

# Master Plan for the East of Halewood

## Sustainable Urban Extension

### Baseline Summary

**Client:** Knowsley Metropolitan Borough Council

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## > Introduction

### Baseline preparation

1.1 The current baseline assessment across the site has been completed to a high degree of detail alongside the house builder consortium, however; there are a number of baseline themes within this report, which are still under going further technical assessment and for which further detailed information is being provided. This document provides the most current understanding of the baseline conditions across the site and serves to provide a coherent basis to develop the masterplan for East of Halewood.

1.2 The diagram opposite illustrates the stages of the masterplanning process undertaken for East of Halewood. This masterplan report summarises the technical baseline assembly which has been undertaken and which informs a composite constraints and opportunities plan. It focuses specifically on the outcomes of stages 1 and 2.

1.3 This masterplan baseline has been produced by Knowsley Council, supported by Optimised Environments Ltd (OPEN). Its purpose is to guide the comprehensive development of the site known as the **East of Halewood Sustainable Urban Extension (SUE)** at Halewood.

1.4 The site is one of several SUEs allocated for new residential development in the Local Plan Core Strategy 2016. The site sits at the heart of a strategic investment corridor, with potential to drive sub-regional economic development objectives, connecting Halewood with Liverpool city, Liverpool airport, Halton and beyond, via the Mersey Gateway bridge.

Figure 1.1 East of Halewood SUE site  
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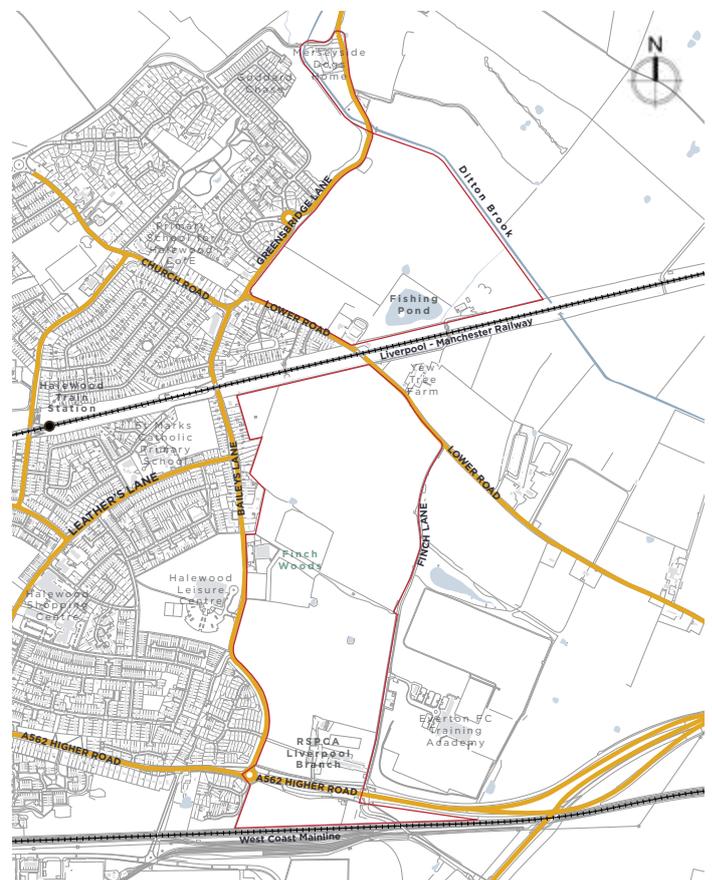
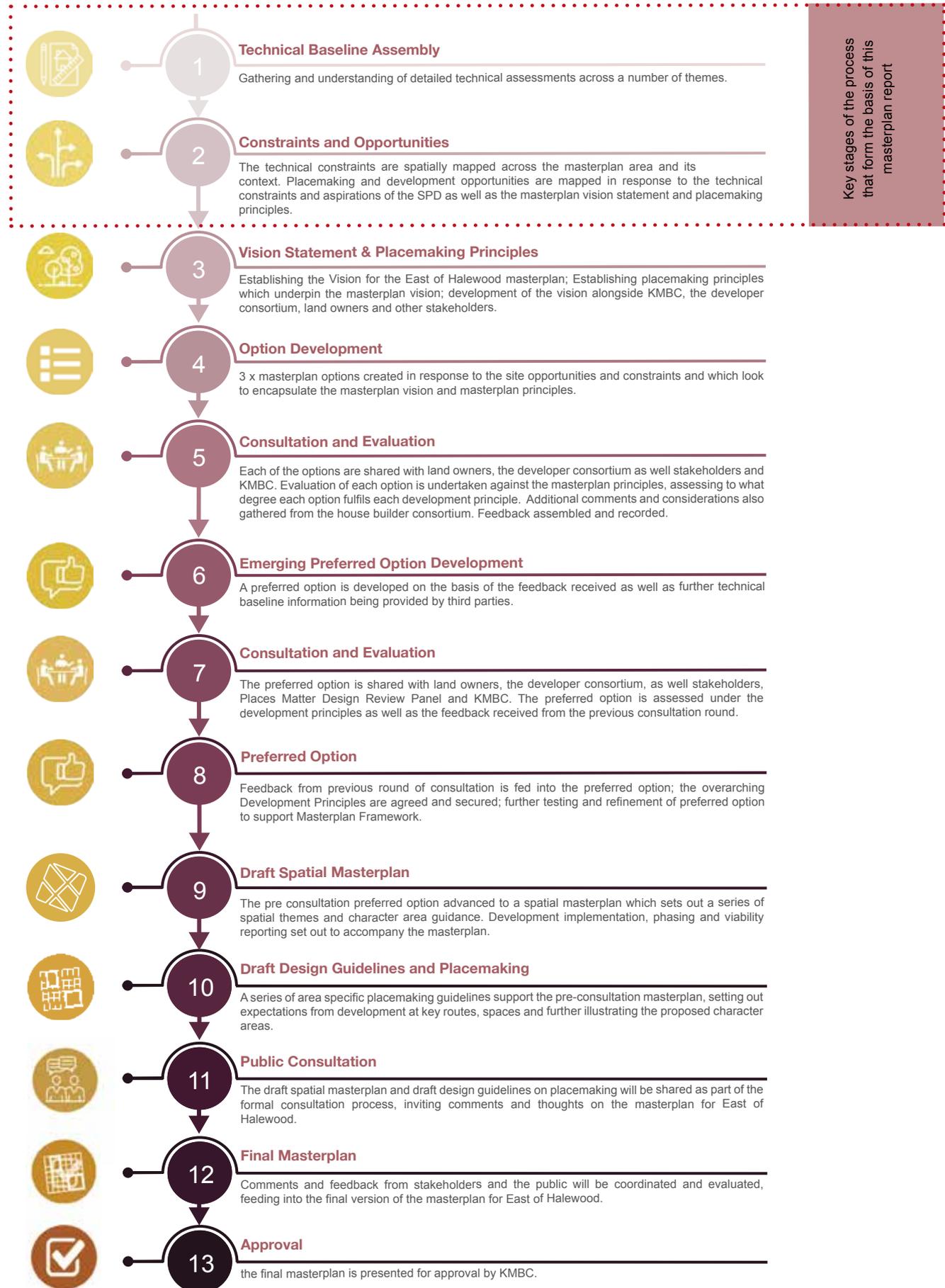


Figure 1.2 Masterplanning process



## > The Site

### The Site

2.1 The East of Halewood site extends to approximately 80 hectares (ha), comprising two principal parcels separated by the Liverpool - Manchester rail line (30ha to the north of the rail line and 50ha to the south). The site is a single strategic development opportunity to be coordinated by a comprehensive masterplan.

2.2 The site lies on the eastern edge of Halewood, which is the smallest of the borough's four townships with a population of just over 20,000. Halewood has strong connections to the City of Liverpool, and is in many ways a continuation of the city suburbs. To the north and east of the site is open countryside, with the built-up areas of Widnes in Halton further to the east.

2.3 The site has excellent connections to the rest of the city region and beyond, particularly via the A5300, M62, M57 and M56 via the Mersey Gateway. Development within the site will become part of the buoyant South Liverpool housing market, with good access to popular locations such as Woolton, Calderstones and Sefton Park, as well as the cultural, retail, leisure and employment offer of the city centre.

2.4 Most of the site is currently in agricultural use, although there are some existing buildings including the Merseyside Dogs' Home, houses and farm buildings on Lower Road, Finch Woods Academy, and the RSPCA Liverpool branch on Higher Road. To the west are established residential neighbourhoods, including the district shopping centre of Halewood. To the east are Everton FC's Finch Farm training centre and Halewood Caravan Park on Lower Road.



Figure 2.1  
Knowsley regional  
connectivity

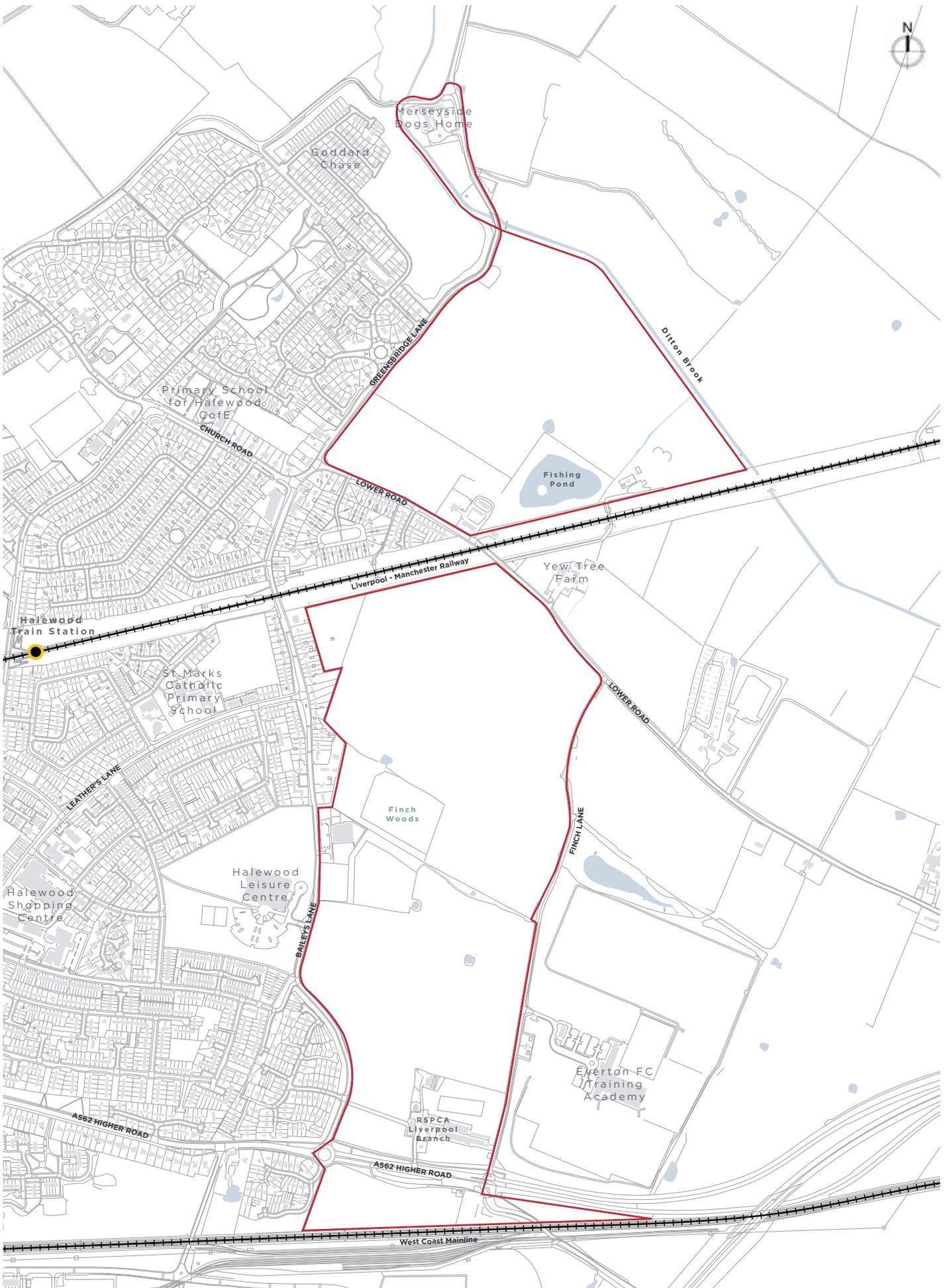


Figure 2.2 East of Halewood site

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# > Site Analysis Summaries

3.1 The summaries in this chapter highlight the key findings of the suite of technical assessments which have been under taken across the site to inform the constraints and opportunities plan.

- 03 (a) Built form and townscape
- 03 (b) Landscape
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Figure 3.1 View along Lower Road towards the railway viaduct

## > 03 (a) Built Form and Townscape

### Appraisal of Townscape and Built Environment Features

3.2 The townscape and built environment quality of the northern area of East Halewood is influenced by a small pockets of historic buildings, however the majority of the Halewood area is comprised of residential development delivered during the post war era and more recently.

3.3 In the mediaeval period this region was characterised by woodland, hence the name 'Halewood', but this was largely removed during the 13th-14th centuries. Historical settlement comprised of three nucleated Hamlets, 'Hale' (now within Halton District), 'North End', and 'Lane Ends' and also a number of farms and cottages scattered along lanes that crossed through the agricultural landscape and defined the character of the area during the 1800's. The area where the greatest concentration of these historic buildings that still remains today in the Knowsley area is located at the cross-roads of Church Road, Greensbridge Lane and Lower Road, (the early Hamlet of 'Lane Ends') this is mainly in the form of terraced and semi-detached dwellings. Further northwest along Church Road where the Halewood Conservation Area and the Grade II Listed Building the Church of St Nicholas (LB no. 1253240) is located.

3.4 There are a few historic buildings which have been identified as part of the townscape appraisal which have a positive historic character (although few are designated heritage assets) that add to the quality and help inform the character of the built environment near the masterplan site. These are identified on the adjacent plan and images and are located primarily around the historic cross roads of Baileys Lane, Church Road and Lower Road (which originated as the historic hamlet Lane Ends) as well as further south along Baileys Lane.

3.5 East Halewood developed more rapidly during the 1940s onwards, with the area seeing a huge increase in residential development in response to the post war housing shortages. This has resulted in two predominant characters emerging within East Halewood.

3.6 A summary of each of the periods of development across East Halewood has been undertaken, to highlight the characteristics of the built form and which of those characteristics contribute to the overall sense of place. Elements which contribute to good quality townscape principles and poor-quality townscape have been identified to help inform the master plan response.



Figure 3.2 Examples of the variety of built forms across Halewood informing local character

Table 3.1 Summary of development periods across Halewood

| Historic residential development   |               |   |
|--|---------------|---|
|  | Urban form    | Variety of forms ranging from terraced cottages to semi detached and detached dwellings   |
|  | Period        | pre 1930s   |
|  | Density range | Varies  |
|  | Storeys       | Predominantly 2   |
|  | Palette       | Traditional brown / sandstone brick.  |
|  | Street ratio  | Varies  |
|  | Roofscape     | Typically traditional pitched roofs with chimney stacks at mid and end of terraces. Consistency in roof and eave height with uniform pitch. |

| Inter-war residential development   |  |  |
|---|--|--|
|  | Urban form   | Typically semi-detached, with larger and deeper front gardens.   |
|   | Period   | 1940s – 1950s  |
|   | Density range  | Approx. 23 dph net.  |
|   | Storeys  | Predominantly 2  |
|   | Palette  | Part render/part traditional brown brick   |
|   | Street ratio   | 3:1 (street width : building height)   |
|   | Roofscape  | Combination of extended hipped roofs and traditional open gable roofs. Consistency in roof and eave height with uniform pitch. |
| Car parking   | On plot / in curtilage typically to front of dwellings |  |

| Post war suburban expansion (up to 1960s)  |   |  |
|--|---|--|
|  | Urban form  | Predominantly terraced form, with small private front gardens. Terraced form allows for corner turning.  |
|  | Period  | 1950s – 1960s  |
|  | Density range   | Approx. 31-38 dph net. (Average 34 dph).   |
|  | Storeys   | Predominantly 2  |
|  | Palette   | Varied render panel boards and brickwork   |
|  | Street ratio  | 3:1 (street width : building height)   |
|  | Roofscape   | Traditional gable roofs with uniformity across height of eaves and pitch. Regular rhythm of chimneys stacks. Some gable ends with roof pitch face onto the street. Minimal boundary treatments to properties and characterised by areas of residual green space. |
| Car parking  | Parking provision through a mixture of on-street, parking courtyards and in-curtilage parking.  |  |
| Further comments   | Orientation of dwellings and street layout is based upon Radburn principles. Some properties are inward facing and end on to primary streets. Streets and courtyards suffer from reduced levels of natural surveillance and legibility. |  |

Table 3.1 Summary of development periods across Halewood (cont).

| Post war suburban expansion (1960s onwards)  |  |   |
|--|--|---|
|    | Urban form   | Predominantly semi-detached with dwellings arranged in a perimeter block formation.   |
|  | Period   | 1960s – 1980s   |
|  | Density range  | Range 30-35 dph net. (Average 33 dph.)  |
|  | Storeys  | Predominantly 2   |
|  | Palette  | Part render boards/part traditional brown brick / some stone pebble dash treatment. Treatments are inconsistent along the street, creating an inconsistent design character. Boundary treatments take the form of low stone walls and stone walls with panel fencing.                     |
|  | Street ratio   | 2:1 (street width : building height)  |
|  | Roofscape  | Traditional pitched roof with consistent eave and roof pitch height and a regular rhythm of chimney spacing.  |
| Further comments   | Orientation of dwellings is based upon perimeter blocks, with houses addressing the street. Exclusion of bespoke building design or detailing giving rise to poor legibility and sense of place.                 |   |
| Late 20th Century suburban expansion   |  |   |
|   | Urban form   | Combination of detached, semi-detached and town houses  |
|  | Period   | 1990s - 2000s   |
|  | Density range  | Approx. 25-30 dph net. (Average 28 Dph.)  |
|  | Storeys  | Ranges between 2 - 3  |
|  | Palette  | Traditional brown brick/stone lintel detailing/timber frame detailing   |
|  | Street ratio   | 2:1 (street width : building height)  |
|  | Roofscape  | Combination of intersecting hip roof and dormer roofs, with a fairly consistent eave height. There are some periodic breaks between, with gable ends fronting street and 2.5 storey dormer roofs. Generally irregular pattern in pitch of roofs.  |
| Parking  | Mixture of in curtilage, parking courtyards and rear parking.  |   |
| Further comments   | Varying degree of architectural detailing across the area as a whole, with different lintel, Juliette balconies and window details. Consistent use of detailing within character areas reinforce local identity. |   |
| Late 20th Century suburban expansion   |  |   |
|  | Urban form   | Combination of detached and semi-detached dwellings, with buildings orientated to face streets forming perimeter blocks.  |
|  | Period   | 2018 (under construction)   |
|  | Density range  | Approx. 32 dph net.   |
|  | Storeys  | Ranges between 2 - 2.5  |
|  | Palette  | Varied light sandstone coloured brick with some brick detailing   |
|  | Street ratio   | 3:1 (street width : building height)  |
|  | Roofscape  | Combination of open gable roof and Intersecting Hip roof, with fairly consistent eave height with periodic changes between houses and gable ends fronting the street. Larger units have a more acute, accentuated roof ridge line that punctuates the typical 2 storey roof ridge height. |
| Parking  | off-street, in curtilage parking and garage parking.   |   |

3.7 In general terms, the area south of the Liverpool – Manchester railway line, which surrounds Halewood shopping centre and the Halewood Leisure Centre, is characterised by a denser form of development, in the form of terraced dwellings fronting along main roads and onto cul-de-sacs. Pedestrian permeability through these areas is often limited to a few areas where internal streets connect to the main road. Pockets of 1980's and early 2000's infill also make up the character of this area which continue to employ cul-de-sac arrangements and demonstrate relatively restricted permeability.

3.8 The area to the north of the Liverpool – Manchester railway line is defined more so by larger semi-detached dwelling types at a more typical suburban density. The arrangement of semi - detached dwellings allows them to have more generous spaces between them and larger gardens. Development here follows more contemporary built environment principles of establishing perimeter blocks and limiting the number of cul-de-sacs. Car parking in this area is handled through incurtilage car parking with garage provision as well as parking on driveways. However there are times where visitor parking results in people parking cars on residential streets usually on kerbs and footways.

3.9 The area north of Church Road and west of Greensbridge Lane has seen the most recent form of residential development being delivered in East of Halewood. This area is lower in density than those closer to Halewood shopping centre and are characterised by detached units. Further expansion is underway with Countryside Properties currently delivering their Goddard Chase residential development.

3.10 The Liverpool – Manchester railway is set upon a raised bund that dissects the master plan area, creating a strong visual and physical barrier between the northern and southern land parcels. Original connections in the form of routes between fields under the railway have been severed. Lower Road and Baileys Lane provide the only connections to the northern land parcels. The West Coast mainline, to the southern extent of the site also creates a strong visual and physical barrier to the south, with access across possible at Higher Road Bridge. The land parcel currently occupied by Merseyside Dogs Home is accessed by Greensbridge Lane and a bridge across Ditton Brook. Pedestrian connectivity across the bridge is poor due to the narrow bridge width. A small kerbed area on the bridge is considerably narrower than the pavement leading to it and terminates the footpath in both directions. It is occupied for the large part by the crash barrier structure. This combined with the shift in alignment and vehicle speeds make this a very uncomfortable environment for pedestrians and on this basis our analysis identifies this as a constraint on connectivity.

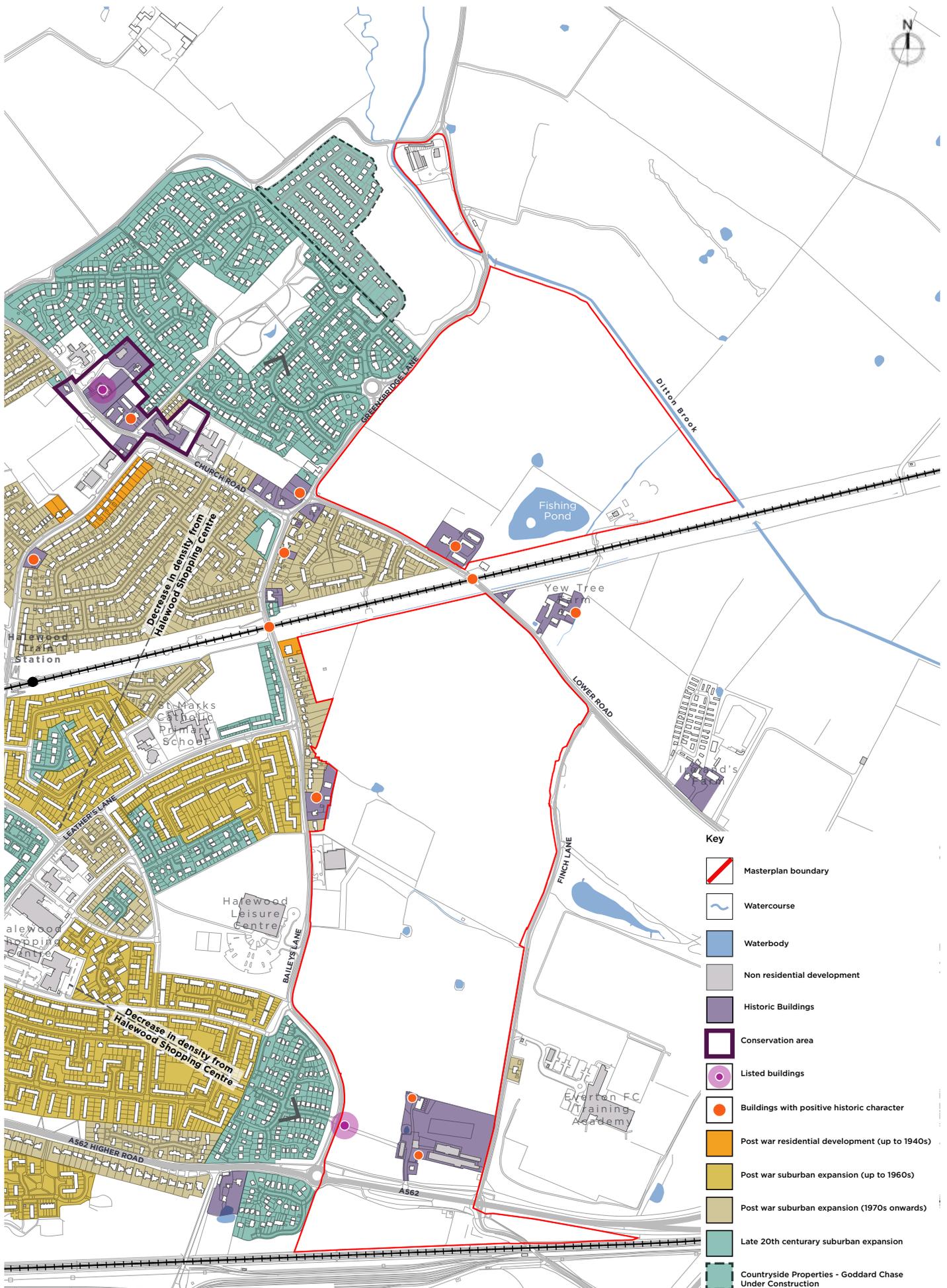


Figure 3.3 Townscape character across Halewood

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## > 03 (a) Built Form and Townscape

### Relationship to existing edges of the local environment

3.11 The site is defined by a number of landscape features including local roads, railway lines, Finch Woods and Ditton Brook. A number of the site edges have a direct relationship with Baileys Lane, Finch Lane, Higher Road, Lower Road and Greensbridge Lane.

3.12 Greensbridge Lane is characterised by high hedgerows and verges along the site's western boundary, with residential development adjacent orientated onto Greensbridge Lane and setback behind an established hedgerow. There are glimpsed views into the site from the southern end of Greensbridge Lane, with longer range views across the whole of the northern extent of the site when you arrive across the Greenbridge Lane bridge heading south. Views here open up across the land parcel, towards the railway line and along Ditton Brook.

3.13 Lower Road defines part of the southern parcel's northern extents and part of the northern parcel's southern extent. This is a relatively narrow country road with grassy verges and a narrow pavement along its southern edge. As you travel along Lower Road from the east, towards Halewood, there are glimpsed views into the site at the junction with Finch Lane, the environs are wholly rural with Yew Tree Farm adding to that impression. Continuing west, the existing hedgerow with hedgerow trees afford further glimpsed views into the site. Passing under the imposing red sandstone railway bridge, a mix of historic buildings within the site offer a high quality

appearance and are a microcosm which showcase the area's historic development. The western end of Lower Road also has a number of suburban residential properties, including several bungalows orientated towards the site, however the established hedgerow on the site side of Lower Road obstructs any direct views into the site. Facing the junction at the western end of Lower Road is a characterful terrace of stone built cottages which provide an attractive gateway feature and help to establish the historic village character of this part of Halewood.

3.14 Finch Lane defines the limit of the eastern extent of the masterplan's southern land parcels. It is a very narrow rural lane, defined by established medium / high hawthorne hedges with intermittent hedgerow trees and grassy verges along the majority of its edges. These offer enclosure to the road but the height of the hedge offers little opportunity for views into the site.

3.15 Higher Road in contrast to Finch Lane is much more open in character due in part to the broad width of the road and verges. There are open views into the RSPCA land from Higher Road through the field boundary which is a four bar fence. Views from Higher Road towards the southern land parcel and the West Coast Mainline are possible, with but are largely contained with hedgerow and tree planting, though a fenced boundary. In the vicinity of the roundabout allows open views. Some existing dwellings to the west of the Hesketh Land parcel, along Aldersgate Drive, overlook the site.

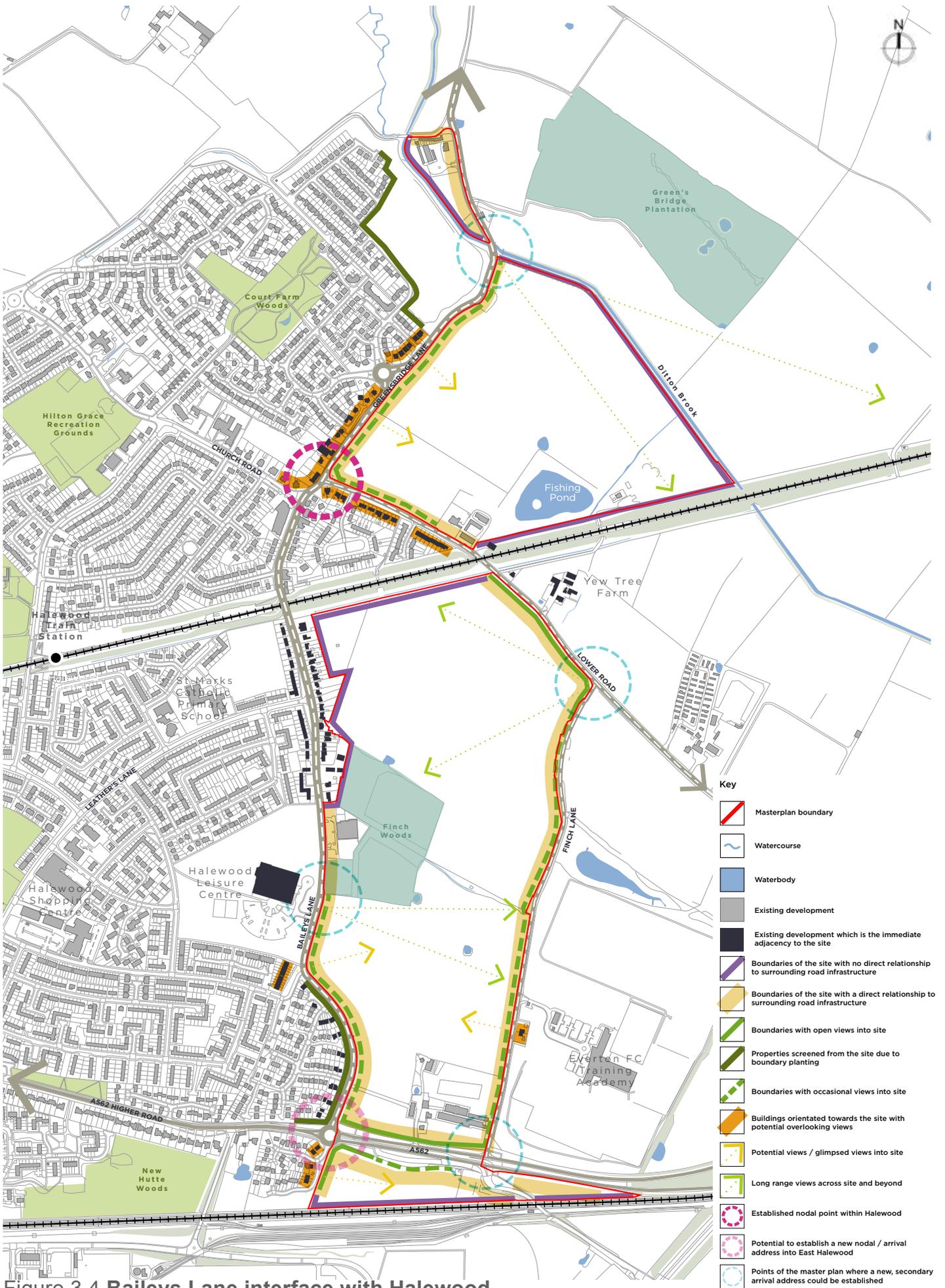


Figure 3.4 Baileys Lane interface with Halewood

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3.16 The western edge of the master plan area faces the existing edge of the built conurbation of Halewood. Currently this is defined in part by Baileys Lane, Finch Woods and existing residential rear gardens backing onto the site. The southern extent of Baileys Lane offers some glimpsed views into and across the site, although the hedgerows restrict views of the majority of the site. The late 20th century housing along the west of Baileys Lane is screened from the site by an established high hedge. Further along Baileys Lane, the character changes to a more suburban feel, with the introduction of the Halewood Leisure Centre, Finch Woods Academy and ribbon residential development. The site at this point is tucked behind development and not visible from Baileys Lane.

3.17 Across the variety of edges, the master plan will need to consider how proposed development will relate and integrate with the existing roads, hedgerows and overlooking properties. There may also be an opportunity to establish outward facing development and driveway access at certain locations along the edges of the master plan to ensure that development positively addresses the surrounding environment. Creating visual and physical connections with Halewood's facilities to the west in particular would help ensure the development positively contributes to the function and overall character of East of Halewood.



Figure 3.5 Examples of views into the site and along Baileys Lane

## > 03 (b) Landscape

### Landscape context

3.18 The majority of the site lies within the Tarbock Landscape Character Area, which is a broad river valley with flat to undulating landform, heavily influenced by mixed agricultural activity, as identified and defined by the Knowsley MBC Landscape Character Assessment (10th September 2007).

3.19 The landscape to the north and east of the site boundary is primarily agricultural, greenbelt land, intersected by transport corridors in the form of the A562, Knowsley Expressway and Manchester-Liverpool railway line. The existing field pattern is defined by mature boundary hedgerow. Isolated trees and ponds are scattered through the landscape. Significant areas of woodland exist in the form of plantation woodlands and alongside transport infrastructure corridors. Finch Farm, the site of Everton Football Club's training academy, is situated to the east of the site and consists of a number of grass and synthetic sports pitches. Halewood Leisure Centre lies to the west of the site and includes formal hard surfaced and synthetic sports courts, as well as an equipped play area, surrounded by mown grass amenity space.

### Trees and Hedgerows

3.20 The site itself consists primarily of arable farmland and is enclosed by field boundary hedgerows that are comprised mainly of mixed native and deciduous species (Bailey's Lane, Halewood Ecological Assessment, TEP\_Oct2013). The southern portion of the site, that sits either side of the A562, is comprised of largely improved grassland (Land off Higher Road, East Halewood, Ecological Survey and Assessment, ERAP\_Nov2017). The site is partially enclosed to the north, east and west by native field boundary hedgerows, including

#### List of documents informing this baseline:

- Landscape Character Assessment of Knowsley Metropolitan Borough (KMBC\_Sept2007)
- Arboriculture Impact Assessment, RSPCA (Aserta\_Jan2018)
- NHBC Tree Survey Report
- Land at Greensbridge Lane / Lower Road Tree Survey Report (TBA\_Dec2017)
- Bailey's Lane, Halewood Ecological Assessment (TEP\_Oct2013)
- Land off Higher Road, East Halewood, Ecological Survey and Assessment (ERAP\_Nov2017)
- Finch Woods, Bailey's Lane, Halewood Arboricultural Summary (Knowsley MBC\_Jun2018)

a mature, Category B, Hawthorn Hedge along Greensbridge Lane (Land at Greensbridge Lane / Lower Road Tree Survey Report, TBA\_Dec2017). A smaller parcel of land is located between Greensbridge Lane and Ditton Brook. This part of the site is partially occupied by Merseyside Dogs Home, the remainder of the land is covered by mature vegetation enclosed by tall hedgerows.

3.21 Two blocks of publicly accessible Millennium Woodland and meadows, known collectively as Finch Woods, are located along the eastern side of Baileys Lane and form the most significant area of tree cover within the masterplan boundary. The woodland was planted in 1995 utilising WGS funding and comprises of 3.08 hectares of woodland in two blocks both of which have open central aspects and rides. The native species mix planted include Ash, Alder, Birch, Field Maple, Hazel and Oak. Each block of woodland has a centralised glade of rough pasture made up of insect rich flora with natural regeneration beginning to take



Figure 3.6 Landscape character across Halewood

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hold (Finch Woods, Bailey's Lane, Halewood Arboricultural Summary, Knowsley MBC\_Jun2018). Further Arboricultural Surveys are required to assess quality of the existing trees and their associated root protection areas. The Open Space baseline summary has identified that Finch Woods is to remain in situ and to positively contribute to the open space provision of the master plan. Further tree survey work should be undertaken if detailed proposals are developed for the design and reconfiguration of the woods under the principles and guidance established under the master plan.

3.22 Additional areas of tree planting lie to the east of the site boundary, running along Finch Lane and provide screening to the Everton FC Training Academy and Finch Lane itself. These include a group of Category A, mature, mixed native broadleaf trees (Land at Greensbridge Lane / Lower Road Tree Survey Report, TBA\_Dec2017).

3.23 Tree planting is also present along the Manchester – Liverpool railway corridor which dissects the site, providing some screening to the railway, albeit the railway line does occupy an elevated position across the landscape. A further established block of woodland is located within the south east corner of the site, between the railway corridor, the A562 and Higher Road. The north western extent of the site, between Ditton Brook, Cartbridge Lane and Greensbridge Lane has a number of established trees along its boundaries which provide screening into the site. A small grouping of Category C trees exist along Greensbridge Lane surrounding the United Utilities drain cover (Land at Greensbridge Lane / Lower Road Tree Survey Report, TBA\_Dec2017). Merseyside Dogs Home sits within it and is mainly surrounded by trees, with a clearing along Greensbridge Lane for

vehicular access. The northern edge of the site boundary, along Ditton Brook has no existing tree groups, with the largest tree group located north of the Brook known as Green's Bridge Plantation. A number of broadleaf, Category B and C trees existing within the southern portion of the site, adjacent to the RSPCA buildings (Arboriculture Impact Assessment, RSPCA, Ascerta\_Jan2018)

3.24 The high-level baseline analysis indicates that there are currently no existing trees or woodland within the site boundary that are covered by a Tree Preservation Order or lie within a Conservation Area. Further detailed arboricultural assessments would be required to support future development proposals as they come forward through the master plan.

### Landscape Character

3.25 Typical of the broader landscape character area, the topography of the northern half of the site is gently undulating. Adjacent to Greensbridge Lane, the site slopes gradually down from south to north towards the Ditton Brook, which defines the northern boundary. There is total gradient change of 3.25m from Lower Road (lying approximately 9.75m AOD) towards the Ditton Brook (lying approximately 6.60m AOD). The area south of Lower Road slopes relatively evenly from Baileys Lane up towards Higher Road. There is total gradient change of 12.25m from Lower Road (approximately 9.75m AOD) towards the Higher Road (approximately 22.0m AOD). Further topographical survey is required for the southern portion of the site, south of the A562. A GIS survey has been undertaken for the whole of the master plan which indicates that the southernmost parcel falls within an approximate level range of 22m AOD – 25m AOD. The accompanying site topography plan below illustrates the topographical profile of the

site and the general fall of the site from A562 Higher Road towards the Ditton Brook.

3.26 A number of ponds exist within and around the site, the largest of which is located to the north of the railway line, close to Lower Road. This currently exists as a private recreational fishing pond. A number of ponds exist within the central part of the site, north and west of Finch Woods. A pond is also present at the southernmost, eastern extent of the site. The agricultural nature of the landscape around this area means there are a number of drainage ditches along field boundaries and alongside primary road and rail infrastructure. A wet ditch runs around the central arable field within the site boundary, south of the Manchester – Liverpool Railway line, parallel to Finch Lane. Ditton Brook runs from north west to south east, along the northern site boundary. The land either side falls within the Ditton Brook Corridor Nature Improvement Area (NIA Focus Area 07, Liverpool City Region Ecological Network) part of which falls within the site.

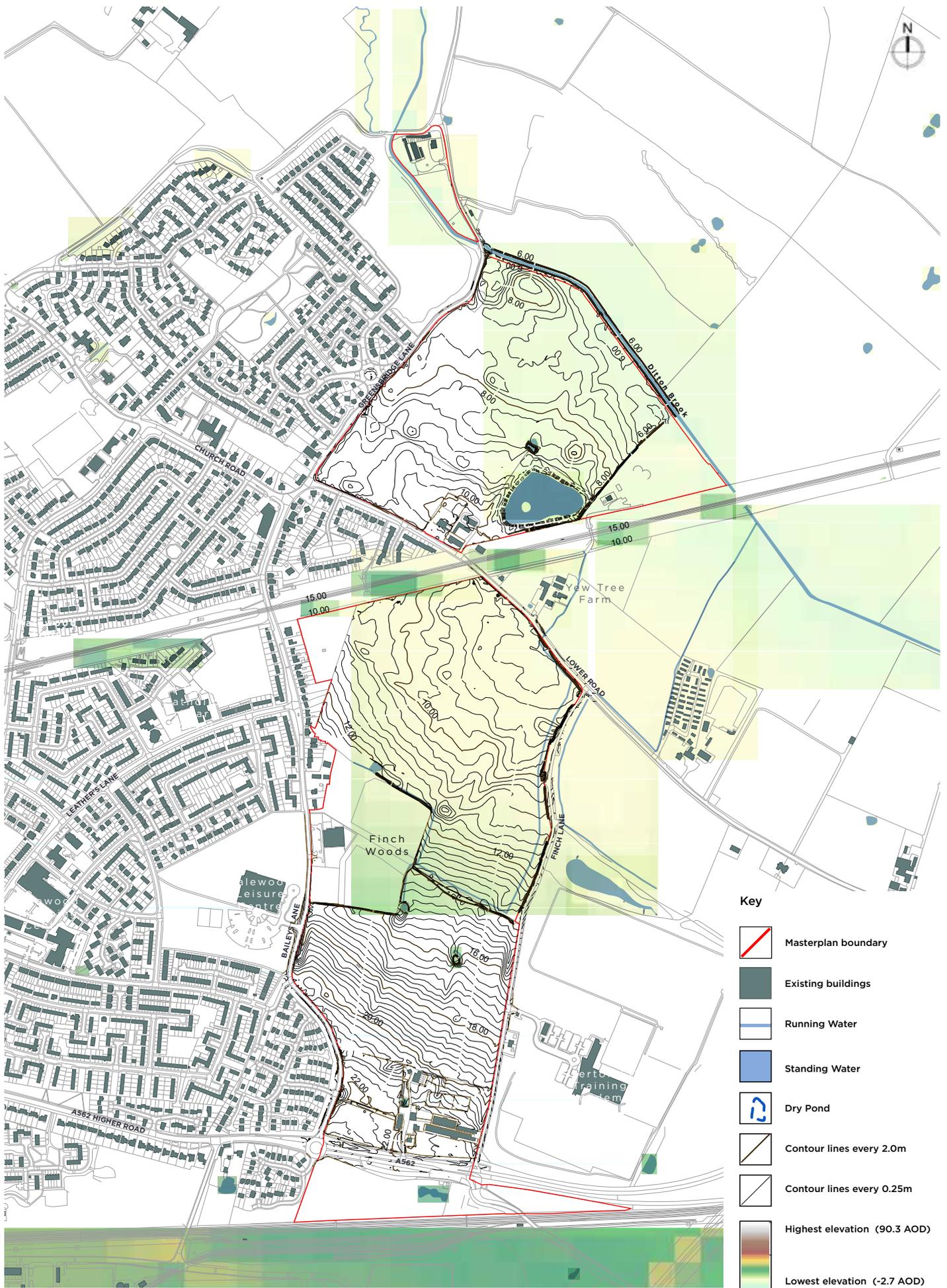
3.27 The neighbouring urban area of Halewood incorporates a number of significant areas of recreational space and amenity grassland. These include the land around Halewood Leisure Centre, located immediately to the west of the site and the public open space along Wood Lane.

### Existing Views

3.28 The largely flat/undulating wider landform around the site, allows long range views of the old and new Runcorn bridges (Silver Jubilee Bridge and Mersey Gateway Bridge). Short range views of the brick railway bridge, crossing Lower Road, exist from within the site and the bridge itself frames views from street level. Much of the southern part of the site has limited visual connection with East Halewood, which is enclosed by screening planting and existing buildings along Baileys Lane.

3.29 There is greater potential for visual connectivity between the northern parcel of land and the residential development along Greensbridge Lane, although views are currently obscured by the existing field boundary edge running along the site boundary. Views currently exist north west and south east along Netherley/Ditton Brook, framed by existing vegetation. Long range views from the northern portion of the site are largely truncated by the surrounding boundary vegetation, although the rear of properties along Lower Road are visible from Greensbridge Lane.

3.30 The plan on the following pages accompanies the locations of a number of site photos which were taken at varying times across 2018. The images give a sense of the views which are offered by the area and the degree of visual containment created by surrounding established structural planting.



**Figure 3.7 Existing site topography & elevation profile**  
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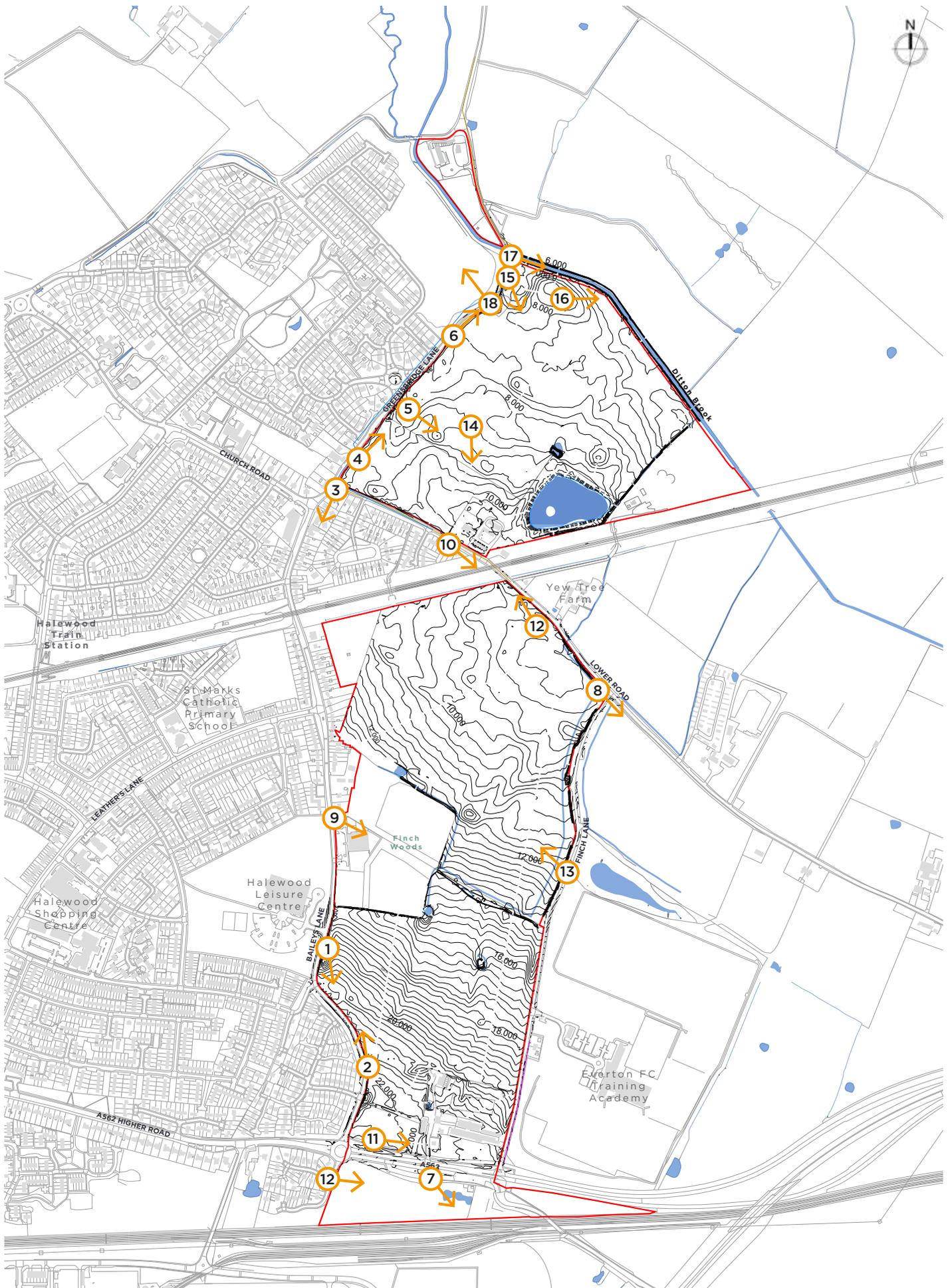


Figure 3.8 Photo locations

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Figure 3.9 Site photos



Figure 3.10 Site photos

## > 03 (c) Local facilities & accessibility

### Education

3.31 The evidence base established to support the Knowsley Local Plan identified that new development at East of Halewood would need to consider the provision of primary and early years education in the area, and ensure that sufficient capacity was made available to serve the new development.

3.32 Halewood is currently served by six primary schools, as detailed in Table 3.2. As of 2018, there are 1,626 primary pupils on roll, resulting in an overall surplus capacity of 46 vacant primary education spaces. Given the small scale capacity, it is likely that a developer contribution will be needed to ensure delivery of additional primary education places to meet demand arising from the development.

3.33 From a sustainability perspective, proximity within 0.8 miles (equivalent to a 10 to 15 minute walk) is more likely to promote walking as a modal choice. This makes the three primary schools closest to the site – Halewood Church of England, Plantation Primary, and St. Mark’s Catholic Primary – the preferable candidates for expansion. The additional places required, and the projects for expansion, will be confirmed through consultation with the Local Education Authority.

Table 3.2 Halewood primary schools

| School                                  | Address                                  | Distance from East of Halewood | Status                                     |
|---|--|--------------------------------|--|
| Halewood Church of England              | Halewood Church Road, Halewood, L26 6LB  | 0.5 miles                      | Academy – Liverpool Diocesan Schools Trust |
| Plantation Primary                      | Hollies Road, Halewood, L26 0TH          | 0.8 miles                      | Maintained                                 |
| St. Mark’s Catholic Primary             | Fir Avenue, Halewood, L26 0XR            | 0.5 miles                      | Maintained                                 |
| Yew Tree Community Primary School       | The Avenue, Wood Road, Halewood, L26 1UU | 1.1 miles                      | Maintained                                 |
| St. Andrew the Apostle Catholic Primary | Higher Road, Halewood, L26 1TD           | 1.4 miles                      | Maintained                                 |
| Holy Family Catholic Primary            | Arncliffe Road, Halewood, L25 9PA        | 2.5 miles                      | Maintained                                 |

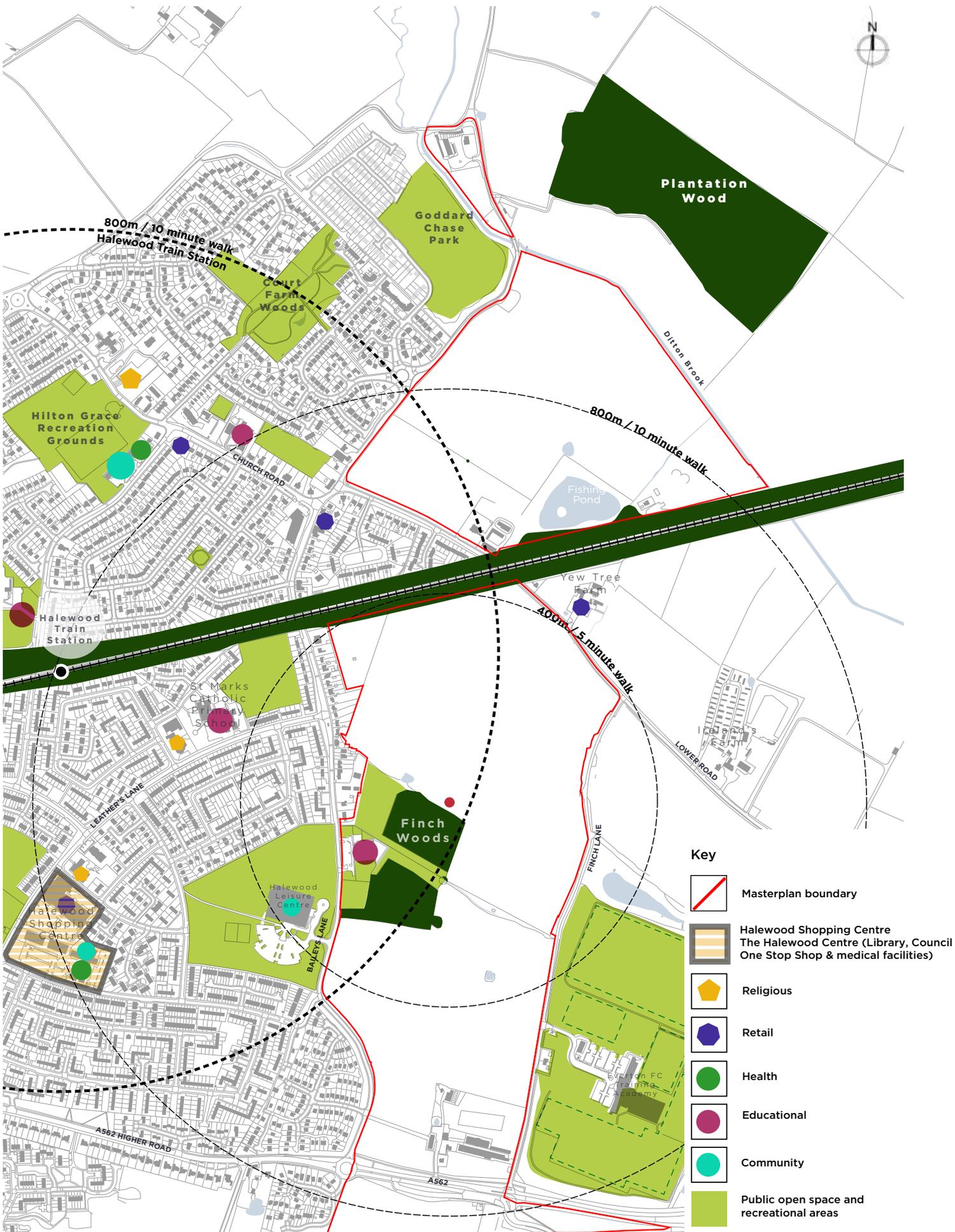


Figure 3.11 Local accessibility to Halewood

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3.34 Halewood is well served by a range of early years providers, including nurseries associated with schools, and otherwise provided by the public and private sector. The requirement for new early years capacity will be confirmed with the Local Education Authority, accounting where possible for factors including location/proximity to the site, attendance rates and parental choice.

### Health care

3.35 Halewood is generally well served by existing GP surgeries and by nearby hospitals, including Whiston Hospital and a wide range of specialist hospitals in Liverpool.

3.36 The East of Halewood site is within the Halewood health planning locality which currently comprises six GP Practices, plus a number of other health facilities, serving a GP registered population of 17,247. It should be noted that the resident population is higher in Halewood and a number of residents are registered with Liverpool GPs. Table 3.3 summarises existing GP provision. Given the additional demand for GP services arising from the East of Halewood development it is anticipated that additional surgery capacity will be required.

**Table 3.3 GP Practices in Halewood**

| GP Practice  | Distance from East of Halewood | GP List Size |
|--|--------------------------------|--------------|
| The Health Centre Surgery<br>The Halewood Centre, Roseheath Drive      | 0.4 miles                      | 5,219        |
| Roseheath Surgery, The Halewood Centre,<br>Roseheath Drive             | 0.4 miles                      | 2,422        |
| Leathers Lane Surgery (Aston), The<br>Halewood Centre, Roseheath Drive | 0.4 miles                      | 2,320        |
| Hollies Medical Centre, Hollies Road                                   | 0.8 miles                      | 4,511        |
| Camberley Medical Centre, Camberley<br>Drive                           | 1.8 miles                      | 2,775        |

3.37 The Halewood Centre is a modern building housing three practices which will be less than half a mile from the East of Halewood site, making it accessible through sustainable modes. The building also houses the Council’s One Stop Shop and Library, and a walk-in centre facility. There is potential within the building to release additional clinical rooms to accommodate increases in patient numbers. The additional capacity required will be confirmed with the Knowsley Clinical Commissioning Group.

### Conclusion

3.38 Halewood is already well served by a range of local facilities. Additional demand arising from the East of Halewood development will need to be accommodated within the township.



## > 03 (d) Flood risk and drainage assessment

3.39 Detailed Flood Risk Assessments have been carried out for the majority of the masterplan area. This report provides an executive summary of the findings across all of the sources identified to form the basis of the flood risk and drainage baseline. Additional, high level commentary is also provided for areas within the masterplan which have not been assessed under detailed flood risk assessments. This is based upon the plans provided within the documents listed adjacent.

3.40 Please see the plan below for references to the specific land parcels which are described under a number of flood and drainage headings.

### Local topography and existing drainage assets.

3.41 There are a number of existing utilities and drainage assets across the master plan area. The distribution of these is shown on figure 3.12.

3.42 The Ditton Brook defines the northern extent of the masterplan area, which was canalised and straightened around 1843 and flows west to east. It currently has privately maintained raised flood embankments along both its banks, which form the northern extents of the site. The embankments are deemed to be in very poor condition and overtop during the 5% (20yr) AEP event. Despite their poor condition and low standard of protection, the defences are considered to be major flood defence assets.

3.43 The most significant drainage utility assets are found across parcels 01 -03. Two 24" cast iron water main runs within Greensbridge Lane and continue along Greensbridge Lane northwards and towards Halewood Village. A 36" steel trunk water main traverses the northern extent of parcel 02, which crosses through a pumping station / inspection chamber on the western edge of the parcel 02.

### List of documents informing this baseline:

- Lower Road, Halewood Flood Risk Assessment & Drainage Strategy (Nov 2017\_Waterco)
- East Halewood (Plot 5) Flood Risk Assessment (July 2018\_Waterco)
- East Halewood (Plot 4) Flood Risk Assessment (July 2018\_Waterco)
- East Halewood (Plot 2) Flood Risk Assessment (July 2018\_Waterco)
- East Halewood (Plot 1) Flood Risk Assessment (July 2018\_Waterco)
- Technical Note (May 2018\_Banners Gate Limited)
- Land at East Halewood Flood Risk Assessment (July 2018\_Waterco)
- Land South of Halewood Flood Risk Assessment & Drainage Strategy (October 2018\_Waterco)

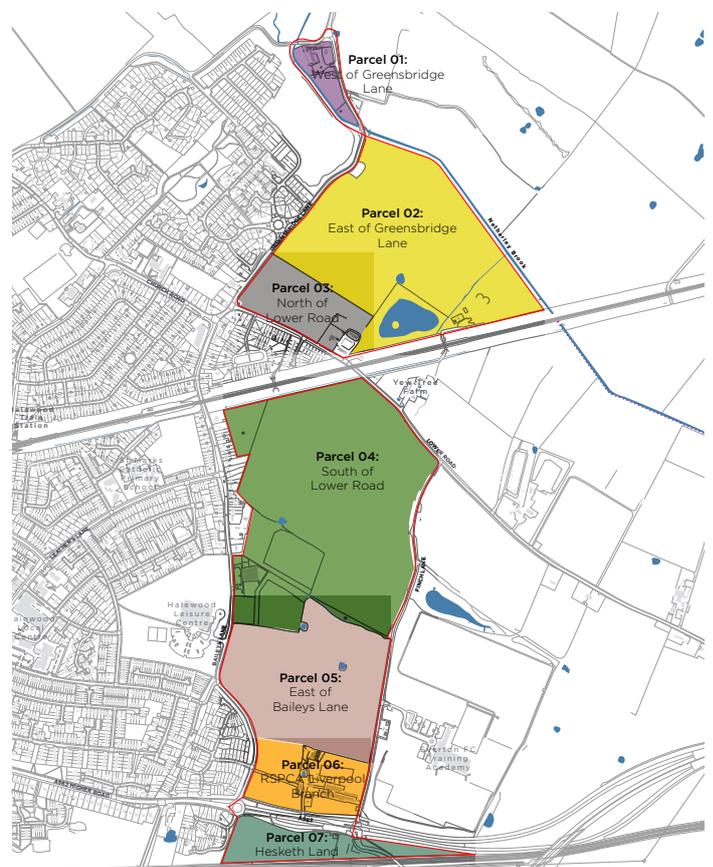


Figure 3.12 Parcel reference plan  
Not to scale. © Crown Copyright Knowsley  
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It is understood that through initial enquiries to United Utilities, that both the two 24" trunk mains and 36" steel trunk mains cannot be diverted due to the strategic requirement of these assets.

3.44 A 110mm public foul sewer is located within Greensbridge Lane. The sewer flows south-west and joins a 600mm public foul sewer that crosses parcel 02 from the north-west to south-east. A 730mm public surface water sewer is also located within Greensbridge Lane.

3.45 To the eastern extent of parcel 02 there is a United Utilities compound, which houses a combined pump station. The remainder of the compound is of scrub vegetation and access road, with no other utility infrastructure shown on United Utility Sewer maps. The pumping station receives two combined 450mm rising mains which run along the northern and eastern edges of parcel 04, as well as a 600m mains foul sewer, which traverses parcel 02 heading north west across Greensbridge Lane.

3.46 Within Lower Road there is a 300mm public foul sewer that flows south-east, joining a 450mm public combined sewer which also flows into the pumping station located within the United Utilities compound. There is a 225mm public surface water sewer located within Lower Road, which flows west and joins other public surface water sewers on the north western boundary of parcel 02 before joining an 825mm (36") public surface water.

3.47 Within parcel 04, there are three public combined rising mains along the north-western and eastern boundaries. These will require unrestricted access to the sewer network for maintenance purposes. United Utilities have specified a minimum clearance distance of 6m (3m each side from centreline of the sewer pipe). If this cannot be achieved, then diverting and or abandoning the public sewer may need to be considered.

3.48 There are three Combined Rising Mains (300mm, 375mm and 400mm diameter) crossing within the eastern boundary of parcel 06. Public foul and surface water sewers are located within Bailey's Lane to the northwest of the parcel. A 450mm combined rising main crosses the eastern extent of parcel 07 and continues southwards and across the railway line.

3.49 Along the northern boundary of parcel 07, within Higher Road, a distribution water mains pipe connects to a 4" pipe within Finch Lane. A 275mm public surface water sewer within Aldersgate Drive immediately lies to the west of the site. A 100mm pipe also serves existing dwellings off Aldersgate Drive which runs along the western boundary of the site. To the north east lies a 450mm public combined rising mains and a 224mm private sewer.

3.50 Consideration should also be given to the maintenance of the existing utilities and drainage infrastructure which sit within or near to the site. Correspondence from UU states 'There are public sewers crossing the site of which, we will require unrestricted access to the sewer for maintenance purposes, we would ask that you maintain a minimum clearance of 6m which is measured 3m from the centre line of the pipe. If you cannot achieve this then you may wish to consider diverting and or abandoning the public sewer'.

3.51 Maintenance access to Ditton Brook and land drains on and bordering the site should be retained; an 8m buffer strip from Ditton Brook and a 6m buffer from the land drains are recommended.

3.52 In general terms, the overall profile of the master plan topography falls from south to north, towards the Ditton Brook. The approximate level change range is 16.0m,

falling from approximately 22.0m in the south to 6.0m in the north along the Ditton Brook. The topography profile for each parcel is summarised in table 3.2 and spatially mapped in figure 3.7 above.

**Table 3.4 Level changes across land parcels**

| Parcel Number | Highest Point within parcel Above Ordinance Datum (AOD)   | Lowest Point within parcel Above Ordinance Datum (AOD)       | Level change |
|---------------|---|--|--------------|
| 01            | Detailed survey information not available for this parcel. Elevational GIS mapping indicates approximate site level of 10.0m AOD. Site visit identifies that the parcel is generally flat with an embankment falling down to the Ditton Brook.  |  |              |
| 02            | 9.66m AOD along southern edge   | 6.69m AOD along northern edge along top of Ditton Brook bank | 2.97m        |
| 03            | 10.01m AOD south-east corner  | 8.42m AOD in northwest corner                                | 1.59m        |
| 04            | 14.13m AOD south-west   | 8.38m AOD north east   | 5.75m        |
| 05            | 21.24m AOD north-east   | 13.96m AOD south west  | 7.28m        |
| 06            | 22.89m AOD north-east   | 19.5m AOD south west   | 3.39m        |
| 07            | Detailed survey information not available for this parcel. Topography survey for Higher Road sits at 22.0m AOD. Elevational GIS mapping indicates approximate site level of 23.0m AOD. Site visit identifies that the parcel is generally flat with localised depressions along southern parcel boundary against the West Coast Railway embankment. |  |              |

## Ground conditions

3.53 Groundwater flooding occurs when water levels underneath the ground rise above normal levels. Prolonged heavy rainfall soaks into the ground and can cause the ground to become saturated. This results in rising groundwater levels which leads to flooding above ground.

3.54 Reference to the British Geological Survey (BGS) online mapping (1:50,000 scale) indicates that the majority of the site is underlain by superficial Devensian Till (Diamicton), with superficial deposits of Alluvium in the north-eastern extent of the site, corresponding with the location of the Ditton Brook, generally comprising clay, silt, sand and gravel. The superficial deposits are

identified as underlain by Wilmslow Sandstone Formation in the north-east and Kinnerton Sandstone Formation in the south.

3.55 MAGIC Map's online Aquifer Designation Mapping indicates that the superficial Devensian Till deposits are recorded as Secondary (undifferentiated) Aquifer. This is assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

3.56 The superficial Alluvium deposits are also recorded as Secondary Aquifer, capable of supporting water supplies at a local level. These are permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases, form an important source of base flow to rivers.

3.57 The underlying Wilmslow Sandstone formation is noted as a Principal Aquifer, capable of providing high levels of water storage and they may support water supply and/or river base flow on a strategic scale

3.58 MAGIC Maps online 'Source Protection Zones' (SPZ) map indicates that the northern extent of the site is located within a

groundwater SPZ 2, with the southern extent of the site within a groundwater SPZ 3. This means that this area is sensitive to pollution risks due to the proximity to drinking water sources and the way groundwater flows. Development in these areas may not allow discharge of foul or surface water into the ground.

3.59 The soil is described by the National Soil Resources Institute as 'slowly permeable seasonally wet loamy and clayey soils'.

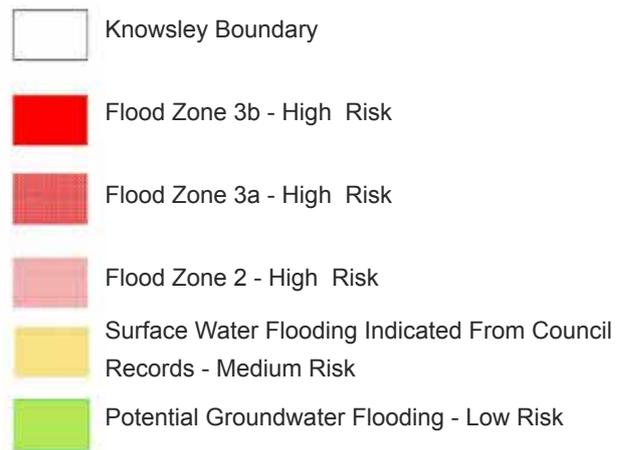
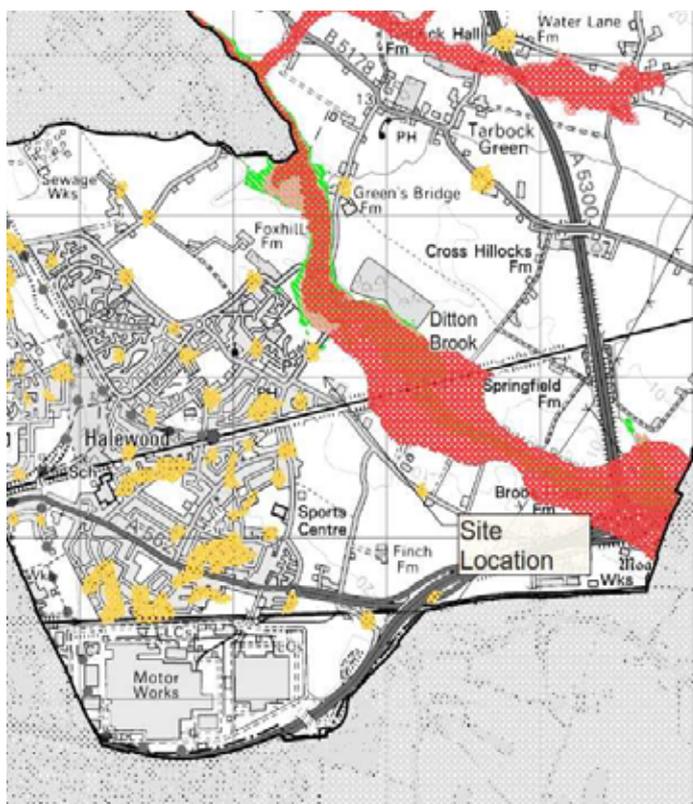


Figure 3.13 Extract taken from Combined Risk Matrix Map as part of the Knowsley & Sefton Strategic Flood Risk Assessment

## Fluvial and Tidal Flooding and Probability

3.60 A number of land drains border the north, east and south of Lower Road parcel 04. The land drain to the north is fed by public surface water sewers and flows east in this location, joining Ditton Brook. The remaining land drains appear to originate on parcels 04 and 05 and flow north, again joining Ditton Brook. They therefore have a limited upstream extent.

3.61 The current EA 'Flood Map for Planning' shows that the majority of the site is located outside the extreme flood event (Flood Zone 1), meaning it has a less than 0.1% annual probability of flooding. Topographical surveys of the site along with LiDAR data provided within the Waterco Flood Risk Assessment indicate that the site is situated a minimum of 8.77m AOD and significantly above sea level. Therefore, these areas are considered to be at low risk of fluvial and tidal flooding.

3.62 There are however, areas of the site affected by fluvial flood risk, namely parcels 01 and 02. The Ditton Brook is the nearest watercourse which forms the northern boundary to parcel 02 and the southern boundary of parcel 01. Two smaller, unnamed tributaries join Ditton Brook approximately 300m upstream of the site. The current EA 'Flood Map for Planning' shows that a small portion of the southern extent of parcel 01 is located within Flood Zone 3, an area

considered to be at flood risk with a 1% (1 in 100) or greater annual probability of fluvial flooding. An area within the south eastern corner of the parcel is located within flood zone 2, an area to be considered to be at a flood risk between 1% and 0.1% (1 in 1000) annual probability of flooding. The remainder of the parcel is located within an area outside of the extreme flood event (within Flood Zone 1), meaning it has a less than 0.1% annual probability of flooding.

3.63 Parcel 02 is considered to be undefended from tidal and fluvial flooding. Fluvial flooding is the primary flood risk source to parcel 02, due to the Ditton Brook overtopping its banks in an extreme rainfall event.

3.64 The current EA 'Flood Map for Planning' shows that the north eastern extent of parcel 02 is located within Flood Zone 3, an area considered to be at flood risk with a 1% (1 in 100) or greater annual probability of fluvial flooding. An area within the north western extent of the parcel is located within flood zone 2, an area to be considered to be at a flood

risk between 1% and 0.1% (1 in 1000) annual probability of flooding. The southern extent of the parcel is located within an area outside of the extreme flood event (within Flood Zone 1), meaning it has a less than 0.1% annual probability of flooding.

3.65 The existing scenario tested through the hydraulic model show that the northern and eastern extents of the parcel flood during the 5% AEP fluvial event due to Ditton Brook exceeding channel capacity. During the 1% + 70% CC event and 0.1% flood event, the majority of the parcel is flooded, with floodwater spilling over from the tributary adjacent to Cartbridge Lane and flowing through the urban area to the north, as shown below.

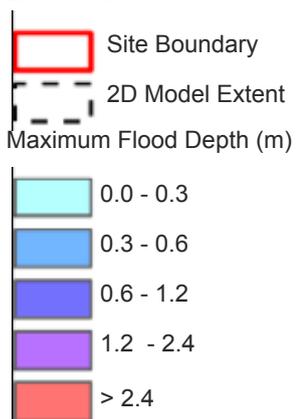
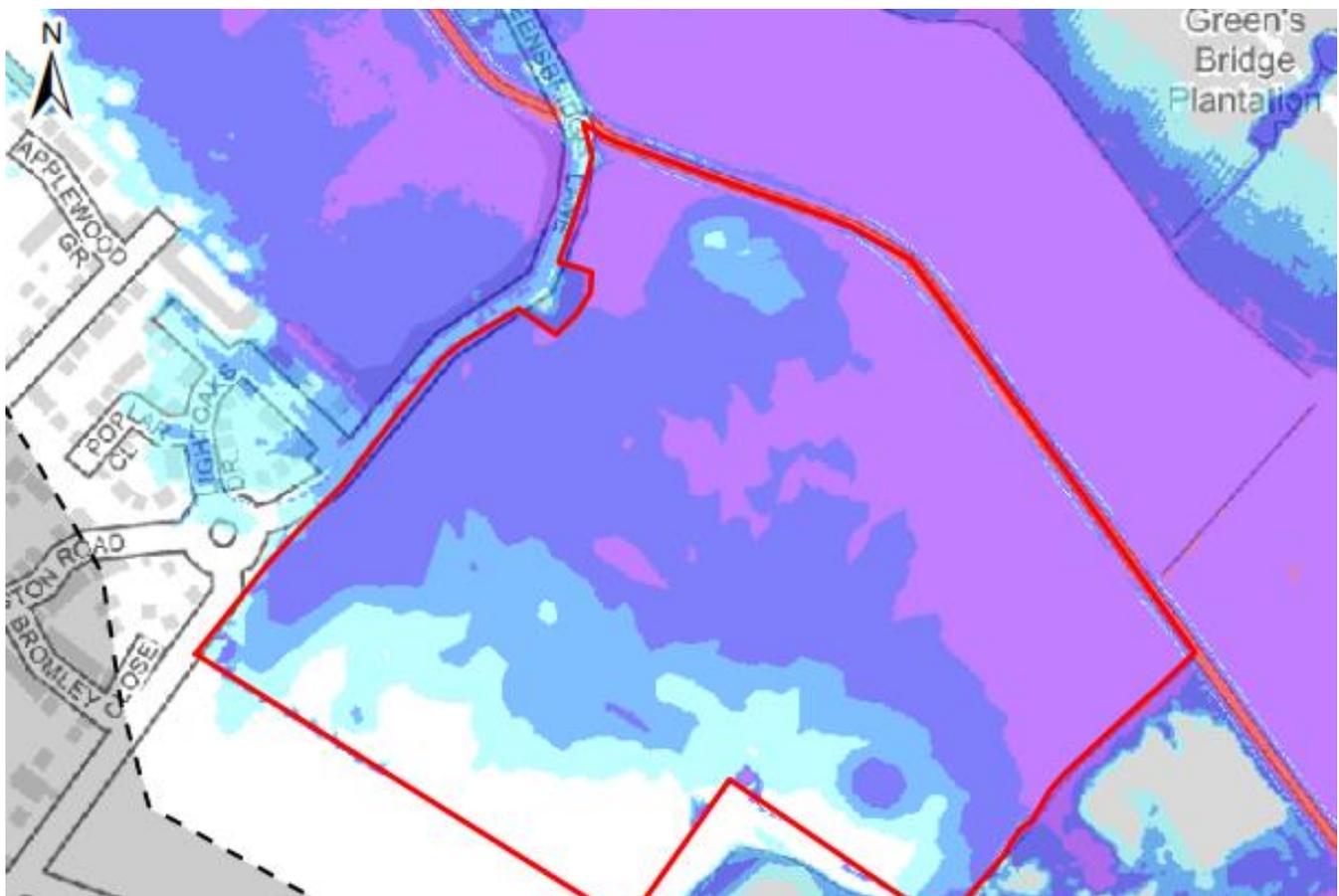


Figure 3.14 Pre-development levels of 1% AEP flood event + 70% CC based upon hydraulic modelling carried out by Waterco. Extract taken from Flood Risk Assessment (Greensbridge Lane, Halewood) prepared by Waterco July 2018.

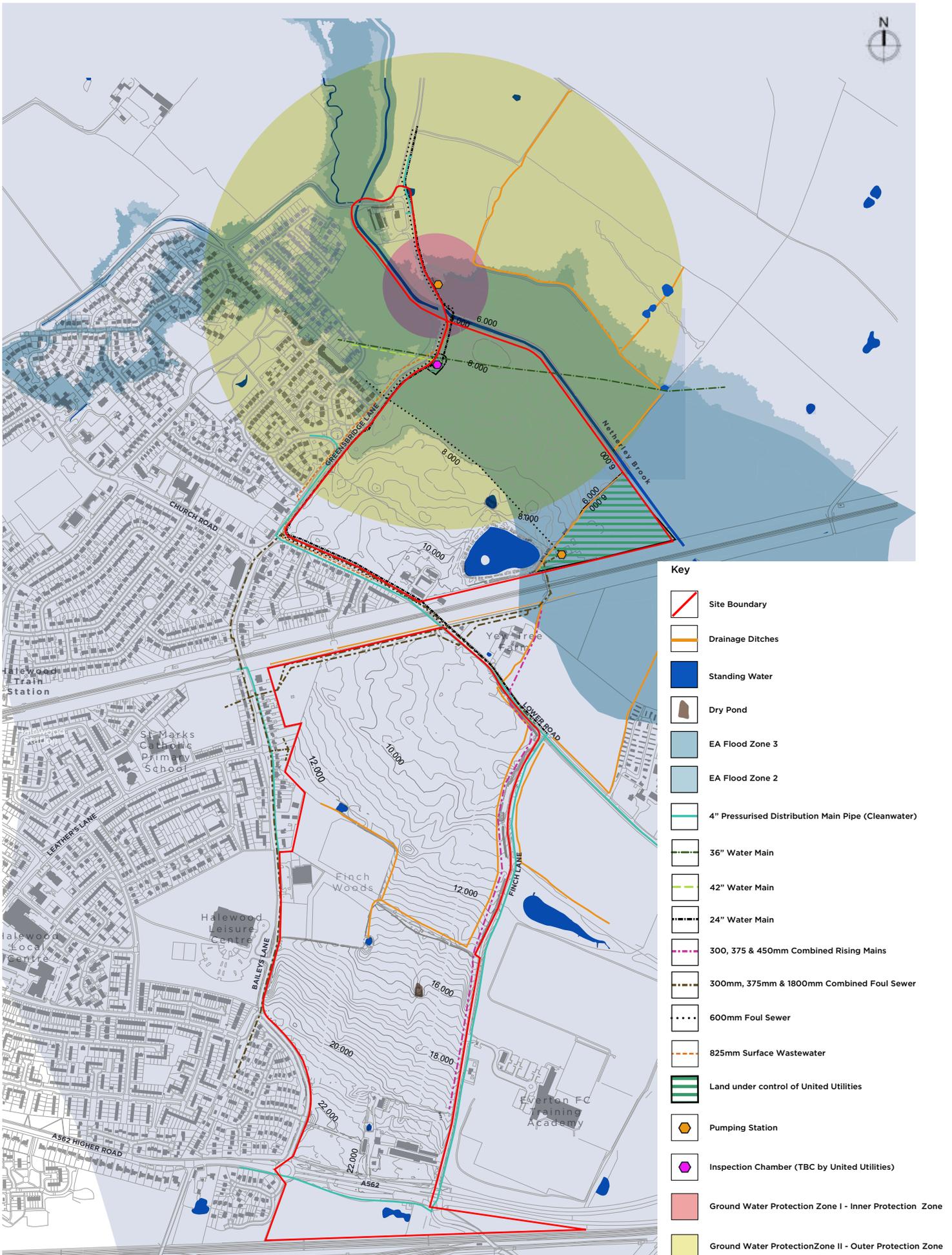


Figure 3.15 Existing flood risk extent and water assets

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## Surface water flooding and probability

3.66 Surface water flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground. It is usually associated with high intensity rainfall events but it can also occur with lower intensity rainfall or melting snow where the ground is already saturated, frozen or developed upon, which results in overland flow and ponding in depressions in topography.

3.67 The EA 'Flood Risk from Surface Water' map indicates that the entirety of the parcel is at very low risk from surface water flooding, with a less than 0.1% annual probability of flooding.

3.68 The north-western and north-eastern extents of parcel 02, the western extent of parcel 03, areas in the northern extent of parcel 04 and isolated areas on parcels 05 and 06 are shown to be at low risk of surface water flooding, meaning it has between a 1% and 0.1% annual probability of flooding.

3.69 There are isolated areas across the site that are identified at high risk of surface water flooding, including the eastern extent of parcel 02, immediately adjacent to Greensbridge Lane within parcel 03, isolated points within parcel 04, the northern boundary of parcel 06 and the lower north-western extent of parcel 07. This means they have a greater than 3.3% annual probability of flooding. These are associated with topographical low points onsite which will most likely be removed as part of new development platform levels. Flow routes appear to originate onsite and could be accommodated as part of a development's future drainage network.

3.70 The existing fishing pond located in the south-eastern corner of parcel 02, which is in private ownership, does not contribute to the

current surface water attenuation of parcel 02 and 03. The embankments surrounding the pond are approximately 9.0m – 10.0m AOD, which are elevated in relation to the surrounding existing ground levels across the parcel. The pond therefore does not play any surface water attenuation role currently as local topography levels fall towards the Ditton Brook and there are no local drainage ditches directed towards it. Any external sources of surface water flooding would be directed north-east away from the site.

3.71 The SFRA 'Combined Risk Matrix Map' indicates that there are no records of surface water flooding across the majority of the site. Along the north-western boundary of parcel 03 is at a medium risk of surface water flooding, as indicated from Council Records. This appears to be associated with a topographical low point and does not form a flow route. Any potential surface water flooding arising at or near to the site would be directed north-east, away from the site, following the local topography.

3.72 The surface water flood risk to the site is associated with flooding in isolated topographical depressions. There are no flow routes in this area which would direct any potential surface water flooding arising off-site, towards the site.

3.73 The majority of the surface water flood risk to the site is associated with flooding in isolated topographical depressions. There are no flow routes in this area which would direct any potential surface water flooding arising off the masterplan, towards the parcel.

### Sewer flooding and probability

3.74 Sewer flooding is described as flooding from when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged or is of inadequate quality. Sewer water flooding is mostly applicable to combined and surface water sewers.

3.75 The SFRA 'Combined Risk Matrix Map' indicates that there are no records of sewer flooding across parcels 02 - 06 based upon the United Utilities DG5 register. The historic sewer water flooding impact is unknown for parcels 01 & 07 at this stage of the baseline assessment. Further review would be required as part of a future planning application to verify the flood risk from this source.

3.76 Any potential flooding arising from the public surface water sewer in Greensbridge Lane (affecting parcels 01,02 & 03) would be directed north-east, away from the site, following the local topography. Any potential flooding arising from the public surface water sewer in Lower Road (affecting parcels 03 & 04) would be directed north-west, away from the site, following the topography of the road.

3.77 It can therefore be concluded that the risk of sewer flooding is low.

### Flooding from artificial sources

3.78 There are no canals within the vicinity of the master plan and the EA 'Flood Risk from Reservoirs' map indicates that the site is not at risk of flooding from reservoirs. Therefore, there is no risk from flooding from artificial sources which influence the master plan area.

### Potential Flooding Mitigation Measures

3.79 In order to provide a more detailed, site specific assessment of fluvial flood risk affecting parcel 02, a linked 1D/2D Hydraulic Model has been developed by Waterco. The modelling methodology has been agreed by the EA and simulates a number of flood events including the 5%, 1% (including impact of future Climate Change by increasing flows by 35% (C1) and 70% (C2)) and 0.1% AEP events. A blockage simulation has also been undertaken to investigate the potentially critical impact that the Greensbridge bridge may have to flooding in the area.

3.80 The results of the hydraulic modelling illustrate that mitigation can be established to help alleviate the flood impact upon parcel 02 and subsequently reduce the degree of flood water penetration into the site from the Ditton Brook.

3.81 The proposed mitigation approach is to raise development levels to 9.0m AOD, creating a development platform which is flood free during all simulated flood events, up to and including the 0.1% AEP plus 70% CC event. The northern extent of the parcel would be dedicated as a Flood Storage Area (FSA), which would be lowered to a level of 6.0m AOD.

3.82 This would have an impact upon the 36" Water Main pipe that traverses the parcel and the proposed FSA. As stated above, it is currently understood that this pipeline is of strategic importance to United Utilities and cannot be diverted. Consultation with United Utilities is required to ascertain the potential to divert the mains, considering the technical, place-making, cost and phasing impacts. If the 36" mains pipe is to remain in situ, there should be careful consideration given to the placemaking impact and how it can be successfully incorporated into a wider

landscape strategy and the Ditton Brook Nature Improvement Area. The 600mm sewer to the south would sit within the area proposed to be heightened to 9.0m AOD.

3.83 Parcel 02 is affected by flood warnings and a flood plan should include details of safe access / egress routes. Safe access / egress should be provided via Greensbridge Lane heading southwest. Pedestrian access should also be made available towards the southern end of the parcel during times of flood. As development levels will be raised to 9.0m AOD, residents can also stay in their homes during a flood event.

3.84 The impact of the proposed mitigation measures associated with parcel 02 on flood risk elsewhere have been quantified and the relative changes from pre to post development have been identified. During both the 5% & 1% AEP fluvial events, a reduction between 80-100mm is predicted. During the 1% AEP + 35% CC fluvial event there is a negligible increase in flood levels (mainly affecting local flow paths that affect four properties with a rise of between 40-80mm). Furthermore, the model shows that a blockage scenario (50% blockage of Greensbridge bridge) does not significantly affect the site or flow paths.

3.85 Overall, the proposed FSA is shown to have a positive effect on local flood risk, reducing flood depths in the local area. The proposed flood storage area would see a net reduction in existing flood depths across 1% & 5% AEP Fluvial events, both within the United Utilities facility to the east and the existing Merseyside Dogs Trust to the northwest, reducing the flood impact and current mitigation requirements. Further detailed assessments should be carried out for both the parcel of land within United Utilities ownership and the Merseyside Dogs

Home through future planning applications. Parcels 03,05 & 06 are at a low risk of flooding from all of the sources identified above. Therefore, no site specific mitigation issues are considered necessary. Parcels 02 and 04 are subject to areas of localised surface water flooding due to localised depressions in topography. These can be mitigated through the releveling of topography as part of a new development platform, or through the removal of topographical depressions or could be included as part of a sustainable drainage system if practicable.

3.86 In accordance with Building Regulations, finished floor levels of properties across the master plan should be set at 150mm above surrounding ground levels.

3.87 United Utilities have also raised some maintenance requirements which affect the 36" water main which cross parcel 02 and which would intersect the proposed FSA. A 10m access strip would be required for maintenance purposes. There should, under no circumstances be anything stored, planted or erected within the easement nor should anything occur which may affect the integrity of the pipe.

3.88 Please see the proposed mitigation approach for parcel 02 based upon the Waterco Hydraulic modelling carried out as part of their baseline assessment of parcel 02.strategy and the Ditton Brook Nature Improvement Area.

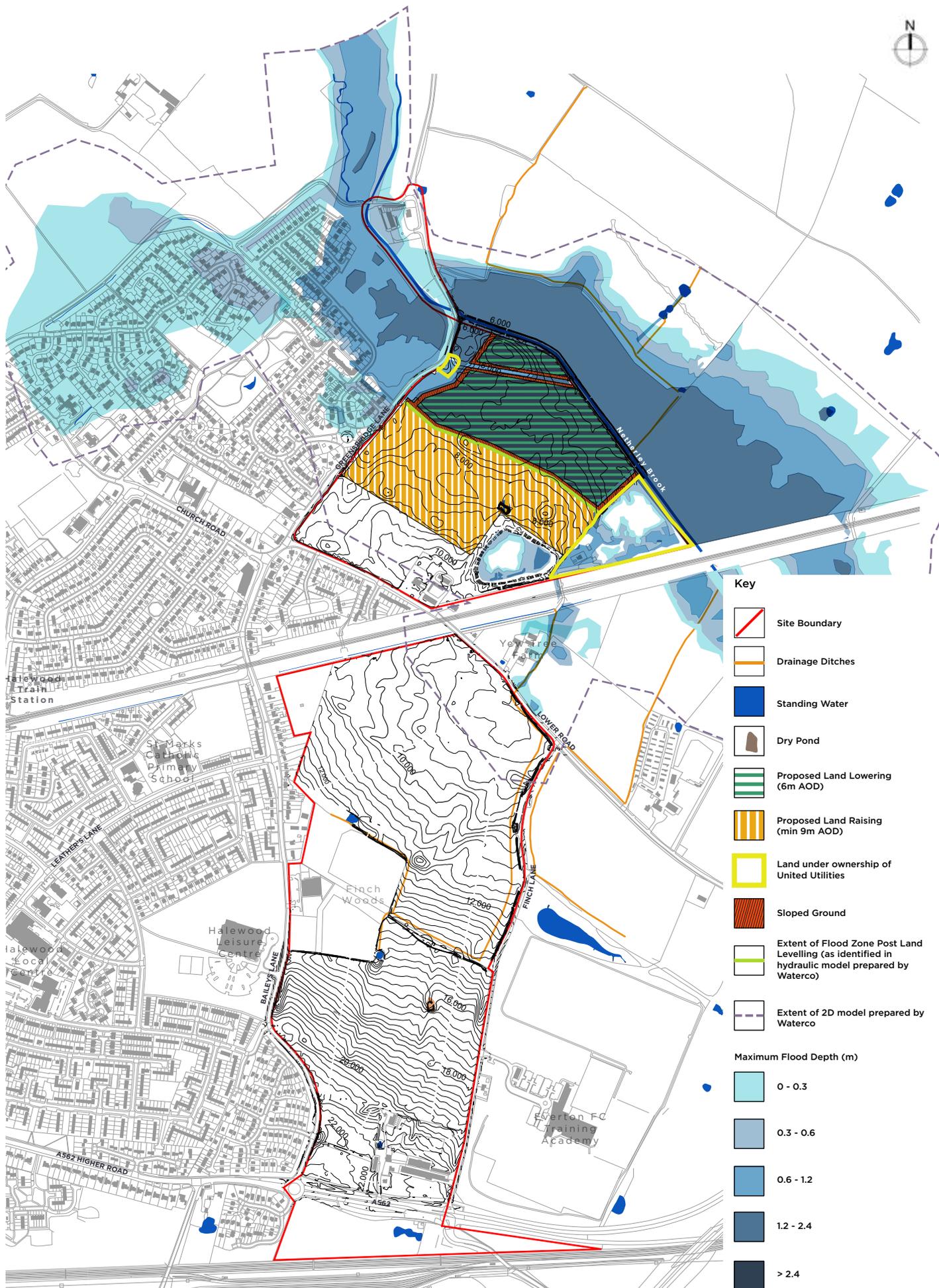


Figure 3.16 Potential flood mitigation strategy along Ditton Brook  
 Not to scale. © Crown Copyright Knowsley MBC 100017655. 2019

## Foul Drainage approaches

3.89 Foul flows should be discharged under gravity to the public foul sewer network within the immediate vicinity of the site (including the 600mm public sewer that cross parcels 02 & 03 and the 1800mm public combined sewer located in the northern extent of parcel 04), which has been agreed in principle with United Utilities. Gravity connections should be feasible for parcels 01, 02, 03, 04 and 05.

3.90 Initial testing of a foul drainage strategy for parcel 03 indicates that discharge foul water can connect at separate outfalls to the existing foul sewer within Lower Road and Bromley Close. Given that invert levels are likely to be achievable, a gravity fed drainage system is available for the parcel.

3.91 Initial testing of a foul drainage strategy for parcel 05 indicates that discharge foul water may have to be directed to a foul pumping station located in the northern extent of the parcel before being discharged via a rising main to the public combined sewer within Baileys Lane (subject to agreement with United Utilities).

3.92 A pumped connection is proposed for parcel 06 due to the topography of the land not allowing for gravity sewage connection. Foul water flows are directed to the public foul water sewerage to the northwest of the parcel.

3.93 With regard to parcel 07, foul flows should be discharged to the public sewer network in Sandhurst Road. A new connection should be agreed with United Utilities. A CCTV survey should be undertaken to confirm the cover and invert levels of the existing sewer to confirm if a gravity discharge is achievable.

3.94 In accordance with Sewers for Adoption 7th Edition, a minimum 15m easement is required from the wet well of a pumping station to habitable dwellings. The site layout should make provision for a pumping station.

## Summary of Potential Surface Water Management Approaches

3.95 Any future residential development within the master plan will result in an increase in surface water run off rates and volumes. As a result, surface water discharge rates should be controlled to prevent an increase in flood risk elsewhere.

3.96 Discharge rates have been estimated for parcels 02 – 06 using the Revitalised Flood Hydrograph Model (ReFH2) method and based upon broad initial assumptions on the potential area of impermeable surfaces, which is set out in the table below. Discharge rates for parcels 01 & 07 have not been considered as part of the technical assessments undertaken by Waterco, to the same degree of detail however, an assumption would be that discharge rates are restricted to greenfield run – off rates parcels 01 & 07 as a baseline position.

3.97 The table below sets out the hierarchy of drainage options, based upon Paragraph 080 of the NPPG: Flood Risk and Coastal Change. The hierarchy includes into the ground (infiltration), to a surface water body, to a surface water sewer, highway drain or another; to a combined sewer.

Table 3.5 Summary of drainage options

| Parcel | Surface Water Outfall & Proposed Discharge Rate  | Attenuation Storage required<br>(These proposed solutions are provided by the housebuilders at this baseline stage)                        |
|--------|--|--|
| 01     | Greenfield run off rates assumed at this stage   | Attenuation provided within SUDs Features up to 1 in 100year + 40% CC event  |
| 02     | Discharge to the Ditton Brook at a restricted rate of 43 l/s<br>A gravity connection appears possible  | 1,579m3 for 1 in 100 year plus 40% CC event  |
| 03     | Discharge to the existing public surface water sewer in Bromley Close at a restricted rate of 18 l/s<br>A gravity connection appears possible  | 1,200m3 for 1 in 100 year plus Climate Change within a tank / pond structure   |
| 04     | Discharge to the land drain in the topographically lower northern extent of the parcel, at a limited discharge rate of 112 l/s<br>A gravity connection appears possible if attenuation is located in the northeastern, lower extent of the site  | 4,262m3 attenuation volume for 1 in 100 year plus 40% CC   |
| 05     | Restricted discharge 57.4 l/s (equivalent to existing 1 in 2-year (QBAR) Discharge rate).<br>A gravity connection appears possible   | Drainage basin should be located at the lower north eastern edge of site at topographical low point.                                       |
| 06     | 25.0 l/s - it is recommended that post development rates of runoff are restricted to the Greenfield 2 year runoff rate, for storm events up to and including the 1 in 100 year plus climate change return period, due to the critical drainage area designation. Foul water from the site will be discharged via independent rising mains to the existing public sewer networks at the junction of Baileys Lane with Baileys Lane (leading to Roseheath Drive) with a final pass forward discharge rate of 25 l/s for surface water to the public surface water sewer. | Up to 1,363m3 for 1 in 100 year plus 40% CC in the form of cellular storage and oversized pipes  |
| 07     | discharge of surface water to the public sewer network in Aldersgate Drive at a rate of 16.8 l/s   | Attenuation in the form of a swale, detention basin located in the lower, southern extent of the site or below ground attenuation storage. |

| Infiltration   | Watercourse  | Sewer & Surface Water Sewers   |
|--|--|--|
|  | Discharge to local water course land drains where feasible   | Discharging under gravity to the existing public foul sewer located within Greensbridge Lane   |
| Proposed ground raising reduces feasibility of infiltration. Further testing required for soakaways. Soakaways should be located a minimum of 5.0m from dwellings. | Gravity connection feasible to Ditton Brook at a limited discharge rate of 43 l/s.<br><br>Attenuation could be provided for within a number of ponds, basins or underground attenuation tanks distributed across the site.   | A connection to Ditton Brook is feasible and connection to public surface water sewer is not required. Prudent to utilise the existing surface water sewer outfall from the 825mm public surface water sewer outfall to the Ditton Brook |
| Not feasible due to low vertical permeability due to Till deposits.  | N/A  | Discharging under gravity to the existing public foul sewer located within Lower Road.   |
| Not feasible due to underlying clay  | The size of the piped outfall beneath Lower Road should be determined. According to MicroDrainage simulations, a pipe diameter of 450mm (at a relatively level gradient) is required to convey the proposed discharge rate of 112 l/s.<br><br>Attenuation could be provided for within a number of ponds, basins or underground attenuation tanks distributed across the site. | Connection to public sewer not necessary as watercourse connection is feasible.  |
| Not feasible due to low vertical permeability due to Till deposits.  | Discharge to the land drain at discharge rate of 57.4 l/s  | Foul water directed to a foul pumping station and discharged via rising mains to public combined sewer within Baileys Lane.  |
| Infiltration not suitable due to cohesive strata encountered   | The nearest being the ditch flowing northerly along Finch Lane approximately 350m north of the site which, in order to be facilitated would be required to cross parcel 05.  | If discharge to the watercourse across parcel 05 cannot be achieved,, a pumped solution to the rising mains to the east of the parcel will be required.  |
| It is anticipated that Infiltration will not suitable due to cohesive strata encountered.  | N/A  | Foul flows should be discharged to the public sewer network in Sandhurst Road.   |

## > 03 (e) Ecology

### **Baseline currently under finalisation.**

The following summary sets out the current understanding of the ecology constraints that affect the site and the surrounding area. Further consultation is ongoing with the Merseyside Environmental Advisory Service (MEAS) as well as the house builder consortium to provide further details on some elements of the baseline provided below. Although the baseline is still to be finalised, the available information indicates that there are no likely constraints to future development that cannot be incorporated or appropriately mitigated against.

3.98 A variety of sources have been used to identify the Ecological baseline including a desktop study, an Extended Phase 1 Habitat Survey for the land parcels north and south of the Liverpool – Manchester Railway / Lower Road and an extended Phase 1 Ecological Survey and Assessment the RSPCA site off Higher Road. The findings of both the extended phase 1 habitat surveys and the wider desktop studies form the basis of the ecological baseline summary.

### **Desktop Survey**

#### **Statutory designations**

3.99 There are no statutorily-protected sites (Site of Special Scientific Interest (SSSI), Ramsar, SAC) within the site or within 500m of the centre of the site, however the site does fall within the SSSI Impact Risk Zone (IRZ) for the Mersey Estuary Protection Area (SPA) and therefore a Habitats Regulations Assessment (HRA) will be required with any forthcoming development applications.

3.100 Merseyside Environmental Advisory Service (MEAS) has provided preliminary

#### **List of documents informing this baseline:**

- Liverpool City Region Ecological Network Nature Improvement Area focus area
- Bailey's Lane, Halewood Ecological Assessment (Oct 2013\_TEP)
- East Halewood Halewood, Merseyside Breeding Bird Survey (Aug 2016\_TEP)
- Appendix C\_MEAS (Merseyside Environmental Advisory Service)
- Constraints Map (Feb 2018\_ERAP)
- Ditton Brook NIA (MerseyBank\_March 2018)
- ERAP 2017-366 Ecological Synopsis (ERAP\_February 2018)
- Ecological Survey and Assessment (including licensed Bat Survey and Assessment) (ERAP\_November 2017)

guidance to the measures required to mitigate against recreational pressure of European sites and their surrounds in relation to development within the SPA. This advice is not exhaustive and a tailored package of measures will be required and will be driven by the scale, development mix and location of development as individual applications are submitted under the East of Halewood masterplan.

#### **Non-statutory designations**

3.101 There are eleven a number of Local Wildlife Sites within a 2km radius of the site, which include;

- Crab Tree Rough and Hop Yard Wood, North
- Ditton Brook & Ditton Brook Flood Plain
- Ash Lane hedge, ditch and grassland
- Cartbridge Lane Wood
- Green's Bridge Plantation
- Halewood Triangle

- Netherley Brook
- Tributary of the Netherley Brook
- Mill Brook, Netherley
- Tarbock Green Ditch
- Mill Wood and Alder Wood LNR (within Halton Borough Council)
- Brickwall Covert
- Ochre Brook, Tarbock
- Dog Clog Brook, Tarbock

3.103 The Ditton Brook Corridor, as well as land to the south of it which sits within the northern boundary of the site, are identified as strategic opportunity areas and a Knowsley Local Wildlife Site (LWS) within the Liverpool City Region (LCR) Ecological Framework and as such form the Ditton Brook Nature Improvement Area (NIA) 07, which traverses Halton, Knowsley and Liverpool Authorities.

3.102 A location plan is provided below (extract taken from summary report provided by ERAP from BioBank Merseyside) indicating the location of the LWS's within a 2km radius of the site within Metropolitan Borough of Knowsley.

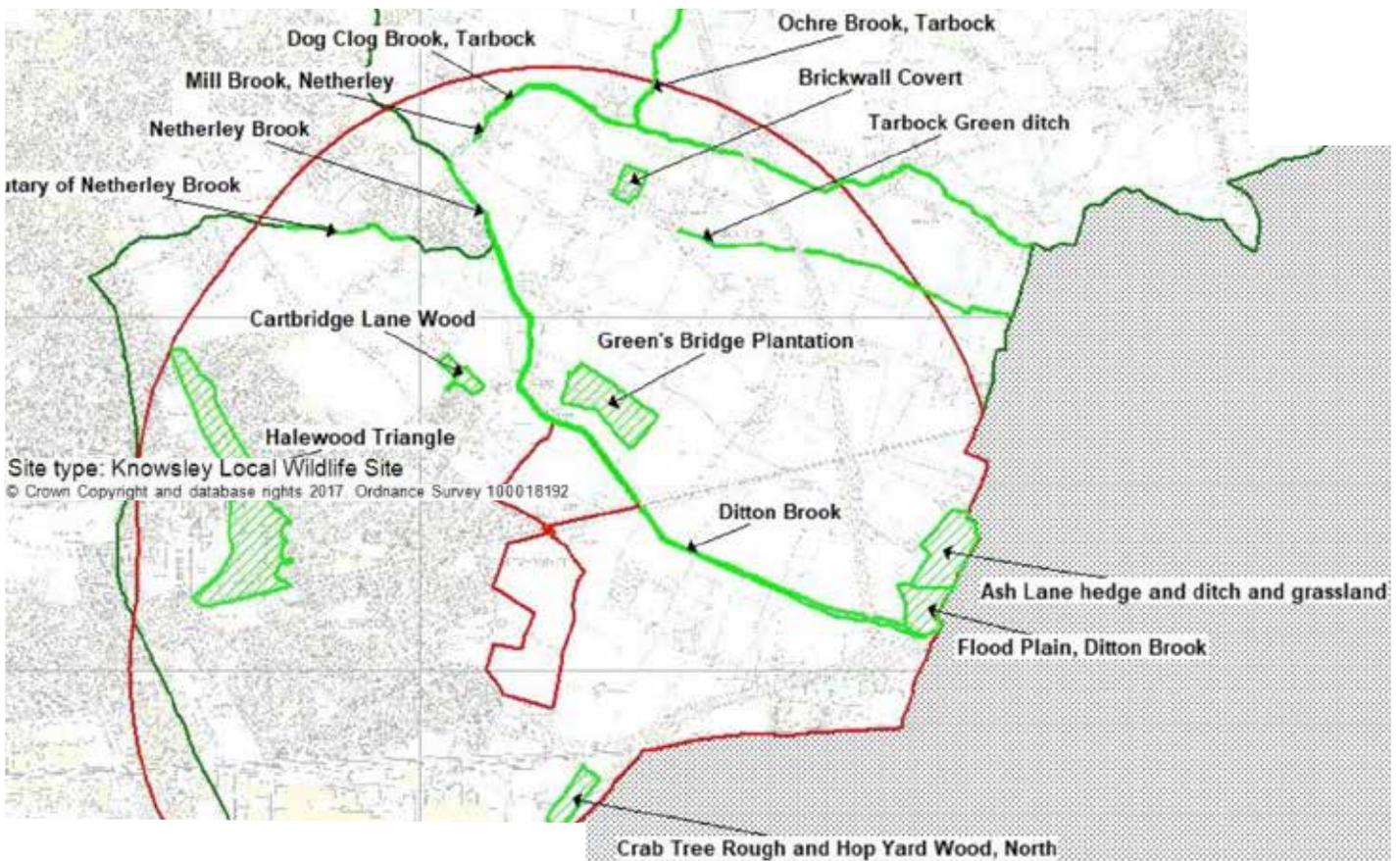


Figure 3.17 Extract from ERAP report of BioBank Merseyside Local Wildlife Sites

3.104 The Ditton Brook, as an open water course has been designated as a LWS as it provides habitat for water vole. Cartbridge Lane Wood is also designated as it is a broadleaf woodland which supports Bluebell as well as reports of Water Vole.

3.105 The master plan should look to avoid development within the NIA and seek to enhance this buffer within the NIA through creation of wetlands, wildflower grasslands. The specific buffer enhancements measures will depend upon the form and scale of development proposed within the master plan. An indicative area is shown on the accompanying ecology baseline plan below.

1. Sefton Coast
2. Formby Moss
3. River Alt Corridor
4. River Alt, Kirkby Brook, Knowlsey Brook, Croxteth Brook and Croxteth Brook Corridor
5. Simonswood Moss, Kirkby Moss, king's Moss and Holiday Moss
6. Blackbrook, Stanley Bank & Carr Mill Dam
7. Sankey Valley Corridor
8. Netherley Brook & Ditton Brook Corridor
9. Birdgewater Canal, Halton Moss & Keckwick
10. South Runcorn Ancient Woodland
11. Runcorn Heath
12. Mersey Estuary
13. Dibbinsdale & Raby Mere
14. Bidston Hill to Clatterbridge
15. Caldy Hill and Thurstaston Common
16. Dee Estuary
17. North Wirral Coast
18. Birket Catchment

 Approximate location of East of Halewood masterplan area

## Vegetation and Habitats

### Hedgerows and Trees

3.106 Much of the land is arable land with the RSPCA land towards the south of the site comprised of improved grassland that has received agricultural management and regular mowing.

3.107 The baseline surveys assessed the large parcels of land within the master plan area, with the exception of the parcel of land south of Higher Road and the parcel of land currently occupied by the Merseyside Dogs Home. The majority of hedgerows within this assessment were identified as species poor and dominated

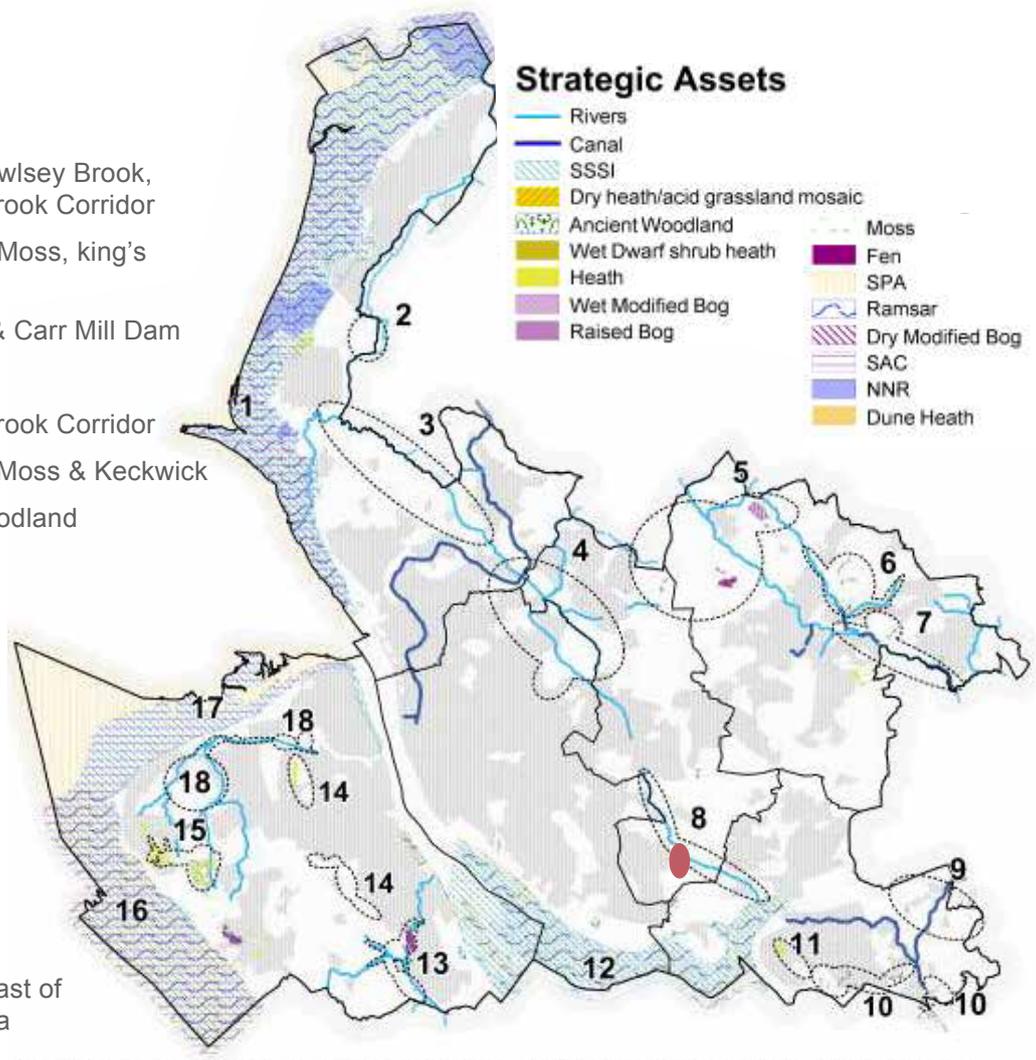


Figure 3.18: Extract from Liverpool City Region Ecological Network Report (FINAL) 11.11.2015.

by Hawthorn, with occasional Elder and Salix. However, baseline reports identify that hedgerows are a Priority Habitat (as listed on Section 41 of the Natural Environment and Rural Communities Act (2006)).

3.108 It is recommended that hedgerows (and associated trees) are retained with an appropriate buffer and are protected during construction. In instances where hedgerow sections must be removed, compensatory planting of native hedgerows must be provided elsewhere within the site to mitigate against their loss.

### **Ponds**

3.109 Seven ponds have been identified within the masterplan boundary, with a number of additional ponds identified within 250m of the study area. Initial examinations of these ponds suggest that they are of poor quality due to eutrophication and littering. Pond 7 is ephemeral. The Priority Habitat Status of these ponds is currently unknown and would be informed by more detailed surveys.

### **Invasive Plant Species**

3.110 A large stand of Japanese Knotweed is present immediately to the north-eastern boundary of the masterplan, close to Ditton Brook. Stands of Indian Balsam, Himalayan Balsam and Variegated Yellow Archangel are present in localised areas within the masterplan (refer to the ecological basemap below). These species, are identified on Schedule 9 of the Wildlife and Countryside 1981 (as amended) but do not preclude development, however mitigation measures to prevent their spread, will be identified in an Invasive Species Management Plan with future planning applications.

## **Protected Species**

### **Great Crested Newts**

3.111 The existing ponds were subject to an evaluation under the Habitat Suitability Index (HSI) for Great Crested Newts. One of the ponds identified within the study area were given an overall HSI 'Below Average' rating, with one pond identified as having a HSI rating of 'Dry'. Pond three was identified as having an 'average' suitability for use by Great Crested Newt and Pond four identified as having a 'Good' HSI rating. Pond seven was discounted as it is located beyond the physical barriers to Newt dispersal. More detailed, mandatory surveys will be required to determine if Great Crested Newts are present within the masterplan boundary, to inform subsequent planning applications coming forward.

### **Water Voles**

3.112 The ditches across the study area are dry and isolated and are unsuitable for Water Vole. The presence of Water Voles is to be determined further by surveys to inform forthcoming planning applications. There have been reports of breeding along Ditton Brook approximately 700m west along the Brook and Cartbridge Lane Wood, to the north-western edge of the site.

### **Bats**

3.113 ERAP Consultant Ecologists conducted an ecological appraisal of the RSPCA site, including a licensed daylight bat survey and assessment of the existing buildings and trees with the RSPCA site. No evidence was found of bat roost activity during the daylight examination of the exterior and interior buildings within the RSPCA land parcel. Further activity surveys are required for a number of the buildings within the RSPCA site. A number trees across the study area support the potential for bat roosting and retention of these is recommended. There

is potential that hedgerows do offer foraging opportunities and commuting routes for bats.

3.114 Additional survey work will be required across the remainder of the master plan, in support of future planning applications, to identify any potential gaps in the baseline information presented within this document.

### **Owls & Badgers**

3.115 The baseline surveys assessed the large parcels of land within the master plan area, with the exception of the parcel of land south of Higher Road and the parcel of land currently occupied by the Merseyside Dogs Home. There is no evidence of Badger setts, footprints, latrines or diggings seen during the course of fieldwork or Barn Owl nesting activity within the area surveyed according to the baseline assessments carried out to date (confirmed by TEP and ERAP). No other mammal holes were identified on site. More detailed assessments may be required, through future applications, to confirm the presence of Owls or Badgers.

### **Breeding Birds**

3.116 TEP conducted a Breeding Bird Survey between the May and July 2016, for the Bellway and Redrow land parcels, which are south of Lower Road (between Lower Road and RSPCA Land) and north of Lower Road (between Lower Road and Ditton Brook). The area of study is most likely to be of local importance for its breeding assemblage overall, with most of the interest associated with field boundaries. A breeding bird assessment carried out identified that 43 species were recorded within the study area and 100m from the boundary. Of these, 11 species (S41) were identified as having principal importance in England and 9 of the S41 species were also birds of Conservation Concern.

3.117 The open fields within the study area provide suitable habitat for ground nesting farmland birds and were found to support six probable breeding pairs of Skylark, an S41 and BoCC Rd species.

3.118 The boundaries of the study area support probable breeding pairs of Dunnock and the habitat along Ditton Brook support probable breeding pairs of Reed Bunting, both of which are S41 species. House Sparrow was confirmed to be breeding within 100m of the study area boundary.

### **Mitigation**

3.119 Preliminary guidance has been provided in relation to future development at East of Halewood. Mitigation methods may include (if necessary) the following potential ecological features;

- Retain hedgerows and existing mature trees, where possible, with an appropriate buffer to development
- Provide compensatory tree and hedgerow planting as required
- Enhance the buffer between any future development and the NIA, in accordance with the principles of the NIA by creating wetlands / scrapes, wildflower grasslands
- Maximising green infrastructure and habitat connectivity across the site by introducing green corridors and hedgerow planting as well as areas of open green space. One further method of creating habitat connectivity could be achieved through the arrangement of contiguous rear gardens and lifted plot boundary fencing
- Future development proposals should retain as much of the existing hedgerows and field boundaries as possible and reinforce these with native wildflower planting of seed-mix of local provenance for foraging.
- Retain a buffer of woodland edge habitat around areas of existing woodland margins
- Maximise the use of native plant species across the site
- Incorporation of Bird Boxes / access panels for use by birds and bats within the built environment

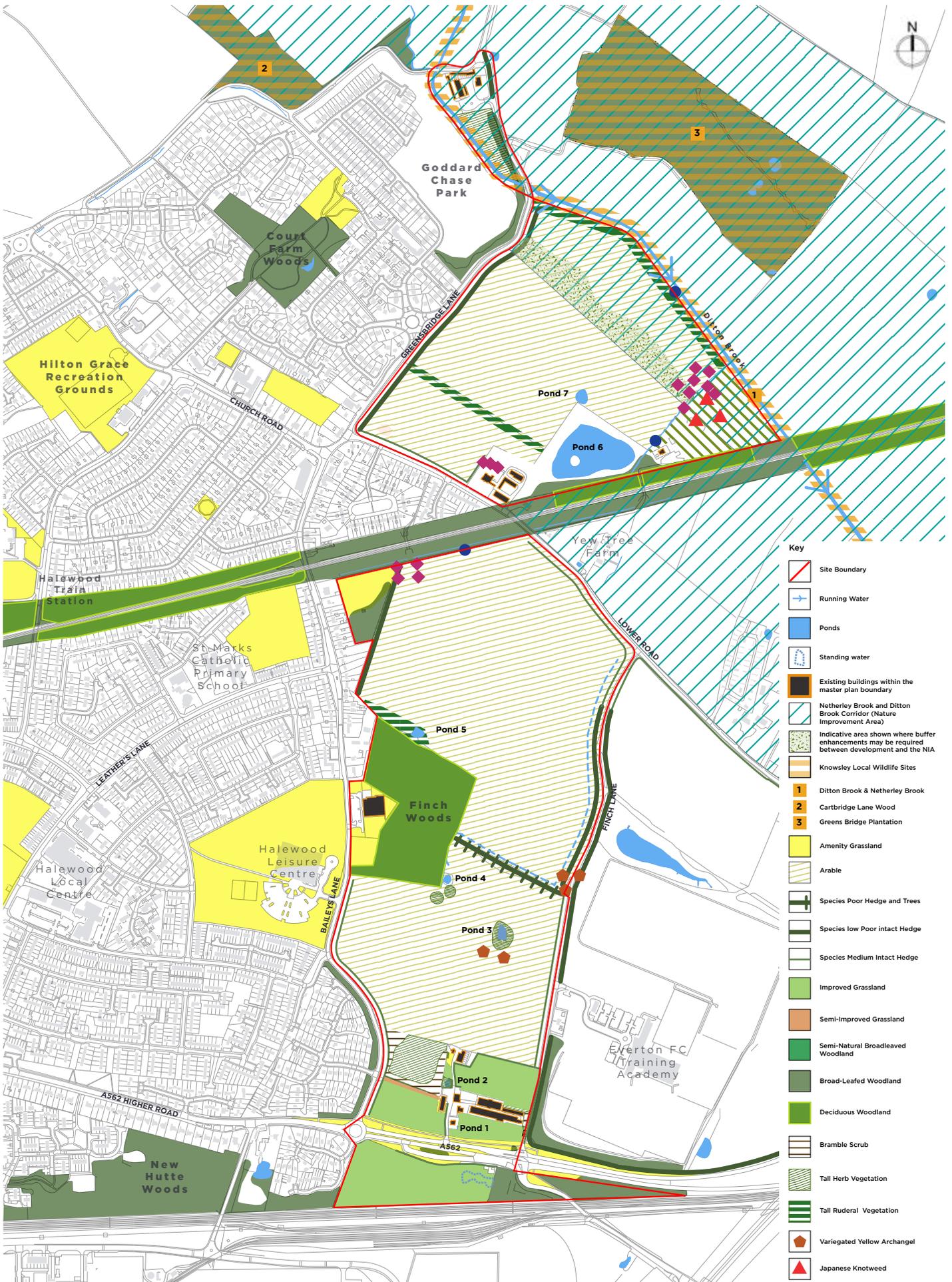


Figure 3.19 Ecological considerations

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## > 03 (f) Archaeology & heritage

3.120 Two Heritage Assessments have been carried out to inform the potential impact of residential development at land east of Halewood.

3.121 The Heritage Assessment prepared by CgMs was prepared on February 2018 the Archaeology and Cultural Heritage Impact Assessment prepared by Wardell Armstrong was prepared on January 2018. Both assessments have been prepared in compliance in accordance with terminology expressed within the National Planning Policy Framework (NPPF) (DCLG 2012). Site inspections were undertaken on 4th & 22nd January 2018.

3.122 The Heritage Baseline findings summarised below are a combination of both the Heritage Assessment prepared by CgMs Heritage and Archaeology & Cultural Heritage Impact Assessment prepared by Wardell Armstrong.

### Designated Heritage Assets

#### Listed Buildings

3.123 Based upon data obtained from Historic England and the Merseyside Historic Environment Record (HER), there is one designated asset, located to the south west of the site that is sensitive to development. This is the Grade II Listed Gravestone of Blackie the War Horse (LB no. 1436263), which is located on the western boundary of the study site within the land ownership of the RSPCA (Liverpool Branch). It marks the location of the burial of Blackie, a horse that served during the First World War alongside his master Lieutenant Leonard Comer Wall. Lieutenant Wall was killed in action at Ypres whilst riding Blackie on 9th June 1917, aged 20. Blackie received severe shrapnel injuries in the same

#### List of documents informing this baseline:

- Desk top report for land at the Greenbridge lane, East Halewood Bailey's Lane, Halewood (Coopers\_May 2018)
- Heritage Assessment (CgMs\_February 2018)
- Archaeology and Cultural Heritage Impact Assessment (Wardell Armstrong\_ January 2018)
- Appendix 4 Historic Hedgerows (CgMs\_ March 2018)

incident but remained in service on the Front for the rest of the war and had taken part in the battle of Arras, Somme, Ypres and Cambrai. In his will, Lieutenant Wall had requested that if he did not survive the war then Blackie should be buried with his medals or decorations. Blackie went to live at the Horses' Rest, Halewood, until he died in 1942. Blackie's death received national press coverage. The design and mature of the inscription on the grave marker is significant, having parallels with military grave markers.

3.124 It does not appear that the current setting of the Grade II listed gravestone is much different to its original, albeit that there modern residential development along the west side of Bailey's Lane. Currently the gravestone is located in an overgrown part of the site, and is not visible from Baileys Lane. It is intended to be accessed via a linear grassy walkway along the field boundary from the current RSPCA buildings, bounded to the north by a significant hedgerow. This walkway was, until recently, lined with other animal gravestones or memorials. Most of these have been removed, with only a small number remaining, within the overgrown hedgerow. It is understood that these markers do not relate to a burial site, but rather were moved to Halewood following

the RSPCA's relocation from elsewhere in Liverpool in the 1970s. At the end of the walkway, near to Baileys lane, within a dip in the site, Blackie's gravestone can be seen to be leaning backwards. It is surrounded by a modern low white plastic picket fence, which is in disrepair, and is fronted by a square of astro-turf. The gravestone has been cleaned recently. Notwithstanding the majority removal of the other grave markers, there is an obvious historic relationships between Blackie's grave and the RSPCA in terms of setting,. The RSPCA was formerly the Horse's Rest, where Blackie spent his last years. and it was likely that the corner of the RSPCA's west field was probably considered to be a suitable peaceful and respectful place for the location of the burial at the time. Currently the gravestone is located in an overgrown part of the site, and is not visible from Baileys Lane. Therefore in the sense that there is a connection in the landscape in its position relative to the RSPCA home, and the former Horses' rest as Blackie's last home, the setting of the Grade II gravestone contributes to its importance as a designated asset.

### **Scheduled Monuments**

3.125 An assessment was carried out to identify if any Scheduled Monuments existed within or around the site. Within the surroundings of the site there are two Scheduled Monuments: Lovell's Hall moated site and fish-pond (SM no. 1014390) located c. 2km to the east; and a Duck Decoy pond (SM no. 1014717) located c. 2.7km to the south-east.

### **Conservation areas**

3.126 Within the surrounding 500m study area from the site boundary, there is one Conservation Area, identified as the Halewood Conservation Area, which is situated c. 260m

to the west of the north parcel of the study site. Within the Conservation Area, there is one Grade II Listed Building identified as the Church of St Nicholas (LB no. 1253240). It is located c. 445m to the west of the north parcel.

### **Summary**

3.127 The assessment has documented that the Scheduled Monuments, Conservation Areas and the Grade II Listed Church of St Nicholas identified above are screened from the study site by topography, vegetation and development and therefore the site does not contribute to the significance of these assets and they are therefore not assessed as sensitive to development on the study site.

3.128 The heritage values of the Grade II Listed Gravestone of Blackie the War Horse monument have been assessed and it is concluded that it has architectural, historic and communal values, both of which are inextricably linked in the commemoration a century on from the First World War. The Listed asset is the first ever war horse grave to be designated and is considered to be of High Importance.

3.129 In view of the statutory protection afforded to the Listed Building and Policy CS20 of the Knowsley Local Plan Core Strategy (January 2016) protecting the asset and its setting, any proposed development will clearly need to avoid any adverse impact to the Listed Building and its setting. Through careful masterplanning the significance of the Grade II Listed gravestone can be protected and, via improved management, enhanced.

## Non-Designated Heritage Assets

3.130 Two non-designated assets are sites which sit within the RSPCA parcel of land north of Higher Road, and comprise of an 18th Century House (MME5976), now replaced by 'The Cottage' and the 18th Century Lodge Farm (MME5985), of which it seems only the combination barn survives. The building is in mixed condition, with some elements rebuilt and a replacement roof. There also appears to be a modern extension. The northern part of the building retains a number of original features internally relating to its historical use as a stable (such as the cobbled floor, stall dividers and hay racks). Given the nature of the building and its connection to the Grade II gravestone, the possibility of retaining and converting this building as part of the residential development of the site should be explored. Both the buildings have potential for sub-surface archaeological remains to be present.

3.131 To the north of the site, there is a findspot of an undated copper alloy coin (MME6015) and a fragment of a lead apostle medieval spoon (MME5983), both of which have little bearing on the assessment of the site's significance.

3.132 The former Hayes Farmhouse (MME6001) is understood to have been replaced in the late 19th Century by the present farmhouse, it is a non-designated heritage asset located on Lower Road. The Farmhouse has the potential for sub-surface archaeological remains to be present, and further investigation may reveal that elements of the earlier structure remain.

3.133 A further non-designated asset lies on the east boundary of the site, on the west side of Finch Lane, recorded as an outbuilding to Finch House (MME5987) seen on late 18th century mapping. Its location, however, in relation to the study site boundary is difficult to ascertain precisely.

3.134 The eastern extent of the southernmost parcel (south of Higher Road) was the location of a mid 19th Century post medieval house (MME5977) which was first seen on the title map in 1843 and last seen on the OS map in 1963.

3.135 The north-western extent of the site along Cartbridge Lane was the site of an 18th century bridge (MME6009). A site visit carried out in 1981 recorded that 'the bridge spans are now concrete, but on the southern side they abut onto a sandstone wall section at the western end with concrete set into its base. The western end of the north side abuts onto a low octagonal sandstone pier of blocks. The sandstone wall to the south may be material reused from a sandstone pier.' The bridge was seen on Stanley's Derby Estate Plan of 1783 as a road crossing Ditton Brook, and it is labelled 'Cart Bridge' on the Tithe map of 1843. It was last seen on the OS map of 1849.

3.136 A late 18th century building (MME5991) and associated early 19th century barn / outbuilding (MME5992) is located at 87 Baileys Lane, to the west of the master plan boundary between Baileys Lane and Finch Woods. The building appears on Stanley's Derby Estate Plan of 1783 (but not part of the estate) and later on the Tithe map of 1843. The barn / outbuilding is seen on Greenwood's map of 1818 and is still a functioning building. An image of the barn is shown below.



3.137 Ireland House and the former barn of Ireland's farm are located to the east of the master plan, approximately 210m along Lower Road from Finch Lane. The former farmhouse of Ireland's Farm, known as Ireland House (MME6191) originates from the post medieval period. The chimney place inside the house has a date of 1648 inscribed. Both Ireland House and the former Ireland's Farm Barn (MME11823) are shown on Stanley's Derby Estate Plan of 1783, (but was not part of the estate), and the Tithe map of 1843. They both appear on the OS map of 1843 but were unlabelled. By the time they were recorded on the OS map of 1893 both were labelled under 'Ireland's Farm'.

3.138 Yew Tree Farm is located along Lower Road, to the east of the Liverpool – Manchester Railway line. The existing farmhouse and two associated barns / outbuildings are shown on Stanley's Derby Estate Plan of 1783. They are currently used as a café and farm shop.

3.139 A row of post medieval cottages occupies a prominent position at the junction between Greensbridge Lane, Lower Road and Baileys Lane. They are referred to as 1-4 Greensbridge Lane (MME5993). The row of 4 cottages appear on Stanley's Derby Estate plan of 1793 and on the Tithe map of 1843. The two storey cottages look to be occupied as residential dwellings.

3.140 A post medieval, late 18th Century cottage (MME5996) was historically located along Baileys Lane, to the west of the master plan boundary. the building appears on Stanley's Derby Estate Plan of 1783 and the Tithe Map of 1843. The cottage which is found on the site today has a plaque above the front door citing its name as 'the cottage' and a date of 1843.

3.141 Sections of the perimeter boundaries to the study site form part of the field system shown on a map the Tithe map dating to 1843, specifically those along Greensbridge lane, Lower Lane, Finch Lane, Baileys Lane, east

-west alongside the pet cemetery, along the entrance lane to the RSPCA site and those surrounding Finch Woods Academy. Under Criterion 5(a) of the Hedgerow Regulations (1997) criteria, these hedgerows are considered to be 'important' hedgerows. There are remnants of the historic field boundaries found within and around the site today, however the majority are not continuous due to lack of maintenance.

3.142 The 1849 ordinance Survey Map shows the site heavily divided by a number of small agricultural field holdings, defined by a number of field boundaries. The following 1894 Ordinance Survey Plan within the CgMs report indicates that a number of the field boundaries have been eroded, with the formation of larger, amalgamated agricultural holdings. The 1970-1977 Ordinance Survey Map sees further erosion of the hedgerows. The heritage constraints plan provided below illustrates the approximate extent of the historic hedgerows which are still present on site. A presumption in favour of retention of the older hedgerows which mark historic field systems and farmsteads would seem appropriate. This is particularly significant for those hedgerows contributing to the setting of the listed building within the site.

3.143 The Ditton Brook, which defines the northern extent of the master plan appears in the 1783 estate map, with its alignment running west to east, albeit in a much more meandering character, This remains the case through the 1786 Yates Map and 1819 Hennet's Map. The 1843 Tithe Map however shows the Ditton Brook as a canalised water course, which has been created as a straightened and engineered channel. Although not recorded on the 1843 Tithe Map, the 1849 Ordnance Survey Map and the 1894 Ordinance Survey Map illustrate the previous alignment of the Ditton Brook, with the 1849 denoting the 'old course of stream', which sits to the north of the now canalised Ditton Brook as seen at present.

## Archaeological

3.144 The assessments have also considered the potential for as-yet to be discovered archaeological assets within the site. It concludes that there is a moderate/low potential for archaeological features of Roman date, especially in the northern parcel of the site. There is also the potential for there to be Prehistoric lithics within the topsoil, but little or no potential for associate features. There is a low/negligible potential for significant, non-agricultural evidence for all other periods.

3.145 Further archaeological investigation and recording will also be required to mitigate against the loss of non-designated heritage assets through forthcoming applications, such

as a geo-physical survey, an archaeological evaluation of the locations of the former farmhouse to Cross' Farm/Lodge Farm, and The Cottage, and photographic recording of standing structures on the site, including the former barn and now majority relocated gravestones which formed the pet cemetery.

3.146 The spatial distribution of the heritage constraints shown on the adjacent plan. Please refer to Appendix A for a gazetteer of the designated and non-designated heritage assets.

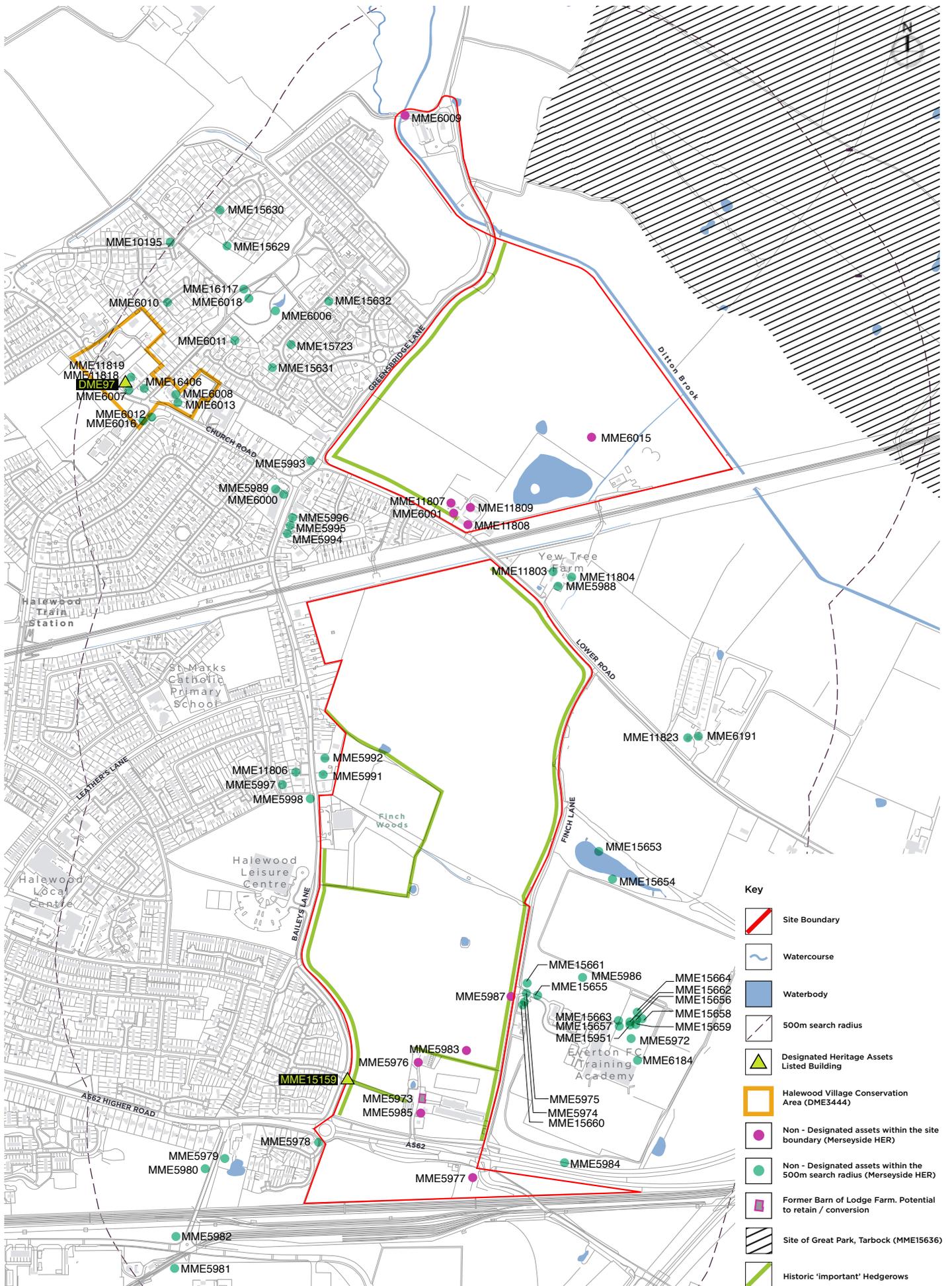


Figure 3.20 Heritage and archaeological considerations

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## > 03 (g) Ground conditions

### Baseline currently under finalisation.

The following summary sets out the current understanding of the ground condition constraints that affect the site. Although the baseline is still to be finalised, including abnormal costings, the available assessment information indicates that there are no likely abnormalities which could impact the masterplan.

#### Background

3.147 A variety of sources have been used to understand the baseline position for ground conditions in the area, including publicly available BGS Open-source records a series of desk-top, site walkover and intrusive ground investigations, undertaken by developers and land owners in the area.

3.148 This permits a relatively clear assessment of the ground conditions and ground-based hazards within the study area which could affect future development however each and any individual applications will need to provide site specific evidence related to that site and any necessary remediation measures to support development of the land.

#### List of documents informing this baseline:

- Desk top report for land at the Greenbridge lane, East Halewood Bailey's Lane, Halewood (Coopers\_May 2018)
- Geo - Environmental Assessment Report (Brownfield Solutions\_May 2018)
- Desk Study & Ground Investigation Report for RSPCA Centre, Halewood (Betts Geo\_November2017)
- Desk Study Report for Finch Lane, Halewood (Betts Geo\_October 2017)
- Desk Study Report for Greenbridge Lane, Halewood (Betts Geo – October 2017)
- RSPCA Halewood – UXO Desk Study & Risk Assessment (Zetica UXO\_21st December 2017).

#### Ground conditions

3.149 The northern portion of the study area comprises Devensian Till with some alluvium deposits from Ditton Brook, and overlying Wilmslow Sandstone formation. The southern site comprises Devensian Till overlying Kinnerton Sandstone. Both sandstone strata are of Triassic age. Some alluvium deposits of sand silt and peat are present around the Ditton Brook, these are anticipated to be uncontaminated and suitable for reuse.

3.150 The Halewood Fault bisects roughly the northern section of the study area from the southern section, running northwest to southeast, and is down faulted to the northeast. This is a basement fault, and it is anticipated that the bedrock either side of the fault is fractured or contains secondary faults.

3.151 Some sites within the study area have undertaken intrusive investigations which conclude, in-line with the general desk-top assessment, that the ground is suitable for

development with strip foundations considered to be the most suitable form.

3.152 Assessments have indicated that there is a small pocket of potentially made ground to the east of Greensbridge Lane, adjacent to a small parcel of land under ownership from United Utilities. There is a potentially abandoned inspection or drainage tank within the United Utilities land ownership, through which an abandoned water main, 24" water main, 42' water main and 36" water main all of which passes through the drainage facility. It is presumed that this drainage facility is no longer in use as it has not appeared on the United Utility sewer and water mains asset maps. The facility is not considered a constraint to development as it sits within the northern extent of the master plan which is heavily impacted by flood risks.

### Groundwater & Hydrology

3.153 The bedrock is a Principal Aquifer and the drift strata is noted as a secondary aquifer, feeding into the Ditton Brook. The majority of the northern section of the study area is situated within an outer catchment for potable groundwater extraction borehole.

3.154 A groundwater abstraction borehole is operated by Everton Football Club for spray irrigation on their Finch Farm training facility in the east and a further borehole for potable water abstraction is present beyond the north-western boundary.

3.155 Several field drains are present across the area and are noted as secondary and tertiary watercourses, with the Ditton Brook being a primary watercourse. A series of existing pond area present across the study area with the largest in the northern section, next to Lower Lane.

### Contamination risks

3.156 There were no hazardous installations within close proximity to the proposed development, or other activities adjacent to the site which may have a detrimental impact on the proposed development.

3.157 A registered inert landfill is located 225 m from the north eastern site boundary and is deemed low risk to the future development of the site. Further investigation and mitigation will need to be undertaken as specific development proposals come forward but it appears unlikely that it will constrain the development of the site.

3.158 Other considerations focus on the contamination risk from filled areas of the site, in particular the location of historic ponds which have been gradually filled over time.

### Gases

3.159 Ground gas mitigation may be required due to organic materials within these areas as well as on site alluvium within the northern area of the northern parcel. Possible ground gases which may migrate from the refuse tip within the eastern consultation area and Characteristic Situation 2 or 3 mitigation measures may be required. These measures are anticipated to comprise proprietary ground gas membrane (anticipate methane resistant), sub-ground floor passively vented void, well designed ground floor slab and minimum penetration of services. No hydrocarbon vapour risk noted to date.

3.160 The study area is understood to be in a low probability radon area as less than 1% of properties are above the action level. Therefore, no radon protective measures are anticipated to be required for residential development.

## Mining risks

3.161 The search reported that the study area is within 1km of a coal mining area, however not within 1km of areas with historic coal mining. It is not situated in an area of known brine abstraction.

3.162 The study area is understood to be situated within a block where coal bed methane extraction has been granted, however no active exploitation or purposeful investigation is known to have been undertaken.

## Coal Mining and Brine Extraction search

3.163 The master plan is not situated in an area of known coal mining or brine abstraction; however, it is located within the specified search distance of an identified mining area as identified by the Coal Authority. As part of the desk top studies carried out thus far, the Coal Authority Report states that the site is not within a surface area that could be affected by past, present or future underground mining. There are no recorded non-coal mining cavities or Brine Extraction areas within 1000m of the master plan area. The site is situated within a block where coal bed methane extraction has been granted, however no active exploitation or purposeful investigation has been completed.

## Unexploded Ordinance risks

3.164 The desktop reports identify that the master plan is within a Regional Unexploded Ordinance (UXO) risk. The parcels of land between Finch Woods and Ditton Brook sit within a 'high' Regional Unexploded Bomb Risk, however bomb damage caused during the blitz within the immediate vicinity of the land parcels is not likely.

3.165 Further detail on bombing statistics for bombs dropped during the WWII Bombing Raids around the RSPCA land parcel, north of the A562, classify the parcel (and the master plan area) as falling with the Whiston Rural District and has a low risk of UXO encounter. No records have been found indicating that the parcel of land has been bombed or that no other significant source of UXO hazard has been identified on site.

3.166 A number of UXO have been recorded, and are set out below;

### 4TH September 1940

- 1 No. Unexploded Bomb found along Baileys Lane (exact location unknown), approximately 0.8km north of the RSPCA land parcel, south of Lower Road. It was removed 7th September.

### 7TH September 1940

- 1 No. Unexploded Bomb found at Finch Lane between Higher Road and Lower Road, approximately 0.5km north of the RSPCA land parcel. It was removed (date unknown)

### 9TH September 1940

- 2 No. Unexploded Bomb found in a field at Ireland's Farm, approximately 0.7km northeast of the RSPCA land parcel. They were removed (date unknown)
- 1 No. Unexploded Bomb found in a field at Ramsbrook Farm, approximately 0.8km southeast of the RSPCA land parcel. It was removed (date unknown)

### **19TH September 1940**

- 1 No. Unexploded Bomb found in a field at Ireland's Farm, approximately 0.7km northeast of the RSPCA land parcel. They were removed (date unknown)

### **3rd November 1940**

- 4No. High explosive Bombs were found in a field at New Hutt Farm, approximately 0.9km southwest of the RSPCA land parcel. 3 of which were recorded as Unexploded Bombs and removed.

### **8th November 1940**

- 1 No. Unexploded Bomb was found in a field 30 yards from west of Mill Wood, near Old Hutt Farm, approximately 0.8km southwest of the RSPCA land parcel. It was found to have exploded.

### **21st December 1940**

- 1No. High explosive Bomb fell 30 yards west of Finch Lane (exact location unknown) within approximately 0.8km northeast of the RSPCA land parcel.
- 2No. High explosive Bomb fell on a field off Higher Road (exact location unknown) within approximately 1.0km north of the RSPCA land parcel.

### **4th May 1941**

- 1No. High explosive Bomb fell on 264 Higher Road approximately 0.5 km west of the RSPCA land parcel

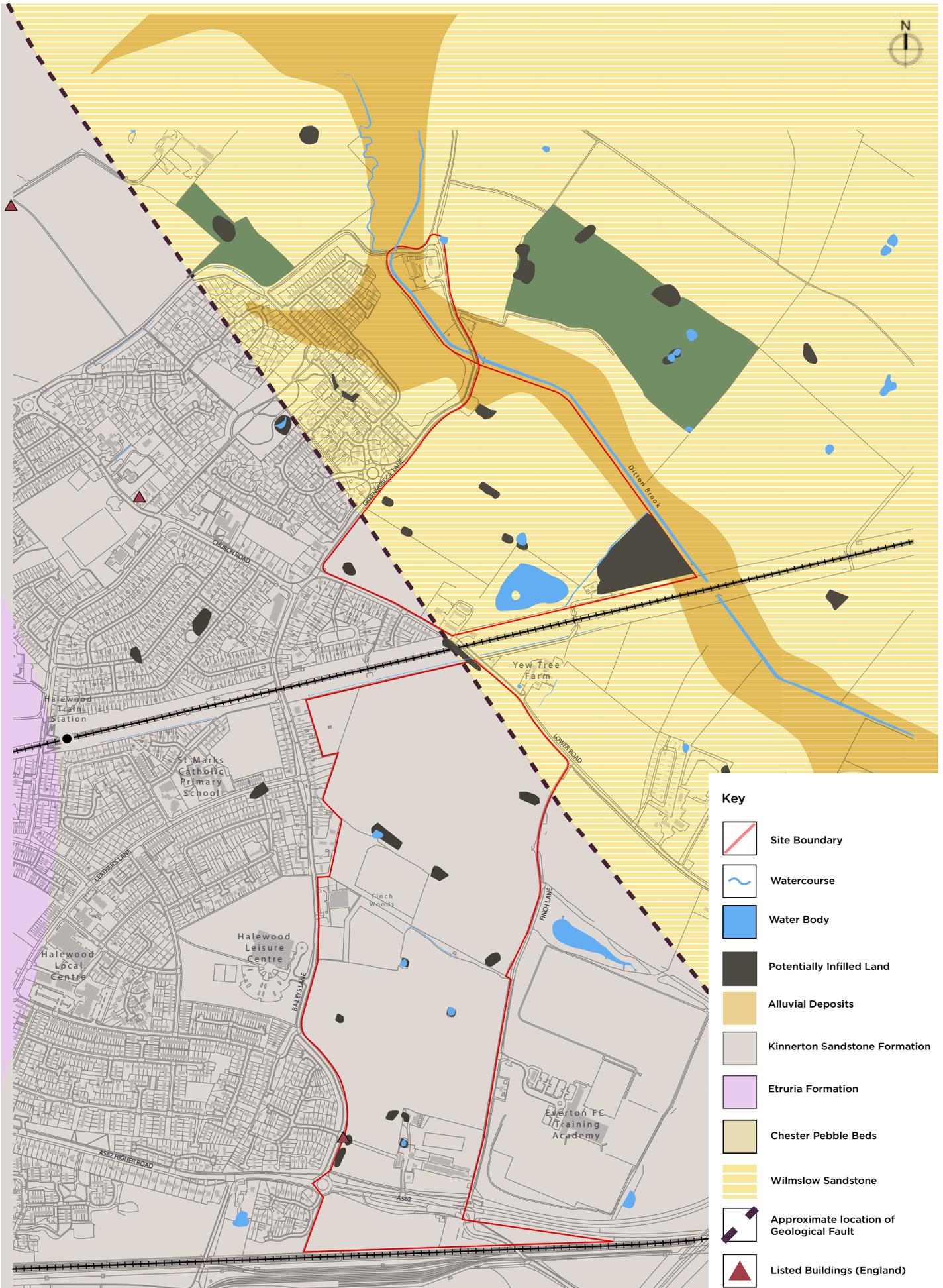
### **Further works and detailed assessments**

3.167 A general recommendation is that further risk assessment for the UXO risk of the master plan area would be prudent, to be conducted by a specialist UXO company, as the locations of the bombs identified in the baseline summary are only approximate.

3.168 Given the potential sources of land contamination and the sensitivity of the potential end use of the site as residential, a planning application specific Phase 1 Desk Study should be submitted for any future planning applications. As part of the technical understanding of this baseline, there are a number of Phase 1 desk top studies which have been carried out for parcels within the master plan boundary, however, studies would need to be provided for the land parcel south of A562, the MerseyCare Dogs Home and the land parcel currently under operation by United Utilities. The Phase 1 desk studies should identify any potential sources, pathways and receptors as well as a preliminary risk assessment to identify any potential unacceptable risks. If unacceptable risks are identified, then a site investigation will be required to determine the land contamination status of the site and what mitigation measures may be required.

3.169 The Coopers report identifies that further Phase 2 site investigations will be required to support future planning applications within the master plan, including investigations and ground gas monitoring as well as associated risk assessments.

3.170 The following plan outlines the general constraints to the site from a geo-environmental and geo-technical perspective. These should be tested and verified as applications come forward.



**Key**

-  Site Boundary
-  Watercourse
-  Water Body
-  Potentially Infilled Land
-  Alluvial Deposits
-  Kinnerton Sandstone Formation
-  Etruria Formation
-  Chester Pebble Beds
-  Wilmslow Sandstone
-  Approximate location of Geological Fault
-  Listed Buildings (England)

Figure 3.21 Ground condition considerations

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Figure 3.22 View towards the West Coast Mainline

## > 03 (h) Transport

### **Baseline currently under finalisation.**

The following summary sets out the current understanding of the transport and accessibility conditions around the site. Further consultation is ongoing with the technical team acting on behalf of the developer consortium and KMBC Highways Team. Further detail is being developed with regard to specific junction requirements to access the site as well as the wider upgrades likely to be required across the wider area.

3.171 Initial work has been carried out in terms of traffic and transport baseline reporting to identify the existing transport provision in the area, as well as identifying potential vehicular access points into whole of the site from the surrounding highway network.

3.172 Discussions with KMBC will need to be carried out in order to identify any necessary mitigation that may be required at junctions and routes, for both vehicles, pedestrians and cyclists as a result of the master plan proposals. Junctions which may require future mitigation would be those which are identified as being pushed above their operating capacity or whose flow substantially increases, thus pushing the junction's functioning close to capacity, as a result of any the master plan proposals. A transport assessment will be required in support of forthcoming applications under the master plan to demonstrate the potential mitigation measures and amendments to the highway network that may be required.

3.173 The locations of potential junctions have been selected on the basis of achieving connectivity principles and locations that are likely to be able to provide a suitable and safe junction access. The final junction designs

#### List of documents informing this baseline:

- BASELINE REVIEW NOTE (CURTINS\_ April 2018)
- TRAFFIC ISSUES NOTE (CROFT TRANSPORT SOLUTIONS\_ December 2017)

would be refined subject to the analysis of traffic flows, highway safety records, design speed of the road, visibility splay requirements and junction capacity assessments. Furthermore, the siting of junctions and achieving acceptable visibility splays may have an impact on the existing hedgerows which enclose areas of the site. In determining highway design, consideration should be given to the appropriate design guidance relating to junction form, layout and siting of future access points into the site.

## Existing transport provision

### Vehicular & pedestrian footpath provision

3.174 The site is dissected by local highway and rail networks, dividing the master plan area into three main parcels.

3.175 The northernmost parcel (parcel A) is bound to the north by the Ditton Brook; bound to the west by Greensbridge Lane; to the south by Lower Road and the Liverpool – Manchester railway line and embankment; and to the south-east by the Liverpool – Manchester railway line only.

3.176 Greensbridge Lane is a primary route providing connections between Halewood Village and Tarbock Green, as well as connections to Lower Road, Church Road, Baileys Lane and Cartbridge Lane. Greensbridge Lane crosses the Ditton Brook via a narrow, single lane, traffic signal-controlled bridge, which has no pedestrian footpath provision. Footpath provision is provided for on both sides of the Greensbridge Lane carriageway, reduced along the left side of the carriageway from the roundabout until the Ditton Brook bridge. Upon crossing the bridge, a narrow footpath provision is only provided for along the right-hand side of the carriageway until the junction with Cartbridge Lane. The highway is limited to a 30mph speed limit from the settlement limit boundary, with a 40mph speed limit in force from the settlement limit heading northwards, which is approximately shown on the plan below.

3.177 The central parcel is bound by the Liverpool – Manchester railway and Lower Road to the north; Finch Lane to the east; the A562 Higher Road to the south and Baileys Lane along part of its western boundary. The Halewood Leisure Centre lies to the west of the site and has

vehicle access from Baileys Lane. Lower Road provides connections between East Halewood Village and Hale Bank, Finch Lane and Baileys Lane, part of which crosses below the Liverpool – Manchester railway bridge. Footpath provision is available on both sides of the carriageway on approach to East Halewood Village from the railway under crossing. Moving easterly from the railway bridge, footpath provision is reduced to the right-hand side of the carriageway until the junction with Finch Lane. Speed limits along this road change from national speed limit to 30 mph.

3.178 Finch Lane forms the eastern boundary of the site and provides a vehicle link between Lower and Higher Road. It is a narrow carriageway in parts, with some bends in its alignment as it meets Lower Road. From the north of Finch Lane Everton FC Training Academy, there is no provision of footpath to Lower Road. To the south of the Training Academy, traveling towards Higher Road, there is pedestrian footpath provision on both sides of the carriageway in part, before reducing to the right-hand side of the carriageway only towards Higher Road.

3.179 Both pedestrian and vehicular access to the site from the southern end of Finch Lane is restricted and would face a number of challenges due to the presence of a 132 KVA cable which serves Jaguar Land Rover. The High Voltage cable runs along the western edge of Finch Lane. Initial investigations indicate that the cable is sitting approximately 400-600mm below current ground level. If a form of pedestrian and/or vehicular access were to be provided onto Finch Lane, this would require significant works to either the cable or to significantly raising access points over and above the cable.

3.180 Access from the northern half of Finch Lane is also potentially restricted by both the existing carriageway alignment and the existing 300, 375 & 400mm combined rising mains, existing ditches and 110mm water mains which sit within the existing verge and immediately west of Finch Lane.

3.181 The A562 Higher Road separates Parcel B with small parcel of land to the south. The road is a dual carriageway with two lanes eastbound and one lane westbound. A separated pedestrian route runs parallel to the southern boundary of the site, connecting Finch Lane and Baileys Lane. It also provides a pedestrian crossing point to the footpath north of the southern-most parcel. There are no pedestrian crossing opportunities from Finch Lane, and the A562 forms a considerable barrier to pedestrian north – south movement as a whole given its significance as a primary route between Speke Boulevard, Widnes East and Hunts Cross. The road is subject to a 40 mph speed limit and has street lighting.

3.182 Baileys Lane forms part of the western edge of Parcel B, before existing dwellings provide frontage along Baileys Lane continuing northwards, with the site sitting immediately behind. Baileys Lane provides access to a large residential area to the west of the master plan area as well as Halewood Leisure Centre, Leathers Lane, Ronaldsway and Church Road. Heading northwards from Higher Road, Baileys Lane has pedestrian footpath provision along its left-hand side until it meets Finch Wood Academy where it has footpath provision along both sides of the carriageway. Baileys Lane is subject to a 30mph speed restriction along its entire length,

3.183 The small, southern most parcel of land (Parcel C) is also defined by the A562 along its northern boundary as well as a large layby

which is currently cordoned from the A562 and disused. Its eastern edge is defined by the Higher Road bridge crossing over the West Coast Mainline, to which there is no access from the site; its western edge is defined by Aldersgate Drive, a residential street serving approximately 14 dwellings, which adjoins the western edge of the site.

3.184 Consideration could be given to lowering speed limits on the roads which surround the site. This could potentially help to improve pedestrian safety and the quality of the street environment within the residential areas. The lowering of speeds will, most likely, decrease the visibility splay requirements which in turn may limit the impact on the existing hedgerows where junctions are to be located. However, this would require further testing at the detail design stage.

### Facilities accessible through walking

3.185 Within the local area walking will likely be the most important mode of travel. The primary destinations for those walking from the site will be to bus routes (including Halewood shopping centre approximately 550m to the west) and Halewood rail station (approximately 750m northwest from Parcel B & 690m southwest from Parcel A). Within the Halewood shopping centre aside from retail there are also GP facilities, a dentist, a library and a pharmacy available to residents. There are also education facilities towards the west as pedestrian's head towards the centre of Halewood. To the south lies the Jaguar Land Rover plant which could be an employer for a number of future residents.

3.186 There is a Public Right of Way (PRoW) which traverses the site from Baileys Lane to Finch Lane, cutting through Finch Woods and along Finch Woods Academy. To the west of Parcel B, there is a pedestrian linkage which runs from Baileys Lane to Barncroft Road, running along the front of the Leisure centre building, which provides pedestrian access to Halewood local centre. There is also a dedicated pedestrian network which lies to the west of Parcel A, which is accessed from Tavington Road and continues northwest into Court Farms Woods, where a PRoW provides access from Cartbridge Lane towards Foxhill Lane.

3.187 The development should look to provide new dedicated pedestrian/cycle connections in addition to the highway connections including new routes towards Halewood town centre and promoting sustainable movements. Initial potential pedestrian connection locations are proposed to be along the railway cutting and north of the Finch Woods Academy.

### Existing cycle provision

3.188 There are various cycling facilities around the proposed development with National Route 62 located to the west of the development, which runs through Halewood Park and offers a traffic-free route to Aintree and then onto Southport. There are also sections of on-road cycle facilities located around the development, predominantly to the west with some facilities located within Widnes to the east.

### Existing bus provision

3.189 There are a number of bus routes located near to the site with numerous bus stops located along Baileys Lane north of Leathers Lane. The routes available offer access to the following destinations including; Speke, Wavertree, Belle Vale, Liverpool. Further bus accessibility is available from the Halewood shopping centre bus stops including; Huyton, Allerton and Woolton are available.

### Existing rail provision

3.190 Halewood rail station is within walking distance of the development. The walking distance varies from 1100m to 1750m in the southern eastern extent of plot C which would be acceptable for commuter and leisure-based trips. The frequency of services to and from the station is one train towards Liverpool and one train towards Manchester per hour. This frequency is increased to two trains towards Liverpool per hour in the peak periods.

3.191 The report compiled by Croft Transport Solutions indicates that the southernmost part of parcel B has direct frontage along Higher Road, with the most appropriate proposed access point being from Baileys Lane or upgrading the existing access point that currently serves the RSPCA. It states that the necessary visibility splays can be achieved to deliver an access from the location along Baileys Lane, shown in the plan below.

3.192 The provision of highway infrastructure (both on and off the site) will be considered in detail within a masterplan delivery plan which would include the likely costing of the measures.

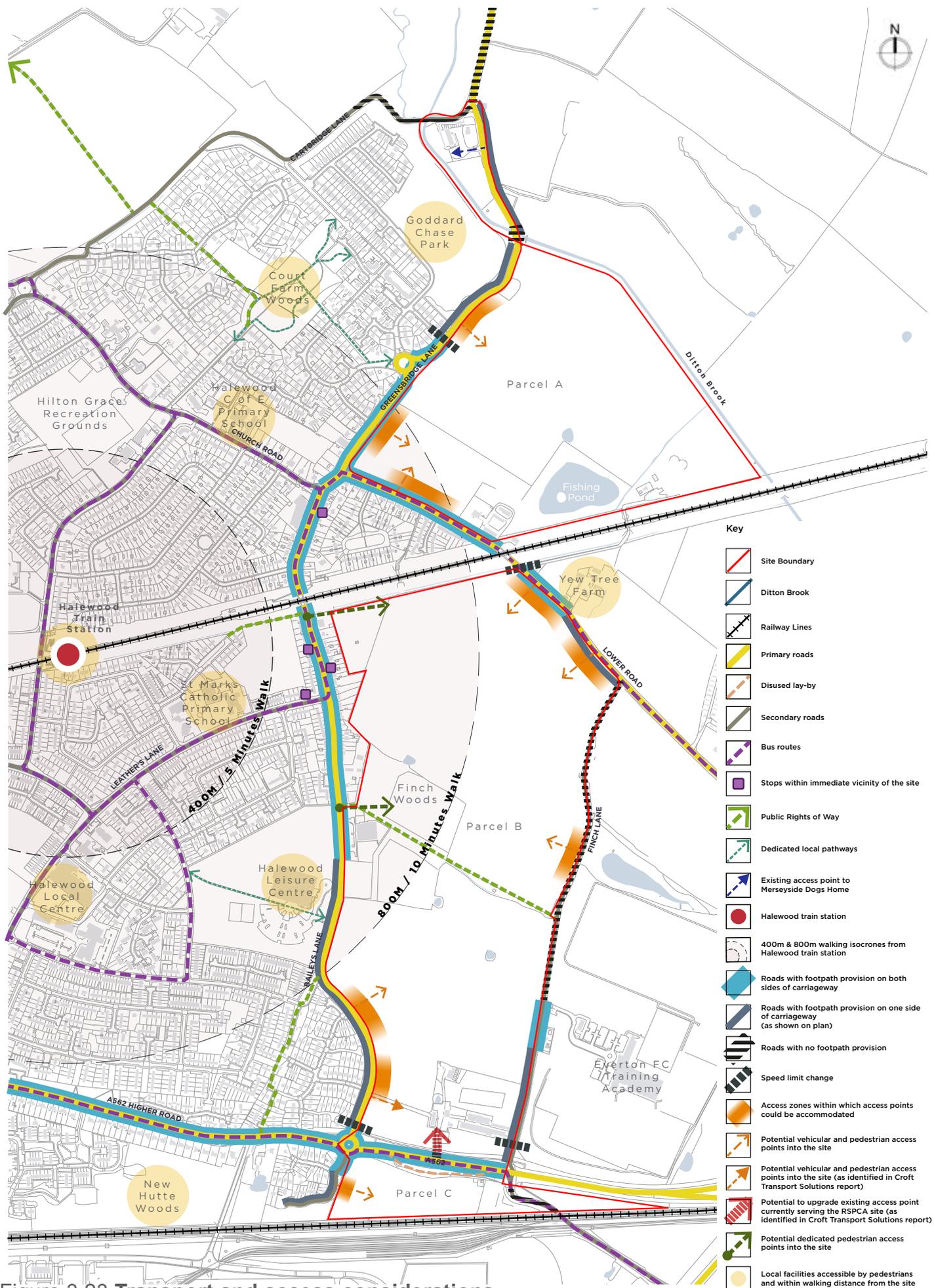


Figure 3.23 Transport and access considerations

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Figure 3.24 View along Lower Road

## > 03 (i) Air quality

3.193 The air quality baseline has been compiled from the Baseline Air Quality Assessment prepared by Resource and Environmental Consultants (REC) Ltd as well as conclusions from the KMBC Assessment, which assessed the Air Quality within their administrative boundary; and Liverpool City Council's review of air quality within their administration.

3.194 KMBC's report concluded that concentrations of pollutants considered within the Air Quality Strategy (AQS) are currently below the relevant Air Quality Objective's (AQO) and therefore no Air Quality Management Areas (AQMA) have been designated within KMBC's administrative limits.

3.195 The findings from the Liverpool City Council air quality assessment concluded that concentrations of NO<sub>2</sub> were above the AQO and therefore a AQMA has been designated across the whole of the City of Liverpool. As the site is located approximately 0.8km north east of the Liverpool City AQMA, there is potential for proposed developments to cause adverse impacts on air quality within this area. Therefore, sensitive receptors within the AQMA would require further consideration within a detailed assessment.

3.196 The assessment identified that the master plan is in close proximity to the A561 and the A5300 which are significant sources of road vehicle emissions, which has the potential to introduce future residents to the exposure to emissions and poor air quality. Furthermore, future residents may also have an adverse impact on existing pollutions levels at nearby sensitive receptors within the local area. The assessment considered these within the context of the site location and available monitoring information.

### List of documents informing this baseline:

- Air quality scoping document – East Halewood, Liverpool (prepared by REC\_April 2018)
- Baseline Air Quality Assessment (prepared by REC\_April 2018)

3.197 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist Local Authorities in their Review and Assessment of air quality. The site is located within grid squares NGR: (345500, 384500), (345500, 385500), (346500, 385500) and (345500, 386500). Data for these locations were downloaded from the DEFRA website<sup>1</sup> for the purpose of the assessment carried out by REC and the range is summarised in the table below.

Table 3.6 Pollutant concentrations

| Pollutant         | Predicted Background concentration (ug/m <sup>3</sup> ) 2017 |
|-------------------|--|
| NO <sub>x</sub>   | 18.96 - 23.78  |
| NO <sub>2</sub>   | 13.8 - 16.86   |
| PM <sub>10</sub>  | 12.04 - 12.54  |
| PM <sub>2.5</sub> | 7.87 - 8.03  |

<sup>1</sup> <http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>.

3.198 As shown in the table above, background concentrations of N02 and PM10 do not exceed the relevant AQOs, which indicates that the pollutant concentrations across the development site are likely to be below AQO's although higher concentrations may exist at locations in the vicinity of the A462.

3.199 A review of the available monitoring data was carried out from KMBC's automatic analysers, the closest of which is the Halewood monitor approximately 0.2km west of the site (located at NGR: 345213, 384691). Results from the monitoring data revealed that there were no exceedances of the relevant air quality standards at roadside locations. Pollutant background mapping indicated that the existing background levels at the site are below the relevant air quality standards.

3.200 REC have also completed a desktop study to identify a number of potential receptors which may be sensitive to the operational phase road vehicle exhaust emission impacts. These are identified as likely sources and may be subject to review and more detailed assessment subject to traffic generation and distribution data from transport assessments. The key receptor locations include;

- Halewood Church of England Primary School
- St Marks Catholic Primary School
- Finch Woods Academy; and
- Residential properties located within the vicinity of the development site.

This is predominantly to the east of the development site, more specifically along Baileys Lane and adjoining roads.

3.201 Conclusions from the baseline assessment carried out by REC identified that air quality is not likely to be a constraint to the master plan subject to inclusion of mitigation measures which would be identified through further detailed assessments. Further detailed assessments will need to be provided for any future planning applications coming forward under the SUE master plan. These necessary detailed assessments should follow the principles of the Environmental Protection UK and Institute of Air Quality Management Guidance, Land-Use Planning & Development Control: Planning for Air Quality January 2017

3.202 This assessment does not identify what the potential impact of the future development within the master plan, may contribute to Air Quality baseline. A detailed Air Quality Assessment will determine the potential pollutant concentrations across the development proposals and the potential for any mitigation that may be required. A potential measure of impact of the significance from the future development proposals could be represented through the percentage change in the baseline pollutant levels as found across the area as well as with regard to the (EU) limit.



**Existing properties within close proximity to the site along Baileys Lane**

## > 03 (j) Noise & vibration

3.203 The Noise and vibration technical baseline has been derived from detailed noise assessments carried out by Resource by Environment Consultants (REC) as well as the Department of the Environment, Food and Rural Affairs (DEFRA) Noise Map. These assessments within the REC assessment have been undertaken to identify noise and vibration sources which would impact upon the site and areas of the master plan, which in turn may have an impact upon sensitive residential receptors. The key findings from these reports have been summarised below and form part of the technical baseline understanding for the master plan and its development.

3.204 In the absence of a noise and vibration assessment for the southernmost parcel of land, south of the A562, noise constraints will need to be derived from the Defra Noise Map for the railway line to the south of the parcel and also for the A562. This will be combined with the noise assessment carried out by REC, which has been carried out on the parcel immediately north of the A562.

3.205 The key noise and vibration sources which would impact upon the site are:

- the surrounding road network and use by vehicles;
- the local railway lines within and along the site boundary;
- Finch Farm along Finch Lane;
- the Merseyside Dogs Home kennels along Greensbridge Lane and;
- the existing RSPCA kennels north of the A562

### List of documents informing this baseline:

- Noise & Vibration Constraints Assessment, East Halewood (OAKFORD) (REC\_ February 2018)
- Noise Impact Assessment, Higher Road, Halewood (REC November\_2017)

3.206 Although it is currently understood that the RSPCA kennels are due to vacate their site, there will be a need to employ noise mitigation measures against noise from generated from the kennels should phasing of the site result in part of the RSPCA facility remaining active after occupation.

3.207 Initial noise risk assessments indicate that the majority of the masterplan area is subject to Low to Negligible Risk during the day-time and night-time periods. Noise levels experienced across the master plan area during daytime are between below 45dB and up to 65dB. Night time noise levels across the site range between 45dB and 58dB. The daytime and night time noise levels, as determined by REC's noise risk assessment, can only be attributed to the parcels that have been subject to the noise measurements undertaken by REC. Without similar measurements, noise levels on the vast majority of the parcel south of the A562 must be assumed to range in the bands of 60dB and 74.9db, as modelled by Defra. When considered under LAeq, 16h then average noise levels are similar bands between 60.0- - 64.9 dB, with the south western edge of the site falling within 55.0 – 59.9 dB.

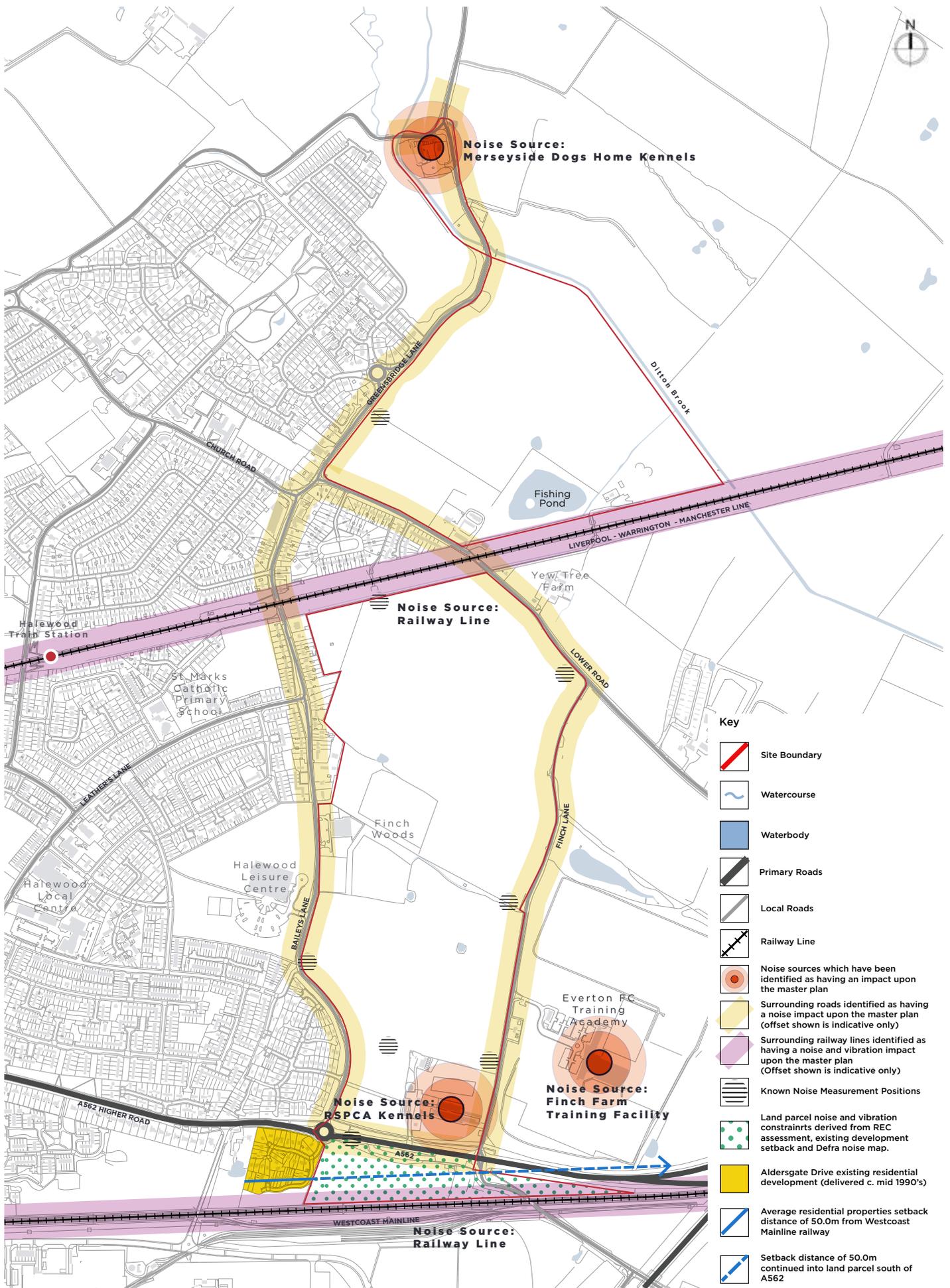


Figure 3.25 Noise and vibration considerations

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3.208 The land south of the A562 is affected to some extent by noise from the railway line with the impact increasing close to the line, with noise mitigation likely to be required. The noise impact of the A562 and the recommended mitigation measures against road traffic noise, as detailed in the noise assessment for the parcel north of the A562, can be expected to be mirrored for the southern parcel. However, there are two caveats to this. The impact of road traffic noise from Bailey's Lane will be reduced on the southern parcel and it is assumed that the layby off the southern carriage way remains closed. With the layby insitu, the noise impacts and recommended mitigation identified to the north of the A562 will represent a worst-case scenario on the southern side. If the area occupied by the layby is developed the mitigation measures will be the likely requirements to achieve acceptable indoor and garden amenity noise levels.

3.209 However, areas bounding Baileys Lane, Lower Road, Higher Road and Greensbridge Lane are subject to Medium Risk given their proximity to the existing road and rail infrastructure.

### Finch Farm & the Merseyside Dogs Home

3.210 The impact of activities associated with training and football matches at Finch Farm has been assessed to a worst-case scenario, with the assessment determining that a Negligible Impact on the closest receptors within the master plan boundary.

3.211 The Mersey Dogs Home currently identified as a noise source within the master plan boundary, however, if under the master plan, this land parcel is to come forward for development, it would no longer be a noise source. If the Dogs Home is to remain in situ and continue its current operations, then further noise assessments will be required to ascertain the extent of the noise impact on any nearby planning applications within the master plan boundary.

## Vibration

3.212 A vibration measurement was carried out along the Liverpool – Manchester line and ascertained that a less than low probability of adverse impact due to rail pass-bys

3.213 The West Coast Mainline, which runs to the south, has also been identified as a vibration source. Without a site-specific vibration assessment along this railway line, any estimate of the vibration constraint can only come from the findings of the REC’s assessment of the northern Liverpool - Manchester railway line.

3.214 The ground conditions of the land parcel south of the A562 site include superficial and bedrock geology (as determined by the BGS 1:10000 maps). This composition of geology is consistent with where vibration measurements have been taken elsewhere across the master plan (within the REC assessment). This suggests the vibration propagation qualities of the ground are generally comparable.

3.215 It should also be noted that the northern track is on an embankment. The construction of the embankment can either make vibration worse or ameliorate it, with an embankment compiled of stiffer material than what it is sat upon will reduce vibration, if it is not it can make vibrations worse. As the embankment construction is unknown in this case, the

vibration as recorded may be better or worse than would be the case if the track was at the surrounding ground level. Therefore, as the southern railway line is not on a significant embankment it is difficult to make a direct comparison. Additionally, it must be noted that the lines on the southern boundary of the masterplan area are both passenger and freight lines unlike the passenger only northern line. Therefore, it is likely that there will be greater levels of vibration from the southern railway line. The degree to which the vibration from the southern railway line constrains specific types of development will be dependent upon further measurements.

3.216 However, it remains the case that the type of construction of buildings on the site will influence how much they will be affected by vibration. It is worth noting that the existing housing development of Aldersgate Drive immediately to the west of the southernmost parcel, and in similar proximity to the rail line, has not reported any issues related to vibration to Knowsley Council Environmental Health Service since the development’s construction in the mid 1990’s. Therefore, it is not unreasonable to assume that given a similar stand-off from the line further residential development on the southern parcel should not be precluded by vibration issues with suitable mitigation.



West Coast Mainline along the southern extent of the masterplan

### Potential mitigation measures

3.217 The master plan will consider the findings of the noise assessment and will seek to implement design principles which help to alleviate the noise impact and protect areas of external and private amenity space from noise sources.

### Site wide mitigation advice

3.218 The World Health Organisation (WHO) Guidelines for Community Noise 1999 serve as a basis for deriving noise standards. The standards repeated below are outlined in the Guidelines and would serve as a guide to the minimum acceptable noise levels which should be achieved through any development as part of the master plan.

3.219 The REC constraints assessment advocates that Good Acoustic Design should be incorporated within the design of residential buildings that border the existing road network. The orientation of these plots / buildings should address the surrounding road network ensuring that their building mass protects their rear gardens, with gaps between buildings kept to a minimum to avoid noise creep.

3.220 Acoustic barriers may be required in the worst affected areas.

3.221 The use of mews dwellings along the boundaries with the existing road networks is suggested as a potential development form to help mitigate against noise sources. However, the use of this form of development will need to be carefully considered within the master plan and ensure that it is a contextually appropriate form of development located in the most appropriate locations.

3.222 If external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended. Public open space or nature corridors along roads are suggested as a potential approach to providing a buffer between roads and residential plots. Alternatively, a landscaped / planted bund could be incorporated to reduce the noise impact upon residential plots. These landscape mitigation approaches will have to be carefully considered and must form part of an overall landscape structure within the masterplan.

3.223 Wherever possible, windows of habitable rooms should face away from noise sources.

**Table 3.7 Noise thresholds per environment**

| Specific Environment | Critical health effect(s)  | LAeq (dB) | Time base (hours) | LAm <sub>ax</sub> , fast (dB) |
|----------------------|--|-----------|-------------------|-------------------------------|
| Outdoor living area  | Serious annoyance, daytime and evening                             | 55        | 16                | -                             |
|                      | Moderate annoyance, daytime and evening                            | 50        | 16                | -                             |
| Dwelling, indoors    | Speech intelligibility and moderate annoyance, daytime and evening | 35        | 16                | -                             |
| Inside bedrooms      | Sleep disturbance, night-time                                      | 30        | 8                 | 45                            |
| Outside bedrooms     | Sleep disturbance, window open (outdoor values)                    | 45        | 8                 | 60                            |

3.224 Alternative ventilation for certain habitable rooms across the master plan may be required depending upon the siting of the dwellings and orientation of the rooms. Higher specification glazing may be required in certain areas along Greenbridge Lane. Areas of the southernmost parcel further from the railway line may still require mitigation measures to buildings such as improved specification of glazing and or alternative ventilation to opening window.

### Land parcel south of the A562

3.225 The West Coast mainline noise and vibration impact on the parcel south of the A562 most likely will require mitigation measures to be employed in terms of a suitable stand-off distance from the railway line. As a noise survey has not been carried out on the parcel, the rail noise impact and mitigations have to be drawn from the extent and level of noise shown in the Defra noise map. Any determination that residential development is not precluded has to be treated with some caution.

3.226 In terms of mitigation to rail noise, it is likely that some quantum of this parcel would be suitable for residential development with similar mitigations to road traffic noise as determined for the parcel to the north of the A652.

3.227 Cues may also be taken from the mitigation measures taken in the build and layout of the Aldersgate Drive development to the west of the site, such as fencing and the stand-off distances from the railway. The existing setback of residential dwellings from the railway is approximately 50.0m, which is shown on the accompanying plan, as well as a continuation of the setback line across the land parcel as an indication of a potential building line. There should be some caution exercised however, as there have been legislative and guidance changes on noise setback distances since this development was built in the mid 1990's.

3.228 Mitigation measures to achieve acceptable noise levels will likely need to include acoustic barriers (e.g. fences and/or bunds) in areas close to the railway line. Additional mitigation such as improved specification of glazing and or alternative ventilation to opening windows may also be required. Building orientation will also be a key consideration and should not be dismissed even in parts of the parcel some distance from the higher railway noise levels. Proper consideration should be given to reflected noise from one source eg the railway, increasing susceptibility to noise impact from another eg road traffic therefore influencing building orientation. Overall, good acoustic design should be incorporated for development on the parcel.

3.229 Vibration propagation is influenced by ground conditions. Vibration studies should consider the prevailing ground conditions at differing measuring points across the parcel south of the A562 and will need to be assessed in order to inform the development of this land parcel.

## > 03 (k) Utilities & infrastructure

3.230 The utility and existing infrastructure baseline has been compiled from a number of reports carried out by Technical and Development Services (TDS) who have carried out an assessment of the master plan area. Their assessment includes obtaining the existing asset plans from the host utility companies across the area and placing applications for information on points of connections to their respective assets.

3.231 A host of existing utility companies active in the area were asked to establish if they had any existing plant within the surrounding area. Of those companies, United Utilities, Scottish Power Energy Networks, National Grid and BT/Openreach and Cadent GAS are affected. Where relevant, advice and guidance notes have been consulted to help inform the basis of the master plan technical baseline.

### Existing Electrical infrastructure

3.232 There are existing overhead and below ground 132KV cables, which affect land parcels both south and north of Lower Road. – assume gone. Restrictions below in instance where they are retained. The overhead High Voltage 132KVa cables run along the western boundary of the United Utilities land parcel and travel north-westerly across the northern parcel of land, exiting along Greensbridge Lane to enter into the smaller northern parcel of land occupied by Merseyside Dogs Home and terminating at the Greensbridge Lane PS substation.

3.233 132KV overhead cables also traverse the land parcel south of Lower Road. They originate from a transmitter located along the public right of way that connects Finch Lane with Finch Woods and travel north easterly, across Lower Road, before turning immediately left across Yew Tree Farm and across the railway line and the north-western extreme of

#### List of documents informing this baseline:

- United Utilities Sewer Records (DWG Pack)
- Proposed development Site at East Halewood, Northern Parcel
- Proposed development Site at East Halewood, Northern Parcel Southern Parcel
- Proposed development at Halewood RSPCA Centre | Utility Statement
- Excavating Safely Avoiding injury when working near gas pipes (Cadent Gas)
- Technical Specification 43-8 Overhead Line Clearances (Energy Networks Association)
- Avoiding danger from overhead power lines Guidance Note (GS6) 4TH Edition (HSE)
- United Utilities Guidance Note – General conditions and precautions to be taken when carrying out work adjacent to UU water distribution apparatus.

the site (traversing the land parcel currently under United Utilities ownership). The 132KV cables also run underground along the public right of way towards Finch Lane, before heading southwards, along Finch Lane to an existing substation.

3.234 There are High Voltage (11kv) and Extremely High Voltage (33kv) electricity cables which run within the footpath along Higher Road and connect into the RSPCA land parcel via Finch Lane to the same substation as the 132KV cables.

3.235 There have been ongoing discussions with Scottish Power regarding the potential diversion of the existing 132Kva cables which affect the northern section of the land parcels south of Lower Road and those which traverse the northern most land parcel. Initial discussions have explored timescales, technical deliverability and phasing of the diversion of

the overhead cables. The current location and siting of the cables presents a considerable visual constraint, as well as having an impact upon developable area and poses challenges around successfully integrating infrastructure of this nature with successful placemaking objectives. For the purposes of the masterplan, and on the basis of the ongoing discussions with Scottish Power, the baseline will assume that the O/H cables can be diverted to align with the principles of the preferred masterplan option.

3.236 A LV cable is shown to enter the site to feed Finch Woods Academy off Baileys Lane.

3.237 A telecommunication network tower (operated by Orange) is located along Higher Road, towards the south-eastern corner of the Hesketh land parcel. It is assumed that this could be accommodated within any future development proposals given its location within the parcel.

## Existing Water infrastructure

3.238 There are a number of main pipes which run along the surrounding road and footpath networks. This , including a 110mm pipe along Lower Road, two cast iron 24” main parallel to Greensbridge Lane as well as a 4” CI main which runs along Finch Lane and Higher Road, along the northern boundary of the Hesketh Land parcel. Three rising mains pipes (450mm, 375mm and 300mm) run parallel to Finch Lane, along the eastern edge of the master plan area, along the existing water ditches. They continue northwards and cross under Lower Road, connecting into the United Utilities Pumping Station located within United Utilities parcel of land. A 110mm water mains runs along Finch Lane carriageway and connects to pipelines along Higher Road.

3.239 Both pedestrian and vehicular access to the site from the southern end of Finch Lane is restricted and would face a number of challenges due to the presence of a 132 KVA cable which serves Jaguar Land Rover, which runs along the western edge of Finch Lane. Initial investigations indicate that the cable is sitting approximately 400-600mm below current ground level. If a form of pedestrian and/or vehicular access were to be provided onto Finch Lane, this would require significant works to either the cable or to significantly raising access points over and above the cable.

3.240 Access from the northern half of Finch Lane is also potentially restricted by both the existing carriageway alignment and the existing 300, 375 & 400mm combined rising mains, existing ditches and 110mm water mains which sit within the existing verge and immediately west of Finch Lane.

3.241 A pressurised 36” steel strategic trunk mains traverse the northern extent of the site, running from Greensbridge Lane, easterly across Ditton Brook. The trunk mains which currently sits 0.9m below the current ground level. It is understood that through initial enquiries to United Utilities, that both the two 24” trunk mains and 36” steel trunk mains cannot be diverted due to the strategic requirement of these assets.

3.242 A public foul sewer pipe runs across west to east across Greensbridge Lane to a pumping station located within United Utilities Land. A combined sewer runs along the southern embankment of the Liverpool – Manchester Railway line, from Baileys Lane, past Yew Tree Farm and into the United Utilities pumping station.

3.243 A number of pumping stations are located around the northern parcels, with two located off Greensbridge Lane and a third located within the United Utilities land parcel.

### Existing Gas infrastructure

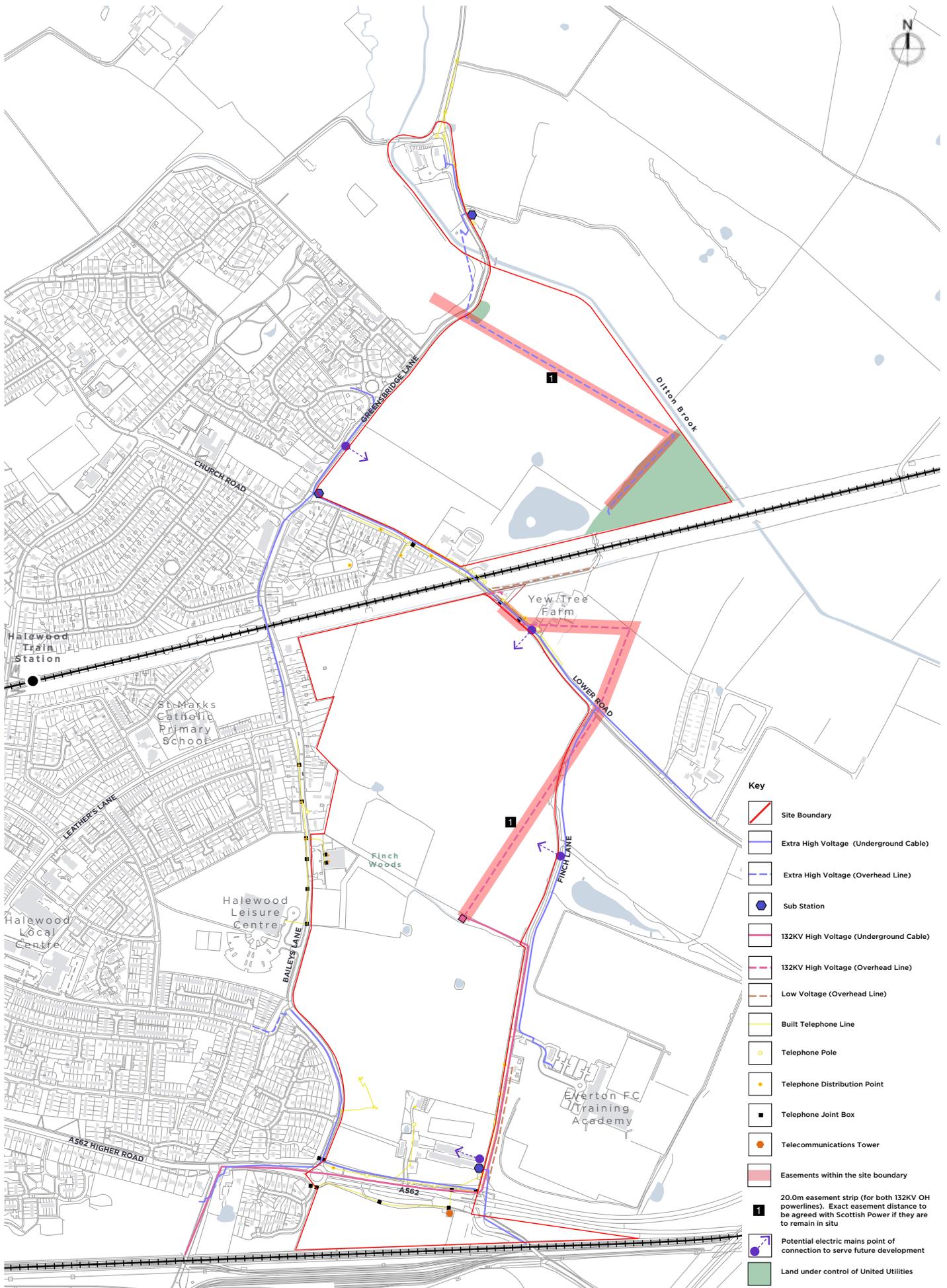
3.244 A 90mm PE I Low-pressure gas mains runs along Baileys Lane, Lower Road to the north and Higher Road to the south. A 63mm mains feeds the Finch Woods Academy from Baileys Lane and a 63mm mains feeds the Railway Cottage along Lower Road. Both a 90mm and 250mm PE low pressure mains runs along the carriageway of Lower Road, with the 90mm mains serving the RSPCA site and the 250mm continuing with the carriageway. The Everton Football Training Academy also has supply line which runs along Finch Lane.

### Existing BT infrastructure

3.245 There is a network of overhead cables located along Higher Road and parallel to Lower Road and Baileys Lane, with a feed into the RSCPA buildings and two poles present in the land parcel occupied by the Merseyside Dogs Home to the northwest of the site.

3.246 There is also a network of underground cables along Baileys Lane, Lower Road and Finch Lane and along the northern boundary of the Hesketh Land parcel.

3.247 A number of pre-development enquiries have been submitted to the relevant asset owners to determine potential points of connections to their respective asset networks. These are indicated on the adjacent plans. Further consultation with the relevant asset owners will be required as more detailed planning applications are submitted.



**Figure 3.26 Dry utility considerations**

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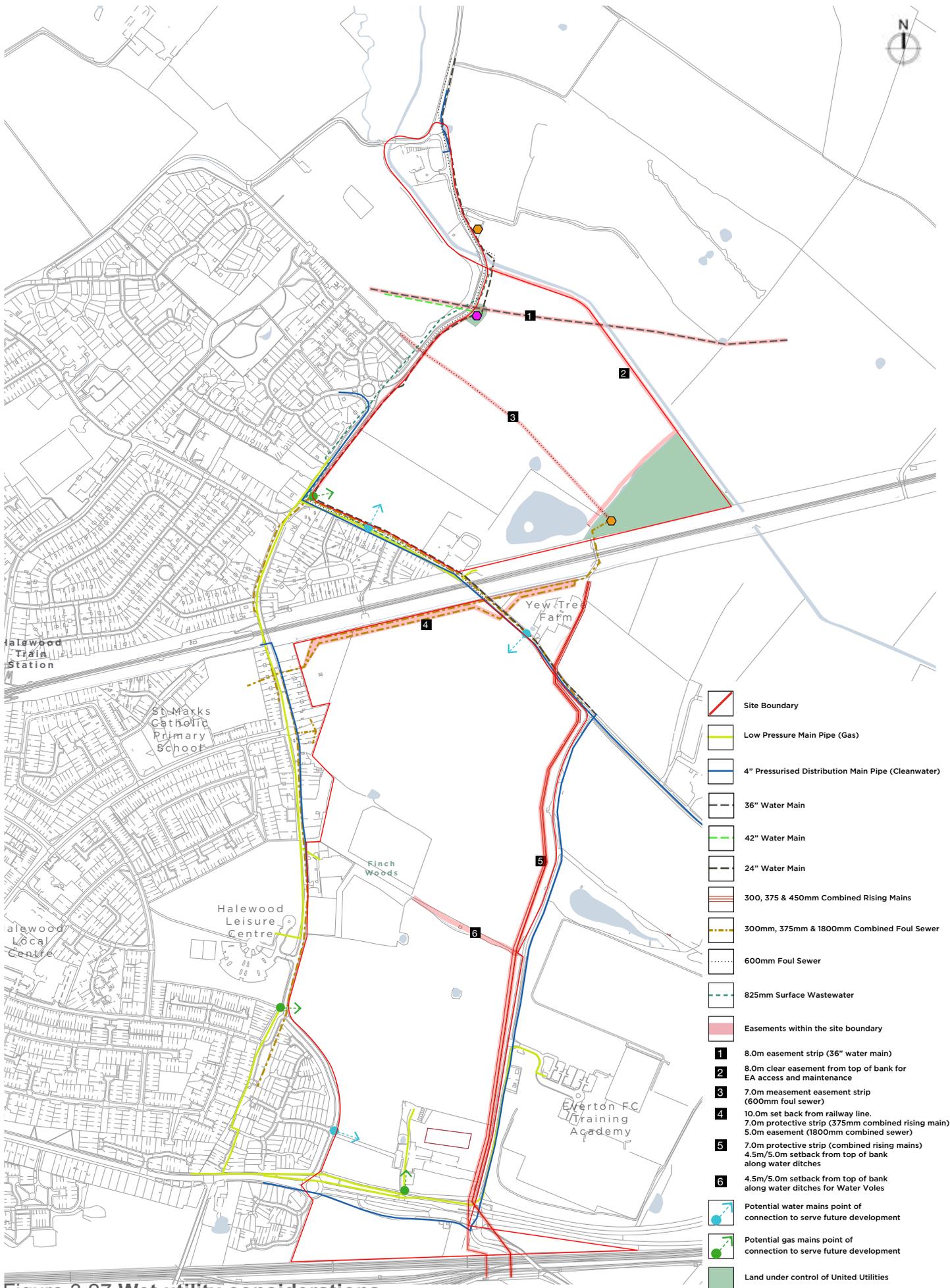


Figure 3.27 Wet utility considerations

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| Dry Utilities  |   |  |
|--|---|--|
| Utility  | Minimum easement / clearance zones  | Considerations   |
| Existing Overhead 132Kva (EHV)                         | Baseline position is to assume the removal of the overhead cables to be relocated within Finch Lane   |  |
| Below ground 132 Kva cables                            | No minimum standardised stand-off distance specified.   | <ul style="list-style-type: none"> <li>No permanent structures should be constructed above the alignment of the cables.</li> <li>Consideration should be given for the potential for cables to be located within property curtilages and potential insurance and legal implications within future title deeds</li> <li>Existing underground cables are usually left in-situ / respected and designed around or where practicable diverted into the new highway infrastructure</li> </ul> |
| Existing Electric substations                          | 1.0m hard stand area required around the perimeter of the substation for maintenance.   | Substation on corner of Lower Road and Greensbridge Lane appears to be accessed from the surrounding highway network.  |
| Proposed Electric substations                          | <ul style="list-style-type: none"> <li>1.0m hard stand area required around the perimeter of the secondary substation for maintenance.</li> <li>Typically, a 4.0x4.0m area (within which the substation is located) is transferred to Scottish Power for maintenance.</li> </ul>  | <ul style="list-style-type: none"> <li>Advice from utility designers is that substation positioning should be located, as far as possible, central to the load of the development and not simply located across the extremities of the development.</li> <li>The number of primary and secondary substations will be determined by detailed residential layout design and the provision of electrical services and load demand.</li> </ul>   |
| Wet Utilities  |   |  |
| Sewers<br>Rising Mains (300mm, 350mm, 375mm and 400mm) | <ul style="list-style-type: none"> <li>3.5m protective strip either side of the centreline of the sewer pipe</li> </ul>   |  |
| Sewers<br>Combined 1800mm sewer                        | <ul style="list-style-type: none"> <li>5.0m easement either side of the sewer alignment</li> </ul>  |  |
| Water Mains  | <ul style="list-style-type: none"> <li>Trunk mains require a 2.5m stand off each side from the centreline of the pipe. (Full and exact clarification would be required from United Utilities once detailed proposals have been developed).</li> <li>A 4.0m standoff either side of the pipe centre line is required for the 36inch trunk main traversing the northern extent of the site</li> </ul> | <ul style="list-style-type: none"> <li>Restrictions on tree planting within the curtilage of water mains pipes</li> </ul>  |
| Gas  | <ul style="list-style-type: none"> <li>Low Pressure – 0.5m no build zone</li> <li>Medium Pressure – 0.5m no build zone</li> <li>Intermediate Pressure – 3.0m no build zone</li> </ul>   | <ul style="list-style-type: none"> <li>Tree or shrub planting should be considered as to ensure that root damage is avoided on any buried mains or services</li> <li>High pressure pipelines have an easement agreed with the landowner of can be located within the highway</li> </ul>  |
| Ditton Brook & Drainage Ditches                        | <ul style="list-style-type: none"> <li>8.0m easement required from top of bank from Ditton Brook</li> <li>4.0-5.0m easement of clear required from top of bank along existing ditches</li> </ul>  |  |

**Table 3.8 Summary of easements and restrictions associated with existing utilities**

## > 03 (I) Control of major accident hazards (COMAH)

3.248 The COMAH baseline information to inform the master plan is compiled from publically accessible information gathered from the Health and Safety Executive (HSE) and their Land Use Planning Methodology.

3.249 The HSE is a statutory consultee on certain developments being considered for planning permission within the vicinity of major hazard sites and major hazard pipelines. If any development proposals which are residential in nature and fall within the Consultation Zone of the Major Hazard Installation must be consulted upon.

3.250 The East of Halewood site sits within the Outer Consultation Zone of the Control of Major Accident Hazard (COMAH) zone which is associated with the Major Hazard site, Vertellus Specialities UK Ltd chemical factory. The factory is located within the jurisdiction of Knowsley Borough Council and lies south of the A561 Speke Boulevard, approximately 1.4km east from the eastern boundary of the site.

3.251 The HSE identifies two types (tiers) of establishment which are subject to COMAH restrictions, known as ‘Upper Tier’ and ‘Lower Tier’ depending on the quantity of dangerous substances they hold. The Vertellus Plant is identified as an ‘Upper Tier’ site based upon their commercial operations and the volume and nature of the material they manufacture and store.

| Level of Sensitivity | Development in Inner Zone | Development in Middle Zone | Development in Outer Zone |
|----------------------|---------------------------|----------------------------|---------------------------|
| 1                    | DAA                       | DAA                        | DAA                       |
| 2                    | AA                        | DAA                        | DAA                       |
| 3                    | AA                        | AA                         | DAA                       |
| 4                    | AA                        | AA                         | AA                        |

AA- Advise Against development

DAA – Don’t Advise Against development

(Source: HSE’s Land Use Planning Methodology)

**Table 3.9 Development sensitivities within each COMAH zone**

### List of documents informing this baseline:

- HSE Consultation Zones Vertellus Specialities Ltd
- HSE Methodolgy Advice note

3.252 The nature and amount of materials being developed and stored at the Vertellus Plant as well as its proximity to the East of Halewood area mean that the masterplan sits within the Outer Zone of the Major Hazard Installation consultation zone.

3.253 Based upon the HSE’s Land Use Planning Methodology, the East of Halewood area is identified as a “Development Type 2.1 x2 - larger housing developments of more than 30 dwellings”, giving it a sensitivity level of 3.

3.254 As the masterplan site sits within the Outer Development Zone and is identified as a level 3 sensitivity, the HSE’s advice would be to Don’t Advise Against Development, as identified in table 3.6.

3.255 The guidance above relates residential development within the COMAH zone however constraints apply to the development of any new schools within the Outer Zone. HSE guidance takes account of the inherent vulnerability of the exposed population and the ease of evacuation or other emergency procedures for the type of development proposed. Some categories of development e.g. schools are regarded as more sensitive than others due to the numbers of venerable people at risk. Schools, Nurseries and Creches, which exceed a total site area of 1.4ha are classified as having a sensitivity level 3 and would not be supported by the HSE.

3.256 The following plan outlines the extent of the Outer Zone and the limit of the Consultation Zone in relation to the masterplan boundary.

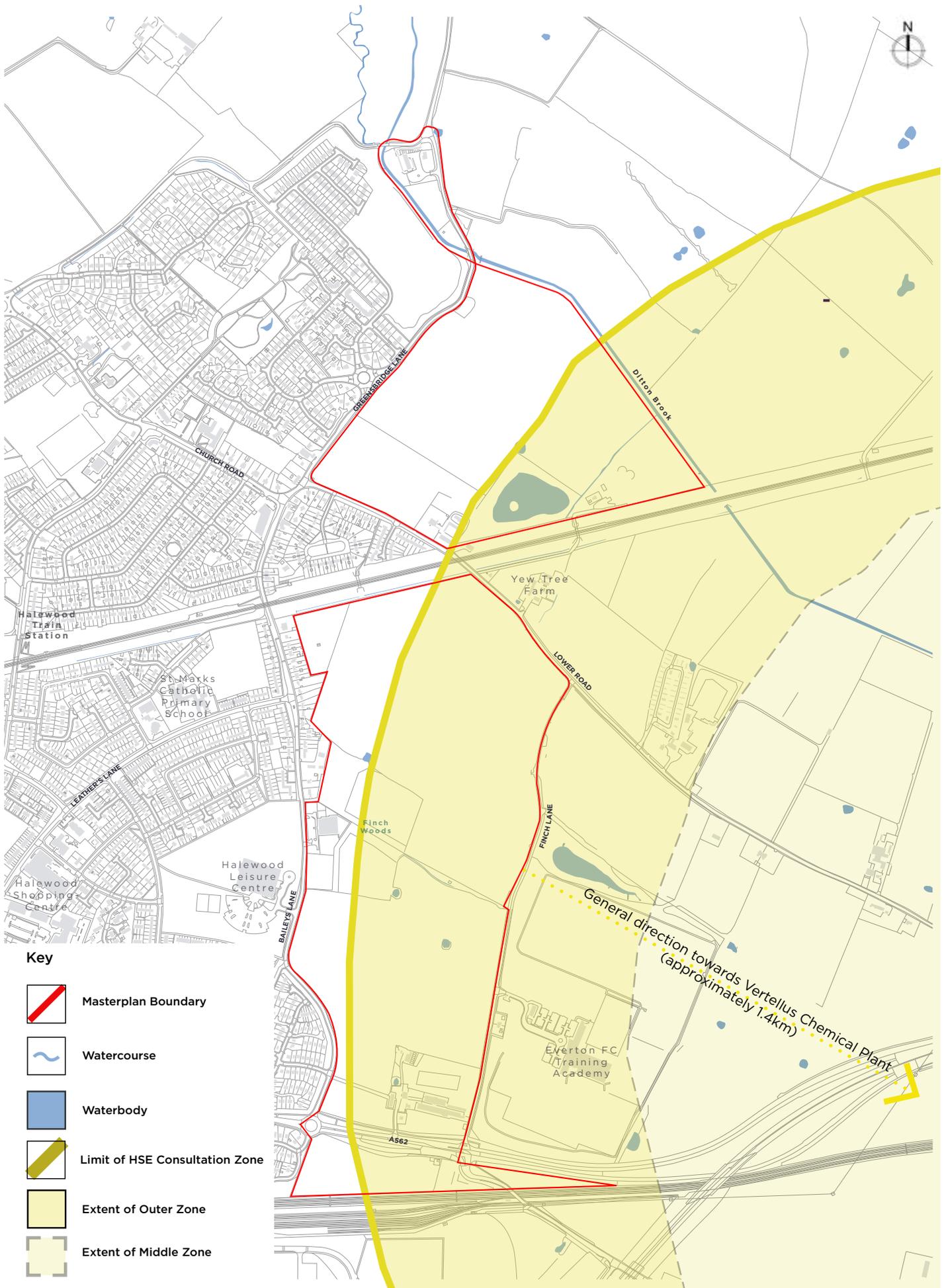


Figure 3.28 COMAH considerations

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## > Summary of land ownerships

# 04

4.1 The East of Halewood allocation currently comprises 19 land ownerships according to Land Registry data. This includes Finch Woods which is under KMBC ownership, as well as areas of unregistered / unidentified land ownerships.

4.2 A consortium of developers comprising of Bellway Homes, Miller Homes and Redrow Homes have engaged with a number of the landowners and have negotiated working under option agreements.

4.3 The scale and comprehensive coverage of the land ownerships has the potential to facilitate a connected and integrated development across the SUE. It is essential to consider and coordinate all land ownerships as part of a comprehensive approach.

4.4 The distribution of ownerships and current developer option agreements is illustrated on the adjacent land ownerships plan and described in the table below.

**Table 4.1 Summary of land ownerships**

| Parcel No.            | Current land owner                                  | Developer  | Area (Ha) | Current Use   |
|-----------------------|---|--|-----------|---|
| 1                     | Parcel A  | TBC  | 1.09      | Dog Rescue Centre   |
| 1                     | Environment Agency                                  | TBC  | 0.23      | Woodland  |
| 2                     | Parcel B  | Redrow Homes                                     | 15.71     | Agricultural use  |
| 2                     | Parcel C  | Bellway Homes                                    | 4.23      | Agricultural use and occupied dwelling  |
| 2                     | Scottish Power (Manweb Plc)                         | TBC (Bellway to acquire)                         | 0.02      | Electrical substation   |
| 2                     | United Utilities Water Ltd (west)                   | N/A  | 0.09      | Waste water pumping station   |
| 2                     | United Utilities Water Ltd (east)                   | N/A  | 2.46      | Waste water pumping station and scrub land  |
| 2                     | Parcel D  | TBC  | 2.40      | Occupied dwellings, fishing pond  |
| 3                     | Parcel E  | Redrow Homes                                     | 20.34     | Agricultural use<br>Scottish Power O/H 132KV Power Lines                              |
| 3                     | Parcel F  | TBC  | 0.97      | Scrub / woodland  |
| 3                     | Parcel G  | TBC  | 0.27      | Scrub / woodland      Occupied dwelling<br>(Baileys Lane)                             |
| 3                     | Parcel H  | Bellway Homes                                    | 12.28     | Former agricultural use   |
| 3                     | RSPCA Liverpool Branch                              | Miller Homes                                     | 4.57      | Pet rescue centre, Occupied dwellings,<br>Paddocks, Animal cemetery / Listed Building |
| 3                     | Knowsley Metropolitan Borough Council (Finch Woods) | N/A  | 3.95      | Woodland  |
| 3                     | Adelaide Academy Trust (KMBC Freehold)              | N/A  | 1.08      | SEND School   |
| 4                     | Hesketh Estate                                      | TBC  | 2.53      | Paddocks  |
| 4                     | Unregistered land (layby)                           | TBC (Developer who delivers Hesketh Estate Land) | 0.4       | Layby and verge   |
| 4                     | P Holmes Properties Ltd                             | N/A  | 0.15      | Mobile phone mast   |
| 4                     | Cheshire East Borough Council                       | N/A  | 0.71      | Scrub / woodland  |
| 4                     | Network Rail  | TBC  | 0.26      | Scrub / woodland  |
| N/A                   | Unregistered / Unidentified                         | N/A  | 0.46      |   |
| Between parcels 2 & 3 | Network Rail  | N/A  |           | Railway infrastructure and arches   |

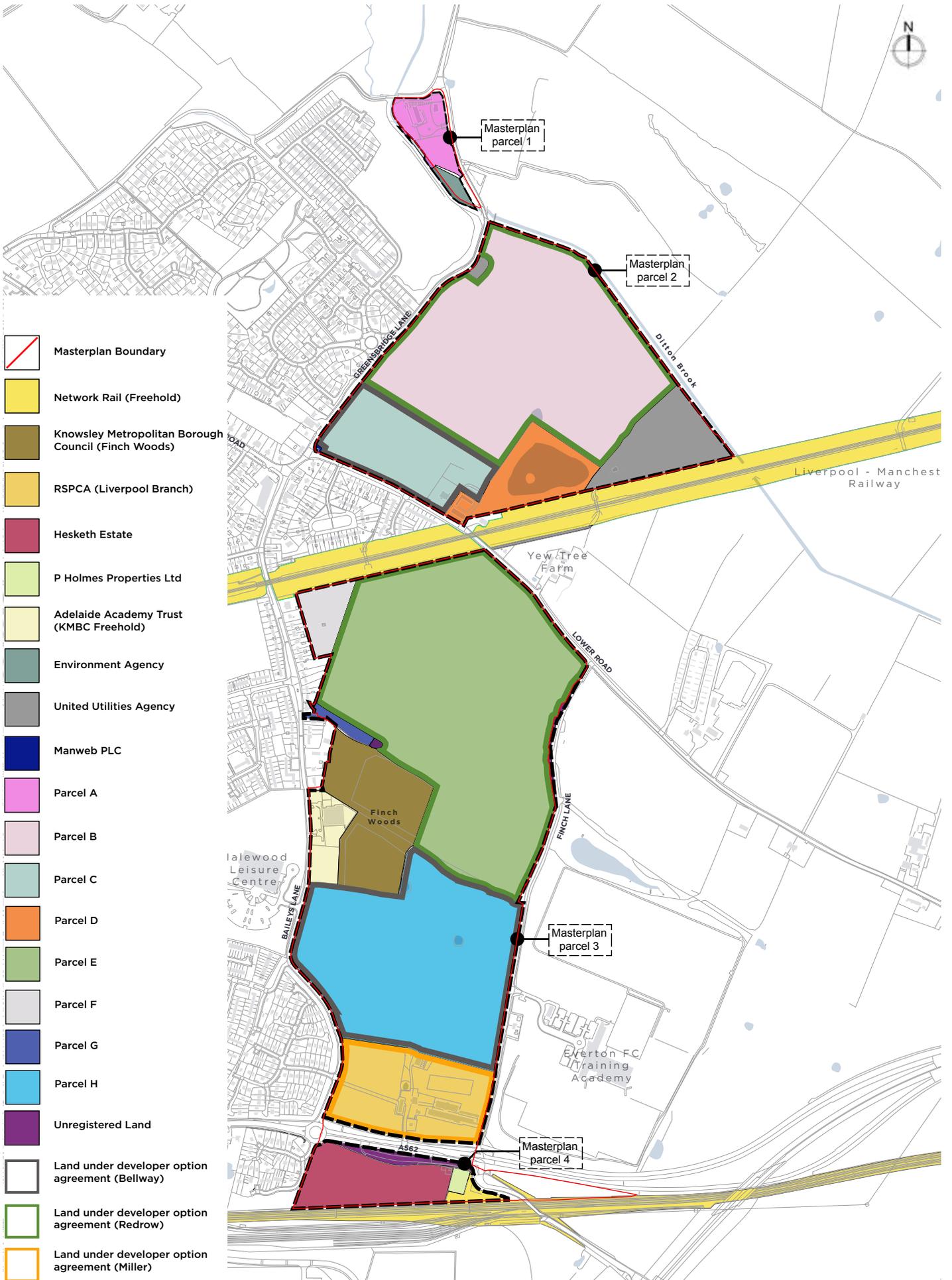


Figure 4.1 Existing land ownership

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### Introduction

5.1 Avison Young (formerly GVA) provided a residential market report on behalf of Knowsley Metropolitan Borough Council (KMBC) in relation to the proposed housing demand report for the recently allocated East Halewood Sustainable Urban Extension (SUE), the masterplan site. The following chapter provides the concluding findings from the main report.

5.2 For full details, please refer to *East Halewood Masterplan, Residential Market Report (July 2018)* by GVA.

5.3 The report has been compiled by GVA to provide baseline residential and commercial (A1, A4 & A5 uses) market analysis to inform the development of the East Halewood Masterplan currently under preparation.

5.4 Engagement with local agents and analysis of sales evidence indicates that Halewood has a reasonably high level of demand for all property types. Agents stated that the site is situated in one of the more favourable parts of Halewood.

5.5 The area is considered popular with families and those who have grown up locally but would also appeal to first time buyers if the appropriate accommodation was provided. Education is one of the main drivers for demand in the area with a number of respected schools situated locally. Halewood's transport links are thought to be another key driver with easy access to the M57 and M62 motorways as well as Halewood train station which provides hourly services to Liverpool Lime Street and Manchester Oxford Road.

5.6 'Goddard Chase' by Countryside is the only recent development within the area and provides the greatest indication of current market conditions. Overall, the scheme has been well received with an average sales rate of 5 properties per calendar month. The scheme is achieving an average net sales value of circa £222 per sq ft.

5.7 Considering this, it is anticipated that average sales prices could range from £205 - £240 per sq ft across the East Halewood masterplan site. It is anticipated that the average open market sales rate per housebuilder would equate to 4 units per calendar month, equivalent to 48 units per annum.

## Role of East Halewood within the South Liverpool Market

5.8 The south Liverpool residential market is dominated by high value, owner occupied housing set in attractive residential areas such as Mossley Hill, Allerton, Childwall, Gateacre and Woolton.

5.9 The East of Halewood Sustainable Urban Extension will create a desirable residential community, acting as a natural extension to the south Liverpool residential market as well as the gateway to Halewood.

5.10 Housebuilders have suggested that development will mainly comprise 3 and 4 bedroom units thereby facilitating the supply of much needed family homes in the area and enhancing the local housing offer.

5.11 The development will also provide an opportunity to those who cannot necessarily afford to purchase in the high value areas of south Liverpool.

## Potential to close gaps in value versus south Liverpool market

5.12 Local and relocating families in the south Liverpool market are encouraged by the good school catchment area, good transport links and facilities nearby.

5.13 Values on the 'Goddard Chase' scheme by Countryside have risen considerably, indicating potential to further enhance values with the successful delivery of the subject site.

5.14 Morris Homes 'Ollerton Grange' scheme in Allerton is currently achieving/asking values in the range of £220 - £235 per sq ft. The values being achieved at 'Goddard Chase' by Countryside are comparable. The delivery of larger detached family homes will increase sales values within the Halewood area.

5.15 Other factors such as amenities, educational offer and good transport links also bridge the gap between the south Liverpool market and Halewood.

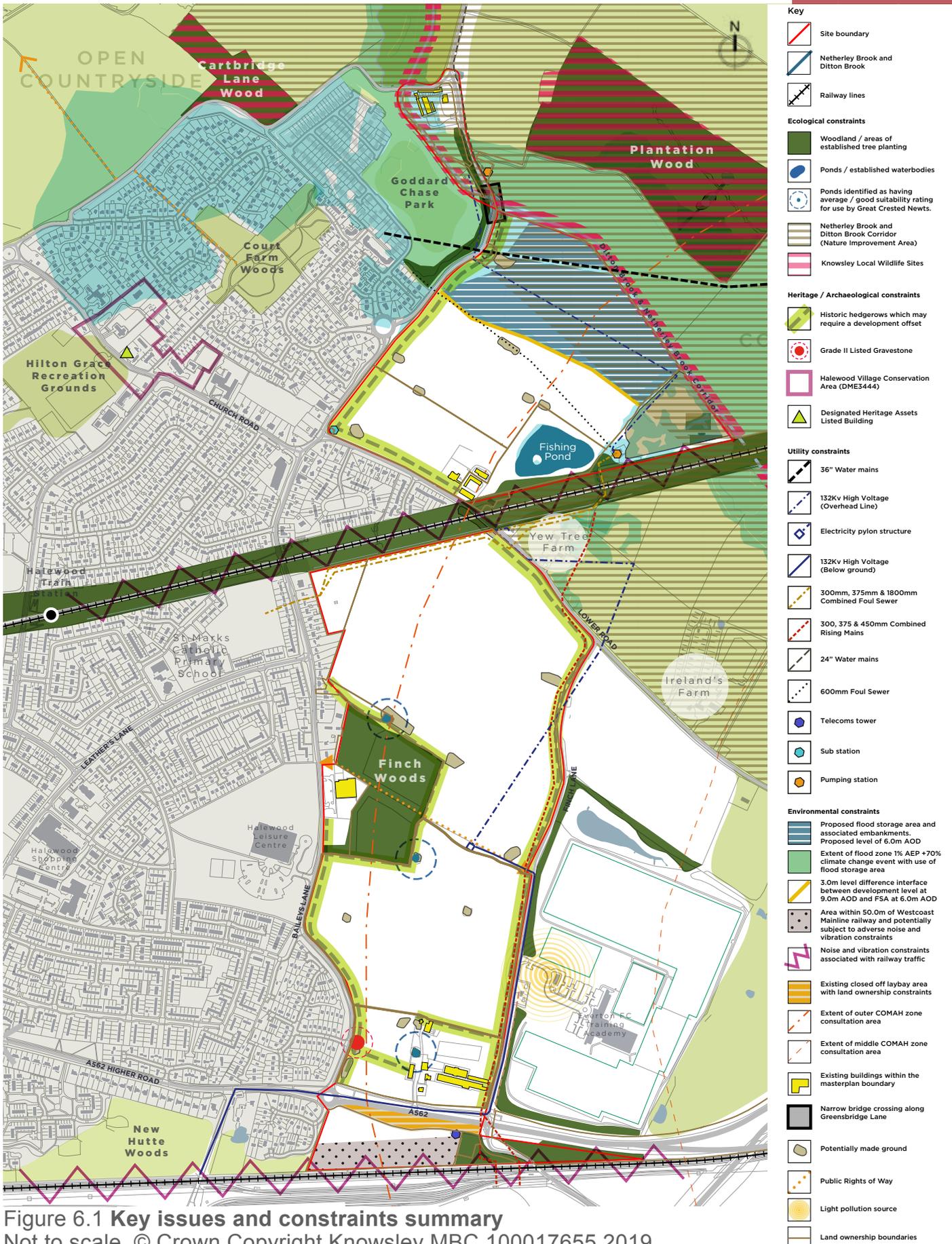


Figure 6.1 Key issues and constraints summary  
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Table 6.1: **Summary of issues and constraints**

| Theme           | Summary of constraints   |
|-----------------|--|
| Geo-environment | <ul style="list-style-type: none"> <li>• some localised areas of made ground around the existing in-filled ponds</li> </ul>  |
| Noise           | <ul style="list-style-type: none"> <li>• likely noise impacts from the surrounding existing highway infrastructure, namely the A562 Higher Road;</li> <li>• the two railway lines will have a noise and vibration impact upon the site;</li> <li>• the Hesketh Land parcel, to the south of the site, is most likely impacted by noise and vibration impacts from the West Coast Mainline. The current baseline position assumes that a 50m offset is created from the railway line as an area where typical, residential development could not be delivered without mitigation to form / building openings / acoustic screening and bunding. This serves as a baseline position until further, more detailed assessments are carried out;</li> <li>• the Merseyside Dogs Home as a continuing noise source if it remains in situ;</li> <li>• the phased closure of the RSPCA site may cause noise issues associated with its current use if it continues until its closure whilst future residential development is delivered simultaneously;</li> <li>• the Everton Training Academy training pitches are a source of noise when in use as well as a light pollution source when the floodlights are in use.</li> </ul>  |
| Air Quality     | <ul style="list-style-type: none"> <li>• a range of potential sensitive receptors identified in close proximity to the site. These are subject to a more detailed assessment through future planning applications;</li> <li>• potential for adverse air quality impacts arising from construction process and during site occupation caused by exhaust emissions.</li> </ul>   |
| Utilities       | <ul style="list-style-type: none"> <li>• the overhead (o/h) 132KV power line runs north-easterly across the site, crossing Lower Road and the Liverpool – Manchester railway line and United Utilities compound. It runs below ground from the PRoW and along Finch Lane and southwards to Jaguar Land Rover and requires a 5m setback. If the o/h section of the powerline is to remain in situ, it severs the potential developable area and creates challenging visual and built form relationships with new residential development and open spaces;</li> <li>• 36” Rising Main steel pipe runs along the northern parcel of the site. This is identified by United Utilities as a significant piece of infrastructure, with substantial challenges facing it’s diversion or alteration. If it is to remain in situ an 8m easement strip is required;</li> <li>• combined foul sewer runs to the southern extent of the Manchester - Liverpool railway - requires 10m setback from the rail line, within which a 7m protective strip is required;</li> <li>• combined Rising Mains run along the eastern boundary of the site, to the west of Finch Lane and require a 7m protective strip;</li> <li>• extra High voltage power line runs along the northern extent of the northern parcel, crossing Greensbridge Lane and the smaller western parcel;</li> <li>• foul wastewater pipe runs east-west through the northern parcel of the site to a pumping station before passing along the northern boundary of the central parcel. A 7m easement strip is required;</li> <li>• sub station located at south-west corner of northern parcel occupying a visually prominent part of the parcel. Initial discussions with Scottish Power suggest that this could be relocated to the centre of the new load generating area;</li> </ul> |

Table 6.1: Summary of issues and constraints (cont.)

| Theme                             | Summary of the constraints  |
|-----------------------------------|---|
|                                   | <ul style="list-style-type: none"> <li>• responses from utility providers have indicated that new development will require network upgrades and reinforcement will be required which will incur costs to complete;</li> <li>• plans for the future use of the United Utilities compound is currently unknown and creates visual issues when considered in proximity to residential development. This facility will require continued access by United Utilities;</li> <li>• a telecommunications tower is located to the south of Lower Road, within the southernmost land parcel.</li> </ul>   |
| <p>Flood Risk &amp; Drainage</p>  | <ul style="list-style-type: none"> <li>• flood zones 2&amp;3 encroaches significantly into the northern parcel from the Ditton Brook;</li> <li>• flood Modelling work has been undertaken by Waterco to reduce the area affected by 1:1000 (+ 70% for climate change) flood event. The mitigation approach is to create a Flood Storage Area to the south of the Ditton Brook at 6m Above Ordnance Datum (AOD). The created development area is raised out of the flood risk area and sits at a level of 9m AOD;</li> <li>• the embankments along the Ditton Brook, which are recognised as major flood defences in the area, are identified as being in very poor condition.</li> </ul>  |
| <p>Heritage &amp; Archaeology</p> | <ul style="list-style-type: none"> <li>• grade II listed building, along the western edge of the southern parcel along Baileys Lane, is identified as the grave of 'Blackie the Warhorse';</li> <li>• historic hedgerows identified along boundaries of northern and central parcels;</li> <li>• the master plan should consider the development response in relation to buildings with local historic interest, both within and beyond the site. These include historic buildings within the RSPCA parcel (such as remaining barn elements of an 18th century farm and a pet cemetery) as well as the adjacent Conservation Area to the west of the site and a number of historic properties along Baileys Lane;</li> <li>• the assessments have also considered the potential for as-yet to be discovered archaeological assets within the site.</li> </ul>   |
| <p>Transport</p>                  | <ul style="list-style-type: none"> <li>• limited potential for pedestrian connection between parcels due to infrastructure barriers, namely the elevated position of the Liverpool – Manchester railway line and its associated embankment;</li> <li>• A562, Finch Lane/Higher Road junction is restricted in terms of site access potential. It also creates a significant barrier to pedestrian connectivity between the southernmost parcel of land and the current RSPCA land. There are no footpaths on Finch Lane north of Finch Farm access. Similarly there is limited pedestrian footpath provision along Greensbridge Lane and Lower Road, with footpath provision on one side;</li> <li>• existing properties fronting along Baileys Lane limit access to the parcel Existing Public Right of Way cuts across central parcel from Leisure Centre/ Baileys Lane towards Finch Lane;</li> <li>• signalised narrow bridge with no pedestrian facilities on Greensbridge Lane;</li> <li>• a package of off site junction and route improvement works will be required in order to mitigate against the impacts of new development;</li> <li>• local bus services to East of Halewood run along Baileys Lane until Leathers Lane, excluding the southern portion of the master plan. Areas to the south eastern corner of the master plan are currently beyond a 10 minute walk to Halewood train station. The frequency of services to and from Liverpool and Manchester to the station is low.</li> </ul> |

Table 6.1: Summary of issues and constraints (cont.)

| Theme     | Summary of the constraints   |
|-----------|--|
| Ecology   | <ul style="list-style-type: none"> <li>• Invasive species have been noted on the site and a Management Plan is advised;</li> <li>• the Netherley Brook and Ditton Brook Corridor is allocated as a Nature Improvement Area (NIA) which looks to incorporate ecological priorities including habitat creation and management. The master plan should look to avoid development within the NIA and a development buffer will be required from the NIA in response to ecological habitats within the corridor. The specific type buffer enhancements will depend upon the form and scale of development proposed within the master plan;</li> <li>• existing ponds have been identified as potential habitats for protected species and further investigation will be required;</li> <li>• finch woods, pocket of woodland to East of Leathers Lane/Baileys Lane and rail corridor with broadleaf and deciduous species identified as potential habitats;</li> <li>• the Netherley Brook and Ditton Brook are also designated as Local Wildlife sites as it provides habitat for water vole. Cartbridge Lane Wood is also designated as it is a broadleaf woodland which supports Bluebell as well as reports of Water Vole.</li> </ul> |
| Landscape | <ul style="list-style-type: none"> <li>• existing woodland and historic hedgerows serve as landscape features across the site;</li> <li>• Nature Improvement Area along the Ditton Brook encroaches into northern parcel. Consideration to the provision of an adequate buffer will be required.</li> </ul>  |
| Townscape | <ul style="list-style-type: none"> <li>• the master plan should consider how future development will integrate with its existing edges, which range from existing residential development along Higher Road, properties which back onto the site from Baileys Lane as well as Finch Woods Academy and the character of Finch Lane;</li> <li>• the existing built form of East of Halewood faces away from site. Combined with the presence of high, historic hedgerows, the master plan must consider how future development can become part of an overall cohesive environment across East of Halewood.</li> </ul>  |
| COMAH     | <ul style="list-style-type: none"> <li>• the majority of the site falls under regulations as set out under the Control of Major Accident Hazards (COMAH) consultation zone. Residential development is identified as level 3 sensitivity ('Do not advise against'), however schools, nurseries and creches, which exceed a total site area of 1.4ha are classified as having a sensitivity level 3 and would not be supported by the HSE. Restrictions would also apply to institutional residential uses such as extra care or residential care home.</li> </ul>  |

Table 6.1: Summary of issues and constraints (cont.)

| Theme             | Summary of the constraints   |
|-------------------|--|
| Education         | <ul style="list-style-type: none"> <li>Halewood has a wide range of schools and nurseries, including a secondary school, six primary schools and numerous nurseries, as well as Finch Woods Academy, a SEND school within the East of Halewood site. Schools within Liverpool also provide spaces for children living in Halewood.</li> <li>Capacity in the three nearest primary schools to the site - Plantation, St.Mark's and Halewood CofE - is limited. To meet need arising from the development for primary and early years' places, extended capacity will be needed.</li> </ul>  |
| Health            | <ul style="list-style-type: none"> <li>Halewood is well served by existing GP surgery facilities, and by nearby hospitals in Whiston and Liverpool.</li> <li>To meet additional GP service demand arising from the East of Halewood site, additional surgery capacity will be required.</li> </ul>   |
| Public Open Space | <ul style="list-style-type: none"> <li>Halewood generally is well served by a number of public open spaces, across the Parks and Gardens, Amenity Greenspace, Children and Young People, and Allotment typologies. However, parts of Halewood suffer a deficit in different typologies; nearest to the East of Halewood site, there is a particular shortage of Parks and Gardens spaces. The East of Halewood site will need to be self-sufficient in public open space, against the Council's standards for provision.</li> <li>Finch Woods public open space is within the site, and must be retained for this use. The area is currently under used, with poor public access and surveillance, and under-maintained woodland areas dominating the site.</li> <li>Halewood Community Area contains a number of outdoor sports facilities, including those directly adjacent to the site at Halewood Leisure Centre, and the proposed community pitches north of Everton's Finch Farm Academy. Against the Council's standards, there is a deficit of pitches in the area, which means the East of Halewood development will need to make a contribution towards the provision of new/improved pitches.</li> </ul> |



Figure 6.2 View along Baileys Lane

# Key opportunities

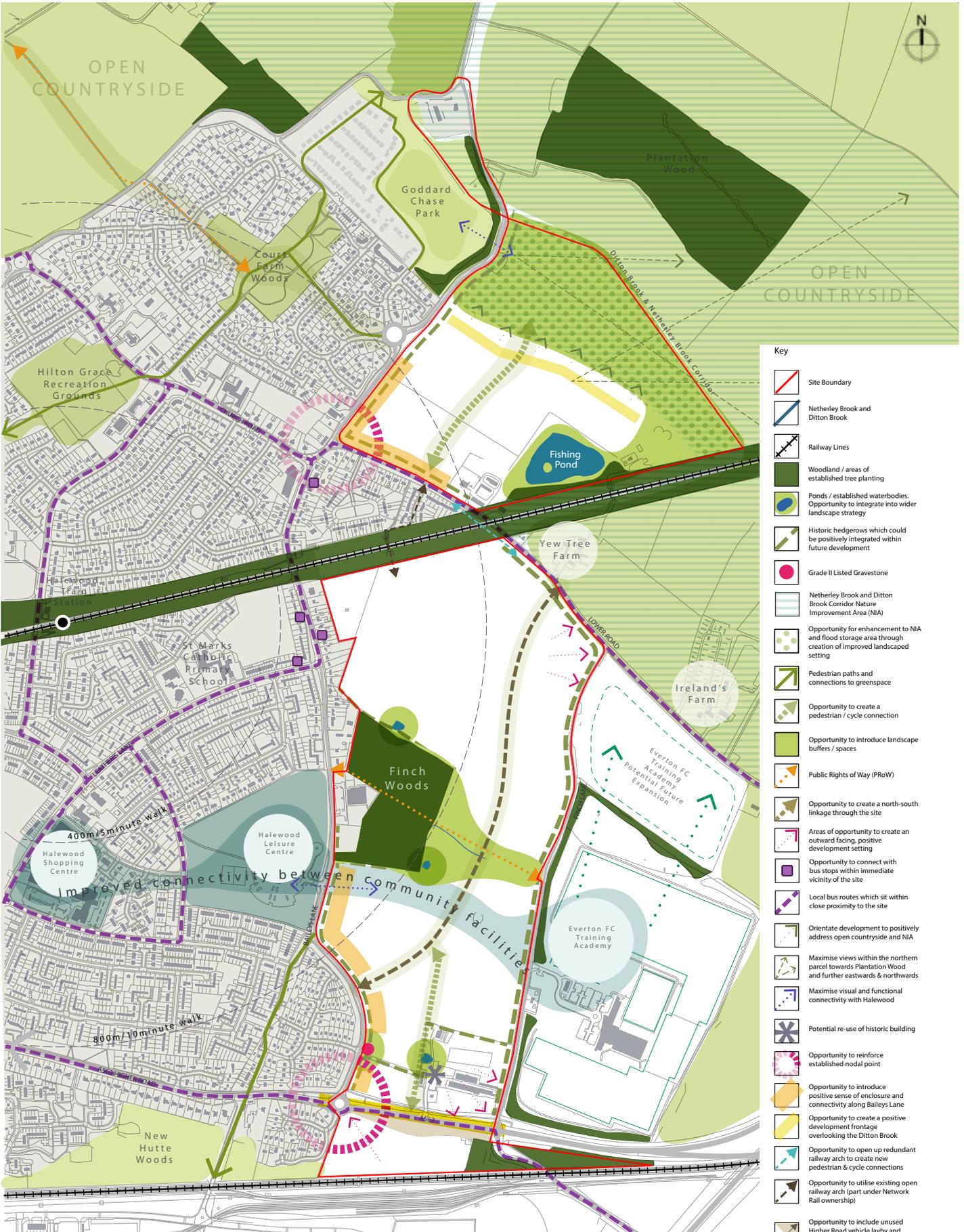


Figure 6.3 Key strengths and opportunities summary  
 Not to scale. © Crown Copyright Knowsley MBC 100017655.2019

Table 6.2: Summary of key opportunities

| Theme                  | Key opportunities to be maximised   |
|------------------------|---|
| Geo-environment        | <ul style="list-style-type: none"> <li>relatively flat, previously undeveloped site with limited underground constraints identified, allowing for flexibility in the provision of developable areas across the site;</li> <li>ground conditions favourable for typical residential foundations.</li> </ul>  |
| Noise                  | <ul style="list-style-type: none"> <li>noise constraints across the majority of the site can be overcome through a range of mitigation measures, including landscape bunds if necessary. Potential to successfully incorporate bunding into a wider, cohesive landscape structure.</li> </ul>   |
| Air Quality            | <ul style="list-style-type: none"> <li>generally good air quality within the study area, with air quality monitoring confirming that there were no exceedances of the relevant air quality standards in this location.</li> </ul>   |
| Utilities              | <ul style="list-style-type: none"> <li>main utility constraints run through north parcel where development stand-off is already likely to be required for flood risk and Nature Improvement Area mitigation reasons;</li> <li>ongoing discussions with utility providers are underway and an agreement to the principle to divert and underground the 132KV overhead cables has been reached. This maximises the available developable land and reduces the risk of unsightly and visually dominant power cables;</li> <li>ongoing discussions with utility providers are underway to relocate the existing substation on the corner of Greensbridge Lane and Lower Road to a more suitable location;</li> <li>existing network of services in close proximity to the site providing a variety of viable connection points to the existing network infrastructure.</li> </ul> |
| Flood Risk & Drainage  | <ul style="list-style-type: none"> <li>very low risk of flooding (Flood Zone 1) across the site area south of Lower Road;</li> <li>only localised areas of surface water flooding due to localised depressions in the land form, which can be regraded through future development;</li> <li>potential to use the proposed Flood Storage Area to create an improved landscape setting and potentially an area for ecological / habitat improvement along the Ditton and Netherley Brook corridor and within the Nature Improvement Area;</li> <li>opportunity to establish a connected Surface Water Drainage Strategy across the entirety of the site, which is integrated with the landscape framework and a potential exemplar in surface water drainage management.</li> </ul>   |
| Heritage & archaeology | <ul style="list-style-type: none"> <li>opportunity to celebrate the location and local heritage of the Grade II Listed 'Blackie the Warhorse' structure, improving its setting and visual prominence;</li> <li>opportunity to consider the re-use the 18th barn as part of the RSPCA site as part of new development proposal</li> </ul>  |
| Transport              | <ul style="list-style-type: none"> <li>reconsider role and nature of Baileys/Greenbridge Lane, around the Leisure Centre and the junction with Greensbridge Lane and Lower Road, to establish a stronger relationship with rest of Halewood and help to redefine the currently disjointed urban character along Baileys Lane and Lower Road.</li> <li>work the existing PROW into a new pedestrian and cycle movement network across the entirety of the site;</li> <li>potential to draw upon or reinforce the accessible existing public transport links serving existing residents and Halewood Local Centre;</li> <li>opportunity to close Higher Road layby to the north of Hesketh land parcel and consolidate the land gained for future development as part of the Hesketh land parcel;</li> </ul>  |

Table 6.2 Summary of key opportunities (cont.)

| Theme     | Key opportunities to be maximised  |
|-----------|--|
| Transport | <ul style="list-style-type: none"> <li>• open up a currently redundant railway arch adjacent to Lower Road to create a pedestrian and cycle connection between the northern and southern master plan parcels;</li> <li>• opportunity to re-configure Higher Road and provide junction upgrades to reduce vehicle speeds, to better manage vehicle movements and conflicts as well as improving the character of the highway in response to future development coming forward. As part of the proposals, improved accessibility could also be achieved for the Hesketh parcel.</li> </ul>   |
| Ecology   | <ul style="list-style-type: none"> <li>• the existing Finch Woods and ponds are potential features that the development can react to, creating areas of interest and character within the master plan, which sit within a coherent landscape structure;</li> <li>• usage of the Flood Storage Area to create an improved landscape setting and potentially an area for ecological / habitat improvement along the Ditton Brook and within the Nature Improvement Area.</li> </ul>  |
| Landscape | <ul style="list-style-type: none"> <li>• Finch Woods can sit at the heart of a landscape structure across the master plan. The woods could be redefined, altered and improved to provide a positive, high quality landscape destination within the master plan for new and existing residents of Halewood to enjoy;</li> <li>• the existing PROW could form basis for new green corridors;</li> <li>• historic hedgerows can be worked into the scheme to provide visual shelter from busier roads which surround the master plan;</li> <li>• the Flood Storage Area can serve a dual purpose in providing an improved landscape setting for future development, which provides a buffer area to the Ditton Brook, as well as creating positive visual amenity to the north, complementing long range views towards Plantation Wood;</li> <li>• long range views from the northern portion of the site are framed by Plantation Wood and could offer an attractive setting for future development;</li> <li>• opportunity to widen the existing central reservation along Higher Road to allow create a more substantial landscaped / planted feature as part of potential improvements to Higher Road.</li> </ul> |
| Townscape | <ul style="list-style-type: none"> <li>• existing strong boundaries to the site can be worked into development form;</li> <li>• lack of any overriding architectural style or built character in the surrounding area and the positive acceptance of recent new development offers the opportunity to define a distinctive new character for East of Halewood, through the delivery of good quality, modern housing;</li> <li>• some architectural detailing cues visible from historic barns and cottages in the area, could be re-interpreted and integrated within the design finishes of the new forms of housing, as an acknowledgement of the local vernacular of Halewood;</li> <li>• opportunity to establish positive edges to the site, namely along Higher Road, Lower Road, Finch Lane and Greensbridge Lane, creating an arrival experience to Halewood Village from the east;</li> <li>• opportunity to redefine the character of Baileys Lane through the introduction of new development frontage which is orientated onto the existing street;</li> </ul>   |

Table 6.2 Summary of key opportunities (cont.)

| Theme             | Key opportunities to be maximised  |
|-------------------|--|
| Townscape Cont.   | <ul style="list-style-type: none"> <li>• opportunity to introduce higher density development at each end of Higher Road, establishing a gateway and built form presence onto this approach link to East of Halewood;</li> <li>• opportunity to introduce higher density development at each end of Higher Road, establishing a gateway and built form presence onto this approach link to East of Halewood;</li> <li>• future development should positively address Finch Woods and incorporate it within the wider master plan. There is an opportunity for the townscape response along Finch Woods to create a unique placemaking character through the use of a larger format, more bespoke dwelling type that fronts onto the woodland.</li> </ul>  |
| Education         | <ul style="list-style-type: none"> <li>• The development of the East of Halewood site brings significant opportunities for investment and expansion of existing primary schools and early years' facilities in Halewood.</li> </ul>  |
| Health            | <ul style="list-style-type: none"> <li>• New GP services can be provided at existing health care sites, including the Halewood Centre which is a short walk and easily accessible from the East of Halewood site.</li> <li>• There are other opportunities to incorporate health-focussed initiatives within the East of Halewood site, including walking/cycling routes and recreation opportunities.</li> </ul>  |
| Public Open Space | <ul style="list-style-type: none"> <li>• Finch Woods is an existing public open space within the site that offers a significant opportunity for investment and upgrading, to better serve existing and new residents.</li> <li>• The extent of other public open spaces required within the site, including for drainage, easements and attenuation purposes, presents a significant opportunity for delivery of new green infrastructure and connected public open spaces.</li> <li>• Halewood Leisure Centre is directly adjacent to the site, offering a variety of sporting and leisure activities. The centre has proposals to expand its offer to include indoor play uses and new outdoor sports facilities. The Leisure Centre sits within a large landscaped sites, offering further opportunities for investment and upgrading of facilities.</li> </ul> |

› **Appendix A**

**Gazetteer of the designated and non-designated heritage assets**



| Reference Number                                      | Name & Description   | Date                     |
|---|--|--------------------------|
| Heritage Assets found within the master plan boundary |  |                          |
| <b>Designated Assets</b>                              |  |                          |
| DME3444   | <b>Halewood Village Conservation Area</b>  |                          |
| DME97   | <b>Church of St Nicholas - Grade II Listed Building.</b><br>1839, enlarged 1847 with tower in 1882-3. Anglican church by AY and G Williams of Liverpool. Coursed red sandstone, slate roofs, tiled ridge crests, sandstone copings and kneelers, lead-lined timber rainwater goods. Early English style. Windows by Burne-Jones and William Morris   | Victorian                |
| MME15159  | <b>Gravestone of Blackie the War Horse, Baileys Lane - Grade II Listed Building.</b><br>Erected c. 1942. Gravestone to Blackie the War Horse who served during WWI and was ridden by the wartime poet Lieutenant Leonard Comer Wall  | 20 <sup>th</sup> Century |
| <b>Monuments</b>                                      |  |                          |
| MME5972   | <b>Site of Finch Farm, Finch Lane</b><br>Mid-late 19th century, brick-built two storey house and farm buildings first seen on the OS map of 1893 and labelled Finch Farm. The buildings were demolished in 2005  | Post Medieval            |
| MME5973   | <b>Former Barn of Lodge Farm, Finch Lane</b><br>18th Century, first seen on Stanley's Derby Estate Plan of 1783 and on the Tithe map of 1843 and labelled Cross Farm on the OS map of 1843. By OS map of 1893 it is labelled as 'Lodge Farm', and the barn was part of a separate property to what had been its farmhouse just to the north. By 1938 the property belonged to the Liverpool Branch of the RSPCA, and the Horses' Rest was re-located from a farm in Bowring Park to Lodge Farm. In 1982 all of the areas's RSPCA accommodation for dogs and cats was relocated to this facility. | Post Medieval            |
| MME5974   | <b>Site of Finch House Farmhouse, Finch Lane</b><br>18th century, first seen on Stanley's Derby Estate Plan of 1783 and on Tithe map of 1843 and labelled Finch House on the OS map of 1849. The buildings were demolished after 1949  | Post Medieval            |
| MME5975   | <b>Site of Barn at Finch House, Finch Lane</b><br>Late 18th century, first seen on Stanley's Derby Estate Plan of 1783 and on the Tithe map of 1843. It last appears on the OS map of 1849   | Post Medieval            |
| MME5976   | <b>Site of a House at The Cottage, Higher Road</b><br>Late 18th century house seen on Stanley's Derby Estate Plan of 1783, but it was not part of the Derby Estate and on the Tithe map of 1843. Last seen on OS map of 1936 and replaced on OS map of 1966 by The Cottage   | Post Medieval            |
| MME5977   | <b>Site of a House, Higher Road</b><br>Mid-19th century house seen on the Tithe map of 1843 but not on Hennet's map of 1829. Last seen on OS map of 1963   | Post Medieval            |
| MME5978   | <b>Site of a House, Aldersgate Drive</b><br>Mid-19th century house seen on the Tithe map of 1843 but not on Hennet's map of 1829. Last seen on OS map of 1893  | Post Medieval            |
| MME5979   | <b>Site of a House, Old Hutte Lane</b><br>Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1938   | Post Medieval            |
| MME5980   | <b>Site of a Cottage, Old Hutte Lane</b><br>Seen on Stanley's Derby Estate Plan of 1783, but it was not part of the Derby Estate, and the Tithe map of 1843. Last seen on OS map of 1849   | Post Medieval            |
| MME5981   | <b>Site of a Tithe Barn, North Road</b><br>In the lists of Lands of the Dissolved Religious Houses, 1536-7, an entry appears under the Priory of [Up]Holland listing their various holdings; included in this list is 'Hale Barne with the Tithes of corn belonging to them.' Seen on Stanley's Derby Estate Plan of 1783, but it was not part of the Derby Estate, and the Tithe map of 1843 as 'Tithe Barn Hey'. Last seen on OS map of 1849   | Post Medieval            |
| MME5982   | <b>Site of a Farm, junction of Old Hutte Lane and North Road</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783, but it was not part of the Derby Estate, and the Tithe map of 1843. Last seen on OS map of 1949  | Post Medieval            |
| MME5983   | <b>Apostle Spoon Fragment</b><br>Handle of a lead apostle spoon  | Medieval                 |
| MME5984   | <b>Silver Penny of Edward I</b>  | Medieval                 |
| MME5985   | <b>Site of Lodge Farm, Higher Road</b><br>Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Labelled 'Cross Farm' on OS map of 1849 and this building, the barn to the north and the house further north were all one property. By 1893 it was labelled 'Lodge Farm' and this building and the barn were of a separate property. By 1938 it belonged to the RSPCA. The building was last seen on the OS 1968 map but the barn survives  | Post Medieval            |

|         |  |               |
|---------|--|---------------|
| MME5986 | <b>Silver Penny of Edward I, north of Finch Farm</b>   | Medieval      |
| MME5987 | <b>Site of an Outbuilding of Finch House, Finch Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783. Last seen on Greenwood's map of 1818   | Post Medieval |
| MME5988 | <b>Farmhouse, Yew Tree Farm, Lower Road</b><br>Building is shown on Stanley's Derby Estate Plan of 1783 and the Tithe Map of 1843  | Post Medieval |
| MME5989 | <b>Site of Derby Arms Inn, junction of Church Road and Baileys Lane</b><br>Mid-19th century. Not shown on Hennessey's map of 1829 but on the Tithe map of 1843 as a public house. Last seen on OS map of 1927. Replaced by a larger building on 1938 OS map  | Post Medieval |
| MME5991 | <b>87 Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 (not part of the estate) and the Tithe map of 1843.   | Post Medieval |
| MME5992 | <b>Barn or outbuilding to 87 Baileys Lane</b><br>Early 19th century. Seen on Greenwood's map of 1818 and still a functioning building  | Post Medieval |
| MME5993 | <b>Nos. 1-4 Greenbridge Lane</b><br>Row of cottages shown on Stanley's Derby Estate Plan of 1783, and on the Tithe map of 1843   | Post Medieval |
| MME5994 | <b>Site of a House, Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1849  | Post Medieval |
| MME5995 | <b>Site of Outbuilding, Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1849  | Post Medieval |
| MME5996 | <b>Site of a Cottage, Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1927  | Post Medieval |
| MME5997 | <b>Site of Roseheath Farmhouse, Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1849  | Post Medieval |
| MME5998 | <b>Site of a Cottage, Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1955  | Post Medieval |
| MME6000 | <b>Site of a row of Cottages, Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843 as four cottages. Last seen on OS map of 1907   | Post Medieval |
| MME6001 | <b>Site of the first farmhouse, The Hayes, Lower Road</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1849 and had been replaced by the OS 1893 by the current farmhouse   | Post Medieval |
| MME6006 | <b>Site of Halewood Brewery (Court Farm) off Court Avenue</b><br>Late 18th century, demolished in the 1970s. A site visit carried out in 1981 established that the main brewery building was next to what was then a pond, and could be recognised by brick and concrete footings visible in the undergrowth. Concrete paths between the buildings also survived and a small area of cobbled pathway between where two eastern outbuildings had been. The area was included in the Local Development Plan as an area to be retained while housing developments were built to the west. Seen on Stanley's Derby Estate Plan of 1783, although not part of the Estate. It is labelled 'Brewery' on Hennessey's map of 1829 and the Tithe map of 1843 | Post Medieval |
| MME6007 | <b>Nos. 46-48 Church Road</b><br>The building first appears on the OS map of 1849 where it is labelled as 'Church School,' and by the time of the OS map of 1893, when two other buildings had been erected to the north and northwest of this building, it was labelled as 'Schools.' By the time of OS mapping dating to 1959 it was labelled as 'Halewood Church of England Primary School', but when OS mapping dating to 1984 was produced it was a 'Hall.' It seems to have been converted into a private dwelling by the time of OS mapping dating to 1990  | Post Medieval |
| MME6008 | <b>Eagle and Child Inn, Church Road and Court Avenue</b><br>The building is shown on Stanley's Derby Estate Plan of 1783, and on the Tithe map of 1843 it is labelled as 'Eagle and Child'. The modern extension had not been built at the time OS mapping dating to 1967 was produced, but it is shown on OS mapping dating to 1977   | Post Medieval |
| MME6009 | <b>Site of Cart Bridge, Cartbridge Lane</b><br>18th century bridge. A site visit carried out in 1981 recorded that 'the bridge spans are now concrete, but on the southern side they abut onto a sandstone wall section at the western end with concrete set into its base. The western end of the north side abuts onto a low octagonal sandstone pier of blocks. The sandstone wall to the south may be material reused from a sandstone pier.' Seen on Stanley's Derby Estate Plan of 1783 as   | Post Medieval |

|          |   |                          |
|----------|---|--------------------------|
|          | a road crossing Netherley Brook, and it is labelled 'Cart Bridge' on the Tithe map of 1843. Last seen on OS map of 1849   |                          |
| MME6010  | <b>Site of a Possible Moated Site, near The Court, Court Avenue</b><br>Potential earthwork was recorded in 1981, comprising two ploughed out banks c. 0.1m high, the south-west one c. 2m wide, the north-west one c. 4 - 5m wide. The north-east side was formed by a possible natural break in slope of c. 0.5m which might have formed part of the hedge line across the field as shown on the 1st edition 6" OS map of 1849. A large amount of pottery, small glass bottles and occasional 20th century tile fragments was recovered  | Medieval - Post Medieval |
| MME6011  | <b>Site of a Farm, Court Avenue</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 as two buildings, although not part of the Estate, and the Tithe map of 1843. Last seen on OS map of 1849   | Post Medieval            |
| MME6012  | <b>No. 2 Hollies Road</b><br>No. 2 Hollies Road (formerly called Hollies), shown on Stanley's Derby Estate Plan of 1783, but was not part of the estate. It is shown and labelled as 'Smithy' on Hennet's map of 1829. It has no label on the OS map of 1849, and by the time of the OS map of 1893 it was the 'Hollies,' and a smithy was located on the opposite side of Church Road  | Post Medieval            |
| MME6013  | <b>Site of a Smithy, Eagle and Child Inn, Church Road</b><br>Former site of a smithy which replaced an earlier smithy at the Hollies on the opposite side of Church Road (MME6016). First seen on OS map of 1893 but no longer labelled on OS map of 1927 and last appeared on OS map of 1966   | Post Medieval            |
| MME6015  | <b>Possible Coin, NE of The Hayes</b><br>Small round, possible copper alloy coin  | Unknown                  |
| MME6016  | <b>Site of a Smithy, Hollies Road</b><br>Former site of a smithy attached to the Hollies. Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Not labelled on the OS map of 1849 and by the OS map of 1893 it was simply the 'Hollies' with a smithy located on the opposite side of Church Road  | Post Medieval            |
| MME6018  | <b>Former site of Court Farm, previously Halewood Brewery</b><br>Late 18th century, demolished in the 1970's. A site visit carried out in 1981 established brick and concrete footings were visible in the undergrowth. Concrete paths between the buildings also survived and a small area of cobbled pathway between where two eastern outbuildings had been. The area was included in the Local Development Plan as an area to be retained while housing developments were built to the west. Seen on Stanley's Derby Estate Plan of 1783, although not part of the estate. It is labelled 'Brewery' on Hennet's map of 1829 and the Tithe map of 1843. By 1907 it was labelled 'The Court' (MME 6006). Previously listed Grade II | Post Medieval            |
| MME6184  | <b>Roman Coin, Finch Farm</b><br>An As coin of Vespasian (AD 69-79) found in 1981   | Roman                    |
| MME6191  | <b>Ireland House, Lower Lane</b><br>Former farmhouse of Ireland's Farm. The chimney place inside the house has a date of 1648 inscribed. The building is shown on Stanley's Derby Estate Plan of 1783, but was not part of the estate, and the Tithe map of 1843. It appears on the OS map of 1843 but is unlabelled, but by the time of the OS map of 1893 it was labelled 'Ireland's Farm'  | Post Medieval            |
| MME10195 | <b>Court Farm Unenclosed Settlement</b><br>In 1996 NMLFAU undertook a fieldwalking survey of land at Court Avenue, Halewood. Roman pottery was found and a small concentration may indicate an area of dumping on the edge of the settlement site   | Roman to early medieval  |
| MME11803 | <b>Barn/Outbuilding, Yew Tree Farm, Lower Road</b><br>The building is shown on Stanley's Derby Estate Plan of 1783  | Post Medieval            |
| MME11804 | <b>Small Outbuilding, Yew Tree Farm, Lower Road</b><br>The building is shown on Stanley's Derby Estate Plan of 1783   | Post Medieval            |
| MME11806 | <b>Site of Roseheath Farm barn or outbuilding, Baileys Lane</b><br>Late 18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1849  | Post Medieval            |
| MME11807 | <b>The Hayes Farmhouse, Lower Road</b><br>The building first appears on the OS map of 1893, and it had replaced an earlier, late 18th century house that was shown on the OS map of 1849  | Post Medieval            |
| MME11808 | <b>The Hayes Barn, Lower Road</b><br>18th century barn. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843   | Post Medieval            |
| MME11809 | <b>Site of The Hayes Shippon or outbuilding, Lower Road</b><br>Mid to late 19th century. First seen on the OS map of 1893 and demolished 2016/6   | Post Medieval            |
| MME11818 | <b>Nos 54 and 56 Church Road</b><br>The building first appears on the OS map of 1893 where it is labelled as 'Schools,' along with another earlier building immediately to the southeast. By the time of OS mapping dating to 1959 it was labelled as 'Halewood Church of England Primary School', but when OS mapping dating to 1984 was produced it was a 'Hall.' It seems to have been converted into a private dwelling by the time of OS mapping dating to 1990. Visible on current Google imagery (Streetview), the building was made to be a mirror image of the older structure to the southeast.   | Post Medieval            |

|          |   |                          |
|----------|---|--------------------------|
| MME11819 | <b>Nos 50 and 52 Church Road</b><br>First appears on the OS map of 1893 where it is labelled as 'Schools,' along with another building to the west and an earlier building immediately to the south. By the time of OS mapping dating to 1959 it was labelled as 'Halewood Church of England Primary School', but when OS mapping dating to 1984 was produced it was a 'Hall.' It seems to have been converted into a private dwelling by the time of OS mapping dating to 1990 | Post Medieval            |
| MME11823 | <b>Ireland's Farm, Former barn of, Lower Lane</b><br>Ireland's House, former farmhouse of Ireland's Farm. The building is shown on Stanley's Derby Estate Plan of 1783, but was not part of the estate, and the Tithe map of 1843. It appears on the OS map of 1843 but is unlabelled, but by the time of the OS map of 1893 it was labelled 'Ireland's Farm'   | Post Medieval            |
| MME15629 | <b>Medieval Pottery, Court Avenue</b><br>In 1996 NMLFAU undertook a fieldwalking survey of land at Court Avenue, Halewood and recovered nine sherds of pottery of 13th to 15th century date probably relating to manuring practices   | Medieval                 |
| MME15630 | <b>Burnt Flint, Court Avenue</b><br>In 1996 NMLFAU undertook a fieldwalking survey of land at Court Avenue, Halewood and recovered three pieces of burnt flint in one field   | Prehistoric              |
| MME15631 | <b>Late Neolithic or Early Bronze Age Flint</b><br>In 1996 NMLFAU undertook a fieldwalking survey of land at Court Avenue, Halewood and recovered two flint tools with three undated flakes   | Prehistoric              |
| MME15632 | <b>Mesolithic Flint, Court Avenue</b><br>In 1996 NMLFAU undertook a fieldwalking survey of land at Court Avenue, Halewood and a waste flake was found   | Prehistoric              |
| MME15636 | <b>Site of Great Park, Tarbock</b><br>Former site of Great Park or Great Wood, Tarbock. There were two parks in Tarbock. The bounds of this southern one were described in a mid-13th century document: "From the ditch which was the boundary between Tarbock and Ditton".   | Medieval - Post Medieval |
| MME15653 | <b>Undated Ditch, Finch Lane</b><br>In 2005 OA North found a N-S ditch during an evaluation, possibly that on the OS map of 1849  | Undated                  |
| MME15654 | <b>Undated Possible Pit, Finch Lane</b><br>In 2005 OA North found a possible pit during an evaluation   | Undated                  |
| MME15655 | <b>Undated Pit and Ditch, Finch Lane</b><br>In 2005 OA North found a pit and large irregular ditch during an evaluation   | Undated                  |
| MME15656 | <b>Site of Platt's House, Finch Lane</b><br>18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Last seen on OS map of 1849 - replaced by Finch Farm to the south  | Post Medieval            |
| MME15657 | <b>Site of a Barn, Finch Farm, Finch Lane</b><br>18th century. Seen on Stanley's Derby Estate Plan of 1783 and the Tithe map of 1843. Recorded in 2005 by OA North prior to its demolition  | Post Medieval            |
| MME15658 | <b>Possible Post-Medieval Midden, Finch Lane</b><br>In 2005 OA North found four post holes during an evaluation filled with late 18th and early 19th century material. A ditch was also found that was replaced by a hedge. A cow burial was also discovered  | Post Medieval            |
| MME15659 | <b>Post Holes, Ditch and a Cow Burial, Finch Lane</b><br>In 2005 OA North found a dumped layer containing large amounts of charcoal and unabraded pottery dated to the 16th-18th centuries during an evaluation   | Post Medieval            |
| MME15660 | <b>Late 17th century stake holes and cobbled surface, Finch Lane</b><br>In 2005 OA North found foundations of a house during an excavation. This was later built over by Finch House. The site was occupied from the late 17th century  | Post Medieval            |
| MME15661 | <b>Medieval Pottery, Finch Lane</b><br>In 2005 OA North found a sherd of pottery of 15th to 16th century date during an excavation  | Post Medieval            |
| MME15662 | <b>17th or 18th century Pond, Finch Lane</b><br>In 2005 OA North found a large pond during an excavation. This was later backfilled and built over  | Post Medieval            |
| MME15663 | <b>17th/18th century Ditches and Post-Built Structure, Finch Lane</b><br>In 2005 OA North found a large ditch parallel to the access track to Platt's House interpreted as an associated early drainage ditch or boundary during an excavation. To the south of this was a group of post holes, post pad and a stake hole   | Post Medieval            |
| MME15664 | <b>17th/18th century Ponds, Pits and Ditches, Finch Lane</b><br>In 2005 OA North found a large pond, a ditch and two pits during an excavation. No pond is shown on the Derby Estate plan of 1783 or the Tithe map of 1843  | Post Medieval            |
| MME15723 | <b>Possible Mesolithic Worked Flint and Chert</b><br>In 1997 NMLFAU undertook a fieldwalking survey of land at Court Avenue, Halewood and a boulder clay pebble flint debitage chip and a platform core fragment on a chert pebble was found  | Prehistoric              |

**Prepared by:**  
Knowsley Metropolitan Borough Council (KMBC)



***Knowsley Council***

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