOT** include:

- Cadent and/or National Grid's legal interest (easements or wayleaves) in the land which restricts activity in proximity to Cadent and/or National Grid's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and if in doubt contact Plant Protection.
- Gas service pipes and related apparatus
- Recently installed apparatus
- Apparatus owned by other organisations, e.g. other gas distribution operators, local electricity companies, other utilities, etc.

It is **YOUR** responsibility to take into account whether the items listed above may be present and if they could be affected by your proposed activities. Further "Essential Guidance" in respect of these items can be found on the National Grid Website (<http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589934982>).

This communication does not constitute any formal agreement or consent for any proposed development work; either generally or with regard to Cadent and/or National Grid's easements or wayleaves nor any planning or building regulations applications.

Cadent Gas Ltd, NGG and NGET or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

If you require further assistance please contact the Plant Protection team via e-mail ([click here](#)) or via the contact details at the top of this response.

Yours faithfully

Plant Protection Team

ASSESSMENT

Affected Apparatus

The apparatus that has been identified as being in the vicinity of your proposed works is:

- High or Intermediate pressure (above 2 bar) Gas Pipelines and associated equipment
- Low or Medium pressure (below 2 bar) gas pipes and associated equipment. (As a result it is highly likely that there are gas services and associated apparatus in the vicinity)

Requirements

BEFORE carrying out any work you must:

- Carefully read these requirements including the attached guidance documents and maps showing the location of apparatus.
- Contact the landowner and ensure any proposed works in private land do not infringe Cadent and/or National Grid's legal rights (i.e. easements or wayleaves). If the works are in the road or footpath the relevant local authority should be contacted.
- Ensure that all persons, including direct labour and contractors, working for you on or near Cadent and/or National Grid's apparatus follow the requirements of the HSE Guidance Notes HSG47 - 'Avoiding Danger from Underground Services' and GS6 – 'Avoidance of danger from overhead electric power lines'. This guidance can be downloaded free of charge at <http://www.hse.gov.uk>
- In line with the above guidance, verify and establish the actual position of mains, pipes, cables, services and other apparatus on site before any activities are undertaken.

GUIDANCE

High Pressure Gas Pipelines Guidance:

If working in the vicinity of a high pressure gas pipeline the following document must be followed: 'Specification for Safe Working in the Vicinity of Cadent and/or National Grid High Pressure Gas Pipelines and Associated Installations - Requirements for Third Parties' (SSW22). This can be obtained from: <http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=33968>

Dial Before You Dig Pipelines Guidance:

<http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=33969>

Excavating Safely - Avoiding injury when working near gas pipes:

http://www.nationalgrid.com/NR/rdonlyres/2D2EEA97-B213-459C-9A26-18361C6E0B0D/25249/Digsafe_leaflet3e2finalamends061207.pdf

Standard Guidance

Essential Guidance document:

<http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589934982>

General Guidance document:

<http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=35103>

Excavating Safely in the vicinity of gas pipes guidance (Credit card):

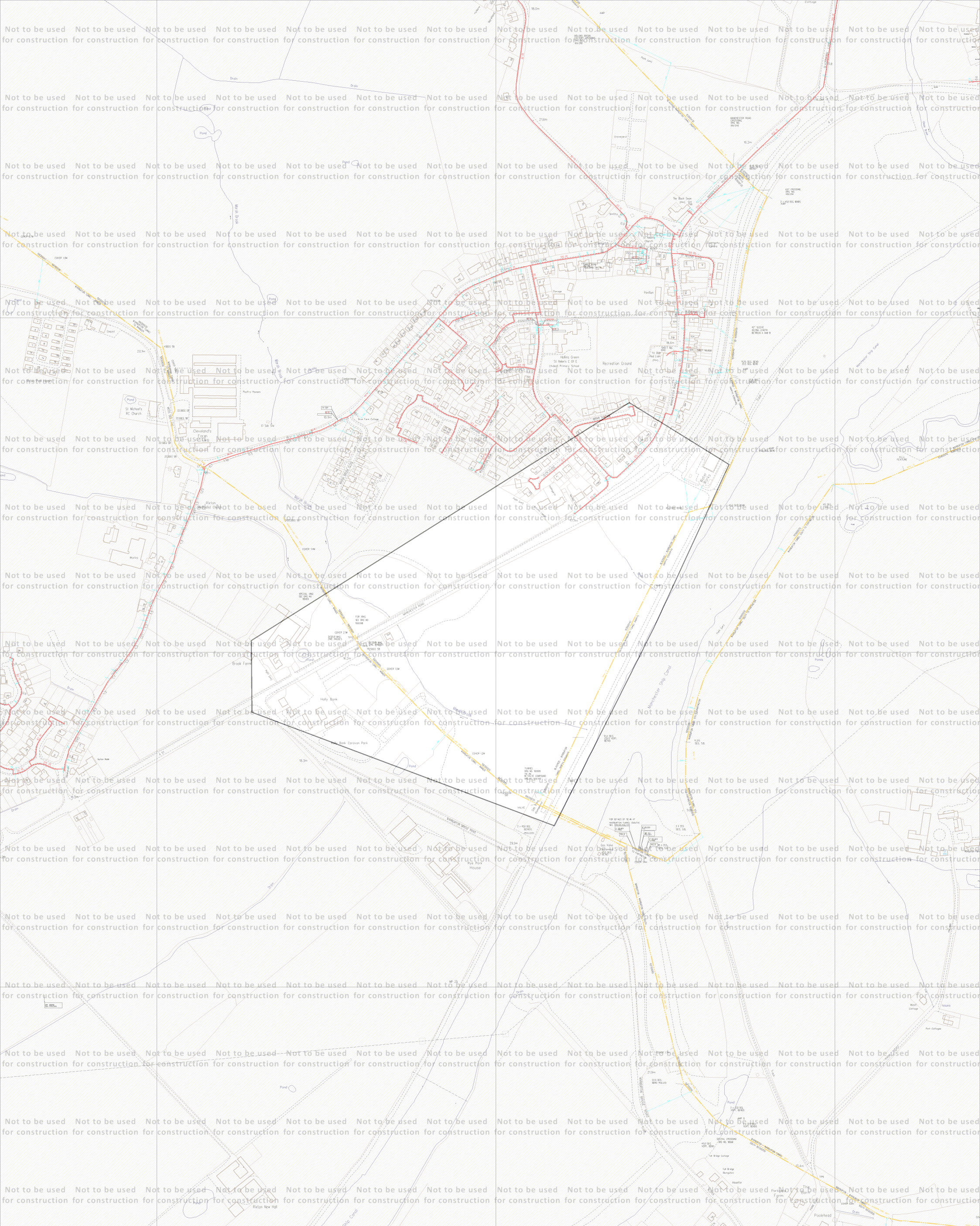
<http://www.nationalgrid.com/NR/rdonlyres/A3D37677-6641-476C-9DDA-E89949052829/44257/ExcavatingSafelyCreditCard.pdf>

Excavating Safely in the vicinity of electricity cables guidance (Credit card):

<http://www.nationalgrid.com/NR/rdonlyres/35DDEC6D-D754-4BA5-AF3C-D607D05A25C2/44858/ExcavatingSafelyCreditCardelectricitycables.pdf>

Copies of all the Guidance Documents can also be downloaded from the National Grid Website:

<http://www.nationalgrid.com/uk/Gas/Safety/work/downloads/>



ID: NW_TW_Z1_3SWX_353081
 USER: nmarsden
 DATE: 09/08/2017
 DATA DATE: 06/08/2017
 REF: Land at Hollins Green
 MAP REF: SJ6990
 CENTRE: 369492, 390557

View extent: 1445m, 1835m

LP MAINS ————
 MP MAINS - - - -
 IP MAINS - - - -
 LHP MAINS - - - -
 NHP MAINS - - - -

0m ———— 100m
 Approximate scale 1:5000
 on A3 Colour Portrait

Map not to be used for construction

This plan shows those pipes owned by National Grid Gas plc in its role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc., are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Gas plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

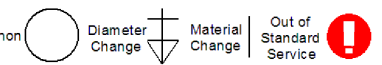
Map 1 of 1 (GAS)

MAPS Plot Server Version 1.9.0

Cadent
 Your Gas Network

Requested by: Shepherd Gilmore Infrastructure

Some examples of Plant Items:



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ENQUIRY SUMMARY

Received Date

08/08/2017

Your Reference

Land at Hollins Green

Location

Centre Point: 369492, 390557

X Extent: 706

Y Extent: 634

Postcode: WA3 6HY

Location Description: Land at Hollins Green, Warrington

Map Options

Paper Size: A3

Orientation: PORTRAIT

Requested Scale: 2500

Actual Scale: 1:5000 (GAS)

Real World Extents: 1445m x 1835m (GAS)

Recipients

[REDACTED]

Enquirer Details

Organisation Name: Shepherd Gilmour Infrastructure

Contact Name: Natalia Marsden

[REDACTED]

[REDACTED]

[REDACTED]

Description of Works

Currently only in the initial planning stages for potential housing development

Enquiry Type

Proposed Works

Activity Type

Development Project

Work Types

Work Type: Plans Only



Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX G



M15 4LZ

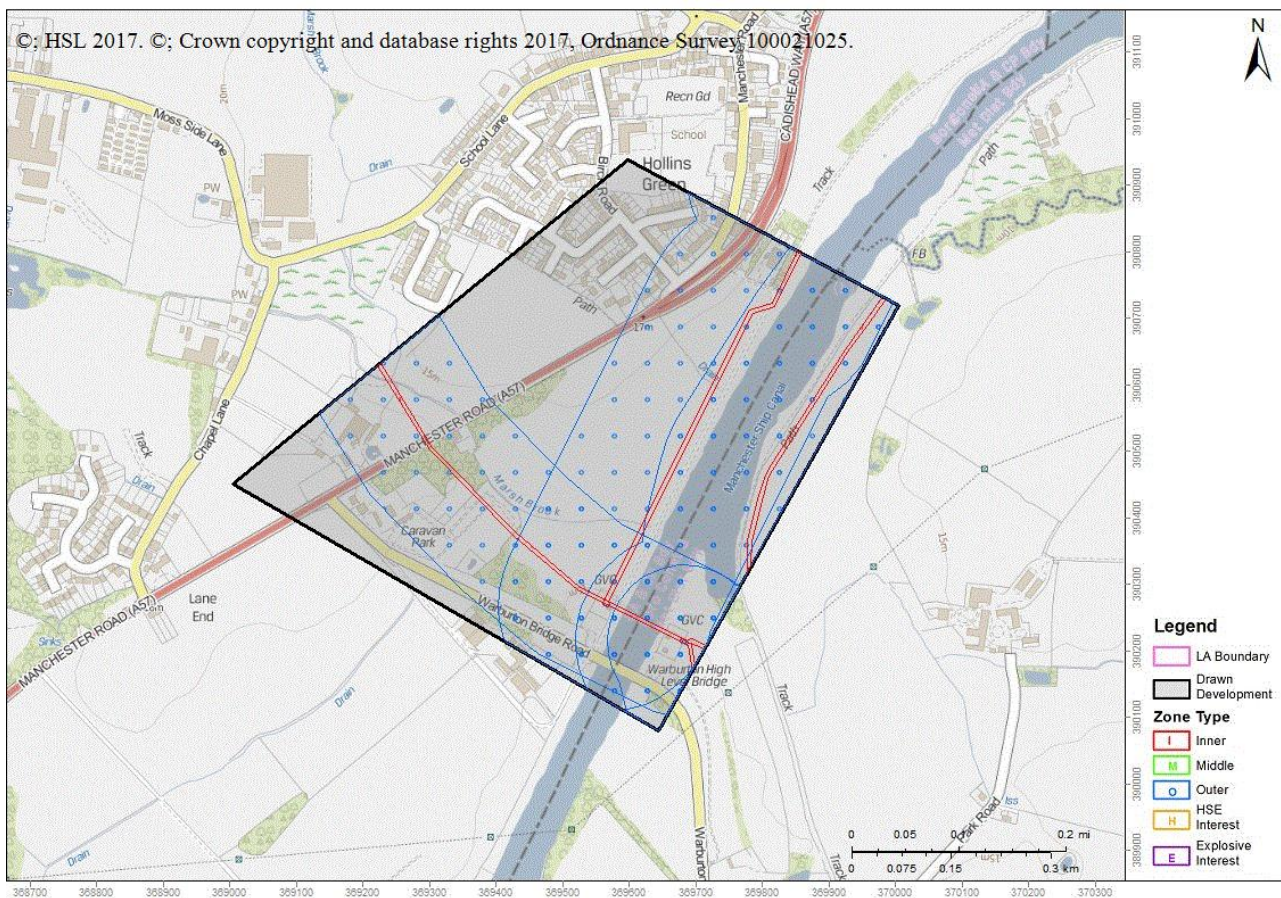
Advice : HSL-170814102609-432 Crosses Consultation Zone

Please enter further details about the proposed development by continuing with the enquiry on the HSE's Planning Advice Web App from the Previous Enquiries tab either now or at a later time, unless the Web App has stopped the process and notified you to contact HSE.

Your Ref: Land at Hollins Green

Development Name:

Comments:



Commercial In Confidence

The proposed development site which you have identified currently lies within the consultation distance (CD) of at least one major hazard site and/or major accident hazard pipeline; HSE needs to be consulted on any developments on this site.

This advice report has been generated using information supplied by Dean O'Reilly at Shepherd Gilmour Infrastructure on 14 August 2017.

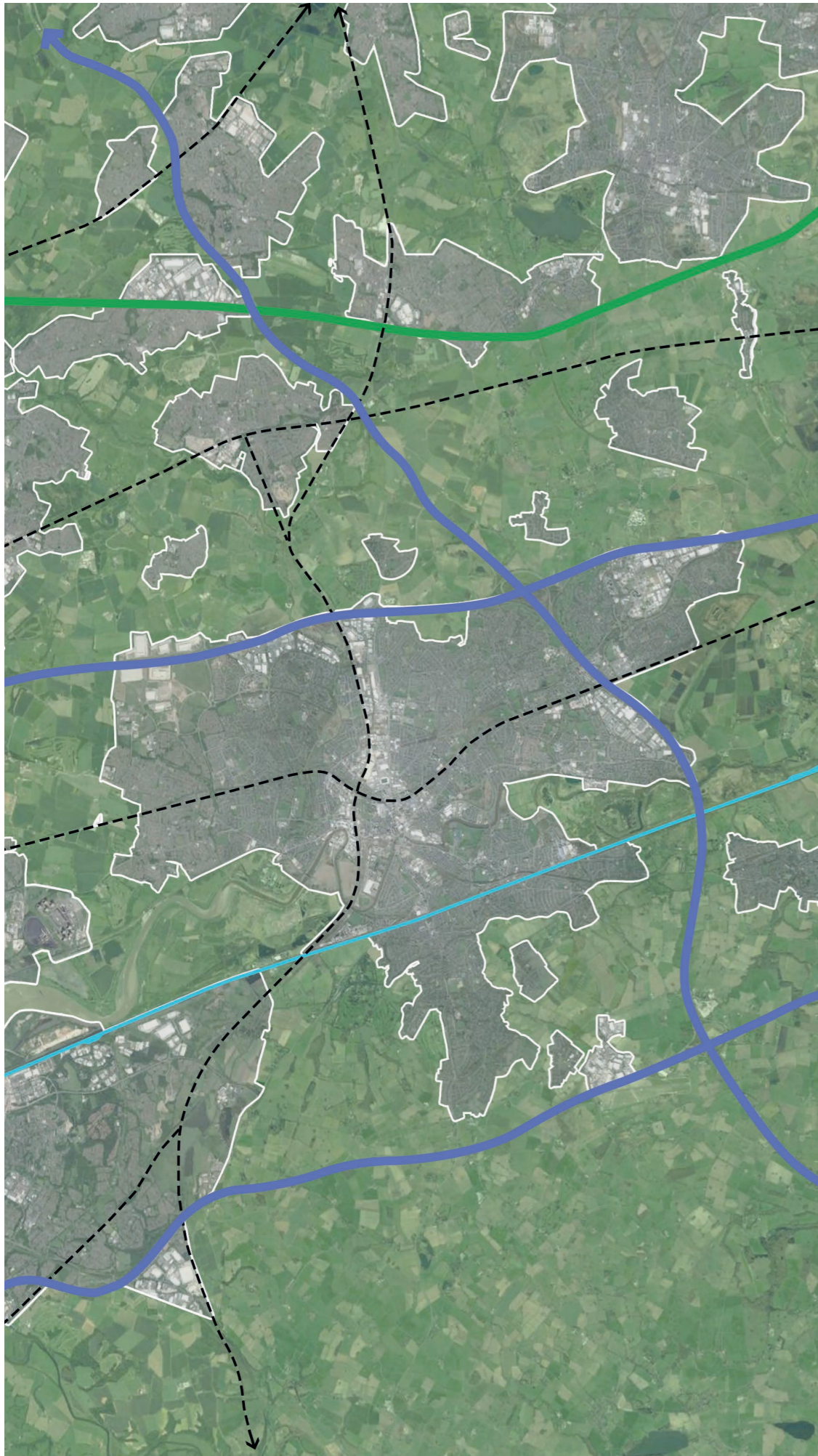
You will also need to contact the pipeline operator as they may have additional constraints on development near their pipeline.

- 6741_1026 Cadent Gas Ltd
- 6742_1027 Cadent Gas Ltd

- 6751_1035 Cadent Gas Ltd
- 6782_1063 Cadent Gas Ltd

HSL/HSE accepts no liability for the accuracy of the pipeline routing data received from a 3rd party. HSE/HSL also accepts no liability if you do not consult with the pipeline operator.

You may wish to contact HSE's Planning Advice team to discuss the above enquiry result on 01298 218159 or by email at lupenquiries@hsl.gsi.gov.uk.



Land off Manchester Road, Hollins Green Warrington

Landscape, Townscape and
Visual Sensitivity Assessment
and Development Appraisal



**RANDALL
THORP**

November 2021

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Randall Thorp Document Control

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QM status: Checked

Checked date: 12.11.21

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Overview

Randall Thorp LLP has been commissioned by Peel Holdings to produce a Landscape, Townscape and Visual sensitivity assessment.

This report has been prepared in response to the proposed allocation of sites within Warrington Borough Council's Updated Proposed Submission Version Local Plan (2021) (UPSVLP).

These reports will assist in demonstrating the need for new residential development within the outlying settlements of the Borough, and broadly appraise the suitability of these outlying settlements to accommodate new residential development in relation to landscape character, townscape character and visual sensitivity.

Introduction

The purpose of this report is to provide an assessment of the landscape, townscape and visual sensitivity of the Land off Manchester Road, Hollins Green site and demonstrates the sites ability to accommodate development in principle without undue impacts on the surrounding landscape.

This report has been prepared in response to the Warrington Borough Council Local Plan Settlement Profiles – Outlying Settlement document, published in July 2017, which states that a sustainable settlement extension to Hollins Green *“could impact on the Green Belt objective and is likely to impact on the character of the settlement.”* The strategic location of Hollins Green within the Warrington Borough and the site location are shown on **Figure 1** (Page 5).

The settlement of Hollins Green is located within the eastern part of the Borough at the border of Warrington, Trafford and Salford. **Figure 2** (Page 7) shows the site in relation to Hollins Green and the surrounding landscape. The site is located to the north of the A57 Manchester Road, an important strategic route that links Warrington to Greater Manchester immediately south of the settlement of Hollins Green and north of the Bridgewater Canal.

This report considers the existing character and visibility of the site. The report reviews the landscape, adjacent townscape and visual baseline in order to provide evidence to support the allocation of the site and inform the future masterplanning of the site for residential development.

An illustrative masterplan is provided to demonstrate one possible solution for the development of the site indicating the findings of this report.

The site is located in Landscape Character Type 1: Undulating Enclosed Farmland. **Volume 1: Analysis of the Warrington Landscape Character Assessment, 2007** considers this Landscape Character Type to be suitable for new development. **Volume 2: Landscape, townscape and visual appraisal of the outlying settlements and individual SHLAA sites** considers this site suitable for development with landscape and visual mitigation.

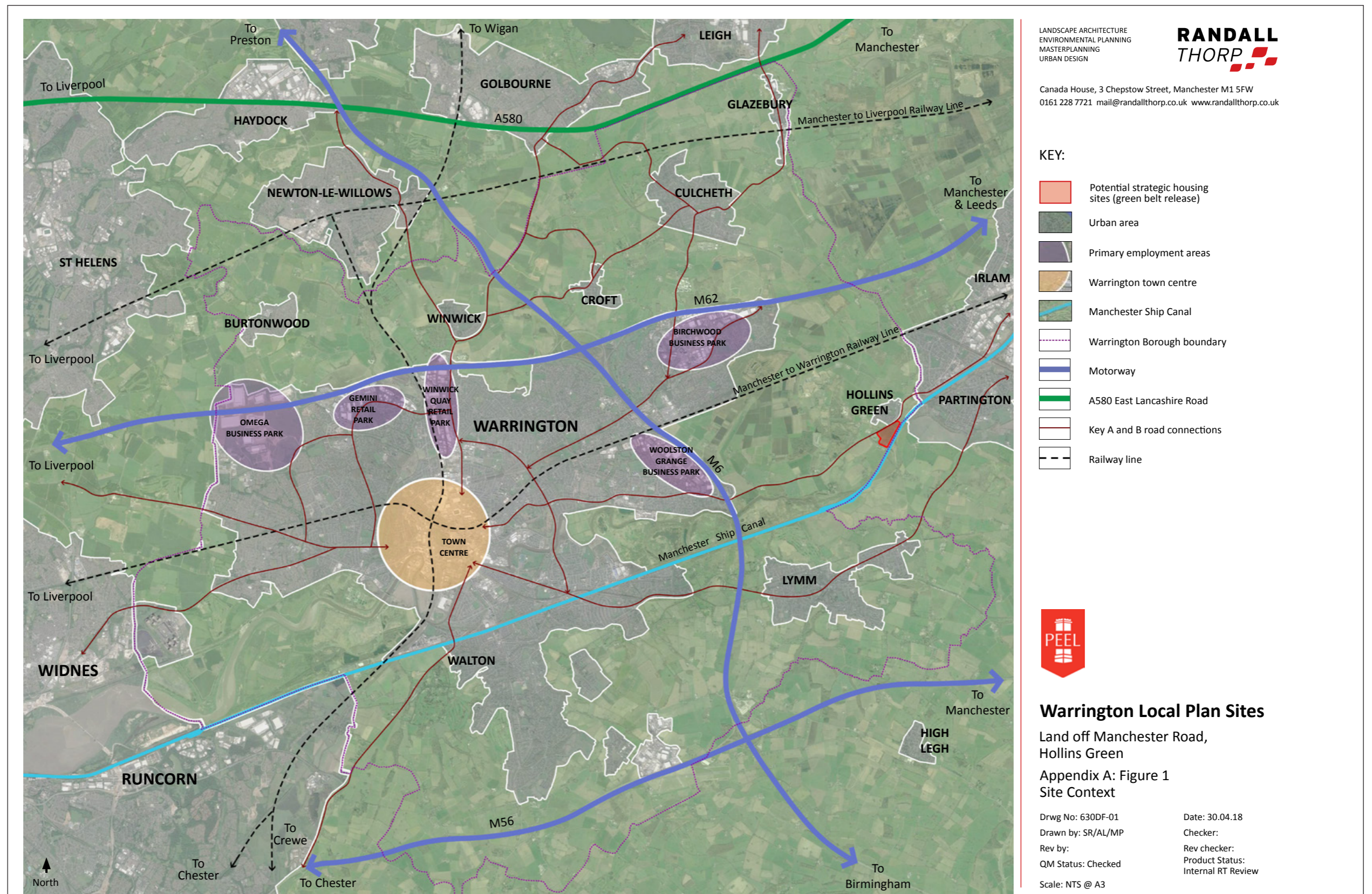


Figure 1 - Site context

Methodology

Guidance

This Landscape, Townscape and Visual Sensitivity Assessment has been prepared in accordance with “Guidelines for Landscape and Visual Impact Assessment” (GLVIA3), Third Edition. These guidelines explain that it is necessary to tailor Landscape and Visual Appraisals to the specific nature of the proposals, and that a prescriptive approach should not be applied.

Study area

For the purposes of the report a landscape study area, which encompasses the site and its surrounding landscape and townscape context has been adopted. **Figure 2** (Page 7) illustrates the study area.

Approach

An appropriate level of assessment has been carried out for the purposes of demonstrating that the site is suitable for allocation.

The principle objectives of the assessment are:

- Identify the planning policy constraints
- Consider the published Landscape Character Assessments
- An evaluation of the landscape and townscape character
- Identify visual receptors
- Describe and evaluate the existing landscape character of the site and its immediate surroundings
- Assess the landscape and visual sensitivity of the site and its immediate surroundings
- Advise on the development potential of the site considering the landscape and visual sensitivity and the evaluation of the adjoining townscape as set out above.

Baseline studies

The baseline study identifies the landscape, townscape and visual character and components of the site within the study area shown in **Figure 2** (Page 7).

The following documents have been reviewed as part of the desk study:

- Landscape Institute and the Institute of Environmental Management and Assessment – Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition (2013)
- Landscape Institute Townscape Character Assessment Technical Information Note 05/2017
- Warrington: A Landscape Character Assessment – Prepared 2007 (Warrington LCA, 2007)
- Warrington Local Plan Core Strategy – Adopted July 2014
- Warrington Borough Council PSLP (2019)
- Warrington Borough Council Local Plan – Settlement Profiles July 2017

Initial field work was undertaken in April 2018; the field work establishes an understanding of the landscape within and around the site, its component parts and subdivisions, as well as the contribution currently made by different areas in terms of landscape quality and character, value, green infrastructure functions and accessibility. It also establishes the visual baseline to identify the range of views of the site, and whether there are any public viewpoints which are important in terms of appreciating the character of the site.

Photographs have been taken from publicly accessible locations as an aide memoire.

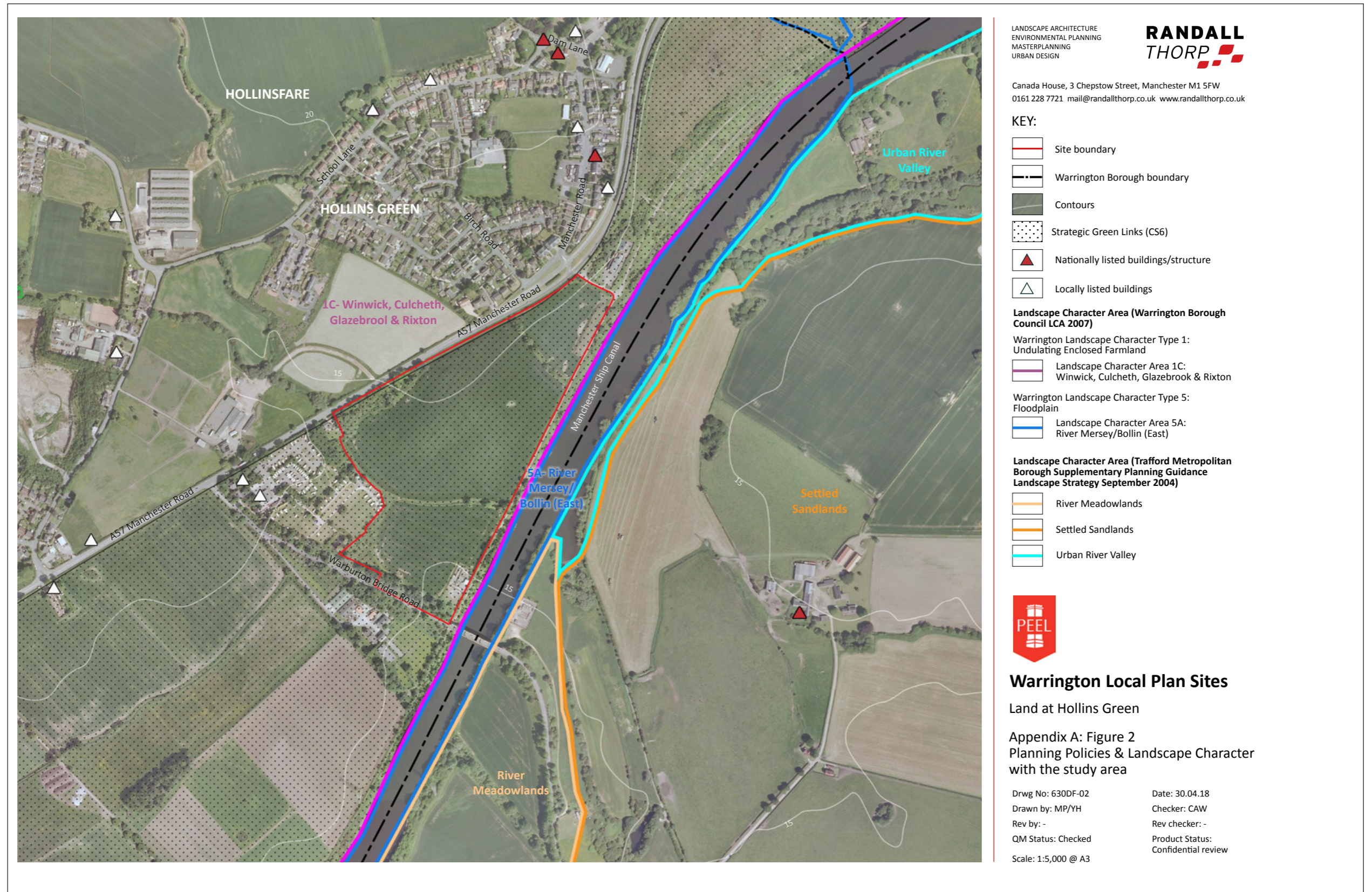


Figure 2 - Planning policies and landscape character within the study area

Methodology for appraising the sensitivity of the landscape

The guidance in GLVIA3 underpins the complete process of landscape and visual impact assessment and states that the value of the landscape should be considered as part of the baseline studies. 'Landscape value' and 'susceptibility to change' are taken into account when establishing the overall sensitivity of a landscape prior to making an assessment of the landscape impacts. In broad terms landscape 'sensitivity' is defined as a considered combination of the value of the landscape with its susceptibility to change.

GLVIA3 suggests two approaches to determining landscape value, the first applies to areas where there are existing landscape characterisation studies and where there are landscape designations in place, and the second applies when there is no existing evidence base. It goes on, however to suggest (para 5.29) that in practice a combination of these approaches is most effective.

In the case of this settlement there is a published assessment, Warrington: A Landscape Character Assessment (LCA) (Prepared in 2007), which sets out the key landscape characters in the Warrington Borough. This LCA does not attach any values to any particular landscape type or landscape area. It is an objective assessment of the 2007 landscapes within Warrington Borough.

In addition Box 5.1 on page 84 of GLVIA lists a range of factors that are generally agreed to help in valuing landscapes.

Box 5.1

Range of factors that can help in the identification of valued landscapes

- **Landscape quality (condition):** A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
- **Scenic quality:** The term used to describe landscapes that appeal primarily to the senses (primarily but not wholly the visual senses).
- **Rarity:** The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type.
- **Representativeness:** Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples.
- **Conservation interests:** The presence of features of wildlife, earth science or archaeological or historical and cultural interest can add to the value of the landscape as well as having value in their own right.
- **Recreation value:** Evidence that the landscape is valued for recreational activity where experience of the landscape is important.
- **Perceptual aspects:** A landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity.
- **Associations:** Some landscapes are associated with particular people, such as artists or writers, or events in history that contribute to perceptions of the natural beauty of the area.

Based on Swanwick and Land Use Consultants (2002)

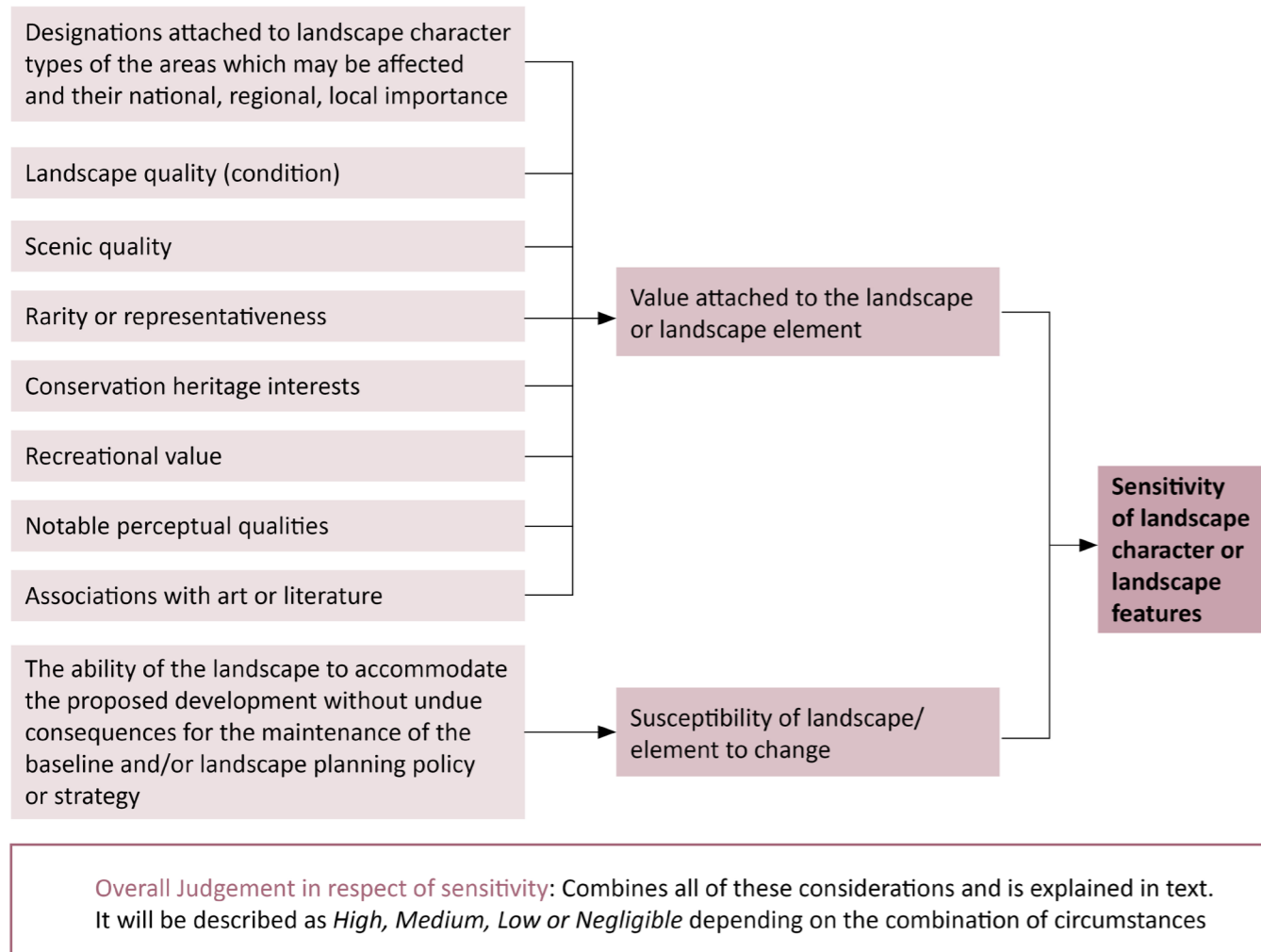
The value of the landscape is assessed in this report using a combination of the considerations set out in Box 5.1 of GLVIA3 and the key characteristics identified in the Warrington LCA, 2007.

'Susceptibility to change' is defined at paragraph 5.40 of GLVIA3 which states:

"This means the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of planning policies and strategies".

The level of susceptibility to change of any landscape will depend on both its existing characteristics and on the characteristics of the development being proposed. A landscape may have a high susceptibility to change if the elements are proposed which are completely new/alien in the context of the landscape, or where new elements would be highly visible in an open view. Likewise a landscape would have a low susceptibility to change if the site is not widely visible and the new elements proposed are already found in the existing environment.

The following diagram summarises some of the considerations contributing to the evaluation of landscape sensitivity.



Methodology for evaluating the townscape character

Using GLVIA and the Landscape Institute Townscape Character Assessment Technical Information Note 05/2017 (TIN) this report includes an evaluation of the townscape character within close proximity of the site.

Townscape is described in GLVIA3, paragraph 2.7:

“the landscape within the built-up area, including the buildings, the relationship between them, the different types of urban open spaces, including green spaces and the relationship between buildings and open spaces.”

Consideration of the townscape character will provide an understanding of how a place has evolved and developed over time to respond to natural, social and economic drivers; and how this is reflected in the layout of the streets, the architecture of the buildings and materials used; and the historic development of the surroundings.

A study of the historic development; movement and connectivity; urban structure and built form; heritage assets; green infrastructure and public realm and tranquility has been carried out in order to evaluate the townscape relevant to the site and surrounding area.

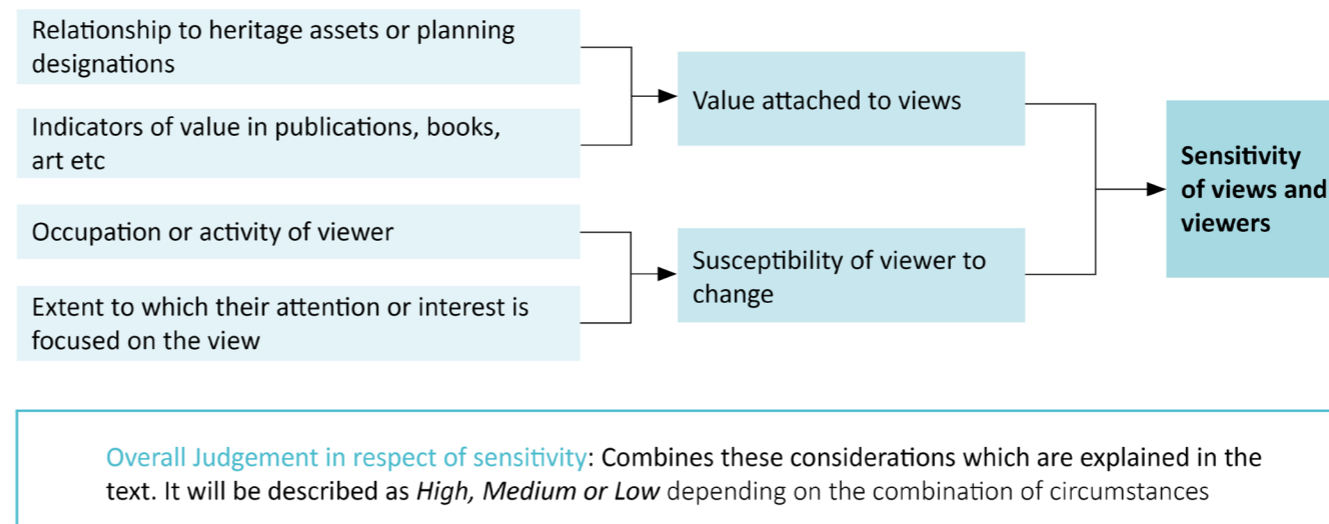
This evaluation will provide an understanding of the intrinsic character and qualities of a place and can be used as a guide to the location, design, scale, massing and type of development that can be accommodated. A townscape character assessment can form the basis for assessing the effects of change and whether a new development is appropriate in its context.

Methodology for appraising the sensitivity of the visual receptors

A visual appraisal has been carried out to identify the sensitivity of the visual receptors.

Viewpoints considered representative of potentially sensitive receptors situated within the study area at varying distances and directions have been identified. Views from public viewpoints, such as Public Rights of Way (PRoW) and roads in the vicinity have been considered.

The following diagram summarises some of the considerations contributing to the evaluation of visual sensitivity.



Planning policy and published landscape character assessment

Planning policy

The Warrington Local Plan Core Strategy was adopted by Warrington Borough Council (WBC) on 21st July 2014 and replaced the previously Adopted Unitary Development Plan as the reference document for planning applications. **Figure 2** (Page 7) identifies the site and the surrounding landscape planning policies within the study area.

The majority of the landscape that surrounds the settlement of Hollins Green and the Land at Hollins Green site is indicated as Green Belt, which is set out within Policy CS 5 – Overall Spatial Strategy – Green Belt. This is a spatial policy which is not specifically related to landscape quality objectives.

Warrington Borough Council recognises the need for Green Belt release in order to accommodate the Borough's housing and economic requirements.

The site is designated as a Strategic Green Link – CS6. This policy sets out the need to care for and manage the Green Infrastructure in the Borough. In this location the policy is concerned with the Mersey Valley and the opportunities the canal presents to provide benefits for people and wildlife. As with Green Belt, the Strategic Green Link policy is an overall spatial strategy policy and is not an indication of landscape quality.

There are a number of Listed Buildings within the study area, which are identified in Policy QE8 – Historic Environment. The Local Plan recognises the value of the heritage assets to the Borough and sets out the policy to appropriately protect and enhance these buildings.

The draft version of the Warrington PSLP was approved for consultation in March 2019. This includes emerging landscape policies that require consideration as part of the site promotion. Once adopted, the PSLP will replace the Local Plan Core Strategy (2014).

Published landscape character assessment

Figure 2 (Page 7) shows the extent of the Landscape Character Areas within the study area. The Landscape Character Area within which the site is located and the adjoining Landscape Character Areas are detailed below.

Warrington LCA, 2007 sets out and describes, on an area by area basis, the Borough's distinctive landscape, its cultural history, landscape sensitivity and landscape change, together with Recommended Management and Landscape Objectives. The Borough is divided into broad Landscape Character Types, these are then divided into more detailed Landscape Character Areas.

The settlement of Hollins Green falls within Landscape Character Type 1 "Undulating Enclosed Farmland" and within Landscape Character Area 1C "Winwick, Culcheth, Glazebrook and Rixton". Hollins Green is located to the eastern boundary of the Landscape Character Area, closely bordered to the south east by the Manchester Ship Canal. The Ship Canal and the land associated with it falls within Landscape Character Type 5 Flood Plain. Landscape Character Area 5A "River Mersey/ Bollin" follows the Manchester Ship Canal which forms a boundary to the Borough of Warrington and has some association with Hollins Green.

Land to the south of the Ship Canal is within the Metropolitan Borough of Trafford (Trafford MBC). Trafford MBC has published Supplementary Planning Guidance (SPG), Landscape Strategy, in September 2004. This document is an assessment of open land outside the built up area and includes the Landscape Character Areas found within the Borough.

Within the study area, adjacent to the settlement of Hollins Greens, there are three character areas identified. These are Settled Sandlands, River Meadowlands, and Urban River Valley.

Appendix B includes extracts of the relevant Landscape Character Area descriptions from the Warrington LCA, 2007.

Landscape Character Area 1C -

Winwick, Culcheth, Glazebrook and Rixton

The relevant key characteristic from LCA 1C:

- *Medium to often large-scale mainly arable fields*
- *Lack of hedgerow trees*
- *Hedgerows between fields often fragmented*
- *Deciduous wooded backdrops*
- *Rixton Clay pits*
- *Rixton Landfill*

Landscape Character Area 1C is described in the Warrington LCA, 2007 as:

"These areas typify undulating enclosed farmland with a medium to large -scale field pattern. The area stretches in an arc from the River Mersey in the south, through Glazebrook to Culcheth in the north and finally wrapping around Winick in the west."

"The agriculture predominantly consists of arable fields, intensely cropped, with poorly maintained remnant hedgerows with few hedgerow trees. Small deciduous woodlands form backdrops to views within the landscape."

Landscape Character Area 5A – River Mersey/ Bollin

The relevant key characteristics from LCA 5A:

- The River Mersey and River Bollin
- The Manchester Ship Canal
- Mounded landfill sites
- Slurry and dredging lagoons
- Importance for nature conservation
- Dominance of floodplain crossings (Road and rail bridges)
- Residual floodplain meadows
- Widespread residential and industrial development on the floodplain
- Artificial levee and channel constraints to the river
- Lack of visual importance of the river (normally screened from views)
- The Mersey Way recreational footpath

Landscape character Area 5A is described in the Warrington LCA, 2007 as:

"The River Mersey and its broad floodplain forms a major landscape character, dividing the Borough into roughly two halves on an east/west axis. The River Bollin flood plain merges with the Mersey floodplain from the east. The Mersey displays the typical characteristics of a lowland mature river, winding across a broad

floodplain with large meander loops. Much of the river has been prevented from naturally flooding onto its floodplain by the creation of artificial levee embankments, whilst its channel has also been occasionally straightened or restricted by sheet piling, walls or other hard structures. A section of the river upstream from Butchers Field, Rixton has also been canalised to form part of the Manchester Ship Canal.

Within the Borough boundary, only small areas of original flood meadows still survive. These are located to the south of the river in the Penketh area, to the north of the river within a meander loop at Paddington Meadows and at the confluence with the River Bollin between Warburton and Lymm. The remainder of the Mersey flood Plain has heavily developed for residential and industrial uses, particularly in the areas of Martincroft, Woolston, Padgate, Orford, Westy, Latchford, Wilderspool and Sankey Bridges."

Appendix C includes extracts of the relevant Landscape Character Area descriptions from the Trafford MBC, SPG, Landscape Strategy.

Landscape Character Area Settled Sandlands

The relevant key characteristic from LCA Settled Sandlands:

- Dominant agricultural land use, arable with some pasture
- Medium to large sized fields, generally defined by hedgerows and prominent hedgerow trees
- Generally low-lying, gently rolling topography, particularly down to the River Bollin floodplain

- Dispersed farmsteads throughout, linked by meandering country lanes with two main cluster settlements at Dunham Woodhouses and Warburton
- The vernacular style, particularly in farm buildings, with their traditional use of materials, is a distinguishing visual feature
- Small, isolated blocks of woodland
- The presence of several watercourses and ponds

Landscape character Area Settled Sandlands is described in the Trafford Landscape Strategy SPG as:

"Settled Sandlands form an extensive wedge of landscape between the urban areas of Ashton-Mersey and Broadheath to the east, Partington to the west and around the Mossland area on its northwestern boundary. The River Bollin lies immediately to the south and the River Mersey immediately north, whilst the Ship Canal forms the western boundary south of Partington.

The area consists of good quality agricultural land, supporting both arable and pasture. The semi-regular pattern of medium sized fields is well defined by hawthorn hedgerows with a high proportion of hedgerow trees, predominantly Oak and Ash. These hedgerow trees and hedgerows around the farmsteads and country lanes are visually prominent throughout the area and contribute to the appearance of the rural area. Although low-lying the land begins to roll gently southwards beyond Sinderland Brook and in particular down to the River Bollin floodplain. The combination of the rolling landscape and unwooded nature of the rural landscape creates extensive views to the south, east and west.

The Settled Sandlands consists of 3 subdivisions, which display the general characteristics but have subtle differences (the land in close proximity to the site is described as:)

ii) Warburton Fields are generally smaller with more irregular boundaries. There are several ponds throughout the area that provide ecological diversity, some perhaps coincide with the location of the former Warburton moss. The ponds were used in conjunction with the drainage ditches found in the area to assist in the control of water levels.”

Landscape Character Area River Meadowlands

The relevant key characteristic from LCA River Meadowlands:

- *low-lying topography associated with a flat alluvial floodplain*
- *meandering watercourse, not visually prominent due to the slightly sunken position within the flat topography*
- *medium scale pastoral landscape with patches of wet grassland*
- *semi-regular enclosure pattern marked by thorn hedgerows and post and wire fences*
- *open often distant views along the floodplain, views north and south controlled by the rising ground beyond the floodplain*
- *secluded character with the occasional building*
- *marginal aquatic vegetation with occasional fringing trees and scrub*

Landscape character Area River Meadowlands is described in the Trafford Landscape Strategy SPG as:

“The River Meadowlands describes two areas within the Borough, the western sections of both the River Mersey in the north and the River Bollin in the south. These two areas demonstrate similar characteristics, albeit that the Mersey Valley is larger than the Bollin and is located within a more urban context.”

“The Bollin Meadowlands mark the southern extent of the Borough, the river itself marking the boundary with Cheshire County Council and Warrington Borough Council. To its north lie the rural and agricultural areas of Warburton and Dunham Massey and the historic hall and woodland areas of Dunham Park. A high, estate brick wall marks the boundary of Dunham Park. To the west the Bollin floodplain widens out until it meets the Ship Canal, whilst to the east the A56 Chester Road marks the boundary between the River Meadowlands and the Wooded River Valley.

The River Meadowlands of the Mersey and Bollin demonstrate similar physiographic, cultural and visual characteristics. The physical nature of the flat, alluvial floodplain, with its associated pastoral land use and only occasional buildings are perhaps the most significant characteristics which distinguish this landscape.

The rivers, which are a key physical element, are not visually prominent, due to their sunken position and the presence of levees, which are parallel to the river course and protect the adjacent areas from flooding. Both the rivers are often marked by the presence of marginal and aquatic vegetation, including willow and hawthorn scrub, herbaceous and rough grassland or aquatic species such as reeds. Due to the rivers periodic flooding woodland areas are uncommon.

Bollin Valley –

Agricultural areas adjacent to the Bollin floodplain, are predominantly pasture, but also include arable and rough grassland. Field boundaries comprise a mixture of hedgerows and most often post and wire fences. Many hedgerows are overgrown or remnant, with isolated and scattered hedgerow trees, particularly adjacent to the river. Where post and wire fences occur these increase the visually open aspect and apparent scale of the field areas. Adjacent to the Dunham Estate the landscape assumes a more managed appearance, with pristine post and rail fences and recent Avenue planting emphasising the main pedestrian routes to and from the Park.

Mersey Valley –

Land use in the Mersey floodplain is more mixed than that of the Bollin. Much of the pasture is used for horse grazing, with only a small amount of land now used for arable farming. Few field boundaries remain most comprising post and wire fencing to those fields used for horses. This allows extensive views along the river corridor, with recent planting and changes to topography (often from landfill operations) being the main obstacle to distant views. Recreational uses have become more widespread to the east of the meadowlands with very little access to the west. There are a number of features such as ox-bows created by the River Mersey, which are important in terms of their geomorphologic and ecological value.”

Landscape Character Area Urban River Valley

The relevant key characteristic from LCA Urban River Valley:

- *The presence of the Manchester Ship Canal and the canalised part of the River Mersey, views of these watercourses are limited Both these stretches of water are operational and working waterways*
- *Generally low lying areas associated with the floodplain*
- *Mixed land use, with a significant amount used for recreation in the Mersey*
- *A fairly dense communication network with motorways, roads and railways producing a number of bridged crossings*
- *Scrub vegetation and natural regeneration often adjacent to the watercourse, otherwise few trees or woodland*
- *Lack of field pattern or boundaries*
- *Few distinguishing built features, a secluded character in parts*

Landscape character Area Urban River Valley is described in the Trafford Landscape Strategy SPG as:

“This description refers to two areas, the Manchester Ship Canal Corridor and the canalised section of the River Mersey (to the east of the Carrington Spur Road and M60). The Ship Canal Corridor contains a narrow strip of land either side of the Canal. The River Mersey area is broadly defined by the extent of the floodplain, which continues into Manchester's boundary.

The character of the two areas has been greatly affected by the proximity of adjacent urban areas. Development adjacent to the Ship Canal extends almost up to the banks. The Ship Canal was borne out of

the River Mersey and in this locality the river's former alignment and original topography have been lost. The Ship Canal attracted industrial uses, which have since decreased resulting in remnant landscapes, which appear derelict or in a state of transition. Views of the Canal are limited by the extent and nature of adjacent development.

The land adjacent to the River Mersey is a mosaic of land uses created by development and its proximity to urban areas. These uses include: - water parks, playing fields, golf courses, sewage works and an increase in access within the floodplain. The banks of the river within this character area have been engineered and have an artificial, formal appearance. There is a general lack of field boundaries such as hedges or fencing. The lack of boundaries and flat topography often permit extensive views over the floodplain, sometimes restricted by the regenerating scrub vegetation and tree planting.

Other than localised areas of remnant trees or woods, vegetation is limited to areas where regeneration has occurred or where planting has taken place. Scrub, herbaceous vegetation or reedbeds create a rich ecological diversity. Some of have been designated as Sites of Biological Importance (S.B.I.)”

Summary of the landscape character of the site and its surroundings

The site itself sits in Landscape Character Area 1C Winwick, Culcheth, Glazebrook and Rixton.

The site comprises small scale arable fields and is not typical of the landscape character area. To the west the site is somewhat enclosed by woodland and mature vegetation associated with the caravan park. Further east the poorly maintained hedgerows and gaps in the vegetation mean the site is influenced by urbanising features such as the heavily trafficked A57, and adjacent existing housing at Hollins Green. The raised iron bridge crossing the Manchester Ship Canal can be seen from the site this also has an urbanising effect on the character and setting of the site.

There is a small area of deciduous woodland which is typical of the character area, but woodland such as this can be found in other character areas in Warrington and would be retained.

Development within the site will be in keeping with the adjacent urban and suburban land uses.

Landscape/townscape character and visual receptors

Landscape character of the study area

The study area is divided in two by the Manchester Ship Canal, which is borne from the River Mersey and also forms the eastern borough boundary of Warrington with Trafford Metropolitan Borough. Hollins Green is a relatively small settlement located to the west of the Manchester Ship Canal and north of the study area.

The topography of land within the study area is relatively flat and comprises of *“farmland with medium – large field pattern”* as described in the Warrington LCA, 2007. The remaining study area comprises a mix of land uses including the residential area of Hollins Green, a caravan park, some large industrial units/ sheds and the ship canal.

Generally, the vegetation within the study area is focused along the fields boundaries and watercourses with some *“small deciduous woodlands that form backdrops to views”* (Warrington LCA, 2007).

Townscape character of the study area

The townscape adjacent to the site comprises Hollins Green.

Historical development

Hollins Green village is located to the north west of the A57/ Manchester Road. The Warrington Landscape Character Assessment describes the village as a *“small village just north of the A57”* which *“contains a church yard on an ancient circular plan site with a footpath called “The Weint” running around it suggestive of a pre-Roman origin”* (Warrington LCA, 2007).

Development of Hollins Green originally centered around the junction of School Lane and Dam Lane at St Helen’s Church. Historical mapping indicates the village developed south and west from this junction in the early 1900’s along School Lane and Manchester Road (within the village before the construction of the A57 by-pass). The settlement then continued to development south west after the 1960s during which time the A57/ Manchester Road, a by-pass route around the village, was constructed.

Movement and connectivity

The main access road into Hollins Green is from the A57/ Manchester Road. This road *“follows the high ground north of the River Mersey”* and *“to the south of the great basin formed by Rixton Moss”*. *“The road connects with the M6 to the west and with the B5212 to the east”* (Warrington LCA, 2007) and is an important transport link connecting Warrington to Greater Manchester and Salford.

The A57/ Manchester Road is a heavily trafficked route with tall vegetation on both sides. The route is urban in its character and although there are glimpsed views across agricultural land the lamp posts, residential development, Warburton bridge and electricity pylons are urbanising features in the view. A slip road from the A57/ Manchester Road provides access to Hollins Green from the south, forming an abrupt approach to the village. North east of the slip road the route becomes a wider transport corridor and the boundary to Hollins Green is formed by the rear garden fences of the properties that back onto the A57/ Manchester Road.

Warburton Bridge provides access across the Ship Canal and is the only crossing point within close proximity of the site. The Warrington Landscape Character Assessment describes this route as once the *“lowest ford on the Mersey”* (Warrington LCA, 2007).

There are a number of PROWs located within close proximity of the site. The majority of which are short routes on the outskirts of Hollins Green.

Urban structure and built form

Hollins Green comprises a mixture of housing styles and type including red brick and white render, terrace dwellings, semi-detached properties and bungalows.

Due to the mixture of housing types the density of built form varies but in the most part the village comprises semi-detached development of a medium density.

The majority of the houses are two storey however there are clusters of single storey dwellings located on the northern edge and western edge of Hollins Green, and adjacent to Manchester Road.

Heritage assets

There are no conservation areas in Hollins Green. The listed buildings and earliest development of the village are focused along School Lane and Manchester Road. There are 3Nr Nationally Listed Buildings within Hollins Green and 10Nr locally Listed Buildings and structures within the study area. Due to the intervening vegetation and built form there is no relationship or inter-visibility between the listed features and the site.

Green infrastructure and public realm

There is one play area located centrally to Hollins Green, and sports pitches are located within the local primary school grounds.

Bridleway Warburton 2 forms a section of the Bollin Valley Way. This route is on the southern side of the Manchester Ship Canal and not directly accessible from Hollins Green or the site. It is a recognised recreational path shadowing the course of the River Bollin. The route starts at Macclesfield Riverside Park and finishes in Partington. It takes in fields and woodlands, towns and villages, passes around Manchester Airport and ends in the industrial area near the site and the Manchester Ship Canal.

Tranquillity

Due to the heavily trafficked A57/ Manchester Road the site is not considered to be tranquil.

Site description

Figure 3 (Page 17) shows the site in relation to Lymm, its landscape features and context.

The site is located immediately south of the settlement of Hollins Green and comprises a broadly triangular area of agricultural land, divided into three fields by a ditch to the north and Marsh Brook to the south. In the southern corner of the site is a sub station and compound associated with the underground gas pipe that traverses the site.

The Manchester Ship Canal forms the south eastern boundary. There is evidence that this boundary is used locally as a recreational walking route along the canal. The A57/Manchester Road forms the north western boundary, and Hollybank Caravan Park and Warburton Bridge Road form the site boundary to south west.

The site is generally flat and well enclosed on all sides by mature vegetation. To the south is an area of mature woodland that creates a strong boundary to the embankment of Warburton Bridge Road. There is a second area of woodland to the north west of the site adjacent to A57/ Manchester Road. The site is enclosed along the remainder of the north western edge of the A57/ Manchester Road by a tall hedgerow. The south eastern edge of the site is formed by mature trees and vegetation that follow the Manchester Ship Canal.

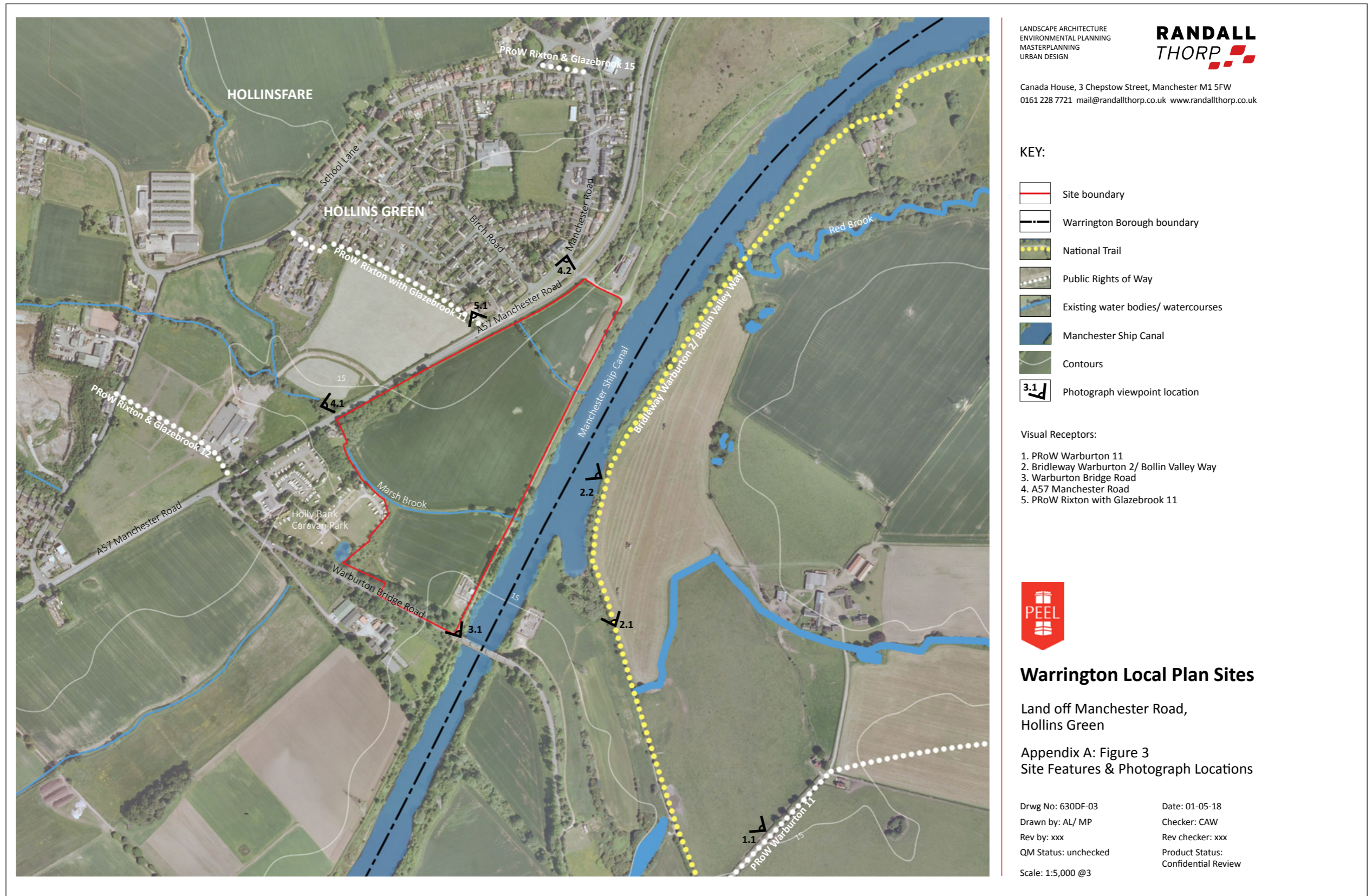


Figure 3 - Site features and photograph locations

Visual receptors and views of the site

Figure 3 (Page 17) illustrates the locations of the photograph viewpoints taken from visual receptors within and around the site.

Figures 5-6 (Pages 20-21) include the Photographs 1-10 which are taken from publicly accessible viewpoints within and around the site. Views from private residencies have not been considered. Any consideration of residential amenity would need to be carried out as a separate assessment.

Observations made during the site visit identified the following publicly accessible visual receptors:

- PRow Warburton 11
- Bridleway Warburton 2/ Bollin Valley Way
- Warburton Bridge Road
- A57/ Manchester Road
- PRow Rixton with Glazebrook 11

Description of the visual receptors

PRow Warburton 11 (Photographs 1.1)

PRow Warburton 11 provides a link from Warburton north and east towards to the A6144 and Partington beyond. As the route leaves the residential area of Warburton it tracks along a narrow access road towards a farm stead at Warburton Park. The route is flanked on both sides by low well- managed hedgerows. From this section of the route there are views across the agricultural land east of the Manchester Ship Canal towards the site. Electricity pylons, a substation and properties on the eastern edge of Hollins Green can also be seen in this view.

Bridleway Warburton 2/ Bollin Valley Way (Photographs 2.1 – 2.2)

Bridleway Warburton 2 also forms part of the Bollin Valley Way. The route starts within the residential area of Warburton and tracks north towards the Ship Canal. From this first section of the route the site is not visible, and the vegetation associated with Warburton Bridge and Ship Canal limit distance views. Further north the route tracks along the south eastern edge of the Manchester Ship Canal and from this location there are clear views towards to the site. These views are experienced in the context of the Warburton Bridge, electricity pylons and the properties on the eastern edge of Hollins Green.

Warburton Bridge Road (Photographs 3.1)

Warburton Bridge is one of the limited crossing points in this location. The road is constructed on steep embankments that are heavily vegetated. This vegetation screens the site for the majority of the journey. However, as the road crosses the canal, on the bridge, there are clear views across the site towards the residential development at Hollins Green.

A57/ Manchester Road (Photographs 4.1 – 4.2)

The A57/ Manchester Road is identified as an important transport link through Warrington. There are limited long distance views from this road due to the tall hedgerows and mature vegetation that border either side of the road. As the road passes the site the dense, mature vegetation within its western corner screens views of the site. Further north the vegetation is thinner and more gappy and in this location there are filtered views into the site with clear views where there are gaps in the vegetation.

PRow Rixton with Glazebrook 11 (Photographs 5.1)

Due to the built form to the north of this route and the dense vegetation to the southern end of the footpath there are limited views towards the site. Any views of the site are filtered through the vegetation on the western site boundary.




Photo 1.1 - View from PRoW Warburton 11 looking North West towards the site.

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Canada House, 3 Chepstow Street, Manchester M1 5FW
0161 228 7721 mail@randallthorp.co.uk www.randallthorp.co.uk




Photo 2.1 - View from Bridleway Warburton 2/ Bollin Valley Way looking north towards the site.



Warrington Local Plan Sites

Land off Manchester Road,
Hollins Green

Appendix A: Figure 4
Viewpoint photographs




Photo 2.2 - View from Bridleway Warburton 2/ Bollin Valley Way looking North towards the site.

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 Drawn by: AL/ MP Checker: CAW
 Rev by: xxx Rev checker: xxx
 QM Status: unchecked Product Status:
 Scale: NTS Confidential Review

Figure 4 - Viewpoint photographs



Photo 3.1 - View from Warburton Bridge Road looking north into the site.

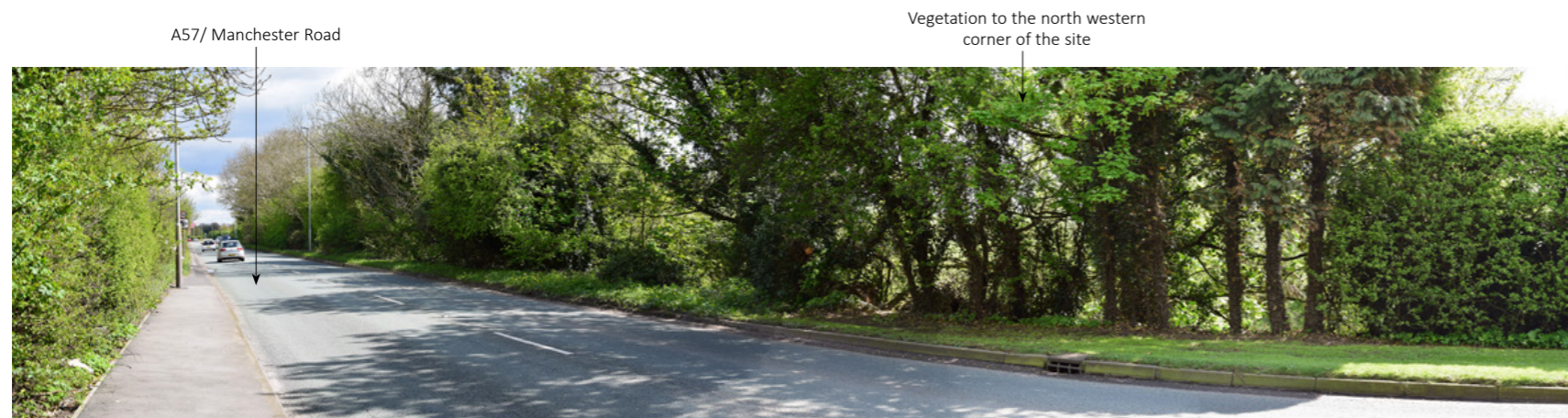


Photo 4.1 - View from Manchester Road/ A57 looking north east towards the site.

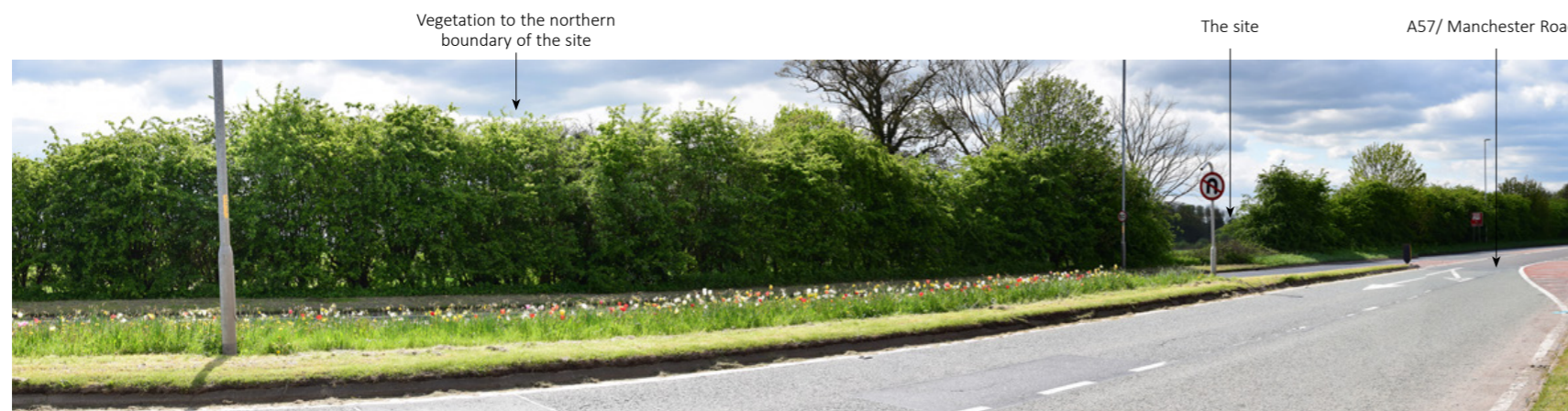


Photo 4.2 - View from Manchester Road/ A57 looking south towards the site

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Canada House, 3 Chepstow Street, Manchester M1 5FW
0161 228 7721 mail@randallthorp.co.uk www.randallthorp.co.uk



Warrington Local Plan Sites

Land off Manchester Road,
Hollins Green

Appendix A: Figure 5
Viewpoint photographs

Drwg No: 630DF-05

Drawn by: AL/MP

Rev by: xxx

QM Status: unchecked

Scale: NTS

Date: 01-05-18

Checker: CAW

Rev checker: xxx

Product Status:

Confidential Review

Figure 5 - Viewpoint photographs

Vegetation on the northern boundary of the site





Photo 5.1 - View from PRoW Rixton with Glazebrook 11.

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Warrington Local Plan Sites

Land off Manchester Road,
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Appendix A: Figure 6
Viewpoint photographs

Drwg No: 630DF-06
Drawn by: AL/MP
Rev by: xxx
QM Status: unchecked
Scale: NTS

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Checker: CAW
Rev checker: xxx
Product Status:
Confidential Review

Figure 6 - Viewpoint photographs

Landscape and visual sensitivity

The landscape within the study area is not designated for its landscape value.

Section 3 above sets out the designations within the wider landscape context.

The value of the landscape within the site and its immediate surroundings is considered below using the guidelines of GLVIA3 Box 5.1.

The landscape value of the site and its immediate surroundings is therefore considered to be **Low**.

LANDSCAPE VALUE
LANDSCAPE QUALITY (CONDITION)
The landscape surrounding Hollins Green is described as <i>“arable fields, intensely cropped, with poorly maintained remnant hedgerow trees.”</i> (Warrington LCA, 2007)
SCENIC QUALITY
The site has a limited visual envelope and is enclosed by vegetation to the north and west. Views along the Ship Canal are often experienced in the context of the adjacent electricity pylons, the Warburton Bridge, and the eastern edge of Hollins Green.
RARITY
The site and its surroundings are not nationally or locally recognised or designated, and therefore not considered to be rare.
REPRESENTATIVENESS
The site itself is not typical of the landscape character however the surroundings are typical of the agricultural landscape as described in Landscape Character Area 1C. The landscape does not contain elements which are considered particularly important examples.
CONSERVATION INTERESTS
The site and its immediate surroundings are not designated or recognised for the presence of any wildlife or earth science interest. There are no nationally Listed Buildings within close-proximity of the site. There are two locally Listed Buildings to the south west of the site but due to the dense vegetation and caravan park adjacent this site boundaries there is no inter-visibility between these buildings and the site.
RECREATION VALUE
There are Public Rights of Way within the landscape surrounding the site which pass through the outskirts of Hollins Green. Beyond the Manchester Ship Canal is the Bollin Valley Way which is a nationally recognised trail but there is no direct link between this route and the site due to the physical barrier of the Manchester Ship Canal.
PERCEPTUAL ASPECTS
The A57/ Manchester Road is a heavily trafficked route located directly adjacent to the site which means that the landscape cannot be considered tranquil or wilderness.
ASSOCIATIONS
There are no known associations with any published art, literature or folklore which would add to its landscape value.

Susceptibility to change

The site and surrounding farmland is often perceived in the context of urbanising features such as existing residential development and the A57/ Manchester Road. To the south east beyond the canal, the Trafford Landscape Strategy SPG states that “*Urban land changes threaten to completely remove the original characteristics*” of the Urban River Valley Character Area and “*urban encroachment*” has “*adversely affected the landscape pattern*” of the River Meadowlands Character Area, making this landscape to the south of the site more vulnerable to change.

The susceptibility to change is therefore considered to be **Medium**.

Conclusion in respects of the landscape sensitivity

As can be ascertained from the descriptions there is nothing to indicate that there is anything about the site or its immediate surroundings which should be considered remarkable or out of the ordinary. The assessment has identified some features of value that are site specific and would be subject to further assessment or mitigation measures.

The landscape sensitivity of the site and its immediate surroundings results from the consideration of landscape value and its susceptibility to change. As the **landscape value has been assessed as Low and the susceptibility to change has been assessed as Medium**, the landscape sensitivity is therefore considered to be **Medium - Low**.

Value and sensitivity of views and visual receptors

In line with GLVIA and **Diagram 2** within the methodology, the sensitivity of the visual receptor is a considered combination of the value of the view and the susceptibility to change of the visual receptor.

The following **Table 1** illustrates the sensitivity of the identified visual receptors

The landscape is not designated nationally or locally for its landscape value and is not valued for its scenic quality.

Table 1: Sensitivity of visual receptors

VISUAL RECEPTOR TYPE	VALUE OF THE VIEW	SUSCEPTIBILITY TO CHANGE	RESULTING SENSITIVITY
Receptor 1 (Photograph 1.1) Pedestrians using PRoW Warburton 11	Medium No recognised value attached to the views. Views across an ordinary landscape with housing at Hollins Green, electricity pylons and the Warburton Bridge visible in the distance.	High The landscape setting is likely to be valued by those engaged in recreational activity	Medium - High
Receptor 2 (Photographs 2.1 – 2.2) Pedestrians using Bridleway Warburton 2/ Bollin Valley Way	High Published recreational route. Views across an ordinary landscape with housing at Hollins Green, electricity pylons and the Warburton Bridge visible in the distance.	High The landscape setting is likely to be valued by those engaged in recreational activity	High
Receptor 3 (Photographs 3.1) Users of Warburton Bridge Road	Low View from highway network. No recognised value attached to the views. Views across an ordinary landscape with housing at Hollins Green, electricity pylons and the Warburton Bridge visible in the distance.	Low Taking in to account their speed of travel, the fleeting views and because their interest is focused on the road and driving rather than the views.	Low
Receptor 4 (Photographs 4.1 – 4.2) Users of Manchester Road/ A57	Medium View from highway network. Some value in relation to locally designated heritage assets. No recognised value attached to the views. Views across an ordinary landscape.	Low Taking in to account their speed of travel, the fleeting views and because their interest is focused on the road and driving rather than the views.	Medium - Low
Receptor 5 (Photographs 5.1) Pedestrians using PRoW Rixton with Glazebrook 11	Medium No recognised value attached to the views. Views across the landscape south of the site.	High The landscape setting is likely to be valued by those engaged in recreational activity.	Medium - High

Development potential of the site

The evaluation of landscape, townscape and the visual receptors highlights any sensitivities of the site. Any proposed masterplan should take into consideration the sensitivities in order to demonstrate good design and a contribution to the landscape and its existing character. The opportunities and constraints plan on page 27 and appended to this assessment (**Appendix D**) illustrates the relevant considerations for the site.

Evaluation of the landscape

The landscape sensitivity of the site and its surroundings is considered to be **Medium - Low**.

The site itself lies within the LCA 1C Winwick, Culcheth, Glazebrook and Rixton and is agricultural land with a lower landscape value and sensitivity than the surrounding floodplain landscape. There would be a loss of arable farmland as a result of developing the site, although this farmland is described as “*intensely cropped*” (Warrington LCA, 2007) and is therefore not considered to be of high value.

The existing landscape structure of the site should be preserved and enhanced. Development of the site would need to retain landscape features such as trees, woodlands, hedgerows and watercourses. The development of the site would need to incorporate an appropriate landscape buffer to the A57/ Manchester Road and new woodland areas screening development and creating an attractive landscape setting and enhanced green infrastructure.

The landscape comprises a mix of land uses including the residential area of Hollins Green, a caravan park, some large industrial units and the Ship Canal. Development within this area would be in keeping with the surrounding land uses.

Through a well-designed masterplan the development of the site could achieve the relevant recommended management and landscape objectives identified within the Warrington LCA, 2007 and contribute to the landscape and its existing character. The relevant recommended management and landscape objectives within the Warrington LCA, 2007 are:

- *Conserve and manage existing woodlands to encourage habitat diversity*
- *Conserve and manage remaining hedgerows*
- *Consider additional native woodland planting*
- *Consider the use of native planting to soften and screen new development.*

Evaluation of the townscape

The key elements of built form that contribute towards the townscape character adjacent to the site within Hollins Green have been identified in Chapter 4 of this report.

The dense vegetation to the north western boundary of the site would filter views of development from the A57. Any development should retain and enhance this existing mature vegetation and be offset from the road with a landscape buffer.

Access to the site should be taken from the A57/ Manchester Road. This road is urban in its character and access roads into pockets of development are not at odds with the journey experienced along this route. The current arrival to Hollins Green is abrupt. A masterplan for the site land to the east of the A57/ Manchester Road should consider an appropriate site entrance with an arrival nodes/ point within the site. There is no inter-visibility between the heritage assets within the study area and the site.

There is evidence of an existing locally walked route on the northern side of the Manchester Ship Canal. The masterplan should demonstrate an opportunity to create a network of new footpaths and cycle routes incorporated within green corridors, enhancing recreational value and improving wildlife connectivity. These pedestrian and cycle routes could link Hollins Green through the site, to the locally walked route along the Manchester Ship Canal. Any new green infrastructure within the site could be overlooked by proposed new development, promoting natural surveillance.

Evaluation of the visual receptors

The sensitivity of each visual receptor with views of the site has been assessed in Chapter 5 of this report.

The most sensitive visual receptors are the existing Public Rights of Way surrounding the site, particularly the nationally recognised Bollin Valley Way. Existing residential development at Hollins Green is visible in views from the Bollin Valley Way and PRoW Warburton 11. Any masterplanning of the site along this eastern edge should show an attractive green corridor to the development with an active frontage.

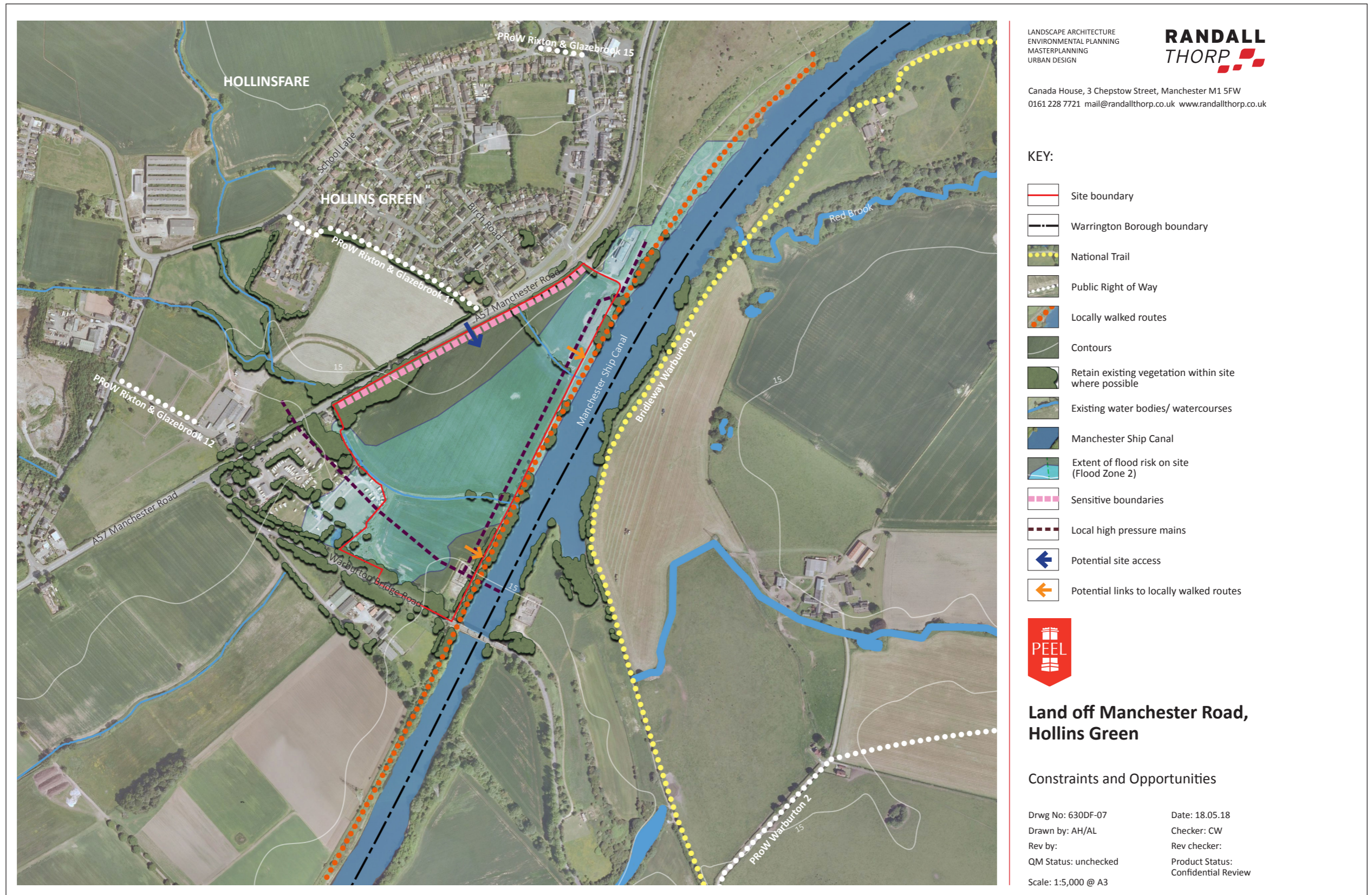
There are limited views of the site from the PRow's located to the north west of the site due to the dense vegetation adjacent to the footpaths, and the mature vegetation to the northern western boundary of the site. Any development of the site should be set back from this western edge with an appropriate landscape buffer screening development.

Development potential of the site

There is no reason why a well-designed development, that preserves the existing landscape features, provides a green infrastructure network and responds sensitively to the setting of the existing landscape features of the site, would have any significant effects on the character and townscape of the surrounding landscape.

With appropriate good design and well thought out landscape mitigation measures, it would be possible to develop the site whilst avoiding any potentially significant effects on the visual amenity of the surrounding receptors.

For the reasons set out above, this report considers the Land at Hollins Green to be a sustainable and achievable location to be allocated for new housing development within the new Warrington Borough Council Local Plan without having significant effects *“on the Green Belt objective”* and *“on the character of the settlement”* as suggested in the Warrington Borough Council Local Plan: Settlement Profiles – Outlying Settlements Document (July 2017).



Constraints and Opportunities

Illustrative masterplan

The opportunities and constraints identified through the landscape and visual appraisal have been combined with an analysis of site constraints and opportunities from other consultants in relation to arboriculture, ecology, heritage, noise, transport, flood risk and utilities. This resultant illustrative masterplan has been prepared to demonstrate the potential development opportunities of the site with an allocation for housing.

The land off Manchester Road, Hollins Green presents an opportunity to develop a sustainable extension to Hollins Green, providing around 199 new homes.

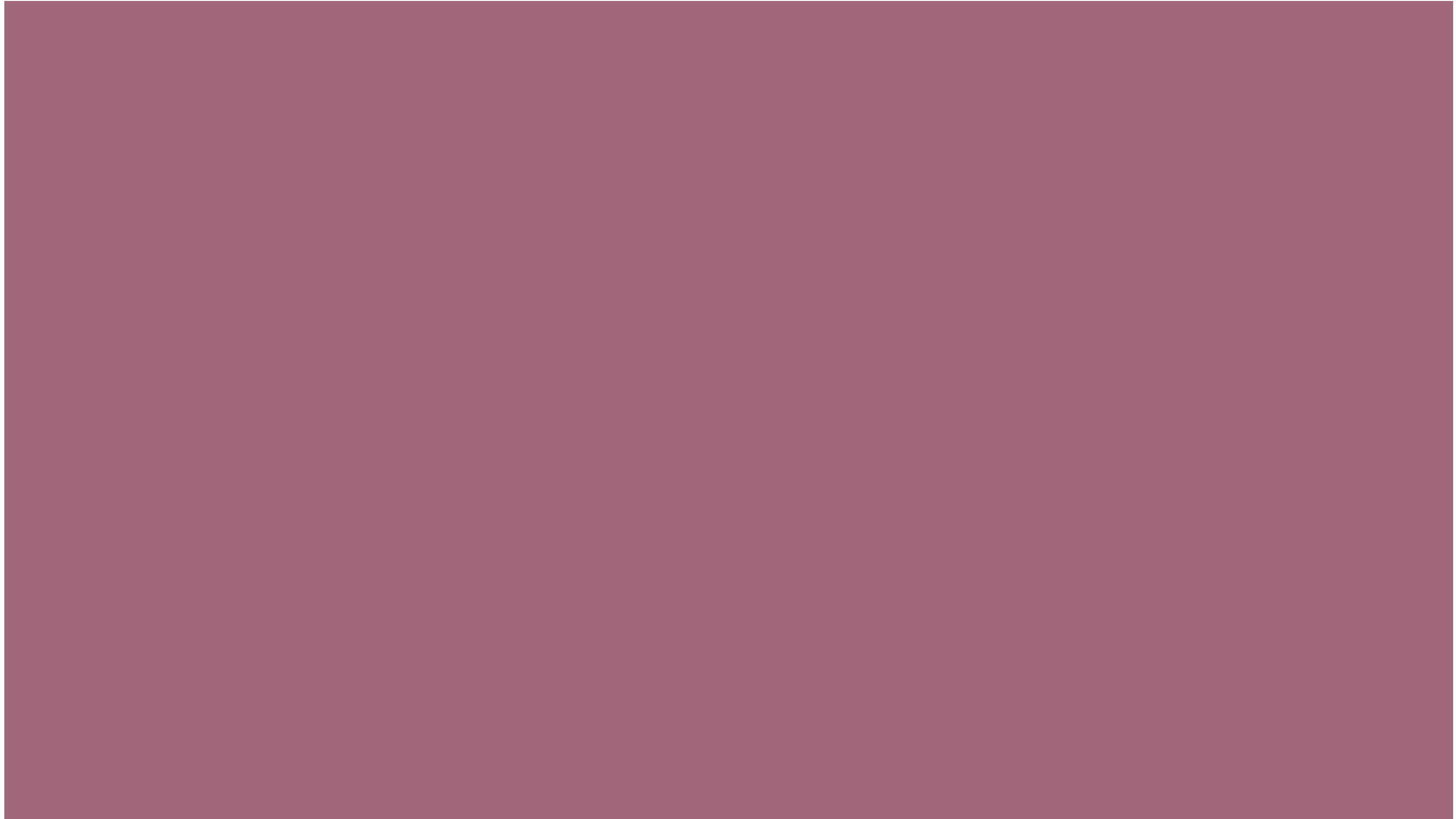
The development would support the existing community with high quality residential development, and an extensive area of open space for informal recreational use. The development would be designed to support walking and cycling and will benefit from direct access onto a locally walked route that follows the Manchester Ship Canal.

The new Green Belt boundary would form a new logical settlement boundary to Hollins Green.

Development would ensure that important ecological assets within the site are preserved with opportunities to provide additional habitats and enhanced biodiversity.



Illustrative Masterplan



Prepared for:



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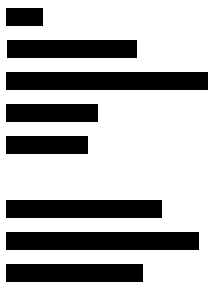


HOLLINS GREEN

WARRINGTON

ARBORICULTURAL WALKOVER SURVEY AND DESKTOP ASSESSMENT

JUNE 2019



Document Title	Arboricultural Walkover Survey and Desktop Assessment
Prepared for	Peel Holdings (Land and Property) Limited
Prepared by	TEP - Warrington
Document Ref	6929.02.005

Author	Tom Popplewell
Date	June 2019
Checked	Jonathan Smith
Approved	Jonathan Smith

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1.0	04/07/18	TDP	JGS	Approval	Superseded
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3.0	12/06/19	RMG	JGS	Amendments after client comment	Final

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APPENDICES

APPENDIX A: Tree Survey Data

DRAWINGS

Drawing 1 - Arboricultural Desktop Overview

Drawing 2 - Arboricultural Survey Overview

Drawing 3 - Land at Hollins Green, Conceptual Masterplan and Vision

Executive Summary

1. TEP has been commissioned by Peel Holdings (Land and Property) Limited to conduct a walkover survey and desktop assessment of land at Hollins Green and a review of designations, policies and other instruments of relevance to arboriculture. This report presents the results of the assessment and the anticipated interaction of trees with residential development.
2. The Illustrative Masterplan comprises 7.41 ha of land that could deliver up to 232 units with a further 4.83ha allocated for green infrastructure.
3. Approximately 3.82ha of tree cover and c. 320m of hedgerow was recorded on or within influencing distance of the site. The majority of trees are located around the perimeter of the site with only a small number of individual trees (c.10) internal to the site along ditches/streams.
4. The desktop review and site survey identified no Tree Preservation Orders; no trees within a Conservation Area; no ancient woodland; no veteran trees; 1.21 ha of Habitat of Principal Importance *Deciduous Woodland*; and c. 320m of Habitat of Principal Importance *Hedgerow*. The site is also within the Mersey Forest community forest.
5. The Illustrative Masterplan demonstrates it would be possible to develop the site whilst incorporating all of existing trees. It would also provide an opportunity for substantial new planting that could increase species diversity and create habitat types not currently present on the site. On this basis mitigation for the loss of trees could be adequately delivered within the site proposals and is likely to result in a net gain in long-term canopy cover.
6. An Arboricultural Impact Assessment (AIA) will be required in support of a reserved matter/detailed application. This will identify, evaluate and possibly mitigate the impacts of developing land on the existing tree resource. The AIA should be based on a detailed tree survey undertaken according to BS5837:2012 that assess and reports on: canopy spread of existing trees and groups; a Root Protection Area (RPA) calculated in accordance with BS 5837; and tree quality category that identifies the quality and value (in a non-fiscal sense) of the existing tree stock, to allow informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

1.0 Instruction and scope

- 1.1 TEP has been commissioned by Peel Holdings (Land and Property) Limited to conduct a preliminary arboricultural survey and desktop assessment of land at Hollins Green. This report presents the results of a site walkover and desktop exercise to identify potential constraints to future development. It also reports on the preliminary assessment effects of the nominated masterplan for the site.
- 1.2 A site visit was undertaken on 14th June by Tom Popplewell, an experienced arboriculturist and Professional Member of the Institute of Chartered Foresters with a BSc (hons) in arboriculture.
- 1.3 During the survey, all accessible areas of the site were visited and a visual inspection of the distribution, condition and quality of trees was made.
- 1.4 In some areas of the site, access was restricted. The principle constraint to access was steep terrain along the south-western boundary and dense vegetation within the interior of tree groups along Manchester Road. The weather during the survey was fine and visibility was good.
- 1.5 The extent of tree and hedgerow cover shown has been digitised from aerial photography and National Tree Map data and should be regarded as approximate.
- 1.6 The survey identifies broad vegetation types based on the categories used in the National Forest Inventory. It should not be regarded as a detailed assessment of tree risk or an assessment of the type and quality of each individual tree.

2.0 Site description

Site name

- 2.1 The site is known as Hollins Green. The approximate extents of this combined area is shown in Figure 1.



Figure 1 Site location and approximate boundary (OS VectorMap® District Resampled)

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Address/location

- 2.2 The site is located to the south of Hollins Green, between Manchester Road, Warburton Bridge Road and the Manchester Ship Canal.
- 2.3 The site is a rough triangle of agricultural land with hedgerow and tree-lined boundaries. There is a caravan park (Hollybank) in the western corner of the site, which is excluded from the red line boundary. Marsh Brook runs across the southern part of the site to the north of the caravan park.

Approximate area

- 2.4 The site is approximately 12.24ha.

Current use

- 2.5 The site comprises three fields. There is a small compound in the southern corner, which contains apparatus associated with a pipe crossing of the canal. A steep bank runs up to the southern boundary and supports Warburton Bridge Road on its approach to the bridge. A footpath follows the eastern boundary adjacent to the canal.

Local authority

- 2.6 The local authority is Warrington Borough Council.
- 2.7 The local authority's tree officer can be contacted by email at stwigg@warrington.gov.uk or by telephone on 01925 444 108.

3.0 Statutory protection, designations and guidance

Tree Preservation Orders

- 3.1 Local authorities can create Tree Preservation Orders (TPO) to protect the amenity of trees, groups of trees, woodland or all the trees within a defined area¹. Cutting down, lopping (including roots), topping, uprooting, and wilful damage or destruction are prohibited by TPO unless done with the Local Authority's written consent.
- 3.2 The council's online mapping facility confirmed that there are no TPOs on or adjacent to the site.

Conservation Area

- 3.3 Trees within Conservation Areas are protected by Section 211 of The Town and Country Planning Act 1990. The local authority must be notified 6 weeks before the any tree² in a Conservation Area is removed, uprooted, lopped, topped, wilfully destroyed, or wilfully damaged. During this period the Council may consider serving a Tree Preservation Order to prevent the proposed work from being undertaken.
- 3.4 The council's online mapping facility confirmed that no part of the site is within a Conservation Area.

Ancient Woodland and Veteran Trees

- 3.5 Ancient woodland and ancient or veteran trees are irreplaceable and amongst the most valuable and sensitive habitats. Ancient woodland is any area that has been wooded since at least 1600. Individual trees of exceptional age, size, biodiversity or cultural significance are regarded as 'veterans'. Neither category has legal protection but they have strong protection in planning policy. Any works to veteran or ancient trees and woodland should be undertaken with the utmost sensitivity and under specialist advice.³
- 3.6 The Forestry Commission is a non-statutory consultee for development within 500m of an Ancient Woodland. Natural England and Forestry Commission publishes Standing Advice which reinforces the assumption in NPPF that development within an Ancient Woodland normally requires exceptional circumstances. A minimum buffer of 15m is recommended between any new development and ancient woodland.
- 3.7 Natural England's ancient woodland inventory⁴ shows no ancient woodland within or adjacent to the site. The inventory is provisional and may not show woodland smaller than 2ha. It is therefore possible that smaller or unmapped ancient woodland exists. The current and previous land use is thought to make this unlikely.

¹ Exemptions apply, see <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas>

² Exemptions apply, see <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas>

³ See <https://www.forestry.gov.uk/anwpracticeguide> for further information

⁴ <http://www.natureonthemap.naturalengland.org.uk/magicmap.aspx>

- 3.8 Veteran trees are also regarded as an irreplaceable habitat with similar provisions to ancient woodland. There is a presumption in NPPF against development that would result in loss or deterioration of a veteran tree. It is not possible to replace veteran trees and any such effects must be weighed in the planning balance against need and benefits.
- 3.9 There is no comprehensive register of veteran trees. The Woodland Trust maintains a verified register of ancient, veteran and notable trees on behalf of the Ancient Tree Forum, which contains no records for the site.
- 3.10 The walkover survey recorded no veteran trees within the site.
- 3.11 It is possible that the survey did not record all veteran trees because of the access restrictions in some areas, the level of survey detail afforded by a walkover, and the lack of ancient tree inventory detail.
- 3.12 It is not considered that access constraints have significantly impeded the mapping of character and distribution of vegetation within the areas that were surveyed. However, identification of individual trees of significance such as veteran trees should be regarded as provisional. A comprehensive survey should be undertaken to inform any planning application. This should pay particular regard to compartments containing mature trees and semi-natural woodland such as C1 and C5, although neither is considered likely to contain veteran trees.

Felling Licences

- 3.13 It is an offence under the Forestry Act (1967) to fell trees without a licence unless an exemption applies.
- 3.14 Pruning; small scale felling; hazard and nuisance abatement; and felling in a domestic garden, orchard, churchyard or designated open space are amongst those works that may be exempt.⁵
- 3.15 There are no parts of the site that should be considered exempt from felling licence jurisdiction. However, certain operations are exempt and advice should be sought when considering tree works. In the absence of a detailed planning permission, any tree works may require a felling licence.

Hedgerow Regulations

- 3.16 The Hedgerow Regulations (1997) protect hedgerows that meet certain criteria⁶. This report does not include an assessment to determine which, if any, features would be protected under the Regulations. Hedges less than 20m long, in domestic gardens, or younger than 30 years are less likely to be protected.
- 3.17 Any removal of a protected hedgerow or a section of a protected hedgerow must only be done with the written consent of the Local Authority.

⁵ See <https://www.forestry.gov.uk/england-fellinglicences> for details

⁶ See <https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management> for details

- 3.18 The site contains hedgerow along the north-western boundary. Hedgerow that is mapped on Drawing 2 may qualify as 'Important' hedgerow under the Regulations on the grounds of woody species and ecological criteria. It is possible that linear vegetation including scrub and trees around the footpath on the eastern boundary that is not mapped as hedgerow might qualify but a full assessment has not been undertaken.

Habitats of Principal Importance

- 3.19 The Natural Environment and Rural Communities Act 2006 places a duty on public bodies to show regard for biodiversity in the normal discharge of their functions. The Act requires a schedule of Habitats of Principal Importance to be maintained. This schedule (section 41 in England) is used by public bodies as a guide to the interpretation of their duty to conserve biodiversity. The list of habitats is based on the previously published list of Biodiversity Action Plan 'Priority Habitats'. For this reason, mapping tends to follow broad habitat types and requires verification in the field.
- 3.20 There are a number of habitat types that pertain to trees: *Deciduous Woodland*; *Hedgerows*; *Wood Pasture and Parkland*; and *Traditional Orchards*.
- 3.21 *Deciduous Woodland* is used to represent a range of woodland types that are not mapped individually.
- 3.22 Mapping of *Deciduous Woodland* is based on remote digital analysis; the walkover survey was therefore used to test the publicly available deciduous woodland data. With the exception of individual trees, hedgerow, low density tree cover and ornamental trees, all woody vegetation present is a type of deciduous woodland. The extent of deciduous woodland that was recorded within the site and shown on Drawing 2 is approximately 1.21ha, although tree canopy cover is higher.
- 3.23 *Hedgerows* are defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less than 20m wide. It is likely that all of the hedgerows on the site would meet the criteria for inclusion in this habitat type. Circa 320m of hedgerows are shown approximately on Drawing 2.
- 3.24 *Wood Pasture and Parkland* is a less common and easily overlooked type of woodland habitat in which trees are a principal structural component but within an open and grazed context rather than high woodland. Veteran and ancient trees are often a feature and the presence of deadwood and grazing animals create niche habitats for a range of lichens, insects, fungi and flora that occur exclusively in this habitat. None of the site is mapped as *Wood Pasture and Parkland*. The survey identified nothing to refute this.
- 3.25 *Traditional Orchard* includes most non-commercial and non-intensive orchards. There are no records of Traditional Orchards on or adjacent to the site. The survey identified nothing to refute this

Community Forest

- 3.26 The site is within the Mersey Forest community forest. It is also within the recently announced Northern Forest. These may provide a useful vehicle for coordinating, consulting on, planning, funding, or maximising benefits delivered by tree and woodland management. In view of the tree population present, it is suggested that the Mersey Forest should be consulted on proposed development and mitigation options.
- 3.27 Within the Mersey Forest Plan the site falls within the *Area north of Lymm, to the south of the A57, and to the east of the M6 (W9) area*. The indicative woodland cover target for this area is 30% and the relevant policy is:
- (i) *Restore hedges and hedgerow trees. Plant small copses and linear woodlands along highways and rights of way. Maintain the open 'valley bottom'. Further develop the Mersey Way to link to Rixton, create a footpath/cycleway along the Ship Canal to Rixton, and develop strategic green links such as the River Bollin and Mersey Valley.*

Other Designations and Status

- 3.28 None known.

4.0 Planning Policy

- 4.1 All trees are a material consideration. All other things being equal, the removal or deterioration of a tree, woodland or hedgerow should be regarded as an adverse effect and may therefore require mitigation to achieve no net loss.
- 4.2 Mitigation in the form of new planting is unlikely to deliver equivalent functions and benefits to existing trees, particularly where these are mature. Temporal delays in delivery, higher planting ratios, or additional measures may therefore form a necessary part of any mitigation strategy.

National Planning Policy Framework (NPPF)

- 4.3 The National Planning Policy Framework (NPPF) is a material consideration in the planning process and promotes a presumption in favour of sustainable development. In terms of the natural environment, development should minimise impacts on biodiversity and provide a net gain in biodiversity where possible.
- 4.4 The application of national planning policy, particularly the assessment of net impacts on tree cover and quality, is reinforced by published guidance in the form of BS5837:2012 Trees in relation to design, demolition and construction - Recommendations. It should be assumed that any necessary tree removal should be mitigated or offset and that any application should be supported by an assessment of residual impact by a qualified arboriculturist. It should also be assumed that all ancient woodland and veteran trees are sacrosanct and must be incorporated appropriately within any development.
- 4.5 The NPPF assumes protection of all ancient woodland and veteran trees unless there are wholly exceptional reasons and a suitable compensation strategy exists. In this respect ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree of exceptional value for wildlife, in the landscape, or culturally because of its great age, size or condition.
- 4.6 The absence of veteran trees on Drawings 2 should be confirmed in due course by detailed ground surveys.

Local Planning Policy

- 4.7 Warrington Borough Council has a number of adopted policies pertaining to trees and nature conservation in the Core Strategy. They are reproduced hereafter.

Policy QE 3

Green Infrastructure

- 4.8 The Council will work with partners to develop and adopt an integrated approach to the provision, care and management of the borough's Green Infrastructure. Joint working and the assessment of applications will be focussed on:
 - (i) protecting existing provision and the functions this performs;

(ii) increasing the functionality of existing and planned provision especially where this helps to mitigate the causes of and addresses the impacts of climate change;

(iii) improving the quality of existing provision, including local networks and corridors, specifically to increase its attractiveness as a sport, leisure and recreation opportunity and its value as a habitat for biodiversity;

(iv) protecting and improving access to and connectivity between existing and planned provision to develop a continuous right of way and greenway network and integrated ecological system;

(v) securing new provision in order to cater for anticipated increases in demand arising from development particularly in areas where there are existing deficiencies assessed against standards set by the Council.

Policy QE 5

Biodiversity and Geodiversity

- 4.9 The Council will work with partners to protect and where possible enhance sites of recognised nature and geological value. These efforts will be guided by the principles set out in National Planning Policy and those which underpin the strategic approach to the care and management of the borough's Green Infrastructure in its widest sense.
- 4.10 Sites and areas recognised for their nature and geological value are shown on the Policies Map and include:
- (i) European Sites of International Importance
 - (ii) Sites of Special Scientific Interest
 - (iii) Regionally Important Geological Sites
 - (iv) Local Nature Reserves
 - (v) Local Wildlife Sites
 - (vi) Wildlife Corridors
- 4.11 The specific sites covered by the above designations at the time of publication are detailed in Appendix 3. [NB. This includes Moore Nature Reserve]
- 4.12 Proposals for development which may affect European Sites of International Importance will be subject to the most rigorous examination in accordance with the Habitats Directive. Development or land use change not directly connected with or necessary to the management of the site and which is likely to have significant effects on the site (either individually or in combination with other plans or projects) and which would affect the integrity of the site, will not be permitted unless the Council is satisfied that; there is no alternative solution; and there are imperative reasons of over-riding public interest for the development or land use change.

- 4.13 Proposals for development in or likely to affect Sites of Special Scientific Interest (SSSI) will be subject to special scrutiny. Where such development may have an adverse effect, directly or indirectly, on the SSSI it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.
- 4.14 Proposals for development likely to have an adverse effect on regionally and locally designated sites will not be permitted unless it can be clearly demonstrated that there are reasons for the development which outweigh the need to safeguard the substantive nature conservation value of the site or feature.
- 4.15 Proposals for development which may adversely affect the integrity or continuity of UK Key habitats or other habitats of local importance, or adversely affect EU Protected Species, UK Priority Species or other species of local importance, or which are the subject of Local Biodiversity Action Plans will only be permitted if it can be shown that the reasons for the development clearly outweigh the need to retain the habitats or species affected and that mitigating measures can be provided which would reinstate the habitats or provide equally viable alternative refuge sites for the species affected.
- 4.16 All development proposals affecting protected sites, wildlife corridors, key habitats or priority species (as identified in Local Biodiversity Action Plans) should be accompanied by information proportionate to their nature conservation value including;
- (i) importance; an assessment of the likely impacts of the proposed development proposals for the protection and management of features identified for retention;
 - (ii) an assessment of whether the reasons for the development clearly outweigh the nature conservation value of the site, area or species; and
 - (iii) proposals for compensating for features damaged or destroyed during the development process
- 4.17 Where development is permitted, the Council will consider the use of conditions or planning obligations to ensure the protection and enhancement of the site's nature conservation interest and/or to provide appropriate compensatory measures.

Policy QE 6

Environment and Amenity Protection

- 4.18 The Council, in consultation with other Agencies, will only support development which would not lead to an adverse impact on the environment or amenity of future occupiers or those currently occupying adjoining or nearby properties, or does not have an unacceptable impact on the surrounding area. The Council will take into consideration the following:
- (i) The integrity and continuity of tidal and fluvial flood defences;
 - (ii) The quality of water bodies, including canals, rivers, ponds and lakes;

- (iii) Groundwater resources in terms of their quantity, quality and the ecological features they support;
- (iv) Land quality;
- (v) Air quality;
- (vi) Noise and vibration levels and times when such disturbances are likely to occur;
- (vii) Levels of light pollution and impacts on the night sky;
- (viii) Levels of odours, fumes, dust, litter accumulation and refuse collection/storage.
- (ix) The need to respect the living conditions of existing neighbouring residential occupiers and future occupiers of new housing schemes in relation to overlooking/loss of privacy, outlook, sunlight, daylight, overshadowing, noise and disturbance;
- (x) The effect and timing of traffic movement to, from and within the site and car parking including impacts on highway safety;
- (xi) The ability and the effect of using permitted development rights to change use within the same Use Class (as set out in the in the Town and Country Planning (General Permitted Development Order) without the need to obtain planning consent.

- 4.19 Proposals may be required to include detailed assessments in relation to any of the above criteria to the Council for approval.
- 4.20 Where development is permitted which may have an impact on such considerations, the Council will consider the use of conditions or planning obligations to ensure any appropriate mitigation or compensatory measures are secured.
- 4.21 Development proposals on land that is (or is suspected to be) affected by contamination or ground instability or has a sensitive end use must include an assessment of the extent of the issues and any possible risks. Development will only be permitted where the land is, or is made, suitable for the proposed use.
- 4.22 Additional guidance to support the implementation of this policy is provided in the Design and Construction and Environmental Protection Supplementary Planning Documents.

Relevance to this site

- 4.23 The application and relevance of the above policies to any development on this site should be explored within an Arboricultural Impact Assessment. Where boundary vegetation can be incorporated, it is unlikely that a development would fail any local policy tests on grounds of adverse effects on trees.

5.0 Tree Population Summary

- 5.1 Trees cover a relatively low proportion of the total site area but most of the trees are in areas that may not be developable in any event because of steep topography or proximity to the Canal and Manchester Road. The majority of trees are located around the perimeter of the site with only a small number of individual trees (c.10) internal to the site along ditches/streams.
- 5.2 In terms of quality and particularly habitat and amenity benefits, the tree population is principally of value as a screen and particulate filter to the periodically congested Manchester Road and the western approach to Warburton Bridge. It also delineates and provides the visual context for the stretch of footpath along the eastern boundary. The tree cover diminishes to patchy scrub towards the north and allows views of the canal. There are also features with more significant habitat interest including compartments C1 and C6, both of which contain areas of wet ground or ponds.
- 5.3 The survey categorised woody vegetation into the broad types shown in the table below. These are based on the categories used by the National Forest Inventory remote assessment method, which are mapped on Drawing 1. The survey confirmed the actual extents of these vegetation types within accessible areas and a more accurate representation of the vegetation present is shown on Drawing 2 for comparison.
- 5.4 Reference numbers as per the table below relating to types of tree cover are used in Appendix A. Each area of tree cover that is spatially distinct or with a distinct character from surrounding vegetation was mapped as a separate 'Compartment'. Where a secondary descriptor was useful to add texture to the description and to more clearly identify the characteristics of the compartment, these were added to the survey data but are not presented graphically.

Table 1 Approximate quantum of woody habitats

Reference	Woody habitat type	Area
1	Broadleaved	2.47 ha
2	Conifer	0.0 ha
3	Coppice	0.0 ha
4	Coppice with standards	0.0 ha
5	Failed	0.0 ha
6	Felled	0.0 ha
7	Ground preparation	0.0 ha
8	Low density	0.86 ha
9	Mixed mainly broadleaved	0.0 ha

Reference	Woody habitat type	Area
10	Mixed mainly conifer	0.49 ha
11	Shrub	0.0 ha
12	Windthrow	0.0 ha
13	Young trees	0.0 ha

- 5.5 Mature individual trees are also shown approximately on the survey plans. These identify mature trees that are not within woodland as well as trees within woodland that are notable for their size or difference from surrounding vegetation, either individually or as a collective feature. Some of the trees in compartment C10 are dead or dying, which is probably due to Dutch elm disease. There is at least one extant elm tree that is not showing signs of infection but this remains a risk for the future.
- 5.6 A short description of each surveyed compartment is included in the survey data at Appendix A.

6.0 Preliminary Assessment of Effects

- 6.1 Wherever development occurs, there is a potential for effects on trees. This might comprise the removal of trees that would physically prevent the development but also those that are nearby and vulnerable to changes in local conditions that would arise because of construction.
- 6.2 Trees are a material consideration in the planning process. There should be a common sense ambition to limit tree loss to that which is strictly necessary to facilitate the proposal, and to ensure that the condition and safety of all remaining trees would not be compromised by the development. The quality and distribution of trees should also be considered amongst other constraints in the development of the proposed design and may not always have the highest priority.
- 6.3 The approximate extents of woody vegetation and relevant designations and status are shown on Drawing 2. This should be used as a basis for masterplanning and feasibility studies but should not be relied upon for detailed layout design. The following text gives an overview of the likely impact of the masterplan proposals on key metrics of existing trees where these are known or can be estimated. Actual effects will be determined at the detailed design stage. It is assumed that any future design will be broadly similar to the Masterplan (reproduced at Drawing 3) but may be influenced by the constraints and opportunities presented in this report and by other technical disciplines.

Development Proposals

- 6.4 The proposed development area, including the provision of infrastructure incorporates 7.41ha of the site at Hollins Green potentially delivering up to 232 units. The masterplan also allocates a further 4.83ha of new and existing green infrastructure.

Canopy Cover

- 6.5 No trees would be removed if the site was to be developed in broad accordance with the masterplan. The means of access to the site is likely to be associated with some lapsed hedgerow. Manchester Road is busy at peak times and often has stationary traffic. It is therefore assumed that a turning lane or controlled junction would be required and this would probably increase the quantity of hedgerow lost from Compartment C2 along the northern boundary. This equates to approximately 30-35m of this feature.
- 6.6 New residential areas and internal access have been designed around the sites green infrastructure; one particular example is the internal access taking advantage of the natural gaps in the linear group of mature boundary trees (Compartment C10).
- 6.7 The masterplan also shows a significant proportion of new tree planting including new buffer and screen planting along the northern and western boundaries and formal avenue planting alongside the new internal road network.

Opportunities

- 6.8 Trees are a material consideration in the planning process. All trees have some inherent value and any loss of trees should normally be mitigated by new planting. Preserving the existing quantity and proportion of tree cover is generally possible in most areas due to the sites former use and layout of the final built form as shown by the masterplan.
- 6.9 The introduction of formal avenues along the proposed road network and augmentation of existing tree belts presents an opportunity to significantly increase the age diversity and arboreal legacy across the site. New planting should look to introduce species that are resilient to disease whilst increasing the existing diversity of the current tree stock.

Tree Quality

- 6.10 A simple assessment of quality has been made as a proxy for the likely magnitude of adverse effects or requirements for and anticipated difficulty in providing mitigation associated with tree loss in different parts of the site.
- 6.11 Compartments of Poor Quality are those that have identified defects or shortcomings. These may be remediable.
- 6.12 Compartments of Fair Quality are those that have no noteworthy defects or shortcomings, and no particular merit beyond the basic value of all trees and their function as part of the wider treescape, which is material.
- 6.13 Compartments of Good Quality are those with significant identified and material merit. They would tend to be more diverse, mature and delivering a range of benefits and functions than those in lower categories.
- 6.14 Compartments of Excellent Quality are those with substantial material merit. They are likely to be exceptional in their characteristics or the provision of benefits and functions. They may represent mature or climax vegetation or be associated with a higher incidence of veteran trees and protected species.

Table 2 Quality of surveyed compartments

Excellent Quality	Good Quality	Fair Quality	Poor Quality
0	8	2	0

7.0 Recommendations

Tree Works

- 7.1 Whilst the purpose of the walkover survey was not to identify tree works, the recommendations in Appendix A are based on observations that were made during the survey and should be considered to prevent future problems.
- 7.2 All works should be undertaken by a suitably qualified, competent and insured contractor. It is recommended that at least three quotations should be sought for works

Permissions

- 7.3 Authority to undertake the works recommended in Appendix A or any other routine maintenance works must be sought in advance of commencement.
- 7.4 The permission of the owner of the land around the base of the tree must be sought. For trees on boundaries, this may be more than one party. Tree pruning in compartment C1 may be the responsibility of the council/Highways Authority, depending on the location of the ownership boundary.
- 7.5 Any tree works that are required to deliver development that has detailed consent will not normally require additional permissions, unless they are done under licence from Natural England because they would affect a protected species.
- 7.6 Works affecting any tree within an area covered by an active planning permission may risk breach of that planning permission except those expressly permitted by planning consent. Further works should not be undertaken until it has been determined that they are permitted or otherwise acceptable to the relevant consenting authority.
- 7.7 Based on the results of the desktop survey, tree works recommended in Appendix A would not be subject to TPO or affect trees within a Conservation Area.
- 7.8 The recommended works would not require a felling licence⁷ but any other thinning, felling or tree removal works that are not exempted may also require a felling licence. Such licences typically include requirements to replant trees.
- 7.9 It is considered unlikely that recommended works will affect protected hedgerow because they are limited to routine maintenance. Even if they do not support a significant number of woody species or associated features, it is possible that hedges may be protected for other reasons such as historical or archaeological significance. If in doubt, the Local Authority should be able to provide confirmation.
- 7.10 Additional consenting mechanisms may apply in certain circumstances including for works affecting protected species; close to overhead lines; in churchyards; close to airports; and for which access is required across or above land owned by third parties (including the Highways and Local Authorities).

⁷[https://www.forestry.gov.uk/pdf/FellingLicenceApplicationFormEnglandv2.doc/\\$FILE/FellingLicenceApplicationFormEnglandv2.doc](https://www.forestry.gov.uk/pdf/FellingLicenceApplicationFormEnglandv2.doc/$FILE/FellingLicenceApplicationFormEnglandv2.doc)

Detailed Tree Survey

- 7.11 A detailed tree survey undertaken according to BS5837:2012 will be required to inform a detailed design. This should record all trees, groups of trees, woodland, and hedgerow within influencing distance of the site. It should assess and report on: canopy spread of existing trees and groups; a Root Protection Area (RPA) calculated in accordance with BS 5837; and tree quality category that identifies the quality and value (in a non-fiscal sense) of the existing tree stock, to allow informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.
- 7.12 The level of detail in the tree survey may vary, providing greater resolution in areas of anticipated activity. Interior trees within larger groups or in areas of minimal intervention may be subject to a more general appraisal but should still be included in the survey.

Other types of Arboricultural Assessment

- 7.13 In order to assess the functions and benefits provided by existing trees, to quantify loss, and to justify any mitigation proposals it may be useful to undertake types of assessment that look at specific outcomes rather than simply tree quality (according to BS5837). In particular, *iTree Eco* quantitative modelling of ecosystem services and a biodiversity offsetting analysis may be useful tools within the planning process.

Arboricultural Impact Assessment

- 7.14 An Arboricultural Impact Assessment (AIA) will be required in support of a reserved matter/detailed application. This will identify, evaluate and possibly mitigate the impacts of developing land on the existing tree resource.
- 7.15 One function of the AIA process will be the consideration of trees alongside other project disciplines (layout, drainage, utilities etc.) in order to minimise future conflict and avoid uncalculated expense or undesirable tree loss.
- 7.16 The AIA should include a detailed Tree Removal Plan outlining the proposed schedule of tree works. It may also include details of any tree protection measures that would be required during the construction phase. In certain circumstances it may be appropriate to set out a heads of terms for tree protection and defer the detail to a Condition of planning consent.

Mitigation Planting & Landscaping

- 7.17 The National Planning Policy Framework (NPPF) is a material consideration in the planning process and promotes a presumption in favour of sustainable development. In terms of the natural environment, development should minimise impacts on biodiversity and provide a net gain in biodiversity where possible. In respect of trees, a sustainable development will be one whereby the total number, value or function provided by trees is maintained or increased or where the long-term prospects of the existing tree stock can be substantially improved.

- 7.18 Mitigation for the loss of trees as a result of development will be delivered via the creation of new planting along the northern and western boundaries with the introduction of formal avenue planting along the proposed internal road network.
- 7.19 No tree cover and c. 35m of hedgerow would be removed if the development was carried out in strict accordance with the Masterplan; this should be confirmed at the detailed design stage. The Masterplan indicates that in general, existing tree cover and arboreal connectivity across the site would be retained and strengthened. Discussion is provided on the interrelationship of key arboricultural features in Section 6.
- 7.20 Based on the estimated tree loss figures provided above and the opportunities presented by the Masterplan, mitigation for the total loss of tree cover could be delivered within the site proposals.
- 7.21 The extent of replacement tree planting required to mitigate adverse effects should be assessed as part of the AIA process. The advice of a qualified Arboricultural Consultant should be sought during planting plan preparation to ensure species and placement suitability. Any new planting should not be viewed principally as an exercise in landscape architecture and aesthetic design but should be strongly informed by conservation and habitat objectives.

Post Development Management

- 7.22 As much of the site as possible should receive long-term management. Ideally, this would be through a single management plan to allow a single and coherent approach to inform the management of most areas. The objectives for this management plan should be set following consultation with a range of local and national stakeholders and experts.
- 7.23 Areas of the site that will be open to public access should be surveyed regularly for developing hazards. Trees are dynamic living organisms whose structure is constantly changing; even those in good condition can suffer from damage or stress. There is no set approach or period for tree inspection and the best approach should be determined when the future usage, management and ownership of the site has been determined.

APPENDIX A: Tree Survey Data

APPENDIX A: Tree Survey Data



Surveyor Tom Popplewell
Survey date 22nd May 2018
Site Land at Hollins Green
Town Warrington

Ref	Main woody species	Primary Vegetation Descriptor	Secondary Vegetation Descriptor	Maturity	Quality	Description	Works Recommendations
	(Common name)	NFI	NFI	Young, Middle Age, Mature, Ancient, Young to Middle Age, Middle Age to Mature, Young to Mature	Excellent, Good, Fair, Poor		

Compartments

C1	Sycamore; hawthorn; white willow; ash; elder; cherry; wych elm	1		Middle Age to Mature	Good	Mature belt of trees by road; ivy on lower stems; ash dominated with sycamore in canopy; around wide ditch; good habitat; willows dominate canopy at the western end and include some dead trees	Deadwood over road throughout group
C2	Hawthorn; sycamore; elder; ash	1		Middle Age to Mature	Good	Lapsed hedge with occasional trees	Flail hedge on sides
C3	Hawthorn; sycamore; fir; ash; poplar; cypress; spruce	9		Middle Age	Good	Ornamental planting around properties and caravan park	
C4	Oak; cypress; birch	1		Middle Age	Fair	Ornamental specimens on boundary; 7 trees; with Himalayan balsam	Eradicate Himalayan balsam
C5	Sycamore; elder; ash; white willow; lime; oak	1		Middle Age to Mature	Good	Wooded bank by road/bridge approach	
C6	Grey willow	1	13	Young to Mature	Good	Multistemmed trees in carr around pond and with lower density tree cover/scrub woodland area to south east; with Himalayan balsam	Eradicate Himalayan balsam
C7	Hawthorn; common alder; sycamore; grey willow; elder; oak; ash	1	11	Middle Age	Good	Hedged side; belt of woodland; scrubby at southern end; along footpath	
C8	Ash	1		Middle Age to Mature	Good	Boundary trees	
C9	Hawthorn; ash; bramble; white willow	8	11	Young to Mature	Good	Bramble hedge and patchy trees, mainly to south east of path but on either side; willows on lower bank at northern end of group	
C10	Hawthorn; oak; wych elm; sycamore	1		Mature	Fair	Open grown trees on internal boundary including relatively large elm; 2 dead trees at north western end of group	Monitor elm for development of Dutch elm disease; convert larger dead tree to a standing stem

DRAWINGS

Drawing 1 - Arboricultural Desktop Overview

Drawing 2 - Arboricultural Survey Overview

Drawing 3 - Land at Hollins Green, Conceptual Masterplan and Vision



KEY
(This drawing must be reproduced in colour)

- Site Boundary
- National Tree Map (c.177 trees)

Mapped designations and classifications

- Ancient Woodland (with 15m buffer) (None)
- Tree Preservation Order (Warrington Borough Council) (None)
- Habitat of Principal Importance (NERC: Deciduous Woodland) (0.80ha)
- Habitat of Principal Importance (NERC: Wood Pasture and Parkland) (None)
- Habitat of Principal Importance (NERC: Traditional Orchard) (None)
- Community Forest (Mersey Forest and Northern Forest) (All)
- Ancient/Veteran/Notable Tree (Ancient Tree Inventory) (None)
- Conservation Area (Warrington Borough Council) (None)

Vegetation type (National Forest Inventory)

- Assumed woodland (0ha)
- Broadleaved (0.88ha)
- Conifer (0ha)
- Coppice (0ha)
- Coppice with standards (0ha)
- Failed (0ha)
- Felled (0ha)
- Ground preparation (0ha)
- Low density (0ha)
- Mixed mainly broadleaved (0ha)
- Mixed mainly conifer (0ha)
- Shrub (0ha)
- Windthrow (0ha)
- Young trees (0ha)

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Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP
Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Hollins Green, Arboricultural Walkover and Desktop
Title
Arboricultural Desktop Overview

Drawing Number
D6929.02.018

Scale 1:1,250 @ A1	Date 11/05/2018
Drawn TDP	Checked JGS
	Approved JGS



- KEY**
(This drawing must be reproduced in colour)
- Site Boundary
 - Not accessible for survey (Land not in Peel ownership)
- Designations and classifications (ground truthed)**
- Ancient Woodland (15m buffer) (None)
 - Tree Preservation Order (Warrington Borough Council) (None)
 - Habitat of Principal Importance (1.21ha) (NERC: Deciduous Woodland)
 - Habitat of Principal Importance (None) (NERC: Wood Pasture and Parkland)
 - Habitat of Principal Importance (None) (NERC: Traditional Orchard)
 - Habitat of Principal Importance (320m) (NERC: Hedgerow)
 - Community Forest (Mersey Forest and Northern Forest) (All)
 - Veteran Tree 15m buffer (None) (Compartments most likely to contain further veterans marked *)
 - Conservation Area (Warrington Borough Council) (None)

- Vegetation type (measurements taken within the boundary)**
- Mature trees (non-woodland or notable)
 - Broadleaved (2.47ha)
 - Conifer (0ha)
 - Coppice (0ha)
 - Coppice with standards (0ha)
 - Failed (0ha)
 - Felled (0ha)
 - Ground preparation (0ha)
 - Low density (0.86ha)
 - Mixed mainly broadleaved (0ha)
 - Mixed mainly conifer (0.49ha)
 - Shrub (0ha)
 - Windthrow (0ha)
 - Young trees (0ha)

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Rev	Description	Drawn	Approved	Date

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Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Hollins Green, Arboricultural Walkover and Desktop
Title
Arboricultural Walkover Overview

Drawing Number
D6929.02.019

Scale 1:1,250 @ A1	Date 11/05/2018
Drawn TDP	Checked JGS
	Approved JGS



KEY:

-  Site boundary
-  Existing buildings
-  Existing vegetation
-  Proposed woodland planting
-  Proposed avenue trees
-  Green infrastructure
-  Proposed development area
-  Potential focal square
-  Proposed primary road
-  Proposed secondary roads
-  Proposed private drives
-  Proposed vehicular access
-  Proposed footpaths

NB: Masterplan subject to change following detailed survey work.



**Land off Manchester Road,
 Hollins Green**

Conceptual Masterplan and Vision

Total Area: 12.24ha
 Development Area : 6.63ha
 Spine Road Area: 0.78ha
 Green Infrastructure: 4.83ha

Potential Yield
 @30 dph 199 units
 @35 dph 232 units

Drwg No: 630DF-09
 Drawn by: AH
 Rev by:
 QM Status: Checked
 Scale: 1: 5,000 @ A3

Date: 22.09.17
 Checker: CAW
 Rev checker:
 Product Status:
 Confidential Review

NOTE:



November 2021

Peel L&P Holdings (UK) Limited

Predicted Agricultural Land Classification

at

Land at Hollins Green, Warrington

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

1 Introduction

- 1.1 Reading Agricultural Consultants Ltd (RAC) is instructed by Peel L&P Holdings (UK) Limited to assess the Agricultural Land Classification (ALC) of land at Hollins Green, Warrington, by means of a desktop appraisal of soil and site characteristics.
- 1.2 Guidance for assessing the quality of agricultural land in England and Wales is set out in the Ministry of Agriculture, Fisheries and Food (MAFF) revised guidelines and criteria for grading the quality of agricultural land (1988)¹, and summarised in Natural England's Technical Information Note 049².
- 1.3 Agricultural land in England and Wales is graded between 1 and 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on agricultural use. The principal physical factors influencing grading are climate, site and soil which, together with interactions between them, form the basis for classifying land into one of the five grades.
- 1.4 Grade 1 land is excellent quality agricultural land with very minor or no limitations to agricultural use, and Grade 5 is very poor quality land, with severe limitations due to adverse soil, relief, climate or a combination of these. Grade 3 land is subdivided into Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). Land which is classified as Grades 1, 2 and 3a in the ALC system is defined as best and most versatile agricultural land.

2 Site and climatic conditions

General features, land form and drainage

- 2.1 The site occupies approximately 12.2ha, most of which is agricultural land in arable use. The site is roughly triangular in shape, comprising three fields collectively bounded to the north by Manchester Road, to the south-west by a caravan park, to the south by Warburton Bridge Road and to the east by the Manchester Ship Canal.
- 2.2 Topography across the site is largely level at around 15m above Ordnance Datum (AOD).

¹ **MAFF (1988)**. *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications.

² **Natural England (2012)**. *Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land*, Second Edition.

Agro-climatic conditions

2.3 Agro-climatic data for the site have been interpolated from the Meteorological Office's standard 5km grid point data set at a representative altitude of 15m AOD, and are given in Table 1.

Climate at the site is wet and moderately warm with moderate moisture deficits. The number of field capacity days is greater than is typical for lowland England and is unfavourable for providing opportunities for agricultural field work.

Table 1: Local agro-climatic conditions

Parameter	Value
Average Annual Rainfall	849mm
Accumulated Temperatures >0°C	1,434 day°
Field Capacity Days	200 days
Average Moisture Deficit, wheat	89mm
Average Moisture Deficit, potatoes	77mm

Soil parent material and soil type

2.4 The principal underlying geology mapped by the British Geological Survey³ across the site is the Bollin Mudstone Member of the Sidmouth Mudstone Formation, comprising reddish-brown and greenish-grey mudstone with siltstones.

2.5 Superficial deposits across most of the site include sand and gravel of glaciofluvial origin. At the south and eastern boundaries of the site, the bedrock is overlain by alluvium which normally comprises silty clay, but which can include layers of silt, sand, peat and gravel.

2.6 The Soil Survey of England and Wales soil association mapping⁴ (1:250,000 scale) shows the Conway association across the site. Profiles are dominantly greyish brown or grey deep stoneless fine silty soils found on river floodplains and streams. Soils are seasonally waterlogged and commonly assessed as Wetness Class (WC) III, this can be improved to WC II through underdrainage⁵.

³ **British Geological Survey (2021).** *Geology of Britain viewer*, <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

⁴ **Soil Survey of England and Wales (1984).** *Soils of Midland and Western England (1:250,000)*, Sheet 3

⁵ **Ragg et al. (1984).** *Soils and Their Use in Midland and Western England*, Soil Survey of England and Wales, Bulletin 12. Harpenden

3 Agricultural land quality

Existing data

- 3.1 Provisional ALC mapping shows the site as Grade 2. However, Natural England's TIN049 explains that:

"These maps are not sufficiently accurate for use in assessment of individual fields or development sites, and should not be used other than as general guidance. They show only five grades: their preparation preceded the subdivision of Grade 3 and the refinement of criteria, which occurred after 1976. They have not been updated and are out of print. A 1:250 000 scale map series based on the same information is available. These are more appropriate for the strategic use originally intended ..."








- 3.2 Detailed ALC survey data is not available for the site, however data to the immediate south-west⁶ shows land to be classified as Grades 2 to 4. Profiles of Grade 2 generally comprise sandy loam or sandy clay loam topsoils overlying loamy sand or sand subsoils and are affected slightly by droughtiness. Where the subsoil passes to sand below 50cm depth, the droughtiness limitation is more severe, to Subgrade 3a. Land of Grades 2 and 3a is associated with areas across which glaciofluvial sand and gravel deposits are mapped.
- 3.3 A second soil type is identified in which slowly permeable clay horizons result in wetness limitations, commonly to Subgrade 3b or Grade 4, where profiles are of WC III or IV respectively. Topsoils are of heavy clay loam or silty clay loam. Land of Subgrade 3b and Grade 4 is associated with areas in which alluvial deposits are mapped.
- 3.4 In line with the mapped superficial deposits, the southern and eastern parts of the site at Hollins Green are likely to comprise slowly permeable clay horizons and be limited to Subgrade 3b at best, whilst the northern and western parts of the site are likely to be limited by soil droughtiness to Subgrade 3a. The resulting likely areas of each ALC grade at the site are given in Table 2 and are shown in Figure RAC8025-1a.

Table 2: Agricultural land classification

Grade	Description	Area (ha)	% of agri land
3a	Good quality	5.6	46
3b	Moderate quality	6.1	50
Non-agricultural		0.5	4
Total		12.2	100

⁶ ADAS (1997) Rixton New Hall, Warrington – Agricultural Land Classification Survey Verification. Ref No 25/RPT/0816



- | | | | | |
|---|-----------------------------|--------------------------------|---|--------------------------------|
|  | Grade 1 - excellent quality | } Best and most versatile land |  | Subgrade 3b - moderate quality |
|  | Grade 2 - very good quality | |  | Grade 4 - poor quality |
|  | Subgrade 3a - good quality | |  | Grade 5 - very poor quality |
|  | Not Present | | | |



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Scale 1:10,000@A4 Nov 2021

Figure RAC8025-1a: Predicted ALC

Site: Land at Hollins Green, Warrington

Client: Peel L&P Holdings (UK) Limited

**Reading
Agricultural
Consultants**



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NOISE SCREENING ASSESSMENT

on behalf of

PEEL L&P HOLDINGS (UK) LIMITED

for the site at

LAND OFF MANCHESTER ROAD, HOLLINS GREEN

REPORT DATE: 11TH NOVEMBER 2021

REPORT NUMBER: 101865_V3



Summary

Miller Goodall Ltd (MG) has, on behalf of Peel L&P Holdings (UK) Ltd, undertaken a desktop noise screening assessment, a preliminary walk over survey and preliminary noise measurements to review the potential issues associated with noise on a proposed residential development comprised of 230 homes of mixed tenure (including affordable housing). The study has been undertaken to support the promotion of the land through the Warrington Local Plan.



The study concludes that noise should not be a barrier to residential development on the land except for the areas in close proximity to industrial areas or transport uses where additional mitigation may be required.

In relation to the impact of the development on the noise environment, information is limited and significance will need to be assessed via detailed modelling at a later date and mitigation measures considered.

Given the location of the railway, road network, future location of HS2 and industrial noise sources a full noise assessment would be required at the planning stage to ensure all noise sources are fully assessed and appropriate mitigation measures identified as part of a full application.

Record of changes

Prepared By James Sharpe AMIOA Reviewed By Jo Miller MIOA CIEH

Signed		Signed	
Date	11th November 2021	Date	11th November 2021

Version	Date	Change	Initials
1	9 th July 2018	Final issue	JLM
2	4 th November 2021	Minor Alterations	JS
3	11 th November 2021	Minor Alterations	JS

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1 Introduction

- 1.1 This noise screening assessment is submitted in support of a proposed housing allocation within the Warrington Local Plan for a site located on the Land off Manchester Road, Hollins Green. The site sits within the administrative boundary of Warrington Metropolitan Borough Council (WMBC).
- 1.2 This report provides a review of the existing noise sources in proximity to the proposed development site and assesses the potential impact of the proposed development on the local noise environment.
- 1.3 The external noise in urban areas is generally dominated by road traffic sources, along with industrial and commercial sources in some areas. Generally residential areas do not generate significant noise sources of concern.
- 1.4 Noise impacts need to be considered as part of the planning process both to ensure the new development does not create adverse noise impacts on existing receptors and also that new developments are not impacted by the existing noise sources.
- 1.5 An initial review of the area has been undertaken to determine existing and future noise sources and noise sensitive receptors and any potential key noise issues have been identified together with any additional work which may be required.

2 Site Description

- 2.1 The site is approximately 12.24 ha in size and currently comprises of agricultural land. The site is located in Rixton-with-Glazebrook. The A57 runs along the northern site boundary, beyond this is the Rixton settlement. Hollybank Caravan Park is located to the west of the site, beyond this is open agricultural fields. Along the eastern boundary is the Manchester Ship Canal, beyond this is agricultural fields. To the east and south of the site there is a mixture of woodland and agricultural fields. Warburton Bridge Road is a raised with the road running over the Manchester Ship Canal.
- 2.2 To the north of the site lies United Utility Water Works. To the south of the site lies the AGI gas governor plant. The site location is shown in Appendix 1.

3 Proposed Development

- 3.1 The proposed development consists of approximately 230 homes of mixed tenure (including affordable housing). The proposed illustrative masterplan is provided in Appendix 2.

4 Policy Context

4.1 Noise Policy Statement for England

4.1.1 The Noise Policy Statement for England (NPSE¹), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- avoid significant adverse effects on health and quality of life;
- mitigate and minimise adverse effects on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.”

4.1.2 The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and the quality of life occur.

4.1.3 The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the Statement). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case:

“...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development”.

4.1.4 Importantly, the NPSE goes on to state:

“This does not mean that such adverse effects cannot occur”.

4.1.5 The Statement does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that:

“Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available”

4.1.6 It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

¹ Noise Policy Statement for England, Defra, March 2010

4.2 National Planning Policy Framework

4.2.1 The National Planning Policy Framework (NPPF²) initially published in March 2012, was updated in July 2021. One of the documents that the NPPF replaces is Planning Policy Guidance Note 24 (PPG 24) "Planning and Noise"³.

4.2.2 The revised NPPF advises that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). One of these is an environmental objective which is described in par. 8 (c):

"to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

4.2.3 At par. 174 we are advised that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

4.2.4 Par. 185 goes on to state:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

4.2.5 Par. 187 seeks to ensure that any development does not prejudice the legally permitted operations and activities of other, existing non-residential uses, stating:

"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or

² National Planning Policy Framework, Ministry of Housing, Communities and Local Government, July 2021

³ Planning Policy Guidance 24: Planning and Noise, DCLG, September 1994

‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

4.3 Planning Practice Guidance – Noise

4.3.1 As of March 2014, a Planning Practice Guidance⁴ for noise was issued which provides additional guidance and elaboration on the NPPF, the guidance was updated in July 2019. It advises that when plan-making and decision-taking, the Local Planning Authority should consider the acoustic environment in relation to:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and
- Whether or not a good standard of amenity can be achieved.

4.3.2 In line with the Explanatory Note of the NPSE, the PPG goes on to reference the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that:

“...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation”.

4.3.3 Examples of these factors include:

- The source and absolute noise level of the source along with the time of day that it occurs;
- Where the noise is non-continuous, the number of noise events and pattern of occurrence;
- The frequency content and acoustic characteristics of the noise;
- The effect of noise on wildlife;
- The acoustic environment of external amenity areas provided as an intrinsic part of the overall design;
- The impact of noise from certain commercial developments such as night clubs and pubs where activities are often at their peak during the evening and night.

4.3.4 The PPG also provides general advice on the typical options available for mitigating noise. It goes on to suggest that Local Plans may include noise standards applicable to proposed developments within the Local Authority’s administrative boundary, although it states that:

“Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed”.

4.3.5 The PPG was amended in December 2014 to clarify guidance on the potential effect of noise from existing businesses on proposed new residential accommodation. Even if existing noise levels are intermittent (for example, from a live music venue), noise will need to be carefully considered and appropriate mitigation measures employed to control noise at the proposed accommodation.

⁴ Planning Practice Guidance – Noise, <https://www.gov.uk/guidance/noise--2> 22nd July 2019.

5 Acoustic Standards and Guidance

5.1 ProPG: Planning & Noise – Professional Practice Guidance on Planning & Noise – New Residential Development – May 2017

5.1.1 ProPG: Planning and Noise is new guidance with the aim of delivering sustainable development and promoting good health and well-being through the effective management of noise which may impact on new residential developments. The guidance aims to complement the national planning policy and encourages the use of good acoustic design at the earliest phase of the planning process. It builds upon the recommendations of various other guidance documents including NPPF, NPSE and PPG-Noise, BS 8233 and WHO.

5.1.2 The guidance is applicable to new residential developments which would be exposed predominantly to noise from existing transport sources. The ProPG advocates a risk based approach to noise using a two-stage process:

- Stage 1 – an initial noise risk assessment of the proposed development site; and
- Stage 2 – a systematic consideration of four key elements: –
 - Element 1 – demonstrating a ‘Good Acoustic Design Process’;
 - Element 2 – observing internal ‘Noise Level Guidelines’;
 - Element 3 – undertaking an ‘External Amenity Area Noise Assessment’; and
 - Element 4 – consideration of ‘Other Relevant Issues’.

5.1.3 The ProPG approach is underpinned by the preparation and delivery of an ‘Acoustic Design Statement’ (ADS), whereby the higher the risk for noise at the site, the more detailed the ADS. The ADS should address the following issues:

- Present the initial site noise risk assessment, including the pre-development acoustic conditions prior to development;
- Describe the external noise levels that occur across the site both before and after any necessary mitigation measures have been incorporated. The external noise assessment with mitigation measures in place should use an informed judgement of typical worst-case conditions;
- Demonstrate how good acoustic design is integrated into the overall design and how the proposed acoustic design responds to specific circumstances of the site;
- Confirm how the internal noise level guidelines will be achieved, including full details of the design measures and building envelope specifications;
- A detailed assessment of the potential impact on occupants should be undertaken where individual noise events are expected to exceed 45 dB $L_{AF,max}$ more than 10 times a night inside bedrooms;

- Priority should be given to enable the use of openable windows where practical across the development. Where this is not practical to achieve the internal noise level guidelines with windows open, then full details of the proposed ventilation and thermal comfort arrangements must be provided;
- Present the findings of the external amenity area noise assessment;
- Present the findings of the assessment of other relevant issues;
- Confirm for a low risk site how adverse impacts of noise will be mitigated and minimised;
- Confirm for a medium or high noise risk site how adverse impacts of noise will be mitigated and minimised and clearly demonstrate that a significant adverse noise impact has been avoided.

5.1.4 ProPG target noise levels are based on existing guidance from BS 8233 and WHO (see below). Table 1 below outlines the guidance noise levels for different room types during day and night times.

Table 1: ProPG guideline indoor ambient noise levels for dwellings

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 dB $L_{Aeq,16hr}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hr}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$ 45 dB $L_{Amax,F}$

5.1.5 The footnotes to this table suggest that internal noise level limits can be relaxed by up to 5 dB where development is considered necessary or desirable, and still represent “reasonable” internal conditions. They also suggest that in such cases, external levels which exceed WHO guidance target levels (see WHO section below) may still be acceptable provided that reasonable internal noise levels are achieved. Although, where the acoustic environment of external amenity areas is intrinsic to the overall design, “noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq,16hr}$ ”. The wording of ProPG (and BS 8233:2014) is clear that exceedance of guideline noise levels in external areas should not prohibit the development of desirable developments in any event.

5.2 BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings

5.2.1 This standard provides recommended guideline values for internal noise levels within dwellings which are similar in scope to guideline values contained within the World Health Organisation (WHO) document, Guidelines for Community Noise (1999)⁵. These guideline noise levels are shown in Table 2, below.

⁵ World Health Organisation Guidelines for Community Noise, 1999

Table 2: BS 8233: 2014 guideline indoor ambient noise levels for dwellings

Location	Activity	07:00 to 23:00	23:00 to 07:00
Living Room	Resting	35 dB $L_{Aeq,16hr}$	-
Dining room/area	Dining	40 dB $L_{Aeq,16hr}$	-
Bedroom	Sleeping (daytime resting)	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$

5.2.2 BS 8233:2014 advises that:

“regular individual noise events...can cause sleep disturbance. A guideline value may be set in terms of SEL⁶ or $L_{Amax,F}$ depending on the character and number of events per night. Sporadic noise events could require separate values”.

5.2.3 BS 8233:2014 adopts guideline external noise values provided in WHO for external amenity areas such as gardens and patios. The standard states that it is “desirable” that the external noise does not exceed 50 dB $L_{Aeq,T}$ with an upper guideline value of 55 dB $L_{Aeq,T}$ whilst recognising that development in higher noise areas such as urban areas or those close to the transport network may require a compromise between elevated noise levels and other factors that determine if development in such areas is warranted. In such circumstances, the development should be designed to achieve the lowest practicable noise levels in external amenity areas.

5.3 World Health Organisation (WHO) Guidelines for Community Noise 1999

5.3.1 The WHO Guidelines 1999 recommends that to avoid sleep disturbance, indoor night-time guideline noise values of 30 dB L_{Aeq} for continuous noise and 45 dB L_{AFmax} for individual noise events should be applicable. It is to be noted that the WHO Night Noise Guidelines for Europe 2009⁷ makes reference to research that indicates sleep disturbance from noise events at indoor levels as low as 42 dB L_{AFmax} . The number of individual noise events should also be taken into account and the WHO guidelines suggest that indoor noise levels from such events should not exceed approximately 45 dB L_{AFmax} more than 10 – 15 times per night.

5.3.2 The WHO document recommends that steady, continuous noise levels should not exceed 55 dB L_{Aeq} on balconies, terraces and outdoor living areas. It goes on to state that to protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB L_{Aeq} .

⁶ Sound exposure level or L_{AE}

⁷ WHO Night Noise Guidelines for Europe 2009

5.4 BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'

5.4.1 BS 4142:2014+A1:2019⁸ provides guidance on the assessment of the likelihood of complaints relating to noise from industrial sources. It replaced the 1997 edition of the Standard in October 2014 and was amended in June 2019. The amended version corrected a number of printing errors and further clarified that the standard is used to assess external noise levels, and not internal noise levels (although this can form part of the discussion regarding context). The key aspects of the Standard are summarised below.

5.4.2 The standard presents a method of assessing potential noise impact by comparing the noise level due to industrial sources (the Rating Level) with that of the existing background noise level at the nearest noise sensitive receiver in the absence of the source (the Background Sound Level).

5.4.3 The Specific Noise Level - the noise level produced by the source in question at the assessment location - is determined and a correction applied for certain undesirable acoustic features such as tonality, impulsivity or intermittency. The corrected Specific Noise Level is referred to as the Rating Level.

5.4.4 In order to assess the noise impact, the Background Sound Level is arithmetically subtracted from the Rating Level. The standard states the following:

- *Typically, the greater this difference, the greater the magnitude of the impact,*
- *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context,*
- *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context,*
- *The lower the Rating Level is relative to the measured Background Sound Level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the Rating Level does not exceed the Background Sound Level, this is an indication of the specific sound source having a low impact, depending on the context.*

5.4.5 In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014+A1:2019 edition places emphasis upon an appreciation of the context, as follows:

An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.

5.4.6 The 2014 edition of BS 4142 also introduces a requirement to consider and report the uncertainty in the data and associated calculations and to take reasonably practicable steps to reduce the level of uncertainty.

⁸ BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

6 Impact of Existing Noise Sources on the Development

6.1 Measurements of Existing Noise Sources

6.1.1 Indicative noise measurements were undertaken at three locations identified in Appendix 1 in accordance with BS 7445-1: 2003⁹ by Stephen Maslivec of Miller Goodall Ltd. The calibration of the sound level meter was checked before and after measurements with negligible deviation (<0.1 dB). Details of the equipment used are shown in Table 3, below.

Table 3: Noise monitoring equipment

Equipment Description	Type Number	Manufacturer	Serial No.	Date Calibrated	Calibration Certification Number
Class 1 Integrating Real Time 1/3 Octave Sound Analyser	NOR 140	Norsonic	1406017	23/05/17	03238/2
Microphone	NOR 1225	Norsonic	151206	23/05/17	03238/2
Class 1 Calibrator	Type 4231	Brüel & Kjær	2478249	18/05/17	03238/1

6.1.2 Specific, background and ambient noise monitoring was undertaken at the times specified in Table 4, below. Weather conditions were determined both at the start and on completion of the survey. It is considered that meteorological conditions were appropriate for environmental noise measurements.

Table 4: Dates, times and weather conditions during noise measurements

Measurement Location	Date	Time	Weather conditions
MP1/MP2/MP3	06/06/2018	13:58 – 15:16	Sunny, no wind, dry, 15°C

6.1.3 Measurements were taken to establish an estimate of the noise levels in the area. Further more detailed noise monitoring would be required to support a full noise assessment for the site.

6.1.4 The measurements were taken at a height of 1.5 m and were free-field at the locations detailed below:

- MP1 Approximately 10 m from Manchester Road at the northern section of the site.
- MP2 Towards the rear of the site at the northern end, close to the canal.
- MP3 Towards the canal away from industrial noise associated with the water treatment works.

6.1.5 The noise sources within the vicinity of the measurement locations are summarised in Table 5, below:

⁹ BS 7445-1: 2003 Description and measurement of environmental noise - Part 1: Guide to quantities and procedures

Table 5: Description of noise sources affecting the site

Measurement Locations	Noise Sources
MP1	Noise from road traffic A57 and birdsong. No noise from United Utilities site or ship canal during the assessment.
MP2	Noise from road traffic noise, whirring from pumping station at United Utilities site
MP3	Distant road traffic noise from A57

6.2 Monitoring Results

6.2.1 A summary of the broadband measurement data is provided in Table 6 below. All data are sound pressure levels in dB re 20 μ Pa.

Table 6: Summary of noise measurements

Measurement Location	Start Time	$L_{Aeq,T,5}$ mins (dB)	Overall L_{AFmax} (dB)	$L_{AF10,5}$ mins (dB)	$L_{AF90,5}$ mins (dB)
MP1	13:53:24	62.2	77.3	66.5	49.9
MP1	13:58:24	63.2	78.1	66.4	50.2
MP1	14:03:24	62.9	78.7	66.8	49.5
MP1	14:08:24	61	75.1	65.2	45.8
MP1	14:13:24	61.2	74.2	65.2	49.3
MP1	14:18:24	62.2	74.6	66.7	48.7
MP1	14:23:24	61.3	76.3	65.8	49.7
MP1	14:28:24	62.7	77.5	66.5	48.6
MP1	14:33:24	61.6	76.4	66.2	51.4
MP1	14:38:24	62.2	74.1	66.6	52.3
MP1	14:43:24	62.8	76.6	66.9	49.5
MP1	14:48:24	62.6	77.3	66.9	50.6
MP2	14:58:25	57.4	73.9	61.1	46.1
MP2	15:03:25	52	66.8	54.6	47
MP3	15:13:25	49.6	64.4	52.4	45

- 6.2.2 Each measurement period consisted of sequential 5 minute samples.
- 6.2.3 The average noise monitoring results have been assessed against the ProPG noise risk levels to determine the potential effect of noise on the proposed site without mitigation measures. The risk level has been determined based on the measured daytime noise levels at the monitoring positions.
- 6.2.4 The results indicate that at the monitoring positions the noise levels exceed the guideline values for ProPG, and therefore careful design of the site will be required. The monitoring was purely undertaken to obtain a guide of the levels of noise on the site. No night-time noise measurements have been undertaken to date.
- 6.2.5 Noise from the United Utilities and the AGI gas governor site is likely to result in an adverse impact in relation to noise. Both sites are likely to operate 24 hours and therefore would need to be addressed as part of the noise assessment for the site and mitigation provided for this area.

Table 7: ProPG Noise Risk Level Assessment

Noise Risk Assessment	Potential Effect Without Noise Mitigation	Pre-Planning Application Advice
	<p>Increasing risk of adverse effect</p>	<p>High noise levels indicate that there is an increased risk that development may be refused on noise grounds. This risk may be reduced by following a good acoustic design process that is demonstrated in a detailed ADS. Applicants are strongly advised to seek expert advice.</p> <p>As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.</p> <p>At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.</p> <p>These noise levels indicate that the development site is likely to be acceptable from a noise perspective, and the application need not normally be delayed on noise grounds.</p>

Table Notes:

- a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
- b. Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is not dominant.

6.2.6 As can be seen in Table 7 above, the noise levels measured at the site indicate “an increased risk of adverse effect”, however as previously stated these levels are a short-term indication of the noise levels for the site and do not include night-time levels.

6.2.7 Careful design of the site would be required to ensure the target noise levels are achieved.

6.3 Noise Mapping

6.3.1 Environmental noise mainly consists of noise from transport sources, such as road, rail and aviation. Department for Environment, Food and Rural Affairs (DEFRA) is responsible for creating noise maps and drawing up Action Plans under the Environmental Noise (England) Regulations 2006 (as amended), which requires Defra to:

- adopt noise maps which show people's exposure to environmental noise;
- adopt action plans based on the results of noise mapping
- aims to preserve environmental noise quality where it is good; and
- provides information to the public on environmental noise and its effects.

6.3.2 Noise mapping has been undertaken by Department of Environment Food and Rural Affairs (DEFRA) in 2017. Maps have been provided for main noise sources including road traffic noise and railway lines. The noise maps for the area are shown for both daytime and night-time road traffic noise in Appendix 3 and Appendix 4 respectively. The results show the predicted $L_{Aeq, \text{daytime}, 16\text{hour}}$ and $L_{Aeq, \text{night-time}, 8\text{hour}}$ road traffic noise levels around the site, taken at a grid height of 4 m.

6.4 Road Traffic Noise

6.4.1 The main existing road traffic noise source which has impacts on the site is from the A57, Manchester Road. The road forms the north western boundary of the site and it is at a higher geographic level. Warburton Bridge Road is located to the south of the site, which also has the potential to impact on the site, however to a lesser extent.

6.4.2 The main parcels of land which are likely to be impacted by the daytime road traffic noise are those located within approximately 150 m of the road. These are areas where the road traffic noise levels are predicted to exceed 55 dB $L_{Aeq, 16\text{hour}}$. Night-time road traffic noise levels are predicted to exceed 50 dB $L_{Aeq, 8\text{hour}}$ at the previously mentioned distance from the road.

6.4.3 The road network in this area is a significant noise source and further assessments would be needed to ensure that national noise standards are not exceeded. The mitigation may be in the form of:

- Suitable buffer zones between noise sources and proposed residential developments;
- The use of Noise bunds and barriers to protect future residents from noise; and
- Orientation of properties to provide the most protection to noise sensitive areas, such as bedrooms and private garden areas.

6.5 Railway Noise

6.5.1 There is an existing railway line approximately 1.7 km away from the site and it is therefore very unlikely to have any impact on the development in terms of noise.

6.5.2 The proposed HS2 railway line runs SE to NE of the Hollins Green site and is approximately 370 m at its nearest point at the NE of the site and 650 m at the nearest point to the East. This part of the proposed HS2 line is the Golborne Link at this location the proposed line would be raised with a viaduct running over the Manchester Ship Canal. Due to the height of the proposed line and the distance to the site, this source of noise would need to be assessed fully as part of the detailed planning application.

6.6 Commercial and Industrial Noise

6.6.1 The main commercial/industrial noise sources which have the potential to impact on the development site have been identified from a desktop internet search and site observations. The sources identified are detailed in Table 8 below.

Table 8: Industrial/Commercial Sources with Potential to Impact on the Site

Location	Name of Site	Type of Operation	Types of Noise Sources
Off Manchester Road (A57)	Hollins Green Pumping Station	Water works	Plant and machinery noise, vehicle movements
Warburton Bridge Road	Holly Bank Caravan Park	Caravan parking and use	Machinery and potential on site entertainment.
Eastern boundary of site	Manchester Ship Canal	Canal/river traffic	Watercraft engine noise
Off Warburton Bridge Road	AGI - Gas governor	Gas operation	Machinery/gas regulating on a 24 hour basis

7 Impact of Noise from the Proposed Development

7.1 Transport Noise

7.1.1 New residential developments will result in additional vehicles on the local road network. Assuming that every household on the site regularly uses one or two cars for commuting, this will result in a maximum of around 460 extra cars being added to the nearby traffic environment at peak times.

7.1.2 Design Manual for Roads and Bridges – Noise and Vibration November 2011 (DMRB) states that a change in noise level of 1 dB $L_{A10,18\text{hour}}$ would result from a 25% increase or 20% decrease in traffic flow (assuming other factors remain unchanged). A change of 3 dB $L_{A10,18\text{hour}}$ is equivalent to a 100% increase or 50% decrease in traffic flow. A change of 3 dB correlates well with the threshold at which a change in noise level begins to become subjectively perceptible.

- 7.1.3 The site is likely to require some degree of DMRB assessment for planning, however in our view the site is unlikely to pose a risk to the surrounding environment in terms of noise. This is because existing noise from the A57 is still likely to be dominant.

7.2 Construction Noise and Vibration Impacts

- 7.2.1 It is common for the control of construction noise, vibration and dust emission to be addressed by the application of Best Practicable Means (BPM) and detailed within a Construction and Environmental Management Plan (CEMP). The impact of construction noise from a development of this size is likely to be the main noise impacting on existing noise sensitive receptors, albeit over a relatively short period of time.
- 7.2.2 Prior to commencement of works, a quantitative noise impact assessment using guidance in BS 5228¹⁰ on site may also be required but in our experience is usually unnecessary, unless there are nearby high risk or noise sensitive receptors, provided a robust CEMP is in place and agreed upon by the Local Authority.
- 7.2.3 Warrington Borough Council are likely to have their own recommended wording for planning conditions relating to the control of noise and vibration from construction works.

7.3 New Commercial and Educational developments

- 7.3.1 No new commercial or educational developments are proposed for this area.

7.4 Protecting areas from increased noise.

- 7.4.1 The NPPF recommends protecting areas of tranquillity and areas prized for their recreational and amenity value. Table 9 identifies areas which it is felt meets this criteria.

Table 9: Locations where noise should be protected

Name of Site	Type of Operation	Reason
Warburton Park	Park	Parks are considered to be areas where people seek tranquillity
Manchester Ship Canal	Footpath	The Manchester Ship Canal has existing walkways

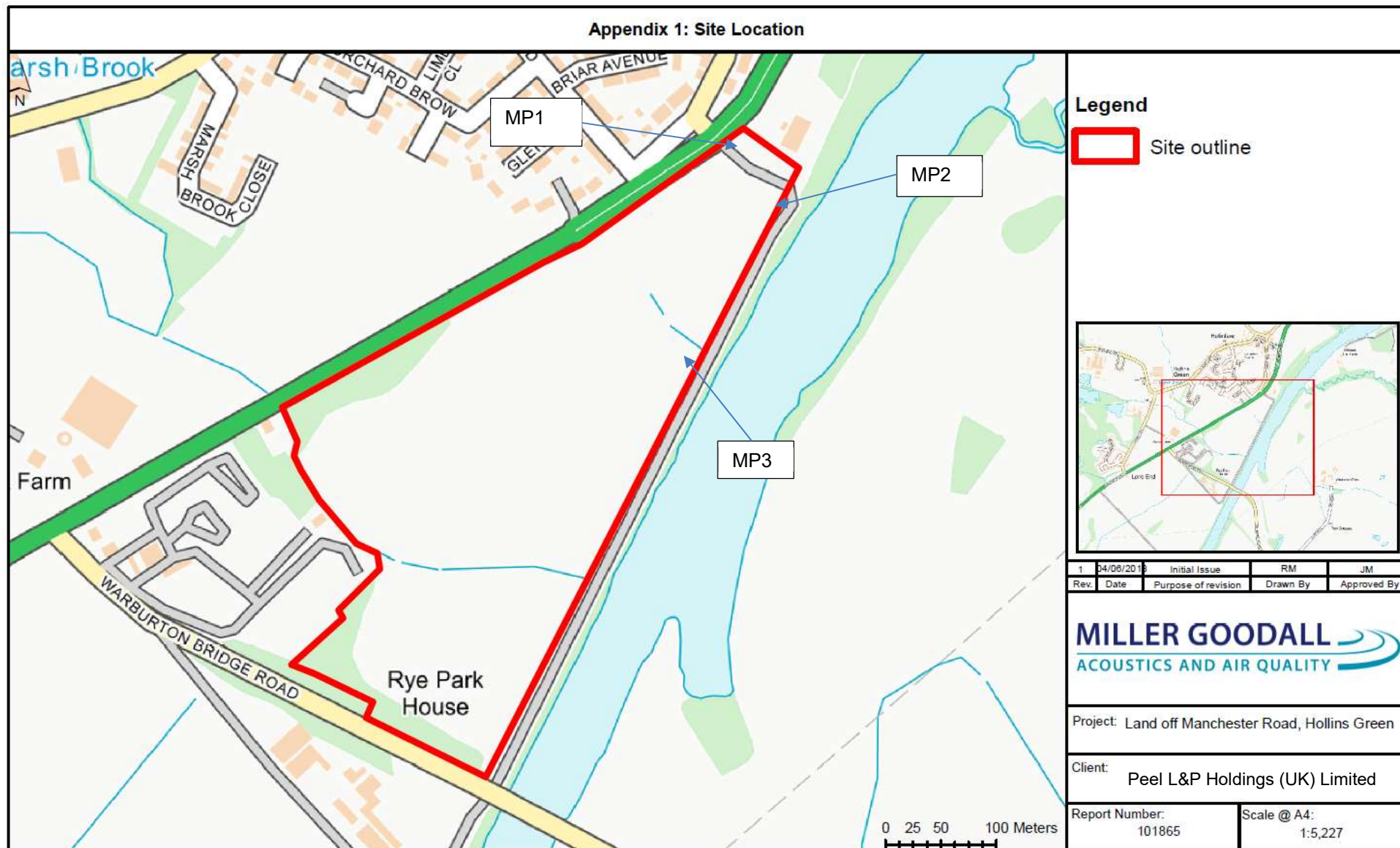
- 7.4.2 It is unlikely that this small housing development is likely to impact upon this area, however the use of good acoustic design would enable the site to be developed to protect the identified tranquil areas. This would be considered as part of the noise assessment submitted to support the planning application.

¹⁰ BS 5228 Noise and Vibration Control on Construction and Open Sites - Part 1: Noise: 2009+A1:2014

8 Summary and Conclusions

- 8.1 A noise screening assessment, site visit and preliminary noise measurements have been undertaken to identify any potential noise sources which are likely to have an impact on the development of a site for a housing development. The information indicates that the impact of noise from traffic noise and potentially from HS2 may result in developable land area being reduced, however it is not considered that it would be a barrier to residential development on most of the land under consideration.
- 8.2 It is recommended that;
- Noise from transportation sources, including road transport and the proposed HS2 railway around the site would need to be considered as part of the detailed masterplan for the site and considered as part of the planning submission which is likely to require an Environmental Impact Assessment.
 - Noise from industrial and commercial sources located around the periphery of the site would need to be assessed in more detail as part of a detailed planning submission for the site.
- 8.3 An assessment of the impact of the development in terms of noise from; transport, construction noise and commercial and retail sources would need to be assessed as part of the planning submission for the application site. Good acoustic design should be considered as part of the development of the masterplan to protect existing noise sensitive receptors.

APPENDICES



Appendix 2: Illustrative Masterplan



Canada House, 3 Chepstow Street, Manchester M1 5FW
0161 228 7721 mail@randallthorp.co.uk www.randallthorp.co.uk

KEY:

- Site boundary
- Existing buildings
- Existing vegetation
- Proposed woodland planting
- Proposed avenue trees
- Green infrastructure
- Proposed development area
- Potential focal square
- Proposed primary road
- Proposed secondary roads
- Proposed private drives
- Proposed vehicular access
- Proposed footpaths

NB: Masterplan subject to change following detailed survey work.



Land off Manchester Road, Hollins Green

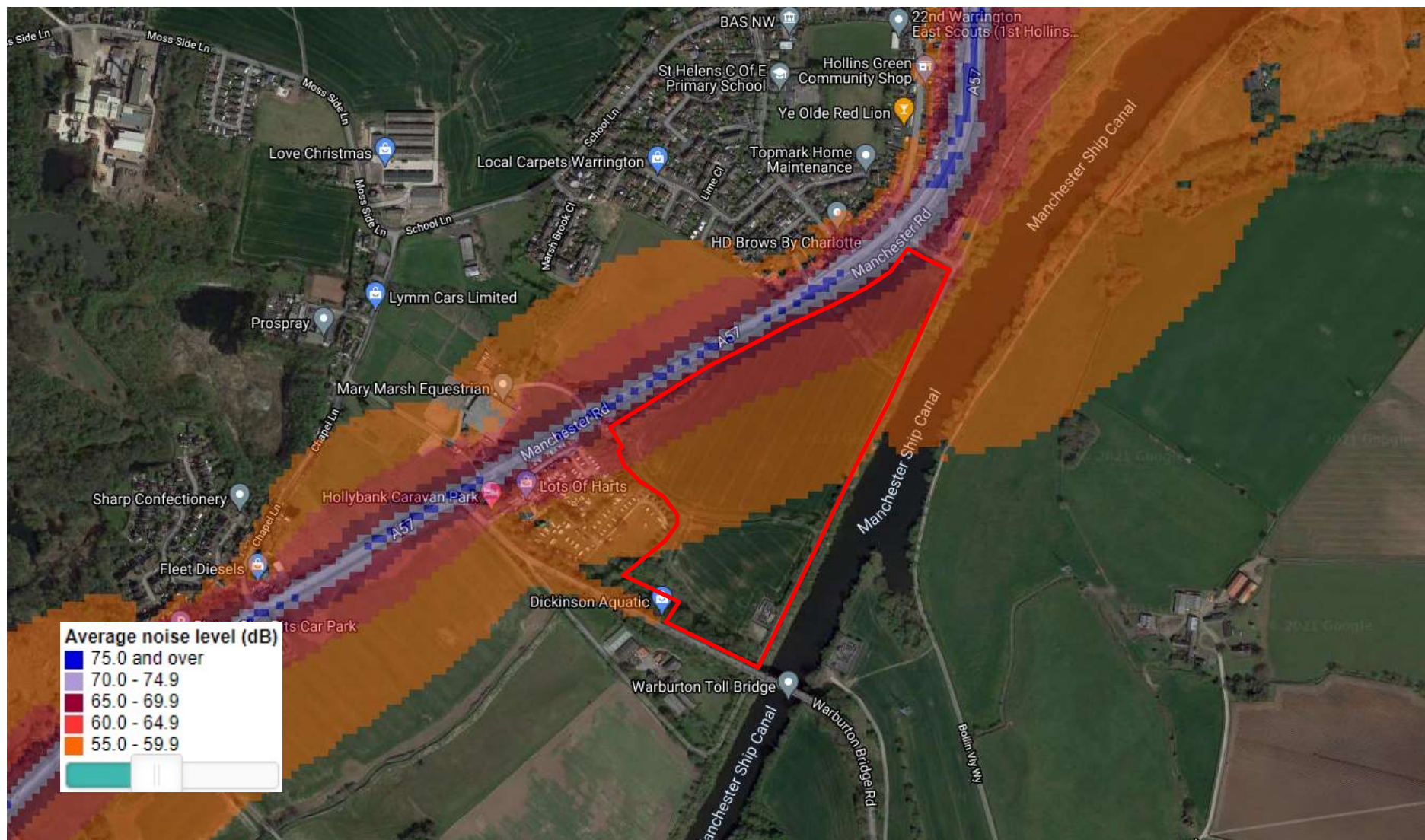
Conceptual Masterplan and Vision

NOTE:
Total Area: 12.24ha
Development Area: 6.63ha
Spine Road Area: 0.78ha
Green Infrastructure: 4.83ha

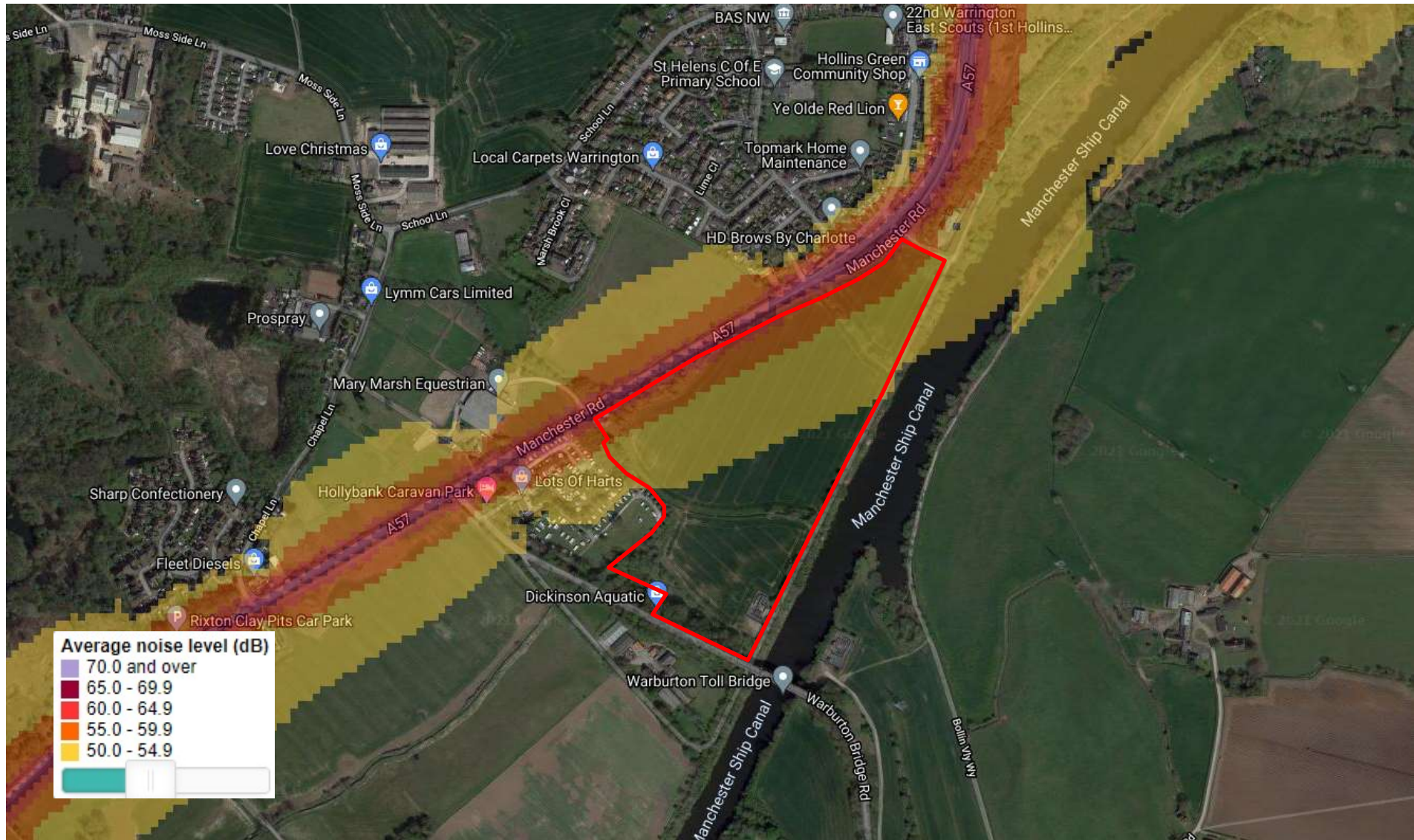
Potential Yield
@ 30 dph 199 units
@ 35 dph 232 units

Drwg No: 6300F-09 Date: 22.09.17
Drawn by: AH Checker: CAW
Rev by: Rev checker:
QM Status: Checked Product Status:
Scale: 1: 5,000 @ A3 Confidential Review

Appendix 3: DEFRA Daytime Road Traffic Noise Mapping, $L_{Aeq,16hour}$



Appendix 4: DEFRA Night-time Road Traffic Noise Mapping, $L_{Aeq,8hour}$



Glossary of Terms

- Decibel (dB)** The unit used to quantify sound pressure levels; it is derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 μPa , the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is usually only perceptible under controlled conditions.
- dB L_A** Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB L_A broadly agree with an individual's assessment of loudness. A change of 3 dB L_A is the minimum perceptible under normal conditions, and a change of 10 dB L_A corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB L_A ; normal conversation about 60 dB L_A at 1 meter; heavy road traffic about 80 dB L_A at 10 meters; the level near a pneumatic drill about 100 dB L_A .
- $L_{A90,T}$** The A weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142: 1997 it is used to define background noise level.
- $L_{Aeq,T}$** The equivalent continuous sound level. The sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.
- L_{Amax}** The highest A weighted noise level recorded during the time period. It is usually used to describe the highest noise level that occurred during the event.
- NOEL** No observed effect level: the level of noise exposure below which no effect at all on health or quality of life can be detected.
- LOAEL** Lowest observed adverse effect level: the level of noise exposure above which adverse effects on health or quality of life can be detected.
- SOAEL** Significant observed adverse effect level: the level of noise exposure above which significant adverse effects on health or quality of life can be detected.

MILLER GOODALL 
ACOUSTICS AND AIR QUALITY



14th June 2019

Ms. Donna Barber

Dear Donna,

**Re: Preliminary Site Appraisal
Manchester Road, Hollins Green, Warrington**

SGi understands that Peel Holdings Land & Property (UK) Ltd are considering developing the above site put forward for Warrington Local Plan.

SGi has prepared a Preliminary Site Appraisal, including a desk-based review of historical data, geological mapping and environmental site sensitivity information, issued as a precursor to the full interpretive Phase I & II Geo-Environmental Reports.

Preliminary Geo-Environmental Summary

Site Address

Manchester Road, Hollins Green, Warrington WA3 6HY

Site Location



Figure I.1 Red Line Boundary



Grid Reference	E 3639585, N390535	
Site Area	12.65 Hectares	
Current Site Use	<p>The subject site is an irregular shaped parcel of land located to the south of Hollins Green, Warrington.</p> <p>The site comprises three undeveloped arable agricultural fields (Figure 1.1) surrounded by trees and self-seeding vegetation.</p> <p>Marsh Brook is located in the southern sector which flows in a NW to SE orientation towards the Manchester Ship Canal.</p>	
Proposed Development	The proposed development scheme has not been finalized at this stage.	
Previous Reports	No previous reports have been provided for the site.	
Site History	A review of the OS historical mapping dating from the 1840s indicates the site has remained undeveloped agricultural land.	
Utility Locations	A review of service records indicates the presence of utility connections in Manchester Road to the northwest.	
Environmental Setting	<i>Drift Geology</i>	Glacial Fluvial Deposits – Sand & Gravel; and Alluvium – Clay, Silt, Sand & Gravel within the Central Sector orientated SW to NE.
	<i>Bedrock Geology</i>	Bollin Member – Mudstone.
	<i>Hydrogeology</i>	Superficial Deposits – Secondary A Aquifer; and Bedrock Geology – Secondary B Aquifer.
	<i>Groundwater Source Protection</i>	The site is not located within a Groundwater Source Protection Zone
	<i>Hydrology</i>	The Manchester Ship Canal is located immediately adjacent to the southeast of the site.
	<i>Flood Risk</i>	The site is affected by flooding (Flood Zone 2). Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
	<i>Ecology</i>	No risk to ecology or aquatic ecosystems identified.
	<i>Sensitive Land Uses</i>	A caravan park is located adjacent to the southwest of the site. Residential properties are located to the north of Manchester Road approximately 30m NW of the site boundary.
	<i>Industrial Land Use</i>	There are no industrial land uses on-site or the within the immediate locality that may potentially prejudice the future development of the site for residential end use.



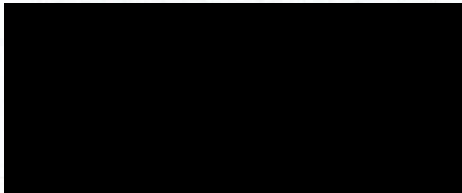
	<i>Subsidence Hazards</i>	No hazard identified in available data searches.
Landfill Sites & Ground Gases	<p>There are no recorded landfill sites (current or historic) located on-site.</p> <p>The closest relates to a historic landfill located c. 195m east of the site, however, this landfill is not considered to present an issue to human health given the Manchester Ship Canal bisects the lateral migration pathway.</p> <p>A further historic landfill is located c. 200m north of the site boundary, however, given the distance from the subject site within the risk from hazardous ground gases is considered to be low.</p>	
Radon	Lower Probability Area (<1% affected) – No protection measures required.	
Invasive Plant Species	To be confirmed during site walkover.	
Coal Mining / Land Stability	The site is not located within an area deemed to be at risk from ground instability arising from historic coal mining activities.	
Brine Pumping / Subsidence	The site is not located within an area deemed to be at risk from ground instability arising from historic brine pumping activities and/or salt extraction.	
Ground Conditions	<p>SGi has reviewed the BGS online records which indicates the nearest recorded borehole is located on site (Ref: SJ69SE20/A) in the SE corner.</p> <p>The ground conditions comprised;</p> <p>GL-0.70 TOPSOIL 0.70-1.52 Brown SAND 1.52-3.66 Soft to firm brown Sandy CLAY 3.66-30.17 Firm red / brown MARL with grey MUDSTONE.</p>	
Preliminary Contaminated Land Risk Assessment		
Human Health	<p>No significant sources of contamination have been identified at the subject site or within the immediate locality that would pose a significant risk to human health or prejudice the future development at the site.</p> <p>Furthermore, no asbestos containing material is anticipated given the undeveloped nature of the site.</p> <p>If any impacted soils are present, localised remediation or a suitable cover system designed in accordance with BRE465 (<i>Cover Systems for Land Regeneration</i>) may be required.</p>	
Controlled Waters	The Initial Conceptual Site Model has not identified any potential on-site sources of mobile contamination, as such the site is deemed to pose a very low risk to controlled waters.	
Ground Gas	No potentially significant sources of hazardous ground gas have been identified.	
Potable Water Infrastructure	Based on existing information, that the use of Poly-Ethylene Pipe (PE) for water supply infrastructure will likely be suitable for proposed development.	



Preliminary Geotechnical Assessment	
Underground Obstructions	Buried obstructions, such as relict foundations are not anticipated to underlie the the site.
Allowable Bearing Potential	TBC
Structural Foundation Options	TBC
Heave Precautions	The site is underlain by cohesive soils to a depth of 3.66m bgl; as such there is potential for heave precaution to be required.
Soakaway Drainage	The site is likely to be underlain by a predominantly cohesive soil matrix which are unlikely to offer the required degree of permeability to facilitate the use of soakaway drainage in this instance.
Sulphate Assessment	TBC
CBR Design %	The likely shallow granular soils underlying the topsoil horizon may potentially provide a CBR of <5%.
Structural Foundation Options	The finished floor levels (FFLs) are unknown at this stage, however, a significant phase of cut/fill works is not likely to be required to form the development platform as they site is relatively flat.
Waste Classification	A WM3 waste classification will need to be completed for any waste materials to be removed off-site.
Ground Investigation	A detailed Phase II intrusive Geo-Environmental Ground Investigation should be undertaken in order to confirm the findings of the initial conceptual site model and value engineer a development solution.

I trust that the above information is sufficient at this time and if you require anything further please do not hesitate to contact me

Yours sincerely,
SHEPHERD GILMOUR INFRASTRUCTURE LTD.



Dean O'Reilly
Civil Engineering Director



Warrington Borough Council Local Plan
Land off Manchester Road, Hollins Green
Transport Appraisal

Client: Peel L&P Holdings (UK) Limited

i-Transport Ref: SEE/JO/dc/ITM13248-002D R

Date: 12 November 2021

Land off Manchester Road, Hollins Green
Transport Appraisal

Client: Peel L&P Holdings (UK) Limited

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Date: 12 November 2021

i-Transport LLP



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Quality Management

Report No.	Comments	Date	Author	Authorised
ITM13248-002R	Draft	27/06/18	Steven Eggleston	Steven Eggleston
ITM13248-002AR	Revised Draft	17/05/19	Steven Eggleston	Steven Eggleston
ITM13248-002BR	Final	12/06/19	Steven Eggleston	Steven Eggleston
ITM13248-002CR	Updated Local Plan	08/11/21	Jonathan Orton / Steven Eggleston	Steven Eggleston
ITM13248-002DR	Updated Local Plan – Final	12/11/21	Jonathan Orton / Steven Eggleston	Steven Eggleston

File Ref: M:\Projects\13248ITM Land at Hollins Green\Admin\Report and Tech Notes\ITM13248-002D Transport Appraisal.docx

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Appendices

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APPENDIX B.	Location of Key Facilities and Services
APPENDIX C.	Potential Site Access from Manchester Road
APPENDIX D.	2017 Baseline Traffic Flows
APPENDIX E.	Forecast Year Baseline Traffic Flows
APPENDIX F.	Development Traffic Flows
APPENDIX G.	Local Highway Network Plan

SECTION 1 Introduction

1.1 Warrington Local Plan Review

- 1.1.1 Warrington Borough Council (WBC) is currently consulting on its Updated Proposed Submission Version Local Plan (UPSVP) which will guide development in the Borough to 2038.
- 1.1.2 WBC's consultation document of September 2021 sets out how the UPSVP was developed, including the work undertaken to develop its Spatial Strategy which has emerged following the 'call for sites' process and a large number of representations made to previous Local Plan consultations. The UPSVP identifies main development areas within the urban area and further development is planned within Warrington's outlying settlements.
- 1.1.3 The Local Plan Key Diagram, identifying the main areas proposed for development is included as Figure 3 of the UPSVP.

1.2 Peel's Land Interests

- 1.2.1 Peel is a major North West based investor and development company with a successful track-record in delivering growth and major projects including the Trafford Centre and Media City UK. Peel owns c.1.2million sqm of property and 20,000 acres of land and water. Peel has significant interests in Warrington Borough including at the Port Warrington and the South West Urban Extension (proposed for allocation in the 2019 Proposed Submission Version Local Plan) and in the outlying settlements.
- 1.2.2 Peel has specific interests in land off Manchester Road at Hollins Green which is capable of delivering up to 232 dwellings.
- 1.2.3 The main representations prepared by Turley explain why further development in Hollins Green is needed and how the Peel site can make a significant contribution to meeting the housing needs of Warrington over the plan period.

1.3 Report Structure

- 1.3.1 This transport appraisal considers the key transport and highways related aspects of the sustainable development proposals at Hollins Green.

1.3.2 The background to the consideration of sites by WBC and the overall policy position, focussing on transport, is set out in Section 2.0. Section 3.0 explains the development proposals. The key 'tests' of the National Planning Policy Framework (NPPF) paragraphs 110 and 111 are then considered: Section 4.0 shows that the site will be accessible and sustainable; Section 5.0 demonstrates how access will be provided to the site; and Section 6.0 outlines the traffic impacts of the proposals.

1.4 Conclusions

1.4.1 A summary of the overall conclusions is presented at Section 7.0. The key conclusions of this appraisal are:

- i Hollins Green has a range of facilities and services with others nearby, accessed by good public transport links. These will support and promote sustainable development and travel patterns, will result in most day-to-day needs being met locally and which confirm its suitability as a location for development.
- ii The range of facilities and services available locally within walking and/or cycling distance in Hollins Green includes a primary school, post office, public houses and play area. Doctors, dentist and pharmacy in Cadishead can be accessed on foot or by using the 100 bus service. Buses are available to Lymm and Culcheth High Schools and there is a frequent bus service from Hollins Green providing connections to Warrington, Irlam, the Trafford Centre and Manchester. Rail services can be accessed at Irlam with connections to a range of destinations.
- iii Therefore the development of the site will fully accord with the NPPF objective related to sustainable travel, with opportunities for such modes taken up.
- iv Access to the site is proposed off Manchester Road and a feasibility level design has been produced and the capacity of this assessed. These show the proposed access arrangements will operate satisfactorily and has been designed to the appropriate design guidance. Site access is controlled by Peel and is deliverable and achievable. It is therefore concluded that satisfactory access can be provided in accordance with the NPPF.
- v There are no constraints on the local highway network infrastructure that will prevent further development in Hollins Green.

- vi Traffic capacity assessments demonstrate that the residual cumulative traffic impacts of development on the site will not be severe and therefore, in accordance with NPPF, development should not be prevented on transport grounds.

1.4.2 Overall, it is therefore concluded that the site off Manchester Road at Hollins Green is suitable for allocation in the Council's Local Plan and will form a sustainable development that can provide much needed housing.

SECTION 2 Background

2.1 Transport Policy Context

2.1.1 This section considers both national and local policy related to transport and, in particular, how this frames the consideration of development proposals. Policy aspects of WBC's consideration of the UPSVLP and allocation of sites are set out in Section 2.2 below and, where relevant, in Sections 4.0, 5.0 and 6.0 related to accessibility, access and traffic impacts.

National Planning Policy Framework (NPPF)

2.1.2 Paragraph 11 of the NPPF sets out the presumption in favour of sustainable development noting that at plan-making stage, local planning authorities should positively seek opportunities to meet the development needs of an area.

2.1.3 The specific transport policies of the Framework are contained within its Part 9. Paragraph 110 sets out the key 'tests' for the consideration of the transport aspects of development proposals, stating that:

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- ***appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;***
- ***safe and suitable access to the site can be achieved for all users;***
- ***the design of streets, parking areas, other transport element and the content of associated standards reflects current national guidance, including the National Design Guide and National Model Design Code; and***
- ***any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."***

2.1.4 Paragraph 111 goes on to confirm:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."

2.1.5 Issues related to the sustainability of the site, access and traffic impacts are set out in Sections 4.0, 5.0 and 6.0 respectively.

2.1.6 Paragraph 104 sets out the principal transport matters that should be considered during the preparation of Local Plans:-

“Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- a the potential impacts of development on transport networks can be addressed;***
- b opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;***
- c opportunities to promote walking, cycling and public transport use are identified and pursued;***
- d the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and***
- e patterns of movement, streets, parking and other transport consideration are integral to the design of schemes, and contribute to making high quality places.”***

2.1.7 Paragraph 105 goes on to note:

“The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision making.”

2.1.8 Paragraph 106 notes that planning policies should, amongst others:

“a. support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;

c. identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;

d. provide for attractive and well-designed walking and cycling networks and supporting facilities such as cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);”

2.1.9 These submissions will demonstrate that the proposals will facilitate and maximise the use of sustainable travel modes and that the settlement of Hollins Green represents a sustainable location for future development. The proposals at Hollins Green will be close to the range of facilities and services in Hollins Green village, including primary school, shop, post office and public houses, thus minimising journey lengths. This is considered in Section 4.0.

2.1.10 Planning Practice Guidance (PPG) sets out further guidance on how the policies in the Framework should be applied and this has been considered in the preparation of this transport appraisal.

Warrington Local Plan

2.1.11 Warrington's Local Plan will provide the statutory planning framework for the Borough for the period 2021 to 2038. The Local Plan will replace the 2014 Local Plan Core Strategy.

2.1.12 The PUSVLP has a series of objectives that include:

“W4. To provide new infrastructure and services to support Warrington's growth; address congestion; promote safer and more sustainable travel; and encourage active and healthy lifestyles.”

2.1.13 Section 7 of the UPSVLP sets out policies related to objective W4 and these include:

“Policy INF1 – Sustainable Travel and Transport

To deliver the Council objectives of improving the safety and efficiency of the transport network, tackling congestion, reducing carbon emissions and improving air quality, promoting sustainable transport options, reducing the need to travel by private car and encouraging healthy lifestyles, the Council will expect development to:

- 1 **General Transport Principles:**
 - a ***Be located in sustainable and accessible locations, or in locations that can be made sustainable and accessible;***
 - b ***Ensure priority is given to walking, cycling and public transport within its design, and reducing the need to travel by private car;***
 - c ***Provide infrastructure for the charging of plug-in and other ultra-low emission vehicles, in line with the Council's Parking Standards SPD (2015);***
 - d ***Support proposals that reduce the level of trips made by single occupancy cars;***
 - e ***Consider demand management measures including the effective allocation of road space in favour of public transport, pedestrians and cyclists;***

- f Mitigate its impact(s) or improve the performance of Warrington's Transport Network, including the Strategic Road Network, by delivering site specific infrastructure which will support the proposed level of development;*
 - g Ensure traffic generated by development is appropriate to the type and nature of the routes available and that there is no adverse impact on the local community;*
 - h Improve and develop appropriate road, rail and water freight transport routes and associated multimodal freight transport facilities in order to assist in the sustainable and efficient movement of goods, in accordance with other relevant Local Plan policies;*
 - i Consider the impacts of the wider region's Strategic Road Network and work with adjoining Local Planning Authorities and wider stakeholders to assess the impacts of the transport initiatives outside the Borough, where impacts have been identified and need to be mitigated; and*
 - j Consider how development can be futureproofed, through the provision of measures to support new and emerging technologies, such as Autonomous Vehicles.*
- 2 Improve Walking and Cycling Facilities (Active Travel) including:**
- a Give a high priority to the needs and safety of pedestrians and cyclists in new developments, through the provision of high quality cycling and walking networks that seamlessly integrate with existing networks;*
 - b Improve way finding (including route signage);*
 - c Enhance and develop integrated networks of continuous, attractive and safe networks for walking and cycling including well designed and improved roads, Rights of Way and the Greenway Network (as shown on the adopted Policies Map). This should include appropriate segregation of users and high priority should be given to users at junctions. Where appropriate, the Council will consider the use of planning conditions or planning obligations to secure the required improvements;*
 - d Increase accessibility for all members' of society through improvements and the provision of new infrastructure to make the most of potential environmental, social and health benefits;*
 - e Give priority to routes linking residential areas (especially those in recognised areas of deprivation) with employment areas, transport interchanges and hubs, schools, Warrington Hospital and other local services and facilities;*
 - f Supporting the provision of new or improved routes between Warrington and surrounding local authority areas; and*
 - g Provide high quality secure and conveniently located bicycle parking facilities at new developments, at transport interchanges and hubs, the town centre and community facilities.*
- 3 Improve Public Transport Including:**

- a **Secure improvements to public transport infrastructure and services (to include bus, rail, taxi and private hire) in partnership, where appropriate with operators and delivery partners;**
- b **Be located in areas with easy access to high quality regular public transport services, to ensure public transport is a viable and attractive option by integrating the development with existing public transport infrastructure and services;**
- c **Providing additional public transport infrastructure and services that are related in scale to the proposed development where existing facilities are not available or are in need of improvement or an appropriate subsidy to help mitigate the impacts of the proposed development;**
- d **Consider options to enhance Bus Priority at junctions and the provision of dedicated Bus lanes;**
- e **Support proposals for new public transport networks and services, such as future Mass Transit systems and low or zero emissions vehicles;**
- f **Support proposals for rail infrastructure and services and the provision of rail facilities appropriate; and**
- g **Engage in proposals for the delivery of High Speed Rail and Northern Powerhouse Rail.**

7 Transport Assessments and Travel Plans

All major development proposals that are likely to generate significant movements will be accompanied by a Transport Assessment and a Travel Plan in line with Council guidance which will address the following requirements:

- a **That the proposed development will not result in an unacceptable impact on safety;**
- b **That trips generated by the development can adequately be served by Warrington's Transport Network, including the Strategic Road Network;**
- c **Identify where there are any significant effects on Warrington's Transport Network and/or the environment and ensure that appropriate mitigation measures including the required infrastructure are identified and in place before the development is brought into use;**
- d **Show how the Transport Assessment and associated Travel Plan have demonstrated how the proposed development will link into and enhance existing walking, cycling or public transport infrastructure;**
- e **Commit to the implementation of a series of measures and initiatives to facilitate and encourage the use of sustainable travel (walking, cycling or public transport use) and**

- f Developments will be required to monitor the effectiveness of the travel plan and the traffic generated by that development and share this data with the Local Authority, on an agreed annual basis."*

2.1.14 The various aspects of this policy are considered throughout this appraisal and are referenced, where appropriate, in Sections 4.0 – 6.0.

Warrington Fourth Local Transport Plan

2.1.15 This document sets out the Fourth Local Transport Plan (LTP) strategy for the period until 2040. The vision and objectives of the plan are as follows:

"Vision

Warrington will be a thriving, attractive and well-connected place with popular, high quality walking, cycling, and public transport networks supporting our carbon neutral future"

And

"Objectives-through LTP4 we will:

- ***Provide people with a choice about how they travel for each journey***
- ***Encourage a culture change that reduces the need for people to travel by car***
- ***Improve access to the town centre for all sustainable modes***
- ***Develop a resilient and efficient transport network that supports the town's growth***
- ***Reduce traffic congestion***
- ***Reduce both exhaust and non-exhaust emissions from transport***
- ***Maintain and improve all transport infrastructure***
- ***Encourage healthier lifestyles by increasing day-to-day activity***
- ***Improve safety for all highway users***
- ***Make Warrington a more disabled friendly place."***

2.1.16 The plan includes seven themes related to different aspects of transport and these are considered in this report: Active Travel, Public Transport, Smarter Choices and Cleaner Fuels (Section 4.0 – Sustainability and Accessibility); Safety and Security (Section 5.0 – Access); and Network Management (Section 6.0 – Traffic Impacts).

2.2 Growth in Outlying Settlements

2.2.1 Peel's proposals off Manchester Road in Hollins Green comprise the development of up to 232 residential dwellings. The UPSVLP proposes limited growth in the outlying settlements with only 90 new homes identified at Hollins Green on a single site north of A57 Manchester Road.

2.2.2 A large number of the sites in the proximity of the outlying settlement were submitted as part of the Local Plan 'call for sites' and during the Preferred Development Option (PDO) consultation. The Council therefore adopted a site selection methodology to confirm the sites proposed to be allocated in the previous Proposed Submission Draft Local Plan from 2019. Therefore information on the PDO consultation is presented below.

2.2.3 As per the 2019 Submission Draft Local Plan, the process adopted by the Council to derive the UPSVLP does not appear to take account of any detailed numerical analysis of the transport system that would result in a cap on growth in Hollins Green or the other outlying settlements.

2.2.4 The PDO, which included only 40 dwellings at Hollins Green, was derived using a four-stage process. Stage 1 identified development needs and land requirements and Stage 2 sets the objectives for the Local Plan. Stage 3 assessed high level spatial options with option 3 being extension in one or more settlements with the remainder of the growth adjacent to the main urban area. The Council's 'Area Profiles and Options Assessment' Technical Note (July 2017) states:-

"For the outlying settlements, the Council applied the following assumptions in defining the growth scenarios:

(i) 'Incremental growth' – based on a level of development that could be accommodated by existing infrastructure, subject to minor expansion of that infrastructure, up to 10% of settlement size."

2.2.5 The process adopted stated that the evidence base for stage 3 included a 'Transport Review'. Further detail is given at 4.46 and 4.47 of the PDO document, noting:-

"In order to help inform the options appraisal process, the Council prepared Area Profiles for... each of the outlying settlements" (4.46)

and

"these profiles provide a detailed assessment of the capacity of... the transport network." (4.47)

2.2.6 Examination of the area profile for Hollins Green includes consideration of the assessment criteria for objective W4, noting:

“Local Highways Network. Peak hour congestion on A57 at Warburton bridge junction. No current planned local highways improvements.”

2.2.7 Other criteria related to the strategic highways network, public transport and active travel did not raise detailed constraints, albeit the profile did note that the nearest rail stations are Glazebrook or Irlam and that active travel to work was generally low.

2.2.8 It is understood that the transport review which was input to the PDO did not include any quantitative analysis. No analysis of the capacity of the existing transport system, the impacts of traffic generated by development and the potential to introduce improvements to facilitate growth had been undertaken. Indeed, the PDO noted that the development numbers in each settlement will depend on detailed assessment including transport impacts.

2.2.9 Specifically, it is understood no analysis had been undertaken of the A57/Warburton Bridge Road traffic signal controlled junction. Section 6.0 considered off-site traffic impacts and showed that the above junction will not constrain development of the scale envisaged at Hollins Green.

2.2.10 The Council undertook further transport modelling, reported in the ‘PDO: Transport Model Testing of Alternative Scenarios’ report. This noted that the model was not available during the consultation stage of the PDO development.

2.2.11 The report noted that the purpose of the testing was to demonstrate that the PDO did not result in a breakdown of the Warrington transport network and to demonstrate that the transport impacts of alternative development scenarios were not materially better than the PDO.

2.2.12 Six alternative scenarios to the PDO were considered in the report with scenario 3 the only one that tested significant additional growth in the outlying settlements, with dwelling numbers increased from 1,190 (as the PDO) to 4,900. Details were not provided of the specific locations of the additional growth. The results of model testing of the scenarios were presented initially at the aggregate level across the Borough as a whole and this adopted key performance indicators related to travel distances, times and lengths, average speeds and public transport modal share.

2.2.13 Considering each of these the report concluded:

- Total vehicle hours: scenario 3 was the best performing scenario although there was negligible variation between scenarios.
- Total vehicle kilometres: again, scenario 3 was the best performing scenario but there was negligible variation between scenarios.
- Average trip length: the PDO was the best performing scenario but there was limited variation between the scenarios. The average trip length for scenario 3 was only 0.53% greater than the PDO (a distance of only 50m).
- Public Transport trips and mode share: there was negligible variation between the scenarios with scenario 3 having a slightly higher public transport modal share than the PDO (by 0.69%) and slightly lower number of public transport trips than the PDO (by 0.65%).
- Average speed: the report notes that average speed is an indicator of delay / congestion and that there was little variation between scenarios at the network wide level (scenario 3 had a slightly higher average speed than the PDO, by 0.7%).
- Journey times: there was limited variation between scenarios in journey times through the urban area.

2.2.14 Overall, the analysis showed that greater levels of development in the outlying settlements did not result in adverse travel characteristics. The report concluded that there was no evidence, from the model, that the transport impacts of other scenarios were materially better than the PDO. By definition, they were not materially worse.

2.2.15 The Council's report 'Transport Model Testing of the WBC Local Plan' does not consider specific locational issues and does not identify any detail of constraints at Hollins Green.

2.2.16 There is therefore no justification, based on sound evidence of transport capacity, to limit development in Hollins Green (or the other outlying settlements) at the level suggested by the Council. This report, which complements the main submissions prepared by Turley, identifies the potential of the site off Manchester Road, Hollins Green to contribute to growth in the borough in a sustainable manner.

SECTION 3 Development Proposals

3.1 Site Location

- 3.1.1 The site is located south of A57 Manchester Road, just south of the existing built development at Hollins Green. The location of the site is shown on Appendix A.
- 3.1.2 The site is broadly triangular shaped and has well defined boundaries: by A57 Manchester Road on its northern side; the Manchester ship canal on its southern side; and Warburton Bridge Road/Hollybank Caravan Park on its western side.
- 3.1.3 The site is 12.24 hectares in size and currently comprises agricultural land. The site is designated as Green Belt within the Warrington Unitary Development Plan.

3.2 Masterplan

- 3.2.1 A concept masterplan of the site has been developed and is included in the main representations prepared by Turley. The masterplan shows residential development of up to 232 dwellings across the site with landscape buffers around all edges.
- 3.2.2 Access to the site is considered in detail in Section 5.0 below: access will be provided off A57 Manchester Road close to the current edge of built development at Hollins Green. A loop road will then be provided within the site to access parcels of residential development. Footpaths will cross the site.
- 3.2.3 The design and layout of transport corridors within the site will focus on creating places. Street and place design will start with pedestrians and cyclists having priority with managed car access. Street design will follow the principles of Manual for Streets and 'Living Streets' and will result in streets that are destinations worth visiting. Shared surfaces will be encouraged. Speed limits will be low with an appropriate street hierarchy developed, making it the norm to travel slowly within the site. The site will be designed for the mobility impaired with account taken of 'Inclusive Mobility' requirements.
- 3.2.4 Thus the design philosophy of the masterplan will encourage sustainable travel through current design standards, contributing to the site forming sustainable development and being designed to reflect national guidance in the context of the NPPF.

SECTION 4 Sustainability And Accessibility

4.1 The Case for Development at Hollins Green

4.1.1 Hollins Green and nearby Cadishead has local facilities within walking distance of residential areas, which residents can access comfortably on foot, and public transport connections to nearby areas, with bus stops within walking distance.

4.1.2 The TEMPRO database has been used to provide an indication of the proportions of trips made by residents in Hollins Green for different journey purposes by all modes of travel. Data for MSOA 2 has been used which includes Hollins Green but also parts of Culcheth:

Table 4.1: TEMPRO Journey Purposes – Hollins Green

Journey Purpose	Proportion of All Trips ¹
Education	14.0%
Shopping	25.3%
Personal Business	8.2%
Recreation / Social	13.1%
Visiting Friends & Relatives	10.3%
Holiday / Day Trips	3.0%
Work	22.7%
Employer's Business	3.2%

¹ Average weekday all modes

4.1.3 Thus trips are made for a variety of journey purposes, many associated with meeting day-to-day needs such as travel to school (c.14%), shopping (c.25%), personal business (c.8%), recreation and social (c.13%) and visiting friends and relatives (c.10%).

4.1.4 It is important to consider the trips likely to be made for each journey purpose with the availability of local facilities and services; this demonstrates that Hollins Green is a sustainable settlement and a suitable location for new development where trips can be made locally by sustainable travel modes. The settlement is compact (c.450m on the north-south axis and c.550m on the east-west axis) and Cadishead is nearby, within a c.800m (10 minutes) walk and with regular bus services connecting the two settlements.

Education

- 4.1.5 Around 14% of daily trips by residents are made for education purposes. There is a primary school in Hollins Green and two further primary schools at Cadishead; St Mary's at 1.8km and Cadishead Primary at 2.5km from Hollins Green. Secondary schooling is provided at Lymm, and there is a school bus from Hollins Green, and Irlam and Cadishead Academy is c.3.1km away with regular buses connecting Hollins Green with the school. TEMPRO data indicates that only 20% of education trips are by a car driver, with these likely to be parents dropping children off at school (the average car occupancy is 2.8 people per car). Thus the majority of trips are made by sustainable modes – walking (32%), cycling (1%), car passenger (36%) and public transport (11%).
- 4.1.6 The size of Hollins Green and the short distance to Cadishead, as well as the availability of bus services, means that many trips can be made on foot, by bike or on public transport. The IHT's document 'Providing for Journeys on Foot' suggests a walking distance to school of up to 2km. The distance between residential areas and schools varies by area but the compact nature of Hollins Green and the short distance to Cadishead facilitates easy trip making and data from the National Travel Survey (NTS) confirms there is a very good prospect of many school trips being made locally. Information from the NTS demonstrates that trips to local schools (i.e. where distances are shorter) are predominantly made on foot:-

Table 4.2: NTS Modal Split of Trips to School

Main Mode	Aged 5 – 10 Years			Aged 11 – 16 Years		
	Under 1 mile (1.6km)	1 to under 2 miles	All lengths	Under 1 mile (1.6km)	1 to under 2 miles	All lengths
Walk	80%	19%	46%	95%	53%	39%
Bicycle	1%	4%	1%	2%	6%	3%
Car/Van	18%	71%	47%	3%	28%	26%
Bus	1%	5%	5%	1%	11%	29%
Other	-	1%	1%	-	1%	4%
Total	100%	100%	100%	100%	100%	100%

NTS Table 0614 for England 2019

- 4.1.7 The primary school at Hollins Green is within one mile and the secondary school at Irlam is within 2 miles, confirming most trips are likely to be made by non-car modes, mainly walking.

Shopping and Personal Business

4.1.8 A third of trips are made for shopping or personal business reasons. Hollins Green includes some facilities that will satisfy day-to-day needs and facilitate local trip making, particularly on-foot. These include a community shop and Post Office and there is a range of shops at Cadishead (including convenience stores, pubs, cafes, bicycle shop and cake shop) as well as a medical centre, dental surgery and pharmacy.

4.1.9 The TEMPRO data shows that less than half (46%) of the journeys for shopping and personal business are made as a car driver. Again, the compact nature of the area means that residents will have the opportunity to walk, cycle or use the bus to access these uses.

Recreation, Visiting Friends and Holidays

4.1.10 These journey purposes account for a significant number of trips – around 26% of the daily total. There are opportunities for such trips to be made locally (e.g. the pubs and park in Hollins Green) whilst recognising that the nature of such trips means that some will be made over longer distances and by car. In this respect Hollins Green provides an accessible location on the A57 which runs between M6 and M60 motorways. The settlement also has good public transport connections to Warrington to the west and Greater Manchester to the east, by regular bus and by train from Irlam station. Around 45% of these trips are made by car drivers (from TEMPRO) with the majority therefore made by more sustainable modes.

Working and Employer's Business

4.1.11 Around a quarter of all trips are made for these purposes. The number of jobs in Hollins Green is limited but there are significant employment areas to the east of Cadishead and Irlam with some within walking distance and other accessible by bus. There are regular buses to Warrington, Cadishead, Irlam, The Trafford Centre and Manchester. The bus service stops close to Irlam station where there are train services to Warrington and Manchester. There are therefore various options for commuting journeys to be made by sustainable modes from Hollins Green.

Overall

4.1.12 Thus, the combination of the size of the settlement, its proximity to Cadishead and the range of facilities and services makes for the use of integrated and accessible transport. Development in

Hollins Green can be focussed on making walking, cycling and bus the most attractive forms of local transport, with residents able to meet their day-to-day needs locally.

4.1.13 Modal split data from TEMPRO identifies this potential with the following mode shares for all journey purposes combined (based on MSOA2 data):-

Table 4.3: TEMPRO Modal Shares – Hollins Green

Mode	Proportion of Trips ¹
Walk	16.9%
Cycle	1.5%
Car Driver	47.9%
Car Passenger	26.0%
Bus / Train	7.6%

¹Average weekday all journey purposes

4.1.14 Locating development in Hollins Green, such as at the site, close to a range of services, both local and nearby at Cadishead, and close to good transport connections, bus and walking routes, will facilitate increased use of sustainable travel modes.

4.1.15 Considering the national and local policies set out earlier in this report:

- Development in Hollins Green will facilitate the use of sustainable modes of transport, given the short-distances involved and availability of buses – meeting NPPF Para 110 and UPSVLP Policy INF1.
- The need to travel can be minimised and use of sustainable modes can be maximised – meeting NPPF Paras 105.
- Day-to-day activities and key facilities such as primary schools and local shops will be located within walking distance of properties – meeting NPPF Para 105 and UPSVLP Policy INF1.

4.1.16 Thus Hollins Green has many existing characteristics which will support and promote sustainable development and sustainable travel patterns, meeting day-to-day needs and which confirm its suitability as a location for development.

4.2 Overview of the Site's Accessibility

4.2.1 The previous section of this report has set out the case for development at Hollins Green in terms of encouraging and promoting the use of sustainable travel modes. This focuses on the availability of a comprehensive range of facilities and services within the village and close by at Cadishead, capable of meeting the majority of residents' day-to-day needs and, as a result, with walking, cycling and public transport designed to be the most attractive forms of local transport.

4.2.2 Considering this, the potential development site off Manchester Road is located immediately adjacent to the built area of Hollins Green. Thus the location of the site will promote sustainable travel patterns and the use of sustainable travel modes, reducing car use, particularly that for single occupancy travel.

4.2.3 Sustainable travel modes will therefore be promoted at the site by:

- i Taking advantage of the site's location close to Hollins Green village and Cadishead;
- ii Maximising opportunities for walking and cycling trips, particularly over shorter distances, and encouraging public transport;
- iii Encourage commuting trips to Warrington and other destinations to be made by bus; and
- iv Where absolutely necessary, mitigating the impacts of residual car borne trips by the introduction of highways improvements.

4.2.4 Measures for encouraging walking, cycling and public transport including those to be included in a Travel Plan are included in Sections 4.3 – 4.5 with the locational characteristics of the site and existing sustainable travel provision also set out. The accessibility of the site is then considered in Section 4.6.

4.3 Local Connectivity of the Site

4.3.1 As noted above, the sites lies immediately adjacent to the existing built development within Hollins Green village thus affording the opportunity to make direct and high quality connections. A pedestrian crossing facility of A57 will be included in the site access proposals. The streets in Hollins Green have footways and the site can connect to these, providing easy pedestrian access to the facilities within the village, and are lightly trafficked and suitable for cycling.

4.3.2 Improvements to the pedestrian/cyclist environment will be investigated in detail and, where appropriate, implemented in line with development coming forward. At this stage it is envisaged these could include: the provision of a crossing of A57; where possible within the highway, the widening of the footway along the northern side of Manchester Road between the site access and Mersey View; and footway improvements in Hollins Green village such as dropped kerbs at crossing points. These will be complemented by measures included in the Travel Plan for the site (see Section 4.5 below).

4.3.3 The location of the site close to the every-day facilities in Hollins Green village and at Cadishead will afford an opportunity to focus movement on slow modes of travel and thereby reduce car use.

4.4 Availability of Public Transport

4.4.1 There are existing bus routes and services in the vicinity of the site as summarised in the table below.

Table 4.4 Existing Bus Services

Service No.	Route / Destinations Served	Frequency					
		Mon – Fri		Saturday		Sunday	
		Day	Eve	Day	Eve	Day	Eve
100 ¹	Warrington – Hollins Green – Cadishead – Irlam – Trafford Centre – Eccles – Manchester	30*	60	30*	60	60	60

1 from The Black Swan *hourly to/from Warrington

4.4.2 Thus these are half-hourly bus services between Hollins Green and a range of destinations including Irlam, The Trafford Centre, Eccles and Manchester and hourly services to Warrington. The service is hourly from the ‘Eagle and Child’ stops closer to the site. As well as the scheduled bus routes, there are school bus services to Priestley College (service P5), Culcheth High School (service 278) and Lymm High School (service 40B).

4.4.3 The closest railway stations to the site are at Glazebrook and Irlam, the latter connected by the 100 bus service which stops on Liverpool Road close to the station. Rail connections are available from the station to Warrington and Manchester.

4.4.4 Further measures to promote bus (and rail) use can be delivered as part of the Travel Plan, see 4.5 below.

4.5 Promoting Sustainable Travel Choices

Overview

4.5.1 The development of the site will include the production of a comprehensive travel plan to support the proposals. This will primarily identify the delivery of 'soft' measures to encourage the use of sustainable modes.

Travel Plan Objectives and Targets

4.5.2 The detailed objectives and targets for the travel plan will be discussed and agreed with the Council and other key stakeholders, at the appropriate time. Broad objectives have been considered at this stage:

- i Bring together the design of the site and travel plan measures such that the need to travel is reduced.
- ii Provide measures and initiatives that are inclusive, promote cohesion and provide alternatives for all residents on the site.
- iii Promote 'hard' and 'soft' measures such that sustainable modes are the first mode(s) of choice, rather than the car.
- iv Minimise the traffic generated by the development proposals.
- v Assist in developing a sense of place within the site.
- vi Promote healthy lifestyle choices through the use of non-car modes with emphasis on active travel.

4.5.3 Specific SMART targets will be developed for the plan focusing on two key aspects:

- First, meeting modal share targets and a maximum proportion of car driver trips; and
- Secondly, ensuring that the actual traffic flows generated by the site are consistent with those adopted in future transport assessments, such that there is no severe impact from additional car trips.

4.5.4 Formal monitoring arrangements will be agreed to assess the achievement of objectives and targets on an on-going basis.

Travel Plan Measures

4.5.5 Detailed assessment and evaluation will be undertaken to establish the most appropriate measures for the site should the site be allocated. The size of the site is such that a comprehensive package of initiatives will be needed to achieve objectives and targets. There will be general measures to be applied across the site and all modes, specific measures to promote walking and cycling and public transport, measures to reduce residual vehicular trips and information/awareness raising that can be rolled out across the whole site. The measures are summarised below.

Generic Measures

4.5.6 These will include:

- Travel Plan Co-ordinator: the TPC will be responsible for the overall delivery of the plan including liaison with WBC. They will monitor the plan against objectives and targets and identify measures to promote sustainable travel.
- Personalised travel planning: the TPC will liaise with individual householders to plan specific journeys and show how these can be undertaken by sustainable modes.
- Welcome Packs: these will be provided to every new household on first occupation and will set out the benefits of travel plan measures, details of sustainable travel modes (e.g. bus maps), the initiatives available on the site and contact details for any further information.
- Broadband: all homes will be equipped with broadband, enabling working from home etc.

Measures to Promote Walking and Cycling

4.5.7 Physical measures, including a crossing of A57 to connect the site with Hollins Green village centre, are considered above. Additional measures will include: -

- Bicycle user group: the TPC will investigate the potential for a BUG to be established at the site to encourage residents to meet and exchange tips on cycle routes and maintenance. The TPC will forge links with cycle shops to arrange discounts on purchases and repairs, if possible.

- Travel voucher: a voucher will be offered to each new household which can be used to purchase equipment or part purchase a bicycle.
- Cycle storage and stands: secure weather protected cycle storage and/or stands will be provided throughout the site.
- School walking bus: funding for the advertising of walking bus schemes and the provision of fluorescent vests for children and walking bus 'drivers', to connect the site with the primary school in Hollins Green.
- Cycling proficiency schemes at the primary school: funded for a period to be agreed with the Council.
- Cycle training: this will be offered to residents who are less confident regarding the use of a bike. The BUG can co-ordinate this.

Measures to Promote Public Transport

4.5.8 Measures to promote the use of buses could include:

- Travel vouchers/travel cards/bus tickets: a monthly bus pass will be supplied to each household on first occupation. The TPC will seek to obtain discounts from bus operators for these tickets or tickets for extended periods.
- Bus buddying: this is used in other towns where trained volunteers provide one-to-one support to older people, learning disabled people, people with physical and sensory impairments etc. to aid their understanding of using public transport and to help them gain confidence.

Reducing Car Use and Emissions

4.5.9 Residents will make some journeys by car but car sharing will be promoted from first occupation of the dwellings by the TPC. A bespoke car sharing scheme could be developed or existing car sharing initiatives could be used.

4.5.10 Electric car charging will be provided in the residential dwellings proposed on the site.

Information and Awareness

4.5.11 Raising awareness of the measures and initiatives that will be available at the site is important and therefore information will be provided as follows:-

- Site specific travel guide: a foldable map, setting out the details of bus services and walk and cycle routes, will be developed. It will be included in sales literature and updated regularly for distribution by the TPC.
- Website: a Travel Plan website will be developed for the site giving residents access to up-to-date travel information.
- Notice boards: these will be located within sales offices and at strategic points around the development, displaying up-to-date information on sustainable modes and setting out the benefits of these and other travel plan measures.
- Campaigns: the TPC will hold events and campaigns related to national and local initiatives such as 'Bike to Work' day and local organised cycle rides.

4.5.12 The TPC and travel plan measures will be funded by the developer and/or their successors in title.

4.5.13 The Travel Plan measures will thus encourage both active travel and the use of public transport, consistent with the NPPF and the transport related objectives and policies of the UPSVLP.

4.6 Accessibility of the Site

Overview

4.6.1 Strategic objective W4 of the UPSVLP includes the promotion of sustainable travel with the Sustainability Appraisal objectives including those related to reducing the need to travel and enhancing accessibility for essential services and facilities.

4.6.2 Local facilities and services within the vicinity of the site are shown on Appendix B and the distance from the site access to the key destinations in the local area are set out in the table below.

Table 4.5 Distance to Key Facilities and Services

Use	Name	Distance and Mode
Primary School	St Helens C of E Primary School	0.4km – walk
	Cadishead Primary School	3.0km – bus (100)
	Forest Gate Academy, Partington	4.1km - drive
Secondary School	Culcheth High School	7.0km – bus (278)
	Priestley College	10.4km – bus (P5)

Use	Name	Distance and Mode
	Lymm High School	4.9km – bus (40B)
	Irlam & Cadishead Academy	3.8km – bus (100)
	Broadwalk High School	4.4km – drive
Health	Longfield Lodge Surgery	1.7km – walk or bus (100)
	Longfield Lodge Dental Practice	1.6km – walk or bus (100)
	Lloyds Pharmacy	2.3km – walk or bus (100)
Retail and Leisure	Hollins Green Community Shop	0.4km – walk
	Hollinfare Post Office	0.7km – walk
	Hollins Green Park	0.4km – walk
	Ye Old Red Lion public house	0.3km – walk
	The Black Swan public house	0.6km – walk

4.6.3 Manual for Streets (MfS) notes that walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (c.800m) walking distance of residential areas which residents may access comfortably on foot. It does however go on to note that this is not an 'upper limit' and quotes (the now superseded) PPS13 which stated walking has the greatest potential to replace short car trips, particularly those under 2km.

4.6.4 The IHT document 'Providing for Journeys on Foot' includes suggested acceptable walking distances. The preferred maximum distances for commuting / school / sight-seeing are 2km with 1,200m suggested elsewhere. It is concluded 2km represents an appropriate distance for the consideration of walk distances between households and facilities and services.

4.6.5 In terms of cycle distances, DfT Local Transport Note 1/20 'Cycle Infrastructure Design' notes that many personal trips are less than five miles (c.8km) in length, which an achievable distance to cycle for most people.

4.6.6 Thus consideration of Table 4.5 confirms that many day-to-day facilities close to the site within Hollins Green and at Cadishead are within walking and cycling distance, ensuring that the site will form a walkable neighbourhood.

Accessibility to Education

4.6.7 St Helens Primary School is located in Hollins Green off Birch Road and is within a short walk of the site. The Cadishead Primary School is c.3km distant with pupils and parents able to use the regular 100 bus service to access the school.

4.6.8 There are school buses to both Lymm High School (service 40B), Culcheth High School (service 278) and Priestley College (service P5) and Irlam and Cadishead Academy can be reached by the 100 bus service which travels along Liverpool Road through Irlam, close to the college located on Station Road.

4.6.9 The accessibility of the site to education facilities is therefore considered to be excellent.

Accessibility to Health Facilities

4.6.10 There are no GP practices or dental practices in Hollins Green but the Longfield Lodge Surgery and Dental Practice in Cadishead are c.1.7km and c.1.6km away respectively. They are within walking distance or both can be accessed using the 100 bus service. Lloyds Pharmacy, also in Cadishead, is c.2.3km distant and can be reached using the 100 bus service.

4.6.11 It is considered that the accessibility of the site to day-to-day health facilities is good.

Accessibility to Retail and Leisure Facilities

4.6.12 There is a range of facilities in Hollins Green village which provide for everyday needs and all are located within 0.3km – 0.7km of the site. These include the community shop, Hollinfare Post Office, two public houses and park.

4.6.13 Higher-order facilities are further afield in Warrington, at the Trafford Centre and in Manchester and these can be accessed using the regular 100 bus service. This can also be used to reach Irlam railway station where there are onward frequent connections to Birchwood, Warrington, Liverpool and Manchester.

4.6.14 The accessibility to local retail and leisure facilities is therefore concluded to be good.

Summary

4.6.15 In conclusion, a range of facilities and services will be available locally within walking and/or cycling distance in Hollins Green. These include the primary school, post office, public houses and play area. Doctors, dentist and pharmacy in Cadishead can be accessed on foot or by using the 100 bus service. Buses are available to Lymm, Culcheth High School and Priestley College and there is a frequent bus service from Hollins Green providing connections to Warrington, Irlam, the Trafford Centre and Manchester. Rail services can be accessed at Irlam with connections to a range of destinations.

4.6.16 It is therefore concluded that the site is sustainable and accessible via a range of travel modes and therefore will be in accordance with the NPPF and WBC's local policies and objectives for the UPSVLP.

SECTION 5 Site Access Arrangements

5.1 Access Proposals

- 5.1.1 A site access off A57 Manchester Road is proposed to serve the development. The site has a long frontage of c.450m onto Manchester Road and therefore there is flexibility in where the site access is located. Once in the site, the access road will form a loop with connections off this to serve residential parcels.
- 5.1.2 A traffic signal controlled junction is proposed. It can be delivered on land wholly under Peel's control. The proposed access is shown on Appendix C (drawing reference ITM13248-GA-002). A right-turn lane is provided and also pedestrian crossing facilities across both the site access arm and Manchester Road, with the latter providing a connection to the footway on the northern side of the main road with onward connections to Hollins Green village.
- 5.1.3 The access arrangements will be agreed with WBC and will be subject to refinement and road safety audit at the appropriate time. At this stage it is concluded that access is deliverable and therefore achievable.

5.2 Capacity of the Access

- 5.2.1 Traffic surveys have been undertaken to assess the capacity of the proposed access arrangements with details given in Section 6.0. Peak hour traffic flows have been derived and converted to Passenger Car Units (PCU) for use in traffic capacity assessment. The peak hours are 07:45 – 08:45 and 16:15 – 17:15.
- 5.2.2 The peak hour traffic flows in PCU/hour on Manchester Road at the site frontage are as follows:

Table 5.1 Existing Peak Hour Traffic Flows – Manchester Road

Peak Hour	Direction		
	Eastbound	Westbound	Two-Way
AM Peak Hour	729	865	1,594
PM Peak Hour	1,045	742	1,787

- 5.2.3 As part of previous representations to the Local Plan, forecast traffic flows considered growth to 2037 which was the previous end of plan year. This used factors from TEMPRO, adjusted to

account of the exclusion of land-use related growth. The growth factors used were c.10%. The growth factors have been reviewed using the latest TEMPRO NTM Dataset (RTF 2018 Scenario 1 Reference) and the growth factors from 2017 to 2038 are still c.10% and are marginally lower than those adopted previously reducing from 10.6% to 10.5% in the AM peak period and in the PM peak period from 9.8% to 9.7%. Therefore the 2037 traffic flows have been retained and taken to represent 2038 traffic levels. The traffic flows used in the junction assessments in the previous Local Plan representations therefore provide a robust assessment and are presented Section 6. DfT AADT traffic count data indicates that there has been no significant growth along the A57 and therefore this is concluded to represent a worst case assessment. Development traffic has then been derived using the approach set out in Section 6.0.

- 5.2.4 The proposed traffic signal controlled access has been modelled using LINSIG with an allowance for MOVA which would be installed at the junction. The results of the traffic capacity assessment are given in the table below showing that the junction will operate within capacity

Table 5.2 Manchester Road Site Access Capacity Assessment Results – Traffic Signals

Approach Arm	AM Peak Hour		PM Peak Hour	
	DoS	MMQ	DoS	MMQ
A57 East	70.2%	16	61.2%	13
Site Access	55.4%	3	24.2%	1
A57 West	59.9%	12	86.5%	26

- 5.2.5 It is therefore concluded that the site access will operate within capacity, confirming that satisfactory access to the land off Manchester Road in Hollins Green can be provided in accordance with the NPPF.

SECTION 6 Traffic Impacts

6.1 The Case for Development at Hollins Green

6.1.1 It is understood the Council has not published any detailed assessment of the potential traffic impacts resulting from development in the outlying settlements, including the proposed development off Manchester Road at Hollins Green. The modelling work reported at Section 2.2 noted that the aggregate level model results published by the Council do not show adverse travel conditions as a result of further development in the outlying settlements compared to the (then) PDO. Peel is keen to engage with WBC to assess the site and demonstrate how the traffic flows generated by the development can be accommodated on the surrounding highway network.

6.1.2 In terms of traffic conditions in Hollins Green, WBC's Settlement Profile notes with respect to the local road network:

"Peak hour congestion on A57 at the Warburton Bridge junction. No current planned local highways improvements."

6.1.3 It is understood the above is not based on detailed analysis of the capacity of the junction. Existing traffic conditions in Hollins Green have therefore been assessed in detail using traffic survey data collected specifically for this assessment. Traffic surveys, comprising junction turning counts and queue surveys, were undertaken at the following junctions on Wednesday 18 October 2017:-

- A57 / Manchester Road (Hollins Green)
- A57 / Warburton Bridge Road
- Manchester Road / Glazebrook Lane
- A57 / Glazebrook Lane
- A57 / Liverpool Road roundabout

6.1.4 The traffic flow data has been processed and the data converted to PCU for use in traffic capacity assessments. The peak hours are 07:45 – 08:45 and 16:15 – 17:15. The peak hour surveyed traffic flows are given in Appendix D. An ATC was also conducted on A57 and this identifies that the peak hour flows on the day of the turning count surveys were higher than on the other weekdays in the same week.

6.1.5 As outlined in Section 5, the 2017 observed traffic flows were growthed to 2037 which was the end of the plan period. The growth factors have been reviewed for the period between 2017 to 2038 using TEMPRO with development related growth excluded and the latest NTM dataset. The derived growth factor to 2038 is still c.10% (and are marginally lower in the AM and PM) and therefore the 2037 traffic flows from the previous Local Plan representations have been retained for the junction assessments as this provides a robust assessment. As noted at 5.2.3, DfT count data indicates there has been little growth and therefore this represents a worst case assessment. The Forecast Year baseline traffic flows are given in Appendix E.

6.1.6 The Forecast Year traffic flows have been input to LINSIG and the ARCADY and PICADY programs in JUNCTIONS 9, where appropriate, and used to assess the performance of the local highway network in Hollins Green. The results are summarised in the table below.

Table 6.1 Forecast Year Baseline Capacity Assessment Results

Junction	Movement	AM Peak Hour		PM Peak Hour	
		Max RFC /DoS	Max Queue /MMQ	Max RFC /DoS	Max Queue /MMQ
A557 / Manchester Road	Manchester Road: Left & Ahead	0.32	1	0.07	0
	Manchester Road: Right Turn	0.38	1	0.05	0
A57/ Warburton Bridge Road	A57 East	90.1%	26	94.5%	32
	Warburton Bridge Road	87.0%	11	96.1%	28
	A57 West	76.4%	9	93.8%	31
Manchester Road/ Glazebrook Lane	Manchester Road Left Turn	0.05	0	0.09	0
	Manchester Road Right Turn	0.19	0	0.18	0
	Glazebrook Lane Right Turn	0.36	1	0.06	0
A57/ Glazebrook Lane	A57 West	78.0%	11	77.7%	13
	Glazebrook Lane Left Turn	80.1%	10	73.4%	7
	Glazebrook Lane Right Turn	25.8%	3	38.8%	3
	A57 East Ahead	38.1%	3	45.7%	4
	A57 East Right Turn	79.8%	12	76.9%	9
A57/ Liverpool Road	Cadishead Way	0.39	1	0.49	1
	Un-named Minor Road	0.00	0	0.00	0
	Manchester Road	0.64	2	0.66	2
	Liverpool Road	0.32	1	0.26	0

6.1.7 The analysis demonstrates that all the junctions at Hollins Green operate within capacity.

6.1.8 The junction of Warburton Bridge Road with A57 Manchester Road is operating close to capacity, particularly in the PM peak hour with queues of c.30 pcus on each approach. The modelling of the junction with 2017 observed traffic flows results in queue lengths c.50% longer than those surveyed. It is therefore concluded that the Forecast Year assessment results are a worst case but even these show the junction operates within capacity.

6.1.9 It is therefore concluded that the capacity of the road network in Hollins Green should not constrain development in principle.

6.1.10 The next sections consider the specific impacts of the development proposals at Hollins Green.

6.2 Development Traffic Flows

6.2.1 Traffic flows have been calculated for a development of 232 residential dwellings.

Trip Generation

6.2.2 Trip generation rates for the proposed development have been derived from the TRICS database using the 'Houses Privately Owned' category for sites with at least 100 dwellings. At this stage, no allowance has been made for lower trip rates associated with affordable housing on the site.

6.2.3 The trip generation rates and the resultant generated traffic flows are shown in the table below for the morning and evening peak hours.

Table 6.2 Land off Manchester Road, Hollins Green – Trip Generation

Peak Hour	Direction	Trip Rate (per unit)	No. Trips
AM Peak	Arrival	0.127	29
	Departure	0.377	87
	Total	0.504	116
PM Peak	Arrival	0.309	72
	Departure	0.164	38
	Total	0.473	110

6.2.4 Thus the development could generate up to c.120 vehicular trips in the peak hours.

6.2.5 TEMPRO has been used to identify the potential journey purposes travelled by residents. In the peak periods this identifies for the Hollins Green area:-

Table 6.3 Hollins Green – Journey Purposes of Car Travel

Trip Purpose	Proportion of Trips	
	AM Peak Period	PM Peak Period
Work	54%	39%
Employer's business	7%	6%
Education	10%	4%
Shopping	16%	20%
Personal business	5%	7%
Recreation/Social	4%	10%
Visiting friends/relatives	2%	11%
Holiday/day trips	2%	3%

6.2.6 Considering the above, there is potential for some of the peak hour trips to be made locally and by active travel modes rather than the car e.g. to the school in Hollins Green or the facilities and services within the village or close by at Cadishead. In the AM and PM peak periods, 39% and 55% of trips respectively are made for reasons other than journeys to work or on employer's business.

Trip Distribution and Assignment

6.2.7 The potential routes of car trips to and from the site have been derived using 2011 Census journey to work patterns from the local area. This will over-estimate trips on the surrounding highway network as, as noted above, there is potential for journeys to be made locally whereas work related trips tend to be made over longer distances.

6.2.8 The Census data shows the following general distribution of trips:

Table 6.4 Hollins Green – Overall Trip Distribution

Destination/District	Proportion of Trips
Warrington Borough	40%
Salford	10%
Trafford	8%
Manchester	7%
Wigan	8%
Halton	4%
Cheshire West & Chester	2%
Cheshire East	2%
Other	19%

Destination/District	Proportion of Trips
Total	100%

6.2.9 Of the trips to 'other' destinations, larger proportions are made to the rest of Greater Manchester (5%) and Merseyside (8%).

6.2.10 Trips have been assigned to destinations using the fastest routes based on Google mapping. The resultant destination points on the road network surrounding the site are as follows:

Table 6.5 Hollins Green – Trip Assignment

Location	Proportion
A57 East	32.5%
Warburton Bridge Road	5.5%
M6 South	11.2%
A57 West of M6	20.9%
M6 North	24.6%
Glazebrook Lane	5.4%
Total	100.0%

6.2.11 Development traffic flows are given on Appendix F, noting these are considered to be an over-estimate for the reasons set out above.

6.3 Traffic Impacts

6.3.1 The local highway network in the vicinity of the site is shown on Appendix G. A57 runs in an east-west direction through Hollins Green, to the west connecting with M6 at Junction 21 c.4km west of Hollins Green and, to the east, after travelling past Cadishead and Irlam, connecting with M60 at Junction 11. Manchester Road continues west of M6 towards Warrington town centre. Warburton Bridge Road connects with A57 at a traffic signal controlled junction, with this route then providing onward connections towards Lymm, Altrincham and M56 Junction 7. Glazebrook Lane joins A57 at the eastern end of Hollins Green, with this road continuing northwards towards Culcheth and then joining A574 which continues northwards to join A580 East Lancs Road.

6.3.2 The development generated traffic flows derived at 6.2 above (Appendix F) have been compared with the Forecast Year baseline traffic flows (Appendix E). The resultant total traffic flows at the junctions on the local road network close to the site are given in the table below, showing the proportional impacts of the development generated traffic:-

Table 6.6 Proportional Impacts of Development Generated Traffic (232 dwellings)

Junction	AM Peak Hour			PM Peak Hour		
	Forecast Year Baseline Flow	Development Flow	Proportional Impact	Forecast Year Baseline Flow	Development Flow	Proportional Impact
A557 / Manchester Road	1,730	44	2.5%	2,023	42	2.1%
A57/ Warburton Bridge Road	2,257	73	3.2%	2,573	68	2.6%
Manchester Road/ Glazebrook Lane	1,190	6	0.5%	991	6	0.6%
A57/ Glazebrook Lane	2,264	38	1.7%	2,467	36	1.5%
A57/ Liverpool Road	2,074	38	1.8%	2,184	36	1.6%

6.3.3 The Guidelines for Environmental Assessment of Road Traffic state that the day-to-day variation of traffic on a road is frequently at least some + or – 10%. The above table demonstrates that the development generated traffic flows will be well within typical daily variations at all locations. Traffic Impacts are therefore unlikely to be discernible.

6.3.4 The detailed impacts of the traffic flows generated by the proposals have been assessed at junctions on the local road network surrounding the site by comparing the base Forecast Year assessment results (as set out in Table 6.1) with those when the development traffic is added. The results are summarised in the table below.

Table 6.7 Impacts of Development Generated Traffic at Junctions

Junction	Movement	Forecast Year Baseline				Forecast Year With Development			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max RFC /DoS	Max Queue /MMQ	Max RFC /DoS	Max Queue /MMQ	Max RFC /DoS	Max Queue /MMQ	Max RFC /DoS	Max Queue /MMQ
A557 / Manchester Road	Manchester Road: Left & Ahead	0.32	1	0.07	0	0.33	1	0.08	0
	Manchester Road: Right Turn	0.38	1	0.05	0	0.39	1	0.05	0

Junction	Movement	Forecast Year Baseline				Forecast Year With Development			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max RFC /DoS	Max Queue /MMQ	Max RFC /DoS	Max Queue /MMQ	Max RFC /DoS	Max Queue /MMQ	Max RFC /DoS	Max Queue /MMQ
A57/ Warburton Bridge Road	A57 East	90.1%	26	94.5%	32	93.2%	29	95.4%	34
	Warburton Bridge Road	87.0%	11	96.1%	28	90.3%	12	98.6%	32
	A57 West	76.4%	9	93.8%	31	81.2%	9	95.1%	34
Manchester Road/ Glazebrook Lane	Manchester Road Left Turn	0.05	0	0.09	0	0.06	0	0.10	0
	Manchester Road Right Turn	0.19	0	0.18	0	0.19	0	0.18	0
	Glazebrook Lane Right Turn	0.36	1	0.06	0	0.37	1	0.07	0
A57/ Glazebrook Lane	A57 West	78.0%	11	77.7%	13	80.7%	12	77.4%	13
	Glazebrook Lane Left Turn	80.1%	10	73.4%	7	80.1%	10	78.0%	7
	Glazebrook Lane Right Turn	25.8%	3	38.8%	3	25.8%	3	41.3%	3
	A57 East Ahead	38.1%	3	45.7%	4	38.8%	3	46.6%	4
	A57 East Right Turn	79.8%	12	76.9%	9	79.8%	12	76.9%	9
A57/ Liverpool Road	Cadishead Way	0.39	1	0.49	1	0.40	1	0.51	1
	Un-named Minor Road	0.00	0	0.00	0	0.00	0	0.00	0
	Manchester Road	0.64	2	0.66	2	0.66	2	0.66	2
	Liverpool Road	0.32	1	0.26	0	0.32	1	0.26	0

6.3.5 All of the junctions are predicted to operate within capacity and the development generated traffic has no material impacts. At the A57 Manchester Road / Warburton Bridge Road junction, traffic queues increase by 3 – 4 pcus on some arms of the junction. Total queues (across all three arms) increase by 4 pcus from 46 to 50 pcus in the AM peak hour and by 9 pcus from 91 to 100 pcus in the PM peak hour. The development only adds c.one vehicle per minute to this junction and increases total traffic flows at it by only c.3%. It is therefore concluded that the impacts of the development generated traffic at this junction are not material and not severe.

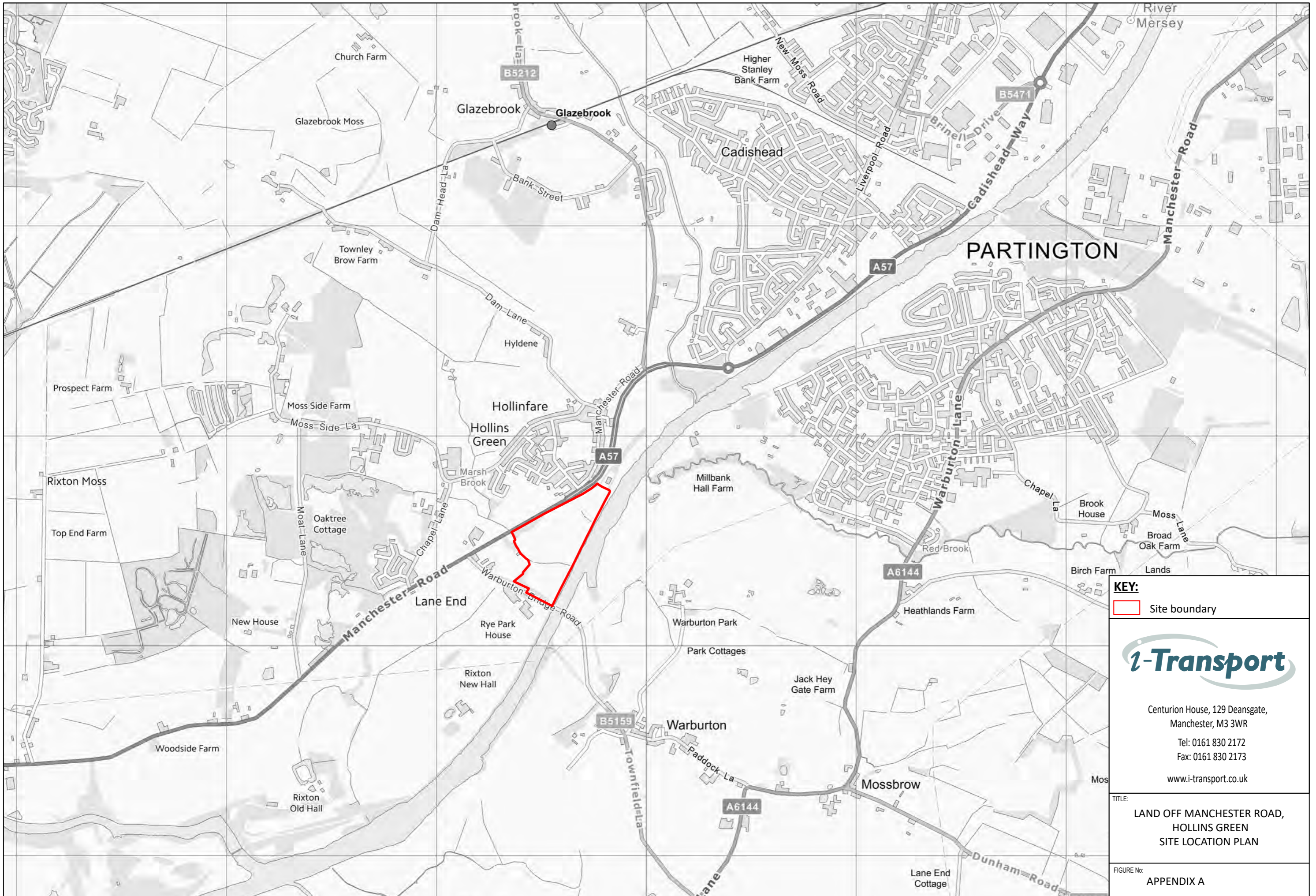
6.3.6 On this basis it is concluded that, in accordance with the NPPF, development in Hollins Green should not be prevented on transport grounds as the residual cumulative impacts of development will not be severe.

SECTION 7 Conclusions

- 7.1 This report has considered the transport and highways implications of Peel's land interests off Manchester Road at Hollins Green. These are capable of accommodating up to 232 new dwellings.
- 7.2 The Council's proposed allocation at Hollins Green is for only an additional 90 dwellings. No quantitative analysis has been published by the Council that analyses the capacity of the transport system and the impacts of higher levels of development other than that at an aggregate level which concludes there is no material difference to what was the PDO. There is therefore no justification, based on sound evidence, to limit development in Hollins Green on transport grounds.
- 7.3 Hollins Green has a range of facilities and services with others nearby, accessed by good public transport links. These will support and promote sustainable development and travel patterns, will result in most day-to-day needs being met locally and which confirm its suitability as a location for development.
- 7.4 The range of facilities and services available locally within walking and/or cycling distance in Hollins Green includes a primary school, post office, public houses and play area. Doctors, dentist and pharmacy in Cadishead can be accessed on foot or by using the 100 bus service. Buses are available to Lymm High School, Priestley College and Culcheth High School and there is a frequent bus service from Hollins Green providing connection to Warrington, Irlam, the Trafford Centre and Manchester. Rail services can be accessed at Irlam with connections to a range of destinations.
- 7.5 Therefore the site will meet the transport related objectives of the UPSVLP.
- 7.6 It is therefore concluded that the development of the site will fully accord with the NPPF objective related to sustainable travel, with opportunities for such modes taken up.
- 7.7 Access to the site is proposed off Manchester Road and a feasibility level design has been produced and the capacity of this assessed the access will operate satisfactorily. Site access is controlled by Peel and is deliverable and achievable. It is therefore also concluded that satisfactory access can be provided in accordance with the NPPF.

- 7.8 There are no constraints on the local highway network infrastructure that will prevent further development in Hollins Green.
- 7.9 Traffic capacity assessments demonstrate that the residual cumulative traffic impacts of development on the site will not be severe and therefore, in accordance with NPPF, development should not be prevented on transport grounds.
- 7.10 Overall, it is therefore concluded that the site at Hollins Green is suitable for allocation in the Council's Local Plan and will form a sustainable development that can provide much needed housing.

APPENDIX A. Site Location Plan



KEY:
 Site boundary

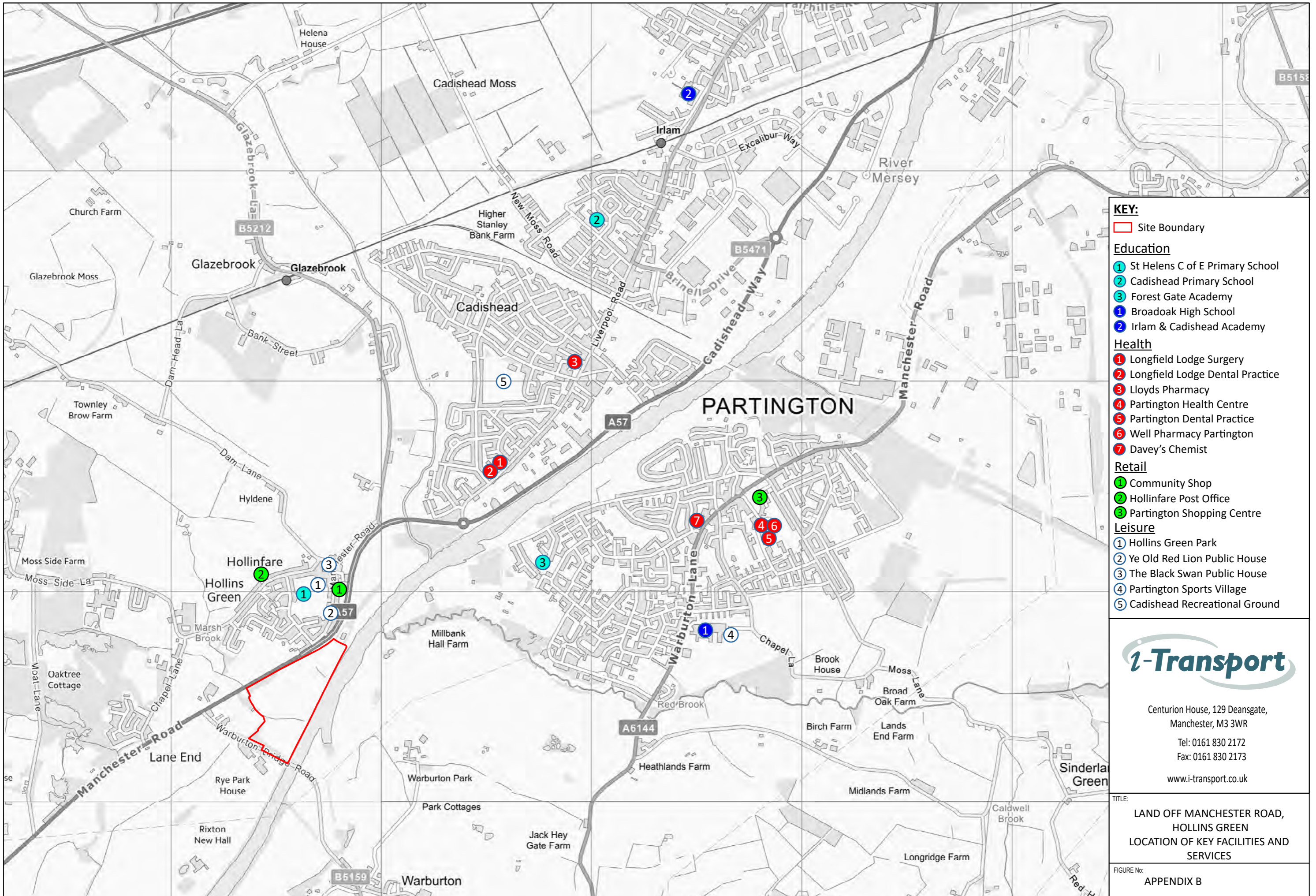
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TITLE:
**LAND OFF MANCHESTER ROAD,
 HOLLINS GREEN
 SITE LOCATION PLAN**

FIGURE No:
APPENDIX A

APPENDIX B. Location of Key Facilities and Services



- KEY:**
- Site Boundary
- Education**
- 1 St Helens C of E Primary School
 - 2 Cadishead Primary School
 - 3 Forest Gate Academy
 - 1 Broadoak High School
 - 2 Irlam & Cadishead Academy
- Health**
- 1 Longfield Lodge Surgery
 - 2 Longfield Lodge Dental Practice
 - 3 Lloyds Pharmacy
 - 4 Partington Health Centre
 - 5 Partington Dental Practice
 - 6 Well Pharmacy Partington
 - 7 Davey's Chemist
- Retail**
- 1 Community Shop
 - 2 Hollinfare Post Office
 - 3 Partington Shopping Centre
- Leisure**
- 1 Hollins Green Park
 - 2 Ye Old Red Lion Public House
 - 3 The Black Swan Public House
 - 4 Partington Sports Village
 - 5 Cadishead Recreational Ground

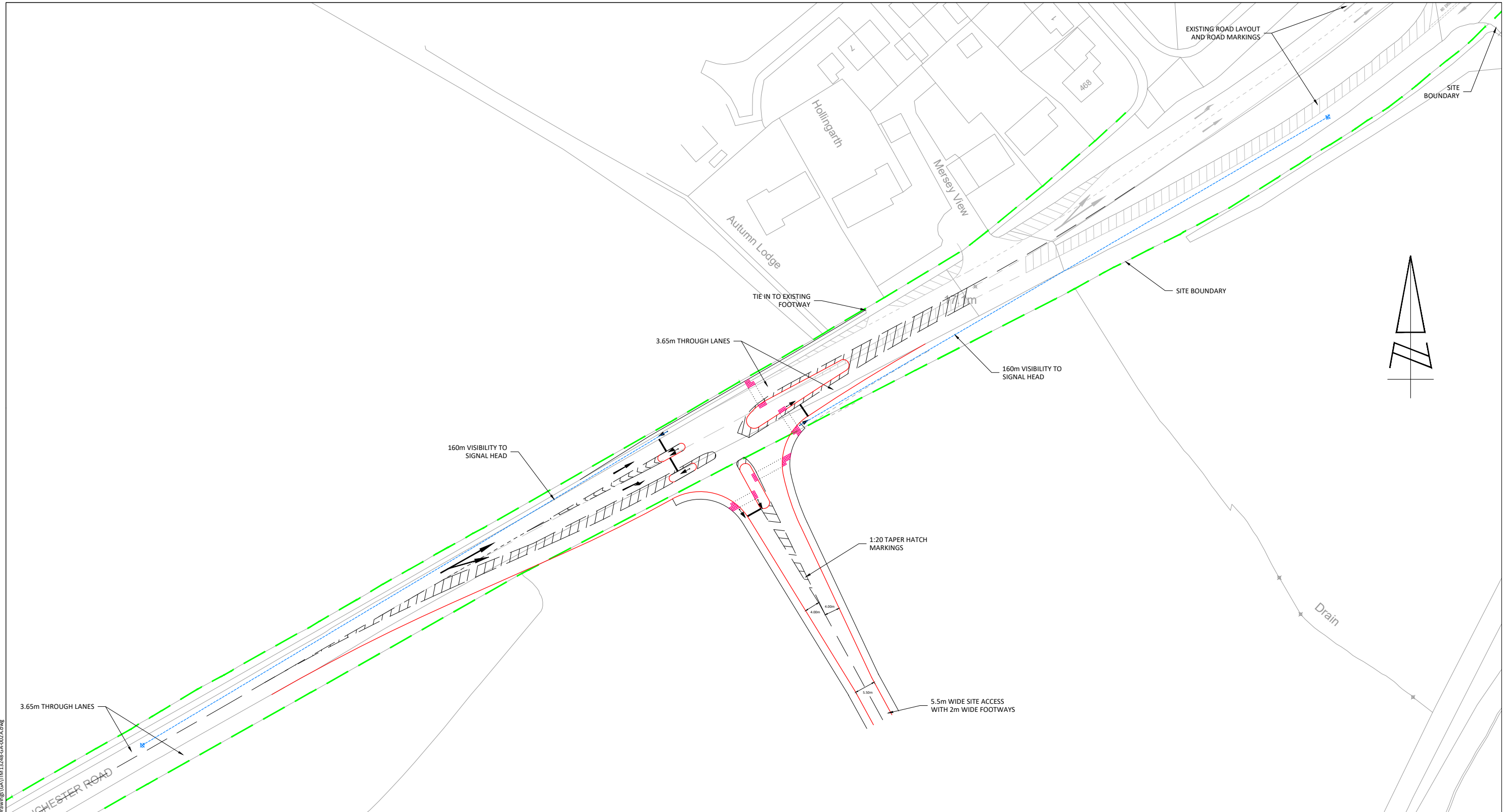


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TITLE:
**LAND OFF MANCHESTER ROAD,
 HOLLINS GREEN
 LOCATION OF KEY FACILITIES AND
 SERVICES**

FIGURE No:
APPENDIX B

APPENDIX C. Potential Site Access from Manchester Road



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— HIGHWAY BOUNDARY



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REV	DATE	BY	DESCRIPTION	CHK	APD
A	12.11.21	JB	CLIENT INFO UPDATED	JO	SE

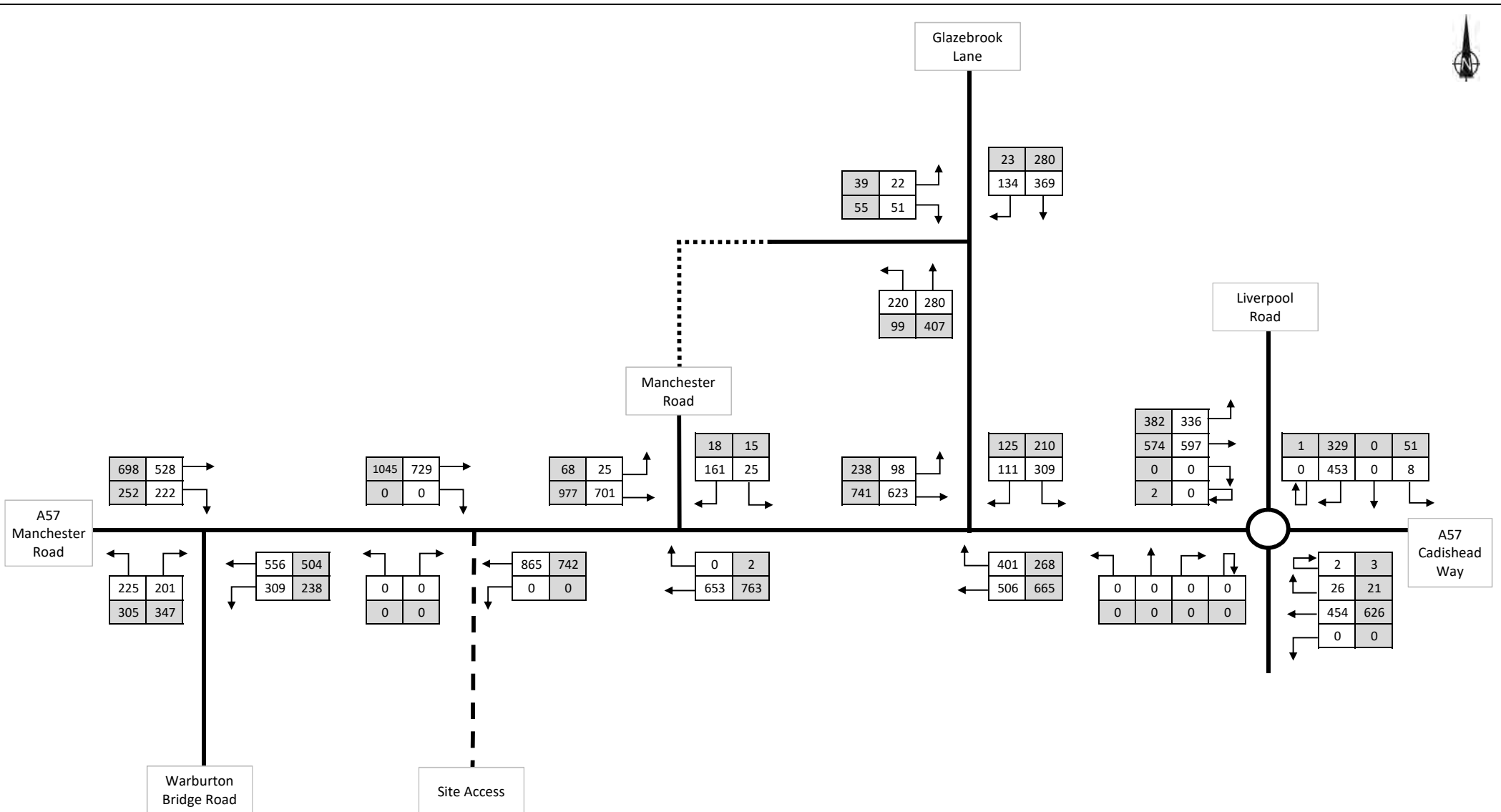
STATUS: DRAFT

TITLE:	POTENTIAL SITE ACCESS FROM MANCHESTER ROAD SIGNAL CONTROLLED JUNCTION	
PROJECT:	LAND OFF MANCHESTER ROAD, HOLLINS GREEN	CLIENT: PEEL L&P HOLDINGS (UK) LIMITED

SCALE @ A3:	1:1000	CHECKED:	SEE	APPROVED:	SEE
FILE REF:	ITM13248-GA	DRAWN:	PH	DATE:	07.09.2017
DRAWING No:	APPENDIX C (ITM13248 - GA - 002)				
PROJECT No:	ITM13248	REV:	A		

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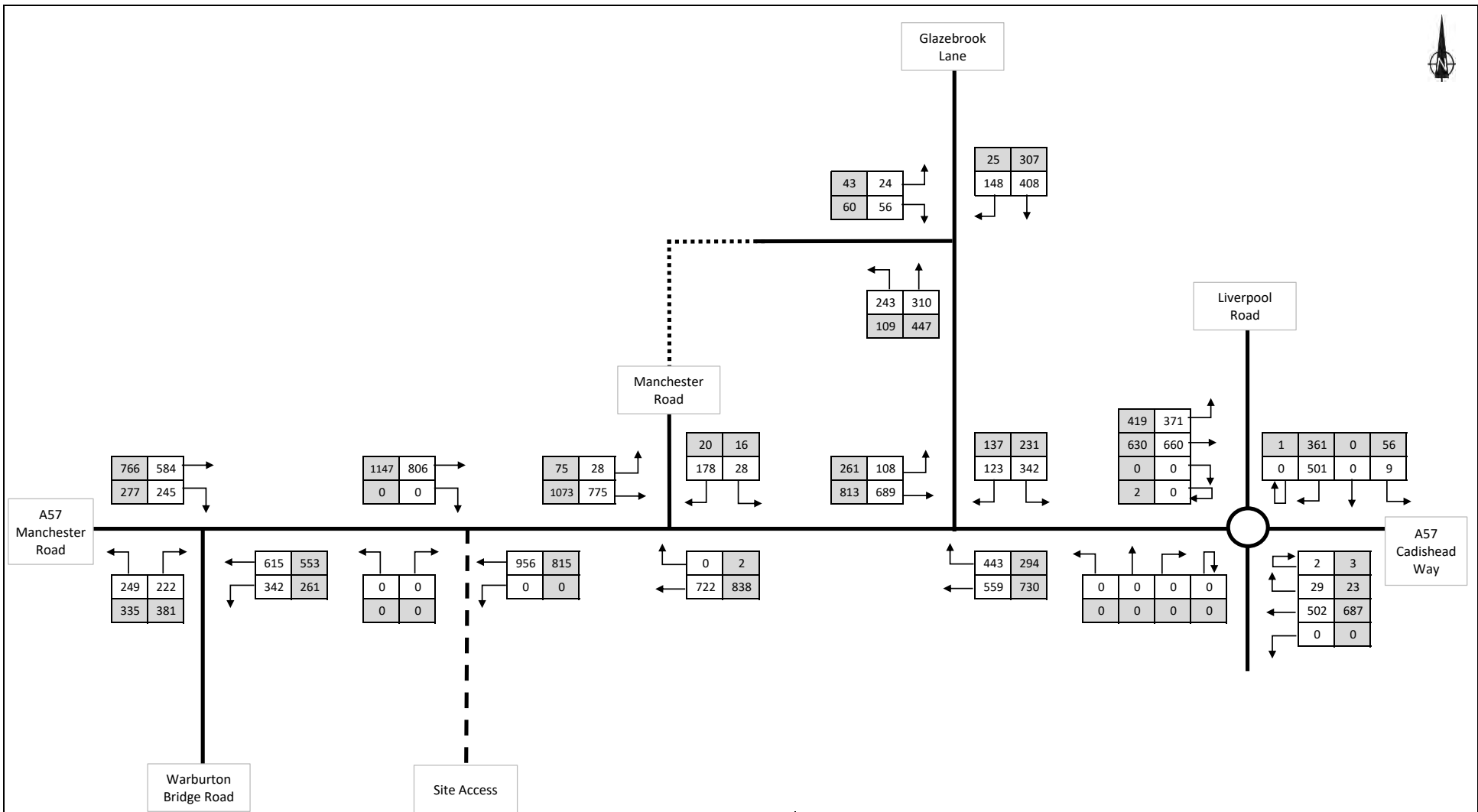
APPENDIX D.2017 Baseline Traffic Flows




Notes:
 AM Peak: 07:45-08:45
 PM Peak: 16:15-17:15

<p>KEY</p> <p>500 = AM PEAK (PCUs)</p> <p>500 = PM PEAK (PCUs)</p>		Centurion House, 129 Deansgate, Manchester, M3 3WR Tel: 0161 830 2172 www.i-transport.co.uk
	LAND OFF MANCHESTER ROAD, HOLLINS GREEN	
	Appendix D	
	2017 Observed Traffic Flows	

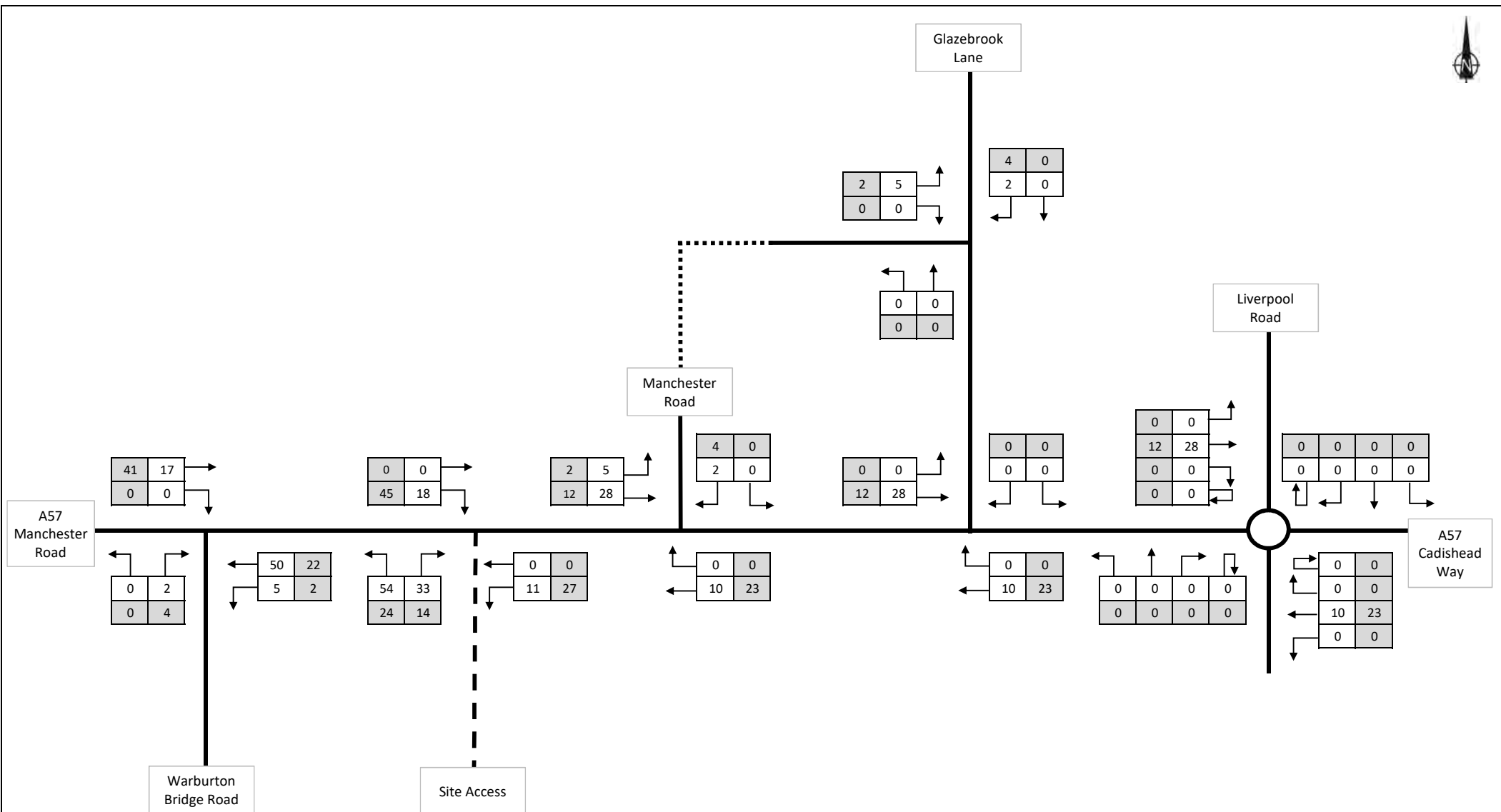
APPENDIX E. Forecast Year Baseline Traffic Flows




Notes:
#N/A

<p>KEY</p> <p>500 = AM PEAK (PCUs)</p> <p>500 = PM PEAK (PCUs)</p>		Centurion House, 129 Deansgate, Manchester, M3 3WR Tel: 0161 830 2172 www.i-transport.co.uk
	LAND OFF MANCHESTER ROAD, HOLLINS GREEN	
	Appendix E	
	Forecast Year Base	

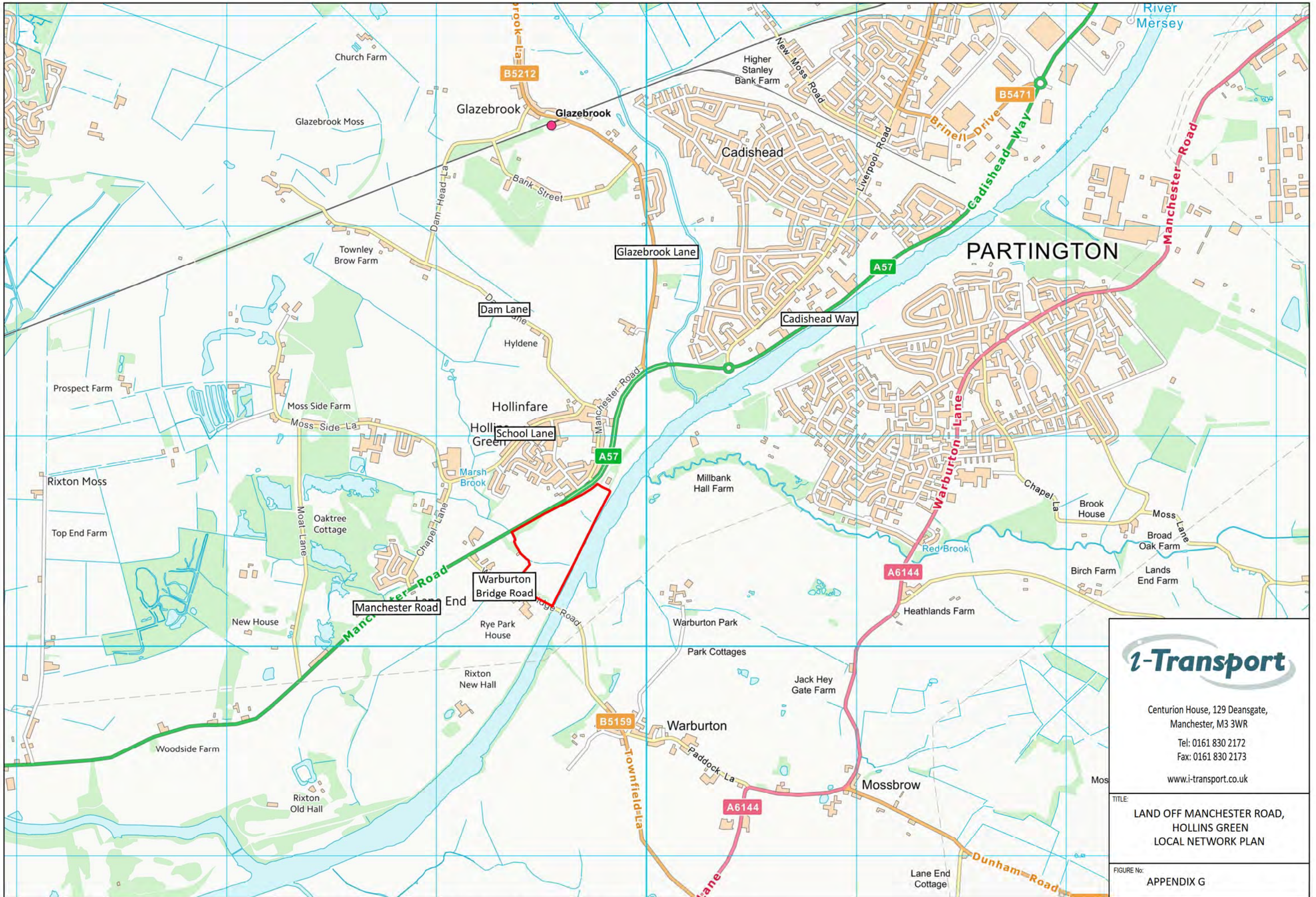
APPENDIX F. Development Traffic Flows



Notes:

<p>KEY</p> <p>500 = AM PEAK (PCUs)</p> <p>500 = PM PEAK (PCUs)</p>		Centurion House, 129 Deansgate, Manchester, M3 3WR Tel: 0161 830 2172 www.i-transport.co.uk
	LAND OFF MANCHESTER ROAD, HOLLINS GREEN	
	Appendix F	
	Development Traffic	

APPENDIX G.Local Highway Network Plan



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TITLE:
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 HOLLINS GREEN
 LOCAL NETWORK PLAN**

FIGURE No:
APPENDIX G

