

Land at Lady Lane, Croft
Technical Appendix

Peel Holdings (Management) Ltd

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THE
ENVIRONMENT
PARTNERSHIP



LAND AT LADY LANE CROFT PRELIMINARY ECOLOGICAL ASSESSMENT

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APPENDICES

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G6929.01.008 Phase 1 Habitat Plan

1.0 Executive Summary

- 1.1 TEP was commissioned by Peel Land and Property (Peel) in May 2018 to carry out an ecological assessment of Land at Lady Lane, Croft, to inform release of this site for development as part of the new Warrington Local Plan. The findings of this report show that there is no reason that sustainable development of this site cannot be undertaken, provided the recommendations made in this report are adhered to.
- 1.2 The site is located off Lady Lane, Croft and is composed of four fields of improved grassland bisected by tree lined ditches. There are also small areas of tall ruderal vegetation around the site boundaries and an area of marshy grassland in the north west of site. The site has good connectivity to the wider area via the surrounding tree lines and hedgerows.
- 1.3 A constraints and opportunities report was produced by TEP for this site in September 2017 and also included an extended Phase 1 Habitat Survey and desktop assessment. This Ecological Assessment is based on the findings of those surveys.
- 1.4 Croft Grasslands LWS lies immediately west of site. Measures will be undertaken as part of a Construction Environmental Management Plan (CEMP) to ensure there are no direct or indirect impacts on this site. To avoid any indirect impacts from increased public pressure, suitable walking routes and public open space will be included within the development proposals.
- 1.5 An Arboricultural survey has been undertaken to ensure woodland, hedgerows and scattered mature trees are suitably protected throughout the development. Within the conceptual masterplan all woodland, hedgerows and mature trees are to be retained with the exception of three road connections through mature hedgerows with ditches which will be mitigated through the creation of replacement habitat on site.
- 1.6 New bridges/culverts will be required for the road crossings. These will be designed so as to impose minimal impacts on protected species and habitats.
- 1.7 Invasive plant species are present across the site. A management plan will be produced detailing measures required to prevent their spread during development.
- 1.8 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 prior to submittal of a detailed planning application. Should bats be present and likely to be impacted by development, mitigation measures and/or a licence from Natural England may be required. There is ample space on site to undertake any required mitigation for roosting bats within the site boundary.
- 1.9 Two ponds are present on site with a further two within 500m. These will be subject to further survey to confirm the presence or absence of great crested newts prior to submittal of a detailed planning application. If great crested newts are identified on site, it is likely a licence will be required from Natural England. It is envisaged that any requirement for mitigation can be undertaken within retained green space on site.

- 1.10 Water vole surveys will be undertaken prior to submittal of a detailed planning application to inform any development within close proximity to the banks of the two ditches running across the site, particularly the two proposed bridge/culvert locations. Should water vole be present, suitable mitigation measures will be required and a licence may be needed from Natural England.
- 1.11 Further survey will be undertaken to confirm the presence or absence of badger prior to submittal of a detailed planning application.
- 1.12 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.
- 1.13 A Reasonable Avoidance Method Statement will be produced detailing how harm to both brown hare and hedgehog will be avoided during works.
- 1.14 Biodiversity enhancement measures suitable for this site are set out in Section 7.31 that can be incorporated into the final design.

2.0 Introduction

- 2.1 TEP was commissioned by Peel in May 2018 to carry out an ecological assessment of Land at Lady Lane, Croft, to inform potential future residential development of the site.
- 2.2 Warrington Council is currently undertaking a review of their local plan. As part of this there has been a call for sites which are capable of supporting new residential development. Peel considers that this site would represent a sustainable location for residential development, capable of making a very significant contribution to meeting the housing needs of Warrington over the emerging plan period.
- 2.3 TEP undertook a constraints and opportunities assessment for this site in September 2017 (Ref: 6612.02.002). This included an extended Phase 1 Habitat Survey and a desk based assessment. An Arboricultural Constraints report has also been produced for the site (TEP Ref: 6929.02.003) and should be read in conjunction with this report. Site proposals are included at Appendix A.
- 2.4 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.
- 2.5 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 proposal; and
 - Outline opportunities for biodiversity enhancement in line with the requirements of the National Planning Policy Framework.

3.0 Site Overview

- 3.1 The site is located off Lady Lane, Croft and is composed of four fields of improved grassland bisected by tree lined ditches. There are also small areas of tall ruderal vegetation around the site boundaries and an area of marshy grassland in the north west of site.
- 3.2 The site is located directly north of the village of Croft and is bounded to the east by the Christ Church and open farmland, to the north by further open farmland and to the south and west by residential development and a block of woodland. 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 2019).

4.0 Methods

Desk Based Assessment

- 4.1 Information regarding designated sites, notable habitats and existing protected and notable species records of 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 Based Assessment 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

- 4.2 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

- 4.3 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

- 4.4 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

- 4.5 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

- 4.6 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.
- 4.7 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.
- 4.8 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).
- 4.9 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

- 4.10 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 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

- 4.11 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

4.12 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

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

5.0 Results

Planning Context

- 5.1 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).
- 5.2 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

- 5.3 There are two internationally designated sites within 10km of the Lady Lane site. These are Manchester Mosses SAC, which 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 3.1km to the south east of the site. Rixton Clay Pits SAC is designated for its great crested newt (GCN) population and lies approximately 5.7km to the south east.
- 5.4 There are no nationally designated sites within 2km but there are two locally designated sites within 1km. Croft Grasslands Local Wildlife Site (LWS) lies immediately west of the site and is designated for its grassland habitats, although it now appears to be entirely covered by semi mature woodland. Houghton Green Pool is another LWS which lies 1km west of site and is designated for its wetland habitats and bird species.
- 5.5 The site falls within a SSSI Impact Risk Zone (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 categories include:
- Discharges - any discharge of water or liquid waste over 20m³/day to ground or to surface water.

Habitats and Flora

- 5.6 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 directly adjacent to the western boundary.
- 5.7 Records of the following flora were also returned within 1km of the site:
- Non-native invasive species: Himalayan cotoneaster *Cotoneaster simonsii*, Montbretia *Crocsmia x crocosmiifolia*, Himalayan balsam

Impatiens glandulifera, Canadian goldenrod *Solidago canadensis* and wall cotoneaster *Cotoneaster horizontalis*.

- 5.8 Habitats present in and around the site are described below and illustrated in TEP drawing G6929.01.008. Target notes are provided in Appendix C. Photographs are included in this report.

Trees and Scrub Habitats



Figure 2 - Tree lined boundary around improved grassland.

- 5.9 The two central fields of improved grassland are separated by lines of mature trees (TN7) dominated by English oak *Quercus robur* with frequent ash *Fraxinus excelsior* and occasional sycamore *Acer pseudoplatanus*. Below the trees is scattered scrub which varies in thickness along the treeline and contains abundant bramble *Rubus fruticosus* agg and hawthorn *Crataegus monogyna*.
- 5.10 The eastern site boundary is defined by a species poor intact hedgerow dominated by hawthorn (TN8) and further hedgerows are present along the northern (TN10, TN11) and eastern boundaries, which are again species poor intact hedgerows dominated by hawthorn. A species poor coniferous hedge is also present in the west of the site (TN12) dominated by garden privet *Ligustrum ovalifolium*.

Grassland Habitats

- 5.11 The site is covered by four fields of improved grassland (TN6), which are dominated by perennial ryegrass *Lolium perenne*. Surrounding the improved grassland fields is a band of tall ruderal vegetation (TN5) dominated by reed canary-grass *Phalaris arundinacea* with a number of flowering species including rosebay willowherb *Chamerion angustifolium*, foxglove *Digitalis purpurea*, meadow vetchling *Lathyrus pratensis* and hemp agrimony *Eupatorium cannabinum*.

- 5.12 In the centre of the north west field is a small area of marshy grassland (TN13) which is dominated by reed canary grass with abundant soft rush *Juncus effusus* and occasional Timothy *Phleum pratense*.



Figure 3 - Tall ruderal vegetation at field margins.

Wetland Habitats

- 5.13 A pool of standing water is present in the south of the site which is located within a dry ditch. This waterbody is heavily shaded with and covered by duckweed *Lemna* sp. as shown in Figure 4.



Figure 4 - Pond in the south of site.

- 5.14 There is also a dry pond present in the north of the site, surrounded by scattered willow *Salix* sp scrub.

- 5.15 There are two dry ditches which run west to east across the site. These ditches are heavily vegetated, being bounded by tall ruderal vegetation with mature trees above. A wet ditch runs north south through the west of the site. This is less than 0.5m wide and deep.

Other Habitats

- 5.16 There is a small area of hardstanding in the west of the site which is made up of a concrete slab. There is also an area of bare ground and ephemeral vegetation located in the east of the site (TN9) which is dominated by cock's foot *Dactylis glomerata*.

Protected and Invasive Flora

- 5.17 Cotoneaster species were identified on site. Due to the time of year it was not possible to confirm the exact species, however as a number of cotoneaster plants are listed as invasive species on Schedule 9 of the Wildlife and Countryside Act 1981, in line with best practice, any cotoneaster on site should be treated as invasive. A number of montbretia *Crococsmia* x *Crococsmiliflora* plants are present within the tall ruderal vegetation along the southern boundary.

Connectivity with the Wider Landscape

- 5.18 The Lady Lane site has good connectivity to the wider area along the treelines and hedgerows which border the site.

Fauna

Bats

- 5.19 Common pipistrelle *Pipistrellus pippistrellus* has been recorded within 1km. The closest record is for a pipistrelle species 180m west of site.
- 5.20 Trees on site were subject to a ground based inspection for their potential to support roosting bats. The results of this survey are shown in the Phase 1 Habitat drawing (G6929.02.008). In summary there are three rows of mature trees running east west across the site dominated by English oak. The majority of these trees contained cracks and crevices suitable to support roosting bats and were identified as having a mix of moderate and high bat roosting potential.



Figure 5 - oak tree with high roosting potential in cavity.

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

Amphibians

- 5.22 Common toad and frog have been recorded within 1km of the site boundary. The closest records are approximately 1km west of the site.
- 5.23 There is a single wet pond on site and a pond which was dry during the September survey, but may hold water during the amphibian breeding season. These ponds may be suitable to support breeding amphibians. There is also habitat present which offers foraging and hibernation potential.

Otter and water vole

- 5.24 Records of water vole have been returned in the desktop study from 1km north east of the site, but no otter records were identified within 1km.
- 5.25 The watercourses running across the site contain habitat suitable to support water vole but, given their size and lack of connectivity to larger watercourses, are unlikely to support otter.

Badger

- 5.26 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.
- 5.27 No evidence of badger was found on site such as snuffle holes, latrines or setts. However, there is habitat suitable to support this species on and adjacent to the site.

Birds

- 5.28 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 black tern *Chidonias niger*, black-necked grebe *Podiceps nigricollis*, fieldfare *Turdus pilaris*, goldeneye *Bucephala clangula*, green sandpiper *Tringa ochropus*, greenshank *Tringa nebularia*, hobby *Falco subbuteo*, little ringed plover *Charadrius dubius*, merlin *Falco colombarius*, peregrine *Falco peregrinus*, redwing *turdus iliacus* and Slavonian grebe *Podiceps auritus*. Full details of bird species within 1km are presented in Appendix B.
- 5.29 The hedgerows, scrub and trees are likely to support a range of common nesting species.
- 5.30 The site is not considered suitable to support an important assemblage of wintering birds, given its small size and the enclosed nature of the fields. However the Schedule 1 species, redwing and fieldfare, have been recorded on site.

Other Fauna

- 5.31 Numerous invertebrate records, including S41 species of principal importance, were returned within 1km. However, the site lacks any significant areas of flowering plants suitable to support an important invertebrate population.
- 5.32 Records of common lizard *Zootoca vivipara* were returned 500m south west of the site. The site lacks any significant habitat suitable to support reptiles, as there are few areas suitable for basking and no significant populations of invertebrates to sustain a reptile population.
- 5.33 The site has potential to support both brown hare *Lepus europaeus* and hedgehog *Erinaceus europaeus*, both have previously been recorded on site.

6.0 Discussion and Conclusions

- 6.1 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).
- 6.2 The conclusions and discussion below are based upon the site being developed in line with the current Conceptual Masterplan (Ref: 630DA-11) which shows three separate areas of housing connected by three roads passing through mature hedgerows with ditches.

Designated Sites

- 6.3 Due to their distance from the site and lack of connectivity, no impacts are predicted to any internationally or nationally designated sites.
- 6.4 Croft Grasslands LWS lies directly adjacent to the western site boundary. This is designated for its grassland habitats, however, this now appears to be heavily wooded. There is potential for direct negative impacts on this LWS from both air and waterborne pollution and from increased public pressure on the site. Mitigation measures to avoid negative impacts are discussed in Section 7.0.
- 6.5 Houghton Green Pool is separated from the site by the M6 and M62 motorways, which act as a barrier to migration of terrestrial species. Given the site is approximately 1km west of land at Lady Lane, and lacks direct connectivity, pollution impacts are not anticipated. No direct walking routes exist between the two sites and so increased public pressure is also considered unlikely. No direct or indirect impacts are predicted on this site.

Habitats and Flora

- 6.6 The habitats of highest importance on site are the ponds and the hedgerows along the site boundaries. The hedgerows are S41 habitats of principal importance and are to be retained throughout development as shown in the proposals at Appendix A. Three small sections of hedgerow are to be removed to allow access into and across the site. Mitigation for the loss of hedgerow will be undertaken as detailed in Section 7.0
- 6.7 The watercourses and mature tree lines crossing the site are also of ecological value as they offer foraging, commuting and breeding opportunities for a range of species. These watercourses and tree lines are to be retained. However, two crossing points will be required through the mature treelines across the water courses. Mitigation for the loss of mature trees will be undertaken as detailed as detailed in Section 7.0
- 6.8 The areas of improved grassland and small patch of marshy grassland across the site are to be lost to development, however these are of low diversity and of little ecological value.
- 6.9 Montbretia and cotoneaster species have been recorded on site. A management plan for removal of these species will be produced.

Fauna

Bats

- 6.10 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).
- 6.11 There are a number of trees on site with both moderate and high potential to support roosting bats. Further survey of these trees will be undertaken prior to submittal of a detailed planning application as detailed in Section 7.0.
- 6.12 The trees, hedgerows and woodland along the site boundaries offer foraging and commuting potential for bats. Bat activity surveys will be undertaken prior to submittal of a detailed planning application to determine the use of the site by the local bat population as discussed in Section 7.0.

Amphibians

- 6.13 GCN and their habitats are protected under the Conservation of Habitats & Species Regulations 2010 (as amended) and the Wildlife & Countryside Act 1981 (as amended).
- 6.14 Two ponds are present on site with another two present within 500m which have direct connectivity to the site. Further survey of these ponds will be undertaken prior to submittal of a detailed planning application to determine the presence or absence of GCN as discussed in Section 7.0. Common toad has also been recorded within 1km and may be present on site.

Otter and water vole

- 6.15 The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species. The watercourses running across the site have potential to support breeding water vole, so further survey for this species will be undertaken prior to submittal of a detailed planning application as detailed in Section 7.0.

Badger

- 6.16 Badgers are fully protected under 'The Protection of Badgers Act 1992'. No evidence of badger was identified on site, however habitats present are capable of supporting badger and have sett building potential. Further survey for this species will be undertaken prior to submittal of a detailed planning application prior to development as detailed in Section 7.0.

Birds

- 6.17 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). This risk can however be mitigated through the completion of nesting bird checks by a suitably qualified ecologist immediately prior to removal.

Other

- 6.18 The site has suitability to support both brown hare and hedgehog and records of both species have been returned on site. Reasonable avoidance measures will be undertaken during development to ensure no negative effects on these species during site clearance works.

7.0 Recommendations

- 7.1 This section sets out appropriate recommendations for impact avoidance, mitigation and enhancement. Any requirement for further surveys are also described, where relevant.
- 7.2 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.
- 7.3 These recommendations are based on the existing masterplan shown in Appendix A (Ref: 630DA-11) which shows three separate areas of housing connected by three roads passing through mature hedgerows with ditches.

Designated Sites

- 7.4 Croft Grasslands LWS lies immediately west of the site. Measures will be detailed within a Construction Environmental Management Plan (CEMP) to ensure there are no indirect impacts from wind or waterborne pollution. Measures will also be listed in the CEMP to ensure there is no accidental encroachment into the site during development.
- 7.5 There may be increased public pressure on the site for amenity use and for dog walking. This has been mitigated for in the masterplan through inclusion of suitable green walkways and areas of public open space incorporated into the new development at Lady Lane. Impermeable fencing will also be installed along the boundary of the Croft Grasslands LWS to prevent public access.

Habitats and Flora

- 7.6 The habitats of highest importance on site are the ponds, hedgerows and the tree lined ditches. All these habitats are to be retained during development, with the exception of the dry pond.
- 7.7 The dry pond is to be lost during development, but will be mitigated through the creation of a new on site pond as shown in the site proposals in Appendix A.
- 7.8 An arboricultural survey has been undertaken by TEP. Provided the recommendations made in this report are adhered to there will be no implications with regard to trees and development.
- 7.9 Three site entrances will be created through the hedgerows present along Lady Lane, Chadwick Avenue and Abbey Close. The loss of these small sections of hedgerow and trees will be mitigated through the creation of new species rich native hedgerows within the site boundary, equal to or greater than the length to be lost and replacement native tree planting at a rate of at least 2 to 1 for each tree lost.
- 7.10 A number of mature trees may also be affected by new road crossings. Replacement native tree planting will be undertaken in the POS to the east of site to mitigate for the loss of any trees on site.

- 7.11 A new bridge or culvert 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 where possible. Their placement will also take into account the results of the water vole survey as discussed below.

Invasive Species

- 7.12 Cotoneaster and montbretia are present across the south of site. These are listed under Schedule 9 of the Wildlife and Countryside Act 1981, as amended, which makes it an offence to grow or otherwise cause these species to spread in the wild. A site specific management plan will be produced and included within the CEMP detailing the management and removal of these species prior to development.

Bats

- 7.13 There are a number of trees with bat 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 identify in change in the trees since the last survey.
- 7.14 Trees with moderate or high potential will be retained where possible. However if removal is necessary these trees will first be climbed, if possible, under supervision of a licensed bat consultant to further investigate features suitable to support roosting bats using an endoscope.
- 7.15 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.
- 7.16 Should trees with confirmed roosting potential be present on site and need removal, a licence would first need to be gained from Natural England.
- 7.17 Should trees with moderate or high potential be removed under licence there is adequate space and retained mature trees on site to allow on site mitigation to be undertaken. This is likely to involve provision of new roost boxes strapped to retained trees or new houses.
- 7.18 If, following aerial assessment, any trees are identified as providing low potential to support roosting bats, these can be felled under the supervision of a licensed bat consultant.
- 7.19 There are a number of tree lines and waterways across the site and site boundaries. Further survey will be undertaken prior to development to determine if these are important foraging and/or commuting routes for bats.

- 7.20 The habitats on site have moderate suitability to support bats. Therefore, one dusk or dawn transect survey visit per month will be required (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.
- 7.21 If important bat foraging and commuting routes are identified on site a detailed mitigation strategy will be produced prior to development. The majority of mature tree and hedge lines are to be retained but this mitigation strategy will detail provision of additional habitats and include within it details of a suitable lighting strategy to prevent any negative impacts on commuting or foraging bats.

Great Crested Newt

- 7.22 Two ponds are present on site with a further two located within 500m. These will be subject to further survey prior to development. Initially eDNA assessment of the ponds 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 only. This survey can be undertaken between 15th April and 30th June only.
- 7.23 Should the eDNA analysis confirm the presence of GCN then traditional surveys involving bottle trapping, egg searching and torchlight survey will 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.
- 7.24 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 will be reviewed at the time of submittal for planning.
- 7.25 Should GCN be found on site it anticipated that there is adequate space within retained green open space in the east of site to mitigate on site. The suitability of this would however be reviewed at the detailed planning application stage and should it not be feasible to mitigate on site new policies from Natural England allow for offsite mitigation.
- 7.26 It is also likely that common toad will be present on site. As part of CEMP a toad Reasonable Avoidance Method Statement will be produced to prevent harm to this species.

Water vole

- 7.27 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, three crossings are required across the water courses on site to allow connection of new roads. To ensure there are no adverse impacts on water vole a detailed survey of the watercourses will be undertaken to inform siting of the new crossings.

- 7.28 Water vole surveys, which require two site visits, will be undertaken one between mid-April and June and the other between July and September, with the surveys undertaken at least two months apart.
- 7.29 If any evidence of water vole is found, the first step will be to adjust the crossing location to avoid impacts on this species. The bridge/culvert would also need to be designed in such a way as to not limit commuting for water vole along the watercourse. If this is not possible and water voles are to be directly impacted by development, a licence will be required from Natural England.

Badger

- 7.30 No evidence of badger was recorded on site, however, badgers 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.
- 7.31 Where this is not possible the activity status of each sett entrance will first be established. The activity survey involves monitoring each hole identified on site for a period of four weeks using sand traps, hair traps and camera traps to determine if the holes are in use. If holes are found to be present within 30m of development, and are found to be active during the monitoring period, they may then need to be closed under licence from Natural England.

Birds

- 7.32 To avoid adverse impact on nesting birds, vegetation clearance or lopping of trees to accommodate the site entrance, 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 will 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) will halt until the chicks have fledged.

Hedgehog and Brown hare

- 7.33 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. This will be included within the CEMP for the site.

Biodiversity Enhancement

- 7.34 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.
- The replacement pond should be designed in accordance with wildlife friendly design recommendations.
- 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.

APPENDIX A: Proposed Development



PRoW Croft 1

Area Measures:
 Total site area: 10.35 ha
 Infrastructure: 0.7 ha
 Green infrastructure: 3.15 ha
 Total developable area : 6.50 ha















This site could deliver between 195 (@30 per ha) and 228 (@35 per ha) units.

LANDSCAPE ARCHITECTURE
 ENVIRONMENTAL PLANNING
 MASTERPLANNING
 URBAN DESIGN



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

KEY:

-  Site boundary
-  Exis ootpath
-  Proposed footpath
-  Exis
-  Exis egeta e
-  Proposed SUDS feature
-  Proposed tree plan
-  Green infrastructure
-  Proposed development area
-  Proposed vehicular access points
-  Poten ehicular access points
-  Proposed primary road
-  Proposed secondary road
-  Proposed LEAP

NB: Masterplan subject to change following detailed survey work



Conceptual Masterplan

Drwg No: 630DA-11	Date: 12.09.17
Drawn by: AH	Checker: SR
Rev by: AH	Rev checker: SR
QM Status: Checked	Product Status: Con review
Scale: 1: 5000 @ A3	

APPENDIX B: Desk Based Assessment

**Desk Based Ecology Assessment
Land at Lady Lane, Croft
Approximate Central Grid Reference: SJ6278694056**

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 2018

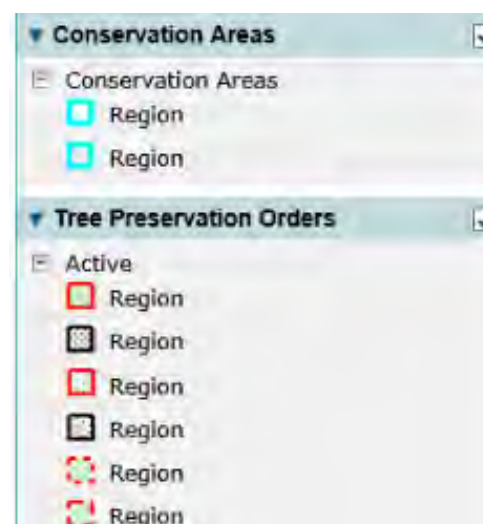
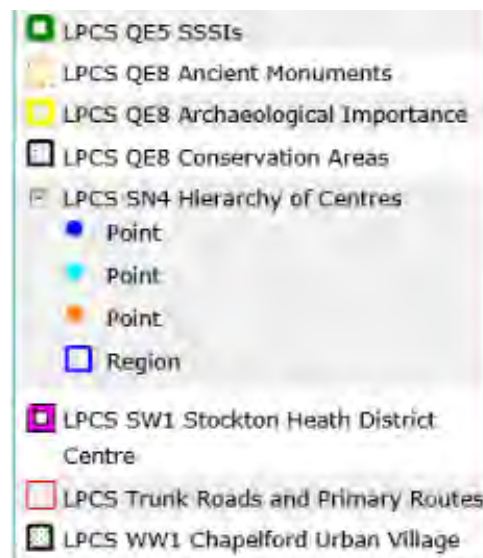
Extract of Warrington Borough Council Local Plan (adopted 2014) and Supporting Key

The site is within the local authority area of Warrington Borough Council, however approximately 1.6km to the north east is Wigan Metropolitan Borough Council and approximately 1.3km to the south east is Salford City Council.

The Warrington BC Core Strategy was adopted in July 2014. Warrington BC are currently undertaking a review on the adopted Local Plan Core Strategy. Consultation on the Local Plan Preferred Development Option is running from 18th July 2017 to 12th September 2017, which sets out the proposed approach to meeting Warrington's needs.

Warrington Borough Council – Core Strategy Policies Map





Designations

- Green Belt (Policy CS5) – Lime Green
- Overall Spatial Strategy for Green Belt (Policy CS5)
- Local Wildlife Site (Policy QE5)
- Active Travel Greenway Network (Policy MP3)

Tree Preservation Orders



Core Strategy – Planning Policies

Policy CS 1 - Overall Spatial Strategy - Delivering Sustainable Development

Throughout the borough, development proposals that are sustainable will be welcomed and approved without delay.

To be sustainable, development must accord with national and local planning policy frameworks, taking into account other material considerations, and must, in no particular order, have regard to:

- the planned provision made for economic and housing growth;
- the requirement to provide for recognised and identified development needs;
- the priority afforded to the protection of the Green Belt and the character of the countryside;
- the priority afforded to accommodating growth in Inner Warrington through the use of previously developed land;
- the importance of sustaining and enhancing the vitality and viability of the Town Centre and other designated centres that act as community hubs; the need to develop sites, services and facilities in appropriate locations accessible by public transport, walking and cycling;
- the need to make the best use of existing transport, utility, social and environmental infrastructure within existing settlements, and ensure additional provision where needed to support development;
- the need to address the causes of and be resilient to the effects of climate change;
- **the need to sustain and enhance the borough's built heritage, biodiversity and geodiversity;**
- the importance of prudently using resources and maximising re-use, recovery and recycling where possible;
- the need to safeguard environmental standards, public safety, and residential amenity;

- **the delivery of high standards of design and construction, that have regard to local distinctiveness and energy efficiency; and**
- The need to improve equality of access and opportunity.

The Council's approach will always be to work proactively with applicants jointly to find solutions which mean that proposals can accord with the development plan and be approved without delay wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then the Council will grant permission unless material considerations indicate otherwise - taking into account whether:

- Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or

Specific policies in that Framework indicate that development should be restricted.

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 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.

Policy CC 2 Protecting the Countryside

Development proposals in the countryside which accord with Green Belt policies set out in national planning policy will be supported provided that;

- the detailed siting and design of the development relates satisfactorily to its rural setting, in terms of its scale, layout and use of materials;
- they respect local landscape character, both in terms of immediate impact, or from distant views;
- unobtrusive provision can be made for any associated servicing and parking facilities or plant, equipment and storage;
- they relate to local enterprise and farm diversification; and it can be demonstrated that there would be no detrimental impact on agricultural interests

Extracts of Relevant Planning Policies and Supplementary Planning Guidance

Design and Construction SPD (2016)

Landscaping and the Environment

Almost all development sites will have some existing or potential value as wildlife habitat or public open space. The retention, protection and extension of areas of wildlife habitat will help conserve and enhance biological diversity and the richness of the natural environment. Good quality landscaping also helps make a development attractive and maintain its desirability and use.

- Existing attractive or valuable natural features must be retained and protected on a site and be the starting point for the development of building design and landscaping proposals. These could include trees, hedges, ponds or streams. They may be valuable because of their visual amenity or their wildlife or biodiversity value. The Council has identified significant areas for nature conservation within the borough. Development proposals on or close to designated wildlife sites will warrant special scrutiny and those that will have an adverse effect on these sites will not be permitted without mitigation to reduce the damage.
- Planting that enhances nature conservation, wildlife habitat and diversity will be encouraged, particularly on sites that are close to existing wildlife areas or enhance and expand “green corridors”.
- New landscaping should be designed for easy maintenance to ensure that the visual amenity continues into the long term and that the plants will thrive. Factors to consider include the appropriateness of species for the local climate, topography and soil; the landscape mix; ensuring that there is sufficient space for plants to thrive without constant maintenance and attention; and minimising the requirement for importing topsoil and using artificial irrigation.
- New development should be designed to harvest rainwater which can be used for irrigation of the site’s landscaping.
- New development with flat roofs can also be designed to be “green roofs” such as sedum roofs.
- These will help improve biodiversity and provide extra insulation to buildings without needing irrigation or significant maintenance.
- Hard landscaping should also be designed and constructed with thought to future maintenance and ensuring a long life. This includes considering the durability of materials, the ease and cost of providing and installing replacements and the route of underground services and access to repair and renewal.

Environmental Protection SPD (2010)

Section 4.6.4 Japanese Knotweed – “Neither the EA nor the Council are responsible for controlling Japanese knotweed, other than that growing on Council-owned land. Managing knotweed is the responsibility of the landowner of a site”



MAGIC Map search for SSSI Impact Risk Zones for Site Only

Site Check Report Report generated on Wed Aug 30 2017
You selected the location: Centroid Grid Ref: SJ837935
The following features have been found in your search area:

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

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 > 750m² & manure stores > 3500t).

Combustion

General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

Waste

Composting

Discharges

Any discharge of water or liquid waste of more than 20m³/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).

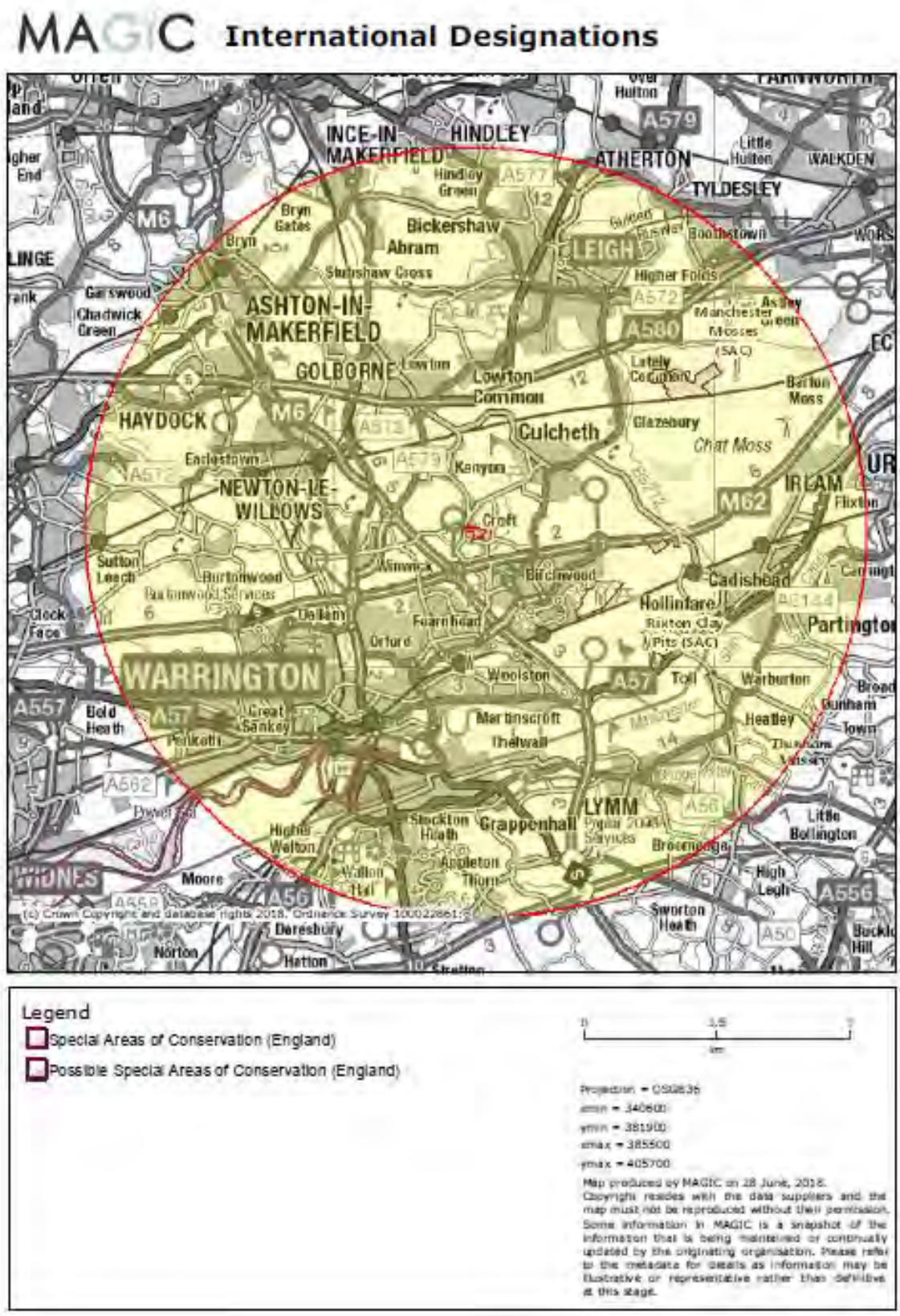
Water Supply

Notes

GUIDANCE – How to use the Impact Risk Zones

[/Metadata for magic/SSSI IRZ User Guidance MAGIC.pdf](#)

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



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

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?eucode=UK0030265>

Name

MANCHESTER MOSSES

Reference

UK0030200

Hectares

171.52

Hyperlink

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

Name

MANCHESTER MOSSES

Reference

UK0030200

Hectares

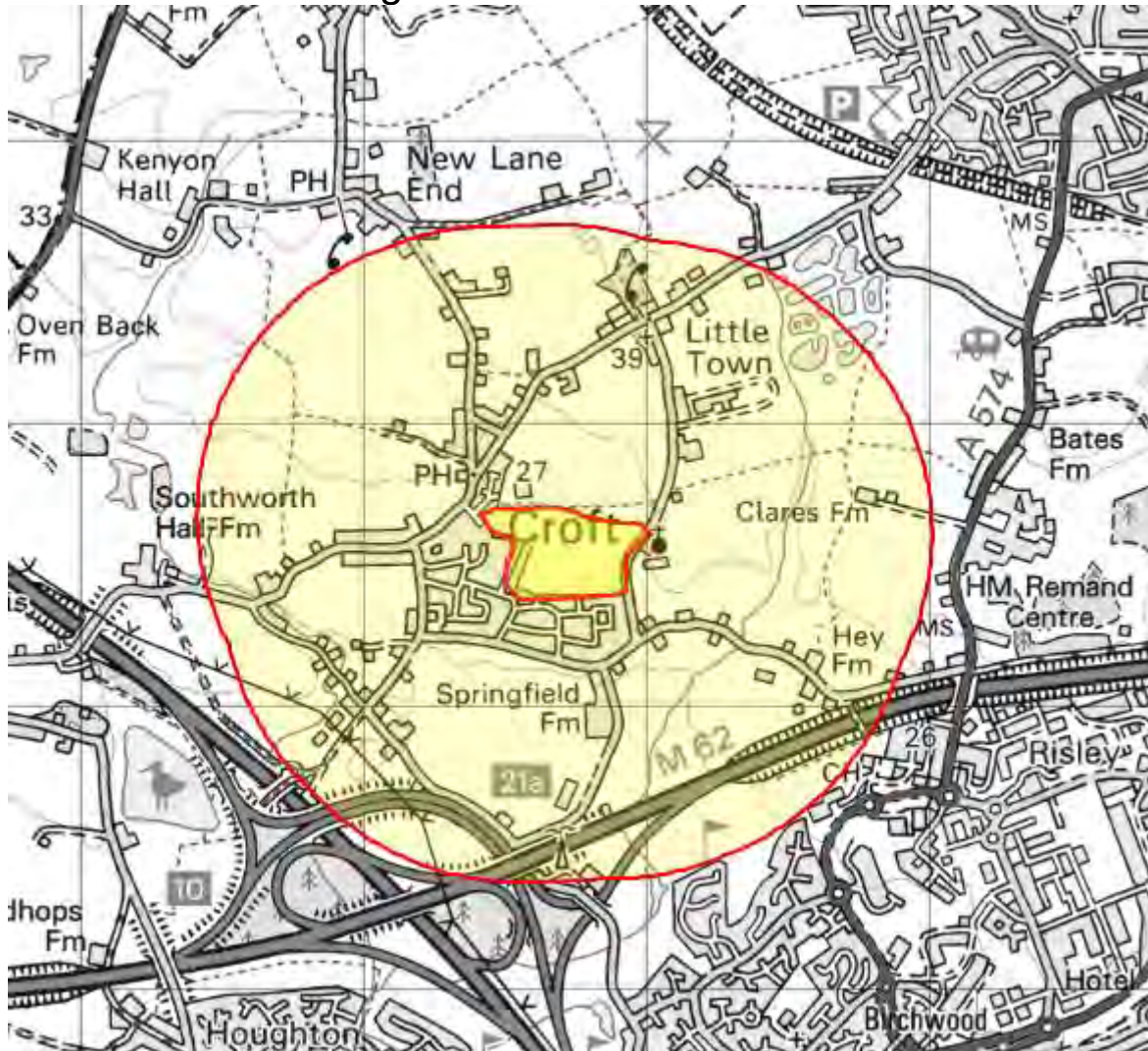
171.52

Hyperlink

<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0030200>

MAGIC Map 1km Search Zone for Nationally Designated Wildlife Sites – Map

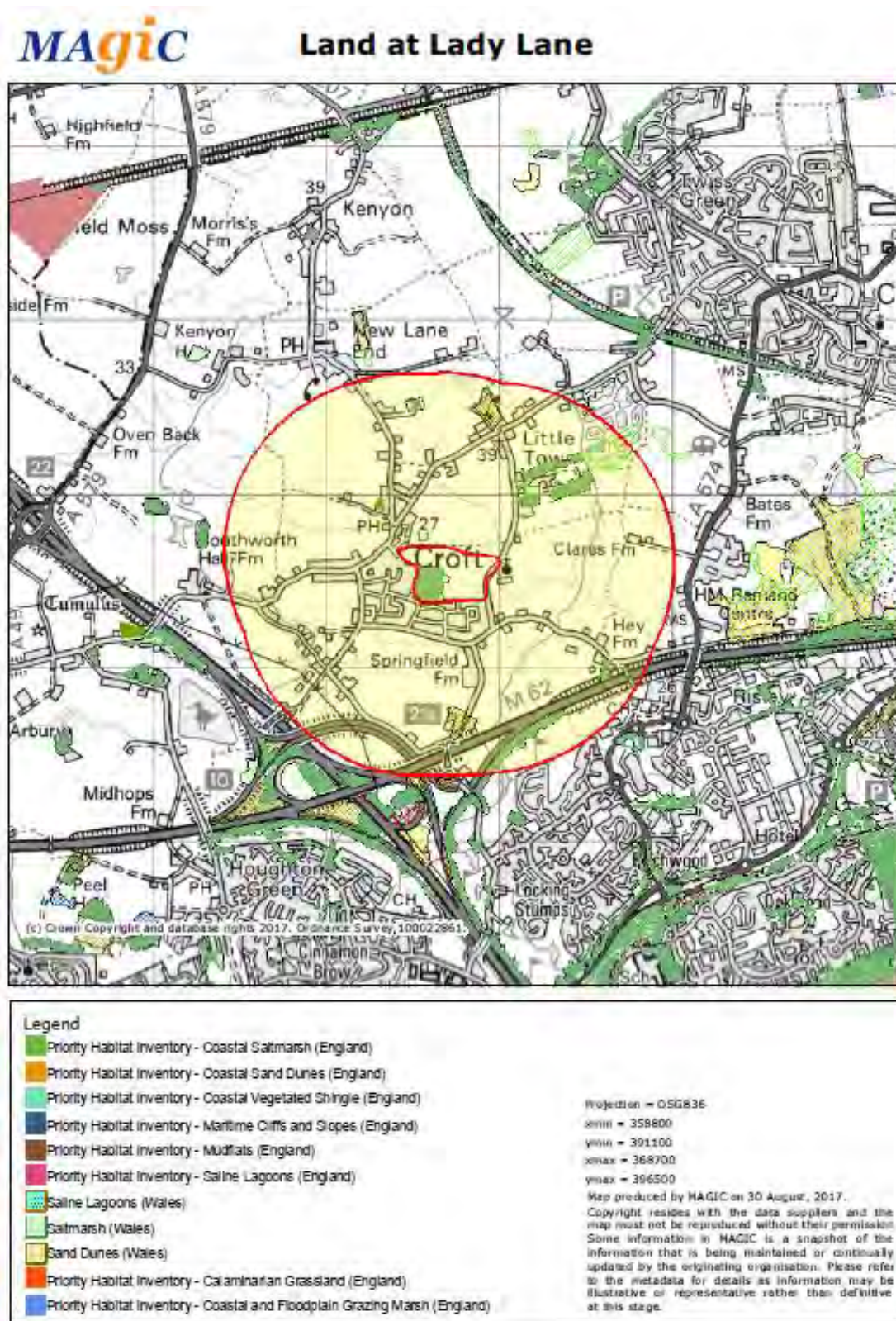
No designated wildlife sites with 1km



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

No designated sites within 1km of the site

MAGIC Map 1km Search Zone for Habitat Inventory Data



Map Provided by RECORD of Site Designations within 1km

Site Boundary Report

Local Sites

Local Wildlife Sites:

Croft Grasslands / WA006

Map



Site name	Croft Grasslands
Site code	WA006
Authority	Warrington Local Wildlife Sites Partnership
Site centroid	SJ6362893488

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 MagicMap <http://www.natureonthemap.naturalengland.org.uk/#/map/3800000000> (please be aware of the NBN Atlas guidance for using data <https://nbnatlas.org/faq/guidance-using-data/>).

Other Sites of Conservation Interest

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

Houghton Green Pool / WA013

Map



Site name	Houghton Green Pool
Site code	WA013
Authority	Warrington Local Wildlife Sites Partnership
Site centroid	SJ6221392911

Extract of Species Data Provided by RECORD within 1km

Designated Species Summary

Taxa	Designation Name	Occurrence in Chestnut tetrad: between 2006–2017 (%)	Occurrence in Chestnut tetrad: all years (%)
Arctic Tern (<i>Sterna paradisaea</i>)	Birds of Conservation Concern [RSPB] - Amber	1%	8%
Black Tern (<i>Chlidonias niger</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber	<1%	9%
Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	Birds of Conservation Concern [RSPB] - Amber	23%	41%
Black-necked Grebe (<i>Podiceps nigricollis</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber	2%	4%
Brown Hare (<i>Lepus europaeus</i>)	Local Biodiversity Action Plan Species, NERC S41, UK BAP Priority Species	21%	80%
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%
Canadian Goldenrod (<i>Solidago canadensis</i>)	Invasive Non-Native Species	2%	7%
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 Gull (<i>Larus canis</i>)	Birds of Conservation Concern [RSPB] - Amber	9%	25%
Common Lizard (<i>Zootoca vivipara</i>)	Wildlife and Countryside Act - Schedule 5, NERC S41, UK BAP Priority Species	5%	9%
Common Toad (<i>Bufo bufo</i>)	Wildlife and Countryside Act - Schedule 5, NERC S41, UK BAP Priority Species	23%	41%
Corn Bunting (<i>Emberiza calandra</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC S41	2%	38%
Dot Moth (<i>Melanchnra persicariae</i>)	NERC S41, UK BAP Priority Species	3%	14%
Dunlin (<i>Calidris alpina</i>)	Birds of Conservation Concern [RSPB] - Red	5%	15%
Dunnock (<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 Water Vole (<i>Arvicola amphibius</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, NERC 541, 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%
Godwoll (<i>Anas strepera</i>)	Birds of Conservation Concern [RSPB] - Amber	6%	12%
Golden Plover (<i>Pluvialis apricaria</i>)	Birds of Conservation Concern [RSPB] - Amber	5%	17%
Goldeneye (<i>Bucephala clangula</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber	6%	14%
Great Black-backed Gull (<i>Larus marinus</i>)	Birds of Conservation Concern [RSPB] - Amber	6%	16%
Green Sandpiper (<i>Tringa ochropus</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber	5%	17%
Greenshank (<i>Tringa nebularia</i>)	Wildlife and Countryside Act - Schedule 1	3%	12%
Grey Partridge (<i>Perdix perdix</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC 541, UK BAP Priority Species	8%	60%
Grey Wagtail (<i>Motacilla cinerea</i>)	Birds of Conservation Concern [RSPB] - Amber	14%	45%
Heath Dog-violet (<i>Viola canina</i>)	IUCN Global Red List - Near Threatened	<1%	4%
Herring Gull (<i>Larus argentatus</i>)	Birds of Conservation Concern [RSPB] - Red	11%	33%
Himalayan Cotoneaster (<i>Cotoneaster simonsii</i>)	Wildlife and Countryside Act Schedule 9	1%	3%
Hobby (<i>Falco subbuteo</i>)	Wildlife and Countryside Act - Schedule 1	9%	17%
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 541, UK BAP Priority Species	35%	84%
Indian Balsam (<i>Impatiens glandulifera</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	24%	36%
Keroplatus testaceus (<i>Keroplatus testaceus</i>)	Nationally Scarce	<1%	<1%
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 541, UK BAP Priority Species	28%	79%
Large Tortoiseshell (<i>Nymphalis</i>)	Wildlife and Countryside Act -	<1%	<1%

polychloros)	Schedule 5		
Large-flowered Hemp-nettle (<i>Galeopsis speciosa</i>)	IUCN Global Red List - Vulnerable	1%	8%
Lesser Black-backed Gull (<i>Larus fuscus</i>)	Birds of Conservation Concern [RSPB] - Amber	12%	29%
Little Grebe (<i>Tachybaptus ruficollis</i>)	Birds of Conservation Concern [RSPB] - Amber	11%	29%
Little Ringed Plover (<i>Charadrius dubius</i>)	Wildlife and Countryside Act - Schedule 1	3%	13%
Mallard (<i>Anas platyrhynchos</i>)	Birds of Conservation Concern [RSPB] - Amber	42%	82%
Meadow Pipit (<i>Anthus pratensis</i>)	Birds of Conservation Concern [RSPB] - Amber	13%	45%
Merlin (<i>Falco columbarius</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber	6%	14%
Mistle Thrush (<i>Turdus viscivorus</i>)	Birds of Conservation Concern [RSPB] - Amber	23%	82%
Montbretia (<i>Crocsmia pottsii</i> x <i>auraea</i> = <i>C. x crocosmiiflora</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	6%	14%
Oystercatcher (<i>Haematopus ostralegus</i>)	Birds of Conservation Concern [RSPB] - Amber	13%	23%
Peregrine (<i>Falco peregrinus</i>)	Wildlife and Countryside Act - Schedule 1	11%	19%
Pink-footed Goose (<i>Anser brachyrhynchus</i>)	Birds of Conservation Concern [RSPB] - Amber	8%	15%
Pipistrelle (<i>Pipistrellus pipistrellus</i>)	Local Biodiversity Action Plan Species, Wildlife and Countryside Act - Schedule 5, Conservation (Habs and Sp) Regulations 2010 - Schedule 2	27%	54%
Pochard (<i>Aythya ferina</i>)	Birds of Conservation Concern [RSPB] - Amber	6%	19%
Redshank (<i>Tringa totanus</i>)	Birds of Conservation Concern [RSPB] - Amber	9%	22%
Redwing (<i>Turdus iliacus</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Red	18%	38%
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%
Ringed Plover (<i>Charadrius hiaticula</i>)	Birds of Conservation Concern [RSPB] - Amber	4%	15%
Ringlet (<i>Aphantopus hyperantus</i>)	Local Biodiversity Action Plan Species	14%	15%
Ruddy Duck (<i>Oxyura jamaicensis</i>)	Invasive Non-Native Species, Wildlife and Countryside Act Schedule 9	3%	14%
Sand Martin (<i>Riparia riparia</i>)	Birds of Conservation Concern [RSPB] - Amber	7%	35%

Shoveler (<i>Anas clypeata</i>)	Birds of Conservation Concern [RSPB] - Amber	8%	18%
Skylark (<i>Alauda arvensis</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC 541	20%	85%
Slavonian Grebe (<i>Podiceps auritus</i>)	Wildlife and Countryside Act - Schedule 1, Birds of Conservation Concern [RSPB] - Amber	<1%	3%
Snipe (<i>Gallinago gallinago</i>)	Birds of Conservation Concern [RSPB] - Amber	13%	54%
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%
Stock Dove (<i>Columba oenas</i>)	Birds of Conservation Concern [RSPB] - Amber	10%	65%
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%
Teal (<i>Anas crecca</i>)	Birds of Conservation Concern [RSPB] - Amber	11%	28%
Tree Sparrow (<i>Passer montanus</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC 541, UK BAP Priority Species	10%	72%
Tufted Duck (<i>Aythya fuligula</i>)	Birds of Conservation Concern [RSPB] - Amber	13%	31%
Wall Cotoneaster (<i>Cotoneaster horizontalis</i>)	Wildlife and Countryside Act Schedule 9	2%	6%
West European Hedgehog (<i>Erinaceus europaeus</i>)	NERC 541, UK BAP Priority Species	24%	44%
Wheatear (<i>Oenanthe oenanthe</i>)	Birds of Conservation Concern [RSPB] - Amber	8%	32%
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 Wagtail (<i>Motacilla flava</i>)	Birds of Conservation Concern [RSPB] - Red, NERC 541	5%	54%
Yellowhammer (<i>Emberiza citrinella</i>)	Local Biodiversity Action Plan Species, Birds of Conservation Concern [RSPB] - Red, NERC 541, UK BAP Priority Species	14%	77%

Species Report

AMPHIBIAN

[Map](#)



Common Toad (*Bufo bufo*) (1)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
M6 Junction 21a	SJ619933	1	14/05/2008-26/09/2008	None	Present	Field Record

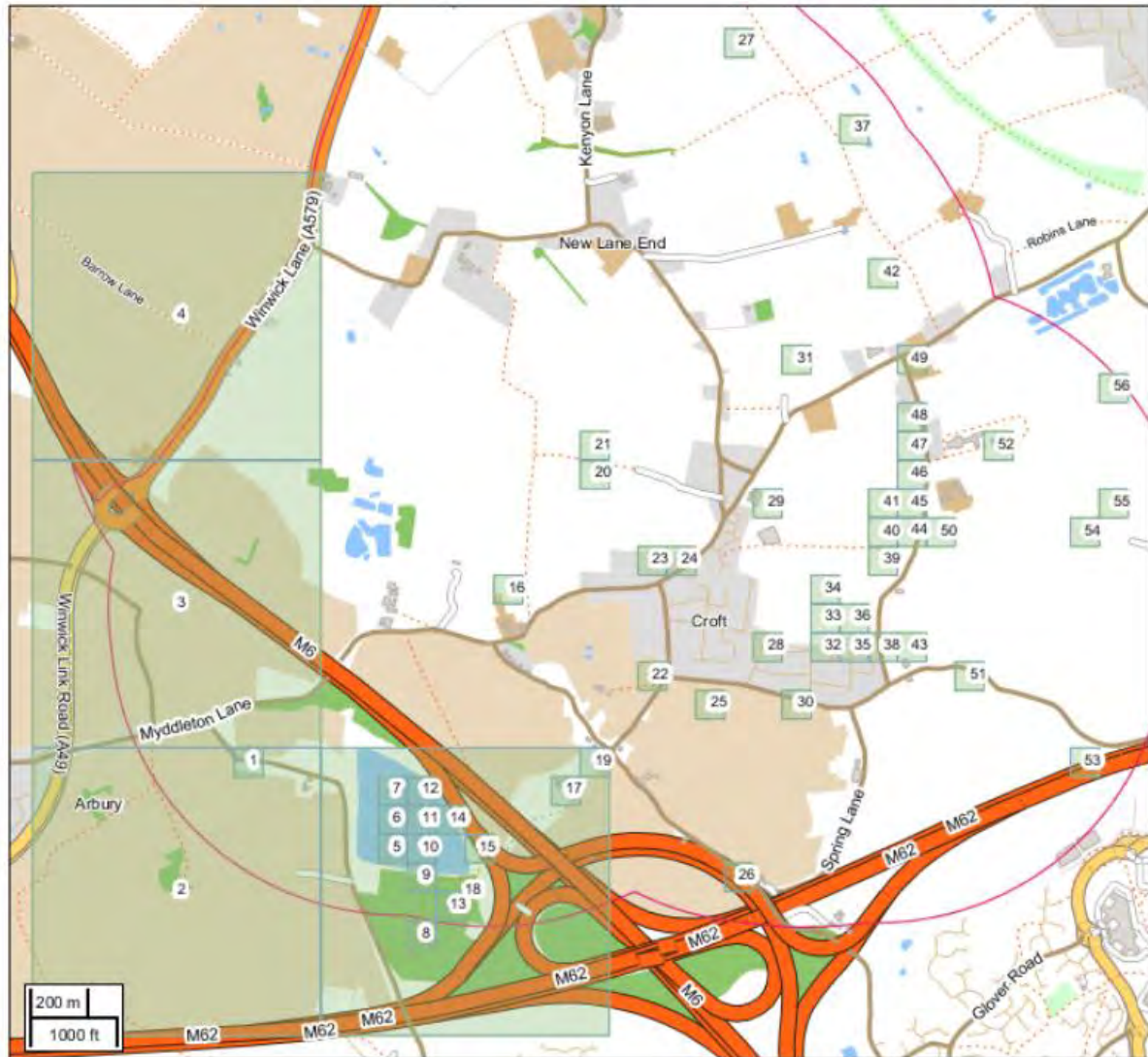
Common Frog (*Rana temporaria*) (1,2,3,4)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
M6 Junction 21a	SJ619933	1	14/05/2008-26/09/2008	None	Present	Field Record
M62 j11-12 (westbound)	SJ640930	4	14/05/2008-26/09/2008	None	1	Field Record
Croft, Garden, Wadeson Way	SJ637933	3	11/03/2013	Egg/Ovum	Present	Field Record
Croft, Wadeson Way - garden	SJ637933	3	16/04/2012	Adult	1	Field Record
Garden, Wadeson Way	SJ636933	2	08/08/2010	Adult	1	Field Record

BIRD

Map



Green Sandpiper (*Tringa ochropus*) (7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	15/04/2012	None	1	Field Record

Goldeneye (*Bucephala clangula*) (7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	29/02/2012	None	1	Field Record
	SJ622928	7	25/02/2012	None	1	Field Record

House Martin (*Delichon urbicum*) (9)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ623925	9	30/06/2012	Adult	1	Field Record

Dunlin (*Calidris alpina*) (7, 11)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ623927	11	19/04/2013	Adult Male	1	Field Record
	SJ622928	7	06/02/2012	None	2	Field Record

Lesser Black-backed Gull (*Larus fuscus*) (7, 10)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ623926	10	28/03/2013	Adult	5 Approx	Field Record
	SJ622928	7	22/02/2014	Adult	1	Field Record

Great Black-backed Gull (*Larus marinus*) (7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	04/02/2012	None	3	Field Record

Bullfinch (*Pyrrhula pyrrhula*) (2)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ6192	2	11/01/2012	None	3	Field Record

Golden Plover (*Pluvialis apricaria*) (2,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
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SJ6192	2	13/12/2012	None	2	Field Record
SJ622928	7	06/02/2012	None	26	Field Record

Meadow Pipit (*Anthus pratensis*) (2,7,18)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ6192	2	02/04/2012	None	2	Field Record
	SJ6192	2	13/12/2012	None	53	Field Record
	SJ6292	18	28/12/2006	None	13	Field Record
	SJ6292	18	28/12/2006	None	13	Field Record
	SJ622928	7	02/04/2012	None	2	Field Record

Grey Wagtail (*Motacilla cinerea*) (3,45)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Winwick, Houghton Green Pool	SJ6193	3	18/02/2011	None	1	Field Record
Croft, Off Lady Lane	SJ640938	45	15/03/2016	Adult	1	Field Record

Black-necked Grebe (*Podiceps nigricollis*) (3,6,7,11)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	26/07/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	09/04/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	06/04/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	05/04/2011	None	6	Field Record
Houghton Green Pool	SJ6193	3	02/04/2011	None	5	Field Record
Houghton Green Pool	SJ6193	3	01/04/2011	None	5	Field Record
Houghton Green Pool	SJ6193	3	26/03/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	20/03/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	19/03/2011	None	1	Field Record
	SJ622928	7	16/08/2012	None	1	Field Record
Houghton Green	SJ622927	6	20/03/2009	None	2	Field Record

PS, Warrington						
	SJ623927	11	23/03/2011	Adult	4	Field Record
	SJ623927	11	17/04/2011	Adult	3	Field Record

Black Tern (*Chlidonias niger*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	13/09/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	11/09/2011	None	1	Field Record

Merlin (*Falco columbarius*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	02/02/2011	None	Present	Field Record

Canada Goose (*Branta canadensis*) (3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	08/09/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	26/07/2011	None	4	Field Record
	SJ622928	7	26/06/2012	None	21	Field Record
Hought Green Pool SINC - pond	SJ622928	7	15/07/2012	None	20	Field Record
	SJ622928	7	25/02/2012	None	2	Field Record

Greenshank (*Tringa nebularia*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	07/09/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	31/08/2011	None	1	Field Record

Hobby (*Falco subbuteo*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	08/09/2011	None	1	Field Record

Gadwall (*Anas strepera*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	04/06/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	8	Field Record
Winwick, Houghton Green Pool	SJ6193	3	17/02/2011	None	9	Field Record
Houghton Green Pool	SJ6193	3	19/08/2011	None	6	Field Record

Corn Bunting (*Emberiza calandra*) (2,3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	30/05/2011	None	3	Field Record
Arbury	SJ6193	3	05/06/2011	None	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	2	Field Record
	SJ622928	7	26/06/2012	None	2	Field Record
	SJ6192	2	23/04/2012	None	1	Field Record

Common Gull (*Larus canus*) (2,3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	17/09/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	13/09/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	4	Field Record
	SJ6192	2	21/09/2012	None	5	Field Record
	SJ622928	7	11/09/2012	None	2	Field Record
	SJ622928	7	04/02/2012	None	9	Field Record
	SJ622928	7	28/01/2012	None	6	Field Record
	SJ622928	7	14/01/2012	None	9	Field Record
	SJ622928	7	05/03/2012	None	2	Field Record
	SJ622928	7	03/03/2012	None	6	Field Record

SJ622928	7	20/02/2012	None	3	Field Record
SJ622928	7	18/02/2012	None	8	Field Record

Little Grebe (*Tachybaptus ruficollis*) (3,6)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	09/09/2011	None	7	Field Record
Houghton Green Pool	SJ6193	3	31/08/2011	None	5	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	19/08/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	5	Field Record
Houghton Green Pool	SJ6193	3	13/09/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	25/09/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	3	Field Record
Houghton Green Pool	SJ62239278	6	29/09/2007	Adult	2	Field Record

House Sparrow (*Passer domesticus*) (2,3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	29/02/2012	None	26	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	20	Field Record
Houghton Green Pool	SJ6193	3	08/09/2011	None	60	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	175	Field Record
Houghton Green Pool	SJ6193	3	02/02/2011	None	30	Field Record
Arbury	SJ6193	3	25/09/2011	None	10	Field Record
Arbury	SJ6193	3	03/08/2011	None	25	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	71	Field Record
	SJ6192	2	02/04/2012	None	42	Field Record
	SJ6192	2	13/12/2012	None	19	Field Record
	SJ6192	2	16/08/2012	None	20	Field Record

	SJ6192	2	17/08/2012	None	12	Field Record
	SJ6192	2	11/01/2012	None	15	Field Record
Winwick	SJ6192	2	26/04/2012	None	20	Field Record
	SJ6192	2	23/04/2012	None	2	Field Record
	SJ6192	2	24/04/2012	None	57	Field Record
Winwick	SJ6192	2	25/04/2012	None	12	Field Record

Kestrel (*Falco tinnunculus*) (2,3,7,15,33,36,40,52,53)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	23/04/2012	None	Present	Field Record
Houghton Green Pool	SJ6193	3	02/02/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	10/09/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	08/09/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	Present	Field Record
Houghton Green Pool	SJ6193	3	03/08/2011	None	2	Field Record
Arbury	SJ6193	3	05/06/2011	None	Present	Field Record
	SJ6192	2	21/09/2012	None	1	Field Record
	SJ6192	2	13/12/2012	None	1	Field Record
	SJ6192	2	16/08/2012	None	2	Field Record
	SJ6192	2	22/09/2012	None	1	Field Record
Croft, Battlefiled	SJ638934	36	03/10/2012	None	1	Field Record
Culcheth, Glazebury & Croft - CP	SJ639937	40	18/03/2011	Adult	1	Field Record
Croft, HMS Gosling site	SJ643940	52	19/01/2013	Adult	1	Field Record
	SJ622928	7	11/09/2012	None	1	Field Record
	SJ622928	7	10/01/2012	None	1	Field Record

Culcheth, Glazebury & Croft - CP, By M6	SJ625926	15	26/12/2011	Adult	2	Field Record
Hey Farm Barn	SJ64699295	53	15/10/2011	None	1	Field Record
	SJ622928	7	06/02/2012	None	1	Field Record
	SJ622928	7	12/04/2012	None	1	Field Record
Battlefield*****	SJ637934	33	14/01/2012	Adult	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	3	Field Record
	SJ639937	40	18/03/2011	Adult	1	Field Record

Little Ringed Plover (*Charadrius dubius*) (3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	25/04/2012	None	7	Field Record
	SJ622928	7	21/04/2012	None	1	Field Record
Houghton Green Pool	SJ6193	3	04/06/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	29/07/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	28/05/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	06/04/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	26/07/2011	None	2	Field Record
	SJ622928	7	16/08/2012	None	1	Field Record
	SJ622928	7	26/06/2012	None	3	Field Record
	SJ622928	7	12/04/2012	None	2	Field Record
	SJ622928	7	16/04/2012	None	7	Field Record
	SJ622928	7	11/04/2012	None	2	Field Record
	SJ622928	7	04/04/2012	None	2	Field Record
	SJ622928	7	15/04/2012	None	3	Field Record

Arctic Tern (*Sterna paradisaea*) (3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	25/04/2012	None	3	Field Record
Houghton Green Pool	SJ6193	3	09/09/2011	None	3	Field Record

Dunnoek (*Prunella modularis*) (2,3,7,36)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	09/05/2012	None	3	Field Record
Radley Plantation	SJ6193	3	29/08/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	12/02/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	4	Field Record
	SJ6192	2	16/08/2012	None	1	Field Record
	SJ622928	7	29/02/2012	None	2	Field Record
Battlefield	SJ638934	36	03/02/2012	Adult	1	Field Record
	SJ6192	2	02/04/2012	None	2	Field Record
	SJ6192	2	23/04/2012	None	1	Field Record
Winwick	SJ6192	2	25/04/2012	None	3	Field Record
	SJ6192	2	24/04/2012	None	5	Field Record

Mallard (*Anas platyrhynchos*) (2,3,5,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	09/05/2012	None	1	Field Record
Houghton Green Pool	SJ6193	3	02/02/2011	None	55	Field Record
Houghton Green Pool	SJ6193	3	19/08/2011	None	70	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	27	Field Record
Houghton Green Pool	SJ6193	3	04/06/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	66	Field Record
Houghton Green Pool	SJ6193	3	31/08/2011	None	42	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	82	Field Record
Winwick, Houghton Green Pool	SJ6193	3	17/02/2011	None	41	Field Record
Houghton Green Pool	SJ6193	3	12/02/2011	None	19	Field Record
Houghton Green Pool	SJ6193	3	13/09/2011	None	68	Field Record
Houghton Green Pool	SJ6193	3	25/09/2011	None	65	Field Record

Houghton Green Pool	SJ6193	3	17/09/2011	None	71	Field Record
Houghton Green Pool	SJ6193	3	03/08/2011	None	40	Field Record
Houghton Green Pool	SJ6193	3	26/07/2011	None	23	Field Record
Houghton Green Pool	SJ6193	3	08/09/2011	None	65	Field Record
	SJ6192	2	02/04/2012	None	1	Field Record
	SJ6192	2	21/09/2012	None	3	Field Record
	SJ622928	7	10/01/2012	None	57	Field Record
	SJ622928	7	04/02/2012	None	64	Field Record
	SJ622928	7	14/01/2012	None	48	Field Record
	SJ622928	7	28/01/2012	None	49	Field Record
	SJ622928	7	03/03/2012	None	21	Field Record
	SJ622928	7	29/02/2012	None	29	Field Record
	SJ622928	7	20/02/2012	None	28	Field Record
	SJ622928	7	18/02/2012	None	48	Field Record
	SJ622928	7	06/02/2012	None	66	Field Record
	SJ622928	7	11/09/2012	None	66	Field Record
	SJ622928	7	28/03/2013	Adult	10 Approx	Field Record
	SJ6192	2	23/04/2012	None	8	Field Record
	SJ622926	5	22/02/2014	Adult	8	Field Record
	SJ622926	5	08/02/2011	None	Present	Field Record

Herring Gull (*Larus argentatus*) (2,3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	03/03/2012	None	12	Field Record
Houghton Green Pool	SJ6193	3	26/07/2011	None	1	Field Record
	SJ6192	2	10/01/2012	None	1	Field Record
	SJ622928	7	14/01/2012	None	8	Field Record
	SJ622928	7	18/02/2012	None	10	Field Record

Grey Partridge (*Perdix perdix*) (2,3,7,9,11,12,18,30,44,46,55,56)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft	SJ647938	55	10/01/2010	Adult	12	Field Record

	SJ622928	7	14/05/2012	None	2	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	57	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	13/09/2011	None	16	Field Record
Houghton Green Pool	SJ6193	3	10/09/2011	None	16	Field Record
Houghton Green Pool	SJ6193	3	25/09/2011	None	37	Field Record
Arbury	SJ6193	3	03/08/2011	None	16	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	15	Field Record
Houghton Green Pool	SJ6193	3	08/09/2011	None	67	Field Record
	SJ6192	2	02/04/2012	None	2	Field Record
Winwick	SJ6192	2	25/04/2012	None	2	Field Record
	SJ647938	55	10/01/2010	Adult	12	Field Record
Croft	SJ640937	44	14/06/2015	Adult	2	Field Record
	SJ623928	12	04/04/2015	Adult	2	Field Record
	SJ623928	12	30/06/2012	Adult	2	Field Record
	SJ623927	11	10/09/2015	Adult	12	Field Record
	SJ623927	11	15/08/2015	Adult	8	Field Record
	SJ623925	9	22/04/2012	Adult	2	Field Record
Croft, Stubble field	SJ636931	30	13/11/2016	Adult	9	Field Record
Willow / Birch Natural Regeneration, Peel Hall Area - Comp 12	SJ6292	18	28/12/2006	Adult	4	Field Record
	SJ622928	7	20/02/2012	None	2	Field Record
	SJ622928	7	06/02/2012	None	16	Field Record
Croft, Fields W of Lady Lane	SJ640939	46	08/01/2012	Adult	8	Field Record
	SJ6478294202	56	2007	None	7	Field Record
Croft, Lady Lane	SJ640939	46	25/04/2014	Adult	2	Field Record

Fieldfare (*Turdus pilaris*) (2,3,7,17,22,26,32)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Garden,	SJ637933	32	13/01/2010	Adult	1	Field Record

Wadeson Way						
Houghton Green Pool	SJ6193	3	11/02/2011	None	47	Field Record
Houghton Green Pool	SJ6193	3	02/02/2011	None	30	Field Record
Winwick, Houghton Green Pool	SJ6193	3	17/02/2011	None	35	Field Record
	SJ6192	2	13/12/2012	None	27	Field Record
Culcheth, Glazebury & Croft - CP, Chadwick Avenue	SJ637933	32	05/11/2013	Adult	12 Approx	Field Record
Croft, Fields along Smithy Lane	SJ631932	22	28/03/2013	Adult	6 Approx	Field Record
	SJ622928	7	06/02/2012	None	4	Field Record
Garden, Wadeson Way	SJ637933	32	13/01/2010	Adult	1	Field Record
Culcheth, Glazebury & Croft - CP	SJ628928	17	02/02/2014	Adult	15 Approx	Field Record
Croft, Hop-pole Kennels	SJ634925	26	26/12/2013	Adult	9	Field Record

Lapwing (*Vanellus vanellus*) (2,3,6,7,11,12,13,14,18,37,41)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	20/10/2014	Adult	9	Field Record
	SJ622928	7	14/05/2012	None	6	Field Record
	SJ622928	7	09/05/2012	None	2	Field Record
	SJ622928	7	23/04/2012	None	Present	Field Record
	SJ622928	7	21/04/2012	None	2	Field Record
Houghton Green Pool	SJ6193	3	20/03/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	05/04/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	18	Field Record
Houghton Green Pool	SJ6193	3	03/08/2011	None	1	Field Record
Winwick, Houghton Green Pool	SJ6193	3	17/02/2011	None	70	Field Record

Houghton Green Pool	SJ6193	3	26/07/2011	None	1	Field Record
Winwick	SJ6192	2	25/04/2012	None	2	Field Record
	SJ6192	2	13/12/2012	None	26	Field Record
Croft	SJ639938	41	04/08/2012	Adult	10	Field Record
	SJ622928	7	16/04/2012	None	2	Field Record
	SJ622928	7	04/02/2012	None	17	Field Record
	SJ624927	14	22/04/2012	Adult	1	Field Record
	SJ623928	12	17/03/2012	Adult	2	Field Record
	SJ622927	6	04/04/2015	Adult	2	Field Record
	SJ622928	7	10/01/2012	None	1	Field Record
	SJ622928	7	03/03/2012	None	16	Field Record
	SJ622928	7	29/02/2012	None	102	Field Record
	SJ622928	7	18/02/2012	None	59	Field Record
	SJ622928	7	06/02/2012	None	192	Field Record
	SJ622928	7	02/04/2012	None	1	Field Record
Adjacent field	SJ624924	13	28/03/2013	Adult	2	Field Record
Houghton Green Pool, Delph lane, Warrington	SJ6227792754	6	31/05/2013	Adult	8	Field Record
Near Kenyon Farm	SJ638951	37	02/05/2011	Adult	1	Field Record
	SJ623927	11	02/02/2014	Adult	50 Approx	Field Record
	SJ623927	11	20/01/2014	Adult	18	Field Record
	SJ623927	11	16/01/2014	Adult	27	Field Record
	SJ6292	18	08/02/2011	None	12	Field Record

Mistle Thrush (*Turdus viscivorus*) (2,3,7,19,21,23,24,31,42,46,47,49)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, In tree on Lord St	SJ632936	24	14/11/2014	Adult	1	Field Record
Croft, Lady Lane	SJ640940	47	18/12/2011	Adult	1	Field Record
Radley Plantation	SJ6193	3	22/03/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	02/02/2011	None	3	Field Record
Houghton Green	SJ6193	3	11/02/2011	None	2	Field Record

Pool						
	SJ6192	2	13/12/2012	None	5	Field Record
Croft, Smithy Brow, garden opposite bus stop	SJ631936	23	04/01/2013	Adult	1	Field Record
	SJ622928	7	29/02/2012	None	1	Field Record
	SJ622928	7	02/04/2012	None	3	Field Record
Croft, Fields W of Lady Lane	SJ640939	46	14/01/2012	Adult	1	Field Record
Croft	SJ639946	42	10/06/2013	Adult	1	Field Record
Croft, N of Mustard Lane	SJ636943	31	18/12/2011	Adult	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	1	Field Record
Croft	SJ629929	19	28/03/2013	Adult	2	Field Record
Croft, Lady Lane	SJ640943	49	28/11/2014	Adult	1	Field Record
	SJ629940	21	02/05/2011	Adult	1	Field Record

Black-headed Gull (*Chroicocephalus ridibundus*) (3,5,7,10,18,41)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Willow / Birch Natural Regeneration, Peel Hall Area - Comp 12	SJ6292	18	28/12/2006	None	35	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	12	Field Record
Houghton Green Pool	SJ6193	3	31/08/2011	None	24	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	5	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	138	Field Record
Houghton Green Pool	SJ6193	3	13/09/2011	None	46	Field Record
Arbury	SJ6193	3	25/09/2011	None	260	Field Record
Houghton Green Pool	SJ6193	3	17/09/2011	None	214	Field Record
Houghton Green Pool	SJ6193	3	09/04/2011	None	61	Field Record
Houghton Green Pool	SJ6193	3	19/08/2011	None	30	Field Record
Arbury	SJ6193	3	03/08/2011	None	150	Field Record
Croft	SJ639938	41	04/08/2012	Adult	Several	Field Record
	SJ623926	10	28/03/2013	Adult	20 Approx.	Field Record

SJ622928	7	22/02/2014	Adult	C. 60	Field Record
SJ622926	5	08/02/2011	None	150	Field Record

Wheatear (*Oenanthe oenanthe*) (7,11)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	21/04/2012	None	2	Field Record
	SJ623927	11	19/04/2013	Adult Male	1	Field Record

Stock Dove (*Columba oenas*) (2,3,7,18)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Willow / Birch Natural Regeneration, Peel Hall Area - Comp 12	SJ6292	18	28/12/2006	None	7	Field Record
	SJ622928	7	09/05/2012	None	2	Field Record
	SJ622928	7	21/04/2012	None	5	Field Record
Houghton Green Pool	SJ6193	3	11/02/2011	None	4	Field Record
Radley Plantation	SJ6193	3	29/08/2011	None	8	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	5	Field Record
Arbury	SJ6193	3	03/08/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	4	Field Record
	SJ6192	2	02/04/2012	None	Present	Field Record
	SJ6192	2	22/09/2012	None	3	Field Record
	SJ622928	7	28/03/2012	None	1	Field Record

Slavonian Grebe (*Podiceps auritus*) (7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Flash	SJ622928	7	13/02/2006	None	1	Field Record

Pink-footed Goose (*Anser brachyrhynchus*) (2)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ6192	2	13/12/2012	None	120	Field Record

Snipe (*Gallinago gallinago*) (46)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, By road on small area of wet ground in the snow	SJ640939	46	09/01/2010	Adult	1	Field Record

Shoveler (*Anas clypeata*) (7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	06/02/2012	None	5	Field Record

Yellow Wagtail (*Motacilla flava*) (11)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ623927	11	19/04/2013	Adult	1	Field Record

Redwing (*Turdus iliacus*) (1,3,7,17,22,25,38,51)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Horse paddocks on New Lane	SJ633931	25	28/12/2014	Adult	Abundant	Field Record
Houghton Green Pool	SJ6193	3	12/02/2011	None	8	Field Record
Croft, Cross Lane	SJ642932	51	02/02/2013	Adult	Small Flock	Field Record
Croft, Fields along Smithy Lane	SJ631932	22	28/03/2013	Adult	6 Approx	Field Record
	SJ622928	7	29/02/2012	None	3	Field Record
Croft, Field next to Lady Lane	SJ639933	38	27/01/2014	Adult	30 At Least	Field Record
Croft	SJ628928	17	20/01/2014	Adult	6	Field Record
Culcheth, Glazebury & Croft - CP	SJ628928	17	02/02/2014	Adult	40 Approx	Field Record
	SJ617929	1	24/02/2011	None	2	Field Record

Pochard (*Aythya ferina*) (3,5,7,11)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	02/05/2012	None	2	Field Record
Houghton Green Pool	SJ6193	3	08/09/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	2	Field Record

Houghton Green Pool	SJ6193	3	13/09/2011	None	1	Field Record
	SJ622928	7	04/02/2012	None	9	Field Record
	SJ622928	7	14/01/2012	None	5	Field Record
	SJ623927	11	06/01/2012	None	6	Field Record
	SJ622928	7	09/05/2012	None	4	Field Record
	SJ622928	7	29/02/2012	None	2	Field Record
	SJ622928	7	18/02/2012	None	9	Field Record
	SJ622928	7	06/02/2012	None	13	Field Record
	SJ622926	5	22/02/2014	Adult Male	1	Field Record
	SJ622926	5	08/02/2011	None	Present	Field Record

Yellowhammer (*Emberiza citrinella*) (2,3,7,27)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Culcheth, Glazebury & Croft - CP, Kenyon	SJ634954	27	15/07/2012	Adult Male	1	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	4	Field Record
	SJ622928	7	02/04/2012	None	6	Field Record
Winwick	SJ6192	2	25/04/2012	None	4	Field Record

Peregrine (*Falco peregrinus*) (18)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Willow / Birch Natural Regeneration, Peel Hall Area - Comp 12	SJ6292	18	28/12/2006	Adult Male	1	Field Record

Tree Sparrow (*Passer montanus*) (2,3,7,47,54)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	30/05/2011	None	2	Field Record
Winwick	SJ6192	2	27/04/2012	None	3	Field Record
Winwick	SJ6192	2	26/04/2012	None	7	Field Record

Winwick	SJ6192	2	25/04/2012	None	6	Field Record
	SJ6192	2	23/04/2012	None	4	Field Record
Croft, Lady Lane	SJ640940	47	17/04/2016	Adult	Several	Field Record
	SJ622928	7	02/04/2012	None	10	Field Record
	SJ6467693794	54	2007	None	Present	Field Record

Ringed Plover (*Charadrius hiaticula*) (3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	26/07/2011	None	1	Field Record
	SJ622928	7	03/03/2012	None	2	Field Record
	SJ622928	7	25/02/2012	None	2	Field Record

Starling (*Sturnus vulgaris*) (2,3,7,16,18)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	30/05/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	11/02/2011	None	90	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	02/02/2011	None	65	Field Record
Houghton Green Pool	SJ6193	3	22/09/2011	None	140	Field Record
Houghton Green Pool	SJ6193	3	08/09/2011	None	Present	Field Record
Arbury	SJ6193	3	25/09/2011	None	30	Field Record
	SJ6192	2	22/09/2012	None	180	Field Record
	SJ6192	2	02/04/2012	None	2	Field Record
	SJ6192	2	11/01/2012	None	17	Field Record
	SJ6192	2	21/09/2012	None	32	Field Record
	SJ6192	2	24/04/2012	None	2	Field Record
	SJ622928	7	29/02/2012	None	20	Field Record
	SJ622928	7	06/02/2012	None	70	Field Record
	SJ622928	7	02/04/2012	None	5	Field Record
	SJ6265193584	16	2007	None	45	Field Record
	SJ6292	18	08/02/2011	None	30	Field Record

Ruddy Duck (*Oxyura jamaicensis*) (3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	04/06/2011	None	1	Field Record
	SJ622928	7	29/02/2012	None	1	Field Record

Whitethroat (*Sylvia communis*) (3,29,34)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	30/05/2011	None	3	Field Record
Arbury	SJ6193	3	03/08/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	29/07/2011	None	4	Field Record
"Battlefield"	SJ635938	29	29/04/2011	Adult Male	Several	Field Record
Battlefield	SJ637935	34	04/05/2009	Adult Male	Present	Auditory Record
Battlefield	SJ637935	34	04/05/2009	Adult Male	1	Auditory Record

Song Thrush (*Turdus philomelos*) (2,3,7,22,35,38)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	30/05/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	12/02/2011	None	3	Field Record
Radley Plantation	SJ6193	3	05/06/2011	None	4	Field Record
	SJ6192	2	11/01/2012	None	3	Field Record
	SJ6192	2	13/12/2012	None	2	Field Record
	SJ6192	2	24/04/2012	None	1	Field Record
Croft, Fields along Smithy Lane	SJ631932	22	28/03/2013	Adult	3	Field Record
	SJ622928	7	29/02/2012	None	2	Field Record
	SJ622928	7	02/04/2012	None	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	1	Field Record
Croft, Wadeson Way	SJ638933	35	24/01/2010	Adult	1	Field Record

Croft, Lady Lane	SJ639933	38	01/07/2014	Adult Male	1	Auditory Record
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Tufted Duck (*Aythya fuligula*) (3,5,7,10,11,18)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Houghton Green Pool	SJ6193	3	17/09/2011	None	32	Field Record
Houghton Green Pool	SJ6193	3	31/08/2011	None	37	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	31	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	36	Field Record
Houghton Green Pool	SJ6193	3	12/02/2011	None	45	Field Record
Houghton Green Pool	SJ6193	3	19/08/2011	None	25	Field Record
Houghton Green Pool	SJ6193	3	29/07/2011	None	32	Field Record
Houghton Green Pool	SJ6193	3	26/07/2011	None	14	Field Record
	SJ622928	7	11/09/2012	None	24	Field Record
	SJ622928	7	10/01/2012	None	28	Field Record
	SJ622928	7	04/02/2012	None	2	Field Record
	SJ622928	7	28/01/2012	None	16	Field Record
	SJ622928	7	14/01/2012	None	21	Field Record
	SJ623926	10	28/03/2013	Adult	4 Approx	Field Record
	SJ623927	11	06/01/2012	None	23	Field Record
Willow / Birch Natural Regeneration, Peel Hall Area - Comp 12	SJ6292	18	28/12/2006	None	10	Field Record
	SJ622928	7	03/03/2012	None	17	Field Record
	SJ622928	7	29/02/2012	None	10	Field Record
	SJ622928	7	18/02/2012	None	31	Field Record
	SJ622928	7	17/03/2012	None	13	Field Record
	SJ622926	5	22/02/2014	Adult Male	1	Field Record
	SJ622926	5	08/02/2011	None	30	Field Record

Teal (*Anas crecca*) (3,7,18)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
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Houghton Green Pool	SJ6193	3	09/09/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	02/02/2011	None	15	Field Record
Houghton Green Pool	SJ6193	3	31/08/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	2	Field Record
	SJ622928	7	04/02/2012	None	3	Field Record
Burtonwood & Winwick - CP	SJ6292	18	19/01/2006	None	65	Field Record
	SJ622928	7	06/02/2012	None	3	Field Record

Redshank (*Tringa totanus*) (2,3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	21/04/2012	None	1	Field Record
Houghton Green Pool	SJ6193	3	20/03/2011	None	1	Field Record
	SJ6192	2	21/09/2012	None	1	Field Record
	SJ622928	7	03/03/2012	None	1	Field Record
	SJ622928	7	11/04/2012	None	2	Field Record
	SJ622928	7	28/03/2013	Adult	2	Field Record
	SJ622928	7	04/04/2012	None	2	Field Record
	SJ622928	7	13/02/2006	None	5	Field Record

Skylark (*Alauda arvensis*) (2,3,4,7,8,9,20,50)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	23/04/2012	None	1	Field Record
Houghton Green Pool	SJ6193	3	20/03/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	1	Field Record
Houghton Green Pool	SJ6193	3	10/09/2011	None	5	Field Record
Arbury	SJ6193	3	05/06/2011	None	1	Field Record
	SJ6192	2	02/04/2012	None	2	Field Record

	SJ6192	2	21/09/2012	None	11	Field Record
	SJ6192	2	26/06/2012	None	6	Field Record
Winwick	SJ6192	2	26/04/2012	None	5	Field Record
Culcheth, Glazebury & Croft - CP, Over field to NE of parish church	SJ641937	50	18/03/2011	Adult	1	Field Record
	SJ623923	8	08/02/2011	None	3	Field Record
	SJ622928	7	26/06/2012	None	4	Field Record
Croft	SJ629939	20	16/03/2015	Adult Male	1	Auditory Record
	SJ6192	2	23/04/2012	None	5	Field Record
Winwick	SJ6192	2	25/04/2012	None	3	Field Record
Over field to S	SJ623925	9	23/03/2011	Adult	1	Field Record
Over field to NE of parish church	SJ641937	50	18/03/2011	Adult	1	Field Record
Warrington	SJ6194	4	27/05/2009	None	Present	Field Record

Oystercatcher (*Haematopus ostralegus*) (3, 6, 7, 11, 12, 45)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	03/03/2012	None	2	Field Record
Houghton Green Pool	SJ6193	3	19/03/2011	None	1	Field Record
Winwick, Houghton Green Pool	SJ6193	3	15/02/2011	None	1	Field Record
Croft, Off Lady Lane	SJ640938	45	15/03/2016	Adult	2	Field Record
	SJ622928	7	20/02/2012	None	1	Field Record
	SJ622928	7	26/06/2012	None	1	Field Record
	SJ622928	7	11/04/2012	None	4	Field Record
	SJ623928	12	17/03/2012	Adult	2	Field Record
	SJ622927	6	04/04/2015	Adult	1	Field Record
	SJ623927	11	28/03/2013	Adult	2	Field Record
	SJ622928	7	11/09/2012	None	1	Field Record
	SJ622928	7	12/04/2012	None	2	Field Record
	SJ622928	7	29/02/2012	None	2	Field Record
	SJ622928	7	25/02/2012	None	1	Field Record
	SJ622928	7	17/03/2012	None	2	Field Record

SJ622928	7	28/03/2012	None	2	Field Record
SJ622928	7	05/03/2012	None	2	Field Record
SJ622928	7	04/04/2012	None	2	Field Record
SJ622928	7	02/04/2012	None	2	Field Record
SJ623927	11	23/03/2011	Adult	1	Field Record
SJ623928	12	22/02/2014	Adult	2	Field Record

Swallow (*Hirundo rustica*) (2,3,7,19,39,41,43,44,48)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	19/05/2012	None	30	Field Record
	SJ622928	7	03/05/2012	None	60	Field Record
	SJ622928	7	02/05/2012	None	20	Field Record
	SJ622928	7	25/04/2012	None	70	Field Record
	SJ622928	7	21/04/2012	None	9	Field Record
Houghton Green Pool	SJ6193	3	27/08/2011	None	7	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	15	Field Record
Houghton Green Pool	SJ6193	3	28/08/2011	None	12	Field Record
Houghton Green Pool	SJ6193	3	08/09/2011	None	Present	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	30	Field Record
Radley Plantation	SJ6193	3	29/08/2011	None	29	Field Record
Houghton Green Pool	SJ6193	3	19/08/2011	None	20	Field Record
Houghton Green Pool	SJ6193	3	09/09/2011	None	12	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	4	Field Record
Houghton Green Pool	SJ6193	3	11/09/2011	None	60	Field Record
Houghton Green Pool	SJ6193	3	13/09/2011	None	11	Field Record
Houghton Green Pool	SJ6193	3	31/08/2011	None	22	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	51	Field Record
	SJ6192	2	21/09/2012	None	145	Field Record
	SJ6192	2	16/08/2012	None	10	Field Record

	SJ6192	2	22/09/2012	None	Present	Field Record
	SJ6192	2	26/06/2012	None	10	Field Record
	SJ6192	2	24/04/2012	None	Present	Field Record
Croft, Lady Lane	SJ639936	39	18/04/2013	Adult	1	Field Record
Croft, Fields by Lady Lane	SJ640941	48	29/04/2013	Adult	Frequent	Field Record
Croft	SJ629929	19	22/04/2012	Adult	1	Field Record
	SJ622928	7	23/04/2012	None	6	Field Record
	SJ622928	7	16/04/2012	None	55	Field Record
	SJ622928	7	12/04/2012	None	3	Field Record
	SJ622928	7	11/09/2012	None	34	Field Record
Croft	SJ639938	41	04/08/2012	Adult	5	Field Record
	SJ6192	2	23/04/2012	None	1	Field Record
Eaves Farm	SJ640933	43	18/09/2011	Adult	1	Field Record
Croft, Lady Lane	SJ640937	44	25/04/2014	Adult	3	Field Record
	SJ629929	19	16/07/2011	Adult	1	Field Record

Reed Bunting (*Emberiza schoeniclus*) (2,3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	09/05/2012	None	2	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	2	Field Record
Arbury	SJ6193	3	05/06/2011	None	3	Field Record
Houghton Green Pool	SJ6193	3	14/09/2011	None	1	Field Record
Winwick	SJ6192	2	25/04/2012	None	1	Field Record
	SJ6192	2	23/04/2012	None	4	Field Record
Winwick	SJ6192	2	27/04/2012	None	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	2	Field Record
	SJ6192	2	26/06/2012	None	4	Field Record
	SJ6192	2	24/04/2012	None	1	Field Record
	SJ622928	7	26/06/2012	None	3	Field Record

Sand Martin (*Riparia riparia*) (3,6,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	19/05/2012	None	18	Field Record

	SJ622928	7	14/05/2012	None	34	Field Record
	SJ622928	7	03/05/2012	None	30	Field Record
	SJ622928	7	02/05/2012	None	18	Field Record
	SJ622928	7	21/04/2012	None	6	Field Record
Houghton Green Pool	SJ6193	3	05/04/2011	None	30	Field Record
Houghton Green Pool	SJ6193	3	07/09/2011	None	5	Field Record
	SJ622928	7	25/04/2012	None	35	Field Record
	SJ622928	7	30/06/2012	Adult	Several	Field Record
	SJ622928	7	12/04/2012	None	8	Field Record
	SJ622928	7	11/04/2012	None	30	Field Record
	SJ622928	7	04/04/2012	None	4	Field Record
	SJ622928	7	15/04/2012	None	4	Field Record
Houghton Green PS, Warrington	SJ622927	6	11/05/2010	None	6+	Field Record

Willow Warbler (*Phylloscopus trochilus*) (2,3,7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	09/05/2012	None	1	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	2	Field Record
Arbury	SJ6193	3	03/08/2011	None	1	Field Record
Winwick	SJ6192	2	26/04/2012	None	1	Field Record
	SJ6192	2	24/04/2012	None	2	Field Record

Swift (*Apus apus*) (2,3,6,7,28)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ622928	7	14/05/2012	None	80	Field Record
	SJ622928	7	02/05/2012	None	50	Field Record
	SJ622928	7	25/04/2012	None	Present	Field Record
Houghton Green Pool	SJ6193	3	30/05/2011	None	141	Field Record
Houghton Green Pool	SJ6193	3	19/08/2011	None	2	Field Record
Houghton Green Pool	SJ6193	3	03/08/2011	None	20	Field Record
Houghton Green Pool	SJ6193	3	31/07/2011	None	64	Field Record

	SJ6192	2	26/06/2012	None	40	Field Record
	SJ622927	6	08/06/2009	Adult	30	Field Record
	SJ622928	7	03/05/2012	None	150	Field Record
	SJ622928	7	19/05/2012	None	95	Field Record
Over Eaves Brow Rd	SJ635933	28	01/06/2011	Adult	3	Field Record

FLOWERING PLANT

Map



Indian Balsam (*Impatiens glandulifera*) (1,2,5)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
At North end under wires	SJ636935	5	03/10/2012	Flowering	Small Patch	Field Record
Culcheth, Glazebury & Croft - CP, M6 slip road embankment	SJ626927	1	29/09/2012	Flowering	Occasional	Field Record
M6 bridge embankment	SJ627927	2	01/08/2009	Flowering	Abundant	Field Record

Large-flowered Hemp-nettle (*Galeopsis speciosa*) (6)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Culcheth, Glazebury & Croft - CP, Battlefied	SJ637935	6	17/08/2013	Flowering	Frequent	Field Record

Montbretia (*Crocsmia pottsii* x *aurea* = *C. x crocosmiiflora*) (7)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Culcheth Linear Park	SJ6494	7	24/01/2009	None	Present	Field Record

Himalayan Cotoneaster (*Cotoneaster simonsii*) (3,4)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ635935	4	19/07/2010	Fruiting	Rare	Field Record
Garden, Wadeson Way	SJ635933	3	13/06/2009	Flowering	Frequent	Field Record

Canadian Goldenrod (*Solidago canadensis*) (4)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ635935	4	19/07/2010	None	Occasional	Field Record
	SJ635935	4	19/07/2010	Flowering	Locally Dominant	Field Record

Heath Dog-violet (*Viola canina*) (5)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ636935	5	26/04/2009	Flowering	Several Clumps	Field Record
	SJ636935	5	26/04/2009	Flowering	Several Clumps	Field Record

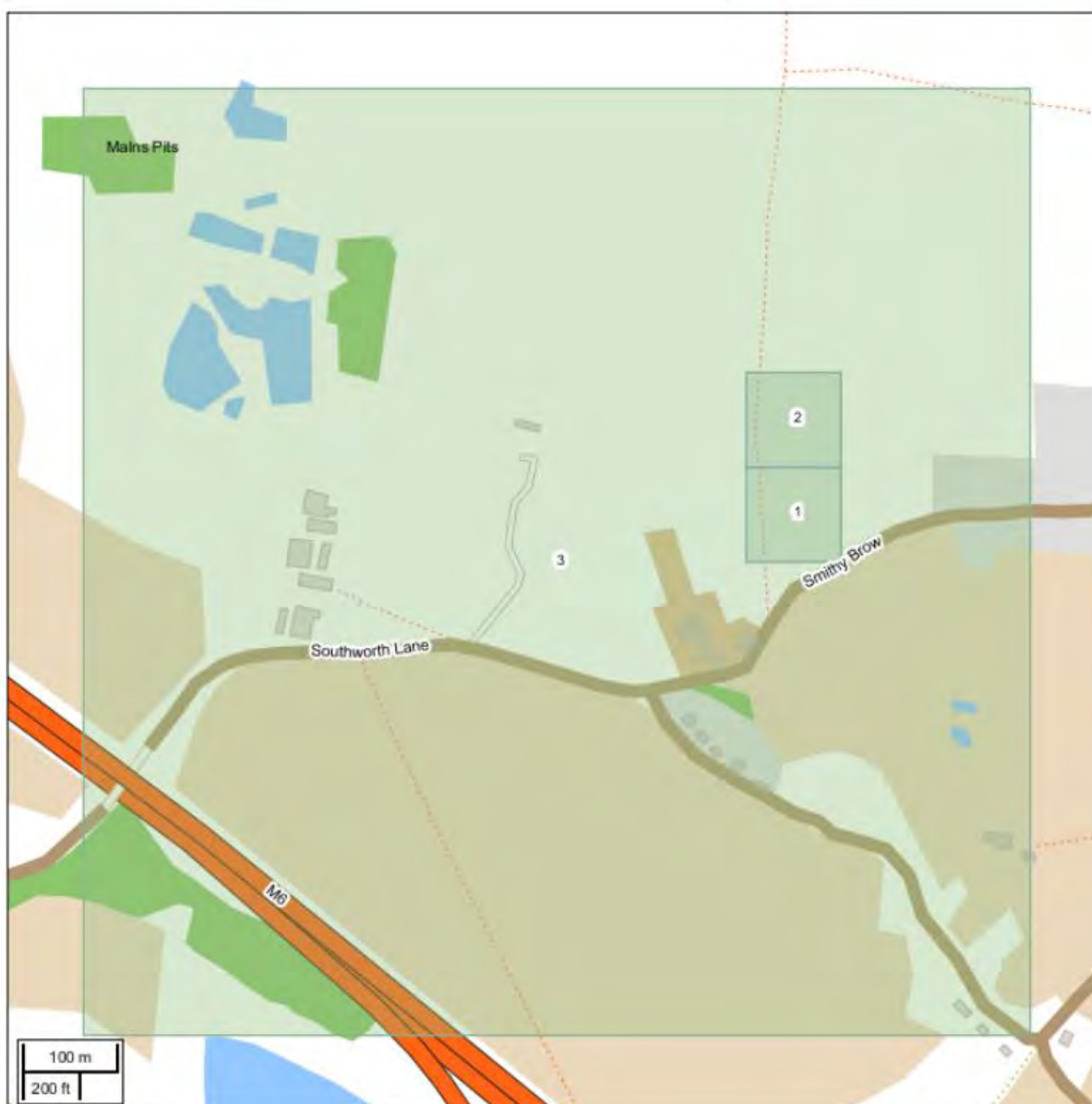
Wall Cotoneaster (*Cotoneaster horizontalis*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Garden, Wadson Way	SJ635933	3	13/06/2009	Flowering	1	Field Record

INSECT - BUTTERFLY

Map



Large Tortoiseshell (*Nymphalis polychloros*) (1,2)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
	SJ6273693589	1	2007	None	Present	Field Record
	SJ6272693669	2	2007	None	Present	Field Record

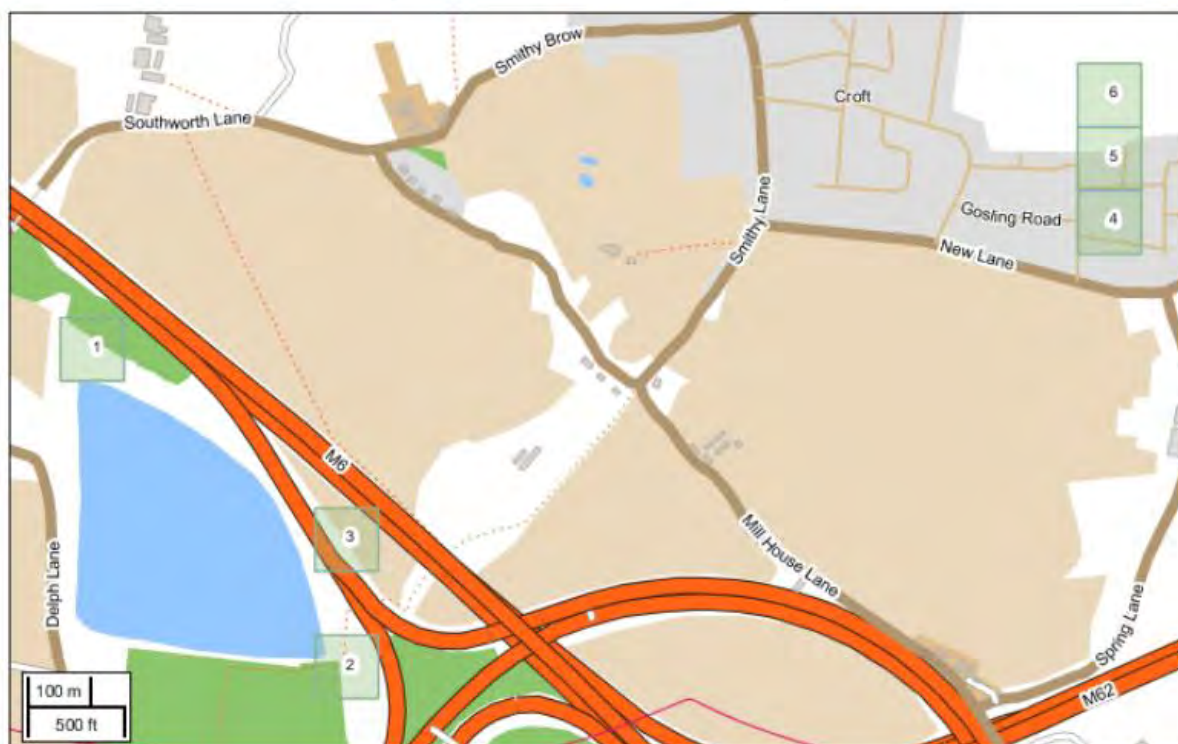
Ringlet (*Aphantopus hyperantus*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Southworth Hall, Croft	SJ6293	3	26/06/2012	None	1	Field Record

INSECT - MOTH

Map



Cinnabar (*Tyria jacobaeae*) (1,2,3,4,6)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Battlefield	SJ637934	6	09/08/2014	Larvae	Present	Field Record
Croft, Garden, Wadeson Way	SJ637932	4	11/06/2015	Adult	1	Field Record
	SJ625927	3	16/07/2011	Larvae	Frequent	Field Record
Edge of Houghton Green Pool	SJ621930	1	03/08/2012	None	Present	Field Record
	SJ625925	2	15/08/2015	Larvae	1	Field Record

Dot Moth (*Melanchra persicariae*) (4,5)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Wadeson Way	SJ637932	4	03/07/2014	Adult	1	Field Record
Croft, Wadeson Way, in house	SJ637933	5	09/07/2011	Adult	1	Field Record

INSECT - TRUE FLY (DIPTERA)

Map



Keroplatus testaceus (Keroplatus testaceus) (1,2)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Wadeson Way	SJ637932	1	18/08/2015	Adult Male	1	Field Record
Croft, Wadeson Way - garden	SJ637933	2	01/09/2012	Adult Male	1	Field Record

REPTILE

Map



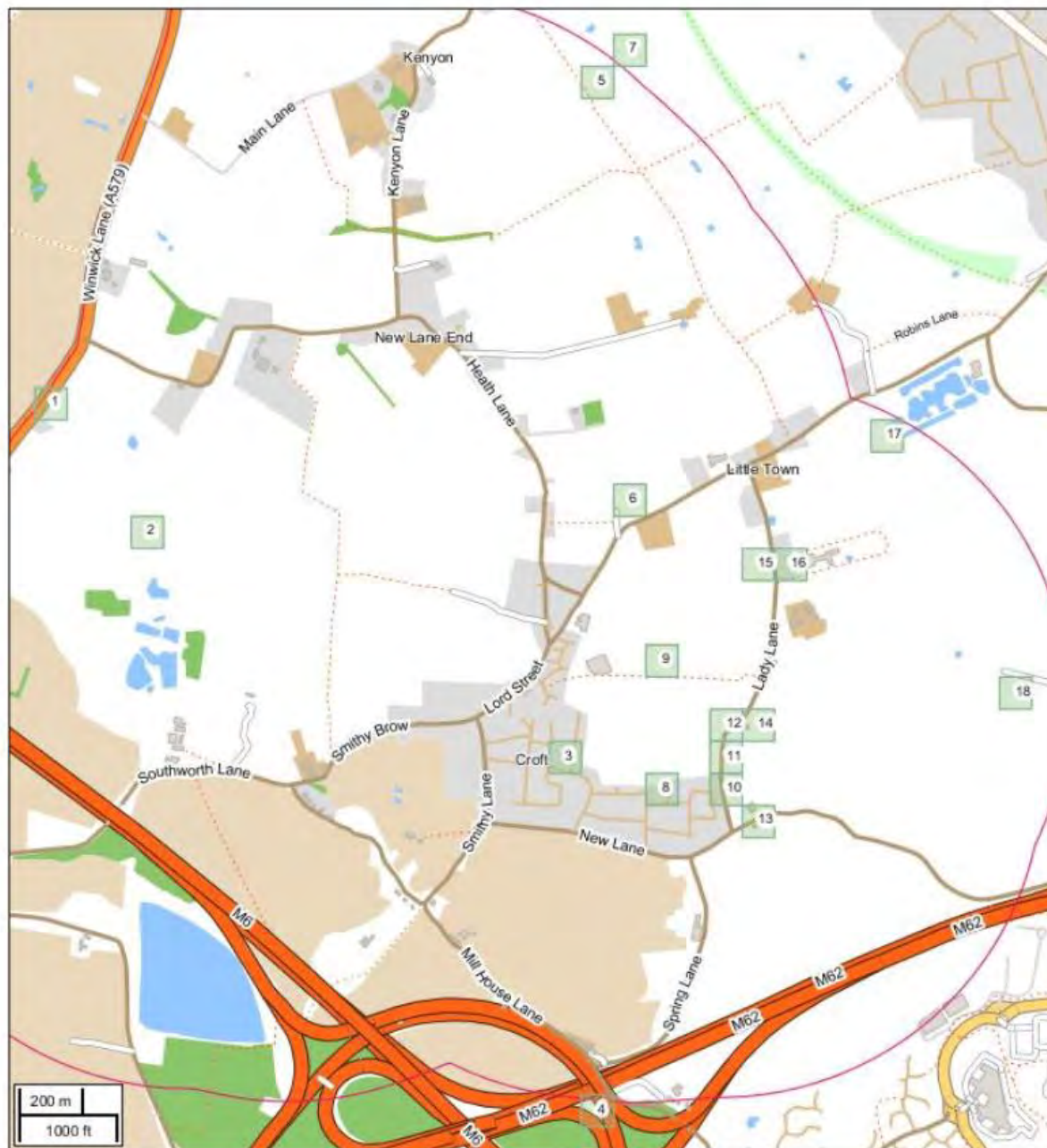
Common Lizard (*Zootoca vivipara*) (1,2)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
M6 Junction 21a	SJ619933	1	14/05/2008-26/09/2008	None	Present	Field Record
M62 j11-12 (westbound)	SJ640930	2	14/05/2008-26/09/2008	None	1	Field Record

TERRESTRIAL MAMMAL

Map



Brown Hare (*Lepus europaeus*) (5,7,9,12,15,18)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Culcheth, Glazebury & Croft - CP, Kenyon	SJ636956	7	15/07/2012	Adult	2	Field Record
Culcheth, Glazebury & Croft - CP	SJ6351895532	5	2007	None	1	Field Record
Croft, Risley	SJ648936	18	09/03/2006	Adult	1	Field Record
Culcheth, Glazebury & Croft - CP, Field opposite Croft Church	SJ639935	12	08/04/2011	Adult	1	Field Record
Croft, Lady Lane	SJ640940	15	01/07/2014	Juvenile	6	Field Record
	SJ637937	9	29/03/2009	Adult	1	Field Record

Eurasian Badger (*Meles meles*) (1,2,4)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Culcheth, Glazebury & Croft - CP, Off A579 (In hedge line that borders the Quarry)	SJ621941	2	10/04/2013	None	Present	Badger Sett (Active)
A579	SJ61829455	1	10/06/2015	None	1	Dead On Road
slip road off M62 east to M6 South at Junction 10	SJ63549238	4	30/04/2015	None	1	Dead On Road

European Water Vole (*Arvicola amphibius*) (17)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Partridge Lakes	SJ644944	17	22/09/2008	None	Present	Field Record
Partridge Lakes	SJ644944	17	21/09/2009	None	Present	Burrow, Nesthole

Eastern Grey Squirrel (*Sciurus carolinensis*) (6)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Mustard Lane	SJ636942	6	03/12/2013	Adult	1	Dead On Road

Pipistrelle (*Pipistrellus pipistrellus*) (3)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
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5 betsyfield drive croft	SJ63479343	3	14/06/2011	None	1	Aural Bat Detector
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West European Hedgehog (*Erinaceus europaeus*) (8, 10, 11, 13, 14, 16)

RECORD

Location	Grid ref.	Grid ID	Date	Sex/Stage	Abundance	Record type
Croft, Lady Lane, by steps	SJ639934	11	04/08/2012	Adult	1	Dead On Road
Croft, Near HMS Gosling	SJ641940	16	04/08/2012	Juvenile	1	Dead On Road
Croft, Lady Lane	SJ639933	10	17/02/2012	Dead Adult	1	Field Record
Culcheth, Glazebury & Croft - CP, Wadeson Way, Garden	SJ637933	8	23/09/2011	Juvenile Dead	1	Field Record
Croft, Near Croft church	SJ640935	14	18/07/2009	Adult	1	Dead On Road
Croft	SJ640932	13	06/04/2014	Adult	1	Dead On Road

APPENDIX C: Target Notes

Target Note 5

Tall ruderal area that lays in the corner of an arable field

<i>Phalaris arundinacea</i>	Reed Canary-grass	D
<i>Agrostis capillaris</i>	Common Bent	A
<i>Cirsium arvense</i>	Creeping Thistle	A
<i>Juncus effusus</i>	Soft Rush	A
<i>Lolium perenne</i>	Perennial Ryegrass	A
<i>Persicaria bistorta</i>	Bistort	A
<i>Rumex obtusifolius</i>	Broad-leaved Dock	A
<i>Urtica dioica</i>	Nettle	A
<i>Chamerion angustifolium</i>	Rosebay Willowherb	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Senecio jacobaea</i>	Common Ragwort	F
<i>Digitalis purpurea</i>	Foxglove	O
<i>Galium aparine</i>	Cleavers	O
<i>Geranium robertianum</i>	Herb-Robert	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	O
<i>Sonchus asper</i>	Prickly Sow-thistle	O
<i>Carex</i> sp.	Sedge species	R
<i>Corylus avellana</i>	Hazel	R
<i>Dryopteris filix-mas</i>	Male-fern	R
<i>Eupatorium cannabinum</i>	Hemp-agrimony	R
<i>Hypochaeris radicata</i>	Common Cat's-ear	R
<i>Leucanthemum vulgare</i>	Oxeye daisy	R
<i>Quercus robur</i>	English Oak	R
<i>Trifolium pratense</i>	Red Clover	R

Target Note 6

Improved grassland surrounded by hedgerows and trees

<i>Lolium perenne</i>	Perennial Ryegrass	D
<i>Persicaria bistorta</i>	Bistort	O
<i>Senecio jacobaea</i>	Common Ragwort	R
<i>Trifolium repens</i>	White Clover	R

Target Note 7

Field Boundary - Woodland above grain and tall ruderal vegetation.

<i>Quercus robur</i>	English Oak	D
<i>Calystegia</i> sp.	Bindweed species	A
<i>Crataegus monogyna</i>	Hawthorn	A
<i>Rubus fruticosus</i> agg.	Bramble	A
<i>Urtica dioica</i>	Nettle	A
<i>Chamerion angustifolium</i>	Rosebay Willowherb	F
<i>Epilobium</i> sp.	Willowherb species	F
<i>Fraxinus excelsior</i>	Ash	F
<i>Juncus effusus</i>	Soft Rush	F
<i>Phleum pratense</i>	Timothy	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Corylus avellana</i>	Hazel	O
<i>Digitalis purpurea</i>	Foxglove	O
<i>Galium aparine</i>	Cleavers	O
<i>Geranium robertianum</i>	Herb-Robert	O
<i>Hedera helix</i>	Ivy	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Ilex aquifolium</i>	Holly	O
<i>Lythrum salicaria</i>	Purple Loosestrife	O
<i>Rosa arvensis</i>	Field Rose	O
<i>Sambucus nigra</i>	Elder	O

<i>Senecio jacobaea</i>	Common Ragwort	O
<i>Sonchus asper</i>	Prickly Sow-thistle	O
<i>Symphoricarpos albus</i>	Snowberry	O
<i>Anemone nemorosa</i>	Wood Anemone	R
<i>Buddleja davidii</i>	Buddleia	R
<i>Cotoneaster sp.</i>	Cotoneaster species	R
<i>Crocsmia x crocosmiiflora</i>	Montbretia	R
<i>Iris pseudacorus</i>	Yellow Flag Iris	R
<i>Lonicera nitida</i>	Wilson's Honeysuckle	R
<i>Lonicera periclymenum</i>	Honeysuckle	R
<i>Pilosella aurantiacum</i>	Orange Hawkweed	R
<i>Plantago lanceolata</i>	Ribwort Plantain	R
<i>Prunus laurocerasus</i>	Cherry Laurel	R
<i>Silene dioica</i>	Red Campion	R
<i>Vinca minor</i>	Lesser Periwinkle	R

Target Note 8

Species poor intact hedgerow. Running at boundary of fields and residential properties. Less than 5m high

<i>Crataegus monogyna</i>	Hawthorn	D
<i>Rubus fruticosus agg.</i>	Bramble	F
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Calystegia sp.</i>	Bindweed species	O
<i>Ilex aquifolium</i>	Holly	O
<i>Fraxinus excelsior</i>	Ash	R

Target Note 9

Hardstanding with ephemeral vegetaion. In the corner of improved grassland fields.

<i>Dactylis glomerata</i>	Cock's-foot	D
<i>Rubus fruticosus agg.</i>	Bramble	F
<i>Digitalis purpurea</i>	Foxglove	O
<i>Epilobium sp.</i>	Willowherb species	O
<i>Taraxacum officinale agg.</i>	Dandelion	O
<i>Agrostis capillaris</i>	Common Bent	R
<i>Cirsium arvense</i>	Creeping Thistle	R
<i>Heracleum sphondylium</i>	Hogweed	R
<i>Rosa arvensis</i>	Field Rose	R
<i>Senecio jacobaea</i>	Common Ragwort	R

Target Note 10

Hedgerow and trees. Forms the boundary to site towards residential properties and the roadside.

<i>Quercus robur</i>	English Oak	D
<i>Rubus fruticosus agg.</i>	Bramble	F
<i>Corylus avellana</i>	Hazel	O
<i>Crataegus monogyna</i>	Hawthorn	O

Target Note 11

Species poor intact hedgerow with scattered trees. Under 5m high

<i>Crataegus monogyna</i>	Hawthorn	D
<i>Galium aparine</i>	Cleavers	F
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Ilex aquifolium</i>	Holly	O
<i>Prunus spinosa</i>	Blackthorn	O
<i>Quercus robur</i>	English Oak	O
<i>Rubus fruticosus agg.</i>	Bramble	O
<i>Sambucus nigra</i>	Elder	O
<i>Carex pendula</i>	Pendulous Sedge	R
<i>Solanum dulcamara</i>	Bittersweet	R

Target Note 12

Intact Hedgerow. Running alongside residential properties at the boundary edge of site. Less than 2m high

<i>Ligustrum ovalifolium</i>	Garden Privet	D
------------------------------	---------------	---

Prunus laurocerasus

Cherry Laurel

D

Target Note 13

Small area of marshy grassland within the improved grassland

Phalaris arundinacea

Reed Canary-grass

D

Juncus effusus

Soft Rush

A

Lolium perenne

Perennial Ryegrass

A

Ranunculus repens

Creeping Buttercup

A

Rumex obtusifolius

Broad-leaved Dock

F

Phleum pratense

Timothy

O

Epilobium sp.

Willowherb species

R

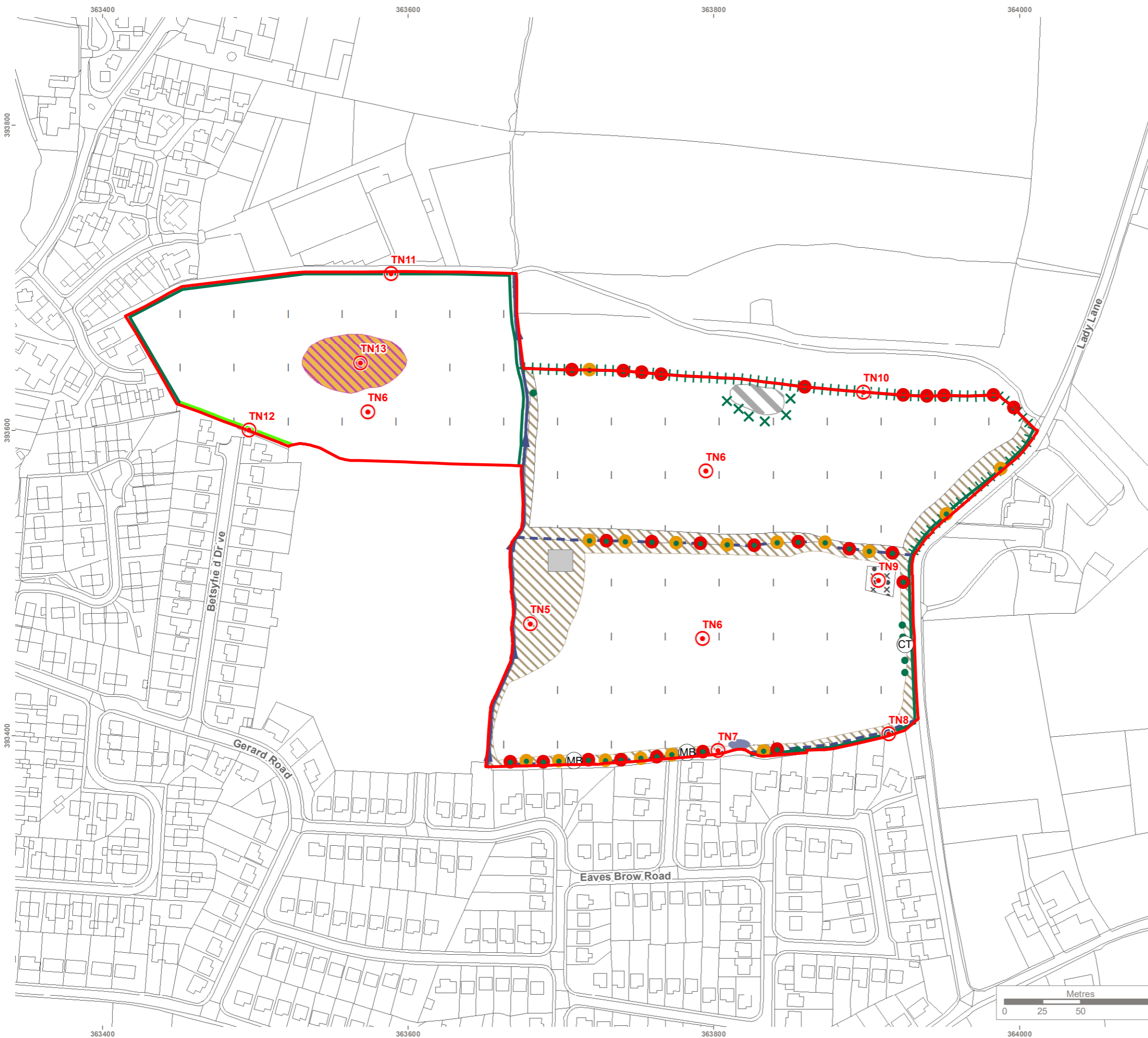
Persicaria bistorta

Bistort

R

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

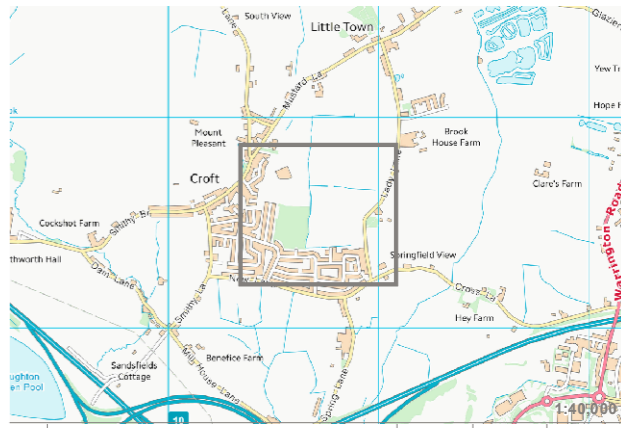
DRAWINGS



Key

- Site Boundary
- Target Note
- CT Cotoneaster
- MB Montbretia
- X Scattered Scrub
- Scattered Broad-leaved Trees
- Broad-leaved Tree with Moderate Bat Potential
- Broad-leaved Tree with High Bat Potential
- ▶ Running Water
- Species-poor Intact Hedge
- Species-poor Intact Hedge and Dry Ditch
- Conifer Hedge
- Species-poor Hedge and Trees
- Dry Ditch
- Improved Grassland
- Marsh/Marshy Grassland
- Tall Ruderal
- Standing Water
- Dry Pond
- Bare Ground/Ephemeral Mix
- Hardstanding

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 Base mapping provided by client



A	Amended Red Line	IH	JC	05/19
Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

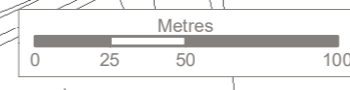
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Project
Peel Sites, Warrington - Land at Lady Lane

Title
Phase 1 Habitat Survey

Drawing Number
G6929.01.008

Drawn	Checked	Approved	Scale	Date
JS	AP	AP	1:2,500 @ A3	17/05/2019





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Heritage Appraisal

Warrington Local Plan – Land at Lady Lane, Croft

June 2018 (Updated May 2019)

Introduction

1. This Heritage Appraisal has been prepared in connection with Land at Lady Lane, Croft (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 (2019) and provides a review of the proposed masterplans in light of the key heritage considerations originally identified.

The Appraisal Site

3. This Appraisal Site is located along Lady Lane, to the north east of the settlement of Croft. The site itself consists of a large wooded area to the south west and to the north west is an open agricultural field (adjacent to a large modern agricultural building and modern housing). To the north east and south east of the site are three open fields divided by mature hedgerows and trees. To the east is the grade II listed Christ Church.
4. Historically, the Appraisal Site and the surrounding area consisted of open agricultural fields between the outskirts of Croft and Christ Church. This arrangement is illustrated on the 1847 Ordnance Survey Map and shows a clear separation between Croft to the west and Lady Lane to the east. By the late 19th century, a footpath is illustrated to the north of the site which shows a connection from the village to the church. This layout and extent of development remains largely the same until the mid-20th century.
5. The land to the south of the Appraisal Site was redeveloped during World War II with various associated buildings, together with other sites in the surrounding area (such as RAF Croft). During the mid to late 20th century, the former WW2 site and the adjoining land to the west were redeveloped with housing, integrating them within the settlement of Croft. This considerably expanded the size of the settlement by the late 20th century. 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

6. The NPPF (2019) 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.

7. The setting of a heritage asset is defined by the NPPF (2019) 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 assets, may affect the ability to appreciate that significance or may be neutral”².

8. 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 then 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
Christ Church	Grade II listed	To the eastern boundary of the site

Christ Church (Grade II Listed)

Special Architectural and Historic Interest

9. Christ Church dates to the early to mid 19th century (c.1833) and was designed by the architect Edward Blore.³ It was built as a commissioner’s church. The building is constructed from red sandstone with a slate roof. Its plan consists of a five bay nave with a short chancel and a south west steeple. The tower to the steeple is square with angled buttresses and lancet windows. The steeple consists of a hexagonal drum with louvred lucarnes, above which is a spire. It is described by Pevsner as a ‘stumpy steeple of wholly incorrect but quite enterprising design’.⁴ The interior of the building contains numerous features of interest including oak choir stalls, an organ and oak pulpit, marble war memorials and a queen post truss timber roof.⁵

Contribution made by Setting to Significance

Physical Surroundings

10. As set out earlier, Christ Church was constructed on the outskirts of Croft presumably to serve the burgeoning area (including Croft itself and surrounding farmsteads). It was originally surrounded by agricultural fields and accessed by a footpath to the north of the site. With the exception of development to the south west, the original setting of the church largely remains. As found today, the plot of the church is well defined to its west by its surrounding graveyard and low lying stone wall surmounted by cast iron railing lined with mature trees. The eastern boundary is less defined with a more open character, including a modern graveyard and fencing.

Experience of the Asset

11. The church is primarily experienced in its immediate grounds (from the south and south west) where its architectural detailing and plan form can be best appreciated. It is also here that the

¹ MHCLG (2019) National Planning Policy Framework (NPPF) – Annex 2: Glossary

² MHCLG (2019) National Planning Policy Framework (NPPF) – Annex 2: Glossary

³ Historic England (1966) List Entry Description for Christ Church

⁴ Pollard, R & Pevsner, N (2006) Pevsner Architectural Guides: Lancashire: Liverpool and the South West

⁵ Historic England (1966) List Entry Description for Christ Church

neighbouring rectory building is experienced, allowing for its historic and functional relationship to remain legible. Much of the surrounding area is largely screened and/or filtered by the existing mature trees.

12. From within the grounds, to the west of the church, are glimpsed views of the surrounding open fields which reinforce its rural and agricultural context. Its position outside the settlement of Croft is appreciable from this point. There are instances of established residential development in distant views but this is limited to the west. There are views out towards open land to the north and east of the listed building but due to the topography of the land, these views are limited.
13. The spire of the church is also appreciable from the surrounding area, including from within Croft along Sandy Lane and Mustard Lane to the north west.

Associative Attributes

14. Christ Church holds an associative relationship with the nearby settlement of Croft, being purpose built to serve its community. It also holds a minor association with the existing footpath to the north of the site which connects the church with the village.

Contribution made by the Appraisal Site

15. As set out earlier, the north eastern part of the Appraisal Site forms part of the agricultural setting of the listed building which allows for an understanding of its rural context. Overall, the Appraisal Site is considered to contribute, to a degree, to the significance of Christ Church, however this contribution is principally attributed to the land in the north eastern part of the site.

Overview of Legislation, Key National Planning Policy Considerations and Guidance

Statutory Duty (1990 Act)

16. 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.”

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

The National Planning Policy Framework, revised 2019

18. Conservation areas are 'designated heritage assets' within the meaning of the NPPF. Paragraph 185 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.

19. Paragraph 190 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.'

20. Paragraph 192 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.

21. Paragraph 193 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 194 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.

22. In the event that harm is perceived to arise from proposals, the NPPF provides a policy framework at paragraphs 195 and 196 within which such harm can then be weighed against public benefits (196) or substantial public benefits (195) bearing in mind the considerable importance and weight that should be attached to the statutory duty of the Act.

23. Paragraph 197 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.

24. Paragraph 200 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.

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

25. 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

26. The redevelopment of the Appraisal Site could result in partial removal of the agricultural landscape neighbouring the grade II listed Christ Church. The development would however be seen in the context of already established residential development which is visible in long-distance views from the church. It does not comprise all of the surrounding open land and the open land to the north, east and south of the listed building would remain open.
27. Given the above, it is likely that the redevelopment of the site could affect the significance of the listed building. In accordance with Historic England guidance, we would recommend that any effect is minimised and/or reduced where possible. We would therefore recommend that the following measures are considered:
- Open space could be retained to the west and north west of Lady Lane, opposite the church. This would ensure that a degree of verdant and open character is maintained and would reduce the visual impact upon views of the listed building.
 - The land to the north west of the site (adjacent to the modern agricultural building) is less sensitive due to its position, the topography of the land, the extent of intervening vegetation, and may be less sensitive to development. The land to the south east is relatively well enclosed by existing vegetation and is also less visible from those key aspects of setting which contribute to the significance of the listed building. This area is also less sensitive to development, subject to the retention of the mature hedgerows and trees along Lady Lane to the north.
 - There are views of the listed building from the north looking south along Lady Lane, where the church is experienced within a relatively rural context. Strengthening of the northern boundary with additional planting would assist in screening any built development in these views and could maintain the rural character of the listed building in these views.
 - A strong masterplan and landscaping strategy should be progressed and designed with an understanding of the significance of the designated assets. A rural and traditional character and context should be maintained. As aforementioned, landscaping can be used to screen views of new development from the church
28. The Masterplan (dated May 2019) has been informed by the key heritage considerations identified in this Heritage Appraisal. Based on an understanding of the significance and setting of the grade II listed Christ Church, any effect has been minimised in the masterplan by the creation of open space to its west and additional planting to the northern boundary of the site. Any residual effects would need to be assessed against Paragraph 196 of the NPPF, bearing in mind the considerable importance and weight to be applied to the statutory duty of the 1990 Act.



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LAND AT LADY LANE



FLOOD RISK AND UTILITIES APPRAISAL

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C1283/INM/DOR/EAJ/2017/115



Report Title:

Land at Lady Lane, Croft
Flood Risk and Utilities Appraisal

Client:

Peel Investments (North) Ltd

Report Status:

Version Rev V5

Date of First Issue:

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Prepared by:



Natalia Marsden BA (Hons)

Checked & Approved:

Dean O'Reilly BSc (Hons)

Version	Date	Initials	Comments
V1	15.09.2017	NM	Updated to reflect amended site masterplan
V2	28.09.2017	NM	Updated to reflect amended site masterplan
V3	04.07.2018	DOR	Updated masterplan
V4	16.05.2019	DOR	Updated Site Location
V5	11.06.2019	NCM	Minor amendments



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 [REDACTED] concerning the legal significance of its [REDACTED] information presented and conclusions drawn [REDACTED] liability 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.

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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 Lady Lane in Croft, Warrington. For the forthcoming representations to the Warrington Local Plan.

SITE LOCATION

I.2. The proposed site is located in the village of Croft in Warrington. The site is approximately 10.35 ha in total and consists of a mix of agricultural fields and woodland.

- Nearest
- OS Co
- OS Gr



Figure I.1 Site Location (Google Maps)

TOPOGRAPHY

- I.3. Based on the Ordnance Survey maps, the site ranges in level between 23-30m AOD. The site appears to fall in level from the northeast (Lady Lane) to the southwest (Gerard Rd).



Figure I.2 Site Plan (OS Map)

PRELIMINARY PROPOSALS

- I.4. The client's conceptual masterplan is shown in **Figure I.3** between 200 and 240 dwellings with associated landscaping/greenspaces.
- I.5. A full-sized plan of the below masterplan is included in **Appendix A**.



Figure I.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 provide initial information on any flood zoning onsite. These maps indicate that the site is located within 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). As the site is located in Flood Zone 1 and is not considered at risk of flooding, the EA do not hold any further modelling data.

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	[REDACTED]				✓

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 works which are not required during times of flood. • Sewage treatment works.

Table 2.2 Development Types (Abstract)

2.4. The conceptual masterplan indicates that all residential developments (i.e. more vulnerable development) will be located within low probability areas (Flood Zone 1). Therefore, the client's preliminary proposals meet the requirements of the NPPF at this stage.

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 B** of this report.

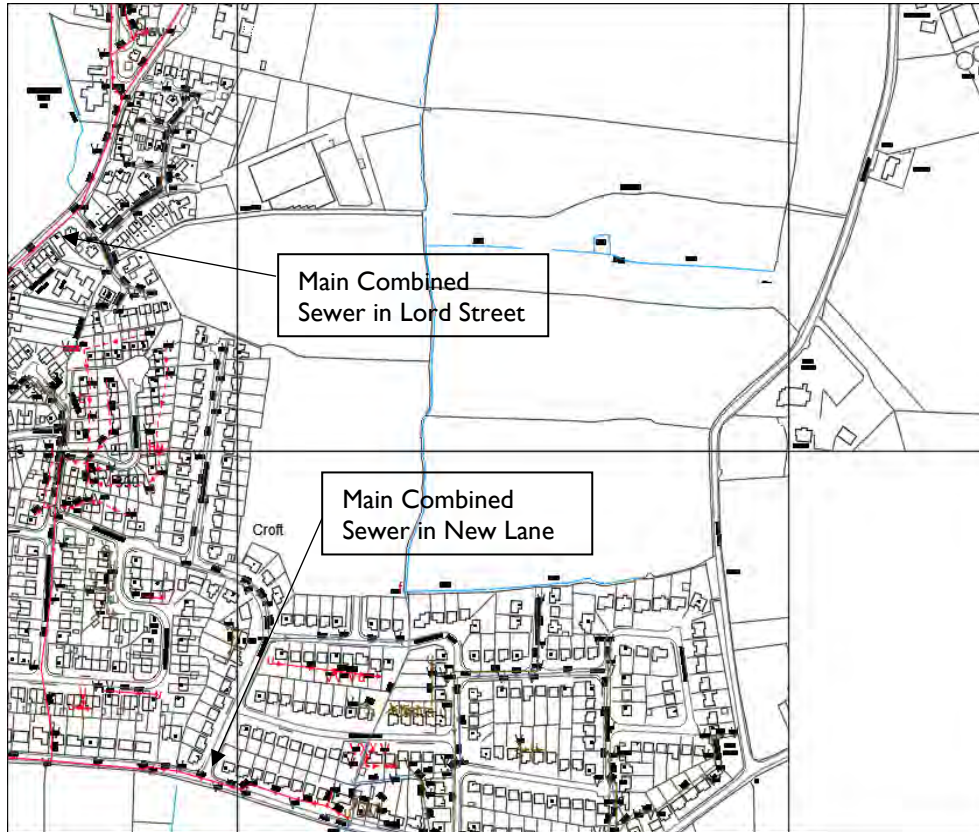


Figure 3.1 Sewer Infrastructure (UU)

Surface Water Sewers

3.2. According to United Utilities records there are no surface water sewers onsite. However, there are sewers in the vicinity which serve the adjacent residential developments. The sewers appear to discharge runoff into the nearby waterbodies either directly or via other means i.e. culverts.

Foul Water Sewers

3.3. According to United Utilities records there are no foul water sewers onsite. There are however sewers in the vicinity which serve the adjacent residential developments. The foul networks discharge effluent into the main combined sewer within Smithy Lane.

Combined Water Sewers

- 3.4. There are no combined water sewers onsite but records indicate that effluent from the adjacent residential developments eventually discharges to the 375mm combined sewer within Smithy Lane to the west of the site.
- 3.5. The nearest combined water sewers to the site is the 225mm sewer within New Lane (south of the site) and the 300/375mm sewer within Lord Street (west of the site).

PRIVATE DRAINAGE

- 3.6. There is no known private drainage onsite.

PRELIMINARY DEVELOPMENT DRAINAGE

Surface Water Drainage

- 3.7. Based on the [REDACTED] it should be possible to discharge any runoff from the development into the onsite waterbodies. This destination is in accordance with the runoff destination hierarchy as set out in Paragraph 080 of the Flood Risk and Coastal Change Guidance document.
- 3.8. Note that any surface water runoff rates must be agreed by the Lead Local Flood Authority.

Foul Water Drainage

- 3.9. Foul effluent generated by the development should be able to connect into the nearby combined water sewers. Note that a third-party agreement might be required to reach these combined water sewers.
- 3.10. 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. Not applicable.

SECTION 4 UTILITIES INFRASTRUCTURE

ELECTRICITY

- 4.1. The electricity in the area is supplied by Scottish Power Manweb (SP Manweb). These records identify a high voltage (11kV) overhead power supply crossing the site from within Eaves Brow Road to the south of the site. There are also a number of LV supplies in the vicinity which serve the existing residential areas to the south and west, and also within Lady Lane along the eastern boundary.
- 4.2. The need for any offsite reinforcement to meet the power demands of the development is unknown. Discussions with SP Manweb should be undertaken as soon as practically possible.

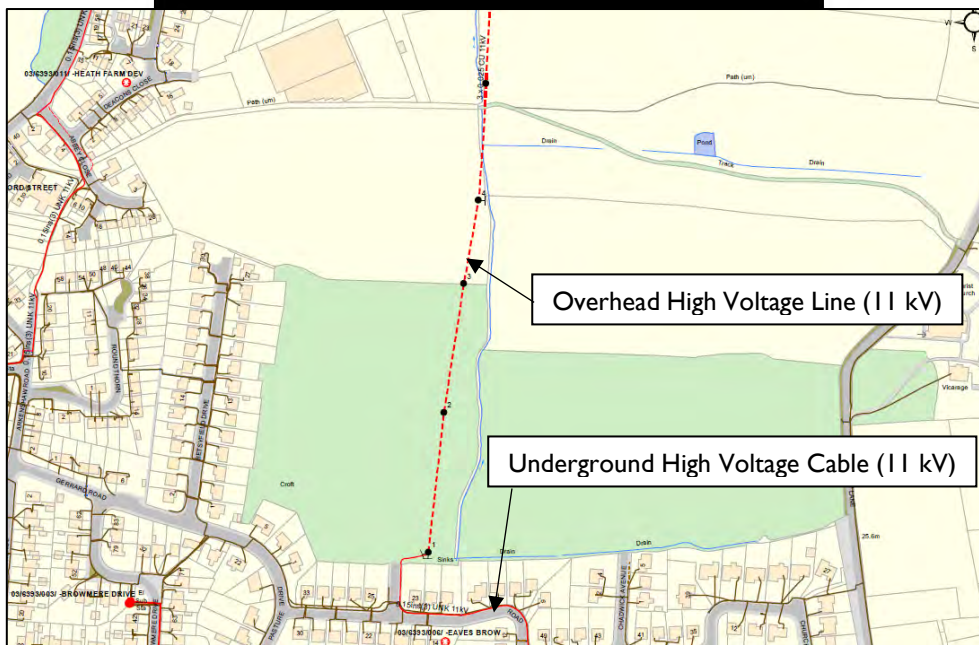


Figure 4.1 Electricity Infrastructure (SP Manweb)

- 4.3. A copy of SP Manweb’s asset records has been included in **Appendix C**.

TELECOMMUNICATION

- 4.4. Openreach records show a number of assets in the vicinity of the site which serve the existing dwellings. A supply from the existing infrastructure might be possible but there may not be sufficient capacity. Discussions with Openreach should be undertaken as soon as practically possible.
- 4.5. A copy of Openreach records has been included within **Appendix D**.

MAINS WATER

- 4.6. United Utilities records indicate 3” to 4” water main within the adjacent highways that could potentially be connected to. The need for offsite reinforcement to meet the water supply demands of the development is however unknown. Discussions with UU should be undertaken as soon as practically possible.
- 4.7. A copy of United Utilities records has been included within **Appendix B**.

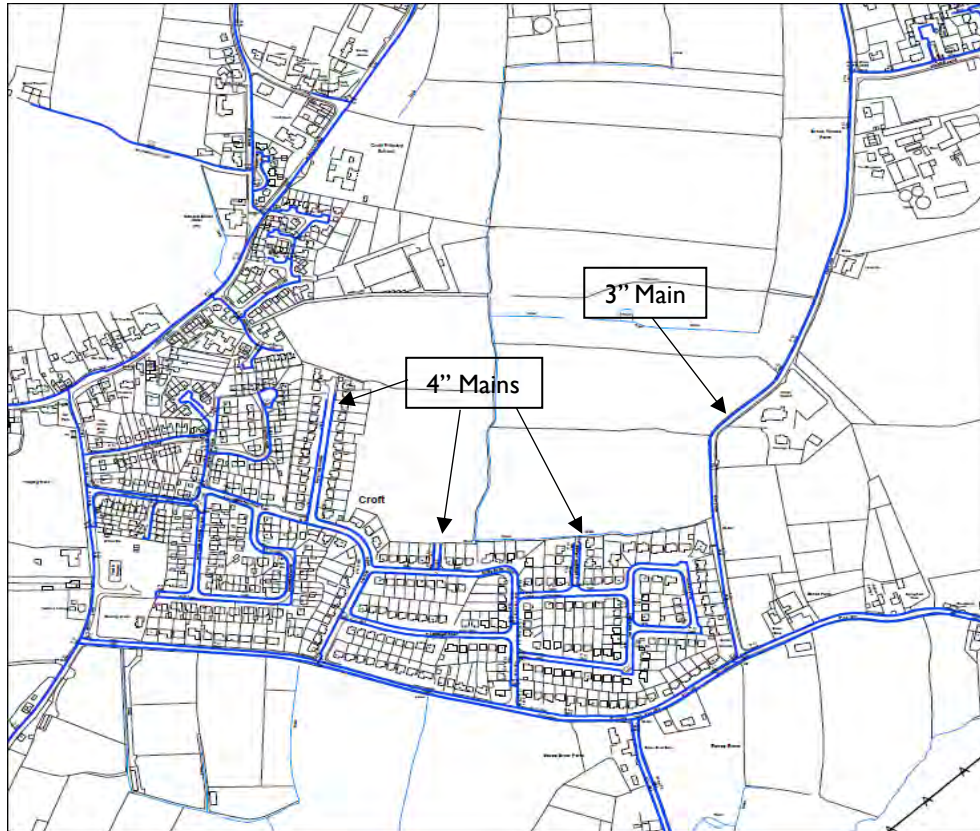


Figure 4.2 Water Infrastructure (UU)

GAS

- 4.8. Cadent/National Grid records do not show any assets onsite, however there are a number of LP gas mains serving the adjacent residential areas. Due to the scale/quality of the records any further information such as size, depth etc. is obscured.
- 4.9. 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.
- 4.10. A copy of Cadent/National Grid records has been included within **Appendix E**.



SECTION 5 HEALTH AND SAFETY EXECUTIVE CHECK

- 5.1. A preliminary consultation with the Health and Safety Executive indicated that there are no major hazard sites or major accident hazard pipeline in the area.
- 5.2. A copy of the HSE response has been included within **Appendix F**.



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) The proposed development is located within Flood Zone I (low probability of fluvial flooding). In accordance with the Flood Risk and Coastal Change Guidance, the preliminary proposals are acceptable in this zone.
- b) The proposed surface water runoff generated by the proposals should discharge to one or more [REDACTED] agreed with the Lead Local Flood [REDACTED]
- c) The proposed [REDACTED] utilities combined water sewers in Lord Street and New Lane. Flow rates and any offsite/onsite upgrade works if required are to be agreed with United Utilities.
- d) Consultation with Scottish Power Manweb is required to establish the proposed electricity route(s) to the site.
- e) The existing Openreach infrastructure that surrounds the site may be able to cater for the site proposals. We would recommend early consultation with Openreach to discuss the proposals.
- f) Consultation with United Utilities is required to establish the proposed mains water route(s) to the site.
- g) Consultation with Cadent is required to establish the future proposed gas main route(s) to the site.
- h) Preliminary discussions with the Health and Safety Executive indicated no major hazard sites or major accident hazard pipeline within the vicinity of the site.



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www.shepherd-gilmour.co.uk

APPENDIX A

















PRoW Croft 1

Area Measures:
 Total site area: 10.35 ha
 Infrastructure: 0.7 ha
 Green infrastructure: 3.15 ha
 Total developable area : 6.50 ha

This site could deliver between 195 (@30 per ha) and 228 (@35 per ha) units.

KEY:

-  Site boundary
-  Exis ootpath
-  Proposed footpath
-  Exis
-  Exis egeta e
-  Proposed SUDS feature
-  Proposed tree plan
-  Green infrastructure
-  Proposed development area
-  Proposed vehicular access points
-  Poten ehicular access points
-  Proposed primary road
-  Proposed secondary road
-  Proposed LEAP

NB: Masterplan subject to change following detailed survey work



Conceptual Masterplan

Drwg No: 630DA-11	Date: 12.09.17
Drawn by: AH	Checker: SR
Rev by: AH	Rev checker: SR
QM Status: Checked	Product Status: Con review
Scale: 1: 5000 @ A3	



Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX B



**Shepherd Gilmour Infrastructure
SGi Consulting Colchester House
40 Peter Street**

**Manchester
M2 5GP**

FAO: 

Dear Sirs

Location: Land at Lady Lane Croft Warrington WA3 7JU

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.

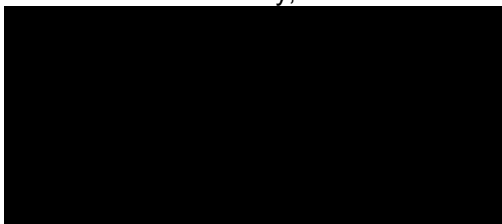
If you are planning works anywhere in the North West, please read our access statement before you start work to check how it will affect our network.

<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,



Property Searches Manager

United Utilities Water Limited

Property Searches
Ground Floor Grasmere House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

Telephone 0370 751 0101

Property.searches@uuplc.co.uk

Your Ref: LADY LANE CROFT
Our Ref: 1316703
Date: 10/8/2017

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.

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.

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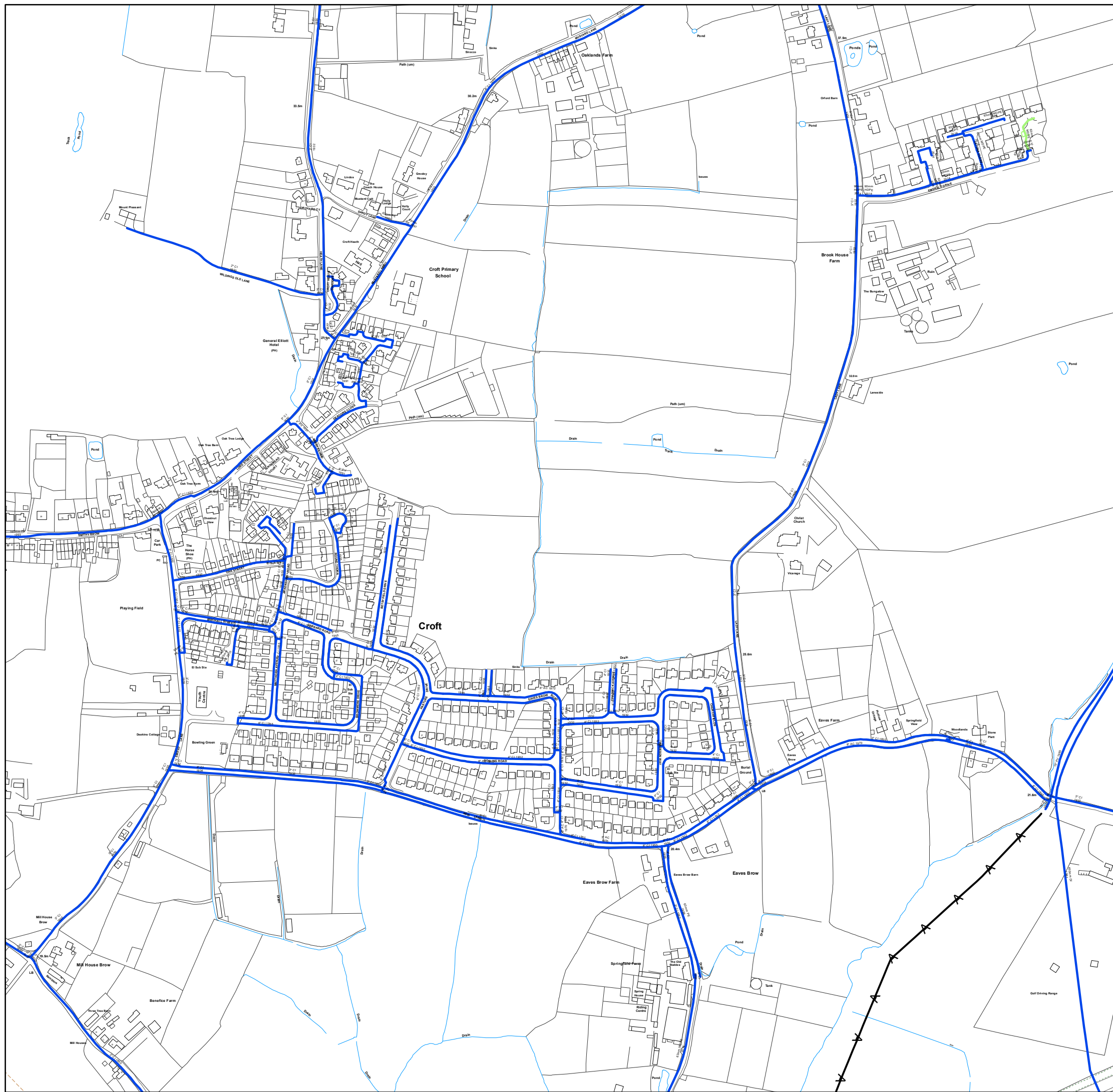
United Utilities Water Limited 2014

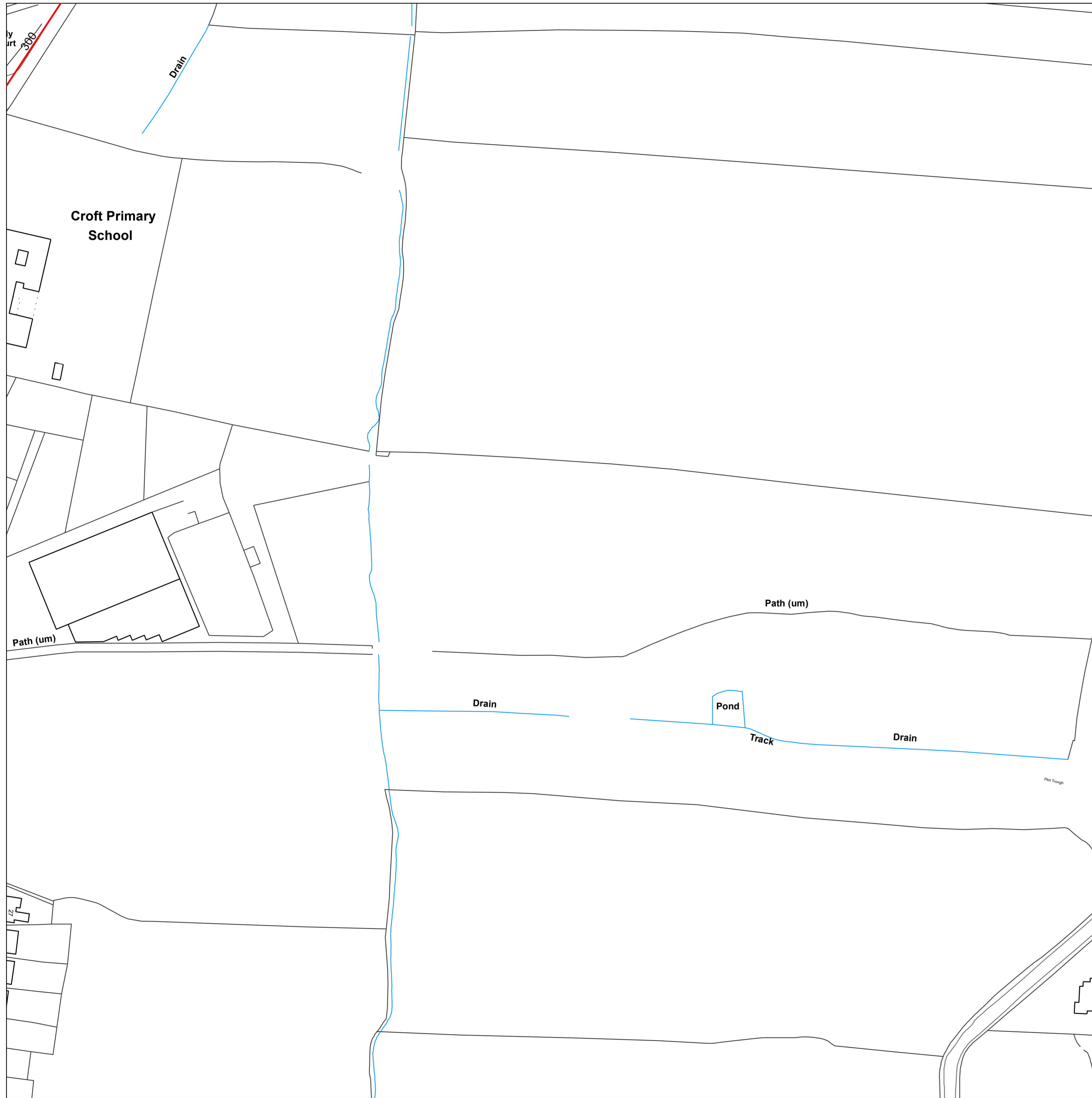
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Land at Lady Lane
Croft
Warrington
WA3 7JU

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

DO NOT SCALE
Approximate Scale: 1:5000





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

WASTE WATER SYMBOLOGY

Foul	Surface	Combined	Overflow	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	Function	Material
			WW Site Termination	Sludge Main, Public
			Air Valve	Sludge Main, Private
			Cascade	Sludge Main, S104
			Non Return Valve	
			Extent of Survey	
			Flow Meter	
			Gully	
			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	Control Kiosk
			Discharge Point	Unspecified
			Outfall	

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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OS Sheet No: SJ6393NE
 Scale: 1:1250 Date: 10/08/2017
 0 Nodes
 Sheet 1 of 1



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OS Sheet No: SJ6393NE
 Scale: 1:1250 Date: 10/08/2017



Retro	Cover	Func	Invert	Size	Shape	Mat	Length	Grad	Retro	Cover	Func	Invert	Size	Shape	Mat	Length	Grad
1902		CO															

WASTE WATER SYMBLOGY

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	Symbol	Description
				WW Site Termination
				Air Valve
				Cascade
				Non Return Valve
				Extent of Survey
				Flow Meter
				Gully
				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

ABANDONED PIPE

	MainSewer
	Rising Main
	Highway Drain
	Sludge Main

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

Other Symbols:

- Control Kiosk
- Unspecified

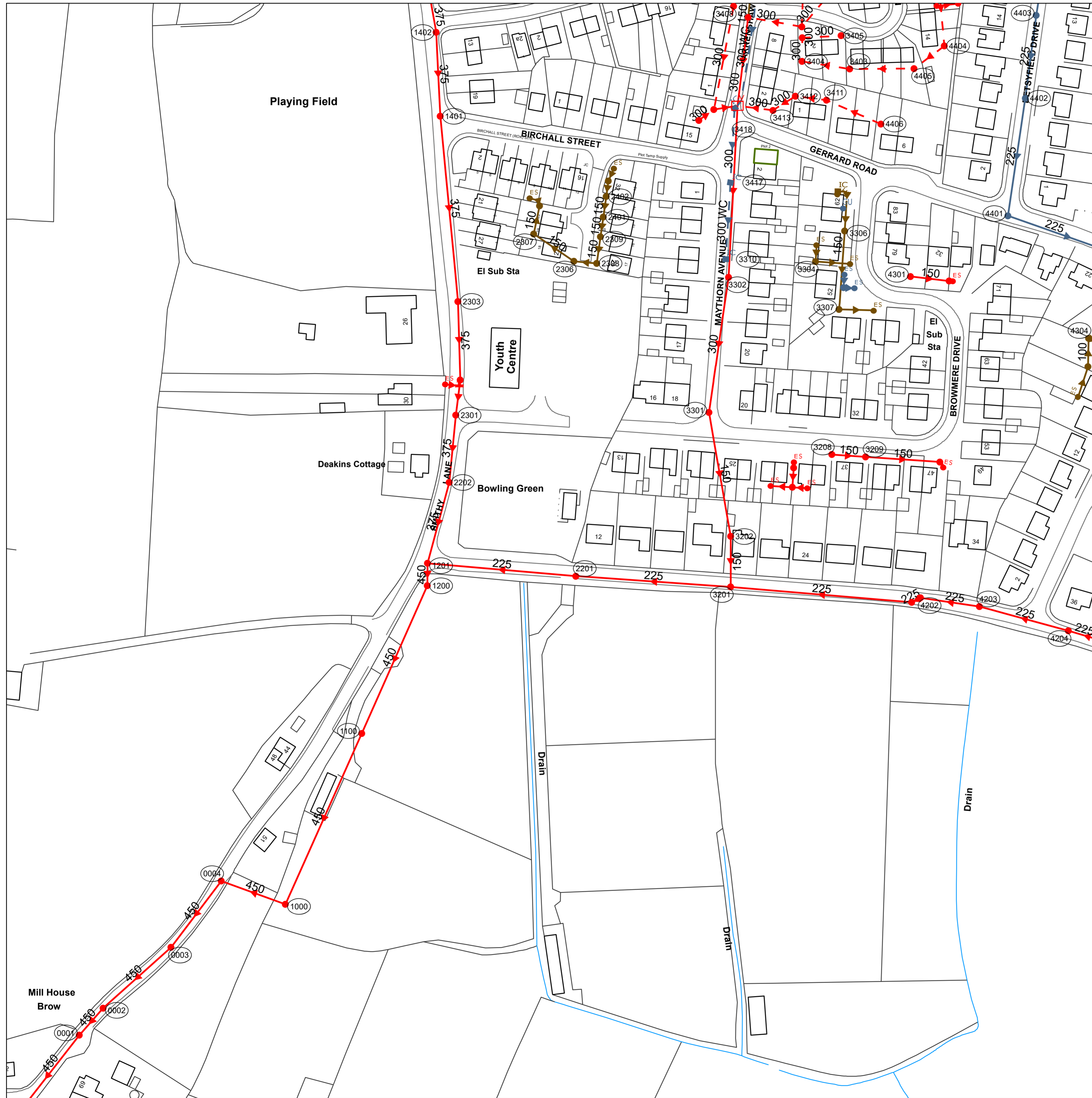
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OS Sheet No: SJ6493NW
 Scale: 1:1250 Date: 10/08/2017
 1 Nodes
 Sheet 1 of 1

Printed By: Property Searches

OS Sheet No: SJ6493NW
 Scale: 1:1250 Date: 10/08/2017





WASTE WATER SYMOLOGY

Foul	Surface	Combined	Overflow	Manhole, Side Entry

Foul	Surface	Combined	Overflow

LEGEND

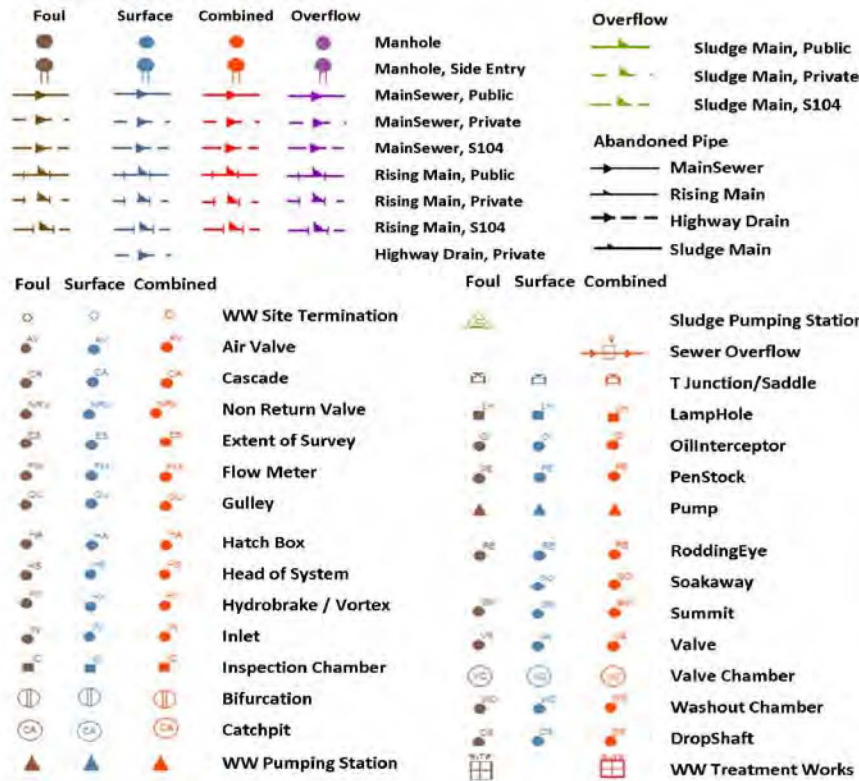
MANHOLE FUNCTION
 FO Foul
 SW Surface Water
 CO Combined
 OV Overflow

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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WASTE WATER SYMBOLOGY



Legend

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

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

CLEAN WATER SYMBOLOGY

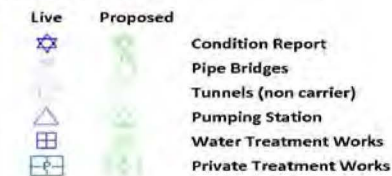
PIPE WORK



ABANDONED PIPE



PROPERTY TYPES



NODES/FURNITURES



Legend

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	INSERTION TYPES
GI GALVANISED IRON	DD DIE DRAWN
GR GREY IRON	DR DIRECTIONAL DRILLING
OT OTHERS	MG MOLING
PB LEAD	PI PIPELINE
PV UPVC	SL SLIP LINED
SI SPUN IRON	
ST STEEL	
UN UNKNOWN	
PE POLYETHYLENE	



Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX C

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.



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email cbyd@openreach.co.uk

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KEY TO BT SYMBOLS

DP	
Planned DP	
PCP	
Planned PCP	
Built	
Planned	
Inferred	
Building	
Kiosk	
Hatchings	

Pole	
Planned Pole	
Joint Box	
Change Of State	
Split Coupling	
Duct Tee	
Planned Box	
Manhole	
Planned Manhole	
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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BT Ref : WKH100591
Map Reference : (centre) SJ6347893670
Easting/Northing : (centre) 363478,393
Issued : 08/08/2017 10:05:59

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Maps by email Plant Information Reply



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KEY TO BT SYMBOLS

DP	
Planned DP	
PCP	
Planned PCP	
Built	
Planned	
Inferred	
Building	
Kiosk	
Hatchings	

Pole	
Planned Pole	
Joint Box	
Change Of State	
Split Coupling	
Duct Tee	
Planned Box	
Manhole	
Planned Manhole	
Cabinet	
Planned Cabinet	

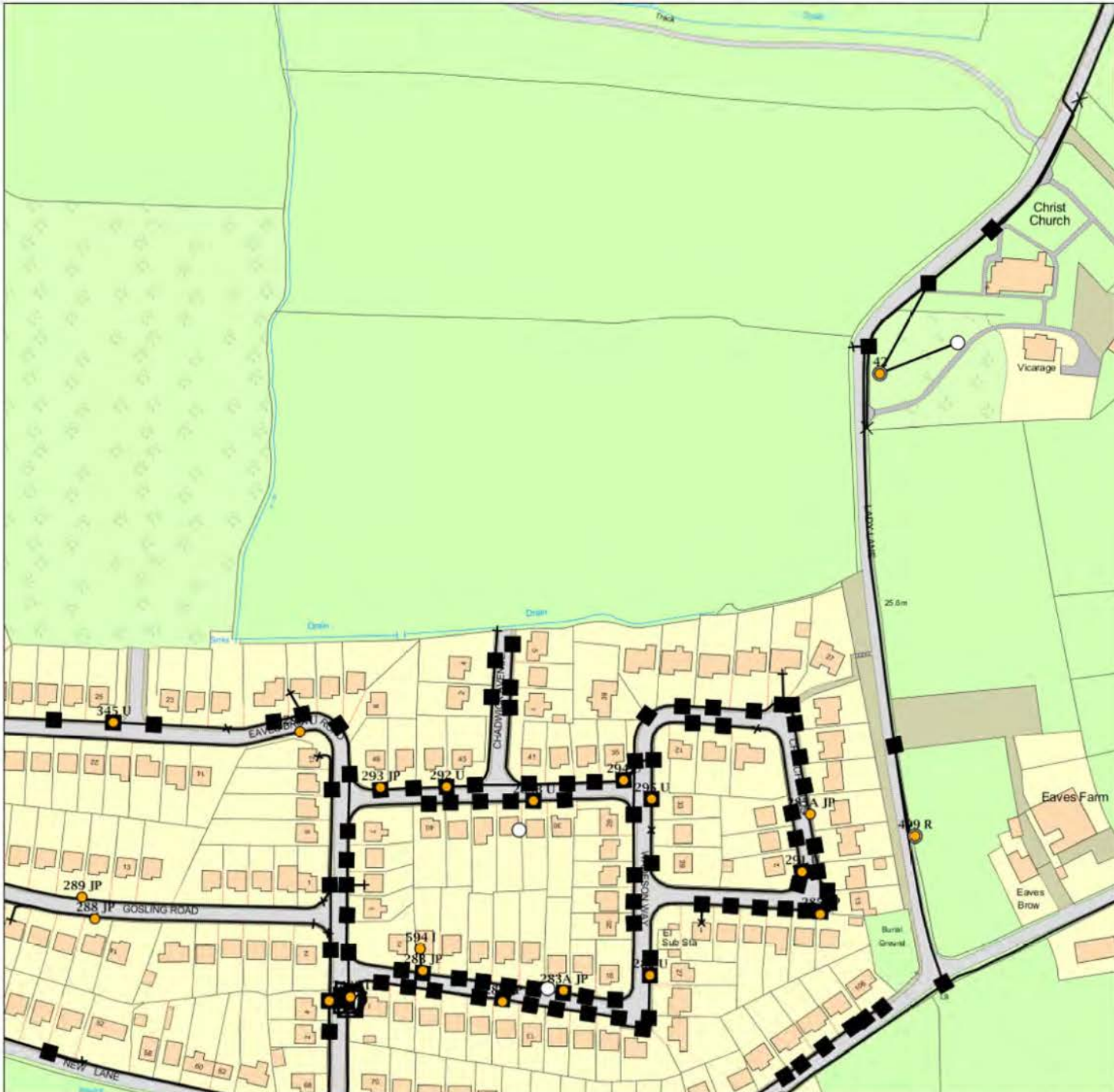
Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
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Information valid at time of preparation

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Easting/Northing : (centre) 363566,393
Issued : 08/08/2017 10:07:58

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Maps by email Plant Information Reply



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KEY TO BT SYMBOLS

DP	
Planned DP	
PCP	
Planned PCP	
Built	
Planned	
Inferred	
Building	
Kiosk	
Hatchings	

Pole	
Planned Pole	
Joint Box	
Change Of State	
Split Coupling	
Duct Tee	
Planned Box	
Manhole	
Planned Manhole	
Cabinet	
Planned Cabinet	

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Existing BT Plant may not be recorded.
Information valid at time of preparation

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BT Ref : BDD10086K

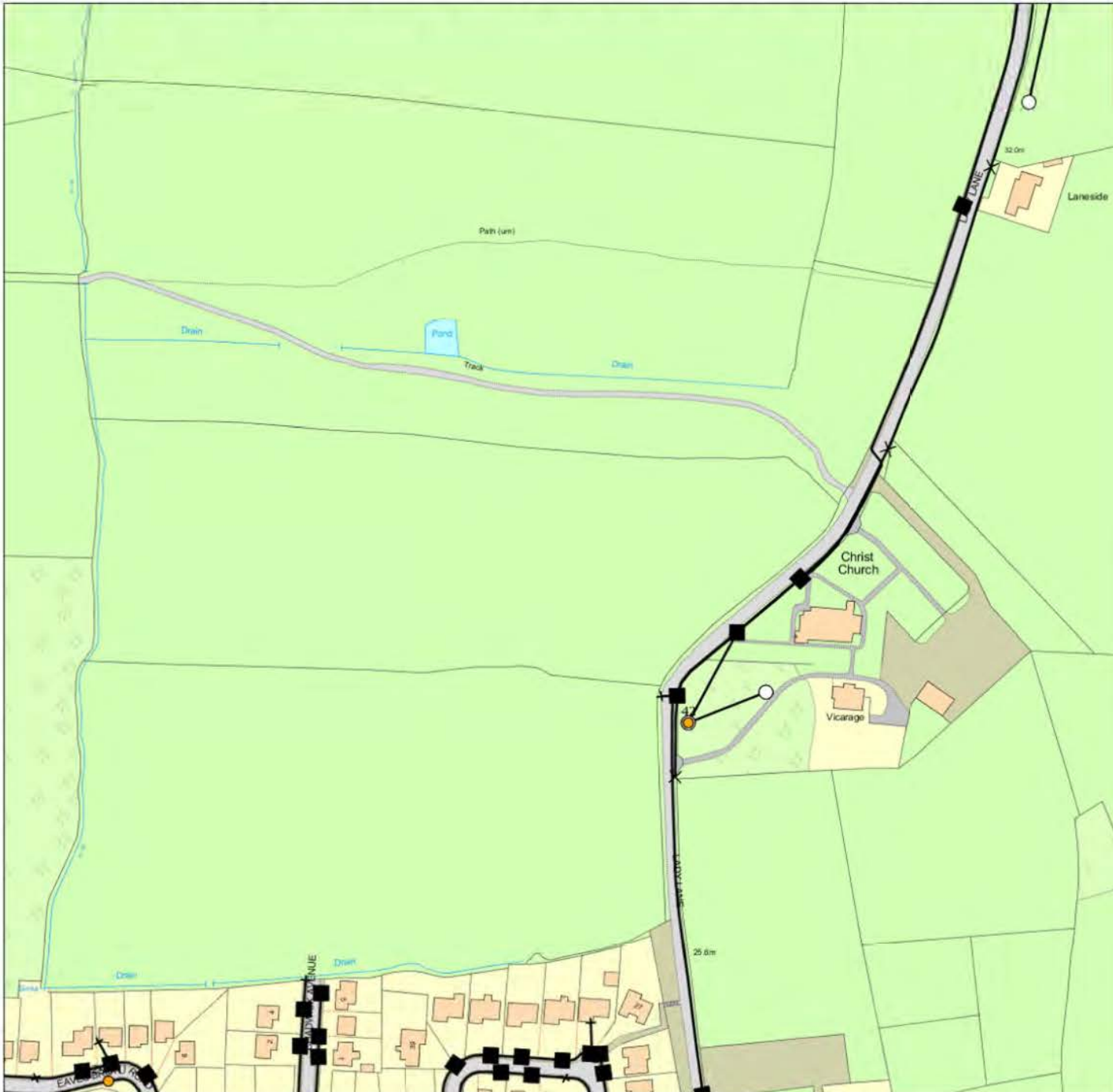
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Easting/Northing : (centre) 363798,393

Issued : 08/08/2017 10:09:05

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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.
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Information valid at time of preparation

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BT Ref : VFC10159Y

Map Reference : (centre) SJ6388493581

Easting/Northing : (centre) 363884,393

Issued : 08/08/2017 10:15:29

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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 maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

openreach
a BT Group business



BT Ref : HYE10158V

Map Reference : (centre) SJ6368993643

Easting/Northing : (centre) 363689,393

Issued : 08/08/2017 10:16:04

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



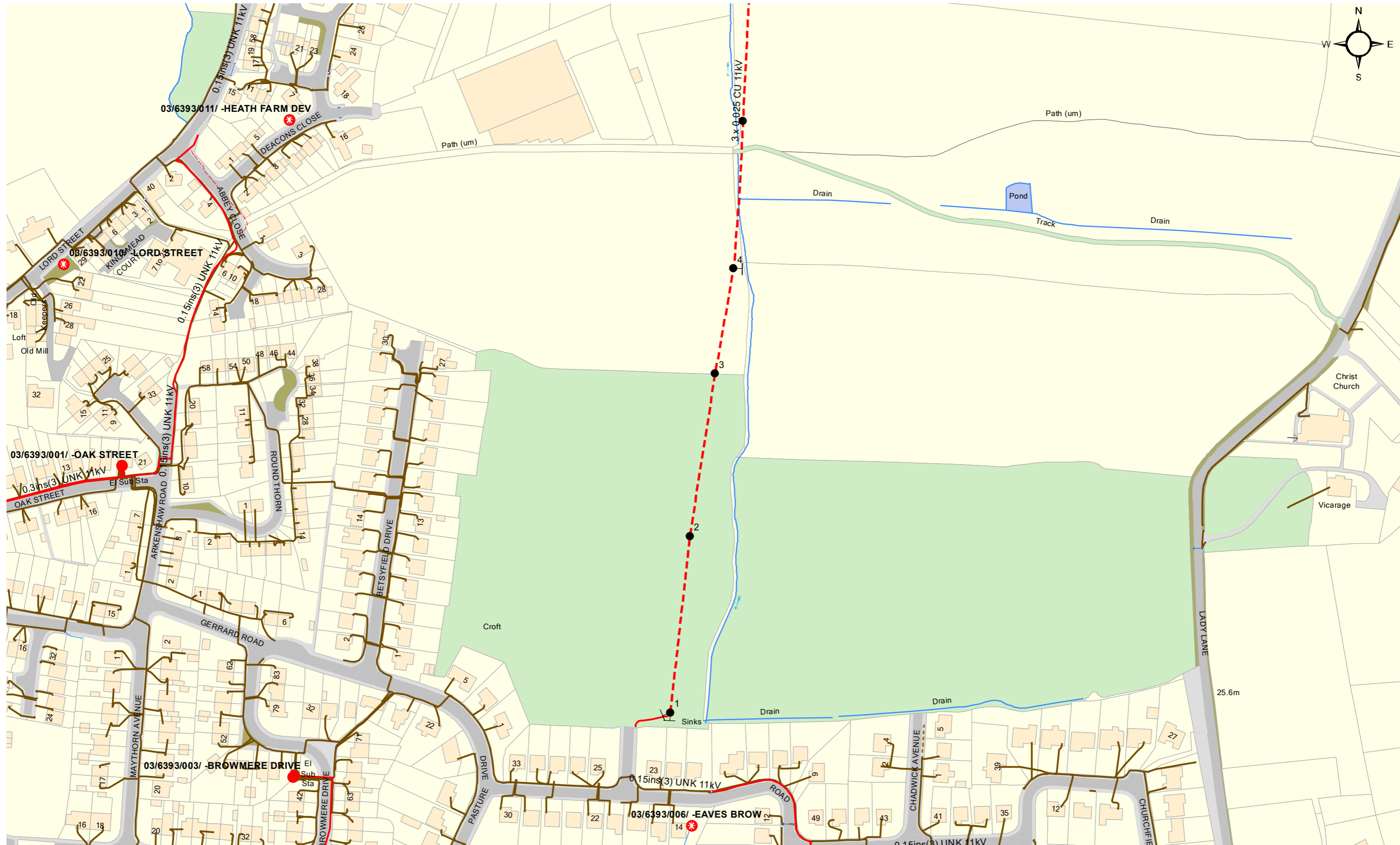
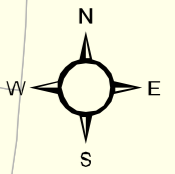
Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

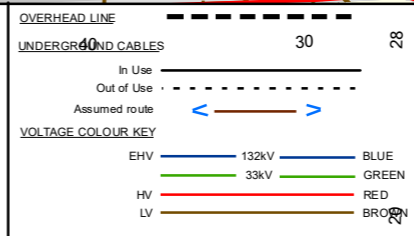
APPENDIX D



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 Marweb area).



GOSLING ROAD
 Registered Office: c/o PowerSystems
 3 Prenton Way, Prenton, CH43 3ET
 Registered in England and Wales No 2366937



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)

TYPE OF ROAD	EHV	HV	LV
FOOTPATHS:	775	600	450
CROSS ROADS:	775	700	600
MAIN ROADS:	775	700	600
AGRICULTURAL:	910	910	910

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

DATE: 14/09/2017

SCALE: 1 : 2,000

MAP REFERENCE: 363,651 393,514

0 5 10 20 30 40 Metres

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APPENDIX E

Natalia Marsden
Shepherd Gilmour Infrastructure
4th Floor Colchester House
40 Peter Street
Manchester
Manchester
Greater Manchester
M2 5GP

Date: 09/08/2017
Our Ref: NW_TW_Z1_3SWX_353079
Your Ref: Lady Lane, Croft
RE: Proposed Works, Lady Lane, Croft, 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.

Plant Protection
Cadent
Block 1; Floor 1
Brick Kiln Street
Hinckley
LE10 0NA
E-mail: plantprotection@cadentgas.com
Telephone: +44 (0)800 688588

National Gas Emergency Number:
0800 111 999*

National Grid Electricity Emergency Number:
0800 40 40 90*

* Available 24 hours, 7 days/week.
Calls may be recorded and monitored.

www.cadentgas.com

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:

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

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_353079		View extent: 2060m, 1220m		Map not to be used for construction		Map 1 of 1 (GAS)	
USER: nmarsden		LP MAINS  MP MAINS  IP MAINS  LHP MAINS  NHP MAINS 		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.		MAPS Plot Server Version 1.9.0  Your Gas Network Requested by: Shepherd Gilmour Infrastructure	
DATE: 09/08/2017		0m  100m Approximate scale 1:5000 on A3 Colour Landscape				This plan is reproduced from or based on the OS map by National Grid Gas plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved. Ordnance Survey Licence number 100024886	
DATA DATE: 06/08/2017		Some examples of Plant Items:      					
REF: Lady Lane, Croft							
MAP REF: SJ6393							
CENTRE: 363701, 393542							

ENQUIRY SUMMARY

Received Date

08/08/2017

Your Reference

Lady Lane, Croft

Location

Centre Point: 363700, 393542

X Extent: 900

Y Extent: 580

Postcode: WA3 7JU

Location Description: Lady Lane, Croft, Warrington

Map Options

Paper Size: A3

Orientation: LANDSCAPE

Requested Scale: 2500

Actual Scale: 1:5000 (GAS)

Real World Extents: 2060m x 1220m (GAS)

Recipients

nmarsden@sgiconsulting.co.uk

Enquirer Details

Organisation Name: Shepherd Gilmour Infrastructure

Contact Name: Natalia Marsden

Email Address: nmarsden@sgiconsulting.co.uk

Telephone: 01618371500

Address: 4th Floor Colchester House, 40 Peter Street, Manchester, Manchester, Greater Manchester, M2 5GP

Description of Works

Currently only in the initial planning stages for potential housing development

Enquiry Type

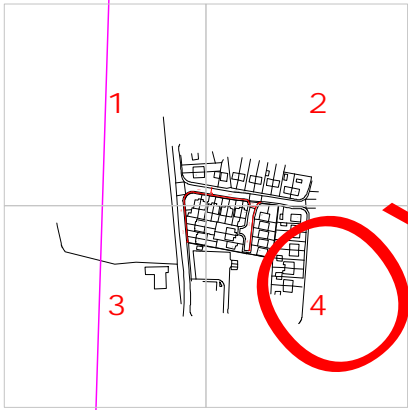
Proposed Works

Activity Type

Development Project

Work Types

Work Type: Plans Only



Date Requested: 08/08/2017

Requested by: Shepherd Gilmour

Job Reference: 10976337

Company: Shepherd Gilmour Infrastructure L

Your Scheme/Reference: Lady Lane, Croft

Key for Mains & Service Pipework



Existing LP mains or services operating up to 75 millibar gauge



Existing MP mains or services operating between 75 millibar and 2 bar gauge



Existing IP mains or services operating between 2 bar and 7 bar gauge

Whilst ESP Utilities Group Ltd (ESP) try to ensure the asset information we provide is accurate, the information is provided Without Prejudice and ESP accept no liability for claims arising from any inaccuracy, omissions or errors contained in this response. The actual position of underground services must be verified and established on site before any mechanical plant is used. Authorities and contractors will be held liable for the full cost of repairs to ESP apparatus and all claims made against them by Third parties as a result of any interference or damage.

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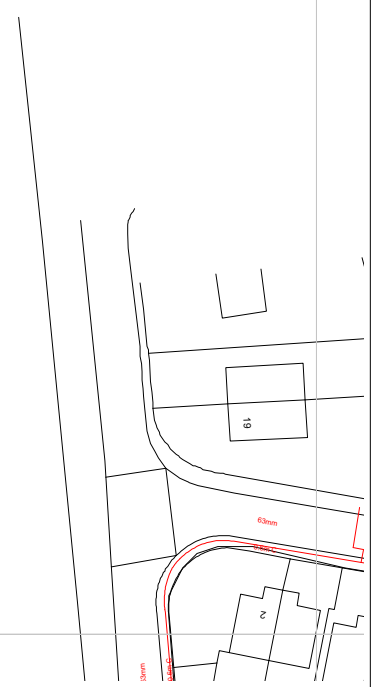
ESP Utilities Group Ltd
Bluebird House
Mole Business Park
Leatherhead
Surrey
KT22 7BA
Phone: 01372 587500
Email: info@espug.com

Dig Sites:

Area Line

Approx scale on A4 paper: 1:1000
(excluding Overview map)

1



Date Requested: 08/08/2017




Requested by: Shepherd Gilmour

Job Reference: 10976337

Company: Shepherd Gilmour Infrastructure L

Your Scheme/Reference: Lady Lane, Croft

Key for Mains & Service Pipework

-  Existing LP mains or services operating up to 75 millibar gauge
-  Existing MP mains or services operating between 75 millibar and 2 bar gauge
-  Existing IP mains or services operating between 2 bar and 7 bar gauge

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 Email: info@espug.com

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Area  Line 
 Approx scale on A4 paper: 1:1000
 (excluding Overview map)



Date Requested: 08/08/2017




Requested by: Shepherd Gilmour

Job Reference: 10976337

Company: Shepherd Gilmour Infrastructure L

Your Scheme/Reference: Lady Lane, Croft

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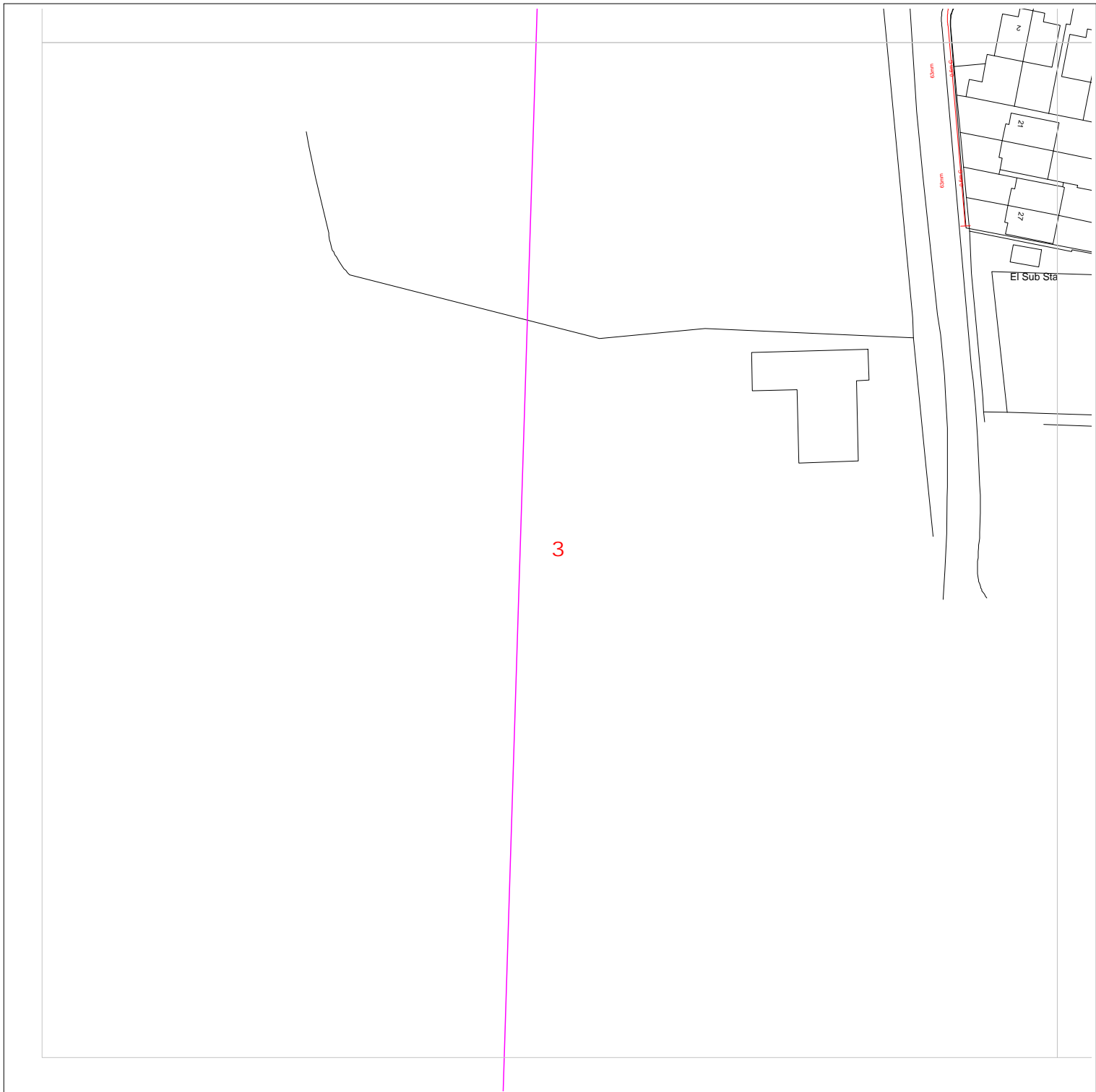
UTILITIES GROUP

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Date Requested: 08/08/2017

Requested by: Shepherd Gilmour

Job Reference: 10976337

Company: Shepherd Gilmour Infrastructure L

Your Scheme/Reference: Lady Lane, Croft

Key for Mains & Service Pipework



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Existing MP mains or services operating between 75 millibar and 2 bar gauge



Existing IP mains or services operating between 2 bar and 7 bar gauge

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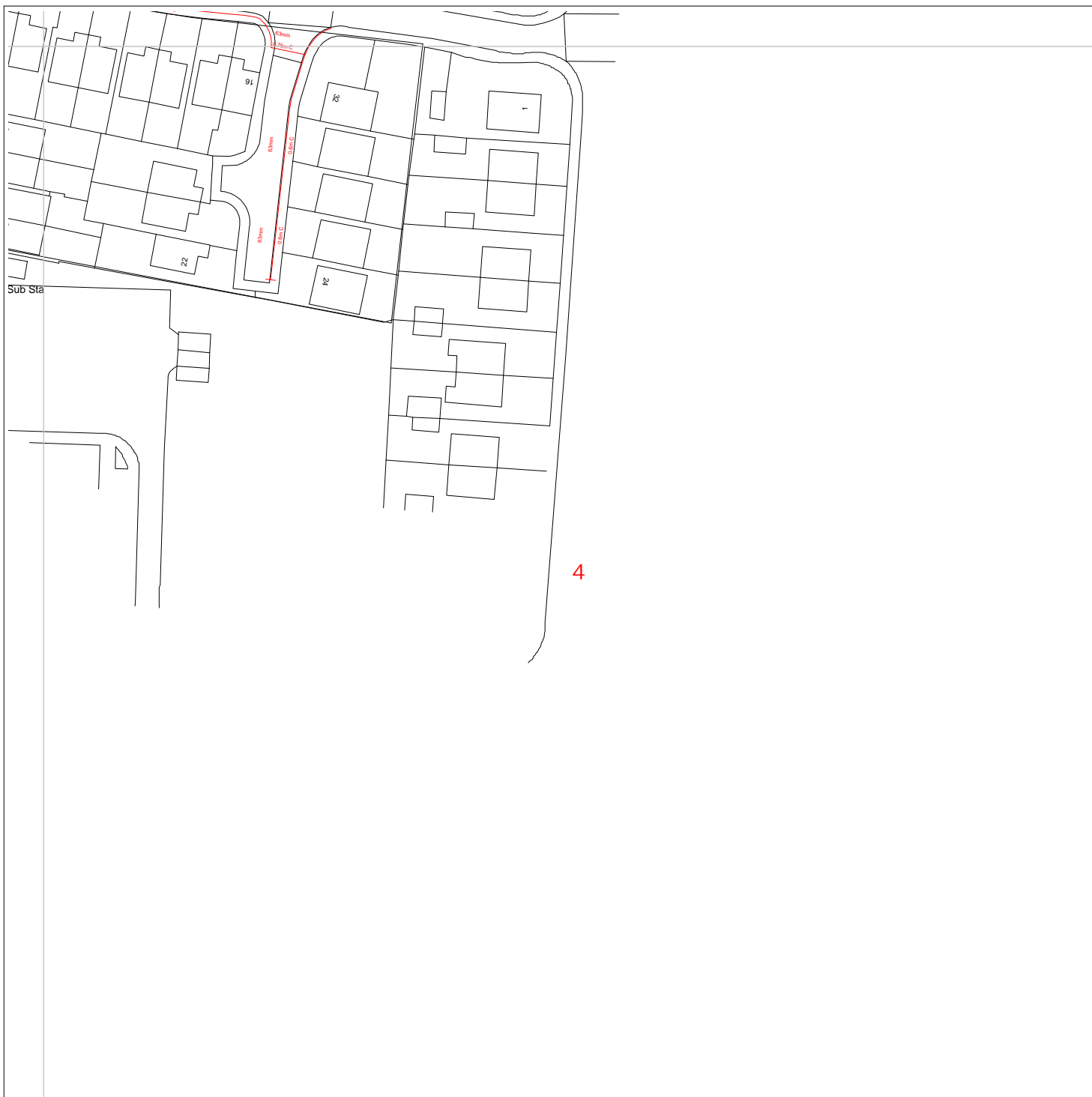


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Date Requested: 08/08/2017




Requested by: Shepherd Gilmour

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Your Scheme/Reference: Lady Lane, Croft

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Dig Sites:

Area  Line 

Approx scale on A4 paper: 1:1000
 (excluding Overview map)



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Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX F

M15 4LZ

Advice : HSL-170814102923-432 Does Not Cross Any Consultation Zones

Your Ref: Land at Lady Lane, Croft

Development Name:

Comments:

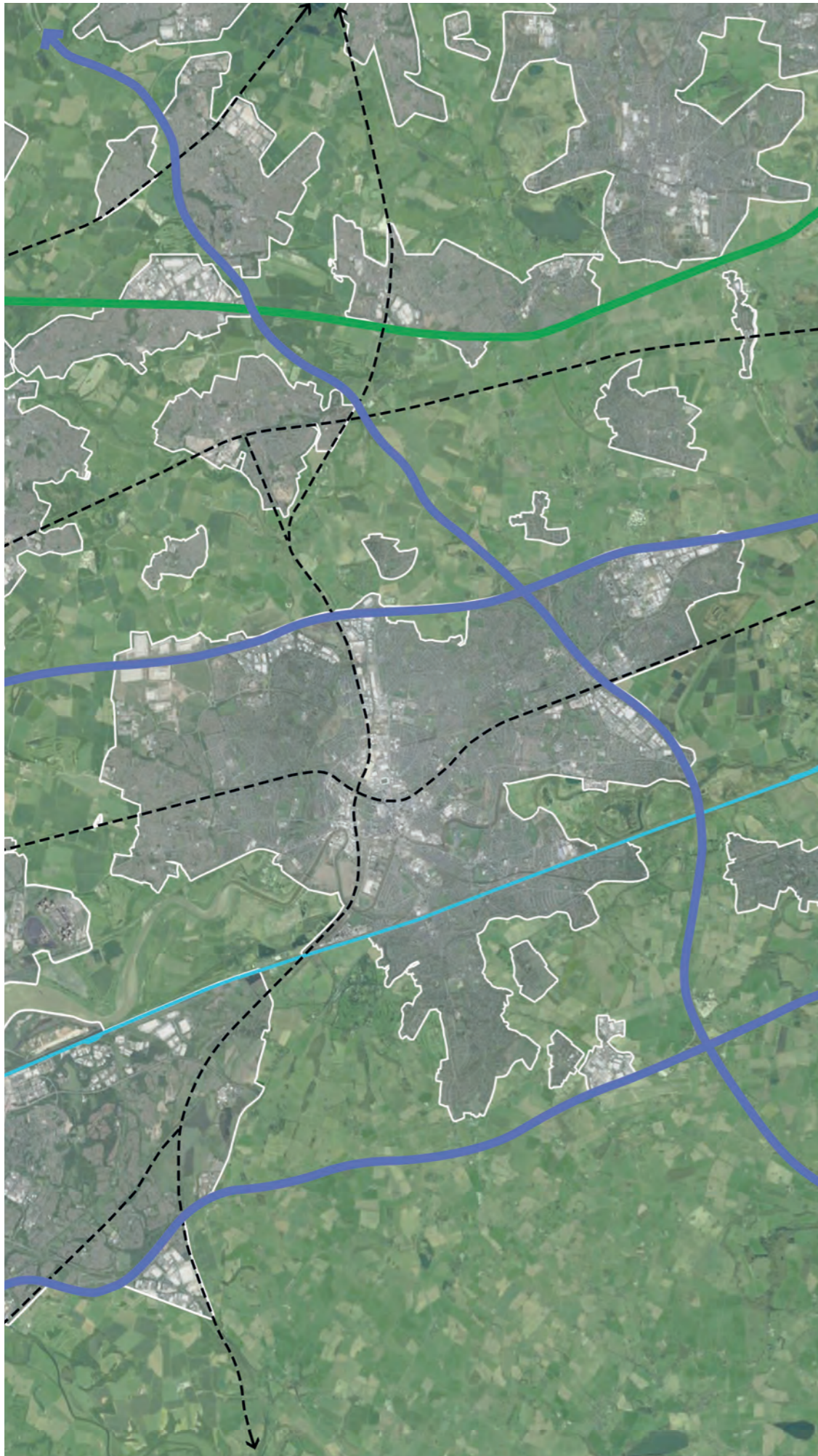


The proposed development site which you have identified does not currently lie within the consultation distance (CD) of a major hazard site or major accident hazard pipeline; therefore at present HSE does not need to be consulted on any developments on this site. However, should there be a delay submitting a planning application for the proposed development on this site, you may wish to approach HSE again to ensure that there have been no changes to CDs in this area in the intervening period.

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



Warrington



Landscape, Townscape and Townscape and Development Appraisal



**RANDALL
THORP**

June 2019

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03 Planning policy and published landscape character assessment	11
04 Landscape/townscape character and visual receptors	13
05 Landsc	21
06 Development poten e	24
07 Illustra e masterplan	26

Randall Thorp Document Control

Doc Reference: 630DA V6

Author(s): CAW/AL

Checker: JF

Format check: AL

Product status: Con t review

QM status: Checked

Checked date: 04.06.18

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Overview

Randall Thorp LLP has been commissioned by Peel Holdings to produce a Landscape, Townscape and Visual Sensitivity Assessment (LTVSA) for the site.

This report has been prepared in response to the proposed allocation of sites within Warrington Borough Council's Proposed Submission Version Local Plan (2019) (PSLP).

These reports will assist in demonstrating the suitability 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 site, to demonstrate the site's 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 Submission, published in July 2017, which states that a sustainable settlement extension of Crayke "could have an impact on the character of the settlement and potentially the surrounding landscape."

Figure 1 (Page 5) shows the strategic location of the site within Warrington Borough and the site location within Crayke. The site is located within the north eastern part of the Borough, close to the settlement of Crayke to the south west. **Figure 2** (Page 7) shows the site in relation to the surrounding landscape. The site is located immediately adjacent to the settlement of Crayke to the south and west, and by Lady Lane to the east.

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 option for the development of the site indicated in this report.

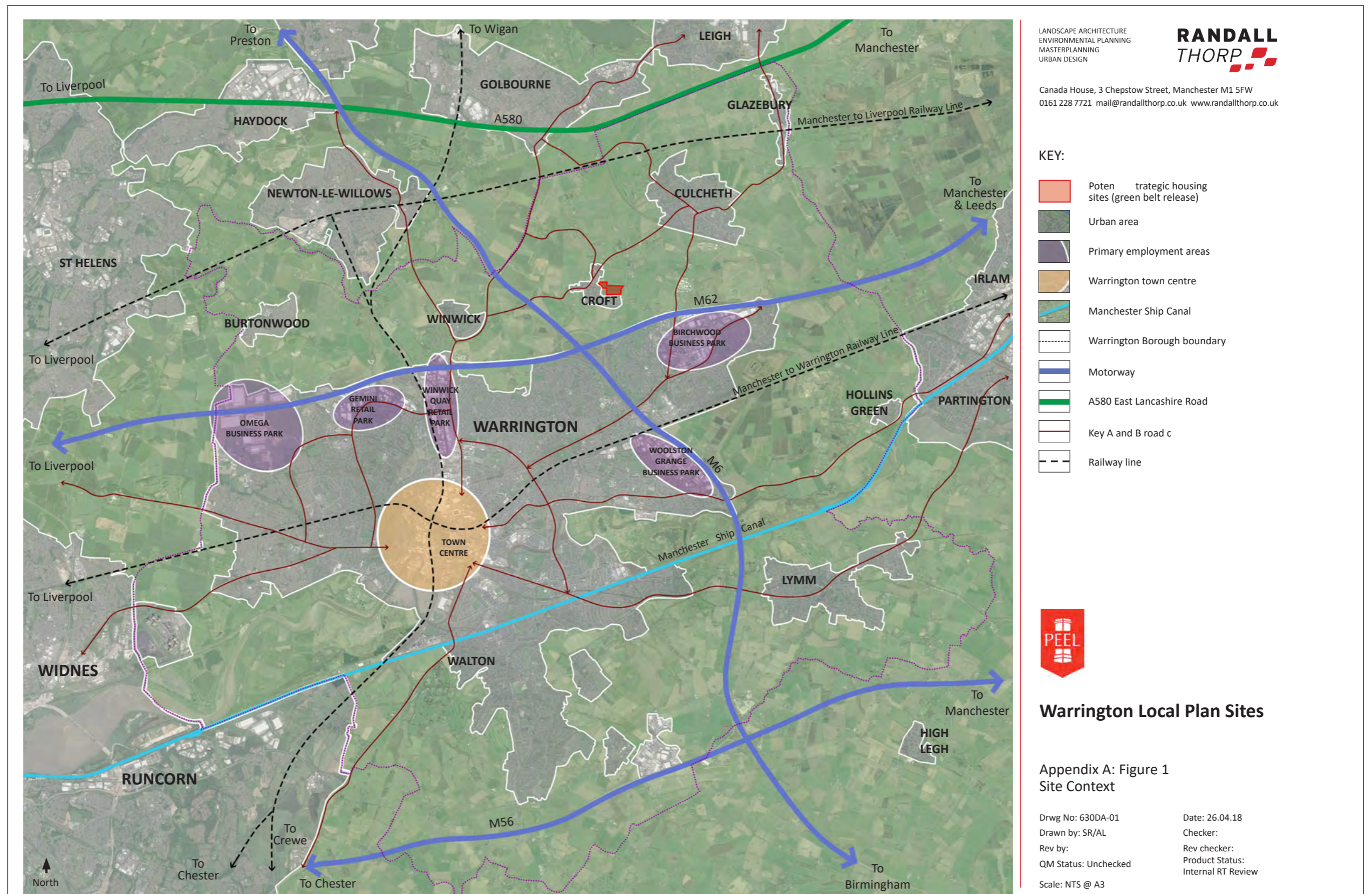


Figure 1 - Site context

Methodology

Guidance

This Landscape, Townscape and Visual Impact Assessment has been prepared in accordance with “Guidelines for Landscape and Visual Impact Assessment” (GLVIA3), Third Edition. It explains that it is necessary to tailor Landscape and Visual Appraisals to the 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.

Objectives of the assessment are:

- Identify the planning policy constraints;
- Consider the published Landscape Character Assessments;
- Assess the existing 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 townscape character and its immediate surroundings; and
- Advise on the development potential, taking into account the landscape and townscape value of the site and 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
- Landscape Institute Townscape Character Assessment Technical Information 05/2017
- Warrington Local Plan Core Strategy – Adopted July 2014
- Warrington Borough Council PSLP (2019)
- Warrington Borough Council Local Plan – Section 10 July 2017
- Warrington: A Landscape Character Assessment – Prepared 2007 (Warrington LCA 2007)

The study work was undertaken to establish an understanding of the landscape within and around the site, its component parts and subdivisions, as well as the context currently made by different areas in terms of landscape quality and character, value, green infrastructure and public realm. 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 local vantage points to provide a visual aide memoire.

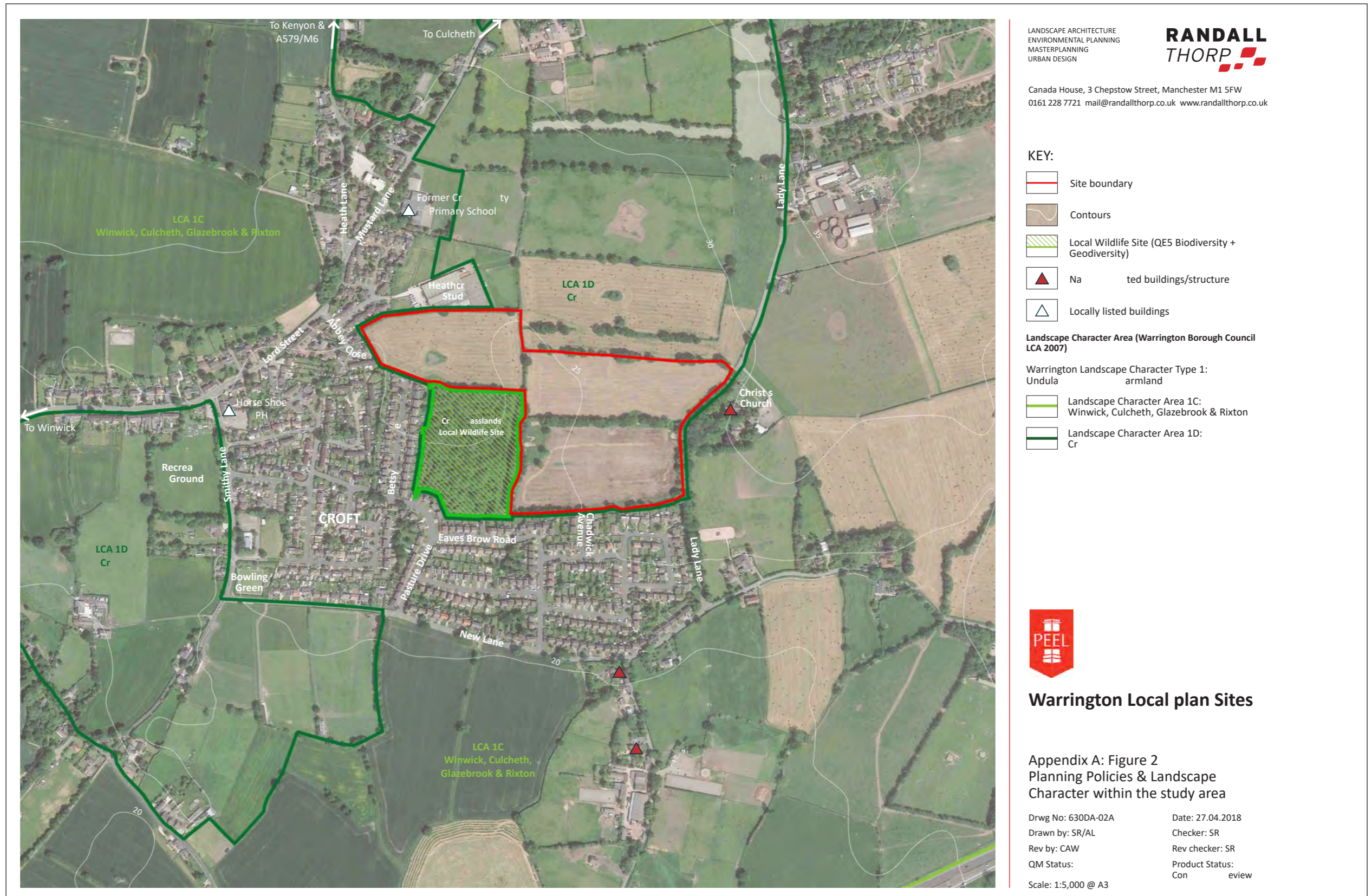


Figure 2 - Planning policies and landscape character within the study area

Methodology for appraisal

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 landscape prior to making an assessment of the landscape impacts. In broad terms landscape value is determined by the 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 characteristics 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 the combination of approaches is most effective.

In the case of this site 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 an individual landscape type or landscape area as part of an assessment of the 2007 landscapes within the Warrington Borough.

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)

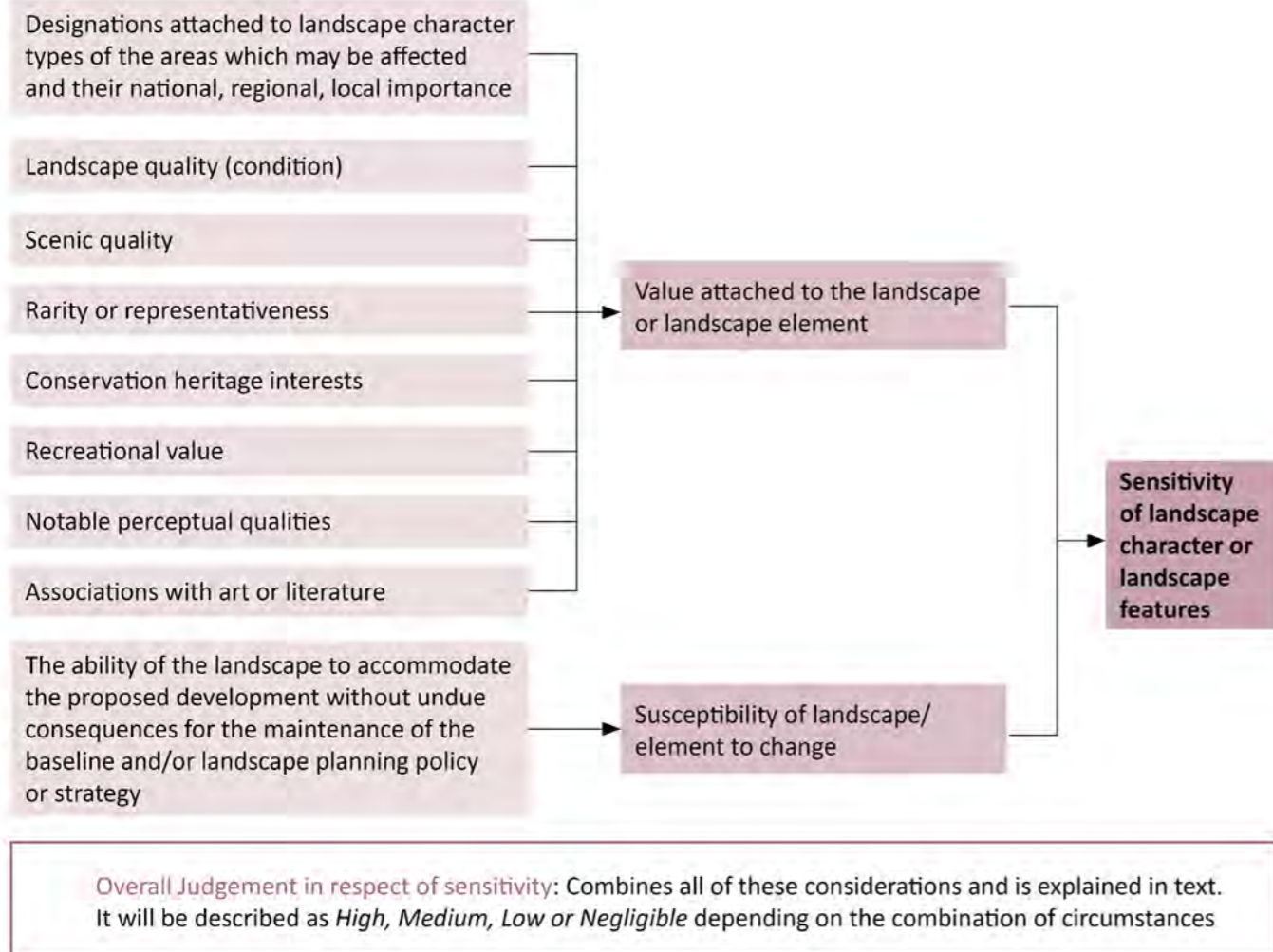
The value of the landscape is assessed in this report using a combination of considerations set out in Box 5.1 of GLVIA3 and the key characteristics identified in the Warrington LCA, 2007.

‘Susceptibility to change’ is defined in 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 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 for the evaluation of the landscape.



Methodology for evaluation

townscape character

Using GLVIA and the Landscape Ins e Townscape Character Assessment Technical Informa e 05/2017 (TIN) this report includes an evalua ownscape 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.”

Considera ownscape character will provide an understanding of how a place has evolved and developed ov to respond to natural, social and economic drivers; and how this is re ed 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 c 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 evalua ovide an understanding of the intrinsic charact an be used as a guide to the loca ale, massing and type of development that can be accommodated.

Methodology for appraisal

Receptors

In line with GLVIA a visual appraisal has been carried out to identify the receptors.

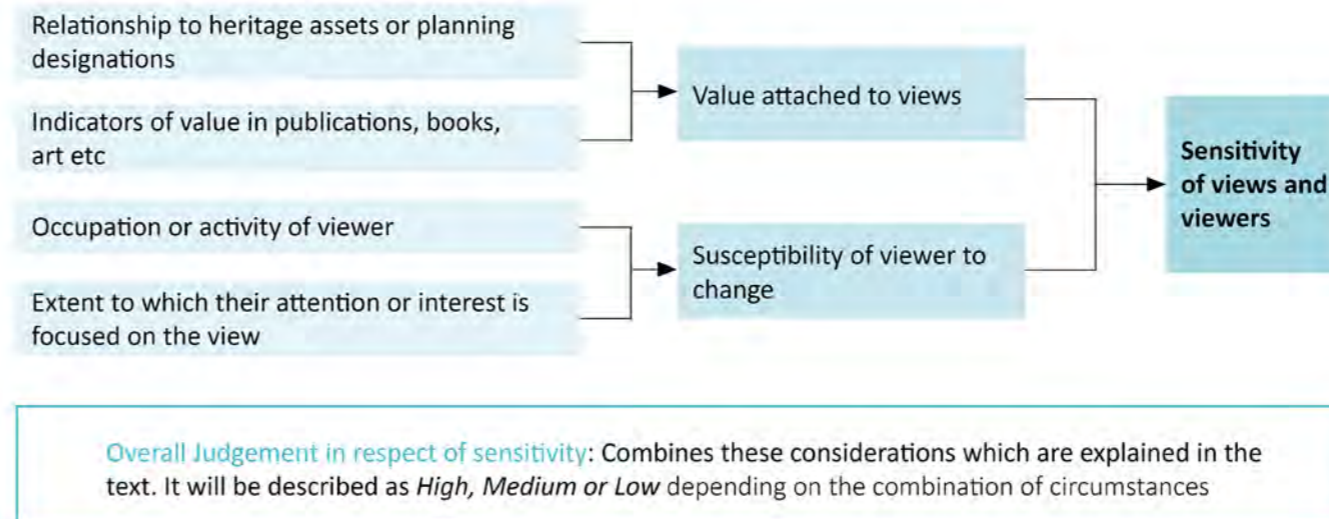
Receptors are considered combinations of receptors, value attached to a view and the susceptibility of the viewer to change.

The value attached to views takes account of the receptors value although planning design value attached through appearance in tourist literature.

The susceptibility of receptors to change will vary according to the occupation of the receptor experiencing the view and the extent to which their attention is focused on the view.

Viewpoints considered representative of potential receptors situated within the study area at varying distances and directions have been identified 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 of the evaluation.



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.

The majority of the landscape that surrounds the settlement of Crayke is indicated as Green Belt, which is set out within Policy CS 5 – Overall Spatial Strategy – Green Belt. This is a spatially related to landscape policies.

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

Within the study area there is one Local Wildlife Site, "Crayke Grasslands" designated and protected by Policy QE5 – Biodiversity and Geodiversity of the Local Plan. Crayke Grasslands is located on the eastern edge of Crayke to the western boundary of the Landward and is currently colonised by young woodland.

Christ's Church is a Grade II listed building located adjacent to the eastern site boundary on Lady Lane. Two locally listed buildings, the Horse Shoe Public House and the Former Crayke Primary School are located further west and north of the site within the village of Crayke.

The draft version of the Warrington PSLP was approved for consultation in March 2019. This includes emerging landscape

policies that require consideration. If the PSLP is 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 that surround the settlement of Crayke study area.

The Warrington LCA, 2007 sets out and describes, on an area by area basis, the Borough's diverse landscape, its cultural history, landscape character change, together with recommended management and landscape policies. The Borough is divided into broad Landscape Character Types; these are then divided into more detailed Landscape Character Areas.

The settlement of Crayke within the study area are part of Landscape Character Area 1C "Winwick, Culcheth, Glazebrook and Rixton." There are two parcels of land immediately south west and north east of Crayke study area, which fall under Landscape Character Area 1D "Crayke." Both of these Landscape Areas are part of Landscape Character Type 1: Undulating Enclosed Farmland.

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 characteristics of Landscape Character Area 1C are:

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

Landscape Character Area 1C is described within 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 Winwick in the west."

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

Landscape Character Area 1D – Crayke

The relevant key characteristics of Landscape Character Area 1D are:

- *Historic field patterns;*
- *Gently undulating landscape containing intimate scale linear strip fields;*

- Gapped and fragmented hedgerows supplemented by post and wire fencing;
- Numerous hedgerow oaks in groups or isolated;
- Predominantly pastureland;
- Association of fields to adjoining properties or gardens or horse paddocks;
- Red brick and sandstone farms;
- Limited and often linear views;
- Settlement pattern of older properties reflected in the field patterns.

expansive, large scale field system has developed to the surrounding areas.”

“The soil type around Croft is heavy clay with fields used both for arable and pasture farming. The smaller field system has, in many cases, led to larger extended linear gardens with a number of the pasture fields succumbing to the demand used for horse grazing.”

Landscape Character Area 1D is described within the Warrington LCA, 2007 as:

“Its landscape comprises of a series of small, linear fields closely associated with the village and contrasts markedly with the larger, and more rectangular, field patterns of the surrounding land defined under Area 1C Winwick, Culcheth, Glazebrook and Rixton.”

“Many of Croft’s fields are long and narrow, bordered with ditches and divided by hawthorn hedges frequently containing groups of mature hedgerow trees. Views are linear and strongly contained between the field hedges. They are clearly medieval in origin, ‘fossilised’ in the landscape through later enclosure and exhibit the characteristic ‘S’ shape in plan as the result of years of ploughing by oxen or horses.”

“Judging from historical maps, it is clear that the small scale field pattern was once a lot more extensive but due to the removal of hedgerows and field boundaries in more recent times, a more

Summary of the landscape character of the site and its surroundings

The site itself sits in Landscape Character Area 1D Cr

The site and immediate surroundings demonstrate an intimate scale and linear structure to the north of the site. The landscape is clearly defined by examples of the historic hedgerow pattern. The site itself has been subject to amalgamation and fragmentation of the landscape character area described as a narrow and fragmented hedgerow landscape with a mix of residential development at Croft and other uses of the site.

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 Warrington LCA, 2007 describes the local

“Croft is sited on undulating, gently south sloping land, north-east of the wide, flat floored valley of Cockshot Brook, now almost entirely occupied and certainly dominated by the M6 and M62 motorway junction.”

The landscape of the study area surrounding the site is primarily agricultural with an irregular, small to medium scale, which increases in size further away from the settlement edge. Field boundaries are generally well vegetated with hedgerows and trees present. The topography of the study area falls gently from north to south.

The settlement pattern in the northern and eastern parts of the study area is regular, although slightly larger scale in the east. To the west the settlement pattern becomes more irregular. Hedgerow and tree boundaries are present throughout the study area.

Croft Asslands is a Local Wildlife Site currently colonized by young woodland. It is located next to the western boundary of the site and adds to the sense of enclosure created by the well vegetated boundaries in close proximity to the settlement of Croft.

Townscape character of the study area

The townscape adjacent to the site comprises the northern and eastern edges of Croft, including as Heathcroft, a Grade II Listed Christ's Church on Lady Lane. The village of Croft extends to the south, west and north west of the site with more residential development along Lady Lane located in the north east of the study area.

Historical development

Croft was built around a triangle of roads, New Lane (to the south), Lady Lane (to the east) and Smithy Lane, Lord Street and Mustard Lane (to the west and north). Originally the core of the village was built around the latter three roads, but it has expanded from 1850” (Warrington LCA, 2007).

The expansion of Croft to what it is today began in the 1950's along Smithy Lane with substantial expansion along New Lane in the 1970's. The Grade II Listed Christ's Church was built in 1833.

Movement and connectivity

A network of A and B roads cut through the study area providing good links to the wider area. Croft Road, Lord Street, Heath Lane and Mustard Lane, which provide connectivity to Winwick and the historic A49 route to the west, Kenyon and the A579/M6 to the north and Culcheth to the north east. The M62, Birchwood Technology Park and Warrington are located to the south of the study area.

Urban structure and built form

Croft *“was a dispersed settlement which historically began to coalesce around Lord Street and later infilled along Smithy Lane and Lord Street.”*

A large estate occupies the area east of Pasture Drive and much of the village is of similar housing type” (Warrington LCA, 2007).

The built form within Croft is two to three storeys in height, with a mix of red brick and render buildings, including combinations of two used throughout the village.

Heritage assets

There are a number of nationally listed buildings within the study area. The nationally listed buildings are all Grade II and are located within the eastern and southern parts of the study area. The Grade II Listed Christ's Church is located on Lady Lane, adjacent to the eastern boundary of the site and is well enclosed by mature trees.

Green infrastructure and public realm

The main elements of green infrastructure and public realm within Croft are focused around Smithy Brow and Smithy Lane, where the main recreation ground and play area sits. Croft Bowling Green is located further south along Smithy Lane. Streets are generally well treed or have well established hedgerows, and the surrounding agricultural landscape gives the village a green character. Further recreation facilities associated with Croft Primary School on Mustard Lane.

Tranquility

Due to the presence of major transport corridors nearby, including the M62 and M6, Croft does not experience any strong sense of tranquility.

Site description

Figure 3 (Page 15) shows the site in relation to Craslands landscape context.

The site is situated at the north eastern edge of Craslands, currently in use as arable farmland with a small scale, rural landscape. A locally designated Local Wildlife Site “Craslands” is located adjacent to the south-western corner of the site. This land is subject to representations by others for allocation to residential development under the new Warrington Local Plan. The combined southern and western boundaries of the site and the Local Wildlife Site are well contained by the existence of Craslands residential development, generally backing onto the site. The eastern boundary of the site is defined by Lady Lane and the northern boundary defined by the Craslands Lane.

An existence of Way partly follows the northern boundary of the site along an east to west orientation. Heathcote Farm Centre is located adjacent to the northern boundary of the site. The hedgerows within the site, the vegetation of Craslands Local Wildlife Site and along the boundaries with Lady Lane and the housing to the south help to create a sense of enclosure within the site.

The topography of the site generally slopes from north to south. A stream flows from north to south through the centre of the site before following the boundary of the site and Craslands Local Wildlife Site. A mainly dry ditch runs east to west along the southern boundary of the site.

Visual receptors and views of the site

Figure 3 (Page 15) illustrates the location of visual receptors and viewpoints. Photographs taken from the visual receptors within and around the site.

Figures 4 – 7 (pages 17-20) include the photographs 1.1 – 4.1 which are taken from publicly accessible viewpoints within and around the site. Views from private residences have not been considered, any considerations for residential development would need to be carried out as a separate assessment.

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

Public Rights of Way surrounding the site

1. Pedestrians using PRoW FP Craslands Lane
2. Pedestrians using PRoW FP Craslands Lane

Roads surrounding the site

3. Motorists using Lady Lane
4. Motorists using Chadwick Avenue
5. Motorists using Abbey Close



Figure 3 - Site features and photograph locations

Descript **ts of Way surrounding the site**

1 PRoW FP Cr

This route connects Abbey Close to Lady Lane from west to east. The western half is fully enclosed within a natural “tunnel” created by the exis egeta tetween the site and Heathcr e are glimpsed views of the site through gaps in this vegeta tern half of the route has a more open character, running through the centr o the north of the site towards Lady Lane. There are clearer views of the site fr oute with views of the exis e of Cr Grade II Listed Christ’s Church depending on the dir avel. The western end of the route follows the exis o meet Lady Lane.

2 PRoW FP Cr

This route is located to the north east of the site, on an east-west alignment, c o the wider footpath network. The route ed to the south by a tall mature hedgerow preven ws south for a majority of the route. On the higher ground through gaps in the vegeta e ma ered views towards the site.

Descrip **oads surrounding the site**

3 Motorists using Lady Lane

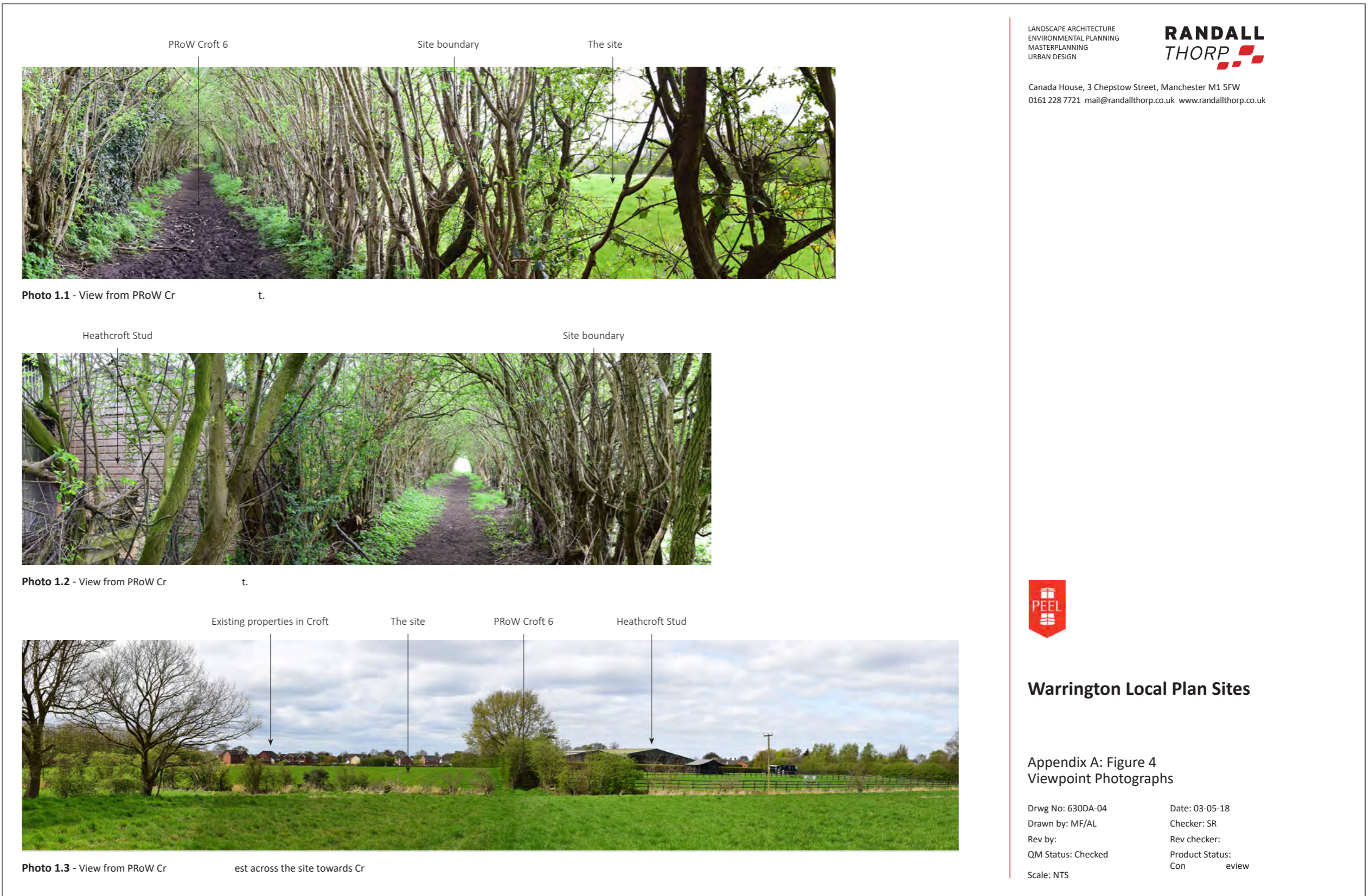
xis egeta where the road abuts exis velopment. Further north the road is less enclosed and there are views across the site towards the village. There are views of the site between the trees lining the road along the eastern site boundary and Christ’s Church is a dominant feature when approaching from the north.

4 Motorists using Chadwick Avenue

Chadwick Avenue is a short residen treet that terminates at the southern site boundary. Views of the site ar ered by the exis vegeta e boundary and the residen t the end of the street face side on to the site.

5 Motorists using Abbey Close

Abbey Close is a short residen treet that terminates at the western site boundary. Views of the site ar ered by the exis egeta along the site boundary and the residen t the end of the street face side on to the site.



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Warrington Local Plan Sites

Appendix A: Figure 4 Viewpoint Photographs

Drwg No: 630DA-04	Date: 03-05-18
Drawn by: MF/AL	Checker: SR
Rev by:	Rev checker:
QM Status: Checked	Product Status:
Scale: NTS	Con review

Figure 4 - Viewpoint photographs



Photo 1.4 - View from PRoW Cr t.



Photo 1.5 - View from PRoW Cr est towards Cr



Photo 1.6 - View from PRoW Cr est towards the site.

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Warrington Local Plan Sites

Appendix A: Figure 5 Viewpoint Photographs

Drwg No: 630DA-05	Date: 03-05-18
Drawn by: MF/AL	Checker: SR
Rev by:	Rev checker:
QM Status: Checked	Product Status:
Scale: NTS	Con review

Figure 5 - Viewpoint photographs



Photo 3.1 - View from Lady Lane, looking south towards the site.

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Photo 3.2 - View from Lady Lane, looking south west across the site towards Cr



Photo 3.3 - View from Lady Lane, looking west across the site towards Cr



Warrington Local Plan Sites

Appendix A: Figure 6
Viewpoint Photographs

Drwg No: 630DA-06A	Date: 03-05-18
Drawn by: MF/AL	Checker: SR
Rev by:	Rev checker:
QM Status: Checked	Product Status:
Scale: NTS	Con review

Figure 6 - Viewpoint photographs

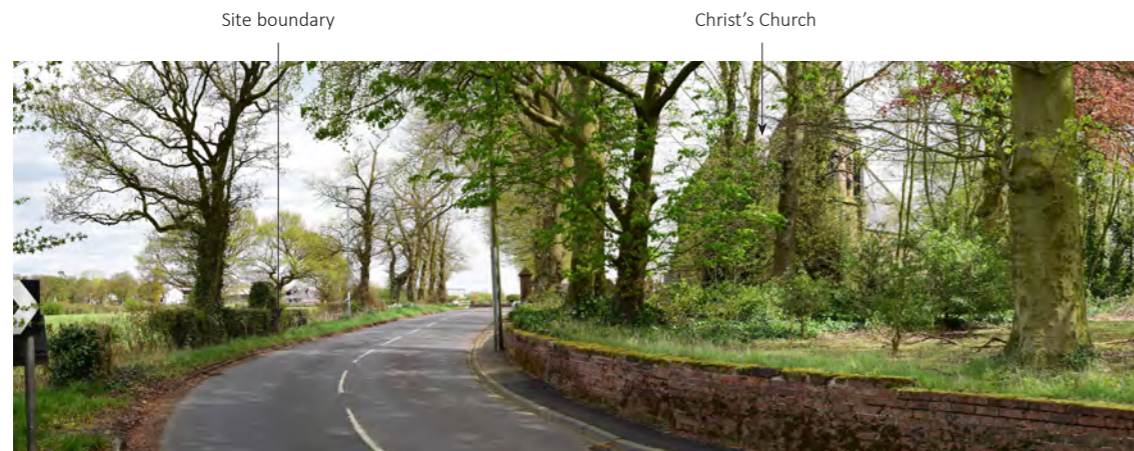


Photo 3.4 - View from Lady Lane, looking north towards the site and Christ's Church.

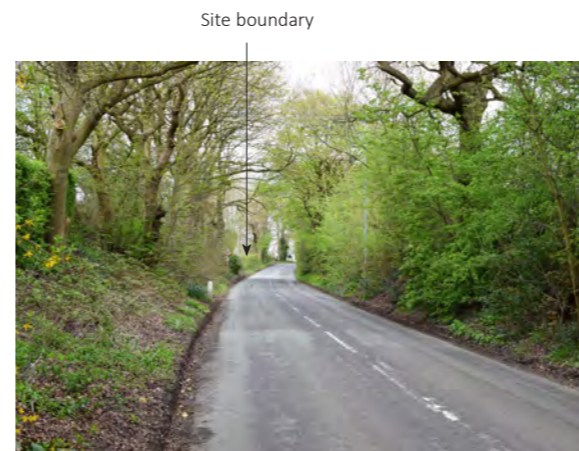


Photo 3.5 - View from Lady Lane, looking north towards the site.

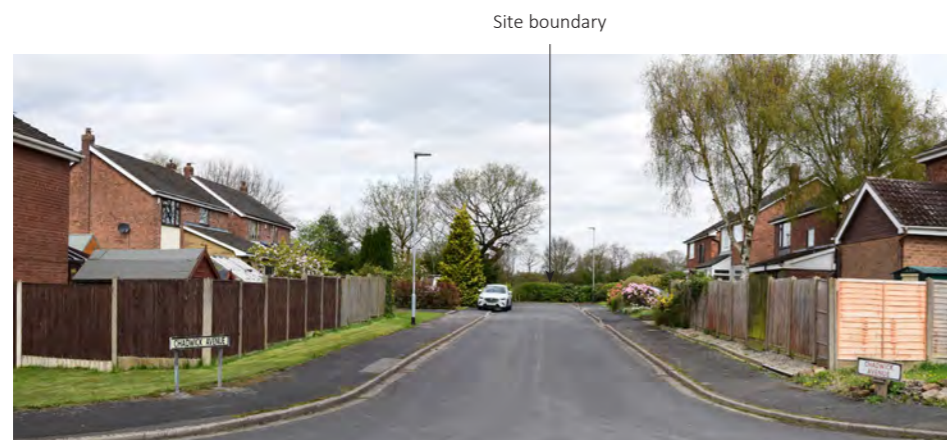


Photo 4.1 - View from Chadwick Avenue, looking north towards the southern site boundary.



Photo 5.1 - View from Abbey Close, looking east towards the western site boundary.

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Warrington Local Plan Sites

Appendix A: Figure 7 Viewpoint Photographs

Drwg No: 630DA-07A	Date: 03-05-18
Drawn by: MF/AL	Checker: SR
Rev by:	Rev checker:
QM Status: Checked	Product Status:
Scale: NTS	Con eview

Figure 7 - Viewpoint photographs

Landscape

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

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

The landscape is not designated for its landscape value and based on the range of factors identified in Box 5.1 is considered to be **Medium** value.

LANDSCAPE VALUE
LANDSCAPE QUALITY (CONDITION)
The landscape closely associated with the north-eastern and south-western sectors of the site are “predominantly pastureland” with “historic field patterns” (Warrington LCA boundaries have become “gapped and fragmented hedgerows supplemented by post and wire fencing” (Warrington LCA, 2007) in places. Weak throughout the study area
SCENIC QUALITY
The landscape immediately surrounding the site has a more “intimate” character with “linear views strongly contained between the field hedges” (Warrington LCA, 2007) in places, suggesting that any scenic quality is held in short linear view corridors. The site is bordered by residential development to the south and west.
RARITY
Remnants of parts of the landscape immediately surrounding the site are “represented in the landscape as post medieval enclosure of a medieval strip system”, the retention of which “the core of an old agricultural landscape is extremely rare within the Borough and a significant asset worthy of retention” (Warrington LCA, 2007).
REPRESENTATIVENESS
The landscape of the site is broadly representative of the landscape experienced by the Warrington LCA (2007), with the exception of the site boundary. There are better examples of the medieval landscape further north within the study area and character area.
CONSERVATION INTERESTS
There are a number of buildings within the site of conservation interest. The only one located in close proximity to the site is the parish church of Christ’s Church, Lady Lane, built in 1833, which is Grade II listed and adjacent to the western boundary of the site. “Crasslands” is a Local Wildlife Site and located on the eastern sector of the site, adjacent to the western boundary of the site.
RECREATION VALUE
A Public Right of Way runs on a west to east orientation to the northern boundary of the site. This connects the site to the wider network within the landscape to the north and north east of the site.
PERCEPTUAL ASPECTS
Due to the presence of major transport corridors nearby, including the M62 and M6, the site does not experience any strong sense of tranquillity. The landscape is therefore not valued for any wildness or tranquillity.
ASSOCIATIONS
There are no known associations with any published art, literature or folklore which would add to its landscape value.

Susceptibility to change

The landscape of the site and its immediate surroundings consists of small scale elements that are a remnant of the historic landscape. To the north of the site is representative of the historic medieval landscape. Further north within the study area.

The well-established woodland of Craslands Local Wildlife Site and the existing residential development to the south and west of the site help to create a more "intimate" (Warrington LCA, 2007) character, closely associated with the setting of Craslands. The landscape becomes more open within the surrounding landscape to the east and west of the site. The susceptibility to change of the site and its immediate surroundings is therefore considered to be **Medium**.

Conclusion in respects of the landscape

As can be ascertained from the description of the site and its value, the landscape of the site and its immediate surroundings contains areas with a "historic intimate character" (Warrington LCA, 2007) closely associated with the setting of Craslands. These elements of rarity within the landscape, although these are visually enclosed by existing vegetation, have experienced some change over time. This "intimate" landscape feathers out into a much larger scale, more "intensely cropped" (Warrington LCA, 2007) agricultural landscape to the west and east.

The landscape of the site and its immediate surroundings results from the consideration of landscape value and its susceptibility to change. As the **landscape value is considered to be Medium, and the susceptibility to change is considered to be Medium**. The landscape of the site and its immediate surroundings is considered to be **Medium**.

Views and visual receptors

In line with GLVIA and Diagram 2 within the methodology, 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 visual receptors.

The landscape is not designated nationally 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
PUBLIC RIGHTS OF WAY SURROUNDING THE SITE			
Receptor 1 (Photos 1.1 – 1.6) Pedestrians using PRoW Cr	Medium The western half of the route is enclosed with limited views. The eastern half is more open with views across the surrounding agricultural landscape and of the Grade II Listed Christ's Church in places.	High The landscape is generally to be valued by those engaged in recreation	Medium - High
Receptor 2 (Photos N/A) Pedestrians using PRoW Cr	Medium Tall vegetation on the southern side of the route restricts views south. On higher ground through gaps in the vegetation will be offered views across agricultural land towards the Grade II Listed Christ's Church.	High The landscape is generally to be valued by those engaged in recreation	Medium - High

VISUAL RECEPTOR TYPE	VALUE OF THE VIEW	SUSCEPTIBILITY TO CHANGE	RESULTING SENSITIVITY
ROADS SURROUNDING THE SITE			
Receptor 2 (Photos 2.1 – 2.5) Motorists using Lady Lane	Medium No recognised value attached to the views, except for Grade II Listed Christ's Church when approached from the north. Views of the road corridor and surrounding the north of the study area, enclosed views of the road corridor in the south.	Low Due to speed of travel, short length of interest and because their interest is focused on the road and driving rather than the views.	Medium - Low
Receptor 3 (Photo 3.1) Motorists using Chadwick Avenue	Low Short residential street with linear view to site boundary framed by housing. No recognised value attached to the views.	Low Due to the residential character, no clear views of the site and because their interest is focused on the road and driving rather than the views.	Low
Receptor 4 (Photo 4.1) Motorists using Abbey Close	Low Short residential street with linear view to site boundary framed by housing. No recognised value attached to the views.	Low Due to the residential character, no clear views of the site and because their interest is focused on the road and driving rather than the views.	Low

Development potential

The evaluation of landscape, townscape and visual receptors below highlights an **Medium** potential. Any proposed masterplan should take into consideration the need to demonstrate good design and contribute to the landscape and its character. The Constraints Schedule 25 and appended to this report (**Appendix C**) illustrates the relevant considerations for the site. These are explained in more detail below.

Evaluation of landscape

The landscape and its surroundings is considered to be **Medium** in Chapter 5 of this report.

Crucially, existing vegetation and hedgerows are the more valuable elements within the site due to their historic value, scenic quality and conservation interests.

The relevant recommended management and landscape policies within the Warrington LCA, 2007 should form the basis of any landscape approach proposed. Illustrative Masterplan, and should aim to:

- Retain existing hedgerows and hedgerow trees;
- Support and encourage traditional hedgerow management;
- Support and encourage new hedgerow and hedgerow tree planting to infill gaps and missing hedge sections.

The existing landscape features within the site should be retained within the green infrastructure network of any proposed development. Plan with hedgerows and woodland around the northern and

eastern boundaries of the site as part of any proposed development would enhance woodland character, strengthen existing boundaries and appropriately respond to the local character adjacent to the Grade II listed Christ's Church. Strengthening the existing character is a key objective of the Warrington LCA, 2007 and it would help to maintain the "intimate" (Warrington LCA, 2007) character of this part of the study area.

Evaluation of townscape

The key elements of built form that contribute towards the townscape character adjacent to the site within Crucially, existing vegetation and hedgerows are the more valuable elements within the site due to their historic value, scenic quality and conservation interests.

Crucially, existing vegetation and hedgerows are the more valuable elements within the site due to their historic value, scenic quality and conservation interests.

Any proposed development within the site needs to be considered towards the character of Lady Lane. The relationship between proposed development with the Grade II listed Christ's Church is also an important consideration for the site.

Evaluation of visual receptors

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

The most sensitive visual receptor to any potential development is the Public Right of Way adjacent to the northern boundary of the site. Development should be set back from the northern boundary in order to preserve the existing vegetation and maintain the character of this route and key view lines towards the wider landscape and townscape features, including the Grade II Listed Christ's Church.

Any proposed development should be set back from the eastern edge of the site to maintain the character of Lady Lane and to respond sensitively to Christ's Church. Development that is visible from this location should not front onto the road corridor to create an additional edge.

Development potential

A well-designed development that preserves the existing landscape features within a green infrastructure network and responds sensitively to the character of Lady Lane and the sensitive Grade II listed Christ's Church adjacent to the eastern boundary of the site would avoid any adverse effects on the character of Crucially, existing vegetation and hedgerows are the more valuable elements within the site due to their historic value, scenic quality and conservation interests.

For the reasons outlined above, this report considers the Lady Lane site to be a sustainable and achievable location to be allocated for new housing development within the new Warrington Borough Local Plan without "impacting on the character objectives" of Crucially, existing vegetation and hedgerows are the more valuable elements within the site due to their historic value, scenic quality and conservation interests. Section 7 of the Warrington Borough Council Local Plan: Sustainability Statement Document (July 2017).



Constraints and Opportunities

Illustrative masterplan

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

The land at Lady Lane, Crayke presents an opportunity to develop a sustainable extension to Crayke providing around 195 homes.

The development would support the existing community with a high quality residential development and an area of open space for informal recreation and areas of play. The development of the site would be designed to support walking and cycling providing sustainable travel to existing proposed local

The development would ensure that important ecological assets within the site are preserved with measures to provide habitats and enhanced biodiversity.

The development of the site would preserve and where possible enhance the setting of St. Mary's Church.



Illustrative Masterplan



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ENVIRONMENT
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**LADY LANE
CROFT
ARBORICULTURAL WALKOVER SURVEY AND
DESKTOP ASSESSMENT
JUNE 2019**

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Prepared for	Peel Holdings (Land and Property) Limited
Prepared by	TEP - Warrington
Document Ref	6929.02.003

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

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2.0	17/05/19	RMG	JGS	Addition of preliminary assessment of effects	Superseded
3.0	12/06/19	RMG	JGS	Amendment 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 off Lady Lane, Conceptual Masterplan

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 Lady Lane 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 6.57ha of land that could deliver up to 228 units with a further 3.15ha allocated for green infrastructure.
3. Approximately 6.73ha of tree cover and 70m of hedgerow was recorded on or within influencing distance of the site. This comprises mostly broadleaved species along the internal and perimeter boundaries and a woodland block adjacent to but outside of the western boundary.
4. The desktop review and site survey identified no Tree Preservation Orders; no trees within a Conservation Area; no ancient woodland; no veteran trees; 3.43ha of Habitat of Principal Importance *Deciduous Woodland*; and 70m 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 over 95% of existing trees (6.61ha). 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 Lady Lane. 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 15th June 2018 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. Access to land not in Peel ownership was not generally possible although the relatively small size of the site and the presence of public rights of way did allow at least limited survey of all trees. The areas outside of Peel ownership are identified on Drawing 2. Survey of trees on the eastern boundary was possible from the road; those to the north-west and south-west were visible from Peel land and footpaths.
- 1.4 Terrain did not constrain access to any area. 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 Lady Lane, Croft. 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 north east of the village of Croft and is adjacent to the built-up area on its western and southern boundaries.
- 2.3 Lady Lane forms the eastern boundary of the site and a listed church (Christ Church) and associated vicarage are opposite the site across Lady Lane at its north-eastern corner.

Approximate area

- 2.4 The site is approximately 10.35ha.

Current use

- 2.5 The site comprises agricultural land and open space within an enclosed field system including very narrow fields in the north of the site and beyond the northern boundary. The south-western quarter of the site is woodland.
- 2.6 Public access is limited except for via footpaths following the perimeter of the woodland and some within it. These are apparently well-used although not necessarily rights of way.

Local authority

- 2.7 The local authority is Warrington Borough Council.
- 2.8 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 areas not previously surveyed and the compartments containing mature trees and semi-natural woodland such as C6 the northern parts of C4, 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's internal and perimeter boundaries are strongly defined by vegetation. Most of this is not in the form of managed hedge and is not mapped as such on Drawing 2. However, the rows of trees with regularly trimmed sides at lower levels may be regarded as hedgerow under the Regulations. Hedgerow that is mapped on Drawing 2 and some of the linear boundary features such as compartment C7 and C8 may qualify as 'Important' hedgerow under the Regulations on the grounds of woody species and ecological criteria. 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. The rows of mature trees and understorey on boundaries would not individually be regarded as woodland. However, as an assemblage of connected features in such close proximity to one another and a larger woodland compartment, it is appropriate to regard all woody vegetation as matrix of low density deciduous woodland with open spaces. The extent of deciduous woodland that was recorded within the site and shown on Drawing 1 is therefore approximately 3.43ha.
- 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 the hedgerows on the site would meet the criteria for inclusion in this habitat type. It is possible that other vegetation could be considered to be hedgerow which has been recorded as compartments, for example where vehicles pass existing trees and trim growth to a clear edge along Lady Lane, or hedgerow with occasional trees that has ceased to be managed such as compartment C7 and C8. Circa 70m of hedgerow is shown approximately on Drawing 1.
- 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.
- 3.27 Within the Mersey Forest Plan the site falls within the Urban edges, motorways and highways (W3) area. The indicative woodland cover target for this area is 30% and the relevant policy is:

(i) Increase woodland planting density and create linear woodlands, including along strategic green links such as the Bridgewater Canal and the Trans Pennine Trail.

- 3.28 The Mersey Forest Plan has been considered in view of the tree population present and whilst the policy can be met, it would be prudent that the Mersey Forest are consulted further in due course.

Other Designations and Status

- 3.29 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. The function of woodland as habitat and in delivering ecosystem services such as stormwater interception should be evaluated in terms of policy compliance and in the context of other conservation objectives.

5.0 Tree Population Summary

- 5.1 Trees cover a large proportion of the total site area. The majority are located within a woodland compartment in the south-west but all internal and perimeter boundaries are marked by vegetation. Most of these include trees and some are relatively large and mature.
- 5.2 Trees along Lady Lane adjacent to the site and extending southwards form an enclosed tunnel along this section of the highway. The trees on the site boundary are somewhat smaller than those in the churchyard but nonetheless a critical component of this characteristic.
- 5.3 In terms of quality and particularly habitat and amenity benefits, the tree population has significance in terms of the setting of Christ Church and Lady Lane. It also marks the established field system with mature vegetation and creates a mature and enclosed landscape. The woodland is a high quality habitat and is well-connected to the surrounding boundary vegetation with few gaps.
- 5.4 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.
- 5.5 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	6.73 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	0.0 ha

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

- 5.6 Mature individual trees are not shown on the survey plans. Compartment C5 comprises 4 individual trees but these were recorded as a compartment because they effectively form the western woodland edge and delineate a scrubby glade to the east. They therefore have a function beyond their numbers and individual characteristics. Strong linear features comprising individual trees whose primary function is as a group such as avenue trees along Lady Lane are also recorded as groups.
- 5.7 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.
- 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 as shown on the masterplan including the provision for site infrastructure incorporates 6.57ha of the site at Lady Lane. This could deliver up to 228 units. A further 3.15 ha is allocated as green infrastructure and incorporates informal open spaces utilising much of the existing tree cover.

Canopy Cover

- 6.5 With the exception of new access the masterplan broadly respects existing tree canopy cover with residential areas shown within the open field network. Third party trees in woodland Compartment C6 have also been afforded a suitable buffer from proposed residential areas. During the detailed design stages, adjacent access routes to Compartment C6 should avoid rooting areas.
- 6.6 The primary tree losses would occur along the site boundaries where new access routes are created. Based on the tree cover mapped on Drawings 1 and 2 an estimated 0.12ha of tree cover would be removed. The majority of this comprises the mature field boundary vegetation across the centre of the site and off Lady Lane.
- 6.7 Proposed vehicular access on the masterplan is indicted off Lady Lane to the east and Chadwick Avenue to the south. Although the access arrangements takes advantage of natural gaps in existing boundary features, both points and their associated visibility splays are likely to result in the removal of a small number of mature oak trees.

- 6.8 Access internally would inevitably cause fragmentation of existing linear features. At compartment C7, this would be less problematic than at compartment C4, which contains many more mature trees.
- 6.9 It would therefore be possible to retain and integrate the majority of trees within the proposed 3.15ha of green infrastructure areas of the masterplan.
- 6.10 The combined anticipated effects of the masterplan are summarised in the following table.

Table 2 Approximate quantum of woody habitats that would be removed

Woody habitat type	NFI Primary Vegetation Descriptor Ref.	Area
Broadleaved	1	0.12 ha

Opportunities

- 6.11 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.
- 6.12 One consideration of development is the opportunity to maintain the arboricultural legacy of the site through appropriate mitigation and management. The existing tree stock is weighted to maturity and leaving the site in its current context could result in the loss of trees over time due to death from old age, pests and diseases, tree failures and ad-hoc responses to health and safety fears. It is unlikely given the site in its current context that new trees won't grow, however, integrating development into the existing tree stock with an appropriate management plan could: increase new tree species type that are resilient to disease; increase species diversity; and create an age structure that ensured the long term tree cover across the site.
- 6.13 The introduction of new SuDs ponds to the south west of the site brings the opportunity to create a small wet-woodland habitat, a valuable habitat that isn't currently present on the site. Species such as willow, alder, oak and downy birch should thrive in these conditions and the introduction of alder and birch could increase the amount of native species types across the site.

Tree Quality

- 6.14 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.
- 6.15 Compartments of Poor Quality are those that have identified defects or shortcomings. These may be remediable.

- 6.16 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.
- 6.17 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.
- 6.18 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 3 Quality of surveyed compartments

Excellent Quality	Good Quality	Fair Quality	Poor Quality
3	6	2	0

- 6.19 A breakdown of canopy loss estimate by quality assessment is provided in the following table.

Table 4 Approximate Quality of woody habitats that would be removed

Woody habitat type	Excellent Quality	Good Quality	Fair Quality	Poor Quality	Total
Broadleaved	0.03ha	0.07ha	0.02ha	0.0ha	0.12ha

Veteran Trees

- 6.20 No veteran trees were identified during the walkover assessment but it is not possible to rule out their presence in areas where access was restricted. It will be necessary for any future layout to respond to the presence of veteran trees should they be identified during more detailed survey work.

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. No immediate works were required.

Permissions

- 7.2 Authority to undertake any other routine maintenance works must be sought in advance of commencement.
- 7.3 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.
- 7.4 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.
- 7.5 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.
- 7.6 Based on the results of the desktop survey, tree works would not be subject to TPO or affect trees within a Conservation Area.
- 7.7 Tree works on the site may require a felling licence⁷ and 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.
- 7.8 It is considered likely that any removal could include hedgerow that is protected by the Hedgerow Regulations 1997 on the grounds of woody species and 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.
- 7.9 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

- 7.10 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.
- 7.11 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

- 7.12 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

- 7.13 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.
- 7.14 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.
- 7.15 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

- 7.16 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.

- 7.17 Mitigation for the loss of trees as a result of development will be delivered via the creation of new planting within proposed green infrastructure to the east of the site adjacent access off Lady Lane and to the west adjacent Compartment C6, shown on Drawing 3.
- 7.18 Approximately 0.12 hectares of tree cover would be removed if the development was carried out in strict accordance with the Masterplan but this may be subject to modification at the detailed design stage. The Masterplan indicates that in general, existing tree cover and arboreal connectivity across the site would be retained. Discussion is provided on the interrelationship of key arboricultural features in Section 6.
- 7.19 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.
- 7.20 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

- 7.21 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.
- 7.22 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 15th June 2018
Site Lady Lane, Croft
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

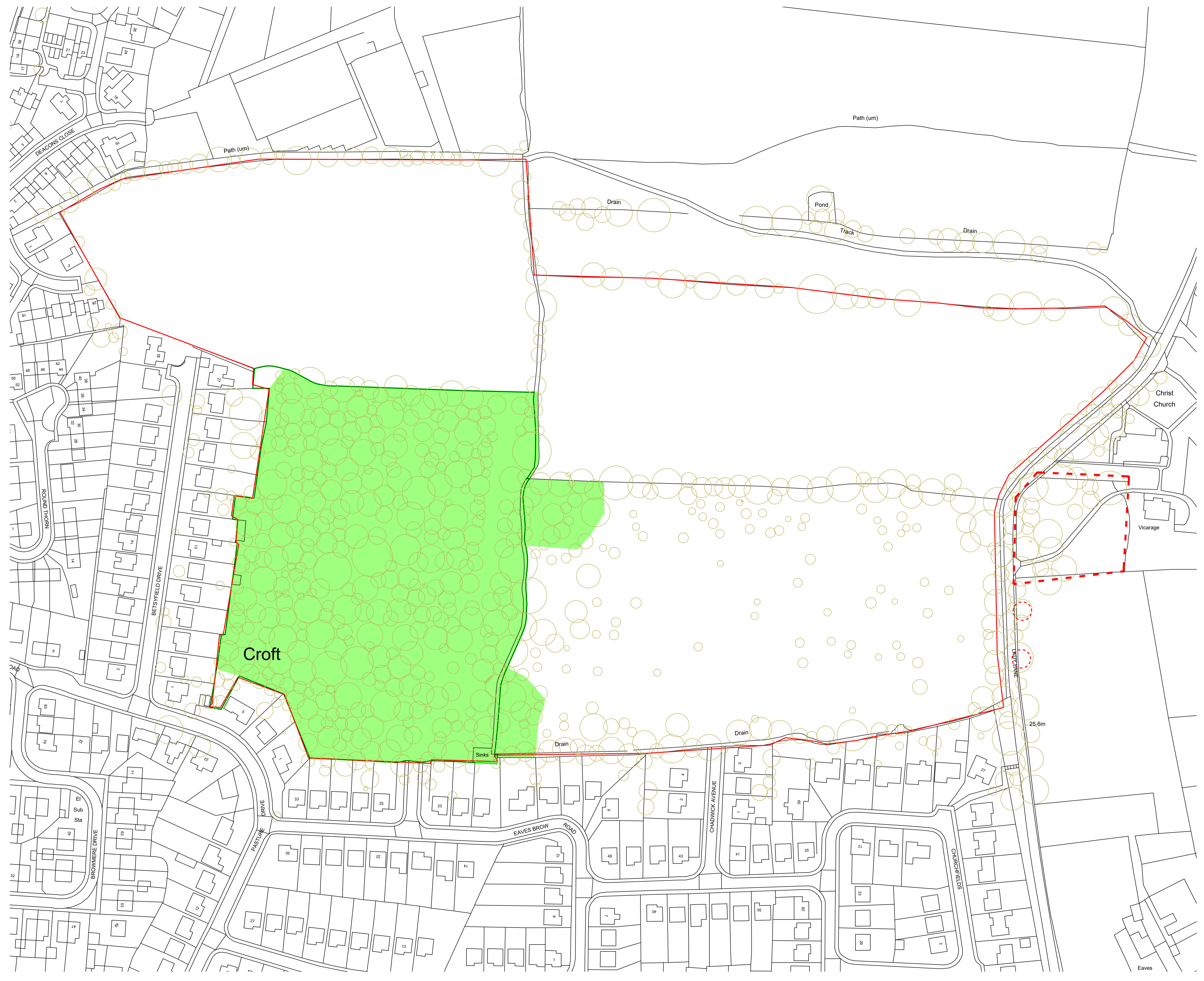
C1	Common lime; small leaved lime; hawthorn; cherry; hazel; ash	1		Middle Age to Mature	Good	Avenue of lime trees within church yard and on site boundary; trees on site boundary smaller and in somewhat poorer condition than those within churchyard; hedgerow along site boundary comprises only lime in some sections	
C2	Beech; holly; oak; hawthorn; copper beech; rowan; horse chestnut	1		Middle Age to Mature	Good	Mixed woodland; beech dominated	
C3	Ash; oak; hawthorn; sycamore; elder; blackthorn	1		Middle Age to Mature	Excellent	Broadleaved hedgerow and mature trees enclosing road and meets overhead; key to character of road	
C4	Ash; sycamore; hawthorn; oak; elder; hazel	1		Middle Age to Mature	Excellent	Row of trees with oak the main canopy; many trees with high conservation value and a range of habitat features including cracks, splits, cavities and aerial deadwood; presumed high bat potential	
C5	Ash; oak	1		Middle Age	Good	Four trees adjacent to open space; effectively forming the edge of woodland C6 with rough unmown area between the two	
C6	Ash; hazel; sycamore; elder; oak; hawthorn; cherry	1		Young to Mature	Excellent	High quality woodland with well-used but unmarked footpath along eastern and northern edge; significant hazel component; oak and sycamore canopy; some areas dominated by smaller hawthorn; ditch on eastern boundary	
C7	Oak; hawthorn; elder	1	11	Middle Age	Fair	Scrubby hedge with one larger oak tree; not managed	
C8	Hawthorn; elder; oak; grey willow	1		Middle Age to Mature	Good	Hedge with managed sides only and tops grown on; occasional mature oak	
C9	Hawthorn; elder	1		Middle Age	Fair	Gappy hedge with some tops grown on	
C10	Oak; hawthorn; hazel; sycamore; birch; ash	1		Middle Age to Mature	Good	Boundary planting adjacent to gardens; high canopy is more intact at western end, eastern end is more of a hedge with occasional trees; western half is a good screen	
C11	Grey willow; oak; gorse; elder	1		Middle Age	Good	Small stand of trees around unmapped pond	

DRAWINGS

Drawing 1 - Arboricultural Desktop Overview

Drawing 2 - Arboricultural Survey Overview

Drawing 3 - Land off Lady Lane, Conceptual Masterplan



- KEY**
(This drawing must be reproduced in colour)
- Site Boundary
 - National Tree Map (c.640 trees)
(considered to be overestimated by c.100 trees)
- Mapped designations and classifications**
- Ancient Woodland (with 15m buffer) (None)
 - Tree Preservation Order (Warrington Borough Council) (Adjacent)
 - Habitat of Principal Importance (NERC: Deciduous Woodland) (3.00ha)
 - 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 (3.22ha)
 - 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
Lady Lane, Arboricultural Walkover and Desktop
Title
Arboricultural Desktop Overview

Drawing Number
D6929.02.014

Scale 1:1,000 @ 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) (Adjacent)
 - Habitat of Principal Importance (3.43ha) (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 (70m) (NERC: Hedgerow)
 - Community Forest (Mersey Forest and Northern Forest) (All)
 - Veteran Tree 15m buffer (Compartments most likely to contain further veterans marked *) (None)
 - Conservation Area (Warrington Borough Council) (None)

- Vegetation type (measurements taken within the boundary)**
- Mature trees (non-woodland or notable)
 - Broadleaved (6.73ha)
 - 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

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Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
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Project
Lady Lane, Arboricultural Walkover and Desktop
Title
Arboricultural Walkover Overview

Drawing Number
D6929.02.015















Scale 1:1,000 @ A1	Date 11/05/2018
Drawn TDP	Checked JGS
	Approved JGS



Area Measures:
 Total site area: 10.35 ha
 Infrastructure: 0.7 ha
 Green infrastructure: 3.15 ha
 Total developable area : 6.50 ha

This site could deliver between 195 (@30 per ha) and 228 (@35 per ha) units.

KEY:

-  Site boundary
-  Exis ootpath
-  Proposed footpath
-  Exis
-  Exis egeta e
-  Proposed SUDS feature
-  Proposed tree plan
-  Green infrastructure
-  Proposed development area
-  Proposed vehicular access points
-  Poten ehicular access points
-  Proposed primary road
-  Proposed secondary road
-  Proposed LEAP

NB: Masterplan subject to change following detailed survey work



Conceptual Masterplan

Drwg No: 630DA-11
 Drawn by: AH
 Rev by: AH
 QM Status: Checked
 Scale: 1: 5000 @ A3

Date: 12.09.17
 Checker: SR
 Rev checker: SR
 Product Status: Con review



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June 2019

Peel Holdings (Land and Property) Ltd

Predicted Agricultural Land Classification

at

Land off Lady Lane, Croft, Warrington

**Beechwood Court,
Long Toll, Woodcote,
RG8 0RR**

**01491 684 233
readingagricultural.co.uk**

1 Introduction

- 1.1 Reading Agricultural Consultants Ltd (RAC) is instructed by Peel Holdings (Land and Property) Ltd to assess the Agricultural Land Classification (ALC) of land off Lady Lane, Croft, 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 extends to approximately 10.35ha, mostly in three arable fields. Aerial photography of the site shows that the south-eastern field has only in recent years been cultivated. Prior to that, the field parcel comprised rough grass and scrub. The site is bounded to the east by Lady Lane, to the south and west by the settlement of Croft and woodland, and to the north by other agricultural land and Heathcroft Stud.

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.

- 2.2 Topography across the site is very gently sloping from east to west, with altitude falling from around 32m above Ordnance Datum (AOD) to 25m AOD in the west.

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 25m AOD, and are given in Table 1. Climate at the site is wet and moderately warm with moderate to moderately small 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	880mm
Accumulated Temperatures >0°C	1,423 day°
Field Capacity Days	208 days
Average Moisture Deficit, wheat	86mm
Average Moisture Deficit, potatoes	73mm

Soil parent material and soil type

- 2.4 The principal bedrock geology mapped by the British Geological Survey³ across the site is the Wilmslow Sandstone Formation, comprising red-brown to brick-red sandstones with sporadic siltstones.
- 2.5 Superficial deposits of glaciolacustrine clay and silt overlie the bedrock across most of the site. In the south, deposits of glacial till are mapped and may comprise particles ranging in size from clay to boulders.
- 2.6 The Soil Survey of England and Wales soil association mapping⁴ (1:250,000 scale) shows the Salop association across the site. These soils are mainly loamy or clayey with slowly permeable subsoils in reddish drift. Soils within this association tend to be waterlogged for long periods in winter and are commonly assessed as Wetness Class (WC) IV. Soils can potentially be improved to WC III with drainage⁵.

³ **British Geological Survey (2019).** *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. Harpende

3 Agricultural land quality

Existing data

- 3.1 Provisional ALC mapping⁶ shows the site as undifferentiated Grade 3. 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 available for 9ha of the site and shows the land to be classified mostly as Subgrade 3b with a smaller area of Subgrade 3a.
- 3.3 Profiles of Subgrade 3b consist of very slightly stony medium clay loam topsoils over very slightly stony permeable heavy clay loam subsoils. Profiles are classed as WC IV and are limited to Subgrade 3b by soil wetness and workability.
- 3.4 Profiles of Subgrade 3a generally comprise very slightly stony medium clay loam and medium sandy loam topsoil over stoneless or very slightly stony sandy clay loam upper subsoils, with slowly permeable heavy clay loam lower subsoils. Soil profiles are slowly permeable between 60 and 70cm depth and are of WC III.
- 3.5 Aerial photography shows some variation in crop establishment across the north-east of the site, which is anticipated to be mostly of Subgrade 3b quality, with a smaller area of Subgrade 3a. The area of former scrub in the south-east also shows some patchiness in crop establishment and is also anticipated likely to be of Subgrade 3b. The combined areas of the actual and likely ALC grades are given in Table 2 and are shown in Figure RAC8025-1f.

Table 2: Agricultural land classification

Grade	Description	Area (ha)	% of agri land
3a	Good quality	2.6	25
3b	Moderate quality	7.7	75
Total		10.3	100

⁶ <https://magic.defra.gov.uk/>, accessed 12/06/2019

3.6 Guidance in paragraph 171 of the National Planning Policy Framework (NPPF)⁷ is that where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality. The land off Lady Lane is the only land surrounding Croft for which there is detailed ALC information but the Provisional ALC map⁶ shows land to the south and south-west of the village as Grade 2, with the remainder as undifferentiated Grade 3. Therefore, the development of land off Lady Lane that would involve predominantly lower quality agricultural land would be consistent with paragraph 171 of the NPPF.

⁷ <https://www.gov.uk/government/collections/revised-national-planning-policy-framework>, accessed 12/06/2019



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



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Scale 1:10,000@A4 May/2019

Figure RAC8025-1f: MAFF and Predicted ALC

Site: Land at Lady Lane, Croft

Client: Peel Holdings (Land and Property) Ltd

Reading Agricultural Consultants

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NOISE SCREENING ASSESSMENT

on behalf of

PEEL HOLDINGS (LAND & PROPERTY) LTD

for the site at

LADY LANE, CROFT

REPORT DATE: 14TH MAY 2019

REPORT NUMBER: 101863_V3

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Summary

Miller Goodall Ltd (MG) has, on behalf of Peel Holdings (Land and Property) Ltd, undertaken a desktop noise screening assessment and a preliminary walk over survey to review the potential issues associated with noise on a proposed residential development comprised of 195-228 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 and noise issues around the site are not considered significant.

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

There appear to be limited noise sources impacting on the site and it is unlikely that a full noise assessment would be required at the planning stage.

Record of changes

Prepared By Jo Miller MIOA

Reviewed By Matt Wilson MIOA

Signed



Signed



Date

14th May 2019

Date

14th May 2019

Version	Date	Change	Initials
1	9 th July 2018	Initial draft	JLM
2	9 th May 2019	Minor changes	RM
3	14 th May 2019	Minor Alterations	RM
4	15 th May 2019	Alterations to plan	JLM

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1 Introduction

- 1.1 This noise report is submitted in support of a proposed housing allocation within the Warrington Local Plan for a site located on the land west of Lady Lane, Croft. 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 10.35 ha in size and currently comprises a mix of agricultural land and woodland. The site is approximately 900 m north of the M62 and M6 intersection. To the north of the site there is open agricultural land. Lady Lane lies along the eastern boundary of the site, beyond which there is Christ Church and agricultural fields. Immediately south and west of the site there are residential dwellings. The site location is shown in Appendix 1.

3 Proposed Development

- 3.1 The proposed development consists of up-to 228 homes and associated infrastructure with the access coming from Lady Lane.

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:

¹Noise Policy Statement for England, Defra, March 2010

“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.

4.2 National Planning Policy Framework

4.2.1 The National Planning Policy Framework (NPPF²) initially published in March 2012, was updated in February 2019. One of the documents that the NPPF replaces is Planning Policy Guidance Note 24 (PPG 24) “Planning and Noise”³.

² National Planning Policy Framework, Ministry of Housing, Communities and Local Government, July 2018

³ Planning Policy Guidance 24: Planning and Noise, DCLG, September 1994

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 contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve 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. 170 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. 180 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.

4.3 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. 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 Planning Practice Guidance – Noise, <http://planningguidance.planningportal.gov.uk/blog/guidance/noise/>, 06 March 2014

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.

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.

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 World Health Organisation Guidelines for Community Noise, 1999

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}.

5.4 BS 4142: 2014 ‘Methods for rating and assessing industrial and commercial sound’

5.4.1 BS 4142: 2014⁸ 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. 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.

⁶ Sound exposure level or L_{AE}

⁷ WHO Night Noise Guidelines for Europe 2009

⁸ BS 4142:2014 Methods for rating and assessing industrial and commercial sound

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 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.

6 Impact of Existing Noise Sources on the Development

6.1 Noise Mapping

6.1.1 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.

6.1.2 Noise mapping has been undertaken by Department of Environment Food and Rural Affairs (DEFRA) in 2012. Maps have been provided for main noise sources including road traffic noise and railway lines. The noise maps for the area are shown for road traffic noise in Appendix 3. The results show the predicted $L_{Aeq,16hour}$ results around the site, taken at a grid height of 4 m.

6.2 Road Traffic Noise

6.2.1 The main existing road traffic noise sources which have the potential to impact on the site is from the M6 and M62. The whole area is shown to exceed 55 dB $L_{Aeq,16hour}$.

6.2.2 New Lane to the southern boundary of the site is not expected to impact on the site in relation to noise in any significant way.

6.2.3 The road network in this area is a noise source and further assessments would be needed to ensure that national noise standards are not exceeded. The assessment would need to include the potential noise from the motorway network and the provision of mitigation measures to protect future residents from noise is likely to be required. 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.

6.3 Railway Noise

6.3.1 Results of the noise mapping produced on behalf of DEFRA for the railway identify that railway noise is not a significant impact for the existing network.

6.3.2 The Golborne Link section of the proposed HS2 railway line runs SE to NW of the Lady Lane site and is approximately 1.4 km at its nearest point at the NW of the site and 1.3 km at the nearest point to the East.

6.4 Industrial/Commercial Noise

6.4.1 The only existing noise source which may have an impact on future residential uses is that of Heathcroft Stud Farm situated on the north western boundary of the development site. Kelly's Kennels is located approximately 350 m to the north east of the site and has the potential to impact on the site.

6.4.2 Potential noise sources include the use of plant and machinery, vehicle movements (deliveries, customers) and horse related activities. It is anticipated that this noise source is likely to be of low in terms of impact, and it should not be a constraint to residential development. However, a confirmation noise assessment would be appropriate.

6.4.3 In general, the development site is in a quiet, semi-rural location, surrounded by dwellings. Road traffic noise impacts are low (Lady Lane to the east) and the Croft Primary School to the north is likely to have no significant impact in terms of noise. Noise sources from Kelly's Kennels and Heathcroft Stud may need an assessment at the detailed design phase of the development. These will not present a barrier to the proposed development as a whole but may result in mitigation dependent on the outcome of a future noise assessment.

7 Impact of Noise from the Proposed Development

7.1 Transport Noise

7.1.1 New residential development and infrastructure developments of this size will result in additional vehicles on the local road network. . In order to assess whether traffic increases impact on the noise environment, it is useful to determine whether there are any roads increases in traffic flow this may necessitate the requirement for a detailed noise assessment. Design Manual for Roads and Bridges (DMRB) November 2011 section A1.8 (ii) states:

Changes in traffic volume on existing roads or new routes may cause either of the threshold values for noise to be exceeded. A change in noise level of 1 dB $L_{A10,18h}$ is equivalent to a 25% increase or a 20 % decrease in traffic flow, assuming other factors remain unchanged and a change in noise level of 3 dB $L_{A10,18h}$ is equivalent to a 100 % increase or a 50 % decrease in traffic flow.

7.1.2 If there are any roads with a 25% increase in traffic flow this may necessitate the requirement for a detailed noise assessment.

7.1.3 The Transport Appraisal undertaken by I-Transport demonstrate the proportional impact of the development for AM and PM peak hours in Table 6.7 of the Transport Appraisal.

7.1.4 This level of traffic increase is likely to require a detailed DMRB traffic noise assessment, however at this stage there is insufficient traffic data to enable a full assessment to be completed. It is expected that this level of increase will lead to a negligible impact on traffic noise levels, however an assessment is likely to be required by the Local Authority.

7.1.5 Although a full detailed assessment of the traffic noise has not as yet been undertaken, it is considered that the impact will be not be significant. The detailed assessment will need to consider the new infrastructure and methods to minimise any potential impacts.

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 5228⁹ 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.

⁹ BS 5228 Noise and Vibration Control on Construction and Open Sites - Part 1: Noise: 2009+A1:2014

7.3 New Commercial and Educational developments

7.3.1 There are no new commercial or educational developments proposed for the site.

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. There do not appear to be any tranquil areas in close proximity to the site.

8 Summary and Conclusions

8.1 A noise screening assessment and site visit have been undertaken to identify any potential noise sources which are likely to have an impact on the development of a site for a significant housing and infrastructure development. The information indicates that the impact of noise would not 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 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.
- Noise from 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, new infrastructure, 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.

8.4 It is concluded that the site is suitable for development from a noise perspective, and that mitigation where necessary (as specified by a full noise assessment for the site at a later stage of the development) will reduce noise to acceptable levels where appropriate.

APPENDICES

Appendix 1: Site Location Plan



Appendix 2: Illustrative Masterplan



Area Measures:
 Total site area: 10.35 ha
 Infrastructure roads: 0.7 ha
 Green infrastructure: 3.15 ha
 Total developable area : 6.50 ha

This site could deliver between 195 (@30 per ha) and 228 (@35 per ha) units.

LANDSCAPE ARCHITECTURE
 ENVIRONMENTAL PLANNING
 MASTERPLANNING
 URBAN DESIGN

RANDALL THORP

Canada House, 3 Chepstow Street, Manchester M1 5FW
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- KEY:**
- Site boundary
 - Existing footpath
 - Proposed footpath
 - Existing buildings
 - Existing vegetation within site
 - Proposed SUDS feature
 - Proposed tree planting
 - Green infrastructure
 - Proposed development area
 - Proposed vehicular access points
 - Potential vehicular access points
 - Proposed primary road
 - Proposed secondary road
 - Proposed LEAP

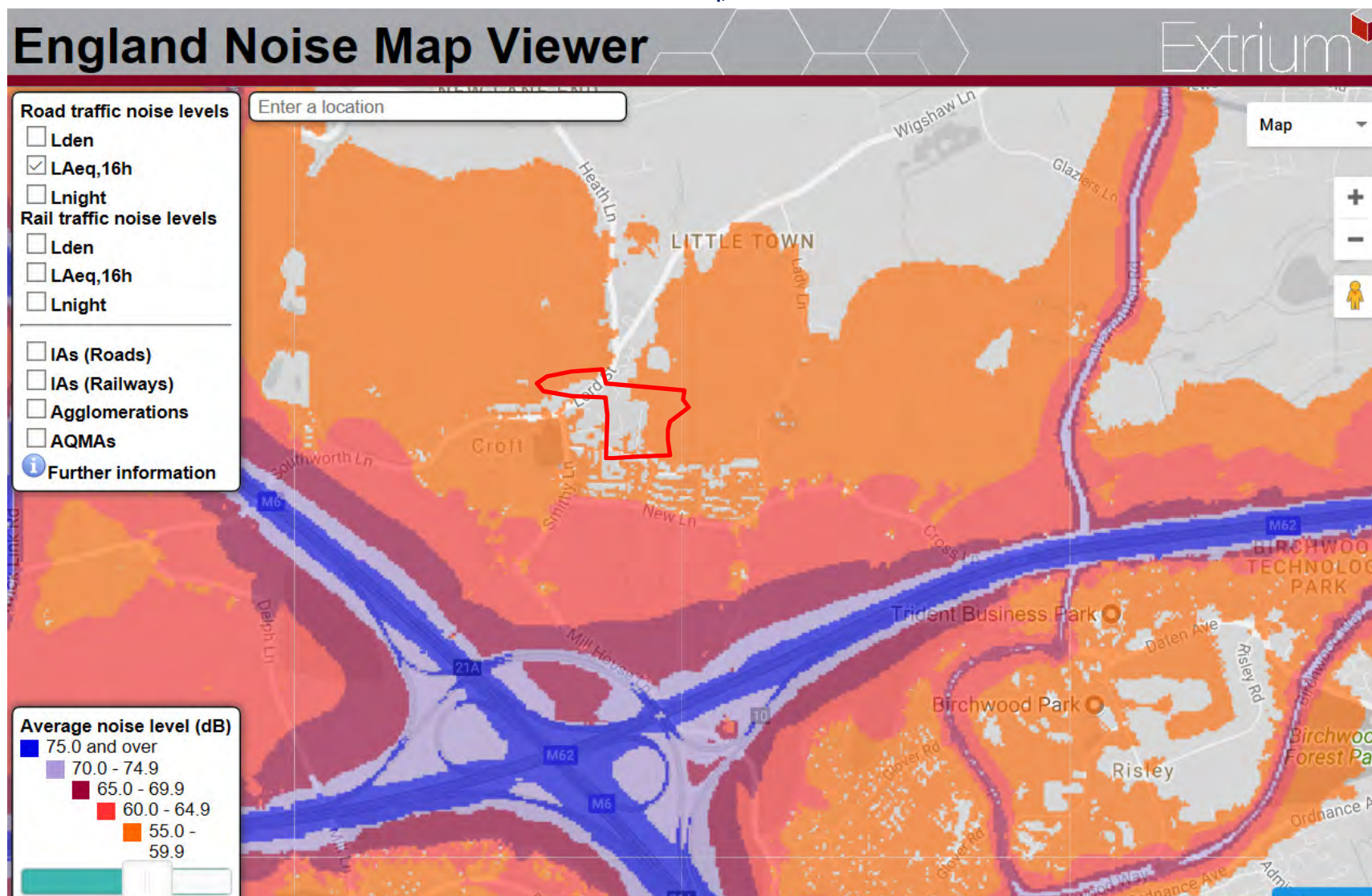
NB: Masterplan subject to change following detailed survey work



Land off Lady Lane, Croft
 Conceptual Masterplan

Drwg No: 6300A-11	Date: 12.09.17
Drawn by: AH	Checker: SR
Rev by: AH	Rev checker: SR
QM Status: Checked	Product Status: Confidential review
Scale: 1: 5000 @ A3	

Appendix 3: Road Traffic Predicted Noise Contours $L_{Aeq,16hour}$



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.



14th June 2019

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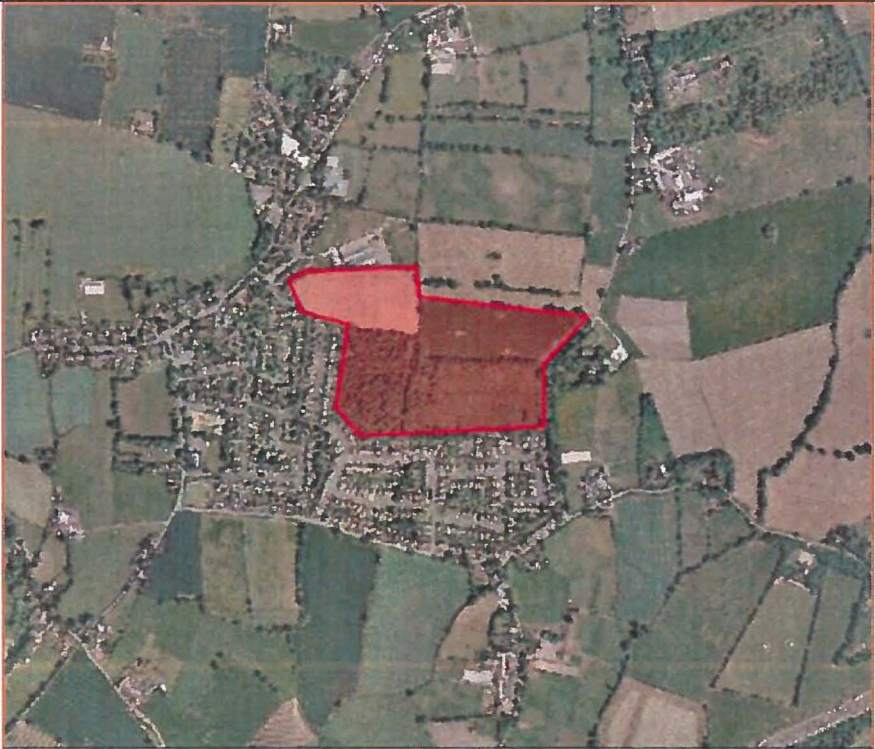
4th Floor
Colchester House
40 Peter Street
Manchester M2 5GP

Dear Donna,

**Re: Preliminary Site Appraisal
Lady Lane, Croft, 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	Lady Lane, Croft, Warrington WA3 7JU
Site Location	 <p style="text-align: center;">Figure 1.1 Red Line Boundary</p>
Grid Reference	E 363707, N 393535
Site Area	12.30 Hectares



<p>Current Site Use</p>	<p>The subject site is a rectangular shaped parcel of land located to the north of Croft, Warrington.</p> <p>The site comprises three undeveloped arable agricultural fields (Figure 1.1) with a wooded area in the southwest sector of the site.</p> <p>A small stream is located in the central sector of the site orientated north to south and flowing to the south which appears to be culverted beneath the neighbouring residential estate.</p>	
<p>Proposed Development</p>	<p>The proposed development scheme has not been finalised at this stage.</p>	
<p>Previous Reports</p>	<p>No previous reports have been provided for the site.</p>	
<p>Site History</p>	<p>A review of the OS historical mapping dating from the 1840s indicates the site has remained undeveloped agricultural land.</p>	
<p>Utility Locations</p>	<p>A review of service records indicates the presence of utility connections in Lord Street (west) and New Lane (south).</p>	
<p>Environmental Setting</p>	<p><i>Drift Geology</i></p>	<p>Glacioacustrine Deposits – <i>Clay & Silt (North)</i>; Glacial Till - <i>Clay, Silt, Sand & Gravel (South)</i></p>
	<p><i>Bedrock Geology</i></p>	<p>Wilmslow Formation – <i>Sandstone</i>.</p>
	<p><i>Hydrogeology</i></p>	<p>Superficial Deposits – <i>Unproductive Aquifer</i>; and Bedrock Geology – <i>Principal Aquifer</i>.</p>
	<p><i>Groundwater Source Protection</i></p>	<p>TBC</p>
	<p><i>Hydrology</i></p>	<p>A small stream is located on-site, and a number of other small streams are located within 250m radius of the site.</p> <p>There are no major watercourses located within a 250m radius of the site.</p>
	<p><i>Flood Risk</i></p>	<p>The site is unaffected by flooding from rivers (Flood Zone I).</p>
	<p><i>Ecology</i></p>	<p>No risk to ecology or aquatic ecosystems identified.</p>
	<p><i>Sensitive Land Uses</i></p>	<p>Residential properties are located to the west and south of the site.</p>
<p><i>Industrial Land Use</i></p>	<p>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.</p>	
<p><i>Subsidence Hazards</i></p>	<p>No hazard identified in available data searches.</p>	
<p>Landfill Sites & Ground Gases</p>	<p>There are no recorded landfill sites (current or historic) located on-site or within a 250m radius of the site.</p>	
<p>Radon</p>	<p>Lower Probability Area (<1% affected) – No protection measures required.</p>	
<p>Invasive Plant Species</p>	<p>To be confirmed during site walkover.</p>	



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 available borehole scan is located c. 400m (Ref:SJ69SW69) SE of the site.</p> <p>The ground conditions comprised;</p> <table> <tr> <td>GL-0.40</td> <td>TOPSOIL</td> </tr> <tr> <td>0.40-1.00</td> <td>Very soft to soft brown silty CLAY</td> </tr> <tr> <td>1.00-4.30</td> <td>Stiff to very stiff brown gravelly CLAY</td> </tr> <tr> <td>4.30-7.80</td> <td>Dense SAND & GRAVEL</td> </tr> <tr> <td>7.80-8.15</td> <td>Red SANDSTONE.</td> </tr> </table>	GL-0.40	TOPSOIL	0.40-1.00	Very soft to soft brown silty CLAY	1.00-4.30	Stiff to very stiff brown gravelly CLAY	4.30-7.80	Dense SAND & GRAVEL	7.80-8.15	Red SANDSTONE.
GL-0.40	TOPSOIL										
0.40-1.00	Very soft to soft brown silty CLAY										
1.00-4.30	Stiff to very stiff brown gravelly CLAY										
4.30-7.80	Dense SAND & GRAVEL										
7.80-8.15	Red SANDSTONE.										
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	<p>No potentially significant sources of hazardous ground gas have been identified.</p> <p>However, a number of small ponds were located on-site which appear to have been infilled or naturally silted up, which may pose a low-level ground gas risk to future site users.</p>										
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 likely underlain by cohesive soils as such there is potential for heave precautions 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 cohesive soils underlying the topsoil horizon may potentially provide a CBR of <5% if re-engineered in favourable climatic conditions.
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 Lady Lane, Croft

Transport Appraisal

Client: Peel Investments (North) Ltd

i-Transport Ref: SEE/dc/ITM13247-002B R

Date: 13 June 2019

Land off Lady Lane, Croft

Transport Appraisal

Client: Peel Investments (North) Ltd

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Date: 13 June 2019

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Quality Management

Report No.	Comments	Date	Author	Authorised
ITM13247-002R	Draft	03/07/18	Steven Eggleston	Steven Eggleston
ITM13247-002AR	Revised Draft	20/05/19	Steven Eggleston	Steven Eggleston
ITM13247-002BR	Final Draft	13/06/19	Steven Eggleston	Steven Eggleston

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Transport Appraisal .docx

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APPENDIX I.	2037 Baseline Traffic Flows
APPENDIX J.	Development Traffic Flows
APPENDIX K.	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 Proposed Submission Local Plan (PSLP) which will guide development in the Borough to 2037.
- 1.1.2 WBC's consultation document of March 2019 sets out how the PSLP was developed, including the work undertaken to develop its Preferred Development Option (PDO) which was subject to consultation in 2017. The PDO identified four main areas of growth: the city centre; the Waterfront; a Garden City Suburb in the south east quadrant of the town; and a south west urban extension. Further development is planned throughout the urban area and within Warrington's outlying settlements. The PSLP generally follows the same approach as the PDO.
- 1.1.3 The Local Plan Key Diagram, identifying the main areas proposed for development is included as Figure 3.1 of the PSLP.

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 15,000 hectares of land and water. Peel has significant interests in Warrington Borough including at the Waterfront, south west urban extension and in the outlying settlements.
- 1.2.2 Peel has specific interests at land off Lady Lane in Croft which is capable of delivering up to 228 new homes.
- 1.2.3 The main representations prepared by Turley explain why further development in Croft is needed and how the 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 off Lady Lane at Croft.

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 108 and 109 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 A range of facilities and services will be available locally within walking and/or cycling distance in Croft village. These include two primary schools, a shop and two public houses. Buses already serve Croft and travel along Lord Street close to the site, providing connections to the many facilities and services in Culcheth.
- ii Therefore the development of the site will fully accord with the NPPF objective related to sustainable travel, with opportunities for such modes taken up.
- iii Access to the site is proposed in several locations and feasibility level designs have been produced. All will operate satisfactorily. Access to the site can be provided on land controlled by Peel and is deliverable and achievable. It is therefore also considered that satisfactory access can be provided in accordance with the NPPF.
- iv 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 Lady Lane at Croft 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 PSLP 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 108 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 people; 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 109 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 102 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 103 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 104 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;

b. be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport development patterns are aligned;

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 high quality 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 Croft as a settlement represents a sustainable location for development on the scale envisaged by Peel.

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 statutory planning framework for the Borough for the period 2017 to 2037. The Local Plan will replace the 2014 Local Plan Core Strategy.

2.1.12 The PSLP 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 PSLP 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 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;*
 - 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; and*
 - f 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;*
 - f *Support proposals for rail infrastructure and services and the provision of rail facilities appropriate;*
- 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 walking, cycling or public transport infrastructure;*
- e *Propose how measures to facilitate and encourage the use of sustainable travel alternatives (such as walking, cycling or public transport use), have been incorporated into development; and*
- f *Major 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 Local Transport Plan

2.1.15 This document sets out the Local Transport Plan (LTP) strategy for the period 2011 – 2030. The objectives of the plan include:-

"To build and manage a transport network that:

- ***Is integrated and customer focused and reduces the need to travel by car.***
- ***Enables the regeneration of the Borough and supports economic growth.***

- ***Maintains the highway, minimises congestion for all modes of travel and enables Warrington's 'smart growth'.***
- ***Improves everyone's access to health, employment, education, culture, leisure and the natural environment.***
- ***Improves everyone's access to the town centre by all modes of travel.***
- ***Enhances accessibility for those in disadvantaged communities or groups.***
- ***Improves neighbourhoods and residential areas.***
- ***Improves safety and security for all modes of travel.***
- ***Reduces the impact of traffic on air quality in Warrington and helps to reduce carbon emissions and tackle climate change.***
- ***Makes Warrington safer, sustainable and healthier.***
- ***Integrates with transport networks outside Warrington to enhance the sustainability of cross boundary travel."***

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 and Smarter Choices (Section 4.0 – Sustainability and Accessibility); Safety and Security (Section 5.0 – Access); and Managing Motorised Travel (Section 6.0 – Traffic Impacts).

2.1.17 The Council is consulting on its LTP4 alongside the PSLP. This sets out Warrington's transport challenges and the Council's vision and objectives:-

"Vision

Warrington will be a thriving, attractive and well-connected place with popular, high quality walking, cycling, and public transport networks"

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 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.***

2.2 Growth in Outlying Settlements

2.2.1 Peel's proposals at land off Lady Lane in Croft comprise the development of up to 228 residential dwellings. The PSLP proposes incremental growth in the outlying settlements with only 75 new homes identified at Croft.

2.2.2 The process adopted by the Council to derive the PSLP does not take account of any detailed numerical analysis of the transport system that would result in a cap on growth in Croft or any of the other outlying settlements.

2.2.3 The PDO, which included only 60 dwellings at Croft, 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."

2.2.4 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)

2.2.5 Examination of the area profile for Croft includes consideration of the assessment criteria for objective W4, noting:

“Local Highways Network. Small amount of peak hour congestion in centre of village. No planned local highways improvements in village.”

- 2.2.6 Other criteria related to the strategic highways network, public transport and active travel do not raise specific constraints. Regarding active travel, WBC do note that there are very low levels of walking and cycling in this area. It is understood this is based on analysis of Census journey to work data. Section 4.0 below explains how active travel and public transport modes will be promoted, for all journey purposes, demonstrating that the site is capable of achieving sustainable travel patterns.
- 2.2.7 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.
- 2.2.8 Specifically, it is understood no analysis had been undertaken of traffic conditions in the centre of Croft village. Section 6.0 considers off-site traffic impacts and shows that these will not constrain development of the scale envisaged at Lady Lane.
- 2.2.9 The Council has now undertaken further transport modelling, reported in the ‘PDO: Transport Model Testing of Alternative Scenarios’ report. This notes that the model was not available during the consultation stage of the PDO development.
- 2.2.10 The report notes that the purpose of the testing is to demonstrate that the PDO does not result in a breakdown of the Warrington transport network and to demonstrate that the transport impacts of alternative development scenarios are not materially better than the PDO.
- 2.2.11 Six alternative scenarios to the PDO are considered in the report with scenario 3 the only one that tests significant additional growth in the outlying settlements, with dwelling numbers increased from 1,190 (as the PDO) to 4,900. Details are not provided of the specific locations of the additional growth. The results of model testing of the scenarios are presented initially at the aggregate level across the Borough as a whole and this adopts key performance indicators related to travel distances, times and lengths, average speeds and public transport modal share.
- 2.2.12 Considering each of these the report concludes:

- Total vehicle hours: scenario 3 is the best performing scenario although there is negligible variation between scenarios.
- Total vehicle kilometres: again, scenario 3 is the best performing scenario but there is negligible variation between scenarios.
- Average trip length: the PDO is the best performing scenario but there is limited variation between the scenarios. The average trip length for scenario 3 is only 0.53% greater than the PDO (a distance of only 50m).
- Public Transport trips and mode share: there is 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 is little variation between scenarios at the network wide level (scenario 3 has a slightly higher average speed than the PDO, by 0.7%).
- Journey times: there is limited variation between scenarios in journey times through the urban area.

2.2.13 Overall, the analysis shows that greater levels of development in the outlying settlements do not result in adverse travel characteristics. The report concludes that there is no evidence, from the model, that the transport impacts of other scenarios are materially better than the PDO. By definition, they are not materially worse.

2.2.14 The Council has also produced a report 'Transport Model Testing of the PSVLP and Highway Schemes in the IDP'. This does not consider specific locational issues and does not identify any detail of constraints at Croft.

2.2.15 There is therefore no justification, based on sound evidence of transport capacity, to limit development in Croft (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 at Lady Lane, Croft 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 adjacent to and immediately to the north and east of the existing built development at Croft and to the west of Lady Lane. The location of the site is shown on Appendix A.
- 3.1.2 Given its position, the site is very well related to the facilities and services within the settlement of Croft with its western and southern boundaries adjoining the village. The site's western boundary is part-formed by residential development at Abbey Close and Deacons Close, its southern boundary by existing dwellings at Eaves Brow Road, Chadwick Avenue and Churchfields and its eastern boundary by Lady Lane. Its northern boundary is an equestrian centre off Deacons Close and field boundaries.
- 3.1.3 The site is 10.35 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 by Randall Thorp and is included in the main representations prepared by Turley. The masterplan shows residential development of up to 228 dwellings with woodland planting along the northern boundary. As an alternative, a smaller site could be developed, accessed only off Chadwick Avenue. This would deliver up to 100 dwellings with the remainder of the larger site to be allocated as safe guarded land as set out in papers 2 and 3 prepared by Turley.
- 3.2.2 Access to the site is considered in detail in Section 5.0 below: access can be provided in several locations including off Chadwick Avenue to the south and Lady Lane to the east. The masterplan shows that the accesses will be connected by internal site roads. A Public Right of Way (PRoW), footpath 6, runs east-west from Lady Lane to Abbey Close, for part of its length along the northern site boundary.
- 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 which will also 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 with local trip making, contributing to the site forming sustainable development in the context of the NPPF.

3.3 **Locational Benefits of Development in Croft**

3.3.1 The sites location, adjacent to the existing built area and in close proximity to public transport routes and existing facilities in Croft, means that the site presents an excellent opportunity to promote sustainable transport and reduce vehicular traffic generations.

3.3.2 The location of the site in the northern part of the Borough also has benefits in terms of its close proximity to the location of existing and future jobs in, and close to, Warrington Borough. Much of the existing and proposed employment related development in the Borough is located in and north of the town centre. Residential development at Croft therefore presents an opportunity to locate workers (in new households) close to major centres of employment, thus minimising journey lengths and facilitating the use of public transport.

3.3.3 Appendix B shows the proximity of Croft and the site to major areas of employment. Those on the northern side of the town include:-

- Birchwood – Only c.2.5km south-east of the site with c.17,000 jobs (source: 2011 Census, Journeys to Work to MSOAs) with expansion planned.
- Omega – c.7.5km south west of the site with c.24,000 jobs (source: www.omegaopportunity.com).
- Parkside – in St Helens, c.2km west of the site with c.8,000 jobs (source: www.thisisparkside.co.uk / www.sthelens.gov.uk).

3.3.4 Thus locating workers close to major employment areas will provide opportunities for reduced travel distances. Over time, is expected that jobs at Birchwood, for example, will be filled by workers in closer proximity, such as at Croft, with resultant reduced in-commuting from outside the Borough. This follows a 'gravity model' principle with trips more likely to be made to/from nearby areas, all else being equal.

3.3.5 At present, the journey to work data for MSOAs in the Birchwood area indicates that only 32% of workers originate in Warrington Borough with the largest in flows from Wigan (10%), St Helens (6%), Cheshire West and Chester (5%), Halton (4%) and Trafford (4%). Thus locating development in areas closer to Birchwood, at Croft and other nearby settlements, has the potential to reduce travel distances and in-commuting to the Borough as a whole.

SECTION 4 Sustainability And Accessibility

4.1 The Case for Development Croft

4.1.1 Croft is a self-contained settlement with local facilities and services available and with other facilities nearby in Culcheth. Those in the village are within walking distance of residential areas.

4.1.2 To consider the trips that can be made locally, the TEMPRO database has been used to identify the proportions of trips made by residents in Croft for different journey purposes by all modes of travel, using data from MSOA 1:

Table 4.1: TEMPRO Journey Purposes – Croft

Journey Purpose	Proportion of All Trips ¹
Education	15.7%
Shopping	23.5%
Personal Business	8.1%
Recreation / Social	10.1%
Visiting Friends & Relatives	9.6%
Holiday / Day Trips	2.8%
Work	26.4%
Employer's Business	3.8%

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.16%), shopping (c.24%), personal business (c.8%), recreation and social (c.10%) 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 including those in nearby Culcheth; this demonstrates that Croft is a sustainable settlement and a suitable location for new development where trips can be made locally by sustainable travel modes.

Education

4.1.5 Around 16% of daily trips by residents are made for education purposes. There are two primary schools (Croft and St. Lewis) in Croft village and a secondary school (Culcheth High School) in Culcheth, providing for the day-to-day education needs of residents. There are direct school bus services between Croft and the High School. TEMPRO data indicates that only 26% of

education trips are by a car driver, with these likely to be parents dropping children off at school (the average car occupancy is 2.5 people per car). Thus the majority of trips are made by sustainable modes – walking (24%), cycling (1%), car passenger (38%) and public transport (10%).

4.1.6 The compact size of Croft (approximately 1.0km on the east-west axis and 0.8km on the north-south axis) and the location of the primary schools means that many trips can be made on foot, as evidenced by TEMPRO. Trips to the High School at Culcheth can be made by bus; the High School is c.4km distant. The IHT’s document ‘Providing for Journeys on Foot’ suggests a walking distance to school of up to 2km. The compact nature of the settlement 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 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	78%	26%	44%	87%	57%	37%
Bicycle	2%	1%	1%	3%	5%	2%
Car/Van	20%	65%	48%	8%	26%	26%
Bus	-	6%	6%	2%	11%	29%
Other	-	1%	1%	-	1%	5%
Total	100%	100%	100%	100%	100%	100%

Shopping, Personal Business and Recreation

4.1.7 Over a third, c.42%, of trips are made for shopping, personal business or recreation reasons. Croft includes some limited facilities that will satisfy day-to-day needs including two public houses. There are more facilities in Culcheth including:-

- Sainsburys’ Supermarket and Co-op Foodstore and a wide range of other shops;
- A library and Post Office;
- Two GP surgeries (Culcheth Medical Centre and Culcheth Health Centre), three dental practices (The Village, Bhawani’s and Hob Hey) and pharmacies (the Well Pharmacy and Tims and Parker);

- A range of cafes, restaurants and pubs.

4.1.8 The TEMPRO data shows that around half (51%) of the journeys for shopping, personal business and recreation are made as a car driver. The compact nature of the settlement and its proximity to Culcheth means that there are opportunities for residents to walk, cycle or use the bus for trips to locations nearby.

Working and Employer's Business

4.1.9 Around 30% of all trips are made for these purposes. There are jobs available in Culcheth, at the local facilities and services, and at major employment areas close to Croft. Around 18% of residents of MSOAs 1 and 2 (which includes Croft) work at home whilst a further 13% work locally. Around 8% work at Birchwood with a further 18% elsewhere in Warrington. Of the work trips made within the MSOAs, over a third are made on foot or by bicycle.

4.1.10 The other trips by residents are to a range of destinations including Wigan, Salford, Trafford and Manchester (each around 6%), the remainder of Greater Manchester (c.4%) Cheshire and Halton (c.5%) and Merseyside (c.6%). Bus connections are available to Warrington.

Overall

4.1.11 Thus, the combination of the facilities available in Croft and at nearby Culcheth and the distances involved and transport connections available makes for the use of integrated and accessible transport. Development in Croft 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.

4.1.12 Modal split data from TEMPRO identifies this potential with the following mode shares for all journey purposes combined:-

Table 4.3: TEMPRO Modal Shares – Croft

Mode	Proportion of Trips ¹
Walk	13.0%
Cycle	1.5%
Car Driver	54.7%
Car Passenger	24.5%
Bus / Train	6.4%

¹Average weekday all journey purposes

4.1.13 Considering the national and local policies set out earlier in this report:

- Development in Croft will facilitate the use of sustainable modes of transport, given the short-distances involved and availability of buses – meeting NPPF Para 108 and PSLP Policy INF1.
- The need to travel can be minimised and use of suitable modes can be encouraged – meeting NPPF Para 103.
- Day-to-day activities and key facilities such as primary schools will be located within walking distance of properties – meeting NPPF Para 103 and PSLP Policy INF1.

4.1.14 Thus Croft has existing characteristics which will support and promote sustainable development and sustainable travel patterns, will result in many day-to-day needs being met locally 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 Croft in terms of encouraging and promoting the use of sustainable travel modes. This focuses on the availability of facilities and services within the settlement and at nearby Culcheth, 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 The potential development at Lady Lane is located within the built area of the settlement, close to the centre and nearby schools. Thus the location of the site will promote sustainable travel patterns and the use of sustainable travel modes, reducing car use.

4.2.3 Sustainable travel modes will be promoted at the site, consistent with the objectives and policies in WBC's PSLP, by:

- i Taking advantage of the site's location in Croft village;
- ii Maximising opportunities for walking and cycling trips, particularly over shorter distances;
- iii Encouraging commuting trips to Warrington 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 – 4.4 with the locational characteristics of the site

and existing sustainable travel networks also set out. The accessibility of the site is then considered in Section 4.5.

4.3 Connectivity of the Site

4.3.1 As noted above, the sites lies immediately adjacent to the existing built development within Croft village thus affording the opportunity to make direct and high quality connections as noted above when considering the site masterplan. The adjacent streets within the village have footways and the site can connect to these via Chadwick Avenue and the Public Right of Way that runs along the northern site boundary to Abbey Close. The roads in Croft are generally 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: improvements to pedestrian provision in Croft village such as the introduction of dropped kerbs at crossing points and widening of footways or the introduction of new crossings. The above will be complemented by measures included in the Travel Plan for the site (see Section 4.4 below).

4.3.3 Nearby facilities and services, catering for everyday needs such as primary education and public houses will be available close to the site and will therefore be readily accessible by active travel modes. The on-site street and layout design will facilitate this.

4.3.4 There are existing bus routes and services in the vicinity of the site as summarised on Appendix C and 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
19	Leigh – Culcheth– Croft – Winwick – Warrington	60 ¹	60 ²	60	-	60	-
192	Rixton – Culcheth – Croft – Birchwood	1 service					
193	Birchwood – Croft –Culcheth – Glazebury	4 services (MWF)					

1 Additional peak service; 2 Early Evening

- 4.3.5 Thus these are hourly bus services between Croft and Winwick, Culcheth and Warrington (and also Leigh) and limited services to Birchwood via the 192 and 193 bus services. The 19 bus route has an additional service in the peak hours.
- 4.3.6 As well as the above scheduled bus services, the 280/281 school bus services run between Croft and Culcheth High School: the 280 departing at 07:50 and arriving at the school at 08:25 and leaving the school at 15:00 and arriving back in Croft at 15:12; and the 281 departing Croft at 08:05 arriving at the school at 08:27 with the return journey leaving at 15:10 and arriving at Croft at 15:19.
- 4.3.7 The closest railway stations to the site are at Birchwood and Padgate albeit these are outside of walking distance.
- 4.3.8 Further measures to promote bus (and rail) use can be delivered as part of the Travel Plan, see below.

4.4 Promoting Sustainable Travel Choices

Overview

- 4.4.1 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

- 4.4.2 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 and other users 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.

4.4.3 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.

4.4.4 Formal monitoring arrangements will be agreed to assess the achievement of objectives and targets on an on-going basis.

Travel Plan Measures

4.4.5 Detailed assessment and evaluation will be undertaken to establish the most appropriate measures for the site should it be allocated. A comprehensive package of initiatives will assist in achieving 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

4.4.6 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 on first occupation to every new household on the site 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

4.4.7 Physical measures 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 a walking bus scheme and the provision of fluorescent vests for children and walking bus 'drivers'.
- Cycling proficiency schemes at the primary schools: 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

4.4.8 Measures to promote the use of buses can 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

4.4.9 Residents will continue to make some journeys by car but car sharing will be promoted from occupation of the dwellings by the TPC. A bespoke car sharing scheme can be developed or existing car sharing initiatives can be used.

Information and Awareness

4.4.10 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.
- 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.

4.4.11 The TPC and travel plan measures will be funded by the developer and/or their successors in title.

4.4.12 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 of the PSLP.

4.5 Accessibility of the Site

Overview

4.5.1 Strategic objective W4 of the PSLP 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.

4.5.2 Local facilities and services within the vicinity of the site are shown on Appendix D and the distance from the closest of the site accesses (with pedestrian/cycle connections) 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	Croft Primary School	0.4km – walk
	St Lewis Catholic Primary School	1.0km – walk
Secondary School	Culcheth High School	4.0km – School bus
Health	Culcheth Health Centre	2.6km – Bus/Cycle
	Culcheth Medical Centre	2.9km – Bus/Cycle
	Well Pharmacy	2.9km – Bus/Cycle
	The Village Dental Practice	3.8km – Bus/Cycle
Retail and Leisure	Public Houses in Croft	0.2km – 0.4km - Walk
	Sainsbury's at Culcheth	3.0km – Bus/Cycle
	Culcheth Post Office	2.9km – Bus/Cycle
	Culcheth Library	3.2km – Bus/Cycle
	Shops in Culcheth	2.9km - Bus/Cycle

4.5.3 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.

4.5.4 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.

4.5.5 In terms of cycle distances, DfT Local Transport note 2/08 'Cycle Infrastructure Design' notes that many utility cycle journeys under three miles (c.5km) but that for commuter journeys a trip distance over 5 miles (c.8km) is not uncommon.

4.5.6 Thus consideration of Table 4.5 confirms that the many day-to-day facilities close to the site in Croft and at Culcheth are within walking and/or cycling distance, with bus connections also available to Culcheth and Warrington.

Accessibility to Education

4.5.7 There are two primary schools within Croft, both very close to the site. Croft Primary School is located off Mustard Lane, only c.400m from the PRoW access at Abbey Close. St Lewis Catholic

Primary School is located further along Mustard Lane c.1.0km from the access. There is a footway along the western side of Mustard Lane that connects the site to the school. There is a very good prospect of trips to the primary schools being made on foot as data from the National Travel Survey shows that where a distance to a primary school is less than 1 mile (1.6km) then 78% of pupils walk to school.

4.5.8 The site is c.4.0km from Culcheth High School, accessed via Mustard Lane and then through Culcheth village. Existing school bus services are available from Croft, direct to the High School.

4.5.9 The accessibility to education facilities is therefore considered to be good.

Accessibility to Health Facilities

4.5.10 The nearest medical centres are within Culcheth, where there are two at Thompson Avenue and Jackson Avenue. There is a pharmacy at Lodge Drive and the Village Dental Practice is located off Warrington Road, both in Culcheth. Existing bus service 19 connects Croft with Culcheth, providing a connection between the site and medical facilities.

4.5.11 The accessibility to local health facilities is therefore also good with these catering for 'day-to-day' needs of residents on the site.

Accessibility to Retail and Leisure Facilities

4.5.12 There are facilities in Croft including two public houses, the General Elliot and The Horseshoe Inn. The centre of Culcheth to the north-east includes several retail and leisure facilities including Sainsbury's food store, Post Office and library and bus connections are available to Culcheth using the 19 bus service. Thus a range of facilities will be available locally, encouraging active travel. The accessibility of the site to these facilities is also concluded to be good.

Summary

4.5.13 In conclusion, a range of facilities and services will be available locally within walking and/or cycling distance in Croft village. These include two primary schools and two public houses. Buses already serve Croft and travel along Lord Street close to the site, providing connections to the many facilities and services in Culcheth.

4.5.14 It is therefore concluded that the site is sustainable and accessible via a range of travel modes and will therefore be in accordance with the NPPF and WBC's policies and objectives in the PSLP.

SECTION 5 Site Access Arrangements

5.1 Access Proposals

5.1.1 The concept masterplan shows development across the site with accesses provided off Chadwick Avenue and Lady Lane. Thus two accesses can be provided to and from the site. A possible vehicular access point is also shown via Abbey Close. If the smaller site is allocated then this can be accessed solely via Chadwick Avenue.

Chadwick Avenue

5.1.2 Access towards the centre of the site can be created by extending Chadwick Avenue into the site as shown on Appendix E (drawing reference ITM13247-GA-002). Chadwick Avenue is a typical residential street of c.5.5m width and with footways on both sides. It forms a junction with Wadeson Way where satisfactory visibility is available. Such a connection will assist in integrating the new dwellings with the existing community to the south.

5.1.3 Chadwick Avenue connects with Wadeson Way which forms a loop and connects with Eaves Brow Road in two places. Eaves Brow Road then connects with the main road network at New Lane in two places; to the south; and to the west then south via Pasture Drive. There are additional routes to the west via Pasture Drive that provide connections to Smithy Lane. Given the width of Chadwick Avenue and the connecting road network as described, it is concluded that Chadwick Drive can serve at least the first phase of development (i.e. the 100 dwelling alternative site discussed above).

Lady Lane

5.1.4 A priority junction access can be created off Lady Lane at the eastern end of the site as shown on Appendix F (drawing reference ITM13247-GA-003). A 5.5m wide access road is shown with a footway on its northern side, allowing for pedestrian movements to Christ Church. A verge is proposed on the southern side as pedestrian movements towards the village will be catered for at Chadwick Avenue as well as the public footpath that leads to Abbey Close. Visibility splays commensurate with the speed limit are shown albeit greater distances are available.

5.1.5 Thus two accesses, off Chadwick Avenue and Lady Lane, can be used to access the entire site of 228 dwellings.

Abbey Close

- 5.1.6 A possible access via Abbey Close would see the existing cul-de-sac extended into the site.

Summary

- 5.1.7 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 to the site is deliverable and therefore achievable.

5.2 Capacity of the Accesses

- 5.2.1 Traffic surveys have been undertaken to assess the capacity of the site access arrangements with details given in Section 6.0. Peak hour traffic flows have been derived and converted to Passenger Car Units (PCUs) for use in traffic capacity assessment. The peak hours are 07:30 – 08:30 and 16:15 – 17:15. The peak hour traffic flows at Wadeson Way and Lady Lane are as follows:

Table 5.1 Existing Peak Hour Traffic Flows

Peak Hour	Wadeson Way			Lady Lane		
	Eastbound	Westbound	Two-way	Northbound	Southbound	Two-Way
AM Peak Hour	2	15	17	43	93	136
PM Peak Hour	16	8	24	114	51	165

- 5.2.2 Traffic has been growthed to the 2037 end of plan year using factors from TEMPRO, adjusted to take account of the exclusion of land-use related growth. The growth factors are c.10%. Development traffic has been derived using the approach set out in Section 6.0. For the purposes of this appraisal, it has been assumed that half of the full development is served off Chadwick Avenue and half off Lady Lane (in practice there will be links connecting the two access points).
- 5.2.3 The results of the capacity assessments of the priority junction site accesses are summarised in the table below:

Table 5.2 Site Access Capacity Assessment Results

Access	Movement	AM Peak Hour		PM Peak Hour	
		Max RFC	Max Queue	Max RFC	Max Queue
	Chadwick Avenue	0.10	0	0.04	0

Access	Movement	AM Peak Hour		PM Peak Hour	
		Max RFC	Max Queue	Max RFC	Max Queue
Chadwick Avenue	Wadeson Way Right Turn	0.00	0	0.00	0
Lady Lane	Site Access	0.10	0	0.04	0
	Lady Lane Right Turn	0.01	0	0.02	0

5.2.4 The assessment results demonstrate that both site accesses will operate comfortably within capacity.

5.2.5 It is therefore concluded that the site accesses will operate within capacity, confirming that satisfactory access to the land off Lady Lane in Croft can be provided in accordance with the NPPF.

SECTION 6 Traffic Impacts

6.1 The Case for Development in Croft

6.1.1 It is understood the Council has not undertaken any detailed assessment of the potential traffic impacts resulting from development in outlying settlements, including the proposed development off Lady Lane in Croft. 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 Croft, WBC's Settlement Profile notes with respect to the local road network:

"Small amount of peak hour congestion in centre of village. No planned local highways improvements in village."

The profile also notes that Croft is in close proximity to M6(J22) and M62(J9 and J11).

6.1.3 It is understood the above is not based on detailed analysis of the road network. An indication of peak hour traffic conditions has therefore been obtained from Google traffic maps with these given in Appendix G for the AM and PM peak hours. Google uses four gradations to define traffic speeds from fast to slow: green, orange, red and dark red. These are relative to the speed limits with 'fast' indicating little delay/free flow traffic conditions.

6.1.4 The traffic maps indicate that most roads in and around Croft have 'fast'/free-flow traffic speeds. Only the roads in the centre of Croft village are graded orange. Winwick Lane towards M6 is shown as orange in the AM Peak hour and Cross Lane on the approach to Warrington Road is shown as red. In the PM peak hour, the northbound A579 towards A580 is graded red and dark red. It is considered typical that there is limited congestion in the peak hours, with this resulting from delays at junctions when traffic flows are at their highest.

6.1.5 Existing traffic conditions in Croft have been assessed in more detail using traffic data collected specifically for this assessment. The survey data has been obtained to provide a picture of existing traffic conditions in Croft, focusing on locations close to the site at Lady Lane where traffic impacts will be greatest.

6.1.6 Traffic surveys, comprising turning flow counts and queue length observations, were undertaken at the following junctions on the dates shown:

- Chadwick Avenue / Wadeson Way – Thursday 19 October 2017
- Pasture Drive / Eaves Brow Road – Thursday 19 October 2017
- Pasture Drive / New Lane – Thursday 19 October 2017
- Lord Street / Abbey Close – Thursday 19 October 2017
- Mustard Lane / Lady Lane – Thursday 19 October 2017
- Smithy Brow / Lord Street / Smithy Lane – Wednesday 18 October 2017
- Smithy Lane / New Lane – Wednesday 18 October 2017
- New Lane / Lady Lane / Cross Lane – Wednesday 18 October 2017

6.1.7 The traffic data has been processed to obtain the peak hour flows and the data has been converted to Passenger Car Units (PCUs) for use in traffic capacity assessments. The peak hours are 07:30 – 08:30 and 16:15 – 17:15. The surveyed data has been used to also derive flows at the junctions of Eaves Brow Road with Wadeson Way and New Lane. The peak hour surveyed traffic flows are given in Appendix H.

6.1.8 The survey data indicates significant traffic movements to and from Birchwood in the morning and evening peak hours respectively, with high tidal flows. In particular, the route using Smithy Brow, Smithy Lane, New Lane and Cross Lane, has high traffic flows eastward towards Birchwood in the AM peak hour and the reverse direction, westbound, in the evening peak hour. It is considered likely that traffic is using the route through Croft to avoid traffic congestion on the main road route to Birchwood via M6 and M62 motorways and their junction.

6.1.9 Improvements on the motorway and local network will potentially reduce traffic flows through Croft village. Such improvements include the M62 J10 – J12 Smart Motorway scheme, M6J21a – J26 Smart Motorway scheme, M62J9 traffic signal upgrades and A574 Birchwood Way phases 2 and 3 improvements.

6.1.10 Considering the traffic conditions reported in the Councils Settlement Profile (6.1.2 above), the results from the traffic queue survey at the Smithy Brow / Lord Street / Smithy Lane junction in the centre of Croft village have been analysed and are summarised in the table below:

Table 6.1 Observed Queues at Smithy Brow / Lord Street / Smithy Lane Junction

Movement	AM Peak Hour		PM Peak Hour	
	Average Spot Queue ¹	Maximum Queue	Average Spot Queue ¹	Maximum Queue
Smithy Lane	0	6	1	14
Smithy Brow Right Turn	2	16	0	8

¹ Average of the spot queues recorded on the minute each minute. Used for traffic model validation

- 6.1.11** The queue survey results show that the average spot queues recorded at the junction are short, indicating that overall during the peak hours there is very little congestion at the junction. At times, there is some limited congestion indicated by the maximum queues.
- 6.1.12** Future year baseline traffic flows have been derived for the 2037 end of plan year. Growth factors have been derived from TEMPRO, excluding land use related effects, and are c.10%. The 2037 baseline traffic flows are included in Appendix I.
- 6.1.13** The 2037 traffic flows have been used to assess the capacity of the local highway network with the results summarised in the table below:

Table 6.2 2037 Baseline Capacity Assessment Results

Junction	Movement	AM Peak Hour		PM Peak Hour	
		Max RFC	Max Queue	Max RFC	Max Queue
Wadeson Way / Chadwick Avenue	Wadeson Way	0.00	0	0.00	0
	Chadwick Avenue Right Turn	0.00	0	0.00	0
Wadeson Way / Eaves Brow Road	Wadeson Way	0.03	0	0.02	0
	Eaves Brow Road Right Turn	0.01	0	0.03	0
New Lane / Eaves Brow Road	Eaves Brow Road Left Turn	0.03	0	0.04	0
	Eaves Brow Road Right Turn	0.02	0	0.01	0
	New Lane Right Turn	0.02	0	0.07	0
Lord Street / Abbey Close	Abbey Close	0.09	0	0.04	0
	Lord Street Right Turn	0.02	0	0.03	0
Mustard Lane / Lady Lane	Lady Lane Left Turn	0.06	0	0.57	1
	Lady Lane Right Turn	0.09	0	0.28	0
	Mustard Lane	0.11	0	0.06	0
Lord Street / Smithy Lane / Smithy Brow	Smithy Lane	0.58	1	1.24	68
	Smithy Brow Right Turn	1.19	69	0.20	0
Smithy Lane / New Lane	New Lane	0.10	0	0.53	1
	Smithy Lane Right Turn	0.02	0	0.00	0

Junction	Movement	AM Peak Hour		PM Peak Hour	
		Max RFC	Max Queue	Max RFC	Max Queue
New Lane / Lady Lane / Cross Lane	Lady Lane	0.22	0	0.13	0
	Cross Lane Right Turn	0.02	0	0.18	0

6.1.14 The analysis shows that all junctions operate well within capacity other than the Smithy Brow / Smithy Lane / Lord Street priority controlled junction in the centre of Croft village.

6.1.15 At this junction, long queues are predicted for the right-turn movement into Smithy Lane in the morning peak hour and the movement from Smithy Lane in the evening peak hour. However, the traffic model for the 2017 baseline (with the observed traffic flows input) also shows long queues with these being significantly greater than those observed during the surveys: in the AM peak, the observed queue was 2 PCUs compared to 15 modelled; and in the PM peak, the modelled queue of 35 PCUs significantly exceeds the observed queue of 1 PCU. Observations on site indicate that the junction operates satisfactorily with drivers giving 'courtesy gaps' to other drivers waiting to make turning movements. Thus the modelling clearly over-estimates the queues and the junction is observed to operate satisfactorily in practice.

6.1.16 Overall it is concluded that the analysis confirms WBC's general conclusion that there is a small amount of peak hour congestion in the centre of Croft. This is at a level not sufficient to constrain growth and development and therefore highways infrastructure capacity should not constrain development in the village.

6.1.17 The next sections consider the specific impacts of the development proposals at Lady Lane in Croft.

6.2 Development Traffic Flows

6.2.1 Traffic flows have been calculated for a development of 228 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 and therefore the estimates of traffic generation are very robust.

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 6.3 Land off Lady Lane, Croft – Trip Generation

Peak Hour	Direction	Trip Rate (per unit)	No. Trips
AM Peak	Arrival	0.127	29
	Departure	0.377	86
	Total	0.504	115
PM Peak	Arrival	0.309	71
	Departure	0.164	37
	Total	0.473	108

6.2.4 Thus the development will generate only 110 - 120 vehicular trips in each of the peak hours, around two vehicles every minute (both directions combined).

6.2.5 TEMPRO has been used to identify the potential journey purposes travelled by residents. In the peak periods this identifies for the Croft area:-

Table 6.4 Land off Lady Lane, Croft – Journey Purposes of Car Travel

Trip Purpose	Proportion of Trips	
	AM Peak Period	PM Peak Period
Work	57%	44%
Employer's business	7%	6%
Education	12%	5%
Shopping	13%	18%
Personal business	5%	7%
Recreation/Social	3%	8%
Visiting friends/relatives	1%	9%
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 schools and shop within Croft village. In the AM and PM peak periods, 36% and 50% 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 within and out of 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 6.5 Land off Lady Lane, Croft – Overall Trip Distribution

Destination/District	Proportion of Trips
Warrington Borough	42%
Salford	6%
Trafford	6%
Manchester	6%
Wigan	11%
Halton	3%
Cheshire West & Chester	2%
Cheshire East	2%
Other	22%
Total	100%

6.2.9 Of the trips to 'other' destinations, larger proportions are made to the rest of Greater Manchester (5%) and Merseyside (10%), with c. half of the latter to St Helens. The above does not take account of new job opportunities in the area (e.g. at Parkside, Omega).

6.2.10 Trips have been assigned to destinations using the fastest routes based on Google mapping with account taken of the different access points available. The resultant destination points on the road network surrounding the site are as follows:

Table 6.6 Land off Lady Lane, Croft – Trip Assignment

Destination/District	Proportion of Trips
Warrington Borough	42%
Salford	6%
Trafford	6%
Manchester	6%
Wigan	11%
Halton	3%

Destination/District	Proportion of Trips
Cheshire West & Chester	2%
Cheshire East	2%
Other	22%
Total	100%

6.2.11 Trips have been assigned to destinations using the fastest routes based on Google mapping with account taken of the different access points available. The resultant destination points on the road network surrounding the site are as follows:

Table 6.6 Land off Lady Lane, Croft – Trip Assignment

Location	Proportion
M62 East via Birchwood Way	24.5%
Mustard Lane to Culcheth	11.1%
Kenyon Lane	15.3%
M6 North via J22	2.8%
Myddleton Lane	2.7%
M62 West	13.3%
M6 South via J22	20.4%
Birchwood Park Avenue	9.9%
Total	100.0%

6.2.12 The development traffic flows assigned to the road network surrounding the site are given on Appendix J, 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 K. Lord Street runs through the centre of the village, becoming Mustard Lane as it routes towards Culcheth and Smithy Brow then Southworth Lane as it routes towards Winwick. Smithy Lane joins Lord Street at a 'T' junction in the centre of the village with this then providing a connection to New Lane which provides access to Birchwood via Cross Lane and A574. Heath Lane joins Lord Street/Mustard Lane at a 'T' junction and continues northwards, then turning west to become Stone Pit Lane then Stoney Brow Lane before connecting with A579 Winwick Lane. To the north this provides a route towards Leigh and, to the south, to M6J22.

6.3.2 The development generated traffic flows derived at 6.2 above (and shown in Appendix J) have been compared with the 2037 baseline traffic flows derived at 6.1 above (shown in Appendix I). The resultant total traffic flows at junctions on the local road network close to the site are given in the table below, showing the proportional impacts of the traffic generated by 228 dwellings. Clearly proportional increases in traffic would be lower if the smaller site option is progressed (i.e. the 100 dwelling scheme).

Table 6.7 Proportional Impacts of Development Generated Traffic

Junction	AM Peak Hour			PM Peak Hour		
	2037 Baseline Flow	Development Flow	Proportional Impact	2037 Baseline Flow	Development Flow	Proportional Impact
Wadeson Way / Chadwick Avenue	19	58	205.3%	26	54	107.7%
Wadeson Way / Eaves Brow Road	35	58	165.7%	69	54	78.3%
New Lane / Eaves Brow Road	387	67	17.3%	409	63	15.4%
Lord Street / Abbey Close	952	11	1.2%	772	14	1.8%
Mustard Lane / Lady Lane	764	23	3.0%	1,009	22	2.2%
Lord Street / Smithy Lane / Smithy Brow	1,431	29	2.0%	1,167	27	2.3%
Smithy Lane / New Lane	912	29	3.2%	691	27	3.9%
New Lane / Lady Lane / Cross Lane	474	68	14.3%	508	63	12.4%

6.3.3 The Guidelines for the 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 generated traffic flows associated with the development of 230 dwellings at Lady Lane will be within typically daily variations at most locations, other than on the residential streets near the Chadwick Avenue access where existing flows are very low. The traffic flows with the effects of the development generated traffic remain very low and well within the capacity of these streets. At the Smithy Brow / Lord Street / Smithy Lane junction in the centre of Croft, the development only increases traffic flows by 2.0 – 2.3%, well within the daily variations in traffic and indicating that the proposals are unlikely to result in discernible traffic impacts.

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 2037 assessment results (as set out at Table 6.2) with those when the development generated traffic is added. The results have been summarised in the table below.

Table 6.8 Impacts of Development Generated Traffic at Junctions

Junction	Movement	2037 Baseline				2037 With Development			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
Wadeson Way / Chadwick Avenue	Wadeson Way	0.00	0	0.00	0	0.10	0	0.04	0
	Chadwick Avenue Right Turn	0.00	0	0.00	0	0.00	0	0.00	0
Wadeson Way / Eaves Brow Road	Wadeson Way	0.03	0	0.02	0	0.10	0	0.05	0
	Eaves Brow Road Right Turn	0.01	0	0.03	0	0.04	0	0.10	0
New Lane / Eaves Brow Road	Eaves Brow Road Left Turn	0.03	0	0.04	0	0.08	0	0.06	0
	Eaves Brow Road Right Turn	0.02	0	0.01	0	0.05	0	0.02	0
	New Lane Right Turn	0.02	0	0.07	0	0.04	0	0.12	0
Lord Street / Abbey Close	Abbey Close	0.09	0	0.04	0	0.10	0	0.04	0
	Lord Street Right Turn	0.02	0	0.03	0	0.02	0	0.03	0
Mustard Lane / Lady Lane	Lady Lane Left Turn	0.06	0	0.57	1	0.08	0	0.58	1
	Lady Lane Right Turn	0.09	0	0.28	0	0.11	0	0.30	0
	Mustard Lane	0.11	0	0.06	0	0.12	0	0.08	0
Lord Street / Smithy Lane / Smithy Brow	Smithy Lane	0.58	1	1.24	68	0.67	2	1.27	77
	Smithy Brow Right Turn	1.19	69	0.20	0	1.20	74	0.22	0
Smithy Lane / New Lane	New Lane	0.10	0	0.53	1	0.16	0	0.55	1
	Smithy Lane Right Turn	0.02	0	0.00	0	0.02	0	0.00	0
New Lane / Lady Lane / Cross Lane	Lady Lane	0.22	0	0.13	0	0.30	0	0.18	0
	Cross Lane Right Turn	0.02	0	0.18	0	0.03	0	0.21	0

6.3.5 All junctions are predicted to operate significantly below capacity when the development traffic is added, other than the Smithy Brow / Lord Street / Smithy Lane junction in the centre of Croft.

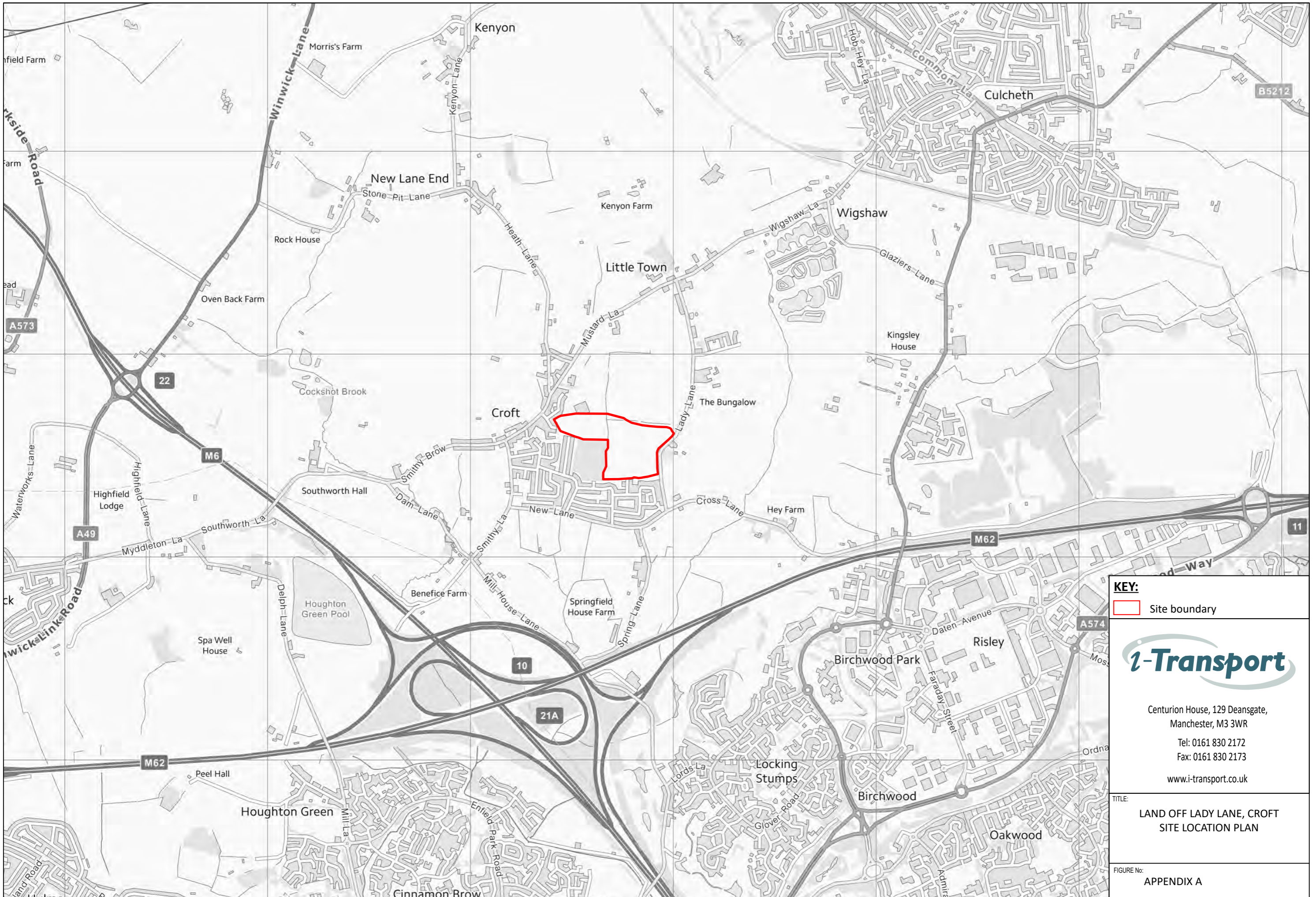
As noted above, the traffic model predictions for this junction are significantly worse than observed and the junction is predicted to operate satisfactorily in practice. In any event, the assessment results set out at Table 6.8 demonstrate that the traffic generated by the development has only a marginal impact on the operation of the junction, increasing queues by only 5 PCUs in the AM peak hour and 9 PCUs in the PM peak hour. It is concluded these impacts are not severe.

- 6.3.6** On this basis it is concluded that, in accordance with the NPPF, development 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 Lady Lane at Croft. These are capable of accommodating up to 228 residential dwellings.
- 7.2 The Council's proposed allocation at Croft is only for an additional 75 dwellings. No detailed quantitative analysis has been undertaken to analyse the capacity of the transport system and the impacts of higher levels of development other than at an aggregate level which concludes that there is no material difference to what was the PDO. There is therefore no justification, based on sound evidence, to limit development in Croft on transport grounds.
- 7.3 The site off Lady Lane in Croft is well related to local facilities including two primary schools, local convenience store and two public houses. These will all be within an easy walk or cycle ride of the residential dwellings and will therefore encourage active travel. Services further afield in Culcheth, including the secondary school and health facilities, can be reached by existing bus services which are within a short walking distance of the site.
- 7.4 The site will therefore meet the transport related objectives of the Council's PSLP and will fully accord with the NPPF objective related to sustainable travel, with opportunities for such modes taken up.
- 7.5 Access to the site is proposed in two locations and feasibility level designs have been produced. Capacity assessments show they will operate satisfactorily. Access to the site can be provided on land controlled by Peel and is deliverable and achievable. It is therefore also concluded that satisfactory access can be provided in accordance with the NPPF.
- 7.6 The traffic flows generated by the site will be low and will not result in any significant traffic impacts in and around Croft village. On this basis it is concluded that, in accordance with the NPPF, development should not be prevented on transport grounds as the residual cumulative impacts of development will not be severe.
- 7.7 Overall, it is therefore concluded that the site at off Lady Lane in Croft is suitable for allocation in the Council's PSLP and will form a sustainable development that can provide much needed housing.

APPENDIX A. Site Location Plan



KEY:
 Site boundary

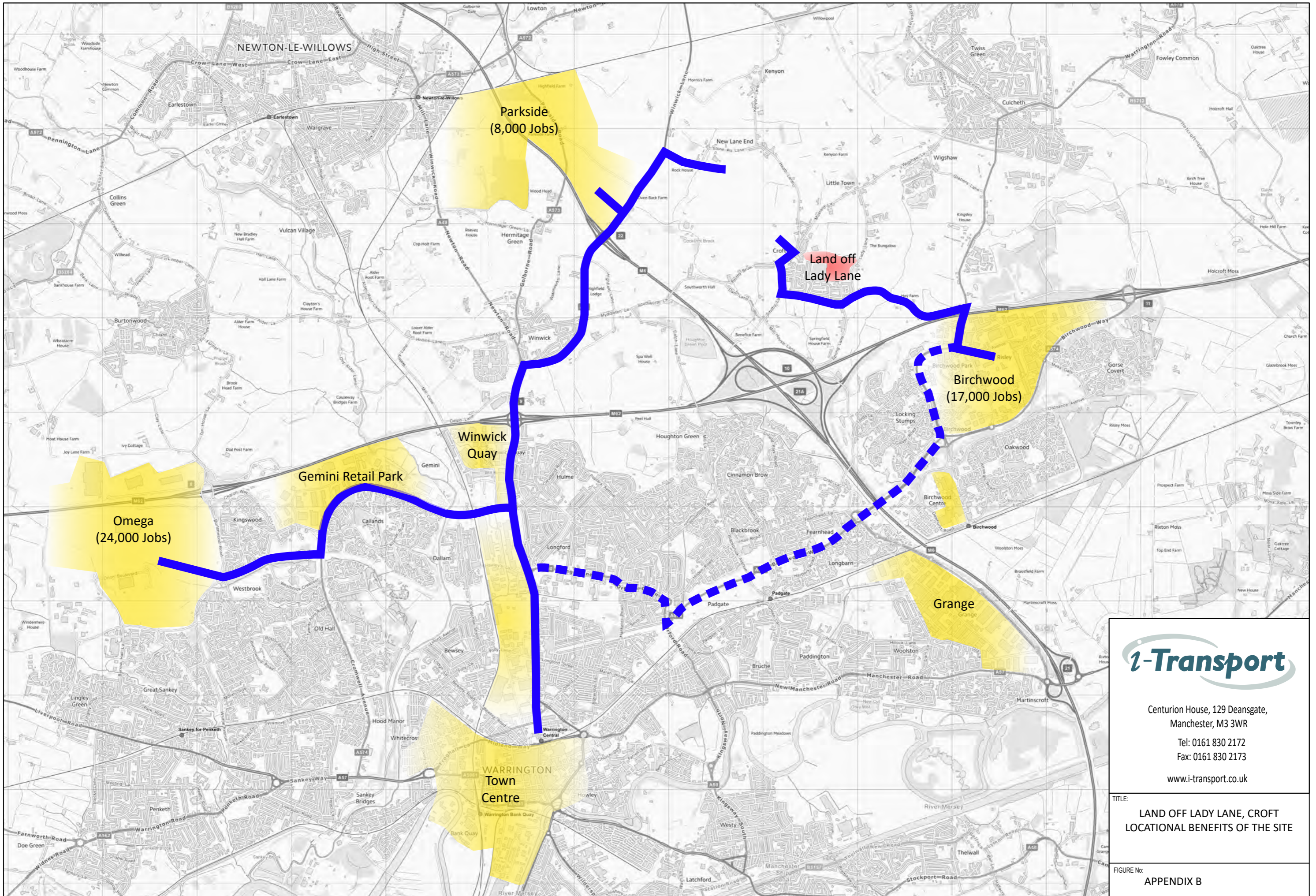
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TITLE:
**LAND OFF LADY LANE, CROFT
 SITE LOCATION PLAN**

FIGURE No:
APPENDIX A

APPENDIX B. Locational Benefits Of The Site

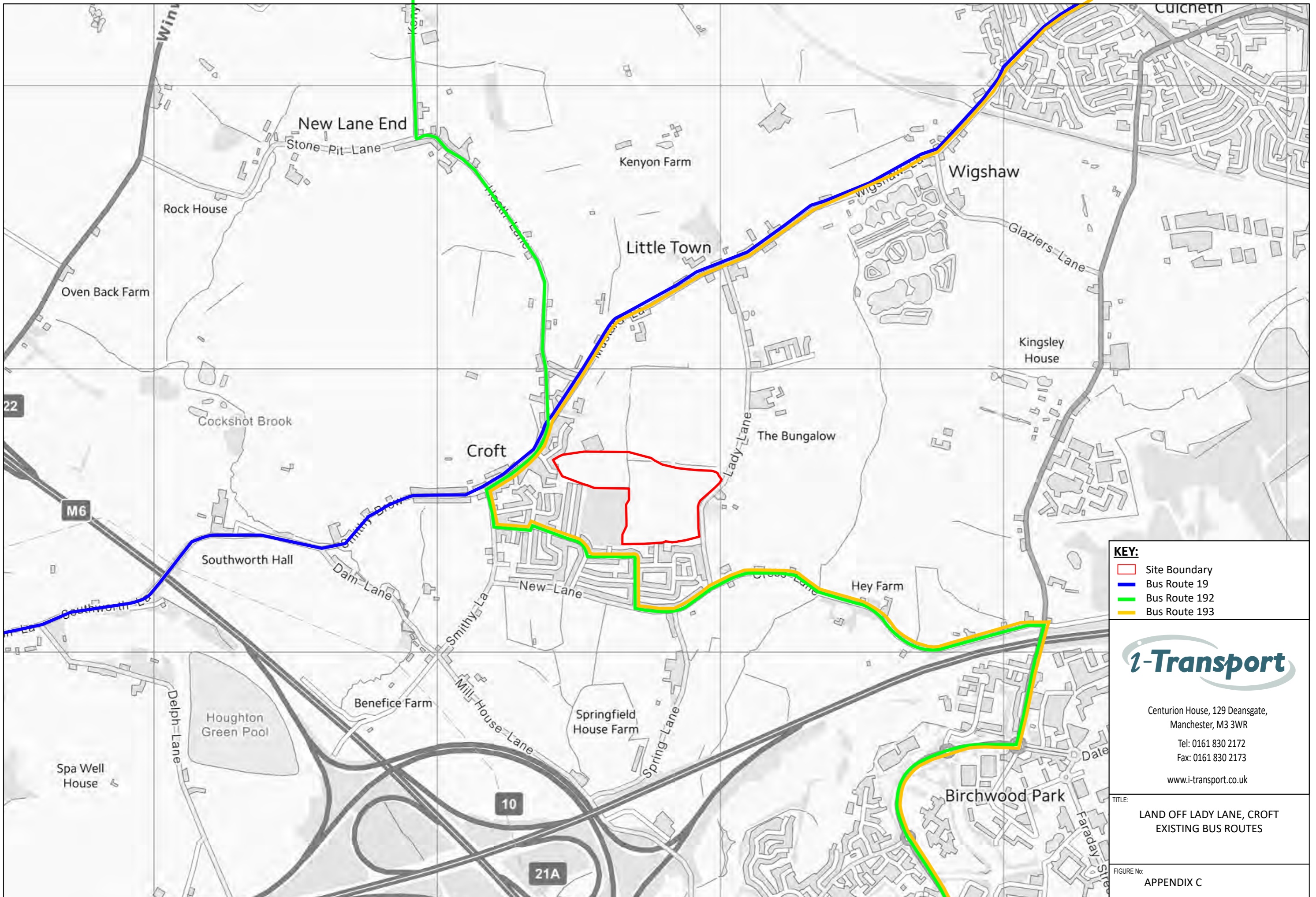


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**LAND OFF LADY LANE, CROFT
 LOCALATIONAL BENEFITS OF THE SITE**

FIGURE No:
APPENDIX B

APPENDIX C. Existing Bus Routes



KEY:

- Site Boundary
- Bus Route 19
- Bus Route 192
- Bus Route 193

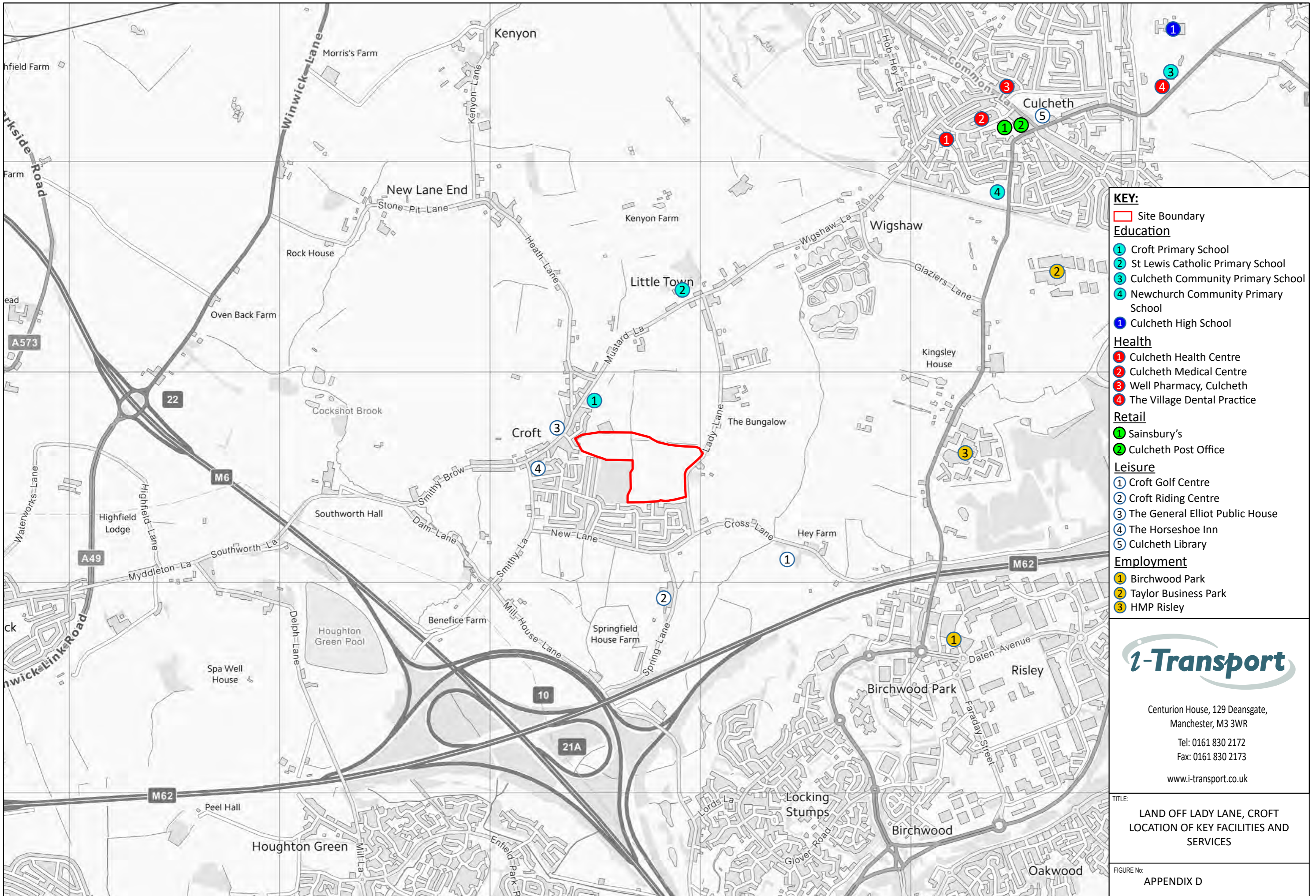


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EXISTING BUS ROUTES**

FIGURE No:
APPENDIX C

APPENDIX D.Location Of Key Facilities And Services



- KEY:**
- Site Boundary
- Education**
- 1 Croft Primary School
 - 2 St Lewis Catholic Primary School
 - 3 Culcheth Community Primary School
 - 4 Newchurch Community Primary School
 - 1 Culcheth High School
- Health**
- 1 Culcheth Health Centre
 - 2 Culcheth Medical Centre
 - 3 Well Pharmacy, Culcheth
 - 4 The Village Dental Practice
- Retail**
- 1 Sainsbury's
 - 2 Culcheth Post Office
- Leisure**
- 1 Croft Golf Centre
 - 2 Croft Riding Centre
 - 3 The General Elliot Public House
 - 4 The Horseshoe Inn
 - 5 Culcheth Library
- Employment**
- 1 Birchwood Park
 - 2 Taylor Business Park
 - 3 HMP Risley

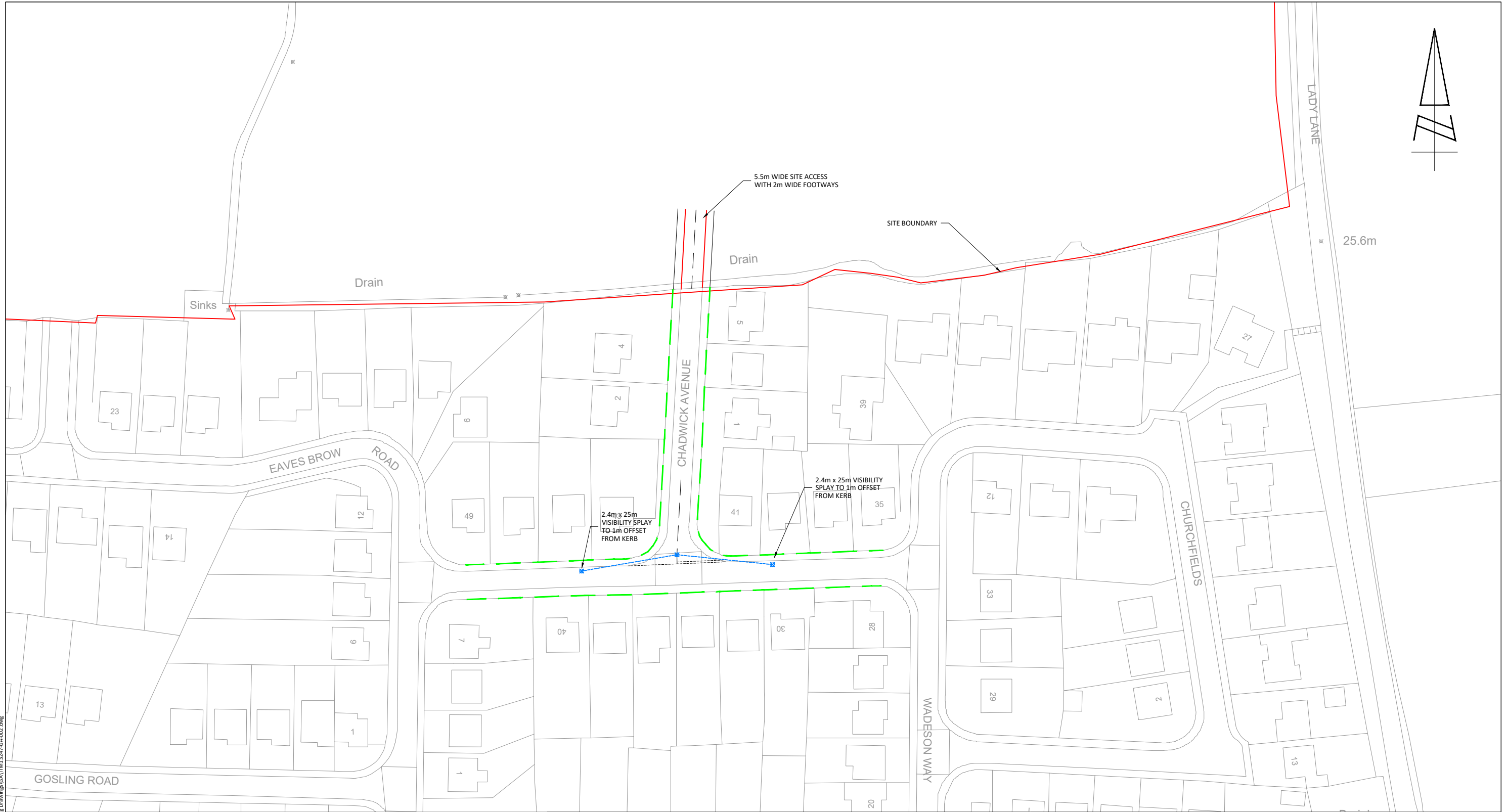


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TITLE:
**LAND OFF LADY LANE, CROFT
LOCATION OF KEY FACILITIES AND
SERVICES**

FIGURE No:
APPENDIX D

APPENDIX E. Potential Site Access From Chadwick Avenue



Z:\Projects\13247\TM Land at Lady Lane, Croft\Tech\Acad\Transport Drawings\Working Drawings\GA\ITM13247-GA-002.dwg

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--- HIGHWAY BOUNDARY

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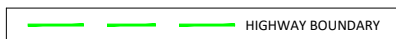
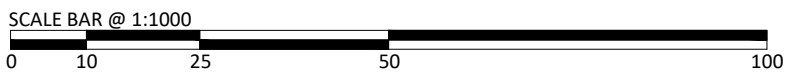
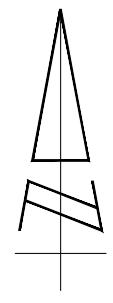
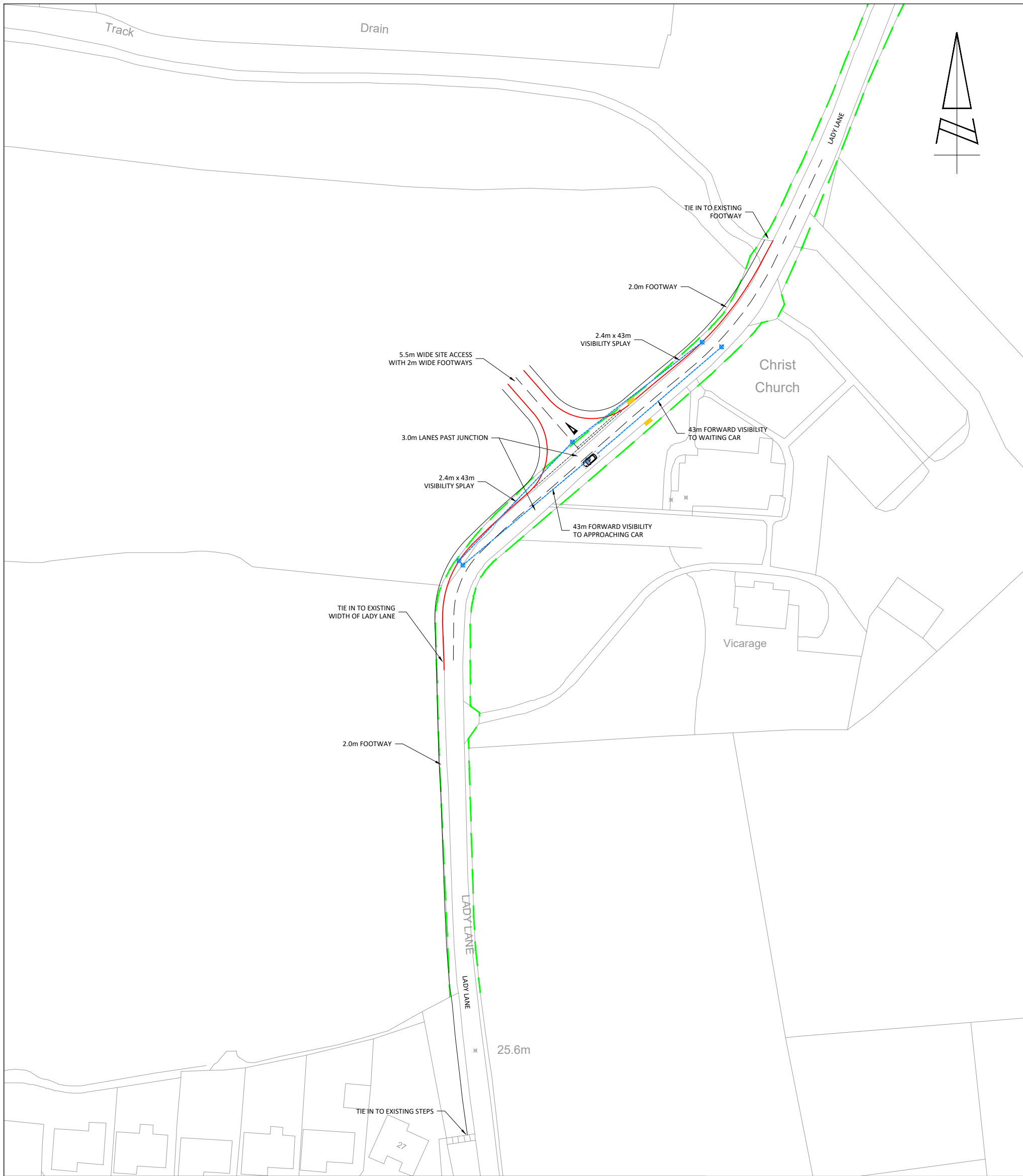
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REV	DATE	BY	DESCRIPTION	CHK	APD
STATUS: DRAFT					

TITLE: POTENTIAL SITE ACCESS FROM CHADWICK AVENUE	
PROJECT: LAND OFF LADY LANE, CROFT	CLIENT: PEEL INVESTMENTS (NORTH) LIMITED

SCALE @ A3: 1:1000	CHECKED: SEE	APPROVED: SEE
FILE REF: ITM13247-GA	DRAWN: PH	DATE: 24.08.2017
DRAWING No: APPENDIX E (ITM13247 - GA - 002)		
PROJECT No: ITM13247	REV: -	

APPENDIX F. Potential Site Access From Lady Lane



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CLIENT:

PEEL INVESTMENTS (NORTH) LIMITED

REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: **DRAFT**

SCALE @ A3: 1:1000	CHECKED: SEE	APPROVED: SEE
FILE REF: ITM13247 - GA	DRAWN: PH	DATE: 30.08.2017

DRAWING No: **APPENDIX F (ITM13247 - GA - 003)**

PROJECT No: ITM13247	REV: -
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TITLE:

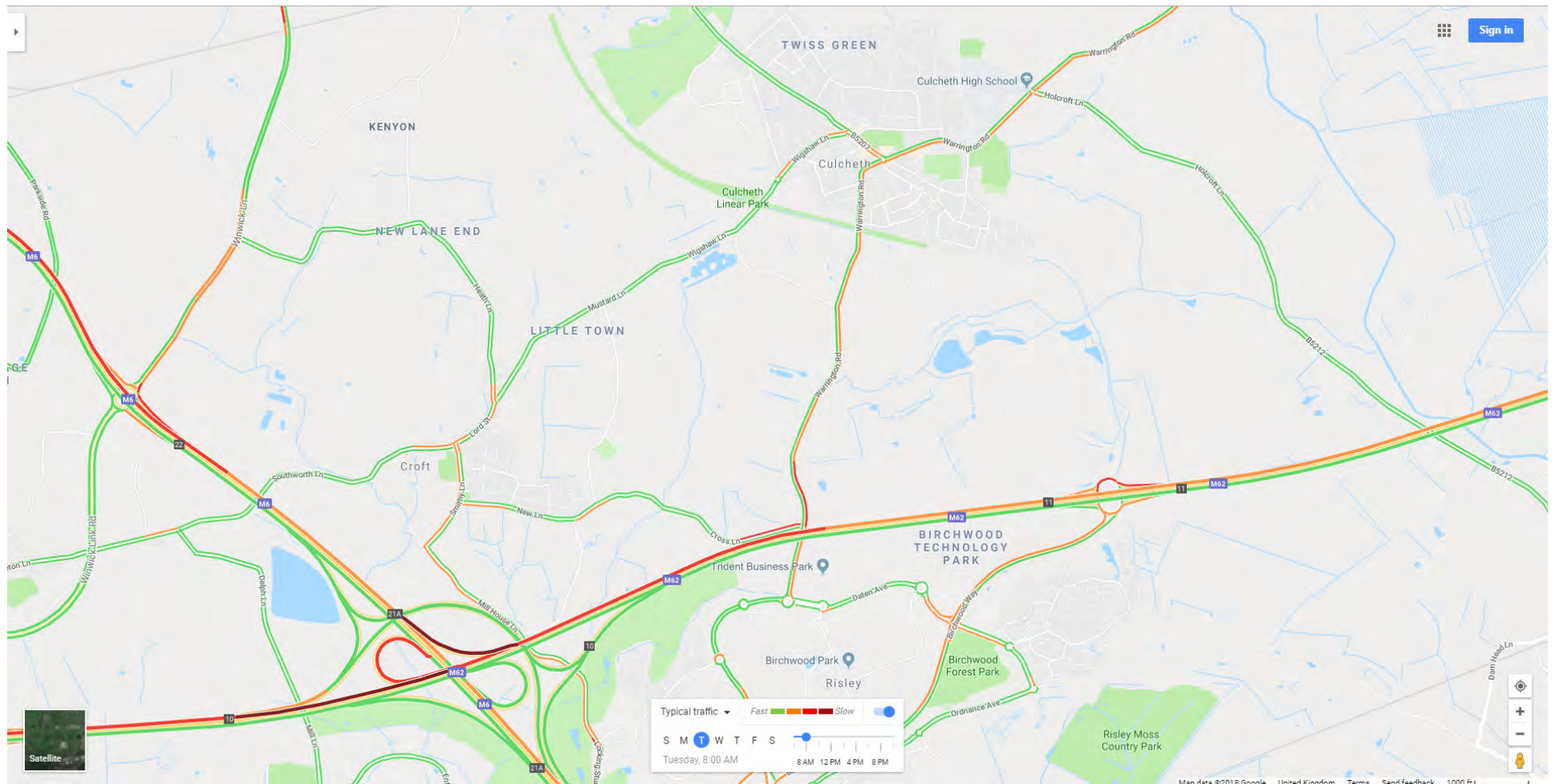
POTENTIAL SITE ACCESS FROM LADY LANE

PROJECT:

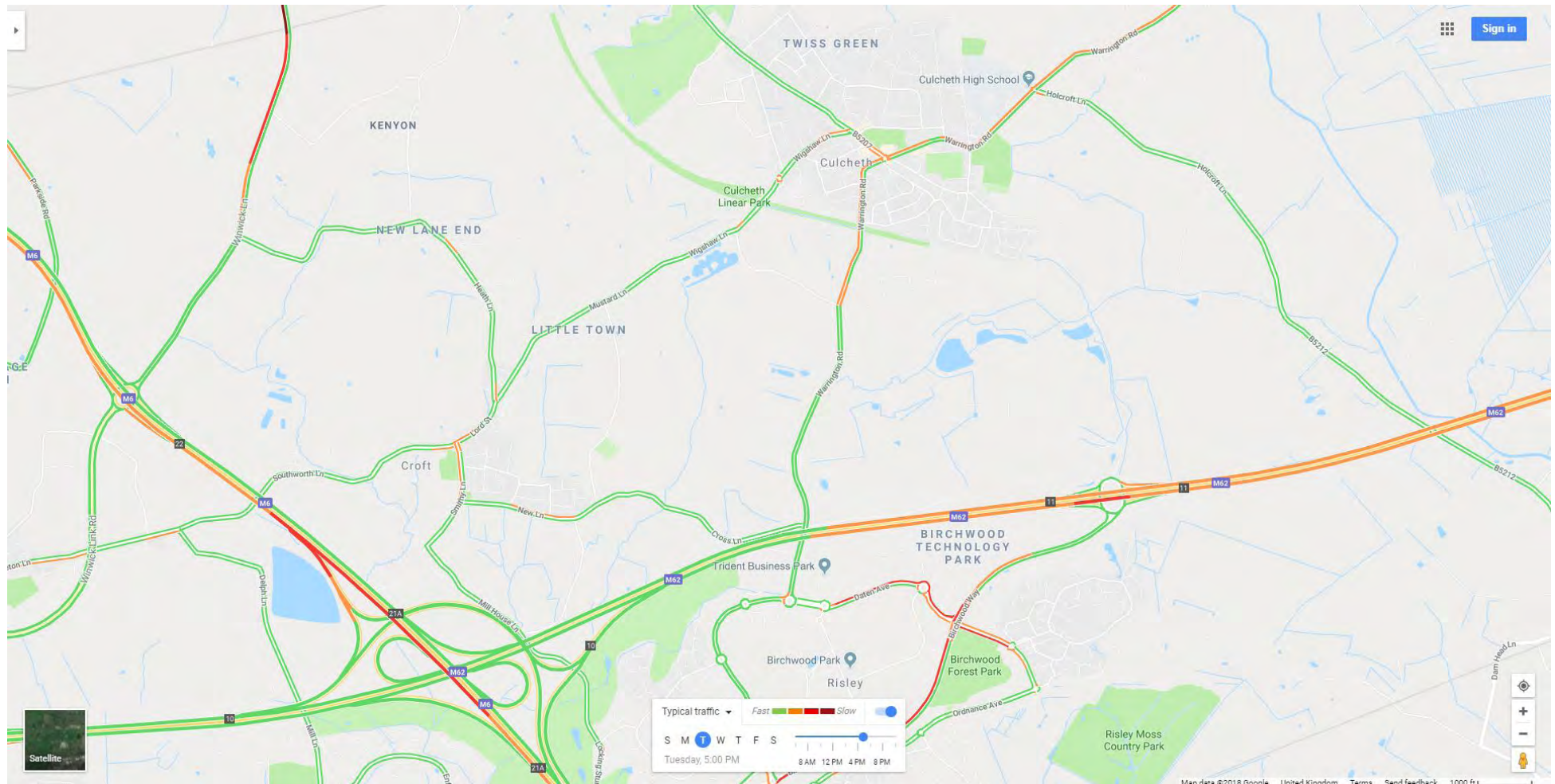
LAND AT LADY LANE, CROFT

APPENDIX G. Google Traffic Maps

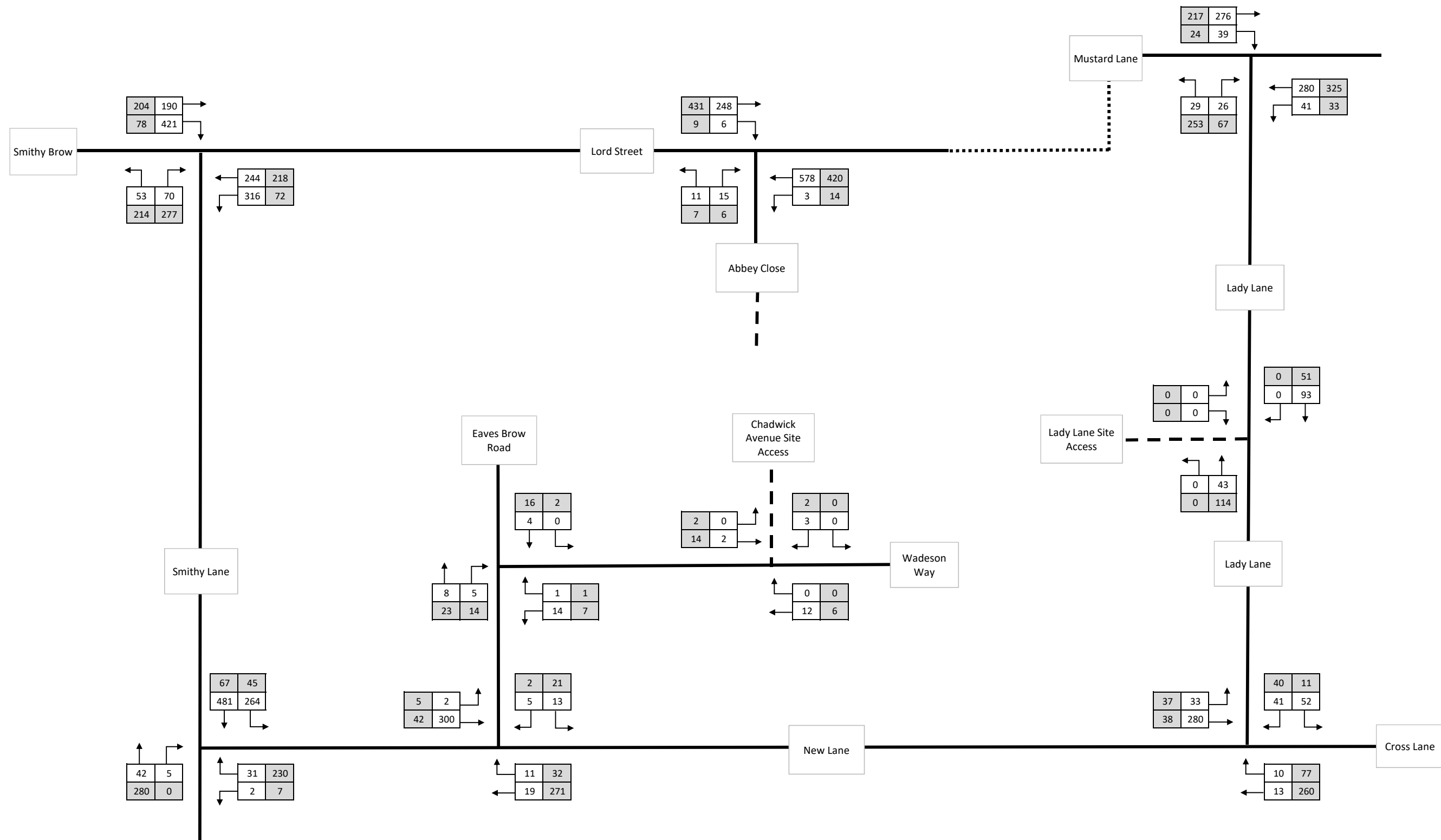
Lady Lane, Croft – AM Peak (08:00)



Lady Lane, Croft – PM Peak (17:00)



APPENDIX H.2017 Observed Traffic Flows



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LAND AT LADY LANE, CROFT	
Appendix H	
2017 Observed Traffic Flows	

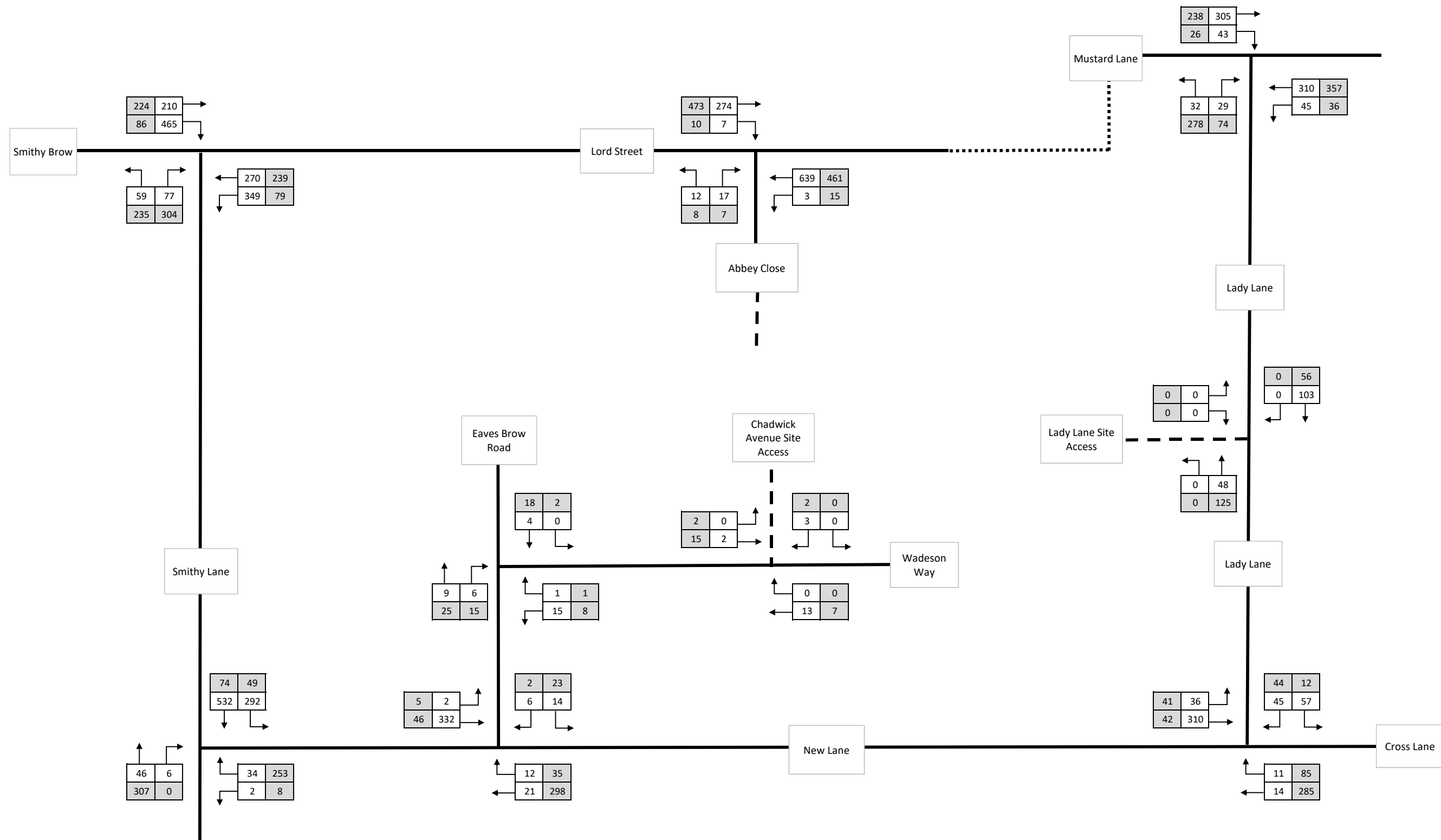
KEY

500 = AM PEAK (PCUs)

500 = PM PEAK (PCUs)

Notes:
 AM Peak: 07:30-08:30
 PM Peak: 16:15-17:15

APPENDIX I. 2037 Baseline Traffic Flows



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LAND AT LADY LANE, CROFT

Appendix I

2037 Base Traffic Flows

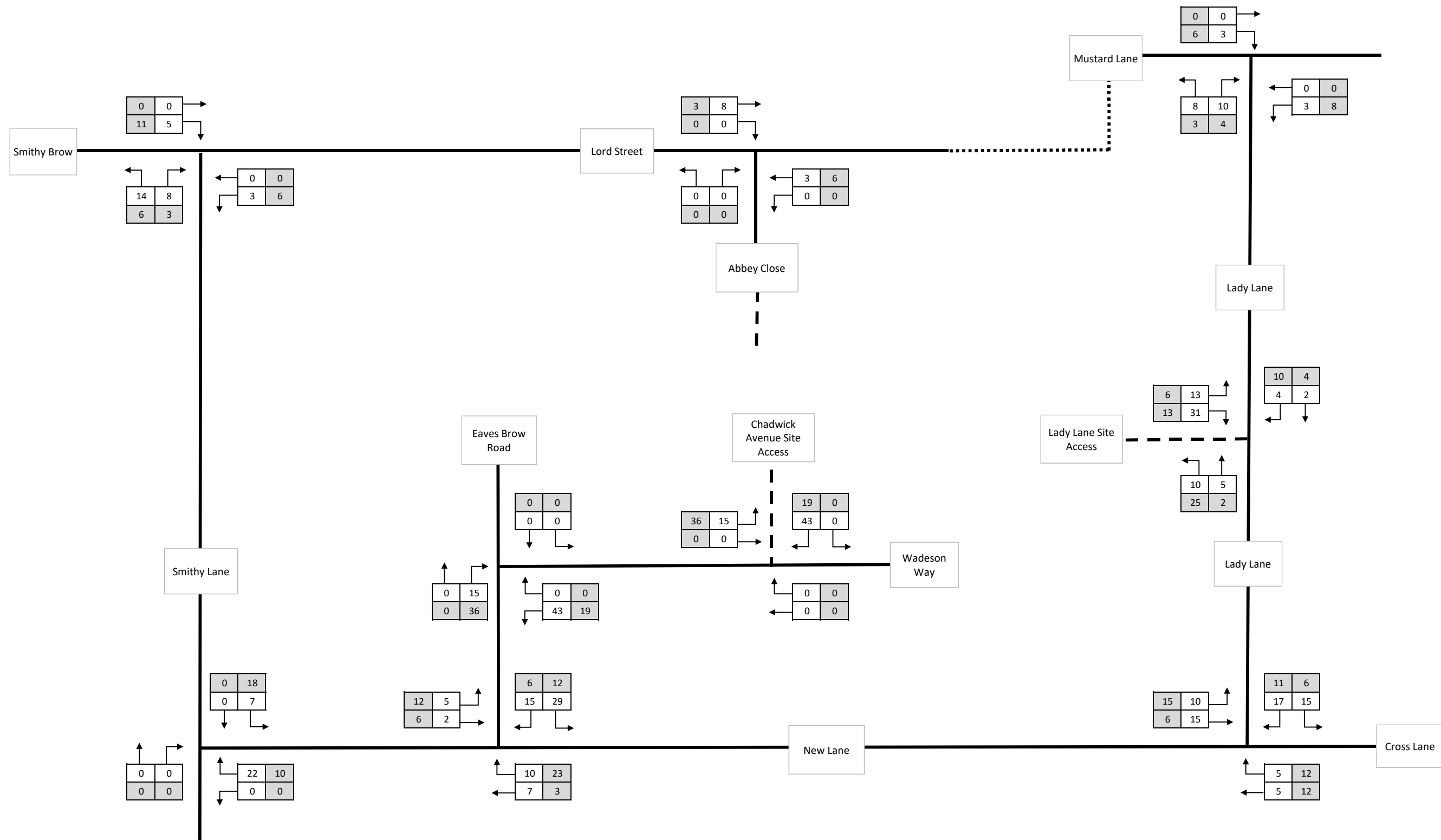
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500 = AM PEAK (PCUs)

500 = PM PEAK (PCUs)

Notes: #N/A

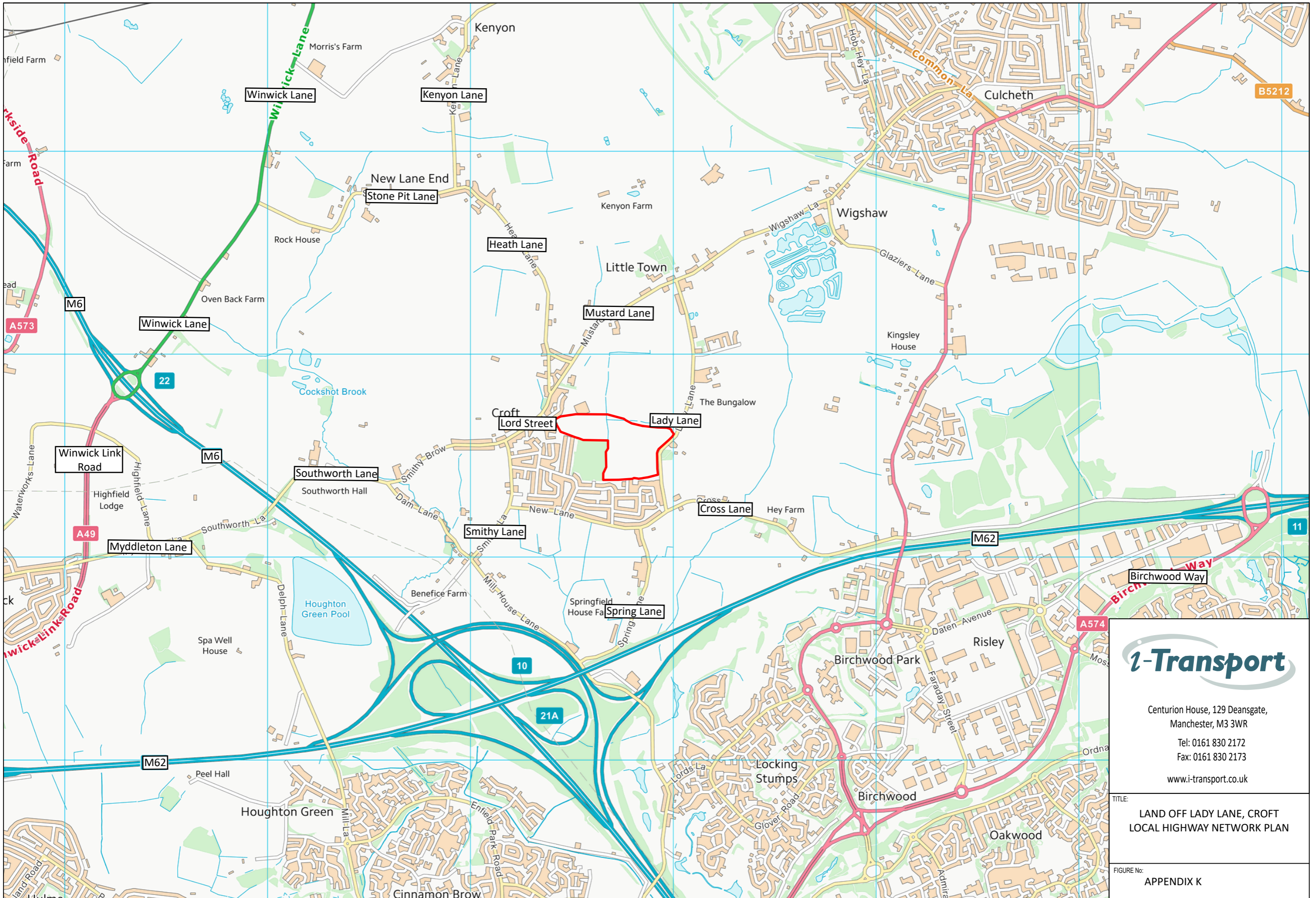
APPENDIX J. Development Traffic Flows



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Appendix J	
Development Traffic Flows	

KEY	
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Notes: #N/A	

APPENDIX K. Local Highway Network Plan



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TITLE:
**LAND OFF LADY LANE, CROFT
 LOCAL HIGHWAY NETWORK PLAN**

FIGURE No:
APPENDIX K

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