



# Masterplan Document

August 2020



**Kingsfold**

**Penwortham Way**

**Moss Lane**

**Bee Lane**

**Leyland Road**

**Lord's Lane**

**Flag Lane**

**Nib Lane**

**The Site**

**West Coast  
Railway Line**

**Chain House Lane**

## Masterplan Role and Status

The Masterplan for The Lanes comprises a suite of three documents: Masterplan, Design Code and Infrastructure Delivery Schedule. The Masterplan is the document which presents and explains the vision for the future redevelopment of the site and the technical considerations. The Masterplan will guide all future development across the site and once approved, it will become a material consideration in the determination of all future planning applications within the site.

### Figures

Fig. 0	Aerial View of the Site	Fig. 6.9	Indicative Bridge Layout
Fig. 0.1	Illustrative Masterplan	Fig. 7.0	Ecology
Fig. 1.0	Allocation of the Site in the South Ribble Local Plan	Fig. 7.1	Trees
Fig. 2.0	Masterplan Area	Fig. 7.2	Noise Impacts
Fig. 2.1	Site Context	Fig. 7.3	Utilities
Fig. 2.2	Sustainability Plan	Fig. 7.4	Site Wide Utilities
Fig. 3.0	South Ribble Borough Plan Policies Map	Fig. 7.5	Air Quality Boundary Zones
Fig. 4.0	Masterplan Sketches developed with residents at the Community Consultation event on 14th August 2018	Fig. 7.6	Heritage and Archaeology
Fig. 4.1	Final Route of CBLR overlaid on draft Masterplan September 2018	Fig. 7.7	Flood Risk and Drainage
Fig. 4.2	Elements of Masterplan overlaid on draft Masterplan September 2018	Fig. 7.8	Ground Conditions and Topography
Fig. 4.3	Elements of Masterplan overlaid on draft Masterplan September 2018	Fig. 7.9	Pylon Corridor
Fig. 4.4	Highlighted areas of change from the December 2019 Masterplan	Fig. 7.10	Constraints Plan
Fig. 4.5	Highlighted areas of change from the December 2019 Masterplan	Fig. 7.11	Hierarchy of Green Spaces
Fig. 6.0	A582 Dualling Scheme – Extent of CPO Land	Fig. 8.0	The Wider Road Network
Fig. 6.1	A582 Site Access – Single Lane	Fig. 8.1	Public Open Space
Fig. 6.2	A582 Site Access – Dualled Approach	Fig. 8.2	Illustration of the Children’s Play Area
Fig. 6.3	Bee Lane Access – Short Term Option	Fig. 8.3	Illustration of the type of Sustainable Urban Drainage (SUDS)
Fig. 6.4	Potential Bee Lane Long Term (New Bridge) – Option 1	Fig. 9.0	14m Buffer Zone
Fig. 6.5	Potential Bee Lane Long Term (New Bridge) – Option 2	Fig. 9.1	Exceptions to 14m Buffer Zone
Fig. 6.6	Potential Flag Lane Access	Fig. 9.2	Development Height
Fig. 6.7	Potential Chain House Lane Access	Fig. 10.0	Illustrative Masterplan
Fig. 6.8	Potential Kingsfold Drive Access – Option 1		

## Contents

Executive Summary	1
1.0 Introduction	3
2.0 The Site	7
3.0 Planning Policy Context	11
4.0 Community Consultation	15
5.0 Vision for the Site	25
6.0 Access and Movement	29
7.0 Environmental and Site Considerations	35
8.0 Physical and Social Infrastructure Requirements	45
9.0 Development Parameters	51
10.0 The Masterplan	59

## Appendices

Appendices A – Planning Policy	63
Appendices B – Planning Application	65
Appendices C – Highways	67
Appendices D – Ecology	69
Appendices E – Flood Risk & Drainage	149
Appendices F – Landscape	155

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## Executive Summary

This Masterplan has been prepared by Taylor Wimpey and Homes England (“the Developers”) to guide the future development of one of the largest allocated sites in South Ribble known as The Lanes, Penwortham (“the site”). The Masterplan is supported by technical appendices and a separate Design Code and Infrastructure Delivery Schedule (“IDS”) which have been prepared by the Developers.

### The Site

The Masterplan area extends to 99.78 hectares and in accordance with Policy C1 of the South Ribble Local Plan comprises both the allocated land and safeguarded land bounded by Chain House Lane / Coote Lane to the south and Penwortham Way to the west. Immediately to the north of the site lies the community of Kingsfold and to the east lies Lostock Hall. The site is currently occupied by a number of individual properties in private ownership, the majority of which are accessed via Bee Lane, Flag Lane, Lords Lane, Moss Lane and Nib Lane which bisect the site.

### Planning Policy

The principle of a residential led mixed use development at the site has been established by South Ribble Borough Council (“SRBC”) through the adoption of the South Ribble Local Plan in July 2015. In accordance with the South Ribble Local Plan the majority of the site is allocated as a Major Site for Development (under Policy C1) with the remainder of the site designated as Safeguarded Land for Future Development (under Policy G3). The Masterplan area adjoins additional Safeguarded Land to the south and the Masterplan will not preclude the future development of this land at the appropriate time.

### Community Consultation

As part of the preparation of this Masterplan, the Developers have carried out extensive consultation. The Masterplan has been prepared following initial consultations with property owners and landowners within the site, the local community, Members and Officers at SRBC and Lancashire County Council (“LCC”), statutory consultee organisations, Penwortham Town Council and other stakeholders. An initial period of consultation took place between June and September 2018 and sought views on the overall content and vision for the Masterplan.

The Developers in consultation with SRBC and LCC prepared a Draft Masterplan document which was submitted to SRBC on 28 September 2018. SRBC’s Planning Committee endorsed the Draft Masterplan document for consultation at its meeting on 7 November 2018. The consultation on the Draft Masterplan took place between 9th November 2018 and 4th January 2019.

The Masterplan was submitted to SRBC in December 2019. A formal consultation was held by SRBC and detailed feedback has been received from both internal and external consultees. A series of changes have been made to the Masterplan following this consultation as detailed at Section 4.

The Masterplan will be used to guide and co-ordinate the development within the site. Once approved the Masterplan will become a material consideration in the determination of all future planning applications relevant to the site. The Developers have submitted an outline planning application for a residential led- mixed use development comprising up to 1,100 new dwellings on land that they own and / or control. The Masterplan has been prepared to allow third party landowners or developers to prepare and submit planning applications for development in a comprehensive manner on the allocated land.

### Environmental Considerations

A comprehensive range of environmental considerations have been taken into account in preparing the Masterplan. Technical assessments of the site have been undertaken by an experienced technical team commissioned by the Developers. A summary of the findings of the specialist technical assessments covering highways, landscape, ecology, flood risk, noise, air quality, ground conditions, utilities and heritage and archaeology is presented within this document. In addition, a series of technical statements on Highways, Ecology, Landscape and Flood Risk and Drainage have also been prepared to provide additional detail on the technical work which underpins the Masterplan proposals. These technical statements are appended to this Masterplan document. The technical assessments conclude that once conventional mitigation is implemented no constraints have been identified which preclude the future development of the site.

### A New Residential Led Mixed-Use Neighbourhood

The Masterplan fully meets the requirements of Policy C1 of the South Ribble Local Plan. It proposes the comprehensive development of the site.

The Masterplan proposes a residential led mixed use development which will deliver in the region of 2,000 new homes. The Masterplan also makes provision for a range of other accompanying uses required by Policy C1 of the Local Plan.

To ensure best practice place-making is achieved throughout the site, a wide range of social and physical infrastructure will be delivered to support the new and existing population. Once planning permission is granted and

development commences on site, it is estimated that there will be between one and four house builder outlets on the site delivering between 30 and 150 dwellings per year.

In accordance with Policy C1 of the South Ribble Local Plan, the proposed uses illustrated on the Masterplan comprise:

- **Residential** – comprising a mix of detached, semi-detached, mews and apartment properties ranging from 1 - 5 bedrooms. The residential development will enable the provision of open market, affordable and retirement / extra care properties.
- **A new Local Centre** – which will contain a range of services and facilities and could include a new convenience retail, offices, community uses as well as a range of other services and facilities for example a pharmacy, gym, veterinary surgery, dry cleaners and hairdressers.
- **Employment Development** – The Masterplan will make provision for the inclusion of office development to be located within the new local centre.
- **Education Facilities** – A new two form entry primary school is proposed as part of the Masterplan. Following consultation with Lancashire County Council Education Team, the new two form entry primary school will have a looped access served off a secondary access road and a drop off car parking facility. The new school is located close to the proposed 3G pitch to allow for connectivity to the community.
- **A Temporary Apprenticeship and Skills Centre** – A temporary Apprenticeship and Skills Programme and Centre is proposed by the Developers throughout their build phase of the development. Open to all, the Apprenticeship and Skills Training Scheme will be designed to help provide people with the skills needed to those wanting to pursue a career in construction.

It was initially proposed that a permanent building for the Apprenticeship and Skills Centre would be provided and once the build phase was complete, the building could have been transferred to the community and used as a community building or other appropriate use. The community building has been removed from the Masterplan because Penwortham Town Council are proposing to extend the existing Community Centre.

- **Green Infrastructure** – A strong green infrastructure network will be provided across the site. The green infrastructure will have differing forms, functions and uses and will be connected by the extensive network of green links across the site. On site green infrastructure provision could include amenity green space, equipped play areas, natural / semi natural open space, allotments. In accordance with Policy 6 of the Penwortham Neighbourhood Plan, the Masterplan includes a new 3G Sports Pitch on land adjacent to the existing Penwortham Community Centre. The existing orchard being to the 1) west of Lords Lane and south of Nib Lane and 2) west of Moss Lane are proposed for either retention or replacement if suitable alternative locations within the site or on other land controlled by the Developers are identified.
- **Cross Borough Link Road** – In accordance with Policy A2 of the South Ribble Local Plan, the Masterplan also proposes land protected from physical development for the delivery of the Cross Borough Link Road (“CBLR”) extension linking Penwortham Way with Leyland Road.

- **Site Access** – The primary vehicular access to the site will be via a signal controlled junction from Penwortham Way. Secondary vehicular access to the site will be provided via a connection towards the north-eastern corner of the site, from Flag Lane to the east of the site and Chain House Lane to the south. Short term and long term vehicular access options connecting to Leyland Road in the north eastern corner of the site are proposed. The short term option is a priority ‘T’ junction arrangement connecting the CBLR extension to Bee Lane utilising the existing Bee Lane bridge to connect to Leyland Road. The short term access option will be restricted to use by existing properties on the site and 40-50 new dwellings. The long term option is a new bridge over the West Coast Mainline connecting the CBLR extension with Leyland Road.

The IDS prepared as part of the Masterplan describes how it is intended the extent of social and physical infrastructure proposed as part of the Masterplan will be delivered.

A series of Development Parameters have been designed to establish a framework for the future development of the site. The Development Parameters, listed below, are reflected in the Masterplan and are presented in greater detail in the Design Code:

- A residential led development supported by a mix of uses;
- Scale of development (including building heights);
- Design;
- Secure by Design
- Site access and road hierarchy;
- Landscaping planting;
- Green Infrastructure; and
- Separation distances and buffers to existing properties.

### Aerial View of the Site

Fig 0.1



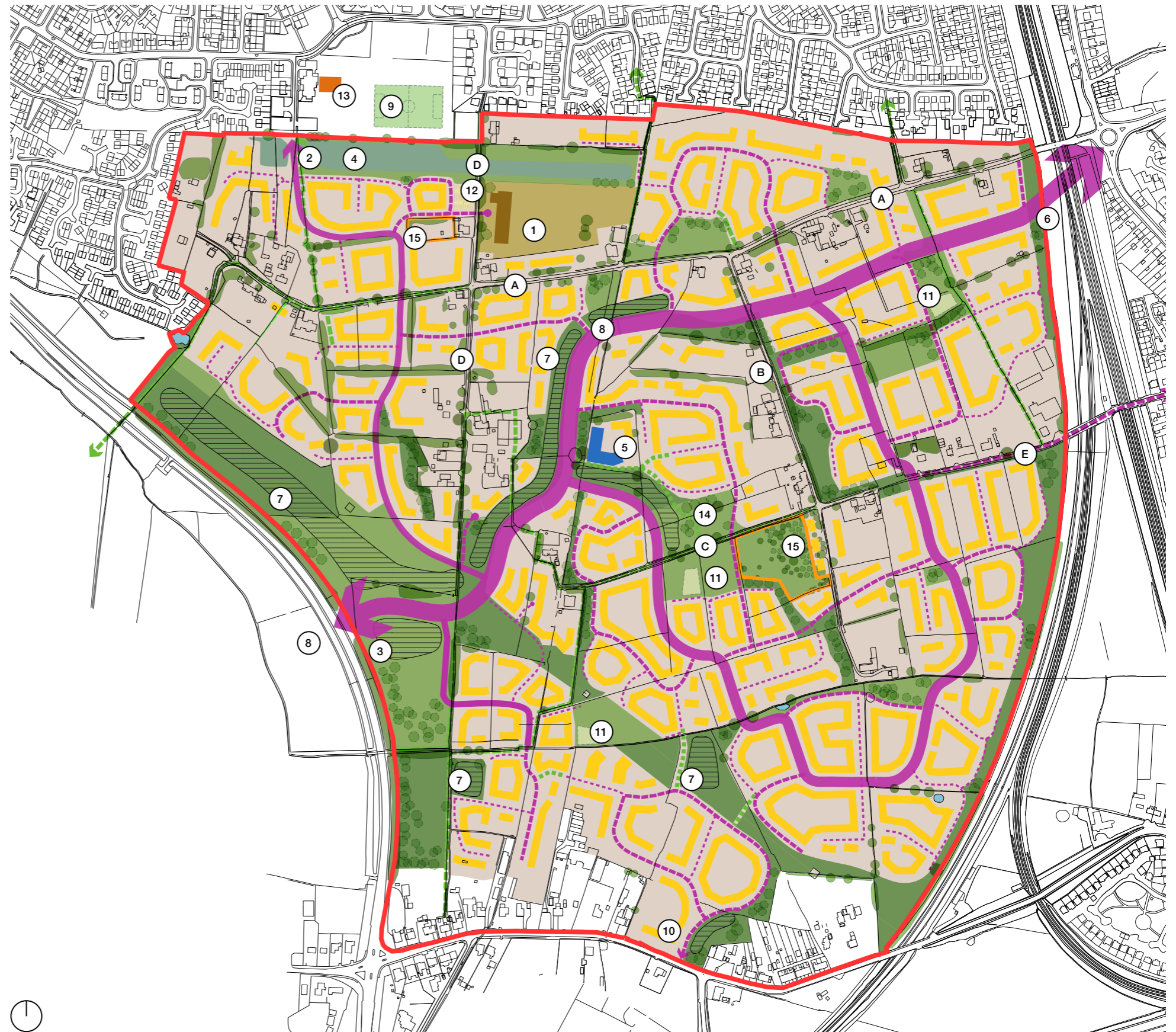
**Illustrative Masterplan**

1. New Primary School
2. Public Transport, Pedestrian and Cycle Link to Kingsfold
3. Entrance Gateway – A new route from Penwortham Way direct to the heart of the new community.
4. Area to manage and contain existing surface water.
5. New local facilities including, employment and community uses
6. New Cross Borough Link Road Bridge.
7. Sustainable Urban Drainage
8. Cross Borough Link Road (CBLR)
9. 3G Pitch
10. Limited highways access onto Chainhouse Lane
11. Children's Play Areas
12. Parking and drop off for school
13. Extension to existing Community Centre
14. The Village Green
15. Retention of Orchard and / or land for future residential development if the Orchard (or part thereof) is replaced within the Masterplan

- A. Bee Lane
- B. Lord's Lane
- C. Nib Lane
- D. Moss Lane
- E. Flag Lane

**Key**

-  Application Red Line
-  Internal Greenspace
-  New Formal Amenity Space
-  Existing Lanes
-  Public Rights of Way
-  Primary Road Network
-  Secondary Road Network
-  Residential Frontages
-  Community Use
-  Education
-  Local Centre and Employment uses
-  Orchard and / or future residential







# 1.0 Introduction

This Masterplan has been prepared in response to the requirements of Policy C1 of the South Ribble Borough Local Plan. The Masterplan proposes the comprehensive development of Pickering's Farm (now known as The Lanes and referred to here after as "the site") and includes the land allocated as a Major Site for Development ("the allocated land") as well as the safeguarded land to Cote Lane ("the safeguarded land"). It presents a Vision and a Development Framework to guide the future development of the site. The Masterplan seeks to deliver an inclusive residential led mixed-use community which could deliver in the region of 2,000 new homes. The Masterplan makes provision for a range of other uses including a primary school; a local centre which could contain local shops, facilities and other community and employment uses, Green Infrastructure and land protected from physical development for the delivery of the Cross Borough Link Road ("CBLR") extension connecting Penwortham Way with Leyland Road.

The Masterplan is supported by technical appendices and a separate Design Code and Infrastructure Delivery Schedule ("IDS") which have been prepared by Taylor Wimpey and Homes England ("the Developers").

**The Opportunity**  
South Ribble Borough Council ("SRBC") has expressed a desire for the site to be developed for many years and this has been evidenced through the sites identification for future development since the 1990's.

**Masterplan Process and Status**  
The Masterplan has been prepared following consultation with property owners and landowners within the site, the local community, Members and Officers at SRBC and Lancashire County Council ("LCC"), statutory consultee organisations, Penwortham Town Council and other stakeholders. An initial visioning consultation took place between June and September 2018 and sought views on the overall content and vision for the Masterplan.

The Developers in consultation with SRBC and LCC prepared a Draft Masterplan document which was submitted to SRBC on 28 September 2018. SRBC's Planning Committee endorsed the Draft Masterplan document for consultation at its meeting on 7 November 2018. The consultation on the Draft Masterplan took place between 9th November 2018 and 4th January 2019.

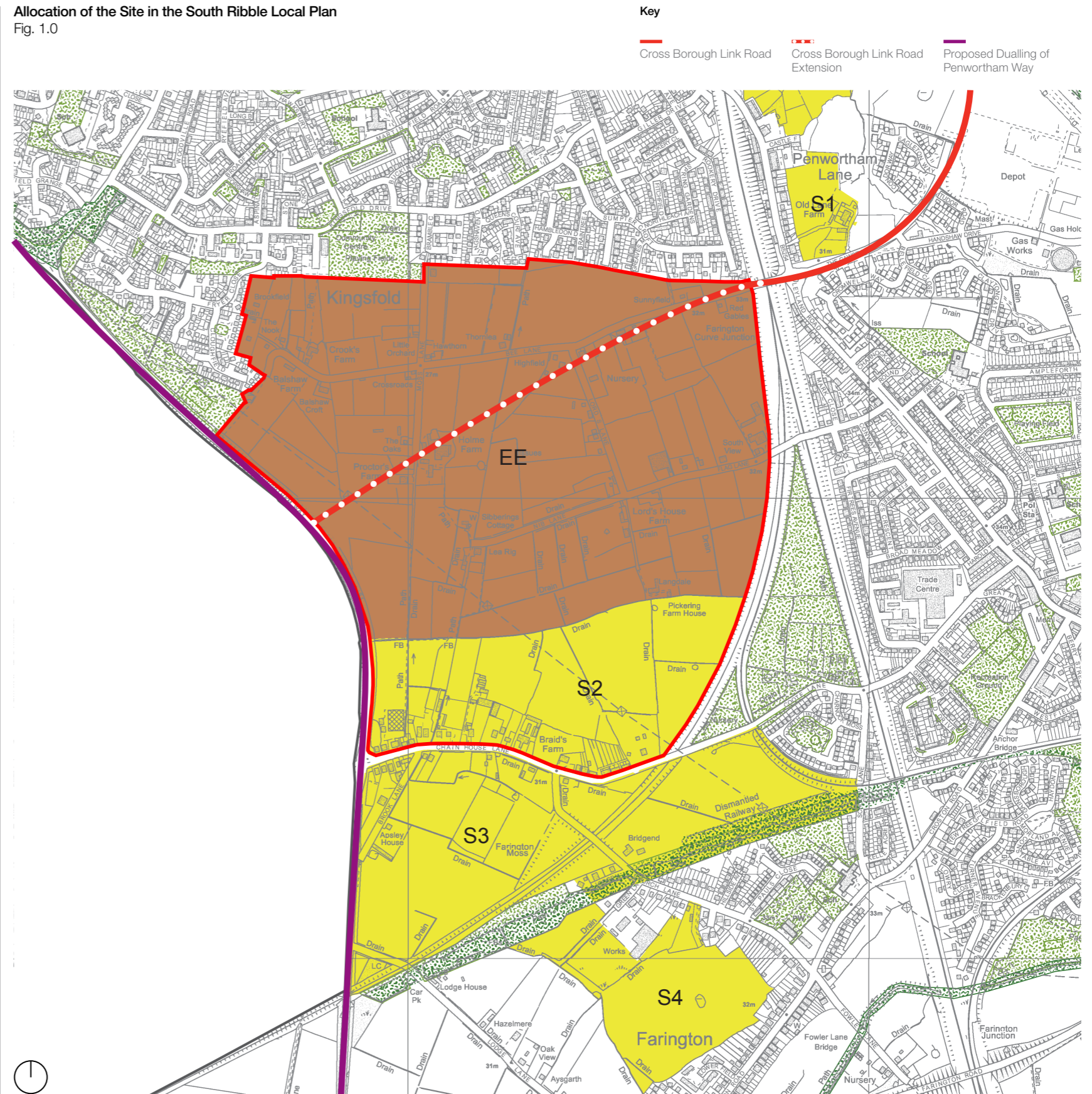
The Masterplan was submitted to SRBC in December 2019. A formal consultation was held by SRBC and detailed feedback has been received from both internal and external consultees. A series of changes have been made to the Masterplan following this consultation.

All feedback received during the consultation meetings has been taken into account and where possible the Masterplan has been revised to address this feedback. All changes which have been made to the Masterplan as part of this consultation is summarised at Section 4 of this document.

**Role of the Masterplan**  
The Masterplan will be used to guide and co-ordinate the development within the site. Once approved, the Masterplan will become a material consideration in the determination of all future planning applications relevant to the site. The Developers have submitted an outline planning application for a residential led- mixed use development comprising up to 1,100 new dwellings on land that they own and / or control. The Masterplan has been prepared to allow third party landowners or developers to prepare and submit planning applications for development in a comprehensive manner.

Allocation of the Site in the South Ribble Local Plan

Fig. 1.0





## 1.0 Introduction



### The Developers

**Taylor  
Wimpey**

Taylor Wimpey is a national developer operating at a local level from 24 regional businesses across the UK and building around 15,000 new high quality homes per year; we have two businesses in the North West of England who build around 1,300 new homes per year.

We are a responsible community developer, committed to working with local people, community groups and local authorities and keeping them informed about our work, both before we build and throughout the life of the development. We focus on getting the basics of homebuilding right first time, such as quality, customer service and health and safety, and we aim to continually improve all parts of our business.

We do much more than build homes – we add social, economic and environmental value to the wider communities in which we operate. We are first and foremost a local business and an important contributor to the local communities in which we build and to the sustainability of those communities and areas.

Every year we create vibrant communities where people want to live and many of our homes are built in areas where there is an under-supply of housing. We also create jobs, deliver improvements to local environments and infrastructure, contribute to community facilities and support local projects and initiatives.

  
Homes  
England

Homes England is the Ministry of Housing, Communities & Local Government's non-departmental public body and brings together land, money, expertise, and planning and compulsory purchase powers, with a clear remit to facilitate delivery of sufficient new homes, where they are most needed, to deliver a sustained improvement in affordability. Homes England works locally in individual communities to help meet local priorities. Homes England invests mostly in building new homes, but also in creating employment floorspace and other community facilities, in cities, towns and villages across the country. The homes funded by Homes England include affordable homes for rent and sale, and homes for rent or sale at market prices. Homes England's investment helps build around half of all new homes built in England each year. This investment also helps increase local growth by creating jobs and supporting businesses.





## 2.0 The Site

The section describes the site, its location and its context.

Masterplan Area  
Fig. 2.0



### The Site

The Masterplan area extends to 99.78 hectares and comprises land bound by Chain House Lane / Cootes Lane to the south and Penwortham Way to the west. Immediately to the north of the site lies the community of Kingsfold and to the east lies Lostock Hall. The site is located within the administrative boundary of SRBC and within the ward of Charnock.

The site is currently occupied by a number of individual properties in private ownership, the majority of which are accessed via Bee Lane, Flag Lane, Lords Lane, Moss Lane and Nib Lane which bisect the site. The remaining properties on the site are accessed directly from Chain House Lane and Cootes Lane from the south.

The site is partially bordered to the east by the West Coast mainline railway, to the south by Cootes Lane, to the west by Penwortham Way and to the north by existing residential development to the south of Kingsfold Drive. Key corridors on the local highway network include Penwortham Way which provides a primary north/south route; Leyland Road which is a local distributor road on the eastern side of the site and Cootes Lane which runs east/west on the south side of the site.

### The Site's Context

Penwortham is a town in South Ribble on the south bank of the River Ribble facing the city of Preston. Located close to the M6 / M61 junction, it has excellent connections to Preston, located less than 3 miles to the north, and Manchester, located 35 miles to the south east.

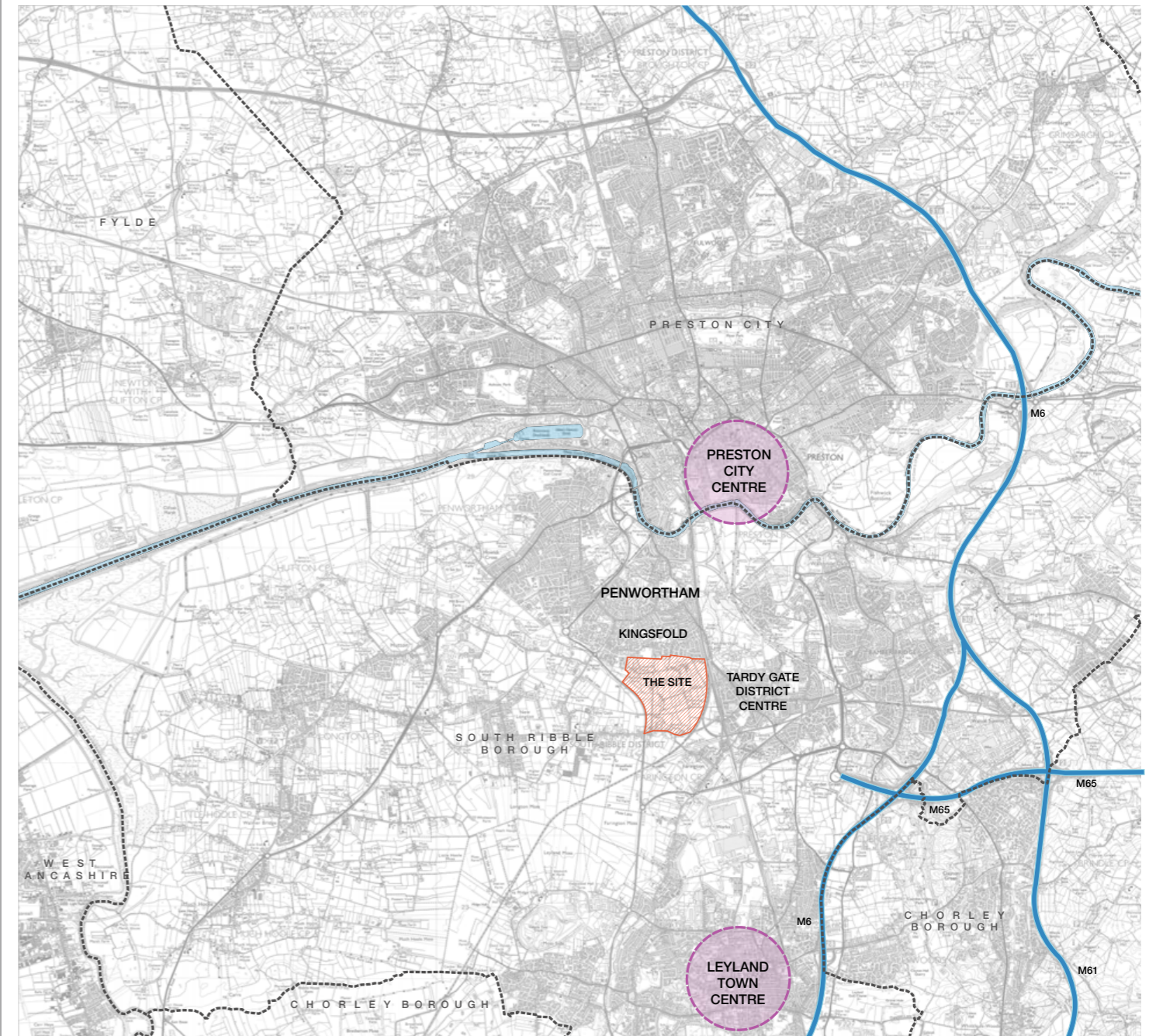
The town consists of three main shopping centres, Middleforth, Kingsfold and Liverpool Road.

Liverpool Road is the main through road in Penwortham leading from the city of Preston out to Liverpool and Southport. Liverpool Road and Leyland Road are main commuter routes into and out of the city of Preston, as well as the Penwortham Bypass. It is proposed by LCC that some parts of the Penwortham Bypass will be widened to alleviate traffic pressure through the shopping area on Liverpool Road, and ensure a freer flow of traffic both into and out of Preston. Works on the dualing of Penwortham Way are anticipated to begin in 2021.

Penwortham also has excellent rail links with train stations at Lostock Hall to the south and Preston to the north, with hourly services from these stations to Blackburn, Burnley and Colne and Blackpool and peak services from York and Leeds.

### Site Context

Fig. 2.1



#### Key

- Motorway
- Borough Boundary
- Penwortham Site
- Preston & Leyland Centres



## 2.0 The Site

### Sustainability Plan

Fig. 2.2



**Key**

- Masterplan Red Line
- - - - Bus Route 3
- - - - Bus Route 111
- - - - Bus Route 114
- - - - Cycle Route 62
- - - - Cycle Route 622
- Preston Town Centre
- Kingsfold District Centre
- Tardy Gate District Centre
- Leyland District Centre
- Train Station
- Nearest Bus Stops
- Education
- Local Play Areas / Parks
- Post Office
- Retail

New proposals should attempt to influence the mode of travel to the development in terms of gaining a shift in modal split towards non-car modes, thus assisting in meeting the aspirations of current national and local planning policy.

In order to demonstrate how the site can be delivered in a sustainable manner, the opportunities presented by the proposals and the key principles of the Masterplan in terms of access by sustainable modes are detailed below:

**Access by Sustainable Modes**

The Lanes is located within an approximate 20-minute walk of the majority of Kingsfold along with parts of Tardy Gate, Lostock Hall and Farington, together with their associated local amenities. Numerous dedicated pedestrian and cycle routes, both as part of the internal road network and via segregated routes will connect the site to the surrounding pedestrian and cycle network. These will include connections to Bee Lane and Flag Lane and the northern section of Moss Lane towards Kingsfold Drive.

The provision of a new local centre, primary school and community uses on the site will also encourage sustainable travel as all residents will be within a short walk of these additional local amenities. The provision of pedestrian and cycle access throughout the site will be addressed as part of future reserved matters/detailed planning applications as each phase of the site is brought forward, however, the principle points of pedestrian/cycle access into the site are defined on the Masterplan.

Each of the pedestrian and cycle routes across the site will be lit, surfaced, be generally overlooked and be of high quality to ensure access on foot and by cycle is maximised. Existing Public Rights of Way will be retained along existing and diverted alignments to be determined within future reserved matters detailed planning applications as the site is brought forward. Public Rights of Way will be upgraded and improved where appropriate and consideration will be given to upgrading routes to bridleway status to accommodate equestrian activity.

The proposed development will also provide a shared pedestrian/cycleway as part of the Cross Borough Link Road (CBLR), connecting the A582 Penwortham Way with The Cawsey. The design of these facilities will be addressed through a detailed Cross Borough Link Road planning application by the developer.

A shared pedestrian/cycleway is to be provided along the northern/eastern side of the A582 Penwortham Way as part of the forthcoming Penwortham Way dualling scheme, currently being progressed by LCC. This pedestrian / cycleway will link into the site at the proposed site access and the proposed TOUCAN crossing across the site access arm of the junction.

In order to facilitate bus accessibility, it is considered that a bus service will be able to access the site from Penwortham Way and Leyland Road to connect the site with Preston, South Ribble and Chorley.

The CBLR parameters will be designed to provide a carriageway width sufficient for two-way bus access. Discussions are underway with LCC and local bus operators to establish the potential for diverting a service or providing a new bus service to serve the site. This additional bus provision will ensure that virtually all of the site will be within 400 metres, or 5 minutes' walk, of a bus route to accord with the targets in national guidance. Routing arrangements will be discussed and agreed with LCC and local bus operators as discussions progress.

The site is also accessible by rail with Lostock Hall railway station located within an approximate 20-minute walk of the site. The station offers one service per hour to destinations including Preston, Blackburn, Burnley, Nelson and Colne.

**Quiet Lanes**

Quiet Lanes are minor rural roads, typically C or unclassified routes, which have been designated by local highway authorities to pay special attention to the needs of walkers, cyclists, horse riders and other vulnerable road users, and to offer protection from speeding traffic. Cars are not banned from Quiet Lanes and their use is shared by all road users. Measures such as lower speed limits and discrete road signs aim to encourage drivers to slow down and be considerate to more vulnerable users who can in turn use and enjoy country lanes in greater safety, with less threat from speeding traffic.

Quiet Lanes have been successfully implemented across the country with the first schemes being located in Norfolk and Kent. The Campaign for the Protection of Rural England (CPRE) published guidance on Quiet Lanes in 2003. This pre-dates the regulations on Quiet Lanes which was published by the Department for Transport in 2006. The CPRE guidance states that Quiet Lanes are a positive way of:

- Providing a chance for people to walk, cycle and horse ride in a safer environment;
- Widening transport choice; and
- Protecting the character and tranquillity of country lanes.

The existing lanes on the site, namely, Bee Lane, Flag Lane, Lords Lane and Moss Lane are ideal to be given Quiet Lane status to ensure that they retain their rural character and that they can encourage new residents within The Lanes development to walk, cycle and horse ride along them without being constrained by any material levels of development generated traffic.

One of the benefits of implementing the Quiet Lanes as part of The Lanes development is that alternative vehicular routes are proposed as part of the wider Lanes development which will assist in encouraging lower vehicular traffic flows on the prospective Quiet Lanes and in turn increasing, and segregating where possible, the flow of pedestrian, cyclists and horse riders along these routes. Consideration of various measures to help deliver the aims of Quiet Lanes will be considered in conjunction with LCC as part of future planning applications, however, appropriate measures could include the following minor and strategic interventions.

**Minor interventions:**

- varying verge maintenance;
- soft landscaping;
- removal of road signs;
- street lighting provision;
- road surface treatments; and
- lowering speed limits.

**Strategic interventions:**

- The truncation/closure of existing lanes with conversion to pedestrian/cycle/ bridleway access only. This could be achieved via physical means or through Traffic Regulation Orders;
- Access only and other traffic management arrangements; and
- The adoption of one-way operation along the lanes.

These strategic measures would be subject to suitable alternative vehicular routes being provided to serve existing properties and an appropriate phased approach. The strategic measures would be particularly important in preventing rat running on the proposed quiet lanes and, as such, the proposed internal site layout will seek to accommodate these strategic measures wherever possible. Consideration will also be given to the phasing of the proposals in relation to the implementation of quiet lanes to ensure the safe and efficient operation of the lanes in accordance with CPRE and DfT design guidance.

Traditional traffic calming measures, such as, speed cushions, humps and high visibility signs are less likely to be appropriate due to the rural nature of the roads, however, all measures will be considered in conjunction with LCC to inform the delivery of the Quiet Lane initiative on the site. The implementation of Quiet Lanes within the site would be achievable and provide substantial benefits for the local community and ensure that the existing lanes are used appropriately and will connect to the proposed pedestrian and cycle infrastructure to ensure that the site is as sustainable as possible.





### 3.0 Planning Policy Context

This section describes the local planning policy relevant to the site and also the Preston, South Ribble and Lancashire City Deal. The principle of a residential led mixed use development at the site has been established by SRBC through the adoption of the South Ribble Local Plan in July 2015. In accordance with the South Ribble Local Plan, the majority of the site is allocated as a Major Site for Development with the remainder designated as Safeguarded Land for Future Development.

**The Development Plan**

The Development Plan for the site comprises:

- The Central Lancashire Core Strategy (adopted in July 2012);
- The adopted South Ribble Local Plan 2012-2026 (adopted in July 2015); and
- The Penwortham Neighbourhood Plan 2016-2026

**Central Lancashire Core Strategy**

The Central Lancashire Core Strategy was adopted in July 2012 and sets out the Central Lancashire authorities spatial planning proposals for the combined area of Preston, South Ribble and Chorley. The purpose of the Core Strategy is to set the overall strategic direction for planning in the area over the period 2010 to 2026.

The Core Strategy plans to deliver 22,200 new homes (net) during the Plan period. Strategic Sites and Locations were identified as being central to the achievement of the Core Strategy.

Land South of Penwortham and North of Farrington was identified as a Strategic Location in the Core Strategy. The Strategic Location was identified because it is of strategic significance by virtue of its ability to significantly contribute to South Ribble's infrastructure and housing requirements. The Core Strategy identified that the area could contribute between 1,200 and 2,000 dwellings and that the South Ribble Local Plan would identify the extent of land to be brought forward within the Strategic Location.

**South Ribble Local Plan**

The South Ribble Local Plan was adopted in July 2015 and covers the period 2012 – 2026. The Local Plan sets out the vision for the Borough and the Council's interpretation of the Central Lancashire Core Strategy including development management policies.

The majority of the site is allocated as a Major Site for Development by Policy C1 in the Local Plan. The sites allocated area is shown as site 'EE' on the Local Plan Policies Map. The southern portion of the site is designated as Safeguarded Land for Future Development by Local Plan Policy G3. The safeguarded land is shown as site 'S2' on the Local Plan Policies Map. The areas of the two land parcels (allocated and safeguarded) are broken down as follows:

- Site EE – 78.25 Hectares
- Site S2 – 21.53 Hectares

**Policy C1**

Local Plan Policy C1 states that:

"Planning permission will only be granted for the development of the Pickering's Farm site subject to the submission of:

- an agreed Masterplan for the comprehensive development of the site. The Masterplan must include the wider area of the Pickering's Farm site which includes the safeguarded land to Coote Lane as shown on the Policies Map, and make provision for a range of land uses to include residential, employment and commercial uses, Green Infrastructure and community facilities;
- a phasing and infrastructure delivery schedule;
- an agreed programme of implementation in accordance with the Masterplan and agreed design code."

The Masterplan proposes the comprehensive development of the site. It covers both the area allocated for Major Development and the safeguarded land to Coote Lane.

**Policy D1**

Local Plan Policy D1 identifies the allocation of housing land. The sites listed in Policy D1 are allocated for residential development and related infrastructure which is to be delivered through CIL and / or developer contributions.

The housing land allocated in Policy D1 equates to a total of 6,576 dwellings over the Plan period. The part of the site allocated for Major Development (site EE) is estimated to deliver 1,350 homes. In addition, the safeguarded land is estimated to deliver in the region of 650 homes.

**Policy A2**

Policy A2 of the Local Plan relates to the CBLR (Development Link Road) and states that:

"Land will be protected from physical development for the delivery of the Cross Borough Link Road. The Cross Borough Link Road comprises:

- A road to be constructed from Carwood Road to The Cawsey, as shown on the Policies Map.
- A road to be constructed through the major development site at Pickering's Farm as shown diagrammatically on the Policies Map."

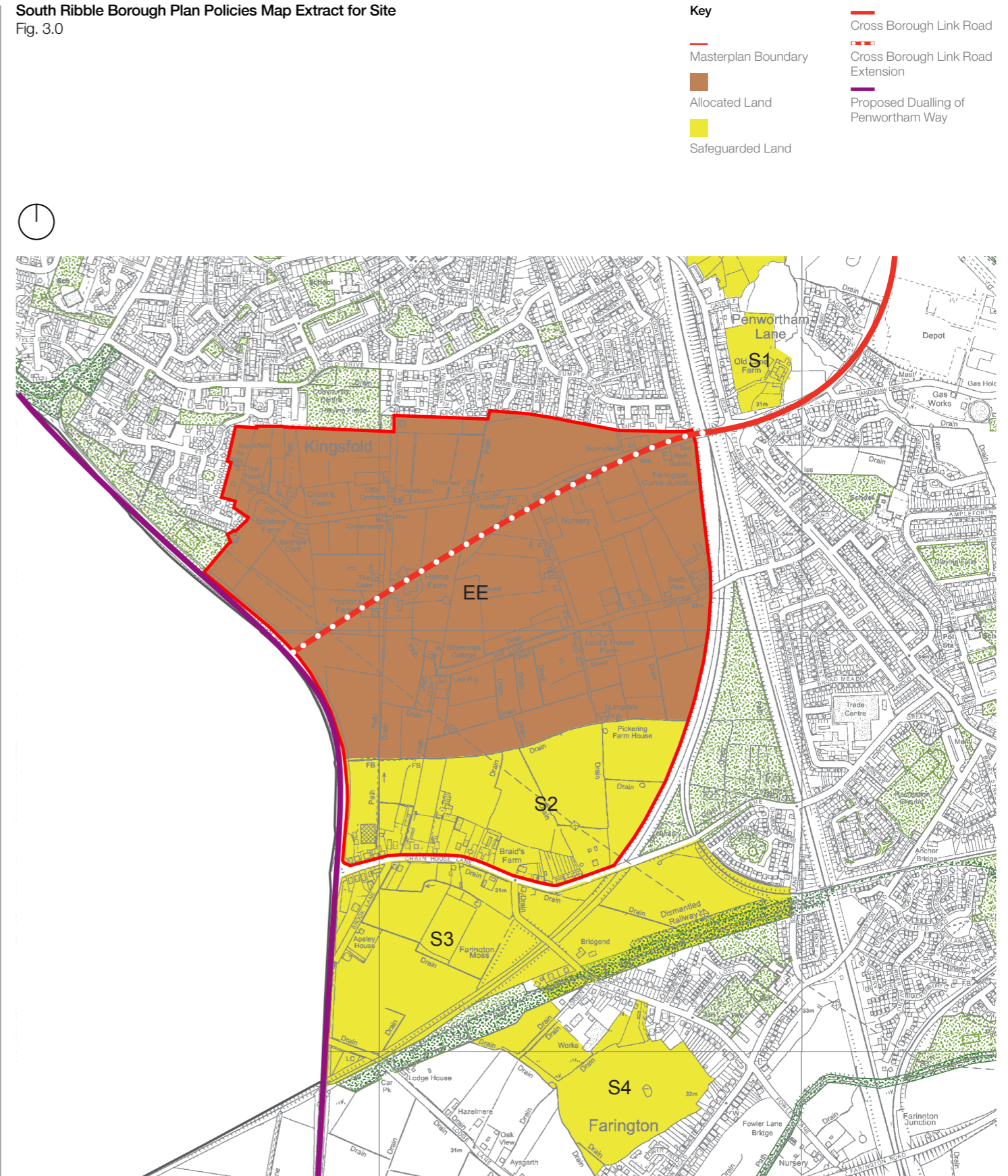
This Masterplan addresses the requirement of part (b) of Policy A2 as it provides for the provision of the CBLR extension which will run from west to east as shown on the Local Plan Policies Map.

Safeguarded Land parcel 'S2' forms the southern part of the Masterplan area. Additional Safeguarded Land parcels S3 and S4 are located outside of the Masterplan area to the south of the site. The Developers have given consideration to these future development parcels and have taken steps to ensure that the Masterplan will facilitate the future development of parcels S3 and S4 at the appropriate time.

**Other Relevant Local Plan Policies**

All other relevant Local Plan policies which future planning applications at the site will be assessed against are set out at Appendix 1.

South Ribble Borough Plan Policies Map Extract for Site Fig. 3.0





## 3.0 Planning Policy Context

### Penwortham Neighbourhood Plan (2016-2026)

The Penwortham Neighbourhood Plan ("PNP") defines the community's vision and aspirations for the town of Penwortham and future development and growth. The PNP acknowledges that the South Ribble Local Plan allocates the site for a residential led development, subject to the preparation of an agreed Masterplan, including phasing and infrastructure delivery and a programme of implementation.

As the site is the largest site within the Neighbourhood Plan area, the PNP contains a number of policies relating to the site, most notably:

- Policy 2 (Requirements for New Large Scale Residential Development) states that: *"the phases of development on the large allocations for residential development should be either relatively small in scale or broken up into smaller parcels (50-150 dwellings), each phase or parcel with its own individual design and place characteristics."*
- Policy 3 (Range of Residential Property) specifies a requirement for single storey properties for use by older people. In Penwortham Single storey properties will be provided across the site in the form of apartments, which will have lift access
- Policy 4 (Types of Residential Property) states that: *"in addition to the requirements of Policy 7 of the Central Lancashire Core Strategy, new residential developments in Penwortham, in complying with Policy 3, should provide 10% of the affordable housing, as required by Policy 7 of the Central Lancashire Core Strategy, to be specifically for occupation by older people; and 10% of each development as single storey property suitable for use by older people."*

- Policy 6 (New Sporting Facilities) states that: *"the Town Council will, in working through the Masterplan preparation for the Pickering's Farm site, seek to locate the new sporting facilities adjacent to the existing Community Centre."*

- Policy 8 (Penwortham Cycle and Walking Route), which states that: *"Penwortham Town Council, working with Lancashire County Council, South Ribble Borough Council, the developers of Pickering's Farm and local groups will protect from any form of development that would prejudice the delivery of, a dedicated circular route for cyclists and walkers."*

#### City Deal

City Deal is a national initiative introduced by the Government as a way of targeting economic growth in key cities across the country. The Preston, South Ribble and Lancashire City Deal was agreed and signed in September 2013.

The City Deal Partners are the Lancashire Enterprise Partnership ("LEP"), Central Government, LCC, SRBC, Preston City Council and Homes England. The City Deal is a ten-year infrastructure delivery programme. It is funded through local and national private and public sector resources. The private sector contributes through Community Infrastructure Levy ("CIL") and other developer contributions. The public sector contributes through a number of ways including retaining the value uplift from land sales by Homes England.

The City Deal will generate more than 20,000 new private sector jobs; nearly £1 billion growth in Gross Value Added; 17,420 new homes; and £2.3 billion in leveraged commercial investment. The City Deal will see investment pumped into South Ribble, resulting in new roads, better public transport, improved public spaces and reduced congestion. Required infrastructure to support population growth, such as new schools and health centres, will also be provided. A City Deal Infrastructure Delivery Programme and City Deal Investment Fund have been established by the City Deal Partners which together are worth £450m over the lifetime of the Deal.

### Central Lancashire Highways and Transport Masterplan (CLHTM)

The CLHTM represents LCC's priorities for future investment in highways and transport across central Lancashire and the start of a delivery programme for the next 13 years which will see new road space built, public transport prioritised along key corridors into Preston and between Leyland and Chorley, and public realm improvements in city, town and local centres.

Four major road schemes are presented in the CLHTM, to be delivered in the period to 2026. Two of these roads have direct relevance to the site due to their proximity and connection to the site.

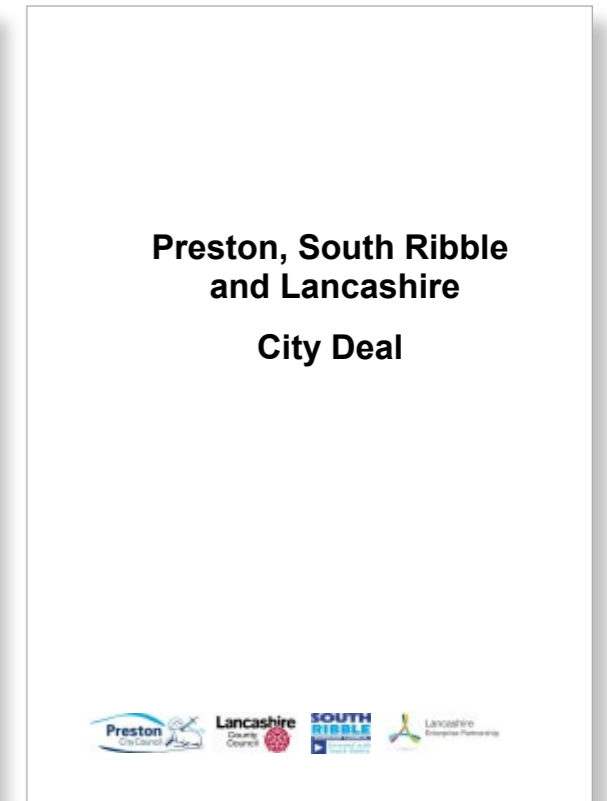
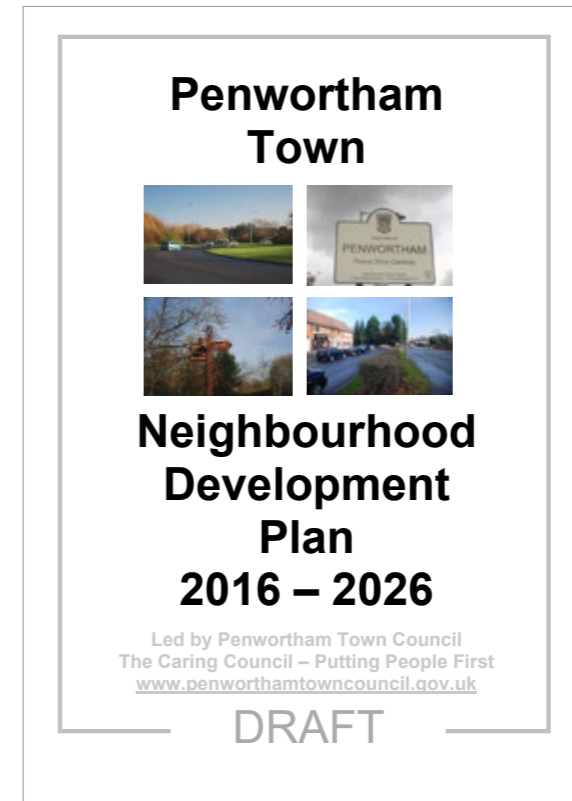
The CLHTM refers to the upgrading of the A582 South Ribble Western Distributor and the B5253 Flensburg Way to improve capacity between Moss Side, Cuerden and Preston City Centre, and support delivery of housing along this corridor and the completion of Penwortham bypass between the Broad Oak roundabout and Howick Cross as being two of four key infrastructure schemes to improve highway capacity.

The two relevant schemes are detailed below:

- 1) A582 South Ribble Western Distributor (Including the Penwortham Way Dualling Scheme) - Upgrading the A582 to a dual carriageway along its full length between Cuerden and Preston city centre and the B5253 south to Longmeanygate; and
- 2) Completion of Penwortham Bypass - The completion of the Penwortham Bypass between the Broad Oak roundabout and Howick Cross

The CLHTM also sets out a network of eight public transport priority corridors that will link Preston, Leyland and Chorley to the main housing and employment areas. Coupled with proposed rail improvements, this will mean that there is a comprehensive public transport network of the highest standard. The network will include the route from Moss Side near Leyland to Cuerden, Lostock Hall and Lower Penwortham, passing the site to reach Preston city centre.

The cost of the transport infrastructure which will be delivered by 2026 under the CLHTM is estimated at £275 million, with various sources of public and private funding, including City Deal funding, identified to support it.







## 4.1 Engagement & Consultation

To prepare the Masterplan, the Developers carried out extensive consultation on both the vision for the site and draft Masterplan document. Full detail of the consultation undertaken and the feedback received can be found within the accompanying Statement of Community Involvement prepared by Lexington, which should be read in conjunction with this Masterplan.

### Visioning Consultation

#### Engagement & Consultation

This visioning consultation was a community led process, which provided local residents, and key stakeholders with the opportunity to input their views and aspirations for the new neighbourhood, including opportunities to embrace new technologies, deliver jobs and establish new community services and facilities.

#### Consultation with South Ribble Borough Council

Prior to commencing the main consultation exercise with local residents and key stakeholders, the Developers held two 'Steering Group' meetings on 12 March and 14 May 2018, which were attended by representatives from SRBC and LCC. The purpose of these meetings was to discuss and agree the format and content of the Masterplan, the inclusion of various social and physical infrastructure elements and the Developers' strategy and timescales for bringing development at the site forwards.

Following the Steering Group meetings, further feedback was received from LCC Education Officers with regards to local educational needs. This feedback established the need for a new two form entry primary school on the site and this is incorporated into the Masterplan as a key social infrastructure requirement.

#### Consultation with Lancashire County Council

In addition to LCC's attendance at the various Steering Group meetings, a formal pre-application meeting with LCC was held on 25 July and a subsequent meeting with LCC and Cllr. Iddon was held on the 6 September. Further liaison has been undertaken with key LCC Officers to inform the evolving Masterplan process. LCC were instrumental in the internal highway layout shown on the Masterplan and provided input into key highways elements such as road hierarchy, which has been agreed in principle, and the design and trajectory of the main vehicular route through the site.

#### Consultation with Key Stakeholders

The Visioning consultation ran for a period of five weeks between Tuesday, 26 June and Friday, 20 July and included two Public Exhibitions held on Tuesday, 10 July and Friday, 13 July. A series of focus meetings with residents and landowners, Officers and Members at SRBC and LCC and other stakeholders including Penwortham Town Council also took place during the consultation exercise. A website was also created.

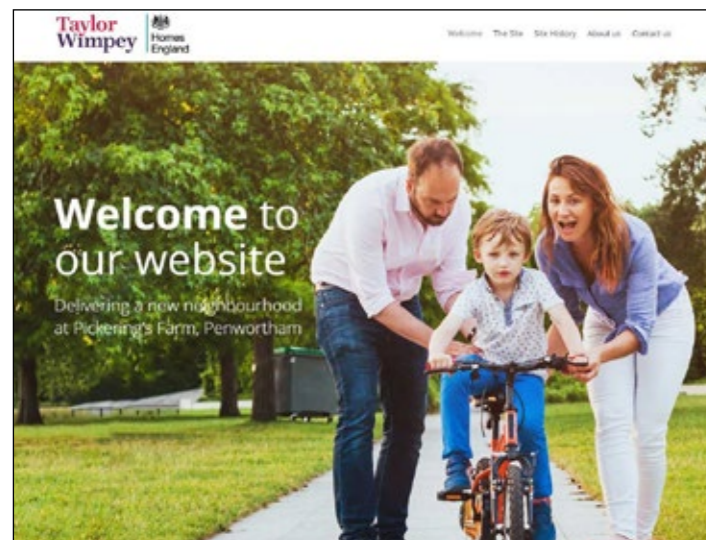
A summary of the activities undertaken during this visioning consultation is provided below:

- An initial meeting with Councillor Cliff Hughes, the Cabinet Member for Strategic Planning, Housing and Economic Growth, took place on Tuesday, 19 June to provide a briefing on the Masterplan process and vision consultation exercise ahead of the launch of the consultation;
- Residents living within the site's boundaries were advised of the consultation ahead of the launch via a written letter and door knocking exercise on Monday, 25 June;
- Leaflets advertising the visioning consultation were distributed to approximately 6,500 residents and businesses on Tuesday, 26 June;
- Key political stakeholders, including SRBC Ward Members, Cabinet Members, MP and Penwortham Town Council were informed of the consultation via letters on Tuesday, 26 June;
- A press release was issued and published in the Lancashire Evening Post and on Blog Preston on Tuesday, 26 June advising of the launch of the consultation. SRBC also published news of the consultation on its website;
- A project website detailing information about the consultation, alongside ways to provide feedback as part of the visioning exercise, was launched by the Developers and advertised within the consultation leaflet, letters to stakeholders, press release and on social media channels;
- A dedicated Facebook page was established detailing information about the consultation, including links to the project website. Facebook adverts were also launched to those living within 3km of the site, resulting in over 25,000 views.
- Two public exhibitions were held on Tuesday, 10 July and Friday 13 July at Kingsfold Methodist Church and Leyland Market respectively, providing an opportunity for local people to view and comment on the Masterplan vision, as well as speak to members of the development team that were on hand;

- A game of 'MasterCraft' was launched on social media, with 10 pieces of a giant puzzle hidden around the community and a further 10 pieces deposited into local schools. The aim of the game was for the community to return all 20 pieces to complete the puzzle during the exhibition scheduled in Penwortham.

- A Community Information Line and dedicated email address was established to deal with any enquiries relating to the scheme and to meet requests for further information;

- A further four meetings were held with local political representatives. The week before the launch of the consultation on Friday, 6 June, the development team met with Cabinet Members and ward representatives to discuss their thoughts on the vision for the site and the forthcoming consultation. Ahead of the Penwortham exhibition, the development team also met with representatives from Penwortham Town Council on Tuesday, 10 July. On Friday, 10 August, a further meeting was held with ward representatives and with a Member of the Town Council. These meetings were complemented by two focused masterplanning sessions and two Steering Group meetings, as detailed within the 'Further Engagement' heading.



## 4.1 Engagement & Consultation

### Further Engagement

Following the end of the formal consultation, the development team held two further successful drop in masterplanning sessions in August 2018 for those living within the site's boundaries. During these sessions, residents were engaged to understand their thoughts on an initial draft version of the Masterplan which had been developed since the main visioning consultation, specifically focussing on the area around their homes. During these conversations, the Masterplan was amended, where possible, to consider resident's ambitions, including in relation to the position of the allotments. The Developers have also held a series of one to one sessions with residents of the site to establish the most effective way of integrating their properties into the development.

Further conversations were held with political stakeholders in the form of two Steering Group meetings held on 21 August and 10 September. These meetings were attended by between 10 – 20 stakeholders from Penwortham Town Council, Members and officers from SRBC and LCC. During these meetings, matters discussed included the access to and from the site.

Masterplan Sketches developed with residents at the Community Consultation event on 14th August 2018  
Fig. 4.0



### Feedback Received

The Statement of Community Consultation prepared by Lexington and submitted to SRBC provides detail of the feedback received from specific organisations and local residents on the Visioning Consultation.

A feedback form allowing local people and stakeholders to comment on the vision for the site was provided throughout the consultation period. This was provided on the dedicated project website and available on hand during the public exhibitions. In total, 53 individuals made submissions during the consultation. The main concerns of residents focussed on the following three key topic areas:

- i) Existing traffic and road capacity issues in the locality and the ability of the highway network to accommodate any new development at the site;
- ii) The loss of green open space at the site, which is utilised by local residents; and
- iii) The lack of local services and social infrastructure to service new development on the site, in particular food store and doctor's surgery and educational facility capacity.

Other feedback received from the local community during the community consultation focussed on:

- Residents were asked to detail the community services they would like to see delivered on site, with a school the most popular response; 22 people indicated they would like to see this.
- Respondents also indicated that cycling routes and walking routes should be established, alongside a local park and opportunities to support wildlife.
- Respondents also detailed their ambitions to see solar panels, opportunities for renewable energy and car charging points on site.
- Allotments were further cited as a desirable asset for the new community.
- With regards to transport and access, respondents indicated a desire to see the local bus service connect to the site to provide public transport facilities for the new residents.
- The need for the Cross Borough Link Road extension was also referenced by respondents, who suggested that this road should be accessed from Penwortham Way.
- Regarding the types of homes that will be delivered, 11 respondents stated that the homes delivered should be high quality.
- The delivery of housing which includes office space and homes suitable for the elderly, was also raised by respondents.
- Respondents were also asked about the types of jobs that should be created on site, with the majority – 21 individuals – indicating a desire to see new shops delivered on site, creating related jobs.

## 4.2 Draft Masterplan Consultation

### Engagement & Consultation

Following a review of the feedback received to the visioning consultation, a second round of consultation on the draft Masterplan took place between November 2018 and January 2019. Following submission of the Masterplan in December 2019, SRBC undertook a further consultation in early 2020.

#### Exhibition in January 2019 at South Ribble Borough Council



### Consultation with Key Stakeholders and Local Residents

The draft Masterplan was submitted to SRBC in September 2018, following which it was endorsed by Planning Committee for further consultation in November 2018. This further consultation exercise took place from 9 November 2018 – 4 January 2019.

The activity undertaken during this consultation included a further two public exhibitions, which took place at the Penwortham Community Centre on Tuesday 20 November and Tuesday 27 November. A total of approximately 200 attendees visited one of the events, including Borough, County and Town Council representatives.

A summary of activities undertaken during the draft Masterplan consultation is included below:

- A leaflet was issued on Friday 9 November to the same 6,500 residents notified of the first round visioning consultation. A letter was also issued to residents living within the site to ensure they were fully aware of the consultation on the draft Masterplan;
- The draft Masterplan document was made available in a number of civic locations, including the Civic Centre in Leyland, Kingsfold Library and Lostock Hall Library. A dedicated page was also established on South Ribble Borough Council's website, displaying key information about the proposals and opportunities to provide feedback;
- The project website was updated to include information about the draft Masterplan, several technical studies undertaken to inform the draft Masterplan and ways to provide feedback on the proposals;
- A press release was issued to the Lancashire Evening Post and Blog Preston regarding the consultation, whilst the Community Information Line and dedicated email address remained open for local people to get in touch and provide their feedback.

### Further Engagement

Two Steering Group meetings involving Members and other consultees, also took place in January 2019, the first on Thursday 17 January and the second on Thursday 24 January. A key topic of conversation during these meetings was the CBLR Extension and its role as a key transport network both internally to the development and externally within the Borough. In response to feedback raised during these meetings, the CBLR Extension was straightened and widened.

Two further meetings took place with Officers from SRBC and LCC on 31 January and 5 February. The key areas discussed included the alignment of the CBLR, vehicular access onto Penwortham Way and Bee Lane, pedestrian and cycling accesses to the north, the location of the primary school and local centre and open space provision.

A final meeting was held on 4 July 2019 to discuss the feedback from the Workshop held in May 2019. During this meeting SRBC and the Developers discussed the key changes to be made to the draft Masterplan following their discussions with technical consultees including LCC Highways and the LLFA.

Following the submission of the Masterplan to SRBC on 29 March 2019, SRBC held a Workshop with technical statutory consultees in May 2019, following which feedback on the Masterplan was provided to the Developers by SRBC. This feedback has been addressed and where possible and the changes requested have been made within the final version of the Masterplan.

### Feedback Received

The Statement of Community Consultation prepared by Lexington and submitted to SRBC as part of the outline planning application provides detail of the feedback received from technical consultees, specific organisations and local residents on the draft Masterplan.

A total of 150 individuals provided direct feedback to this round of consultation, either via email, letter or by filling out a feedback form available on the project website or at one of the exhibitions.

Of the 150 respondents, 69 suggested that they did recognise a need for new homes in South Ribble, whilst a further 66 suggested they did not. Despite the majority recognising a need for new homes in the area, approximately 75% did not agree that new homes should be delivered on sites allocated within South Ribble Borough Council's Local Plan.

With regards to the need for new homes in the area, starter homes and affordable homes were identified the most frequently, with 49 individuals each referencing the need for these properties locally.

Other feedback to the consultation included:

- A majority of respondents supported the delivery of a new primary school;
- Respondents identified a need for new health facility and food shops;
- The response to the proposed transport strategy and access points was mixed, with traffic the most frequently raised concern; and
- Support for the site's sustainable features, including walkways, cycle routes, bridleways and green spaces.

The Developers would like to thank everyone that has taken part in both rounds of the consultation for this Masterplan. The feedback received has helped the Developers establish the blueprint for a new neighbourhood that South Ribble can be proud of. Both the Developers look forward to working with the local community as the plans progress further.

## 4.3 Development of the Masterplan

As a result of the consultation process, a number of revisions and developments have been included; these take into account both public opinion and the further technical work undertaken since the start of the process. The main changes are summarised on the next three pages.

### Cross Borough Link Road

The highway network has been improved in consultation with SRBC and LCC. The main through route has been straightened and become less tortuous to allow a better connection from west to east. The progressive development of this route can be seen in the diagram below.

Detailed tree surveys have identified the quality of the various trees across the site. The CBLR route has also been adapted to assist in retaining Category A trees and subject to site levels.

The adjacent diagram shows the new more direct route superimposed on the previously consulted upon Draft Masterplan from September 2018.

### SRBC Masterplan Consultation – 2020

The Masterplan was submitted to SRBC in December 2019, following which a formal consultation on the Masterplan was carried out by SRBC in January 2020. Responses were received from a number of internal and external statutory consultees and as a result of these comments, a series of further changes were made to the Masterplan. These changes are summarised on the next page.

- 1) Relocation of the primary school site:** Following discussions with the Local Education Authority regarding the feasibility of the previous school location, the school site has been moved further to the north and is to be accessed off a secondary road. A drop off parking facility for the school is also shown on the revised Masterplan.

- 2) A Temporary Apprenticeship and Skills Centre:** A temporary Apprenticeship and Skills Programme and Centre is proposed by the Developers throughout the construction phase of the development. Open to all, the Apprenticeship and Skills Training Scheme will be designed to help provide people with the skills needed to those wanting to pursue a career in construction. The Apprenticeship and Skills Centre will be provided in a temporary building. It was initially proposed that a permanent building for the Apprenticeship and Skills Centre would be provided and once the build phase was complete, the building could have been transferred to the community and used as a community building or other appropriate use. The community building has

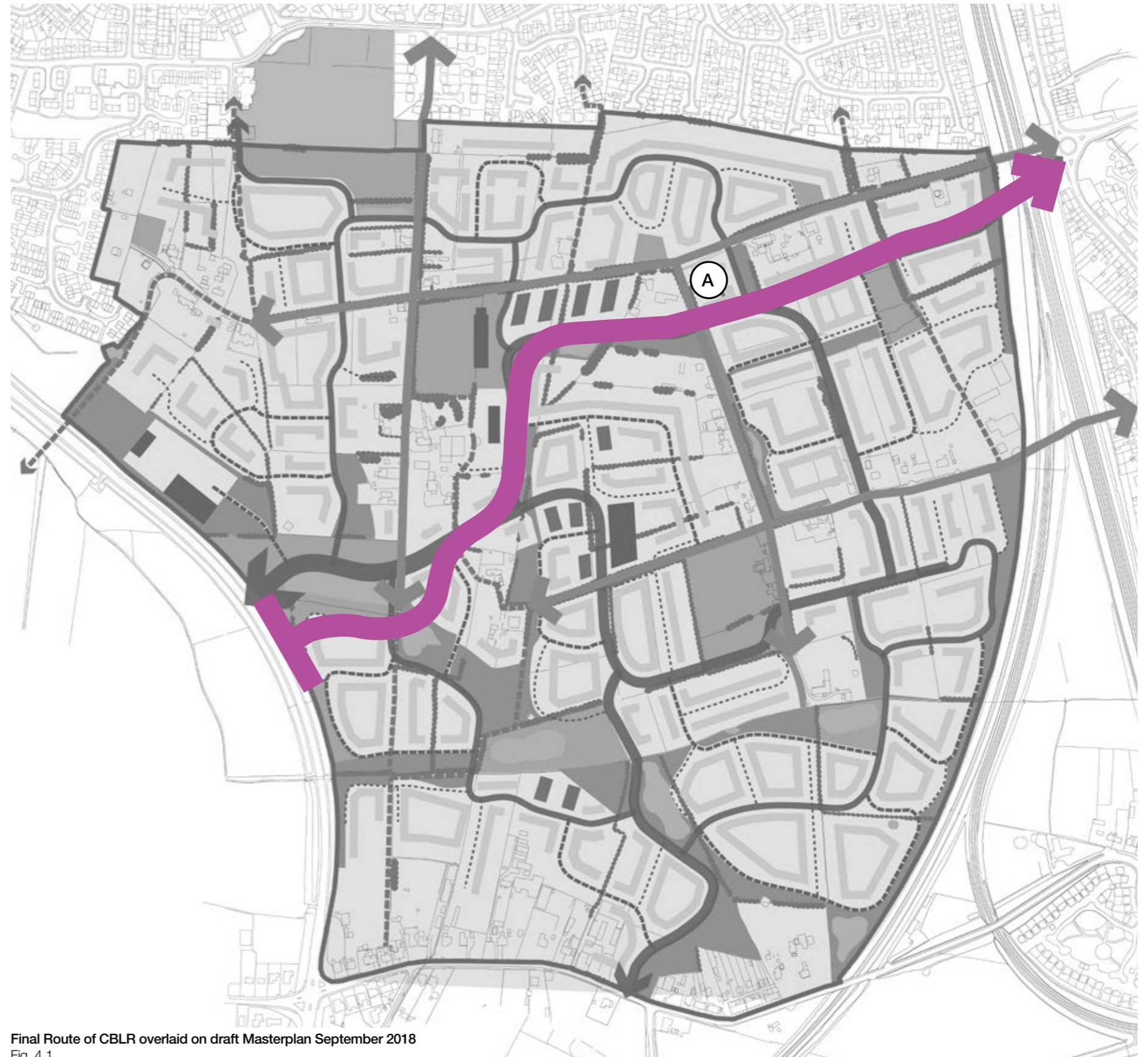
been removed from the Masterplan because Penwortham Town Council are proposing to extend the existing Community Centre.

- 3) Retention of the existing Orchard:** The orchard on the site was not previously proposed for retention due to its poor condition. This feature is now highlighted in orange on the revised Masterplan and will either be retained in situ or replaced on a single site elsewhere within the Masterplan area or on other suitable land outside of the Masterplan area under the control of the Developers. This is explained within the revised Masterplan key (15).

- 4) Introduction of new Green Infrastructure:** Although not within the site, a new 3G sports pitch will be provided on the existing pitches adjacent to the existing community centre. The location of this pitch is shown on the revised Masterplan. The site will also achieve 10% biodiversity net gain in line with consultee requests.

- 5) Short Term and Long Term Access Strategy:** The primary vehicular access to the site will be via a signal controlled junction from Penwortham Way. Secondary vehicular access to the site will be provided via a connection towards the north-eastern corner of the site, from Flag Lane to the east of the site and Chain House Lane to the south. Short term and long term vehicular access options connecting to Leyland Road in the north eastern corner of the site are proposed. The short term option is a priority 'T' junction arrangement connecting the CBLR extension to Bee Lane utilising the existing Bee Lane bridge to connect to Leyland Road. The short term access option will be restricted to use by existing properties on the site and 40-50 new dwellings. The long term option is a new bridge over the West Coast Mainline connecting the CBLR extension with Leyland Road.

In addition, at the request of Officers the Developers also held a series of discussions with representatives from the Clinical Commissioning Group (CCG), to discuss the potential requirement for a new health care facility on the site, or for a financial contribution to be made towards existing local medical facilities. Following a review of local medical centre capacity by the CCG, it was agreed to proceed by way of a financial contribution towards existing medical facilities in the local area as opposed to a new facility on site. The financial contribution towards health care will be secured through Community Infrastructure Levy.



Final Route of CBLR overlaid on draft Masterplan September 2018  
Fig. 4.1

## Amendments to Draft Masterplan Submitted September 2018

### Insert B: Removal of commercial frontage

In the draft Masterplan a space along the frontage of Penwortham Way was reserved for future commercial development. This has now been removed from the scheme. This area will now be used for SUDS and Swales as shown on the Masterplan.

### Insert C: School Location

The school in the Draft Masterplan was shown in a similar position but as a single form entry school on a smaller site.

The final location on the September 2018 Masterplan is in the same location but larger and capable of accommodating a two form primary school. It is well positioned between the new Local Centre and the existing greenspaces in Kingsfold. It is well located on both the CBLR and adjacent to the Quiet Lanes and public footpaths to encourage active lifestyles.

### Insert C: Distribution of Apartments

In the draft Masterplan, a small number of large apartment clusters were shown. This did not allow for a phased release of apartments. The Masterplan now seeks to distribute a larger number of smaller apartment blocks across the whole site, allowing a smaller number of apartments to come forwards as part of each phase of development. The school has expanded onto the site previously occupied by the apartment blocks.

### Insert D : Access from Penwortham Way

The final location of the main western access has been carefully considered from a technical and ecological point of view. The entrance to the development off Penwortham Way has been moved approximately 50m as a result of this. This allows the natural hedge features to dominate the vista approaching the new development and reduces the impact of the pylons at the entrance and on the approach to the development.

### Insert E: No through road to Chain House Lane.

In order to reduce traffic onto Chain House Lane, the vehicle links between the allocated and safeguarded land off Chain House Lane have been replaced by pedestrian and cycle routes. This will result in a smaller number of dwellings (up-to 250 dwellings) being accessed off Chain House Lane once this part of the site is developed.



Elements of Masterplan overlaid on draft Masterplan September 2018  
Fig. 4.2



## Amendments to Draft Masterplan Submitted September 2018

### Surface Water Drainage

As part of the technical studies, and through discussions at the public consultation events, careful consideration of the surface water drainage has led to a solution of swales to be implemented across the site. A number of catchment areas have been determined, and the quantity and location of these have been integrated into the Masterplan. This has led to the changes in Insert F and G.

### Insert F: Surface Water Storage

The area to the north of the masterplan has been reviewed, and development has been removed from a wider area to allow a dedicated areas for surface water storage. As a result the likely hood of instances of surface water flooding will be addressed.

### Insert G: Removal of development to the frontage onto Penwortham Way

The area directly to the east of Penwortham Way and to the South of the new entrance has been reviewed. Development has been removed from this area, and Sustainable Urban Drainage systems (SUDS) introduced. SUDS have also been introduced in a number of other areas.

### Insert H : Location of Local Centre and the Village Green

The commercial units for the Local Centre have moved onto the CBLR to give maximum commercial viability. Clear visibility back to Penwortham Way has been included.

A clear strong walking route has been provided to the central green space; the central green space is located off a primary road.

The proposed Village Green space to the south of Nib Lane was not well connected to the proposed Local Centre. As the character of the Local Centre has developed and the detail of the local facilities to be provided has evolved, the green space has moved further to the north west. This will allow for better walking connections between this great space and the heart of the development.

### Insert J: Straightening of the CBLR

This areas shows further straightening of the link road to ensure a clear flow across the Masterplan.



Elements of Masterplan overlaid on draft Masterplan September 2018  
Fig. 4.3

## Amendments to Masterplan Submitted December 2019

### Insert A: School Location

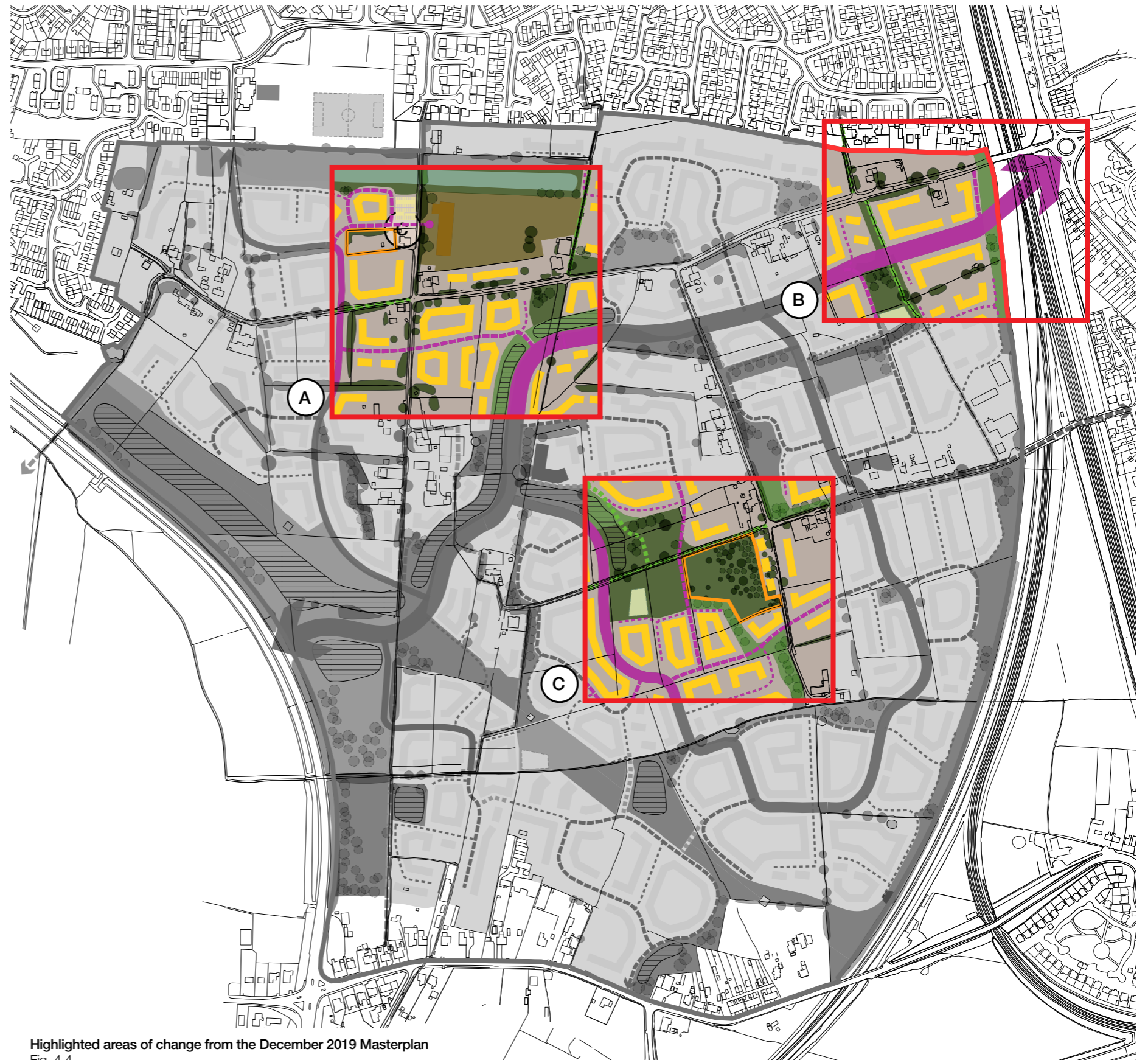
In the draft Masterplan the primary school was located to the south of Bee Lane. After discussions with the Local Education Authority, it was felt that the site to the north of Bee Lane was more suitable; it can be accessed from a quieter road, and benefits from being closer to playing fields in Kingsfold. A small car parking area for up to 40 cars has been provided immediately to the west of the school site.

### Insert B: Links between Bee Lane and the Cross Borough Link Road

The Masterplan has always shown the future new bridge link across the railway to the south of Bee Lane. The Masterplan has been updated to reduce the size of the road between the CBLR and Bee Lane in this location.

### Insert C: The Orchard

After discussions with SRBC, it has been agreed that the Masterplan will show the retention of the existing orchard land. An area has been highlighted with an orange outline showing the areas to be retained. Should a suitable alternative location become available for re-provision of the Orchard, there would also be the option to designate this area as residential.



Highlighted areas of change from the December 2019 Masterplan  
Fig. 4.4

## Amendments to Masterplan Submitted December 2019

**Insert D: Penwortham Centre Extension and 3G pitch provision.**

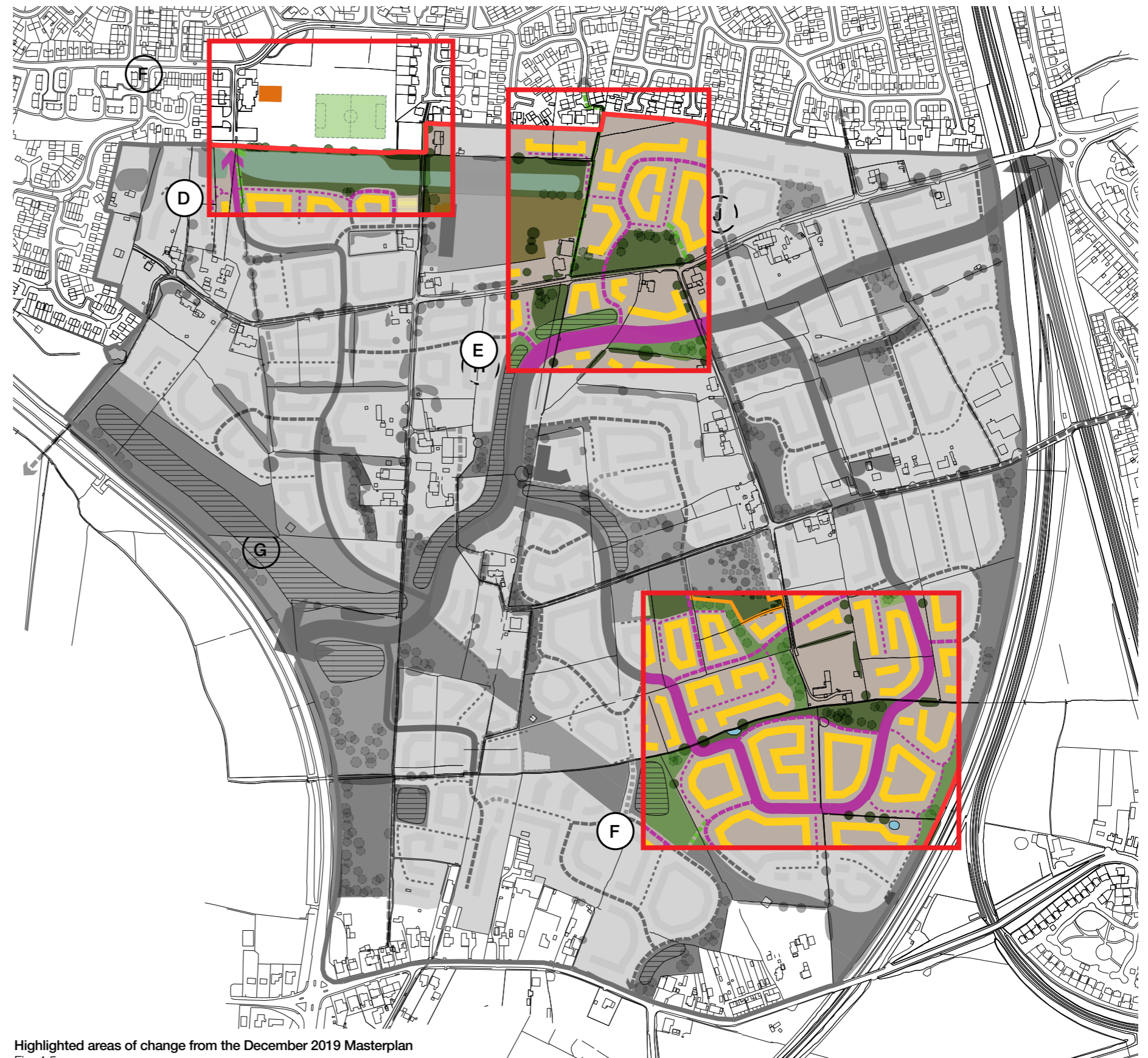
In line with the neighbourhood plan, the Masterplan now shows the upgrading of the existing football pitch to a 3G artificial surface pitch; this will allow greater all year use. In addition, instead of a separate community building within the Masterplan, the current proposals show an extension to the existing Community Centre

**Insert E: Modification of road network**

The altered school location to the west has required some minor modifications to the road network and the access point from Bee Lane. The green network has been amended.

**Insert F : Primary Road Location**

The primary road network has been extended further to the south; this allows a more holistic access solution for the Masterplan, and improves access to the safeguarded land to the south.



Highlighted areas of change from the December 2019 Masterplan  
Fig. 4.5





## 5.0 Vision for the Site

This Masterplan sets out a vision for a new place rooted in the existing context. This new neighbourhood must be a well-connected place that encourages activity. It needs to be both a place to settle down for now, and a place for the next generation.

### A new place rooted in the existing context:

The Masterplan proposes the creation of a new neighbourhood based on the existing woven fabric; the complex arrangement of lanes and footpaths, dominated by hedgerows and interspersed with existing buildings and dwellings provides the Masterplan with a rich starting point. The transformation of the area within the Masterplan boundary could provide a range of Character Areas, connected by a new network of well-defined streets and public spaces. These areas of formal and informal greenspaces could be located to ensure clear biodiversity corridors as well as pedestrian and cycle routes improving the existing recreational space adjacent to Kingsfold Community Centre and linking this through green corridors to new public green spaces across the site could help provide intuitive linkages through the site.

Using the existing landscape framework, the Masterplan could deliver a variety of open spaces providing a broad range of uses for existing and future residents.

Formal amenity space could be sited to provide a positive setting to community facilities and at key gateways to the scheme. As such a key community 'village green' could be delivered in the heart of the site. Further key amenity space could be proposed in connection with Kingsfold playing fields. To ensure easy access to local provision further amenity green spaces could be provided at locations within the Masterplan; linking to wider semi-natural green space associated with the sustainable drainage network and key sustainable links across Penwortham Way to the wider landscape.

Equipped play provision could be provided within these amenity green spaces to ensure accessibility is achieved.

A number of potential locations could also be identified for an allotment, which could provide provision for existing residents of the Kingsfold and Chainhouse Lane area to provide new provision within the core of the new neighbourhood.

Additional 'connective' internal greenspace could be provided within the site, associated with the key amenity spaces and principal movement corridors as well as Public Rights of Way and hedgerows, with the express intention of delivering a continuous, coherent, green and mature landscape setting for development at the earliest opportunity. User provision within these greenspaces may include informal uses such as natural play, dog walking, nature watching, community woodland and off-road cycling. These greenspaces could also naturally align with the sustainable drainage vision for the site, to create the opportunity for the delivery of ecological features including swales, wetlands.

All internal green and amenity space could be located to be easily accessible through the sustainable movement network. Biocorridors, largely consistent with the green space provision, could also be integrated into the Masterplan. This is so that existing biodiversity can be maintained and enhanced with opportunities for movement of species within and through the site.

### A place to settle down, a place for the future:

The vision for the site is to provide a new place with all the ingredients needed to create a sustainable community. The residential led development could include a full range of quality homes, intended as somewhere to settle down and somewhere for the future. The health and well-being of both the existing and new residents is central to the masterplanning and decision-making process. The Developers are designing a place for now and for the long term. This place must be future proofed for generations to come. There is an opportunity here to integrate digital and Smart Technology, thus ensuring that there is suitable space to create small home offices within these homes.



## 5.0 Vision for the Site

### A new neighbourhood:

Proposals for the new urban fabric takes inspiration from the Garden Village Principles. Well defined public and private spaces could allow the community to have a sense of identity and character. A range of new community facilities and services could provide vital connection points to thread together the development and bring social cohesion. There needs to be places for the community to come together on site, with new community uses, a new school, the existing active dairy and new allotments. A local centre including retail facilities could provide a focused centre to the development. The development could also forge strong connections outside the red line, engaging with other local centres and services, as well as with the local farming community.



### A well-connected place:

The Masterplan gives opportunity to develop a well-connected neighbourhood. Using the existing lanes and footpaths, it is possible to create a range of green spaces providing a wealth of different environments. Both new more formal parkland and informal areas for supporting an abundance of wildlife can be integrated into the Masterplan. This green infrastructure must also be well connected to the surrounding areas.



### A place that encourages activity:

The Masterplan layout is based on Active Design Principles. It needs to be easier to walk, cycle or use public transport to get to where you need to be. The Masterplan puts an emphasis on turning the existing lanes into sustainable pedestrian friendly routes; the vast majority of new vehicular traffic will be prevented from using the existing lanes. The green spaces and routes could encourage the growth of a community to stay fit and active.



### Garden Village Principles

As part of the vision outlined on this page, the Masterplan seeks to incorporate a number of the principles of Garden Villages. As set out in the Town and Country Planning Association's Guide 'Understanding Garden Villages: An introductory Guide, the following aspects have been considered:

**Small in scale:** The heart of the development establishes the new identity 'The Lanes'; Garden villages are defined as between 1,500 and 10,000 homes; this development is at the smaller end of the definition.

**Planned for Healthy Living:** This principle is achieved by encouraging walking and cycling and using Active Design principles. These are embedded in the Masterplan, re-using existing footpaths and developing the school and local centre at the heart of the Masterplan.

**Provision for a vibrant social life:** There will need to be a long term artistic and cultural strategy to help achieve this, but in the first instance the Masterplan includes for community provision to enable this.

**Designed with High Quality Materials and attention to detail:** A separate Design Code has been prepared by The Developers which addresses material and design detail across the Masterplan area.

**Provision of services for day-to-day needs within walking distance:** The Masterplan sets out play spaces a local centre and primary school at appropriate walking distances.









## 6.0 Access and Movement

This section presents the access and movement strategy for the site. It is based on detailed consultation with SRBC and LCC.

Enclosed at Appendix C of this Masterplan document is a Transport Technical Statement prepared by Eddisons, which provides consideration of the potential traffic impact of the Masterplan. The technical statement contains an assessment of the 2,000 new dwellings proposed by the Masterplan and establishes what highway mitigation is likely to be required to facilitate the delivery of the Masterplan.

### Penwortham Way

Penwortham Way is proposed to be improved from its current single lane in each direction to a formal two lane dual-carriageway. LCC are proposing to widen Penwortham Way predominantly on its western side, however, some encroachment into the Masterplan area is proposed to the east in the form of proposed earthworks. As such, the slight encroachment into the site is reflected in the Masterplan by providing a buffered landscape area along its boundary with Penwortham Way. A Planning Application (App Ref: LCC/2020/0014) for the dualling of Penwortham Way has been submitted by LCC in 2020. The planning application includes a formal Transport Assessment that considers the impact of the dualling scheme on the operation and safety of the local highway network. The dualling scheme in the context of the site frontage is illustrated in fig 6.0.

Any future development within the site will clearly need to ensure that the proposals will not prejudice the Penwortham Way dualling scheme. Discussions between LCC and the Developers will continue to ensure that the delivery of the site's new access and dualling are seamless.

### Primary Site Access

The design and location of the main vehicular site access from Penwortham Way has been discussed and agreed in principle with LCC. This junction will be signal controlled to allow:

- formal pedestrian crossing facilities at this location; and
- allow LCC more control of the traffic flow along the carriageway as the junctions to the north and south are also signal controlled.

Two initial access options have been developed as detailed below:

- Proposed Site Access Arrangement (Single Lane) – consisting of a signal-controlled T-junction with right-turn lane for traffic accessing the site from the south and TOUCAN crossing across the site access and Penwortham Way. This option ties into the existing Penwortham Way carriageway alignment and width. This is shown in fig 6.1.
- Proposed Site Access Arrangement (Dualled Approach) – consisting of a signal-controlled T-junction with right-turn lane for traffic accessing the site from the south and TOUCAN crossing across the site access and Penwortham Way. This option ties into LCC's proposed Penwortham Way dualling scheme alignment and width. This is shown in fig 6.2.

### Secondary Site Access

Additional accesses to the site will be provided via Bee Lane (to the north east), Flag Lane (to the east), Kingsfold Drive (to the north) and Coote Lane (to the safeguarded land to the south). The accesses from Bee Lane, Flag Lane and Coote Lane may provide limited access to the overall site for general traffic, acting primarily as limited-use residential access roads, cycling and pedestrian access. This strategy will be managed on site through careful consideration of measures that will control traffic flow throughout the site and in particular on 'the lanes'.

Two options, proposing a short and long term vision for the access point at Bee Lane have been developed:

### Bee Lane Short Term and Long Term Access Options

Short term and long term vehicular access options connecting to Leyland Road in the north eastern corner of the site are proposed. The short term option is a 'T' junction arrangement connecting the CBLR extension to Bee Lane utilising the existing Bee Lane bridge to connect to Leyland Road. The short term access option will be restricted to use by existing properties on the site and a limited number of 40-50 dwellings to be agreed with LCC. This is shown in fig 6.3.

The long term option is a new bridge over the West Coast Mainline connecting the CBLR extension with Leyland Road. The delivery of the new bridge is a key aspiration of SRBC and would require third party land to deliver in the long term. The Masterplan allows for the future provision of a new bridge across the West Coast Mainline (WCML) to connect with the B5254 Leyland Road corridor and The Cawsey. The road network and development parcels on the Masterplan have been aligned to protect the

land required for the delivery of the new bridge and the route of the CBLR. To ensure that an appropriate junction can be delivered on Leyland Road facilitating the new bridge, two indicative junction arrangements have been explored, one consisting of improvements to the existing roundabout and one consisting of a new signalised junction arrangement. These indicative options are shown in figures 6.4 and 6.5 and would be developed as part of future planning applications on the Site.

The inclusion of a short and long-term option for Bee Lane demonstrates that the Masterplan will not prejudice the completion of a new WCML bridge. Consultation with SRBC and LCC on the alignment of the CBLR extension will continue to ensure that it will not preclude connection to cross the WCML in the longer term. Once the delivery of the new bridge is complete, it is expected that the existing Bee Lane bridge will be closed, limited to pedestrians and cyclists only, or removed entirely. The proposed spur linking Bee Lane to the CBLR will then be retained as a route for the existing residents on Bee Lane to access the CBLR and the new bridge. This ensures a seamless transition between the short and long term options.

The vehicular route between Penwortham Way and Bee Lane will be phased throughout the wider development and consultation with SRBC and LCC on the site access options will continue as part of the Developers' planning application process.

### Flag Lane and Chain House Lane Access Options

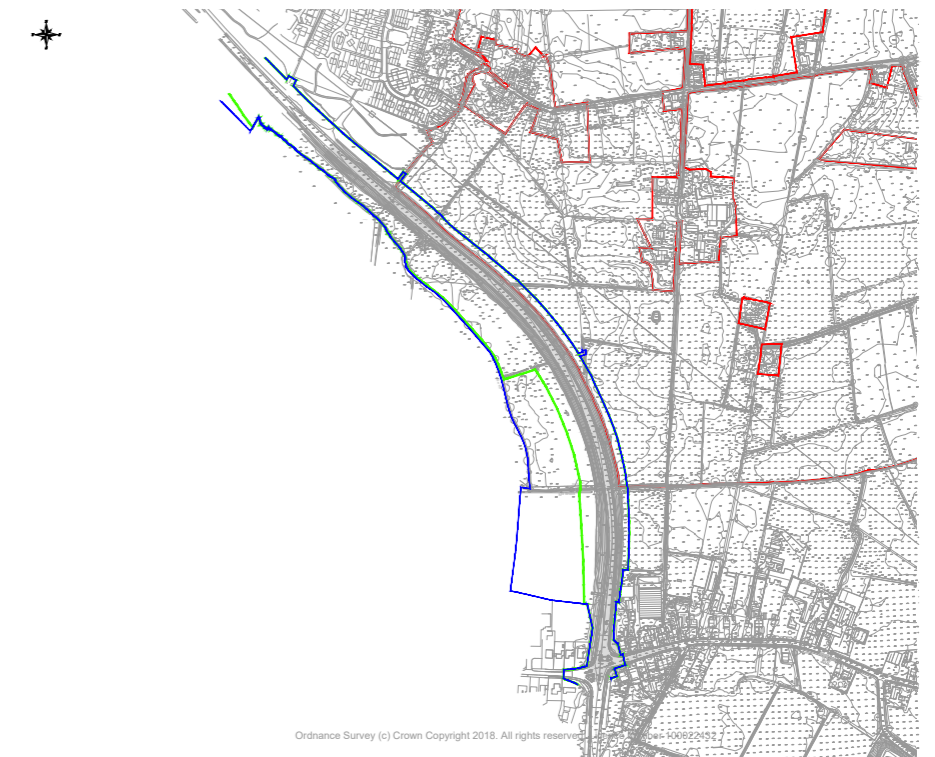
Secondary accesses via Flag Lane (to the east) and Chain House Lane (to the south) are also provided. These accesses will provide limited access to the overall site for general traffic, acting primarily as limited-use residential access roads. This strategy will be managed on site through careful consideration of measures that will control traffic flow throughout the site and will include the creation of a series of cul-de-sacs where appropriate to limit through traffic and the number of dwellings which can utilise each secondary access. These measures will enable the existing character of the lanes to be preserved and will facilitate green corridor initiatives along sections of Flag Lane, Moss Lane and Bee Lane, such as, wildflower planting etc to be introduced. The Flag Lane access option is shown in Figure 6.6 whilst the potential Chain House Lane access option is shown in Figure 6.7. These options will be developed as part of future planning applications on the Site.

### Kingsfold Drive Access Options

As requested by LCC, the access from Kingsfold Drive will facilitate bus and emergency access only to prevent the intensification of use of Kingsfold Drive by general vehicular traffic. No direct vehicular access will be provided across the site via Kingsfold Drive. Kingsfold Drive is not adopted and a section of the route lies outside of the Site on third party land. One access options at Kingsfold Drive have been developed, utilising an existing highway link which currently facilitates access to the Penwortham Community Centre. The indicative access options for the Kingsfold Drive link is shown in Figure 6.8.

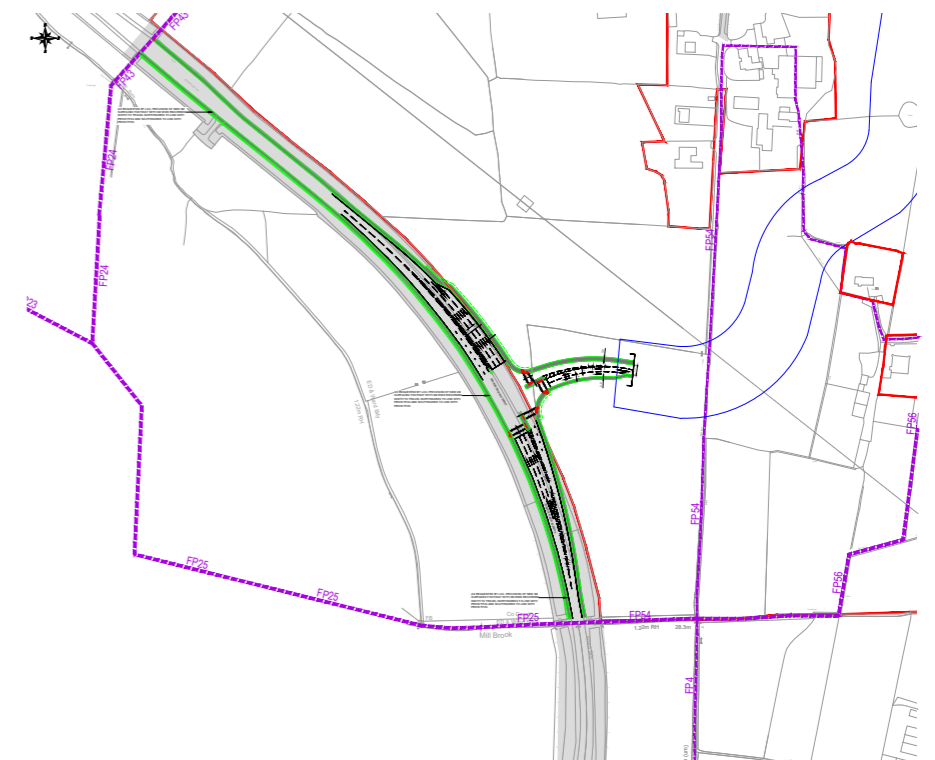
### A582 Dualling Scheme – Extent of CPO Land

Fig. 6.0



### A582 Site Access – Single Lane

Fig. 6.1

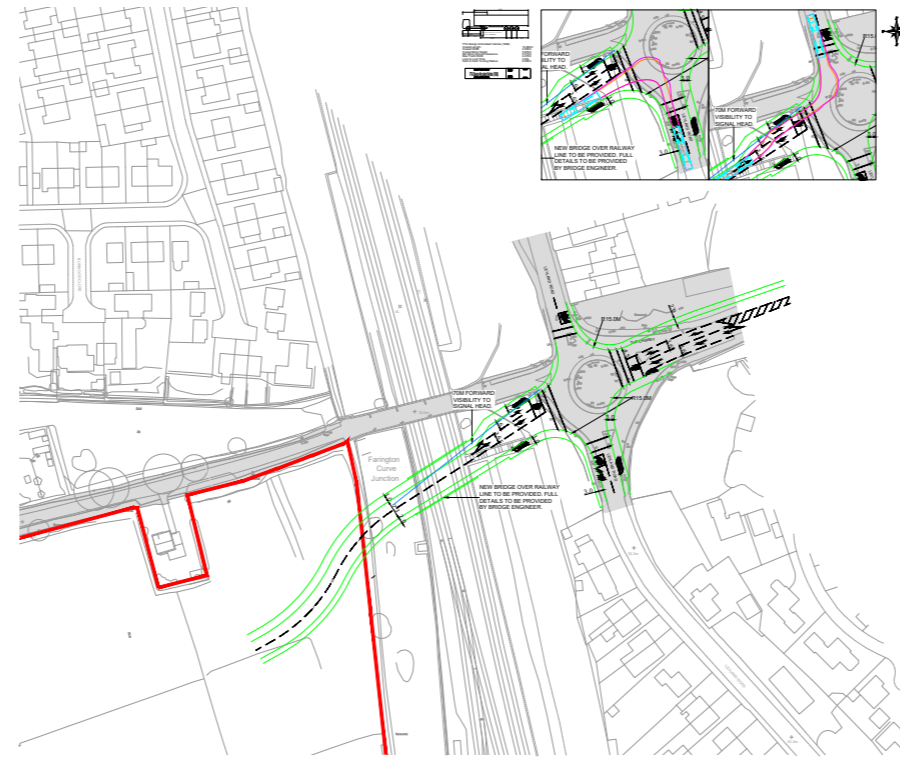


# 6.0 Access and Movement

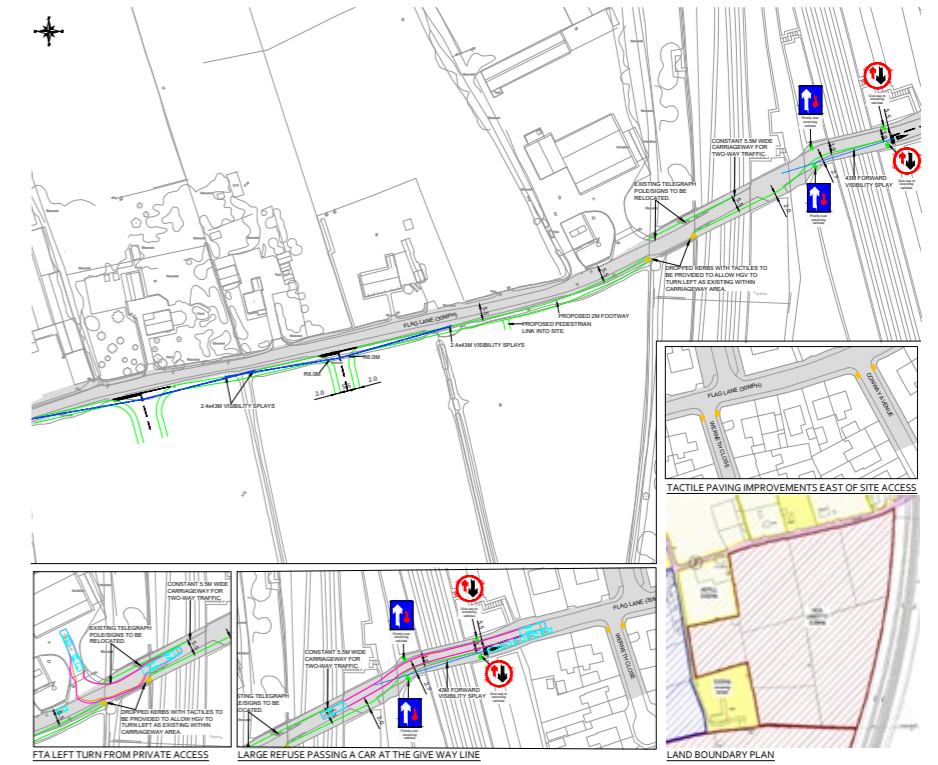
**A582 Site Access – Dualled Approach**  
Fig. 6.2



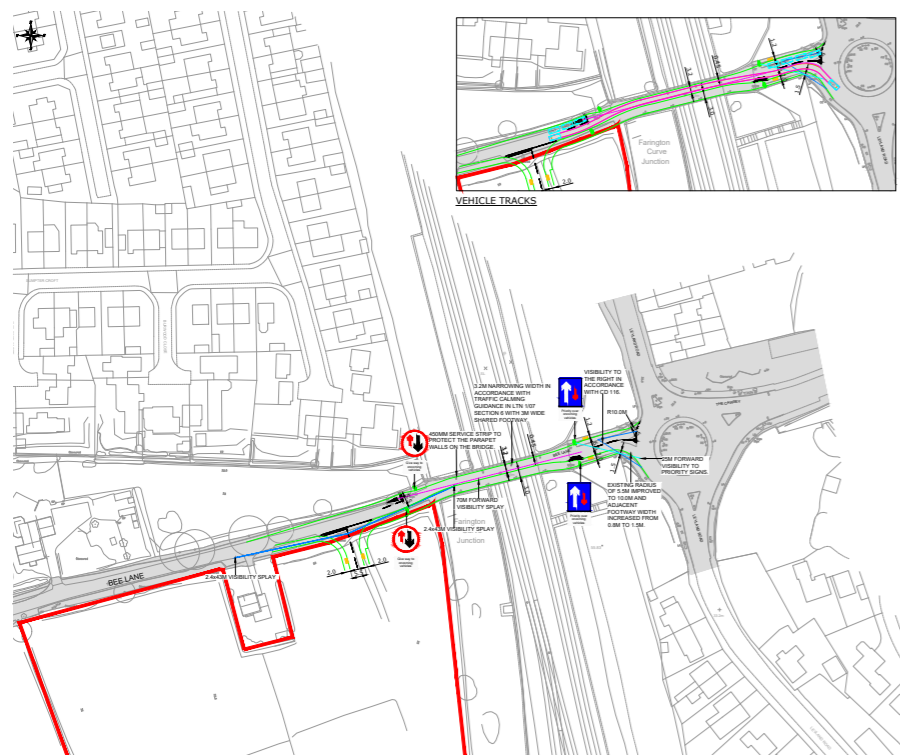
**Potential Bee Lane Long Term (New Bridge) – Option 1**  
Fig. 6.4



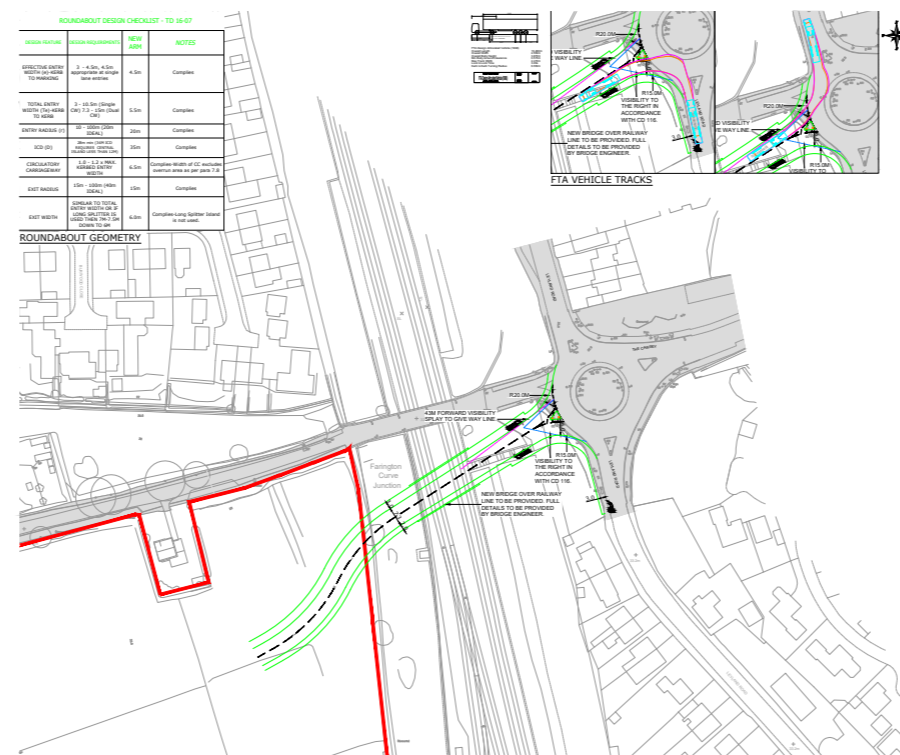
**Potential Flag Lane Access**  
Fig. 6.6



**Bee Lane Access – Short Term Option**  
Fig. 6.3



**Potential Bee Lane Long Term (New Bridge) – Option 2**  
Fig. 6.5



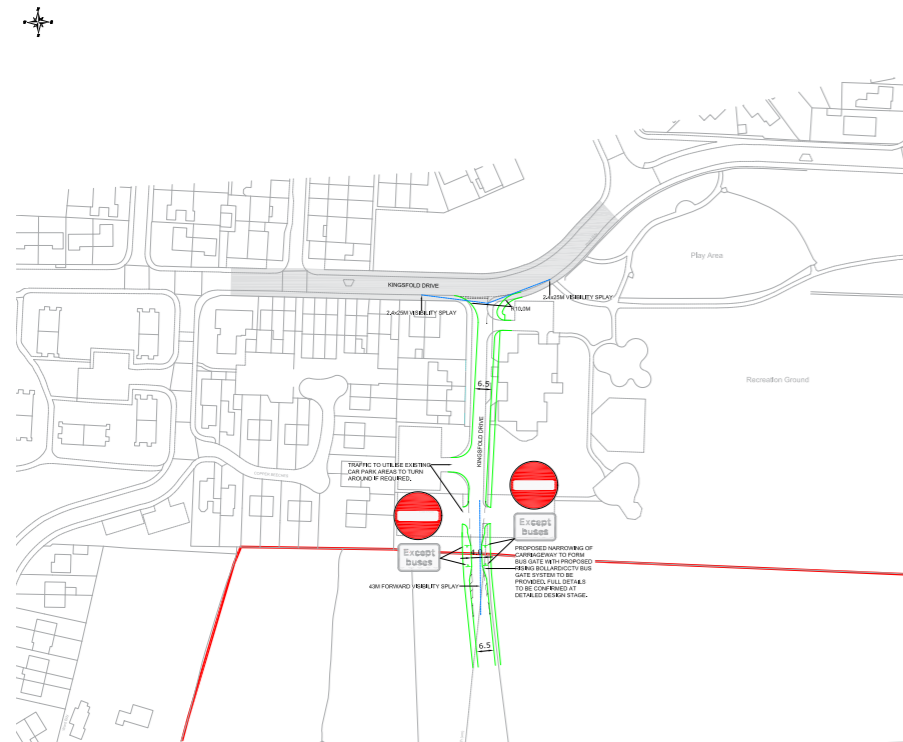
**Potential Chain House Lane Access**  
Fig. 6.7



## 6.0 Access and Movement

### Potential Kingsfold Drive Access – Option 1

Fig. 6.8



#### Pedestrian and Cycle Access

The site is highly accessible by foot and by bicycle. The main point of pedestrian and cycle access will be from the proposed vehicular access points, however, the proposals ensure that the site is permeable in numerous directions to maintain and promote better pedestrian and cycle linkages to the wider area.

The Sustainable Movement Plan provides an illustration of the numerous pedestrian and cycle routes both into, out of and through the Masterplan. The proposed 'quiet lanes', as described earlier in this chapter, will be very lightly trafficked and will provide an attractive and direct network of pedestrian, cycle and bridle routes throughout the site to ensure permeability as well as direct connections to various 'day to day' amenities within the vicinity of the site. These connect well with the already established footpaths and cycle networks adjacent to the site.

The details of any amendments to the 'Quiet Lanes' or any other new and dedicated pedestrian or cycle access will be the subject of discussions with LCC at the time of the Developers' planning application.

#### Travel Planning

The preparation and adoption of a Travel Plan is an important element of managing the demand for travel to all modern developments.

A Framework Travel Plan has been prepared by Eddisons Transport Planning and Design to support the initial residential element of the Masterplan. This document will evolve into a formally agreed Full Travel Plan in agreement with SRBC and LCC prior to first occupation on the site.

The key aims of the Travel Plan are as follows:

- To encourage residents and visitors to use alternatives to the private car;
- To increase the awareness of the advantages and potential for travel by more environmentally friendly modes; and
- To introduce a package of management measures that will facilitate travel by modes of transport other than the private car.

The key measures which are expected to be delivered in the future Travel Plan are detailed below:

- Appointment of Travel Plan Co-ordinator;
- Improvements to walking and cycling routes;
- Ensure travel awareness amongst residents;
- Creation of a travel database with information of the current and historic travel patterns of residents;
- Ensure the availability of the most up to date travel information;

- Ensure that all residents receive a Welcome Pack, which will contain details of public transport services i.e. timetables and route information as well as advice on walking and cycle routes to the site;
- Provision of discounted tickets for bus and or rail to ensure that public transport use is encouraged from the outset;
- Promotion of a Lift Share scheme; and
- Promotion of Travel Awareness initiatives such as 'Cycle to Work' week.

The above list of measures is not exhaustive and the appointment of a Travel Plan Co-ordinator and application of suitable planning conditions will allow other measures to be discussed and agreed with SRBC and LCC prior to first occupation on the site.

#### Inclusive Access

The Masterplan will ensure that the site can be inclusively accessed. The design of the vehicular, pedestrian and cycle access points will be designed to ensure that access for all can be achieved. This will flow through the site in terms of pedestrian routes into, out of and through the Masterplan area.

#### Access to Existing Properties

Access to existing properties in private ownership will be maintained. All existing rights of access will be maintained with acceptable alternatives provided where appropriate.

Opportunities created to review, and where appropriate downgrade, existing lanes through the provision of any new access points will be considered and agreed with LCC.

New access points will be constructed to appropriate design standards.

#### Internal Access

Bee Lane, Flag Lane, Nib Lane, Moss Lane and Lords Lane will be retained, unless appropriate alternative access routes are delivered, allowing for continued vehicular access to existing properties. Where possible the lanes will be converted to pedestrian and cycle priority and the rural character will be preserved, through potential 'quiet lane' status. This will create an enhanced network of pedestrian and cycle friendly routes across the site. The extent of the adopted highway within the site boundary is shown on the adjacent plan. The plan shows that Bee Lane is adopted from the Cawsey up to the intersection with Moss Lane. The section of road between Bee Lane and Flag Lane is adopted and Flag Lane is adopted from the intersection with Lords Lane up to the eastern edge of the site. Moss Lane is partially adopted from the site's northern boundary up to Holme Farm.

#### Street Hierarchy

The street hierarchy will comprise:

- In the long term, the primary internal spine road will link the primary signalised access junction on Penwortham Way to Leyland Road. This route is aligned to discourage drivers travelling directly through the site.
- The primary access routes will have carriageway widths of between 6.5 and 7.3 metres wide.
- 2.0 metre wide footways will be provided on both sides of the primary access roads as a minimum.
- A shared or segregated footway/cycleway of 3.0m to 3.5m wide will be provided along linking the main spine road through the site linking Penwortham Way to Bee Lane.
- Residential access roads of 5.5 metres wide with 2.0 metre footways will be provided linking the main residential areas of the site to the proposed spine road and 4.5 metre wide private drives roads will be used for cul-de-sacs and roads serving a limited number of dwellings.
- The proposed lanes will be retained/ improved and the internal layout of the site will be designed to provide a safe environment for pedestrians and cyclists with clearly defined walkways, crossing points and traffic calming features where appropriate.
- As detailed in Section 9.0 of this Masterplan, parking provision for all uses on the site will be provided in accordance with relevant Parking Standards and in agreement with LCC.

Improvements to the Local Highway Network The proposals will ensure that the site is as accessible as possible by non-car travel modes.

This will assist in reducing the reliance on the private car. However, there will be a large amount of traffic generated by the site during the traditional weekday peak periods and as such there will be some highway improvements required in the area that will improve the capacity of the local highway network. Off-site mitigation is also likely to be required. A highways modelling exercise will be undertaken and the extent of any required off-site highway works, and infrastructure contributions, will be discussed with LCC during the planning process.

#### Public Transport Opportunities

There are a number of opportunities to deliver public transport service improvements in the area. Wider proposals for Bus Priority on the Leyland Road corridor are under consideration by LCC.

The Masterplan will allow for the potential future operation of bus services through and/or around the site and will provide high quality pedestrian linkages to ensure public transport facilities and service provision are within appropriate walking distances of properties. The primary public transport corridor is currently via Leyland Road and Coote Lane.

Discussions are underway with local bus operators to establish the potential for diverting an existing bus service, or providing a new service, to serve the site. Any service improvements will seek to provide a frequent service throughout the day and also consider weekends to a range of destinations. Bus routes will be designed to take into account the phasing of the development and appropriate access to services will be provided for all land uses on the site. This will ensure that the site is directly accessible by bus and provide a bus service accessible to the vast majority of the site within a 5 minute walk.

## 6.0 Access and Movement

### Cross Borough Link Road Extension

The CBLR has been completed between Carrwood Road and The Cawsey. This will link up to Leyland Road to the east of the site. In the long term, the CBLR extension will be a primary route through the site from Penwortham Way linking to the Cawsey to the north east. The CBLR extension will be delivered in phases from west to east across the site. A signal controlled junction is proposed on Penwortham Way, which will create a gateway into the development and will be the main vehicular access into the site. In the east, the CBLR extension will connect to Leyland Road.

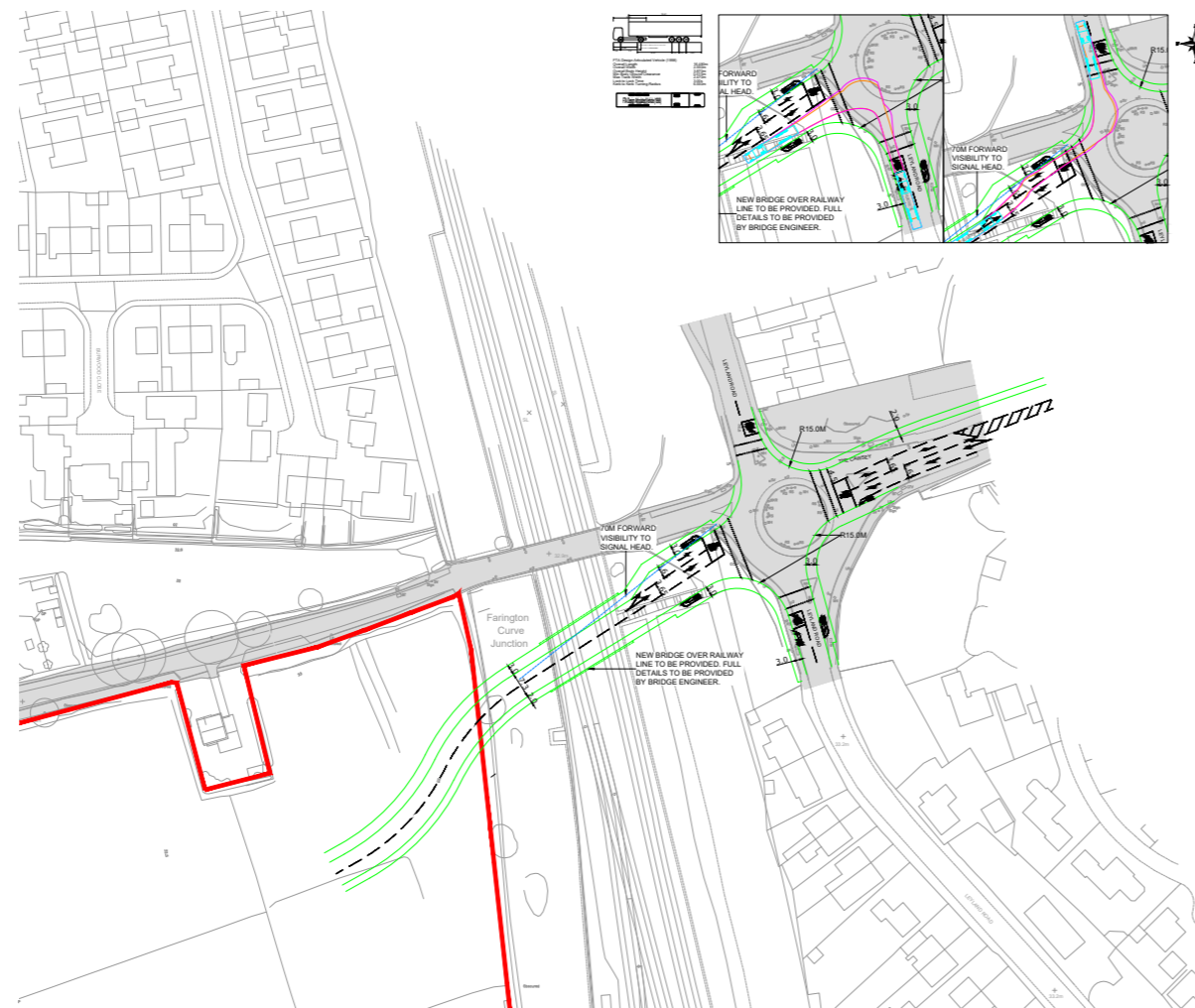
The Masterplan demonstrates that the proposals at the site will not prejudice the completion of a new bridge on the WCML. Consultation with SRBC and LCC on the alignment of the CBLR extension will continue to ensure that it will not preclude connection to cross the WCML in the longer term.

This strategy has been discussed with LCC during the various meetings and liaison described in the consultation section of this document. The main vehicular route through the site will provide a road width of between 6.5m to 7.3m. The indicative bridge layout is shown in Figure 6.10.

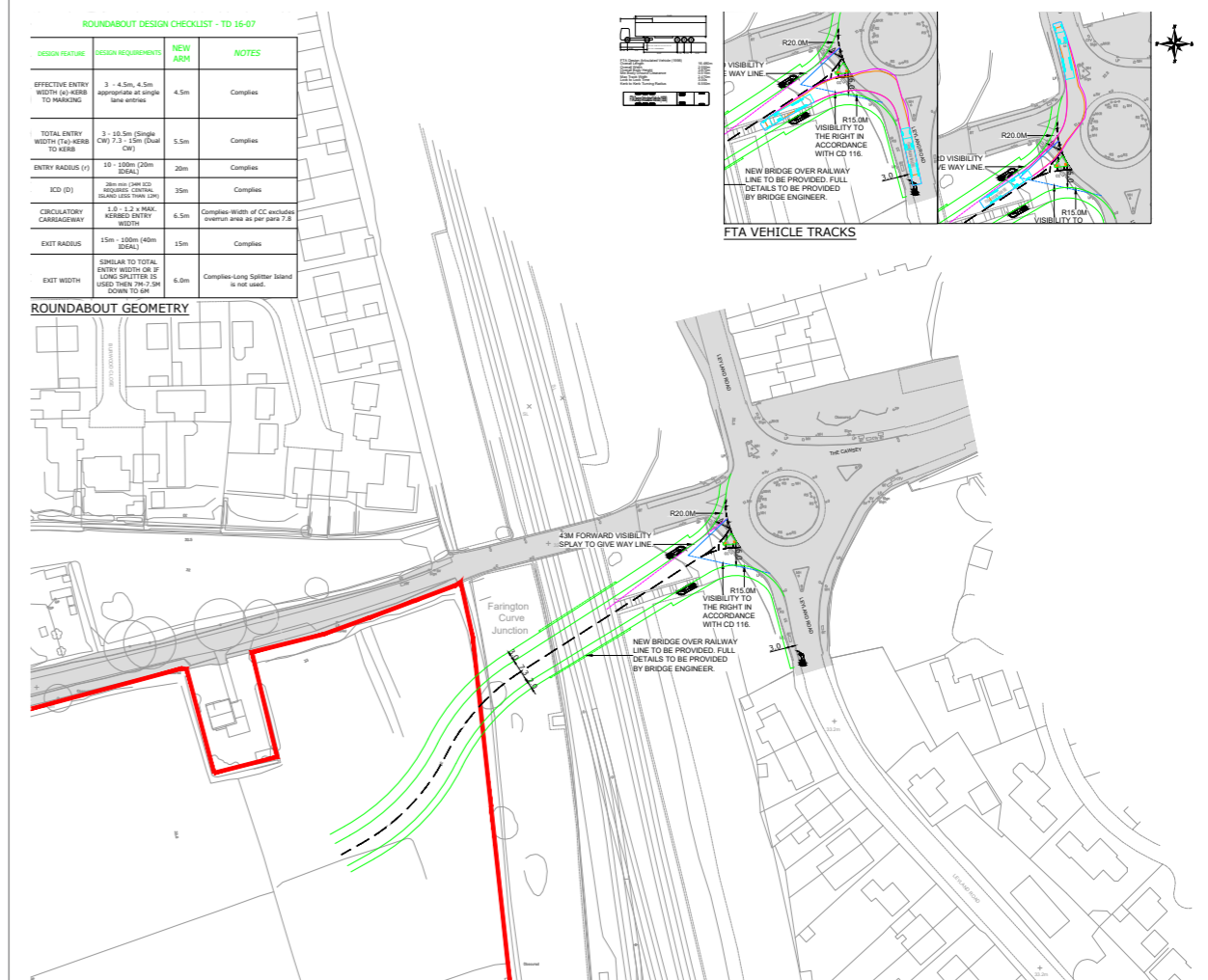
### Indicative Bridge Layout

Fig. 6.10

### Potential Bee Lane Long Term (New Bridge) – Option 1



### Potential Bee Lane Long Term (New Bridge) – Option 2







## 7.0 Environmental and Site Considerations

This section describes the environmental considerations at the site which have been taken into account in preparing the Masterplan. A range of technical assessments of the site have been undertaken by an experienced technical team commissioned by the Developers.

Appended to the Masterplan are a series of Technical Statements, which provide further detail on the assessments which have been carried out to underpin the Masterplan. These technical statements have been prepared following requests from statutory consultees for more detailed information on Transport, Ecology, Flood Risk and Drainage and Landscaping to be included within the Masterplan document during the consultation which took place in early 2020.

A summary of the findings of the technical assessments is presented in this section. The technical assessments conclude that once conventional mitigation measures have been implemented no constraints have been identified which preclude the future development of the site.

### Ecology Fig. 7.0

A Phase 1 Habitat Survey, Hedgerow Regulations Assessment and protected species surveys for great crested newts, badgers, water voles, birds and bats have been undertaken to identify any ecological constraints present on the site. A detailed Ecology Technical Statement prepared by TEP can be found at Appendix D of this Masterplan document. This technical statement provides further detail on the Ecological Assessments which have been undertaken to inform the Masterplan proposals.

No evidence of great crested newts, badgers or water voles was found during the surveys and the site is considered to be unsuitable for reptiles. The hedgerows and trees on the site provide abundant nesting opportunities for local bird populations as well as foraging habitat for bats. A large number of the trees were found to contain features which could be used by roosting bats, although no evidence of roosts was found during the surveys.

**Allocated area** – the proposed development will seek to retain existing ecological features where possible. Where such features are to be removed to facilitate the development these will be replaced/mitigated elsewhere within the scheme wherever possible. The site will be enhanced for local wildlife through the creation of green corridors and biodiversity areas (wetland areas, wildflower meadows and woodland planting) to maintain habitat connectivity within the site and the surrounding landscape as well as native species planting and the installation of features such as bird and bat boxes.

**Safeguarded area** – habitat connectivity between the allocated area will be maintained and strengthened through the creation of landscaped areas to link the site and the wider landscape. The proposed development will include enhancement measures such as bat and bird boxes and native species planting.

The creation of a biodiversity corridor will complement the existing network of hedgerows and significantly enhance habitat connectivity both within the site and the wider landscape for local wildlife. The biodiversity network will include areas which are not publicly accessible to maintain their value to local wildlife. However the proposed development will also incorporate wildlife-friendly features which can be accessed and enjoyed by local residents. This may include play areas set in wildflower meadows and woodland walks. A biodiversity net gain assessment has been completed for the site within which the target of 10% biodiversity net gain, as set out in the emerging Environment Bill and local planning policy, has been met.

Within the natural and semi natural greenspace on the site, an ecology wildlife area will be created. This could include habitat areas, woodlands, educational boards, seating and footways etc. This facility will be for the use of the existing community, the new residents of the scheme and local schools.

Woodland is a scarce habitat in Lancashire. The proposed development will not result in the loss of any woodland and the landscaping scheme will incorporate several parcels of woodland planting which will provide a valuable resource for local wildlife.

Sensitive lighting design will be implemented to minimise light spill on to retained or newly created habitats to maintain dark habitat corridors. This will be particularly beneficial to species such as bats and barn owls which have been recorded within the site.

### Key

Masterplan Boundary

Species-Poor Intact Hedges

Existing Trees





## 7.0 Environmental and Site Considerations

### Trees

Fig. 7.1

Hedgerows are considered to be the most ecologically valuable habitat on the site with over 10,000 linear metres included. A number of hedgerows have been assessed to be "important", from an ecological perspective. Where possible hedgerows will be retained by future development. The remainder of the site is considered to have low ecological value, and therefore there are significant opportunities to enhance the site for local wildlife.




Enhancement of the biodiversity of the site can be achieved through a delivery of a network of 'biocorridors' linking existing resources to new and proposed resources.

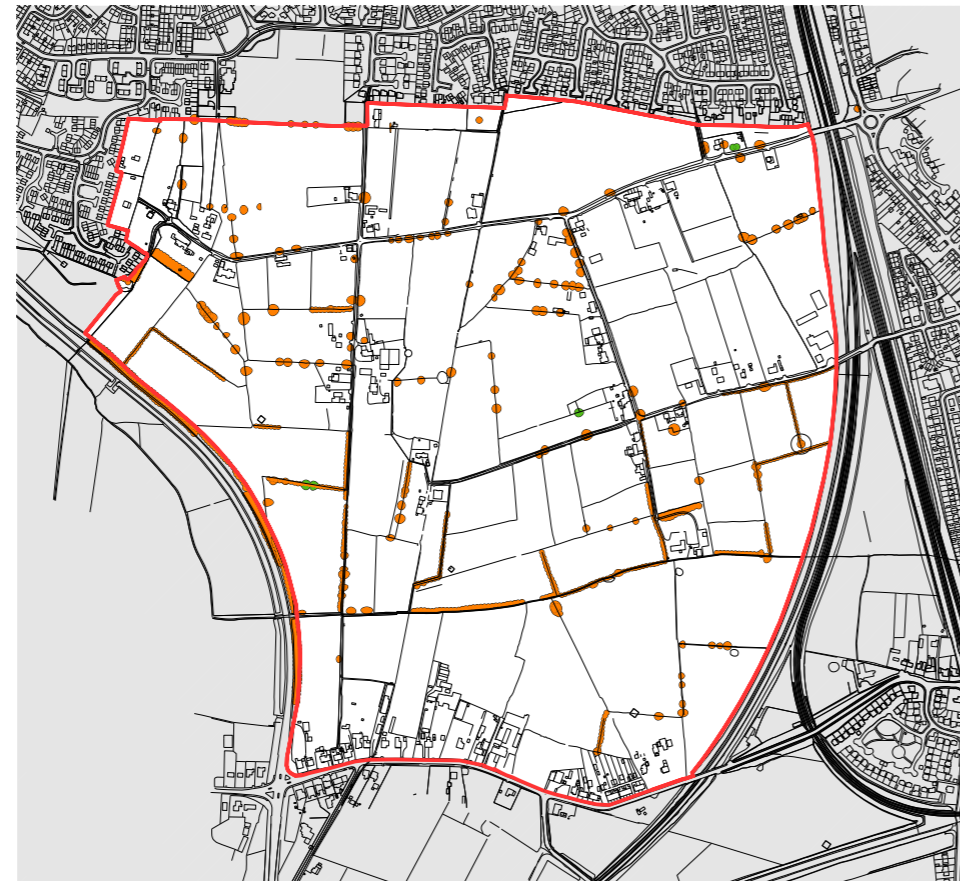
The design team have considered the arboricultural character of the site as a key attribute throughout the development of the Masterplan.

Spread throughout the site are numerous trees that have been deemed of such quality that they should remain untouched within the Masterplan. These are indicated as 'Tree Type A' and total five in number. These trees will have a buffer zone around their current canopy spread to allow further growth without affecting new development. Where possible 'Tree Type B' will also be retained.

An iterative design process has resulted in the retention and protection of key habitat features or like-for-like replacement within the scheme as a minimum.

#### Key

-  Masterplan Boundary
-  Tree Type A
-  Tree Type B













### Site Wide Utilities

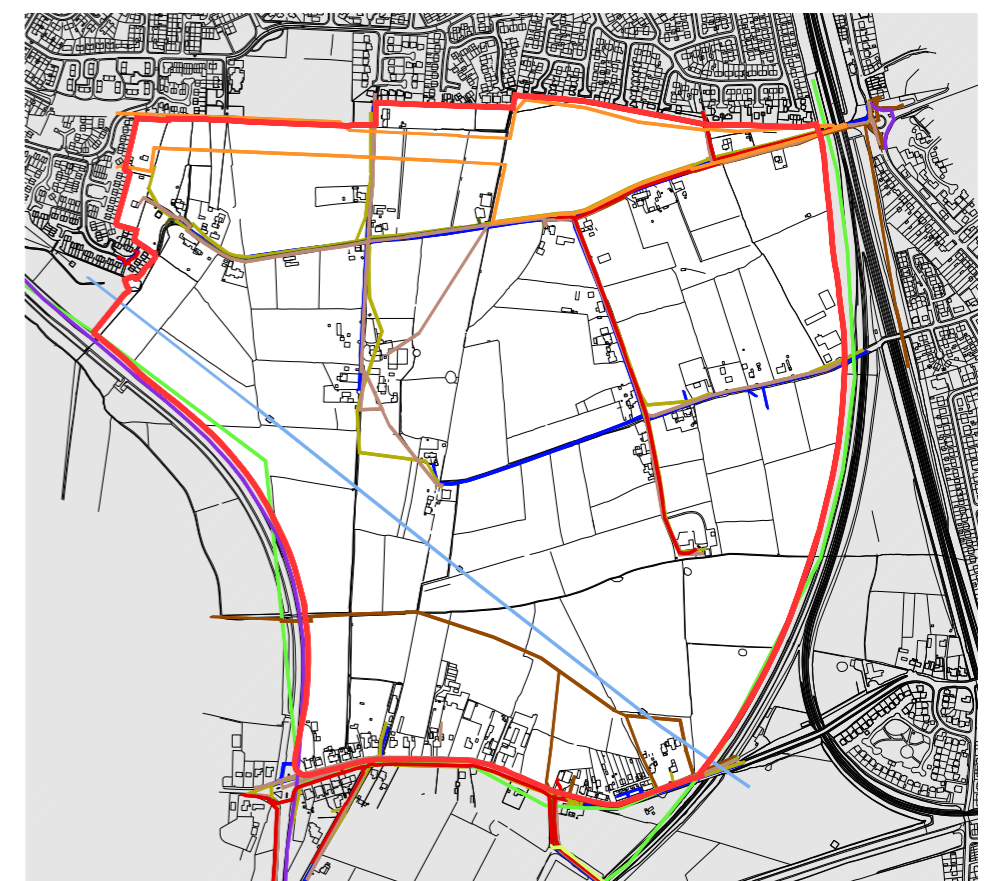
Fig. 7.2

Records obtained by Electricity North West, Cadent Gas, United Utilities Water, BT Openreach, Virgin Media and Centurylink have been used to inform the development of the Masterplan to ensure minimal impacts on the existing site infrastructure.

Representatives from Electricity North West and Cadent undertook visits to the site in May 2020 and following this, these bodies provided written confirmation that the gas and electricity proposals for the site were acceptable,

#### Key

-  Masterplan Boundary
-  Existing Water
-  BT Internet
-  CTL Centurylink
-  Existing Electric 6.6kv
-  Existing Electric 11kv
-  Existing Electric LV
-  Existing Overhead Line
-  Virgin Media
-  Gas LP Mains
-  Gas IP Mains
-  Gas MP Mains



## 7.0 Environmental and Site Considerations

### Noise Impacts prior to mitigation

Fig. 7.3

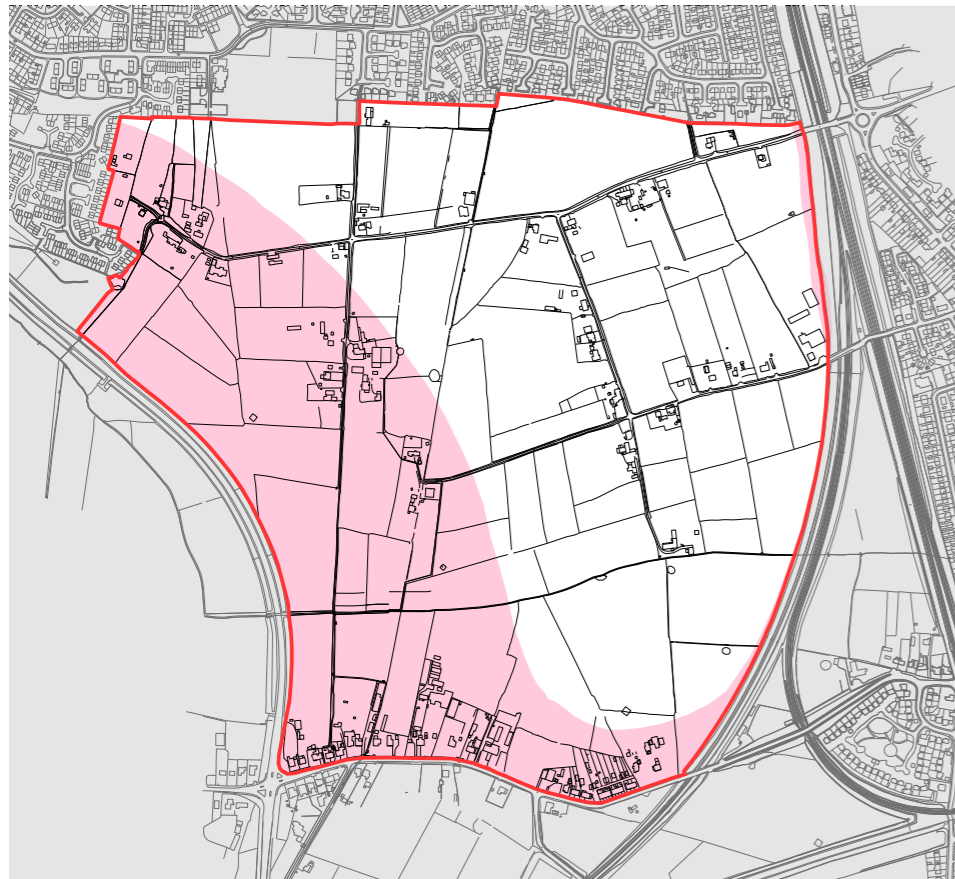
Noise modelling software has been used to predict the road and rail traffic noise levels associated with construction and operation on sensitive receptors both on and off site. Vibration sources associated with train pass-bys have also been assessed. With regards to transportation sound, it is necessary that good acoustic design is incorporated into the design for areas bordering roads, especially Penwortham Way. The diagram below shows the current impact of road noise prior to mitigation and development.

To prevent unnecessary discomfort to future residents, homes that lie within the 50 dB(A) zone post mitigation should not have all of the back gardens fronting on to Penwortham Way. This will minimise the impact of noise levels from

Penwortham Way through good design and siting.

Good Acoustic Design should be followed across the site, particularly for areas closest to the roads. Private gardens will be located and orientated such that they are on the side of the dwelling away from the roads and that gaps between those dwellings facing the roads are kept to a minimum. With regards to internal noise levels, alternative ventilation for certain habitable rooms across the site is likely to be required depending on the siting of the dwellings and orientation of the rooms.

**Key**  
 Masterplan Boundary  
 > 50dB(A) prior to mitigation



### Air Quality Boundary Zones

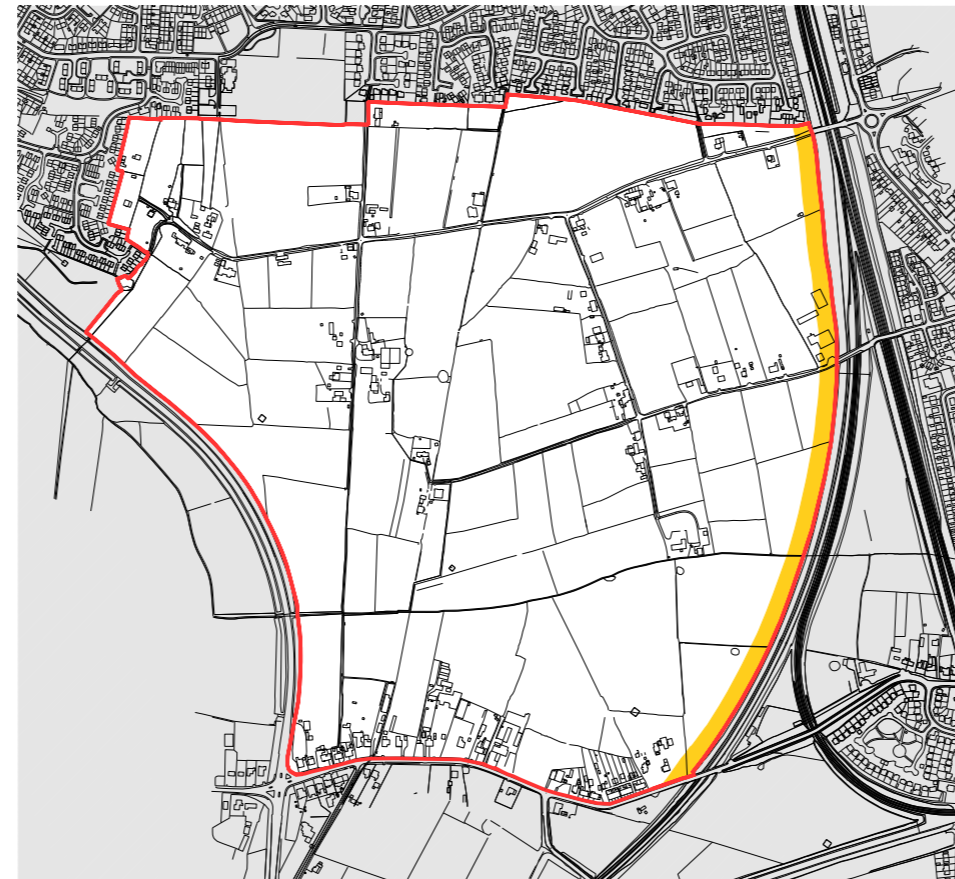
Fig. 7.4

The site is not located within an Air Quality Management Area (AQMA); the closest AQMA is located 400m to the east of the site on Leyland Road. All receptors sensitive to road vehicle exhaust emissions have been modelled including those within the AQMA in order to quantify the impact of the traffic generated by the development on receptors. The modelling has shown that the concentration of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are predicted to be below all relevant quality objectives.

However as the site is located in proximity to Penwortham Way and adjacent to a railway line there is the potential for elevated pollutant levels as a result of road vehicle exhaust emissions and diesel locomotive emissions (although these levels are still below relevant air

quality objectives). Providing that the proposed residential units are not located immediately adjacent to Penwortham Way and are greater than 30m away from the railway line, the future site users will not be exposed to elevated pollutant concentrations. As can be seen from the plan below, a 30m buffer zone from the railway tracks has been indicated for the purposes of air quality in line with local and national requirements. As such, air quality is not considered a constraint to future development.

**Key**  
 Masterplan Boundary  
 Railway Line Buffer Zone



### Heritage and Archaeology

Fig. 7.5

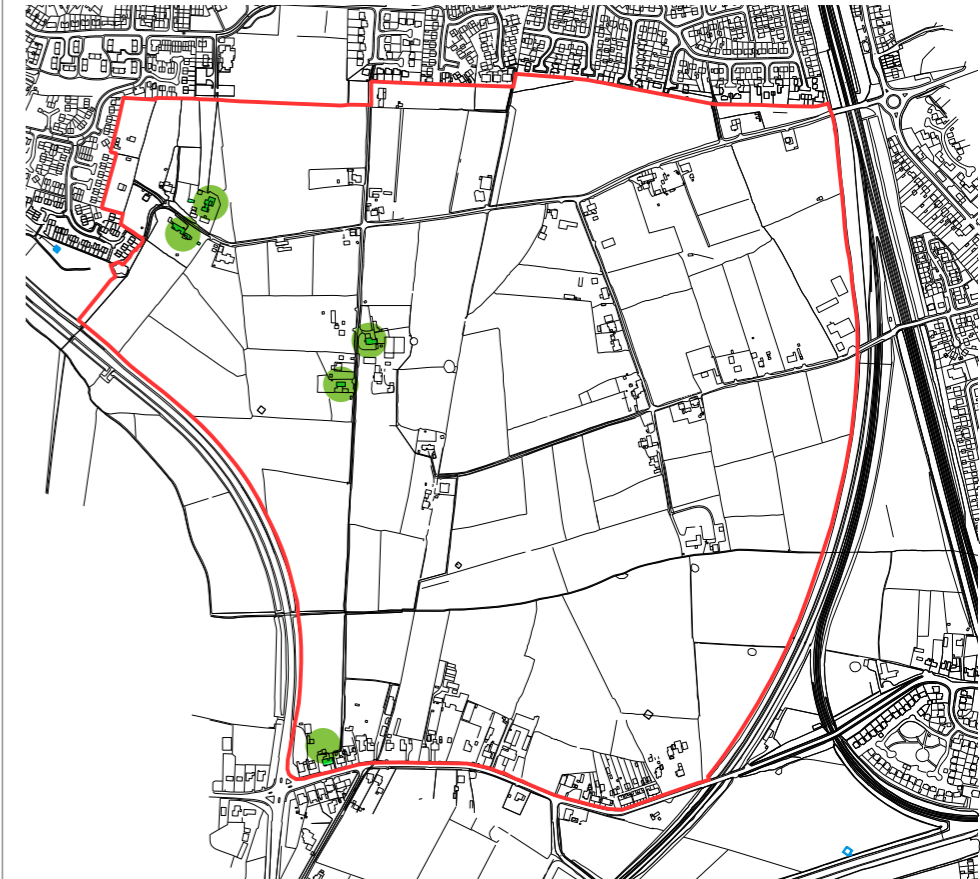
**Designated Heritage Assets** – Five Grade II Listed Buildings are located within 1km of the site boundary, the closest being the Church of St Paul, Farrington, which is located approximately 450m to the south east. There is not considered to be any potential for adverse impacts to the heritage significance of these assets and they should not impose any constraints on the development of the site.

**Non-designated Heritage Assets** – Seven non-designated heritage assets are recorded within the site. One of these assets represents the site of a former pre-1848 farmstead now occupied by housing, whilst the other six represent extant pre-1848 farmsteads. These structures are not considered to impose any constraints on the development of the site.

The site is generally considered to have low potential for the presence of currently unknown significant non-agricultural archaeological remains of all periods.

In summary, the findings of the assessments which have been undertaken have provided a basis upon which the Masterplan has been developed. There have been no barriers to development identified which would preclude the site from being developed in line with planning policy requirements.

**Key**  
 Masterplan Boundary  
 Heritage Asset (not listed)



## 7.0 Environmental and Site Considerations

### Flood Risk and Drainage

Fig. 7.6

A Flood Risk and Drainage Technical Statement is appended to the Masterplan at appendix E.

#### The Allocated Land

#### Surface Water Drainage

The site lies in an area of Zone 1 Flood Risk and potential sources of flood risk have been identified and addressed within the FRA.

There is an extensive ditch network within the site which generally drains west and north.

The area of most significant existing flooding on and adjacent to the northern site boundary is caused by surface water runoff from within the site and from land adjacent to the site including runoff from urban drainage networks to the north. It is proposed to open up the northern culvert and re-profile the land to form a flood basin which will be contained along the northern boundary between the two IP gas mains by raising proposed development levels.

Ground conditions will be unsuitable for surface water infiltration based drainage. Two surface water outfalls from the development are therefore proposed, to the Mill Brook tributary to the north west and to the same system upstream where it is culverted along the northern boundary. It is proposed to restrict runoff and overall achieve a reduction in the rate of surface water runoff from the site.

Surface water flows from the greater part of the site will be contained within an attenuation basin and swale system located alongside the CBLR and the west boundary. Surface water flows from development within the northern part of the site will be pumped into the northern culvert.

Overall flows up to the 1 in 100 year event plus allowance for 40% climate change will be contained on site within the basin, swale and pipe systems, supplemented by appropriate setting of levels.

It is proposed that the main piped systems and pumping station will be adopted under the Section 104 process by United Utilities with the management company for the development taking on responsibility for those elements of the basin and swale system, control structures and outfalls which will not be adoptable.

The existing land drainage system will be maintained, upgraded or diverted as appropriate to ensure that land drainage flows, including flows from the retained land, are safely conveyed through the development independently of the main pipe systems, either into the basin and swale system, or to the northern boundary culvert. It is proposed that the two minor ditches within the land allocated for the primary school will become redundant and replaced by drainage measures within the school.

#### Foul Drainage

There is an extensive United Utilities public sewer network within the residential development to the north and north west.

The main combined system comprises a 525mm diameter sewer which runs to the north of the development along Kingsfold Drive. This connects into a 675mm diameter system at Pope Lane to the west which continues down the lane before turning north west just before the roundabout junction with Penwortham Way.

There are no recorded sewers within the area proposed for development with existing properties understood to drain to septic tanks.

It is proposed that foul drainage arrangements will generally mimic the surface water drainage proposals.

For the greater part of the site a gravity network will drain down the CBLR to a pumping station from where flows will be pumped along Penwortham Way into the UU combined sewer system in Pope Avenue. For the northern part of the site a gravity network will be run down to a location close to the north boundary and will be pumped to the UU combined sewer system in Kingsfold Drive.

It is proposed that the main foul sewers and the pumping stations will be adopted under the Section 104 process by United Utilities.

#### Safeguarded Land

#### Surface Water Drainage

Mill Brook enters the site from the south west, forms a field boundary before turning west and passing in culvert under Penwortham Way. It then continues in a north / north westerly direction alongside Penwortham Way. There is a ditch which forms the boundary between the Safeguarded Land and the allocated land and which connects into Mill Brook at the point it turns west and under Penwortham Way.

It is proposed that surface water flows from a development of the Safeguarded Land will substantially be connected direct into Mill Brook with flows limited to existing greenfield runoff rates all in compliance with the requirements of the NPPF with respect to flood risk and surface water drainage. Surface water flows will be attenuated on site up to the 1 in 100 year event plus an appropriate allowance for climate change.

#### Foul Drainage

There is an extensive United Utilities public sewer network within the residential development to the north and north west of the allocated land.

The main combined system to the north comprises a 525mm diameter sewer which runs to the north of the application site along Kingsfold Drive which connects into a 675mm diameter system at Pope Lane and into which it is proposed to connect foul drainage from the Application Site. There is also a small diameter combined system running west in Chain House Lane to the south of the Safeguarded Land.

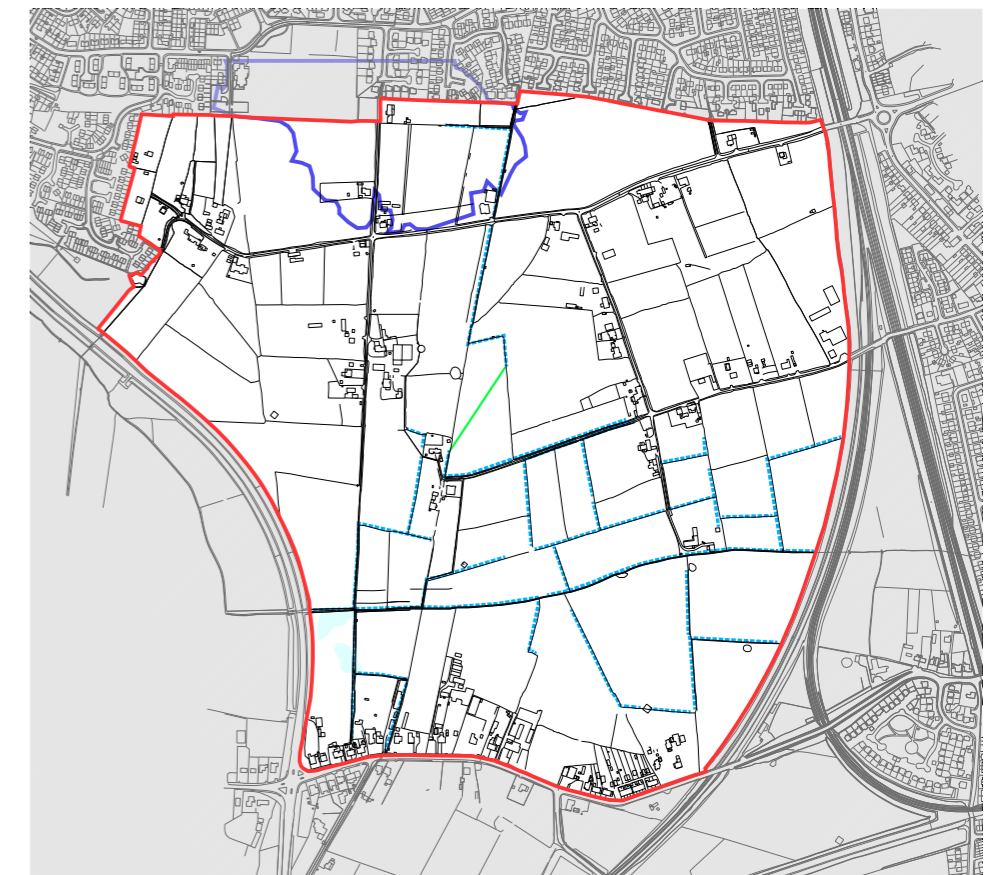
The options for providing foul drainage to the Safeguarded Land comprise connection into the allocated land system, connection into the Chain House Lane sewer or a combination of the two. An assessment will need to be undertaken of these options in consultation with United Utilities at the appropriate stage.

#### Key

Areas of Further surface water Investigation

Existing drainage ditches within landscape

Culverted drainage



## 7.0 Environmental and Site Considerations

### Ground Conditions and Topography

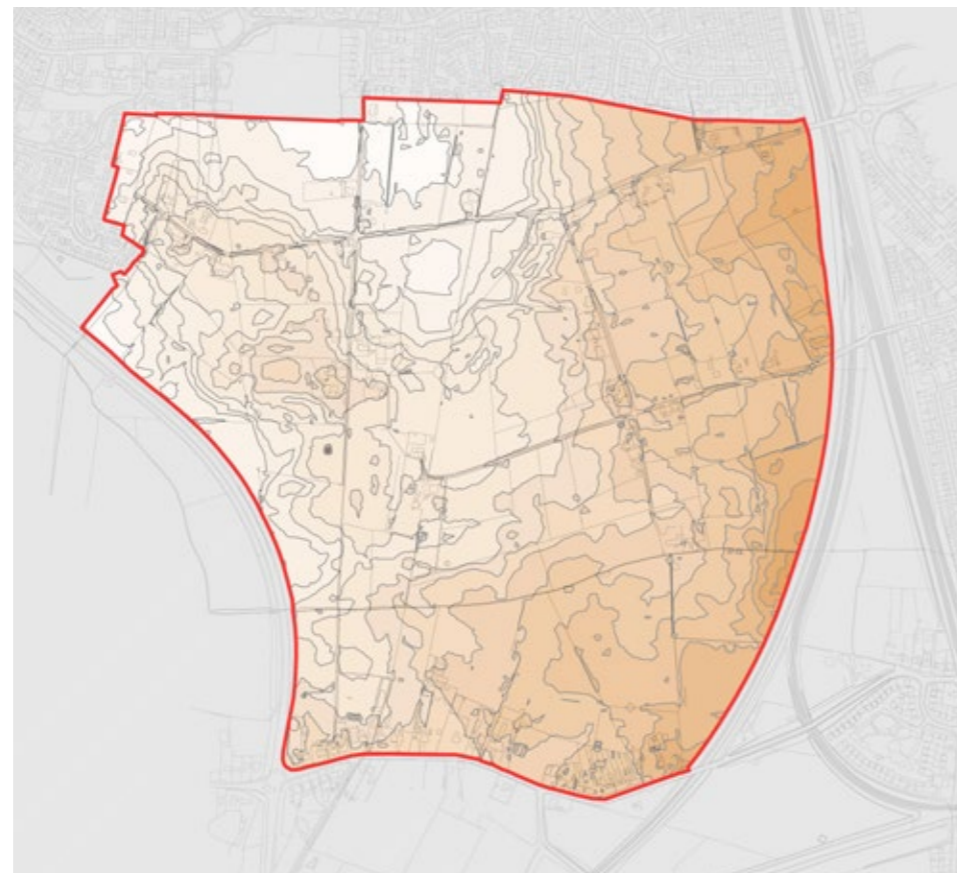
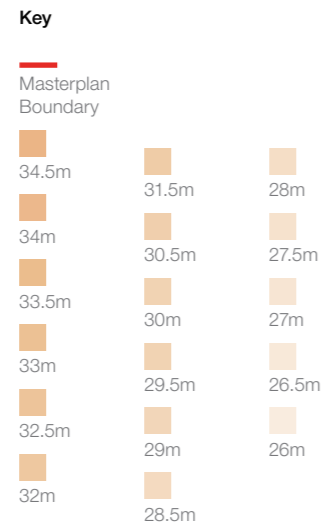
Fig. 7.7

The site has remained largely as undeveloped agricultural land since earliest mapping records with the exception of residential properties and light industrial activities (e.g. dairy farm and garages). Numerous drainage ditches, tertiary water courses and ponds are present across the site, including in-filled pond features.

Historical borehole records (covering approximately 50% of the site footprint) indicate that ground conditions across the site comprise topsoil to depths ranging between 0.3 and 0.6 metres below ground level (mbgl) overlying generally firm to stiff (locally soft) clay to depths in excess of 6.6mbgl. It is considered that, given the strengths recorded, these clays are likely to provide a suitable founding stratum for low-rise residential houses subject to completion of a detailed site investigation which is in progress.

Topographically, the site is relatively flat with occasional areas of undulation including one mounded area of note in a field on the western portion of the site and it is unlikely that bulk earthworks will be required for the creation of development platforms.

It is considered that site features encountered during the site walkover and findings from the desk-based study would not preclude the site's future development.

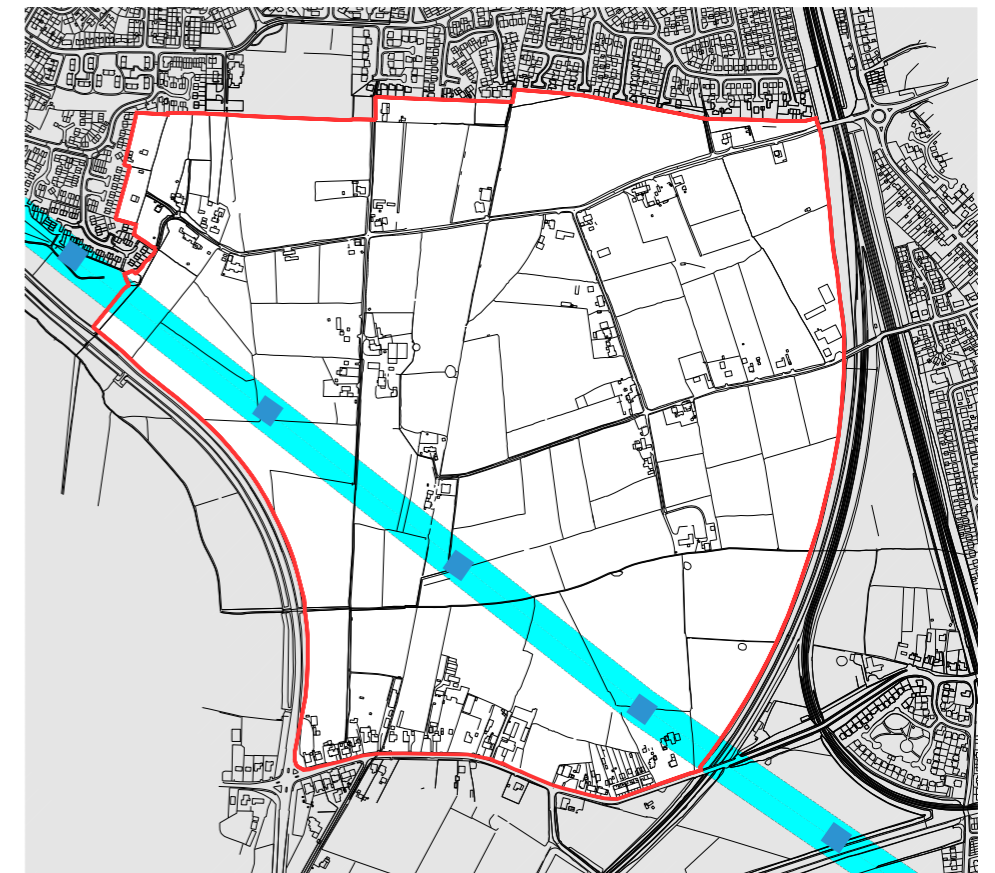
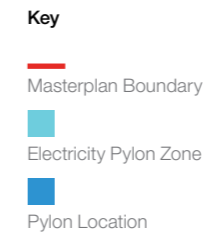


### Pylon Corridor

Fig. 7.8

Overhead Electricity Pylon's pass through the site creating a corridor constraint. Due to restrictions for development underneath the pylons, green spaces will be incorporated to help break up and minimise the visual impact of the pylons. The Masterplan ensures that neither new homes nor gardens are proposed directly under the power lines, and that a set off in line with good practice is observed. The corridor also provides opportunity for a linear biodiversity corridor.

The design team has expressly sought to integrate the constraints associated with the pylon corridor seamlessly into the future vision for the site. A mosaic of greenspace provision, both formal and informal, combined with movement corridors (including Public Rights of Way) and existing landscape features such as hedgerows will enable development to be positively 'set' within the Masterplan regardless of the proximity of the corridor. This approach also ensures the corridor is properly integrated into the Vision diminishing visual impact or potential blight associated with it.



## 7.0 Environmental and Site Considerations

### Landscape Resource

A detailed Landscape Strategy Technical Statement is provided at Appendix F of this document. This note provides further detail of the landscape vision for the site and the proposed network of green spaces.

Extensive green infrastructure will be provided across the site to address key landscape and visual matters and the requirements of the Central Lancashire Open Space and Playing Pitch Supplementary Planning Document adopted in May 2014. The multifunctional benefit of green infrastructure, in terms of environmental, social and wellbeing benefit, is fully understood and is therefore intended to be maximised through the masterplan process to deliver tangible benefits for existing and future communities.

The key landscape issues and design influences across the site have been identified as follows:

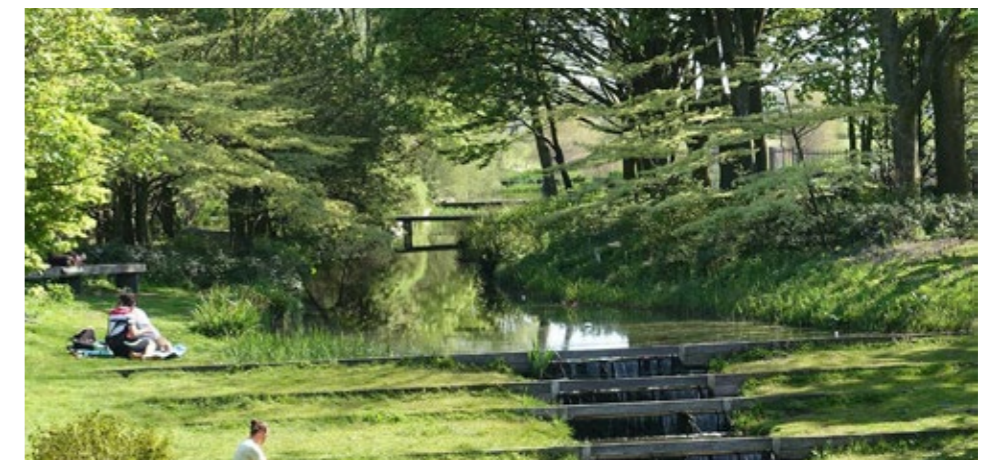
- The strong character of the lanes on the site (Moss Lane, Bee Lane, Nibb Lane and Lords Lane) which are widely used by existing communities for both circular routes within the existing neighbourhood of Kingsfold and for inter-settlement journeys, for example to Lostock Hall;
- The importance of the western boundary of the site and its interface with the wider Ribble Valley landscape, and Green Belt, to the west of Penwortham Way;
- The importance of the existing green infrastructure resource in the context of the site which the scheme should connect with;
- The significant challenge of the high voltage pylon corridor across the site and the potential for a range of landscape typologies for the positive integration of this feature within future development parcels; and
- The prevalence of straight line landscape forms and patterns in the landscape, and the potential to shape new, appropriate development within this established landscape pattern.

The Masterplan responds to these issues by successfully integrating new development into the existing site context, providing opportunities for landscape enhancement and creation, as well as retention of key existing features. This integrated design response will include:

- A generous provision of amenity green space including amenity space for community events at the centre of the site in the vicinity of Nibb Lane. This amenity space provision will have health and well being benefits;
- Substantial expansion of natural green space linking with key existing green infrastructure resource, namely Golden Way Local Nature Reserve and the Mill Brook, closely aligned with the sustainable movement corridors of the Lanes and Public Rights of Way, are proposed to create a robust network;
- Investment in sport and young person provision will be focused at the existing Kingsfold play and community area in consultation with SRBC and Penwortham Town Council;
- The introduction of a new 3G pitch on land adjacent to the existing Community Centre located to the north of the site to be delivered via CIL;
- All green spaces will be designed with play opportunities in mind so that it is an integrated offer accessible to all. This will include natural play and more formal, equipped play provision. Three key Local Equipped Areas of Play ("LEAP") associated with key amenity spaces are proposed as well as well as incidental natural Local Area of Play ("LAP") associated with key thresholds and interfaces with natural green space;
- In support of the garden community vision, spaces for an allotment has been identified on the Masterplan. Designed to be integrated within the wider green infrastructure offer and to include orchard tree planting these spaces will also be located near to play areas and amenity space to support community cohesion and functionality;
- The existing orchard on the site will either be retained in situ or replaced on a single site of the same size elsewhere within the Masterplan area; and
- The site will also achieve 10% biodiversity net gain.

A landscape led approach, which centres on retaining, enhancing and building on the existing green infrastructure resource to provide a multifunctional system for the new neighbourhood for the long term. The objectives of a garden community approach have therefore been embodied into the Masterplan at the earliest stage of the process in an exemplary manner.

With reference to the provision of public open space it is intended that the new resource will have differing character and uses and be located and connected by a network of green links across the site to form cohesive green infrastructure. Discussions with SRBC will continue on the type and extent to be provided. On site provision is likely to include amenity green space, equipped play areas, natural / semi natural open space, and allotment provision.






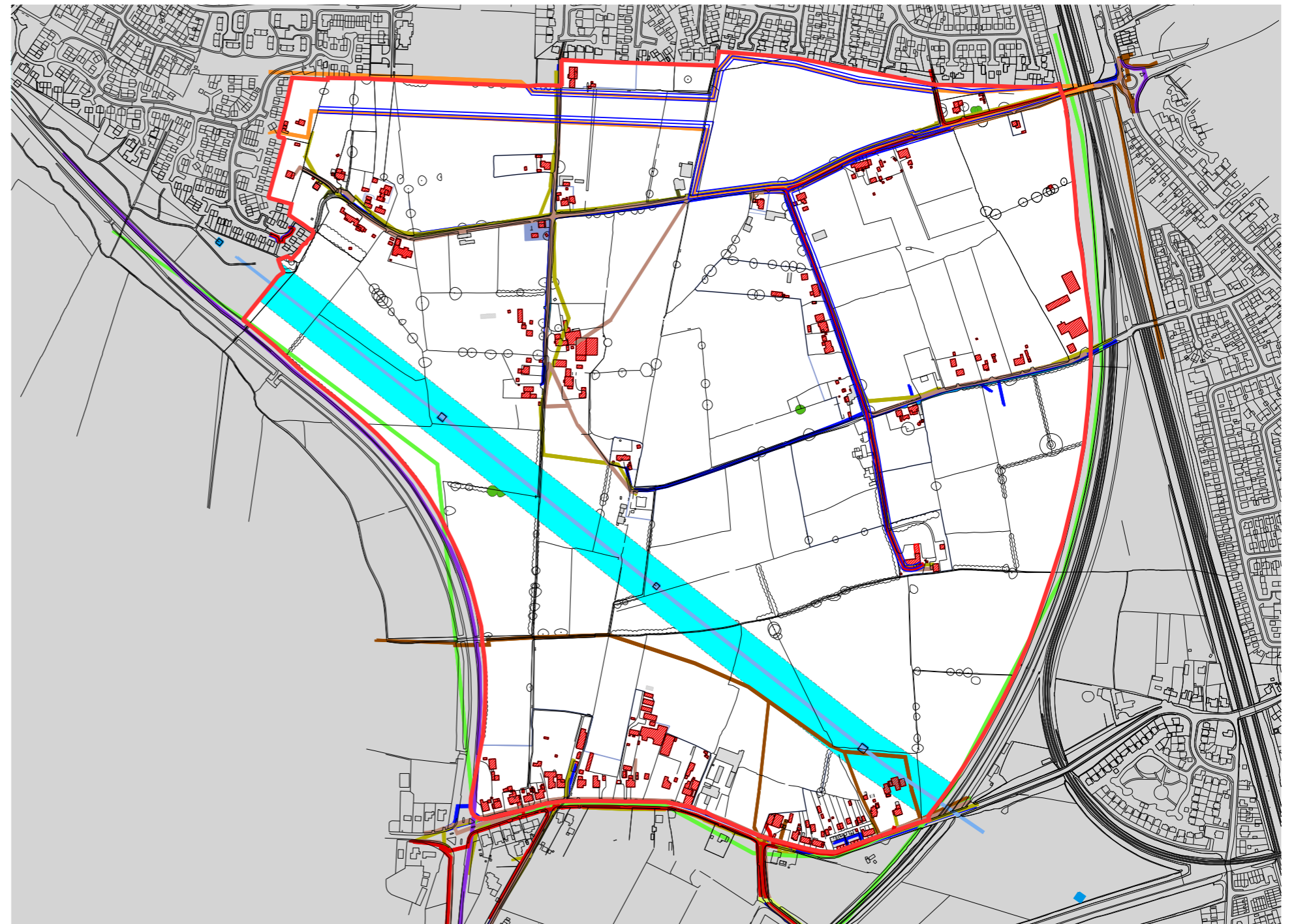
## 7.0 Environmental and Site Considerations

The adjacent plan combines all the physical constraints identified earlier in this section. This constraints plan has been used as a basis upon which the Masterplan has been created.

**Constraints Plan**  
Fig. 7.10

**Key**

- |  |   |   |  |
|--|---|---|--|
|  Masterplan Boundary    |  Tree Type A     |  Existing Electric 6.6kv |  Virgin Media |
|  Electricity Pylon Zone |  Existing Water  |  Existing Electric 11kv  |  Gas LP Mains |
|  Pylon Location         |  BT Internet     |  Existing Electric LV    |  Gas IP Mains |
|  Existing Buildings     |  CTL Centurylink |  Existing Overhead Line  |  Gas MP Mains |



## 7.0 Hierarchy of Green Spaces

### Hierarchy of Green Spaces

The diagram to the right sets out the green and blue framework for the Masterplan, with a series of well connected green spaces.

A full variety of greenspaces will be provided, with more information about the quality and character of each area in the accompanying Design Codes.

### Hierarchy of Green Spaces

Fig. 7.11

#### Numeric Key

1. Primary school with playing fields – Located between new and existing communities
2. 36 Pitch
3. Area to manage and contain existing surface water.
4. Sustainable Urban Drainage
5. Pedestrian links to the north
6. Children's Play Areas
7. Village Green / Formal outdoor space
8. Enhanced Green Routes

- A. Bee Lane
- B. Lord's Lane
- C. Nibb Lane
- D. Moss Lane
- E. Flag Lane

#### Key

-  Boundary
-  Internal Greenspace
-  New Formal Amenity Space
-  Sustainable Urban Drainage
-  Existing Lanes
-  Public Rights of Way



# 8.0 Physical and Social Infrastructure Requirements





## 8.0 Physical & Social Infrastructure Requirements

This section summarises the type and extent of physical and social infrastructure which is required as part of the site's development. The physical and social infrastructure has been identified through consultation with SRBC, LCC, relevant authorities and stakeholders.

The future residents of the development who will live and work at the site will increase the demand for and use of:

- Physical infrastructure such as roads and public transport; and
- Social infrastructure used by local communities on a day to day basis including open space, schools and community facilities.

Policy C1 of the South Ribble Local Plan requires the Masterplan to make provision for a range of land uses to include residential, employment and commercial uses, Green Infrastructure and community facilities. The justification to the policy states that the comprehensive development of the site is dependent on the provision of infrastructure to ensure sustainable development.

An Infrastructure Delivery Schedule linked to the phases of development has been prepared by the Developers.

Following consultation with SRBC, LCC, relevant authorities and stakeholders, it is expected that the future development of the site will deliver the following physical and social infrastructure. This infrastructure will provide direct benefits to both existing and future residents of the development and the surrounding area:

### The Cross Borough Link Road Extension

In accordance with Policy A2 of the South Ribble Local Plan, it is required that land is protected from physical development for the delivery of the CBLR extension. The CBLR extension will be a primary route through the site from Penwortham Way linking to the Cawsey to the north east. As part of the development, the CBLR extension will be delivered in phases.

The CBLR extension will connect to Penwortham Way in the west. A signal controlled junction is proposed which will create a gateway into the development and will be the main vehicular access into the site. In the north east, the CBLR extension will connect to the Cawsey and short term and long-term options for this connection are presented and described in section 6 of this Masterplan.

Weight restrictions could be provided where appropriate on existing roads within the site to provide a more conducive environment for pedestrians, cyclists and equestrian use. This will be discussed with LCC during the Developers' planning process.

### Local Highway Network Improvements

The Highways Technical Study which can be found at Appendix C sets out the potential mitigation measures which may be required for the full Masterplan (2,000 units). These improvements will be secured through s.278 Agreements and could include:

- Improvements to the existing lanes;
- Potential Contribution towards Leyland Road corridor improvements;
- Off-site junction improvements: A59 Golden Way/A59 roundabout;
- Off-site junction improvements: A582 Flensburg Way/A582 Croston Road/Fidler Lane/Croston Road roundabout;
- Off-site junction improvements: A582 Croston Road/A582 Farington Road/Centurion Way roundabout; and improvements to the existing Bee Lane Bridge.

### Public Transport Improvements

The Masterplan will allow for the future operation of bus services through and/or around the site and will provide high quality pedestrian linkages to ensure public transport facilities and

service provision are within appropriate walking distances of properties.

### Footpaths, Cycleways and Bridleways

An extensive network of footpaths, cycleways and bridleways will be created and/or retained across the site. The rural character of the existing lanes will be preserved where possible. Given that the existing lanes are not currently designed for two way traffic, the vision is to retain these routes with priority for pedestrian and cycle movement. These green routes will connect to a series of green spaces. E.g. the new village green.

### The Wider Road Network

Fig. 8.0

#### Key

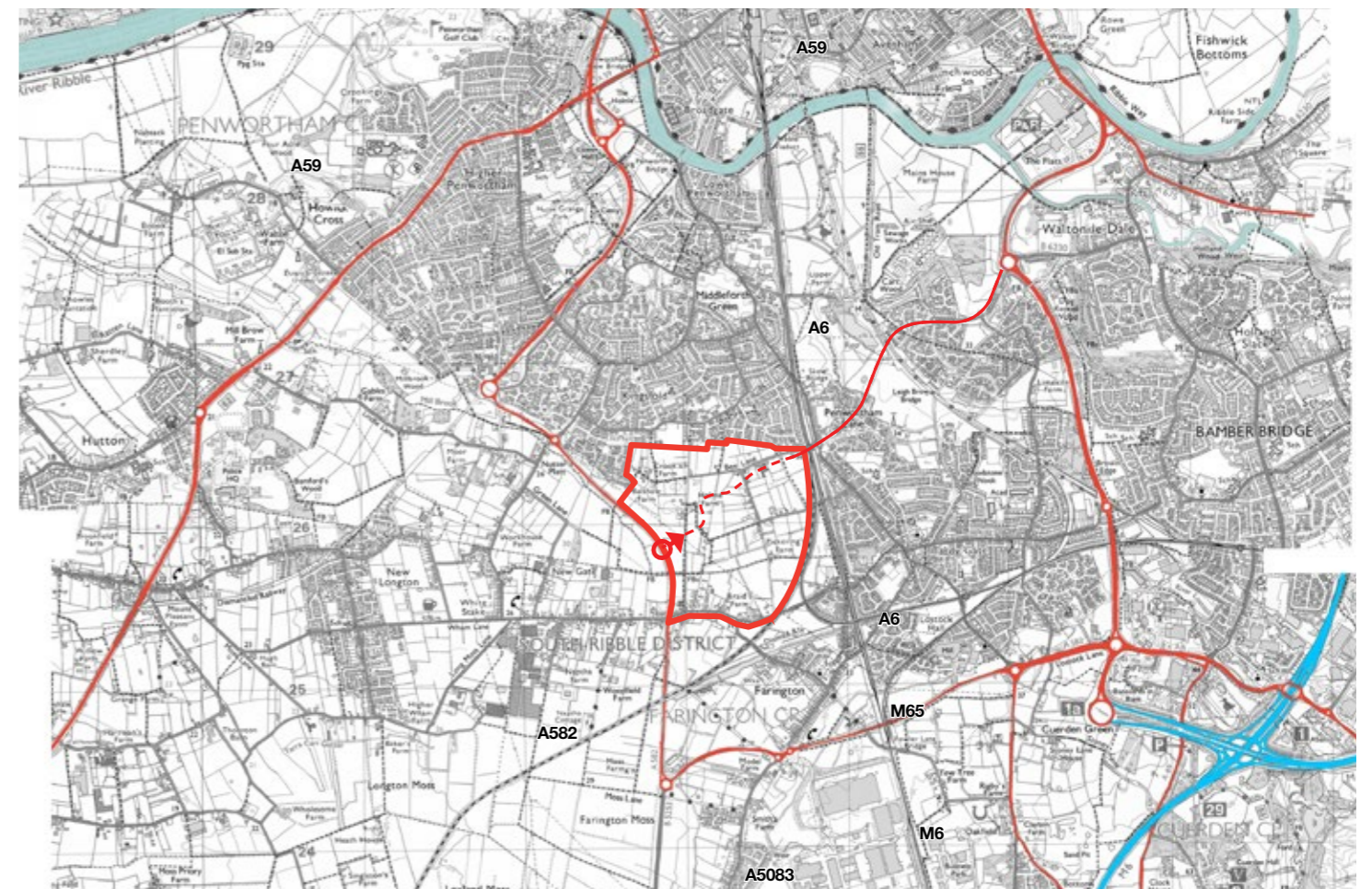
A Road

Motorway

River Ribble

Main Site Access Point

Indicative Potential CBLR Route



## 8.0 Physical & Social Infrastructure Requirements

### Green Infrastructure and Public Open Space

The public open space ("POS") proposed in the Masterplan have been developed in consultation with SRBC. The table below indicates the policy target for 2,000 dwellings or 4,640 people (based on household occupancy of 2.32 persons (in line with the Central Lancashire PPG17 Open Space Study 2012) and the actual provision delivered through the Masterplan.

POS Typology	Contribution Required	Amount Proposed by the Masterplan
Amenity Green Space	6.39ha	14.2ha, including: <ul style="list-style-type: none"> <li>· 0.5ha in Pylon Corridor;</li> <li>· 1.41ha in flood management area</li> <li>· 1.61ha is SUDS; and</li> <li>· 0.2ha is allotment</li> </ul>
Natural & Semi-natural	9.19ha	16.1ha, including: <ul style="list-style-type: none"> <li>· 1.48ha in Pylon Corridor; and</li> <li>· 2.92ha is SUDS</li> </ul>
<b>Total</b>	<b>16.36ha</b>	<b>30.92ha</b>

The table proposes that in all cases, the POS typology requirement is met or is significantly exceeded. It has been agreed with SRBC, that given the provision of Parks and Gardens in the vicinity of the site, that Parks and Gardens provision is not required on the site. The POS provided underneath the pylons and the lanes are not required to meet the POS policy requirements.

An integrated approach to the provision of POS has been undertaken for the Masterplan area. With reference to quantum and accessibility standards set out in the Central Lancashire PPG17 Open Space Study (2012) the extent of each 'type' is indicated on the adjacent plan, namely amenity greenspace, natural green space and allotments. This builds on the contribution being sought by SRBC to include:

- a generous provision of amenity green space including amenity space for community events at the centre of the site in the vicinity of Nibb Lane;
- substantial expansion of natural green space linking with key existing green infrastructure resource, namely Golden Way Local Nature Reserve and the Mill Brook, closely aligned with the sustainable movement corridors of the Lanes and Public Rights of Way, are proposed to create a robust network;
- investment in sport and young person provision will be focused at the existing Kingsfold play and community area in consultation with SRBC and Penwortham Town Council;
- The introduction of a new 3G pitch on land adjacent to the existing Community Centre

located to the north of the site which will be delivered via CIL;

- all green spaces will be designed with play opportunities in mind so that it is an integrated offer accessible to all. This will include natural play and more formal, equipped play provision. Three key Local Equipped Areas of Play ("LEAP") associated with key amenity spaces are proposed. Children's play provision will be delivered in line with planning policy requirements and discussions with SRBC;
- in support of the garden community vision, a space for an allotment has been identified on the Masterplan. Designed to be integrated within the wider green infrastructure offer and to include orchard tree planting this space will also be located near to play areas and amenity space to support community cohesion and functionality;
- The existing orchard on the site will either be retained in situ or replaced on a single site of the same size elsewhere within the Masterplan area or on land outside of the site controlled or owned by the Developers; and
- The site will also achieve 10% biodiversity net gain.

### Public Open Space

Fig. 8.1



## 8.0 Physical & Social Infrastructure Requirements

### Affordable Housing

Policy 7 of the Central Lancashire Core Strategy relates to affordable housing and special needs housing and states that:

“Subject to such site and development considerations as financial viability and contributions to community services, to achieve a target from market housing schemes of 30% in the urban parts of Preston, South Ribble and Chorley...”

Each planning application proposing residential development within the site will be assessed against Policy 7 of the Central Lancashire Core Strategy.

### A New Local Centre

A new Local Centre is also proposed as part of the Masterplan. The Local Centre will be positioned near the heart of the development and will be well connected with pedestrian and cycle links. The Local Centre will contain a range of services and facilities for the use of residents of the development and the surrounding area. The Local Centre could contain convenience retail, farm shop, offices as well as a range of other services and facilities for example a pharmacy, gym, veterinary surgery, dry cleaners and hairdressers.

The range of services and facilities in the new Local Centre will be determined by market demand and ongoing consultation with SRBC, LCC, Penwortham Town Council, other stakeholders and the local community.

### Education Facilities

A new two form entry primary school is proposed as part of the Masterplan. The need for a new two form entry primary school has been confirmed through consultation with LCC's School Planning Team who have based their recommendation on an estimate of how many children of primary school age will be generated by the development.

The new school site location is shown on the revised Masterplan. The school site is 1.6ha in size and includes a looped access from a secondary road and an additional dedicated drop off / parking area, which will seek to avoid any 'bottlenecking' of vehicles at peak times. The site will be a secure site with fencing separating the school from adjoining development, including the flood attenuation area to the north.

The new school site is regular in shape and has no constraints that would preclude its development once conventional mitigation measures are introduced.

A temporary Apprenticeship and Skills Programme and Centre is proposed by the Developers. The Apprenticeship and Skills Training Scheme will be designed to help provide people with the skills needed to those wanting to pursue a career in construction. The Apprenticeship and Skills Centre will be provided in a temporary building.

### A drainage network, including Sustainable Urban Drainage Systems (SUDS)

An appropriate network of blue infrastructure, including SUDS is proposed as part of the Masterplan to serve the new development.

This section has described the extent and type of physical and social infrastructure that will be delivered by the Masterplan. The IDS describes the development phasing and implementation setting out how this infrastructure will be delivered.

Illustration of the Children's Play Area Fig. 8.2



Illustration of the type of Sustainable Urban Drainage (SUDS) Fig. 8.3



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## 9.0 Development Parameters

A series of Development Parameters have been designed to establish a framework for the future redevelopment of the site which are presented in this section. All future planning applications will be required to comply with these parameters. The Masterplan establishes Development Parameters for the following:

- A residential led development supported by a mix of uses;
- Scale of development (including building heights);
- Design;
- Secure by Design;
- Site access and road hierarchy;
- Landscaping planting;
- Green Infrastructure; and
- Separation distances and buffers to existing properties

The Masterplan presented in the following section fully meets the requirements of Policy C1 of the South Ribble Borough Local Plan. The Masterplan has been prepared following extensive consultation with SRBC, LCC, key stakeholders, statutory consultees, existing residents on the site and the local community. It responds positively to the vision for the site, the feedback received during the consultation exercises and illustrates how the development parameters described in this section combine.

A separate Design Code has been prepared by the Developers which relates to a range of character areas that have been established across the site.

### A residential led development supported by a mix of uses

The Masterplan proposes a residential led mixed use scheme which will deliver in the region of 2,000 new homes on the site. The scheme will deliver:

- **Residential** – The proposed residential development will comprise a mix of detached, semi-detached, mews and apartment dwellings ranging from 1 - 5 bedrooms size. The residential development will provide open market, affordable and retirement / extra care properties.
- **Mix of Uses** – To ensure high-quality place-making is achieved throughout the site, a wide range of social and physical infrastructure will be delivered to support the new and existing population.

In accordance with Policies A2 and C1 of the South Ribble Local Plan, the proposed uses illustrated on the Masterplan in addition to residential comprise:

- **A new Local Centre** – which will contain a range of services and facilities and could include a new food store, offices, community uses as well as a range of other services and facilities for example a pharmacy, gym, veterinary surgery, dry cleaners and hairdressers.
- **Employment Development** – The Masterplan will make provision for the

inclusion of office development to be located within the new local centre.

- **Education Facilities** – A new two form entry primary school is proposed as part of the Masterplan. Following consultation with Lancashire County Council Education Team, the new two form entry primary school will have a looped access served off a secondary access road and a drop off car parking facility.
- **A Temporary Apprenticeship and Skills Centre** – A temporary Apprenticeship and Skills Programme and Centre is proposed by the Developers. The Apprenticeship and Skills Training Scheme will be designed to help provide people with the skills needed to those wanting to pursue a career in construction.
- **Green Infrastructure** – A strong green infrastructure network will be provided across the site. The green infrastructure will have differing forms, functions and uses and will be connected by the extensive network of green links across the site. On site green infrastructure provision could include amenity green space, equipped play areas, natural / semi natural open space, allotments and biodiversity net gain. In accordance with Policy 6 of the Penwortham Neighbourhood Plan, the Masterplan includes a new 3G Sports Pitch on land adjacent to the existing Penwortham Community Centre to be delivered via CIL. The existing orchards

to the 1) west of Lords Lane and south of Nib Lane and 2) west of Moss Lane are proposed for either retention or replacement if suitable alternative locations within the site or on other land controlled by the Developers are identified.

- **Cross Borough Link Road** – In accordance with Policy A2 of the South Ribble Local Plan, the Masterplan also proposes land protected from physical development for the delivery of the Cross Borough Link Road ("CBLR") extension linking Penwortham Way with Leyland Road. The CBLR will be brought forwards in a phased manner.

### Scale of Development

The Masterplan proposes to create a new residential led mixed use neighbourhood. Varying densities of development will be applied across the site to reflect its physical characteristics and surroundings.

In order to aid the creation of a high-quality mixed community and encourage good design, a series of Character Areas have been established across the site. Each Character Area will have its own identify with varying scale and densities ranging from low, medium to higher densities depending on the location. The scale and density of development will be appropriate having regard to the character and appearance of the area and will enable in the region of 2,000 new dwellings to be delivered by the Masterplan in accordance with the requirements of the South Ribble Local Plan.

The majority of the proposed housing will be of traditional scale ranging from 2 - 3 storeys in height, with taller 4 storey properties proposed in key locations to promote good urban design and to achieve a high quality place making. It is proposed to incorporate higher density development both in the north western part of the site to mirror existing housing densities at Kingsfold, and around the new local centre. Apartments will be proposed in certain locations which could be up to 4 storeys in height.

### Site Access

The primary vehicular access to the site will be via a signal controlled junction from Penwortham Way. Secondary vehicular access to the site will be provided via a connection towards the north-eastern corner of the site, from Flag Lane to the east of the site and Chain House Lane to the south. Short term and long term vehicular access options connecting to Leyland Road in the north eastern corner of the site are proposed. The short term option is a priority 'T' junction arrangement connecting the CBLR extension to Bee Lane utilising the existing Bee Lane bridge to connect to Leyland Road. The short term access option will be restricted to use by existing properties on the site and 40-50 new dwellings. The long term option is a new bridge over the West Coast Mainline connecting the CBLR extension with Leyland Road.

### Road Hierarchy

The design of the main internal road infrastructure will allow for a vehicular connection





## 9.0 Development Parameters

between Penwortham Way and The Cawsey. The CBLR extension is proposed to be constructed as a primary route through the site from Penwortham Way to Leyland Road. The CBLR extension will be delivered in phases from west to east across the site.

The CBLR extension will act as the main 'spine road' which will form the structure of the internal road network. Secondary access roads will fork off from the CBLR extension linking the main residential and commercial areas of the site.

The road hierarchy will comprise:

- The primary internal spine road will link the primary signalised access junction on Penwortham Way to Leyland Road.
- The primary access routes will have carriageway widths of between 6.5 and 7.3 metres wide.
- 2.0 metre wide footways will be provided on both sides of the primary access roads as a minimum.
- A shared or segregated footway/cycleway of 3.0m to 3.5m wide will be provided along the main spine road through the site linking Penwortham Way to Bee Lane.
- Residential access roads of 5.5 metres wide with 2.0 metre footways will be provided linking the main residential areas of the site to the proposed spine road and 4.5 metre wide

private drives roads will be used for cul-de-sacs and roads serving a limited number of dwellings.

- The proposed Quiet Lanes will be retained/improved and the internal layout of the site will be designed to provide a safe environment for pedestrians and cyclists with clearly defined walkways, crossing points and traffic calming features where appropriate.

### Parking Provision

Parking throughout the development will be provided in accordance with relevant Parking Standards contained within the SRBC Local Plan and in agreement with LCC. This will ensure that the potential impacts of on-street parking, as a result of the proposed school and local centre, as well as other uses, do not have an impact on the operational reliability of the highway network.

Consideration will be given to the traffic management measures and the implementation of traffic regulation orders as appropriate.

Detailed parking provision by land-use will be addressed in subsequent Transport Assessments as the development is brought forwards on a phase by phase basis.

### Landscaping and Planting

The Masterplan has adopted a landscape led approach in order to deliver an integrated design solution and functional green infrastructure across the site. Garden Village Principles have been adopted when formulating the landscape and planting strategy for the site. Garden communities are environments designed to promote community inclusion and walk-able, sociable, vibrant neighbourhoods.

The landscape strategy will support the delivery of the vision for the site by providing a range of external spaces to support formal and informal use, being fully accessible and inclusive, feeling safe, encouraging footfall on key routes and making sure there are varying routes to key facilities and landmarks. The landscape and planting strategy will aid the creation of distinctive, memorable places, providing for 'doorstep to countryside' experiences.

The design of the landscape components of the Masterplan will be sensitively designed to improve the health and wellbeing of residents, the creation of a sustainable community and supporting biodiversity net gains.

### Green Infrastructure

Extensive green infrastructure will be provided across the site in accordance with the requirements of the Central Lancashire Open Space and Playing Pitch Supplementary Planning Document adopted in May 2014, which are provided in Section 8 of this document.

There are opportunities to deliver extensive green infrastructure across the site which is reflected in the Masterplan. The green infrastructure will have differing forms, functions and uses and will be connected by the extensive network of green links across the site.

On site green infrastructure provision will include amenity green space, equipped play areas, natural / semi natural open space, playing fields and allotment provision.

Off site, a new 3G sports pitch will be provided land adjacent to the Penwortham Community Centre, which itself will be extended to provide additional community facilities. The new 3G pitch will be delivered via CIL.

### Character Areas

The Design Code sets out the Character Areas in more detail. In brief, the Masterplan has been divided into smaller zones that have been established based on their context and individual boundary conditions. There are to be five small zones, or Character Areas, of which four wrap around the perimeter with one towards the centre. This is graphically illustrated below. Within each of these areas the look and feel will vary subtly to reflect the existing landscape and buildings. Creating this subdivision creates interest and will ensure a positive contribution to the local area, and prevent a copy-paste style landscape and architecture.

#### A: Bee Lane East

The existing red brick terrace houses to the eastern end of Bee Lane provide the character reference for this area. Linear frontages facing the road in more traditional materials.

#### B: Bee Lane West

The rural character of the existing buildings becomes more informal in this area, with dwellings set back from the road, and a collection of both direct fronting and side fronting properties.

#### C: Penwortham Edge

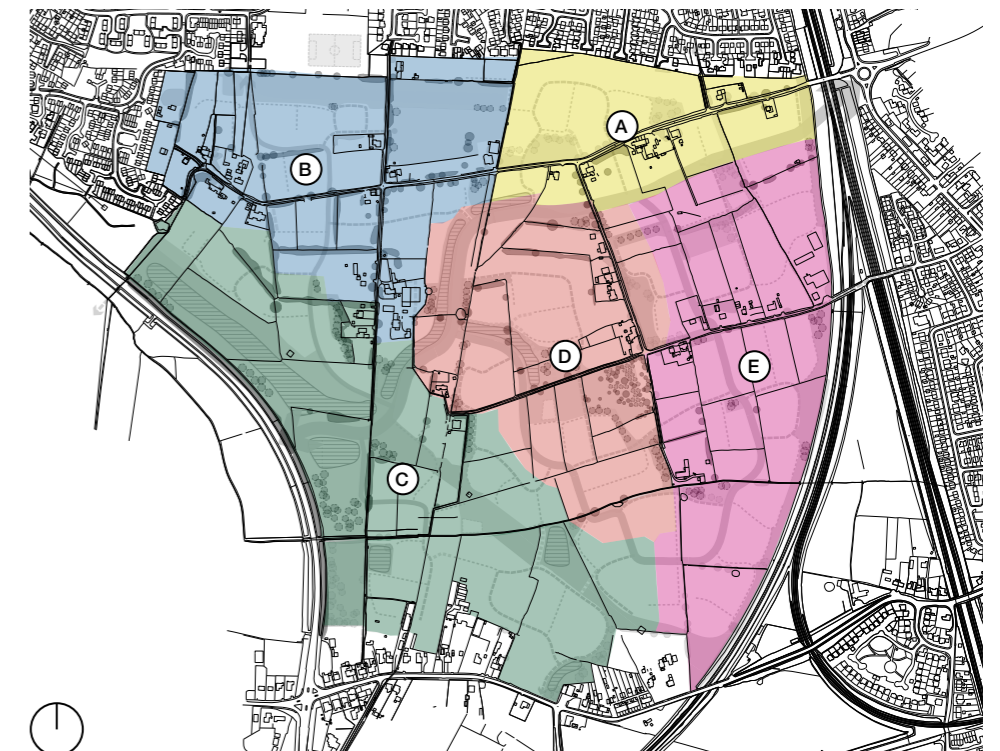
The most rural and green of the 5 character areas, the character of this development is typically 2 to 3 stories, surrounded by landscaped areas. This area is the interface to both Penwortham Way and visually to the Green Belt beyond.

#### D: The Heart of the Lanes

This area is more modern in character, using quality materials and detailing to create a new identity for 'The Lanes' and form the heart of the community.

#### E: The Urban Edge

Of all the areas, the existing field pattern boundary is the most rectilinear; this area has the least existing context and can be more urban in character.



## 9.0 Development Parameters

### 14m Buffer Zone

In line with best practice, and with reference to the Central Lancashire Design Guide SPD, new dwellings have been set away from existing properties by more than required.

The general principle to follow is that dwelling should have a back to back separation of 21m and a back to gable of 13m. This would typically generate back gardens of 10.5m long. In all cases this is achieved.

This has been further increased to give back gardens of at least 14m in length from the boundary of existing properties.

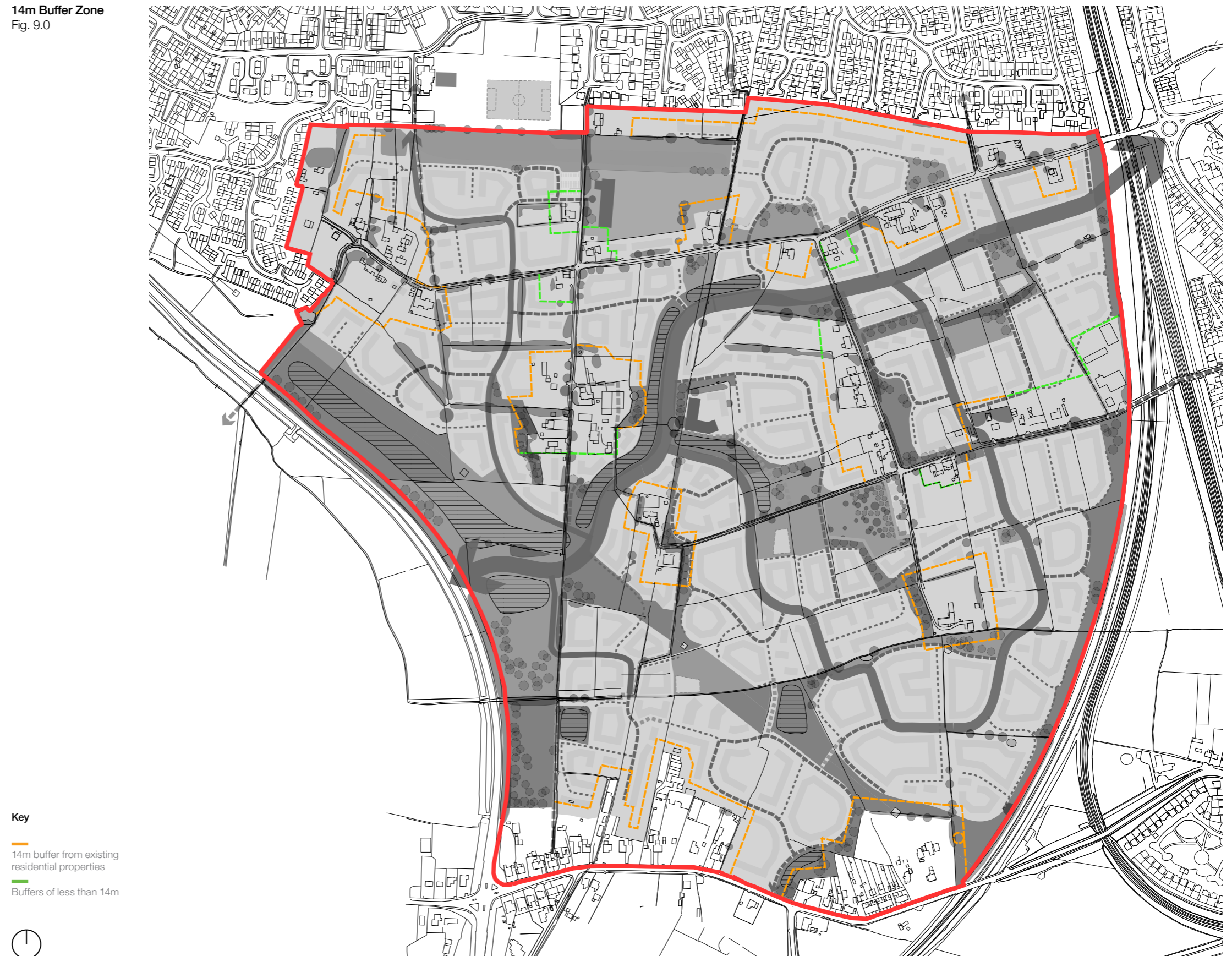
The adjacent diagram sets out in an orange dashed line the 14m buffer between new development and the boundary of existing properties.

There are some exceptions to this indicated in dashed green. In some cases this is because more detailed discussions have been held with individual residents on the site.

In other instances dwellings have been included within the curtilage of existing residential plots on site. In these situations clearly the 14m rule of thumb is not maintained with new dwellings.

The green exceptions are discussed in more detail on the following page.

14m Buffer Zone  
Fig. 9.0



#### Key

- 14m buffer from existing residential properties
- Buffers of less than 14m



## 9.0 Development Parameters

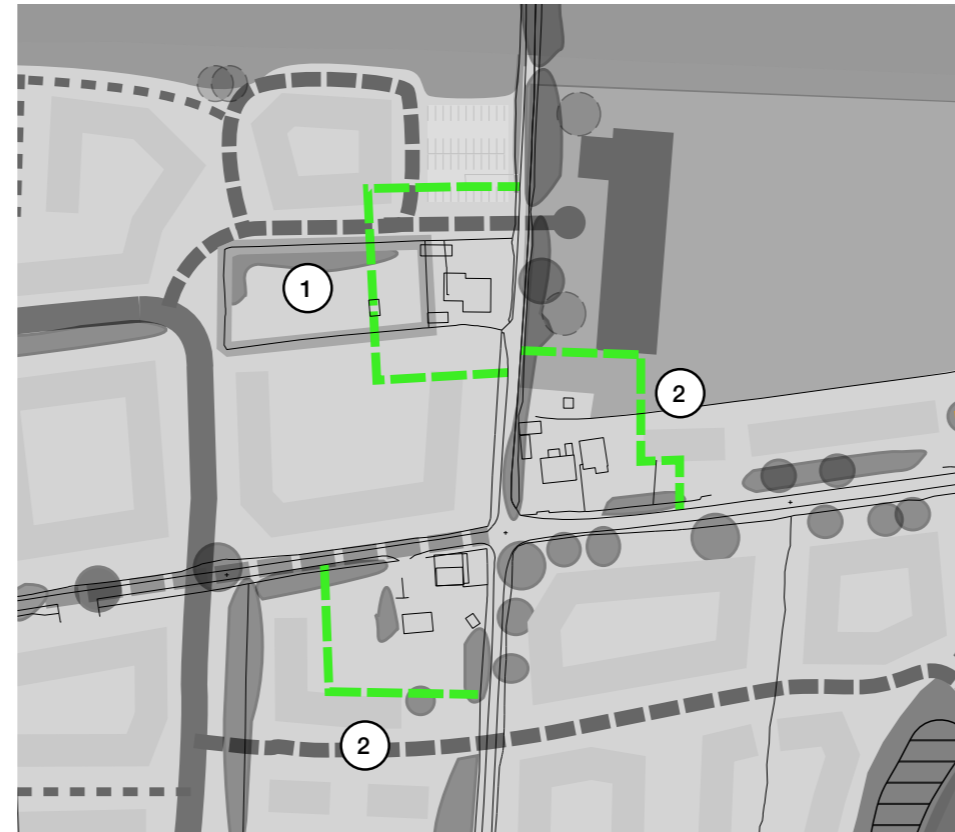
### Exceptions to 14m Buffer Zone

Fig. 9.1

Each of these 5 enlarged areas show where the 14m buffer is not maintained, with narrative as to why.

#### Key

1. 14m buffers have been maintained to either side of this property, but at the rear, at the resident's request, development has been included within their boundary.
2. The residents have an agreement in place with the Developers.
3. Development has been shown on third party land. The affected residents have control of the land and can revisit the principles as part of their own planning application



## 9.0 Development Parameters

### Development Height

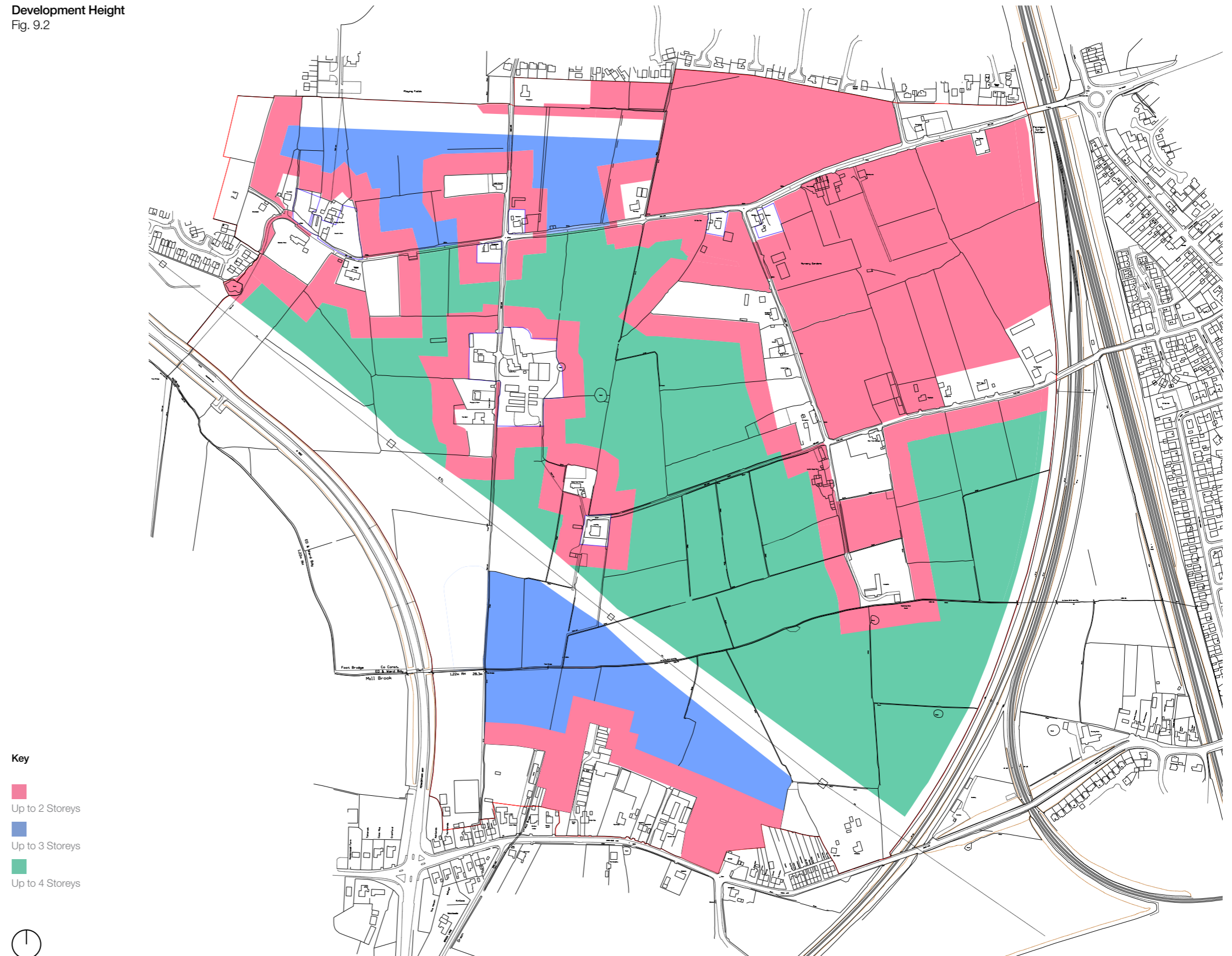
In line with the Developers Landscape and Visual Impact Assessment, and to control the height of development across the Masterplan, the following maximum height parameters are recommended.

Generally, the pylons form a visual barrier and development to the west of the pylon corridor should be no more than 3 storeys high; development to the east of the pylon corridor could be higher to a maximum of 4 storeys. This is however moderated by proximity to existing dwellings and moderated to the east as the land generally rises. Whilst maximum building heights are prepared it is intended that 4 storey proportions will only be provided in certain locations as part of the Good Urban Design Principles and allow apartment developments.

Any planning application and associated height parameters should come forward in accordance with these principles.

### Development Height

Fig. 9.2



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## 10.0 The Masterplan

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The Masterplan sets out how the development of the site could come forward. It brings together the framework of design parameters described in the previous section.

The diagrams here summarise the key elements of the Masterplan that have been discussed and developed earlier in this document.

The Masterplan fully meets the requirements of Policy C1 of the South Ribble Local Plan. It proposes the comprehensive redevelopment of the site and includes the land allocated for Major Development and the land Safeguarded for Future development to Coote Lane. The Masterplan proposes to deliver a residential led mixed use development and makes provision for a range of uses including residential; a new local centre comprising retail, community and employment; education, and Green Infrastructure.

The Masterplan also protects land from physical development for the CBLR extension linking Penwortham Way to The Cawsey.



# 10.0 The Masterplan

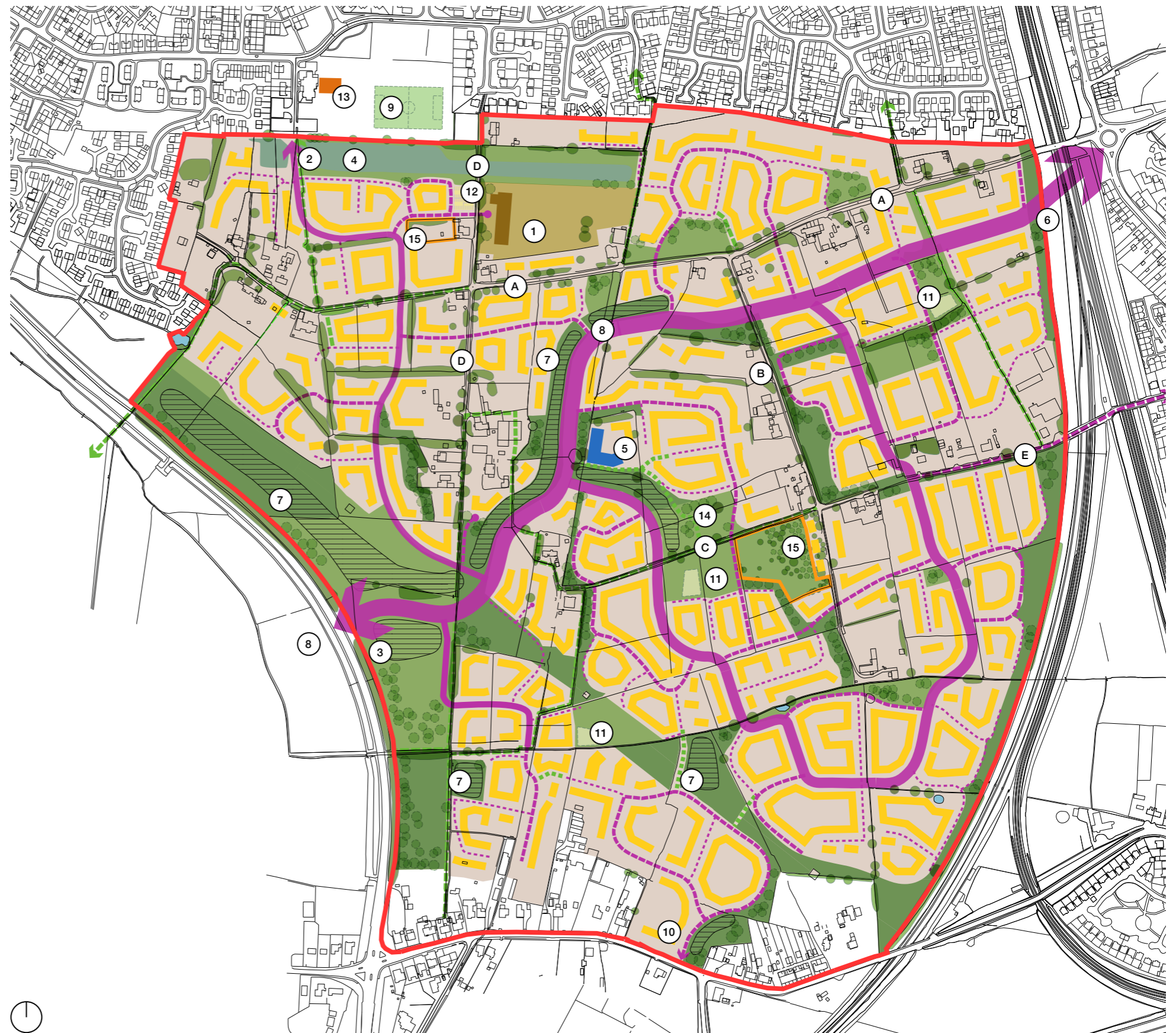
## Illustrative Masterplan

1. New Primary School
2. Public Transport, Pedestrian and Cycle Link to Kingsfold
3. Entrance Gateway – A new route from Penwortham Way direct to the heart of the new community.
4. Area to manage and contain existing surface water.
5. New local facilities including, employment and community uses
6. New Cross Borough Link Road Bridge.
7. Sustainable Urban Drainage
8. Cross Borough Link Road (CBLR)
9. 3G Pitch
10. Limited highways access onto Chainhouse Lane
11. Children's Play Areas
12. Parking and drop off for school
13. Extension to existing Community Centre
14. The Village Green
15. Retention of Orchard and / or land for future residential development if the Orchard (or part thereof) is replaced within the Masterplan

- A. Bee Lane
- B. Lord's Lane
- C. Nib Lane
- D. Moss Lane
- E. Flag Lane

### Key

- |   |   |
|---|---|
|  Application Red Line     |  Secondary Road Network              |
|  Internal Greenspace      |  Residential Frontages               |
|  New Formal Amenity Space |  Community Use                       |
|  Existing Lanes           |  Education                           |
|  Public Rights of Way     |  Local Centre and Employment uses    |
|  Primary Road Network     |  Orchard and / or future residential |















Proposed Residential led Mixed Use Development,  
The Lanes, Penwortham

# TAYLOR WIMPEY/HOMES ENGLAND

Technical Note – Assessment of Wider Masterplan Area  
August 2020



## REPORT

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## Contents

1	INTRODUCTION.....	1
1.1	Introduction .....	1
2	EXISTING CONDITIONS .....	2
2.1	Site Location .....	2
2.2	Local Highway Network.....	3
2.3	Road Safety.....	8
3	ASSESSMENT OF PROPOSED DEVELOPMENT (FULL MASTERPLAN AREA).....	10
3.1	Introduction .....	10
3.2	Proposed Access Arrangements .....	10
3.3	Assessment Assumptions .....	12
3.4	Capacity Assessments .....	14
3.5	Wider Network Junctions .....	22
4	CONCLUSIONS.....	26

## Contents

### APPENDICES

- Appendix 1 - Chain House Lane Proposals
- Appendix 2 - Traffic Flows Figures
- Appendix 3 - PICADY Output - Site Access/Chain House Lane
- Appendix 4 - LINSIG Output - Site Access/A582 Penwortham Way
- Appendix 5 - ARCADY Output - B5254 Leyland Road/Bee Lane/The Cawsey Roundabout
- Appendix 6 - PICADY Output - B5254 Leyland Road/Flag Lane T-junction
- Appendix 7 - LINSIG Output - A582 Penwortham Way/Chain House Lane



## 1 INTRODUCTION

### 1.1 Introduction

1.1.1 Croft Eddisons have been instructed to advise on the traffic and transportation issues relating to the delivery of the Masterplan which has been prepared by Taylor Wimpey and Homes England to guide the future development of one of the largest allocated sites in South Ribble.

1.1.2 The Masterplan covers both the area allocated by Policy C1 (known as 'The Lanes') as well as the land to the south referred to as site 'S2' which is safeguarded for future development. Together the Masterplan area is anticipated to accommodate in the region of 2,000 homes as well as commercial development and other community uses and facilities.

1.1.3 An outline planning application has been submitted on the allocated land controlled by the Developers (Taylor Wimpey and Homes England). This application consists of a residential led mixed use development including 1,100 new homes.

1.1.4 This note will provide consideration of the potential traffic impact of the entire masterplan area which will be primarily accessed from the A582 Penwortham Way and the B5254 Leyland Road via the implementation of the proposed Cross Brough Link Road (CBLR). This note will focus upon the anticipated implications of the proposed development and establish what highway mitigation is likely to be required to facilitate the delivery of the entire Masterplan area.

1.1.5 This assessment has been requested by Lancashire County Council (LCC), the local highway authority, to inform their consideration of the Masterplan only.



## 2 EXISTING CONDITIONS

### 2.1 Site Location

2.1.1 The site is located approximately 3.75 kilometres to the south of Preston city centre, approximately 1.1 kilometres to the west of Lostock Hall town centre and around 3.8 kilometres to the north of Leyland, on land to the east of Penwortham Way to the south of the settlement of Penwortham, as shown in **Figure 2.1** below.



Figure 2.1 - Site Location



## 2.2 Local Highway Network

### Coote Lane/Chain House Lane

- 2.2.1 Coote Lane is a single-lane carriageway located to the south of the safeguarded land extending for approximately 1.2 kilometres along an east to west alignment from the B5254/Leyland Road/Coote Lane signalised T-junction to the priority-controlled Coote Lane/Chain House Lane/Church Lane T-junction.
- 2.2.2 The road passes through a residential area between the B5254 junction and the Preston to Blackburn railway line bridge, where a 7.5 tonne weight limit Prohibition of Driving Order is in operation. This section of carriageway also has a 20 mph speed limit in operation. 2.0 metre-wide footways and street-lighting are provided along both sides of the carriageway along this section of Coote Lane.
- 2.2.3 The speed limit increases to 30mph approximately 133 metres to the east of the Preston to Blackburn railway bridge before increasing to 40 mph approximately 40 metres to the west of the bridge. Coote Lane continues along an east to west alignment through a semi-rural area to its junction with Church Lane and Chain House Lane.
- 2.2.4 The carriageway width varies from approximately 5.3 to 6.3 metres in width in the residential area, narrowing to 3.6 metres in width as it passes over the Preston to Ormskirk railway line bridge, where a 'Give way to Oncoming Vehicles' Traffic Regulation Order for traffic travelling in the westbound direction, is in operation. Coote Lane then widens to approximately 5.8 metres up to its junction with Church Lane/Chain House Lane.



- 2.2.5 A footway along the eastbound carriageway is provided between the Preston to Blackburn railway bridge and the Church Road/Chain House Lane/Coote Lane junction. Street lighting is provided along the length of Coote Lane.
- 2.2.6 Chain House Lane continues from the Coote Lane/Church Road/Chain House Lane T-junction along an east to west alignment for approximately 400 metres to the signalised crossroads junction with the A582 Penwortham Way from where it continues westwards into Whitestake. The carriageway varies in width between 5.8 metres and 11.7 metres at the junction with the A582.
- 2.2.7 A footway is provided along both sides of the carriageway between the Church Lane junction and the A582 junction, varying in width between 0.7 and 2.1 metres. Street lighting is provided along this section of Chain House Lane.

### Existing A582 Penwortham Way

- 2.2.8 The A582 is a principal distributor road extending for approximately 8.0 kilometres from the M65/A6 London Way/A6 Lostock Lane/A582 Lostock Lane four-arm roundabout to the A582 Golden Way/A59 Golden Way three-arm roundabout junction, passing along the western boundary of the allocation.
- 2.2.9 The A582 Lostock Lane is a two-lane dual carriageway extending for approximately 550 metres along an east to west alignment from the M65/A6/A582 roundabout to the A582/B5254/Stanfield Lane four-arm roundabout. After the roundabout junction, the A582 Lostock Lane becomes the single-lane A582 Farington Road, extending for approximately 1.5 kilometres along an east to west alignment as far as the A582/Croston Road/Centurion Way/Fidler Lane six-arm dumb-bell junction.



2.2.10 The A582 continues along an east to south west alignment as the single-lane A582 Flensburg Way for approximately 850 metres to the A582/B5253 three-arm 'Tank Roundabout', where the A582 turns north and becomes the A582 Penwortham Way.

2.2.11 The single-carriageway A582 Penwortham Way continues along a north to south alignment for approximately 2.4 kilometres from the A582/B5253 'Tank Roundabout' to the A582/Pope Lane roundabout where it continues for a further 450 metres as the single-carriageway A582 Golden Way to the A582/Bank Top Road/Millbrook Way five-arm roundabout. At this intersection, the new Penwortham bypass, linking the A582 with the A582 Golden Way with the A59 Liverpool Road is under construction to the west of Penwortham.

2.2.12 The A582 Golden Way heads north east from the A582/Bank Top Road/Millbrook Way roundabout, becoming a two-lane dual-carriageway for a further 1.8 kilometres to join the A59 Golden Way at the A582 Golden Way/A59 Golden Way three-arm roundabout.

2.2.13 The A582 Penwortham Way is currently a 7.3m-wide single-carriageway with no footways along either side of the carriageway in the vicinity of the site.

**A582 Dualling Proposals**

2.2.14 A planning application has been submitted by LCC to dual the A582 in the vicinity of the site. The accompanying Planning Statement states:

“Should planning permission be granted, the scheme would take approximately 27-months to construct, with work expected to commence [at] the end [of] 2021.”

2.2.15 As such, for the purposes of the 2035 assessments contained within this note, it is considered that the dualling scheme will be implemented.



2.2.16 The scheme would comprise the 'preferred option' including the widening of the A582 carriageway to 28-metres in width and the dualling of the existing single carriageway alignment which will be 6.8km long and approx. 38.2m wide in places where dualled on both sides of the road. This would consist of a four-lane dual carriageway, central reserve (2.5m), hard strip (1m) on both sides, grass verge (2.5m) on both sides and combine cycle track (3m) on one side as shown in **Figure 2.2** taken from Figure 12.1 of the 'Traffic and Transport Report of the A582 planning application.

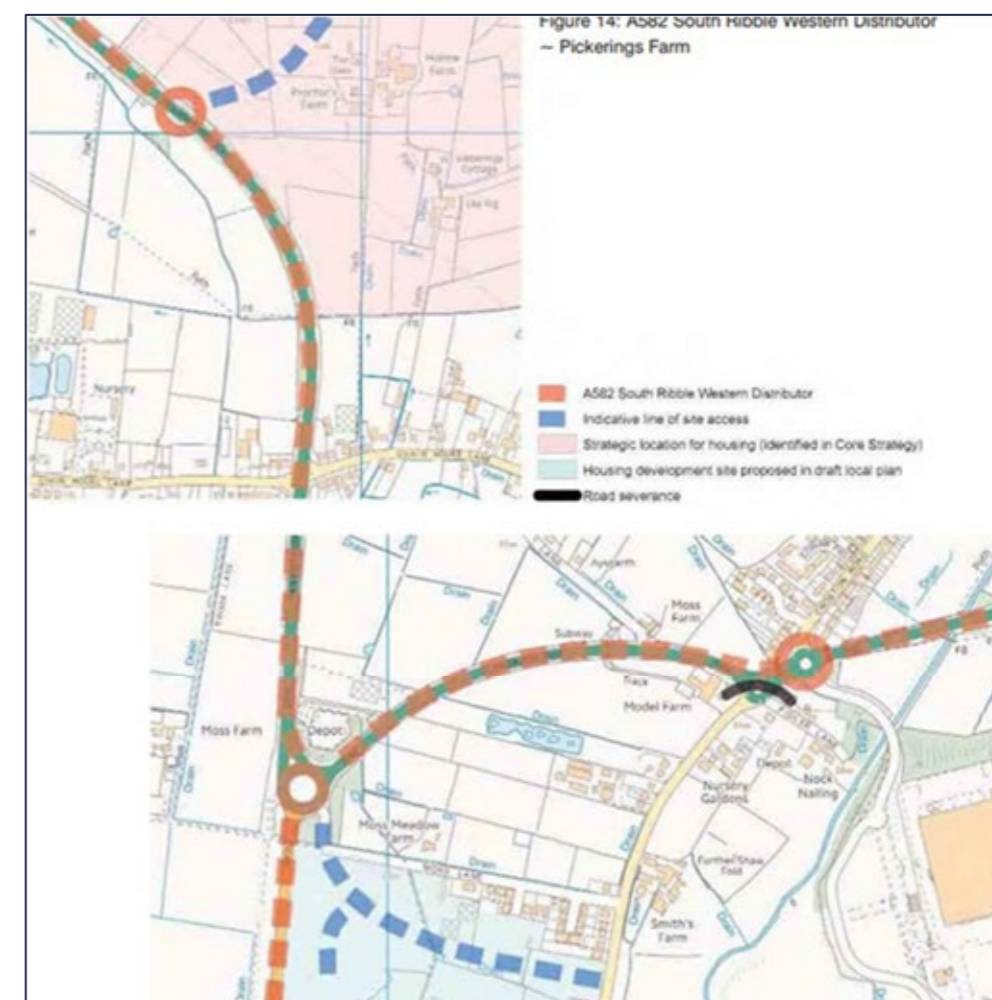


Figure 2.2 - A582 Dualling (South Ribble Western Distributor)



2.2.17 Additionally, controlled crossings at junctions will be provided. The southern leg of the scheme ends at the Longmeanygate junction and to the east with the A5083 Stanfield Lane junction. The scheme would also include improvements to the following junctions:

- Longmeanygate / Flensburg Way;
- Croston Road / Farington Road; and,
- Sherdley Road / Farington Road.

2.2.18 No specific measures are referred to within LCC's submission to improve public transport access along the A582, though reference is made to the provision of bus-priority measures at junctions along the A582. Furthermore, owing to improvements in vehicle traffic through the existing junctions it is anticipated the speed and reliability of bus journeys will be improved particularly at peak times.

#### **B5254 Leyland Road**

2.2.19 To the east of the Masterplan area, the B5254 runs along a north to south alignment for approximately 4.3 kilometres from the A5083 Stanfield Lane/A582 Farington Road/A582 Lostock Lane/B5254 Watkin Lane four-arm roundabout to the A59/B5254 Leyland Road three-arm roundabout.

2.2.20 The B5254 corridor passes through an urban area with residential access roads and residential and retail properties fronting directly onto both sides of the carriageway throughout the corridor in Tardy Gate, Penwortham Gate and Lower Penwortham.

2.2.21 The single-lane carriageway B5254 Watkin Lane extends for approximately 1.0 kilometres along a north to south alignment as far as the B5254/Brownedge Road signalised T-junction in Tardy Gate.



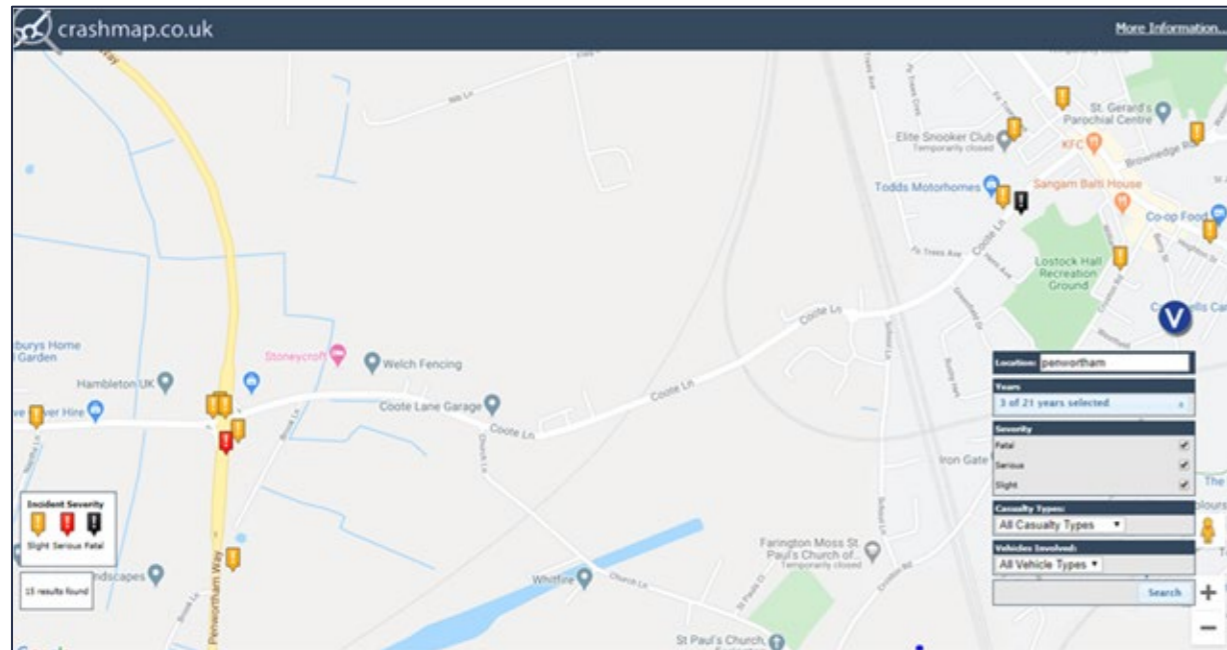
2.2.22 From the B5254/Brownedge junction, the B5254 continues north as a single-carriageway for a further 3.3 kilometres as the B5254 Leyland Road to the B5254 Leyland Road/A59 three-arm roundabout junction.

2.2.23 Bee Lane and Flag Lane provide vehicular access between the site and the B5254 Leyland Road. The B5254 Leyland Road varies in width from approximately 6.6 metres to 7.6 metres in the vicinity of the Bee Lane and Flag Lane junctions respectively.

## **2.3 Road Safety**

2.3.1 In order to consider the potential impact of the development on road safety and to identify any locations with a poor accident record, a review of accident data on the CrashMap website has been undertaken. The data from the most recently available three-year period from 2017 to 2019 has been reviewed on Chain House Lane/Coote Lane, as this will be the location of the proposed access into the safeguarded land.

2.3.2 The wider network has been considered as part of the Developers outline planning application (App Ref: 07/2020/0015/ORM).



**Figure 2.3 – Accident Location Map (Source: CrashMap)**

- 2.3.3 **Figure 2.3** shows that there have zero accidents in the vicinity of the proposed access from Coote Lane into the Safeguarded Land during the most recent 3 year period. Two accidents have occurred on Coote Lane in the vicinity of Todds Motorhomes and one of these accidents resulted in a fatality. The fatality occurred when a car collided with an object off the carriageway.
- 2.3.4 Five accidents have occurred at the A582 Penwortham Way/ Chainhouse Lane junction in the most recent three year period. One of these accidents was classified as serious severity and the remainder as slight.
- 2.3.5 In view of this information, it can be concluded that the local highway network in the vicinity of the safeguarded land does not have an unduly poor safety record and is essentially operating safely.



### 3 ASSESSMENT OF PROPOSED DEVELOPMENT (FULL MASTERPLAN AREA)

#### 3.1 Introduction

3.1.1 The proposals have been the subject of a formal masterplan process and this is ongoing in discussions with officers and members at South Ribble Borough Council, the local planning authority, and LCC, the local highway authority.

3.1.2 As previously stated, the Masterplan covers both the area allocated by Policy C1 of the South Ribble Local Plan (known as 'The Lanes') as well as the land to the south referred to as site 'S2' which is safeguarded for future development. Together the Masterplan area is anticipated to accommodate in the region of 2,000 homes as well as commercial development and other community uses and facilities.

#### 3.2 Proposed Access Arrangements

3.2.1 The primary vehicular access points will be via a new signal controlled junction from the A582 Penwortham Way and via the B5254 Leyland Road/Bee Lane/The Cawsey junction.

3.2.2 The Penwortham Way junction will deliver the western access point to the Cross Borough link road, whilst the B5254 Leyland Road/Bee Lane/The Cawsey junction will provide the main eastern access point. The Cross Borough Link Road will run in an approximate east to west alignment across the site providing the main residential access road through the site.



- 3.2.3 Additional accesses via Flag Lane (to the east), Kingsfold Drive (to the north) and Chain House Lane (to the south) are also considered. However, it should be noted that, if implemented, these accesses will provide limited access to the overall site for general traffic, acting primarily as limited-use residential access roads, cycling and pedestrian access points or, in the case of Kingsfold Drive, bus and emergency access only.
- 3.2.4 The access from Kingsfold Drive will facilitate bus and emergency access only in order to provide a sustainable link whilst preventing the intensification of use of Kingsfold Drive by general vehicular traffic. No direct vehicular access will be provided across the site via Kingsfold Drive. It should be noted that Kingsfold Drive is not adopted and a section of the route lies outside of the edge red boundary on third party land. As such, a vehicular access to Kingsfold Drive is not within the Developers control to deliver.
- 3.2.5 It is acknowledged that there is an additional allocation, referred to as site 'S3' to the south of Chain House Lane, in the vicinity of the proposed access onto Chain House Lane.
- 3.2.6 Site 'S3' has been the subject of a previous planning application (App ref: 07/2018/9316/OUT), submitted on behalf of Wainhomes and discussions were held at the time to establish the best access arrangement to serve both the 'S2' and 'S3' allocation sites. The Wainhomes appeal was dismissed and is now at appeal in the High Court. At the time of writing, a new planning application (App Ref: 07/2020/00505/OUT) has been submitted which retains the same access principles as the appeal application. The resultant preferred access arrangement consists of a simple priority junction arrangement with appropriate junction spacing and pedestrian and cycle links between the two sites. This access arrangement for Chain House Lane can be seen at **Appendix 1**.



- 3.2.7 A number of improvements to Chain House Lane have also been established as part of the Wainhomes application to facilitate the access proposals and to provide improvements on Chain House Lane. The list of improvements is provided below and can also be seen in Appendix 1:
- A 'Green Link' pedestrian/cycle between sites S2 and S3 and crossing Chain House Lane via formal crossing point.
  - A reduction in speed limit from 40mph to 30mph to enhance the environment for pedestrians and cyclists, including;
    - Surface treatment at key junctions and bends to slow traffic;
    - Gateway features to emphasise to road users that they are entering a residential area;
    - Re-location/enhancement of signage;
    - Potential to include traffic signal control at Coote Lane bridge.
- 3.2.8 As a revised application has been submitted, these improvements may be delivered prior to the S2 allocation coming forward, however, it is envisaged that some elements of these improvements are likely to be required to facilitate the delivery of the Chain House Lane site access, if not already delivered as part of the Wainhomes site.
- 3.3 Assessment Assumptions**
- 3.3.1 The capacity assessments provided in this report are based on the Developers planning application (App Ref: 07/2020/0015/ORM) submission for 'The Lanes' site.



- 3.3.2 In summary, they include the following:
- Trip Generation – undertaken in line with trip rates suggested by and agreed with LCC as part of the Developers planning application (App Ref: 07/2020/0015/ORM) application and as requested by LCC for the Chainhouse Lane access.
  - Trip Generation – undertaken in line with the distribution agreed with LCC as part of the Developers planning application (App Ref: 07/2020/0015/ORM).
  - Traffic Growth – applied using TEMPRO growth factors to a future year of 2035, as agreed with LCC as part of the Developers planning application (App Ref: 07/2020/0015/ORM)
  - Junction Modelling – Undertaken using Junctions 9 and Linsig 3 models.

3.3.3 The associated traffic flow figures can be seen in **Appendix 2**.

- 3.3.4 For the purposes of this report, a full CBLR scenario has been assessed as follows:
- 2,000 units with the full CBLR delivered across the site, and a new bridge utilising third party land connecting to Leyland Road. This assumes 200 dwellings accessing via the new access onto Chain House Lane and 1,800 dwellings accessed via the CBLR, with 60% of this traffic accessed via Penwortham Way and 40% via Leyland Road, split via Bee Lane and Flag Lane on a geographical basis. This assessment is considered a worst-case scenario, (the full site allocation).
  - An allowance has also been made for an additional 150 two-way trips to be attracted to the CBLR from the adjacent highway network. This is considered a robust approach.



### 3.4 Capacity Assessments

#### Proposed Site Access/Chain House Lane

- 3.4.1 The operation of the above junction was tested using the PICADY module of the Junctions 9 program.
- 3.4.2 The results for the '2035 Base plus Development' flow scenario are summarised below, with the full results contained within **Appendix 3**.

Arm	2035 Base Flows + Development Flows			
	Weekday AM		Weekday PM	
	Max RFC	Q	Max RFC	Q
Site Access	0.22	0	0.13	0
Chain House Lane	0.09	0	0.17	0

**Table 3.1 - Summary of PICADY Results for Proposed Site Access/Chain House Lane– 2035 Assessment**

- 3.4.3 As can be seen above, the 2035 'With Development' results demonstrate that the junction will operate well within its theoretical capacity in both the AM and PM peak hours and can therefore adequately accommodate the traffic forecast to be generated by the proposed development.





**Site Access/A582 Penwortham Way**

- 3.4.4 In this capacity assessment, the 50m long sections of dual 2-lane approach and exit arms have been replaced by dual 2-lanes of infinite length to simulate the A582 Penwortham Way dual-carriageway.
- 3.4.5 The operation of the above-mentioned junction has been assessed using LINSIG.
- 3.4.6 Assessments were undertaken using the 2035 assessment flows, the results of which are summarised below, with the full results contained within **Appendix 4**.

Arm	Lane	AM Peak		PM Peak	
		Degree Saturation	Mean Max Queue	Degree Saturation	Mean Max Queue
Site Access	Left	67%	9	69%	5
	Right	68%	9	74%	6
A582 Penwortham Way (South-NB)	Right Ahead	61%	13	47%	6
A582 Penwortham Way (North-SB)	Left Ahead	69%	17	74%	19
<b>PRC</b>		<b>30%</b>		<b>22%</b>	

**Table 3.2 - Summary of LINSIG Results for Site Access/A582 Penwortham Way – 2035 Assessment**

- 3.4.7 The summary analysis results demonstrate the junction would operate efficiently and well within its capacity in the forecast year, with the full Masterplan in place.
- 3.4.8 The above demonstrates that the proposed access can adequately accommodate future development traffic.



**B5254 Leyland Road/Bee Lane/The Cawsey roundabout**

- 3.4.9 The B5254 Leyland Road/Bee Lane/The Cawsey roundabout has been assessed using ARCADY.
- 3.4.10 Analysis of the traffic survey data for this junction has indicated that there is little variation in the levels of traffic arriving during each 15 minute period of the peak hour. As such, a FLAT profile is considered appropriate for the modelling of this junction.
- 3.4.11 The results for the 'Base' and 'Base plus Development' flow scenarios for 2035 are summarised below, with the full results contained within **Appendix 5**.

Arm	2035 Base Flows				2035 Base + Development			
	Weekday AM		Weekday PM		Weekday AM		Weekday PM	
	Max RFC	Q	Max RFC	Q	Max RFC	Q	Max RFC	Q
<b>B5254 Leyland Road (N)</b>	0.71	3	0.77	3	0.79	4	0.91	9
<b>The Cawsey</b>	0.36	1	0.38	1	0.41	1	0.49	1
<b>B5254 Leyland Road (S)</b>	0.90	8	0.74	3	0.98	25	0.84	5
<b>Bee Lane</b>	0.11	0	0.03	0	1.24	58	0.54	1

**Table 3.3 - Summary of ARCADY Results B5254 Leyland Road/Bee Lane/The Cawsey roundabout – 2035 Assessment**

- 3.4.12 As can be seen above, with the addition of the safeguarded land, the results indicate that the roundabout is forecast to operate in excess of its theoretical capacity on the B5254 Leyland Road (south) and Bee Lane arms of the junction during the 2035 the AM peak hour period and on the B5254 Leyland Road (north) arm during the PM peak.



3.4.13 As such, it is considered that mitigation at this junction is likely to be required when the full Masterplan Area comes forward. This could be delivered in the form of signalling the junction, which is an option considered in LCC's dualling scheme planning application (Planning Ref: LCC/2020/2014, TA 'Do Something' Scenarios - Section 12.7).

**B5254 Leyland Road/Flag Lane T-junction**

3.4.14 The operation of the above junction was tested using the PICADY module of the Junctions 9 program.

3.4.15 Analysis of the traffic survey data for this junction has indicated that there is little variation in the levels of traffic arriving during each 15 minute period of the peak hour. As such, a FLAT profile is considered appropriate for the modelling of this junction.

3.4.16 The results for the 'Base' and 'Base plus Development' flow scenario for 2035 are summarised below, with the full results contained within **Appendix 6**.

Arm	2035 Base Flows				2035 Base + Development			
	Weekday AM		Weekday PM		Weekday AM		Weekday PM	
	Max RFC	Q	Max RFC	Q	Max RFC	Q	Max RFC	Q
Flag Lane	0.28	0	0.09	0	1.18	32	0.45	1
B5254 Leyland Road SB	0.04	0	0.06	0	0.05	0	0.06	0

**Table 3.4 - Summary of PICADY Results for B5254 Leyland Road/Flag Lane T-junction-- 2035 Assessment**



3.4.17 As can be seen above, with the addition of the safeguarded land, the results demonstrate that the junction will operate in excess of its theoretical capacity in the AM peak. This is due to the volume of traffic trying to exit Flag Lane, not being able to find enough gaps in traffic on Leyland Road, to exit the junction in a timely manner.

3.4.18 Therefore, it is likely that mitigation will be required at the junction, or a limit will have to be placed on the number of dwellings accessing via Flag Lane. Limiting the number of dwellings was the approach taken in the Developers planning application (App Ref: 07/2020/0015/ORM) which indicated that at least circa 125 dwellings could be accessed from Flag Lane without capacity concerns at the Flag Lane/Leyland Road junction.

3.4.19 Alternatively, a mitigation scheme, such as, signalling the junction of Flag Lane and Leyland Road could be considered. However, there is limited scope for significant improvements, with only a single lane on each approach arm likely to be deliverable due to the constrained extent of adopted highway, as shown in the below extract.



Figure 3.1 – B5254 Leyland Road/Flag Lane Extent of Adoption



#### A582 Penwortham Way/Chain House Lane Signalised Crossroads

- 3.4.20 The A582 Penwortham Way/Chain House Lane signalised crossroads has been assessed using LINSIG. The junction model has been provided by LCC's City Deal team and is to be utilised in support of LCC's own forthcoming planning application for the A582 dualling scheme.
- 3.4.21 The results for the 'Base' and 'Base plus Development' flow scenario for 2035 are summarised below, with the full results contained within **Appendix 7**.



Arm	2035 Base Flows				2035 Base + Development			
	Weekday AM		Weekday PM		Weekday AM		Weekday PM	
	Deg. Sat.	Q	Deg. Sat.	Q	Deg. Sat.	Q	Deg. Sat.	Q
Penwortham Way A582 Southbound Ahead Left	87.3%	18.5	97.3%	33.5	102.3 %	40.5	104.4 %	56.4
Penwortham Way A582 Southbound Ahead	87.3%	19.9	97.5%	35.6	102.3 %	42.4	104.6 %	59.5
Penwortham Way A582 Southbound Right	4.0%	0.2	11.3%	0.6	11.3%	0.6	15.3%	0.8
Chain House Lane Westbound Ahead Left	58.0%	11.3	62.4%	10.5	63.6%	12.7	66.4% %	11.3
Chain House Lane Westbound Right	79.1%	11.1	42.7%	3.2	84.6%	12.5	54.8% %	4.6
Penwortham Way A582 Northbound Left Ahead	95.9%	33.5	77.4%	21.8	99.9%	41.7	85.0%	26.2
Penwortham Way A582 Northbound Ahead	95.9%	35.1	76.4%	22.7	100.1 %	44.1	84.4%	27.4
Penwortham Way A582 Northbound Right	22.4%	1.0	31.5%	1.4	29.9%	1.4	49.8%	2.4
Chain House Lane Eastbound Left Ahead	32.4%	5.6	49.0%	8.0	33.4%	5.8	52.0%	8.6
Chain House Lane Eastbound Right	91.9%	11.9	97.7%	12.8	103.1 %	18.2	104.5 %	16.9
<b>PRC</b>	<b>-6.6%</b>		<b>-8.6%</b>		<b>-14.6%</b>		<b>-16.2%</b>	

Table 5 - Summary of LINSIG Results for the A582 Penwortham Way/Chain House Lane Signalised Crossroads – 2035 Assessment



3.4.22 As can be seen above, with the addition of the safeguarded land, the 2035 results demonstrate that the junction is forecast to operate in excess of its capacity, predominately on the Penwortham Way north and southbound arms of the junction. The operation of the junction is forecast to worsen in comparison to the Developers planning application (App Ref: 07/2020/0015/ORM) due to the additional development traffic added from the safeguarded land.

3.4.23 As such, mitigation could be required at this junction, but it is considered that this would only need to be a relatively minor intervention given the robust assumptions made in this assessment, including the significant application of future year traffic growth and committed development. The forecast queue increases can also be considered relatively moderate. It is considered that adjustments to signal timings or minor improvements could be implemented if required.

3.4.24 In addition, this assessment considers a maximum of 200 dwellings accessing the site from Chain House Lane, whilst both the Chain House Lane site access assessments and the results at this signalised junction suggests that the Chain House Lane access could be accommodated a greater number of units. If more traffic was added to the Chain House Lane site access, this would in turn alleviate some pressure from the north and southbound arms of Penwortham Way at this junction. This is something which could be considered and assessed further as part of any future planning application for the safeguarded land.

### 3.5 Wider Network Junctions

3.5.1 In addition to the site access junctions and key junctions in the immediate vicinity of the safeguarded land which have been assessed above. Consideration has also been given to junctions on the wider network based on previously undertaken assessment work and the network observations.



### Tardy Gate

- 3.5.2 The Tardy Gate junction is situated to the east of the safeguarded land and would be impacted primarily by vehicles travelling to and from the south-east of the site. Tardy Gate consists of three closely spaced signalised junctions, with Coote Lane forming the western arm of the northern most junction. All three of the junctions have the B5254 Leyland Road/Watkin Lane as the major arm, with Coote Lane, Browndedge Road and Jubilee Road forming the minor arms.
- 3.5.3 It is acknowledged that there are likely to be capacity issues at the Tardy Gate junctions, however, LCC's dualling scheme will provide some relief to ensure that traffic flows at this junction is reduced and therefore the congestion issues are addressed as the scheme will provide relief to this section of the Leyland Road corridor. It is also understood that MOVA control has been implemented to improve the operation of the junctions. However, it should be noted that this is envisaged to be a short term measure, with future City Deal proposals, planned to give more space to pedestrians and cyclists and to implement bus priority and traffic management measures on Leyland Road and within the Tardy Gate District Centre following the implementation of the A582 dualling and Penwortham Bypass schemes.
- 3.5.4 As such, is it envisaged that the future safeguarded land may be required to contribute towards LCC's improvements/aspirations at Tardy Gate.



### A582 Lostock Lane/A582 Farington Road/A5083 Stanifield Lane/B5254 Watkin Lane signalised roundabout

- 3.5.5 The Developers planning application (App Ref: 07/2020/0015/ORM) had a two-way impact of circa 170 two-way trips in the AM peak and 172 two-way trips in the PM peak at the junction. This level of impact equated to less than 3% which can be considered minimal to the overall operation of the junction, when considering the overall volumes of traffic which this junction accommodates.
- 3.5.6 However, the traffic impact of the full Masterplan Area is forecast to be in the region of 254 two-way trips in the AM peak and 255 two-way trips in the PM peak. As such, this junction is likely to require further detailed assessment as part of any future application on the balance of allocated and/or safeguarded land which could lead to mitigation requirements.
- 3.5.7 Notwithstanding the need for further assessment, it is considered that minimal intervention would be required, as the junction has recently been improved by LCC as part of the City Deal investment along the A582 South Ribble Western Distributor corridor. Capacity improvements have, therefore, recently been implemented to support the strategic housing sites in the area, including this allocation.
- ### B5254 Leyland Road/Marshalls Brow Mini-roundabout
- 3.5.8 The Developers planning application (App Ref: 07/2020/0015/ORM) application had a two-way impact of circa 40 two-way trips in the AM peak and PM peak periods at the junction. This level of impact equated to less than 3% which can be considered minimal.



- 3.5.9 This junction is likely to require further detailed assessment as part of any future application on balance of the allocated and/or safeguarded land as the development of the full Masterplan Area would add circa 221 two-way trips through the junction in the AM peak and 223 two-way trips through the junction in the PM peak based on current distributions and robust assumptions. There is limited scope for improvements at the junction due to the constrained extent of adopted highway. However, minimal intervention would be expected as the Penwortham Bypass and A582 dualling scheme should provide an element of relief at this junction.

#### **A6 London Way/Hennell Lane/Carrwood Road roundabout**

- 3.5.10 The Developers planning application (App Ref: 07/2020/0015/ORM) had a two-way impact of circa 121 two-way trips in the AM peak and 122 two-way trips in the PM peak at the junction. This level of impact equated to approximately 3% which can be considered minimal to the overall operation of the junction when considering the overall volumes of traffic which this junction accommodates. However, the traffic impact of the balance of the Masterplan Area is forecast to be in the region of 239 two-way trips in the AM peak and 241 two-way trips in the PM peak. As such, this junction is likely to require further detailed assessment as part of any future application on the balance of the Allocated and/or safeguarded land which could lead to mitigation requirements.
- 3.5.11 It is considered there is scope to improve the junction if required. Adopted highway information has not been obtained for this junction but it is clear from the current junction arrangement that there is significant scope to implement improvements, if required.



## **4 CONCLUSIONS**

- 4.1.1 The following conclusions can be drawn from the assessment of the full Masterplan Area:
- It is envisaged that LCC's dualling scheme will be in place well before the future year assessment of 2035.
  - The proposed site access off the A582 Penwortham Way is forecast to operate well within capacity.
  - The proposed site access off Chain House is forecast to operate well within capacity when catering for up to 200 dwellings.
  - The B5254 Leyland Road/Bee Lane/The Cawsey roundabout, which will provide the primary site access to the east, is forecast to operate in excess of its capacity when considering the development of the entire Masterplan Area. A mitigation scheme is, therefore, likely to be required at this junction to facilitate the delivery of the safeguarded land.
  - The B5254 Leyland Road/Flag Lane priority controlled junction, which will provide secondary access to the east, is forecast to operate in excess of its capacity with the full Masterplan area in place and without any constraints provided on the number of dwellings accessing the site via Flag Lane. It is, therefore, recommended, that the number of dwellings accessing the site via Flag Lane are limited through a truncated and appropriately designed site layout. The Developers planning application (App Ref: 07/2020/0015/ORM) has demonstrated that at least 125 dwellings can be delivered without any capacity concerns at the junction using this approach.



- A list of the potential mitigation scheme's which are likely to be required to deliver the full Masterplan Area are listed below, in the order of their anticipated delivery priority (highest to lowest priority based on assessment):
  - 1) Potential traffic calming and speed reduction measures to Chain House Lane and Coote Lane (as per the Wainhomes planning application) (App Ref: 07/2020/00505/OUT).
  - 2) Potential footway and bus stop improvements to Chain House Lane (as per the Wainhomes planning application (App Ref: 07/2020/00505/OUT).
  - 3) Highway mitigation scheme consisting of potential signalisation at the B5254 Leyland Road/Bee Lane/The Cawsey roundabout.
  - 4) Highway mitigation scheme consisting of potential signalisation or the limiting of the number of dwellings accessing the site at the B5254 Leyland Road/Flag Lane T-junction.
  - 5) Contribution towards public realm and bus priority measures at the Leyland Road corridor/Tardy Gate District Centre.
  - 6) Potential minor junction improvements or adjustments to signal timings at the A582 Penwortham Way/Chain House Lane Signalised Crossroads.

4.1.2 Any future planning application within the Masterplan area will need to be supported by a Transport Assessment and Travel Plan. Each planning application will be required to identify its impacts on the local highway network and mitigation will need to be agreed with LCC where impacts are shown to be adverse. The review of the planning applications within the Masterplan at the appropriate time may lead to a requirement for mitigation which is additional to that listed above.



- 4.1.3 This note demonstrates that the proposed site access onto the A582 is appropriately future proofed for the full delivery of the wider Masterplan Area, and completion of the CBLR, and there are no issues with delivering up to 200 units off Chain House Lane. It is also considered that there are no insurmountable issues in terms of the delivery of the entire Masterplan area and more importantly the full implementation of the Masterplan area is not prejudiced by the current TW/HE planning application at The Lanes.

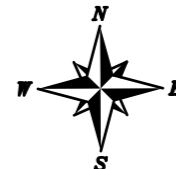
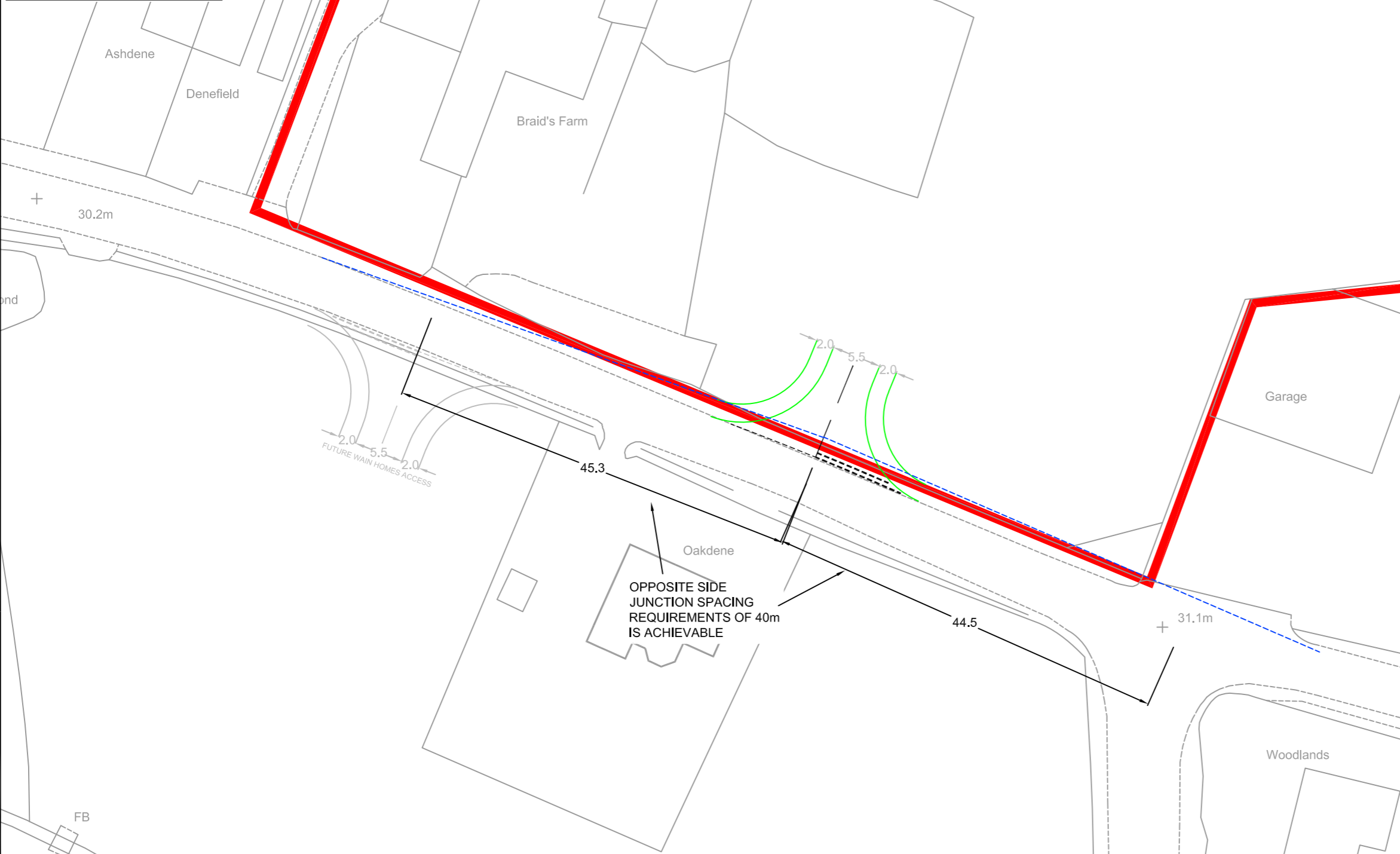
## APPENDICES

## APPENDIX 1





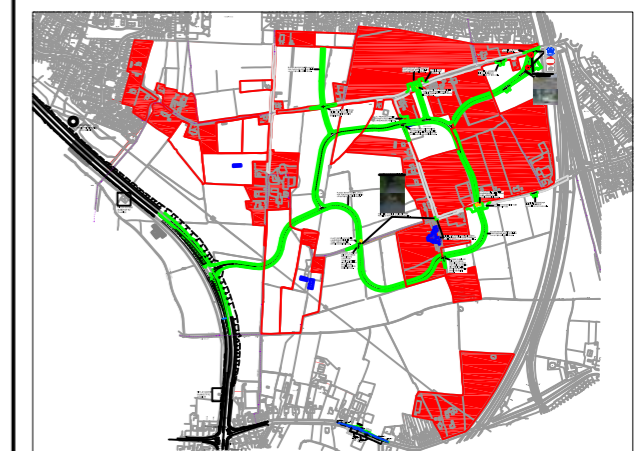
NORTH SOUTH AERIAL VIEW



NOTES

THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. THE DRAWING WILL BE SUBJECT TO CHANGE FOLLOWING LOCAL AUTHORITY REVIEW AND CONFIRMATION OF PUBLIC HIGHWAY AND THIRD PARTY LAND BOUNDARIES.

- INDICATIVE SITE BOUNDARY
- DENOTES NEW KERBS



SITE LAYOUT NTS

REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:  
**TAYLOR WIMPEY AND HOMES ENGLAND**

PROJECT:  
**THE LANES, PENWORTHAM**

DRAWING TITLE:  
**POTENTIAL SITE ACCESS JUNCTION OFF CHAIN HOUSE LANE - SIMPLE PRIORITY JUNCTION ARRANGEMENT (WITH WAINHOMES ACCESS)**

SCALES:  
**1:500 @ A3**

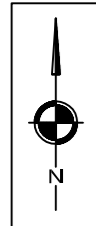
DRAWN: JC	CHECKED: MC	DATE: JAN 19
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Croft Transport Planning & Design  
Hill Quays  
9 Jordan Street  
Manchester  
M15 4PY

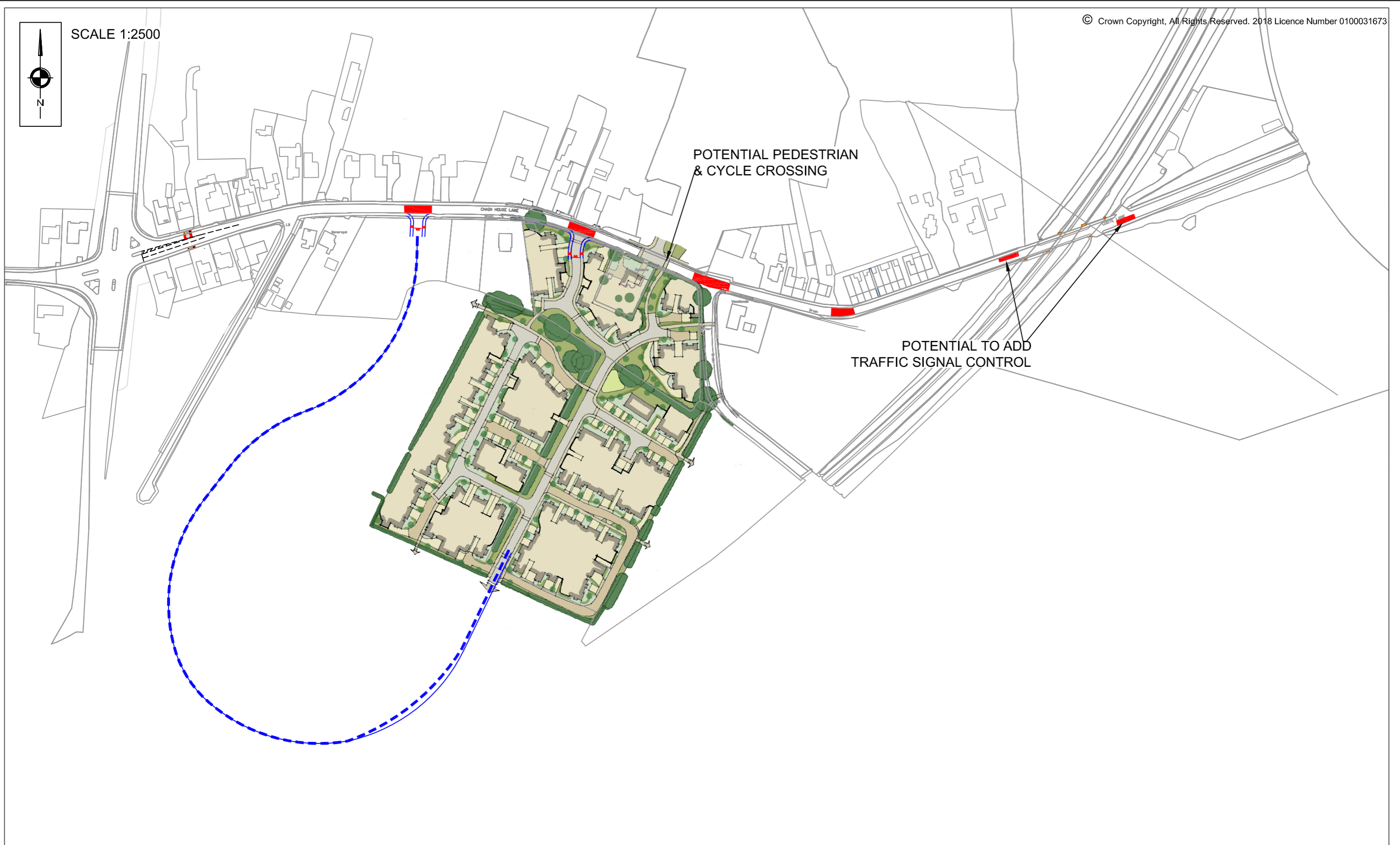
Email: [info@crofts.co.uk](mailto:info@crofts.co.uk)  
Tel: 0161 667 3746  
Web: [www.crofts.co.uk](http://www.crofts.co.uk)



DRAWING NUMBER: <b>0372-F014-02</b>	REVISION: -
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SCALE 1:2500



**S | C | P**  
 Transportation Planning : Infrastructure Design  
 Colwyn Chambers, 19 York Street, Manchester, M2 3BA, Tel 0161 832 4400,  
 www.scptransport.co.uk, Email info@scptransport.co.uk

Client	WAINHOMES (NORTH WEST) LTD
Project Title	CHAIN HOUSE LANE, WHITESTAKE

Drawing Title	FUTURE TRAFFIC CALMING SCHEME AND DEVELOPMENT SITE ACCESS LOCATIONS
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Scale	1:250 @ A3 UNLESS SHOWN
Date	14.03.2019
Approved/Unapproved	-

By	MC / WD
Checked	DR
Status	PLANNING

Rev	Description	Date	By
A	-LATEST SITE LAYOUT UNDERLAID + AMENDMENTS MADE TO GENERAL ARRANGEMENT	27.03.19	WD
B	-AMENDMENTS MADE TO GENERAL ARRANGEMENT	17.04.19	WD
-	-	-	-

Drawing No.	SCP/18355/SK05
Revision	B





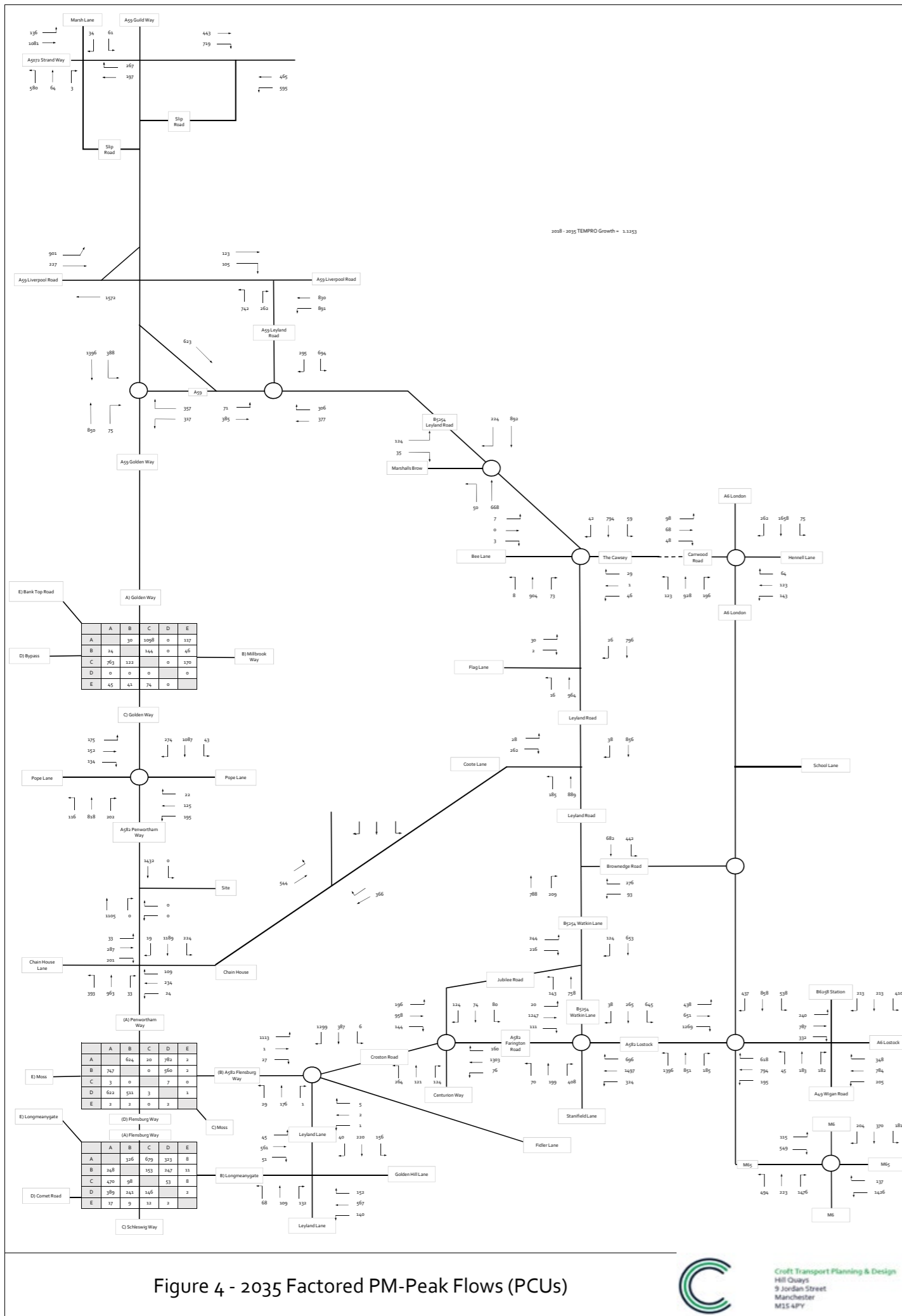


Figure 4 - 2035 Factored PM-Peak Flows (PCUs)

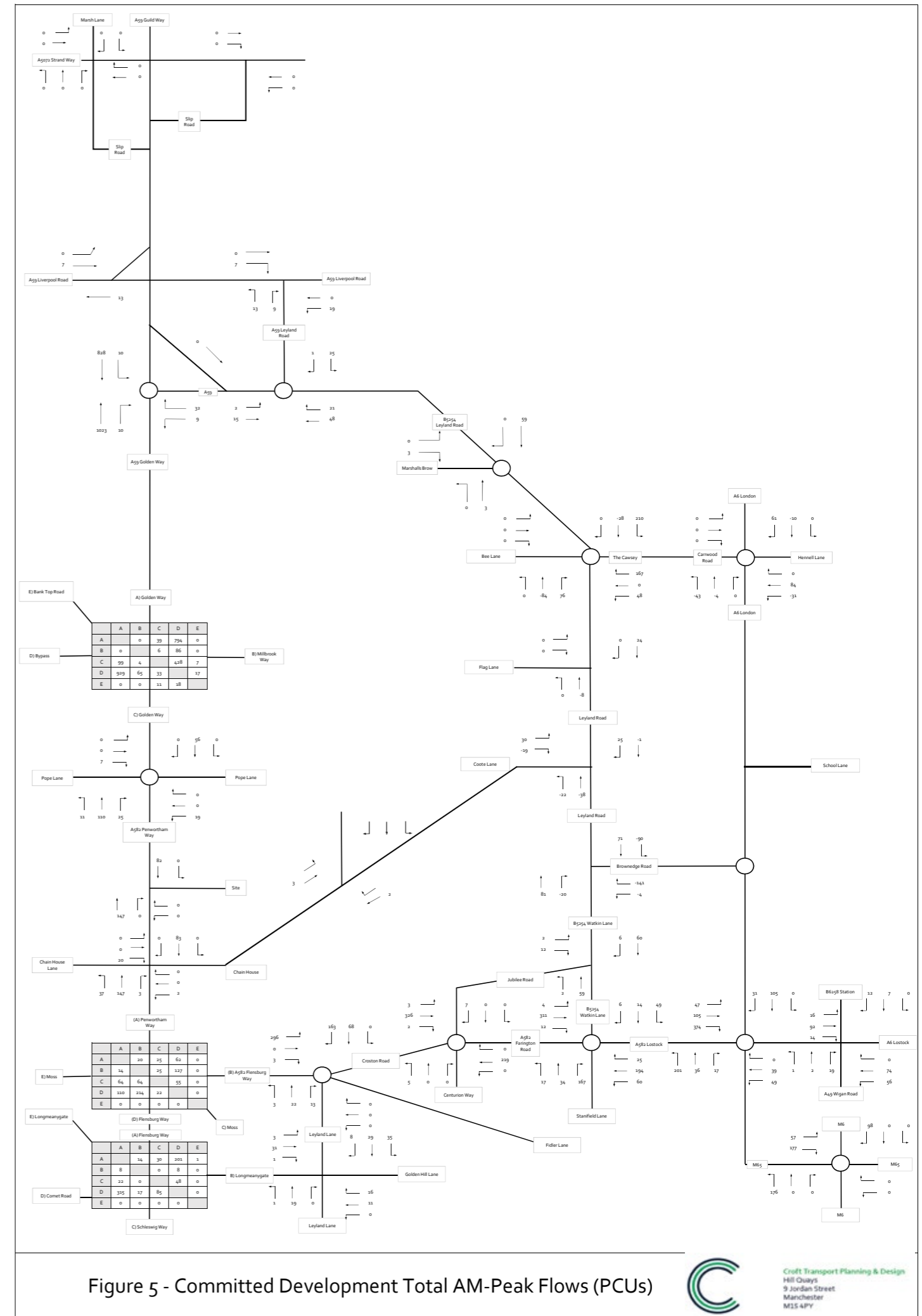


Figure 5 - Committed Development Total AM-Peak Flows (PCUs)









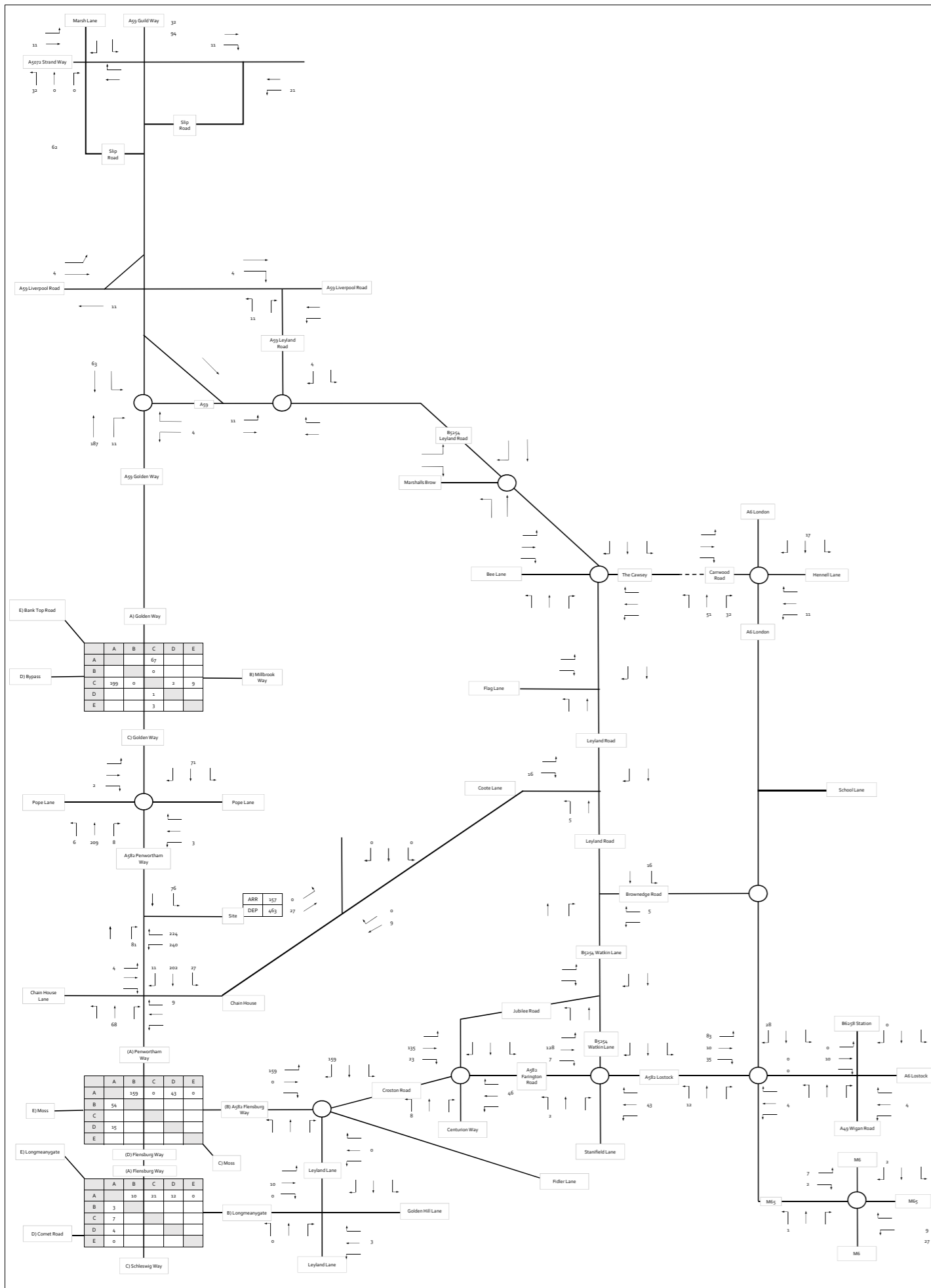


Figure 11 - Development Traffic A582 Access AM Peak Distribution

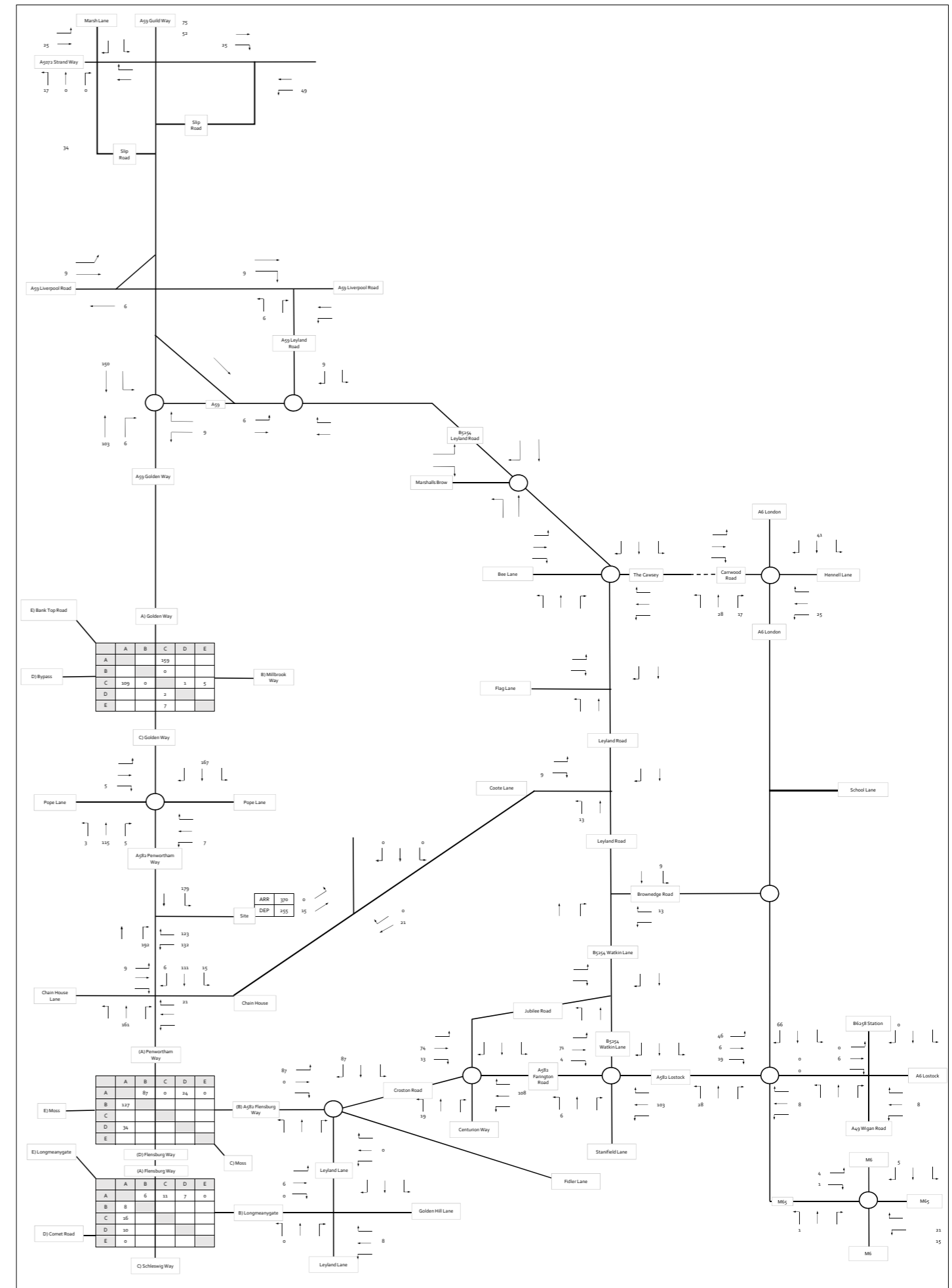


Figure 12 - Development Traffic A582 Access PM Peak Distribution

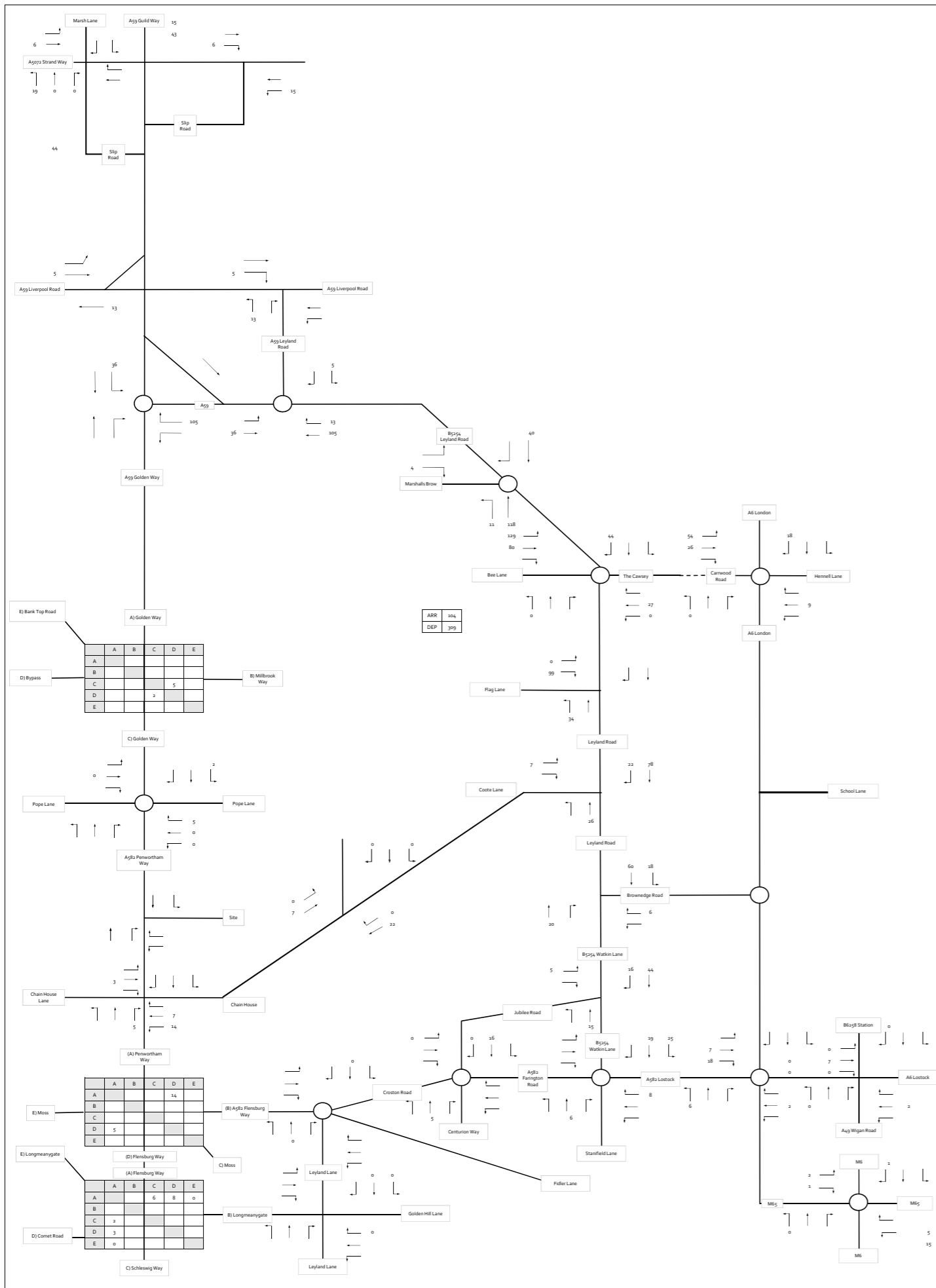


Figure 13 - Development Traffic B5254 Access AM Peak Distribution

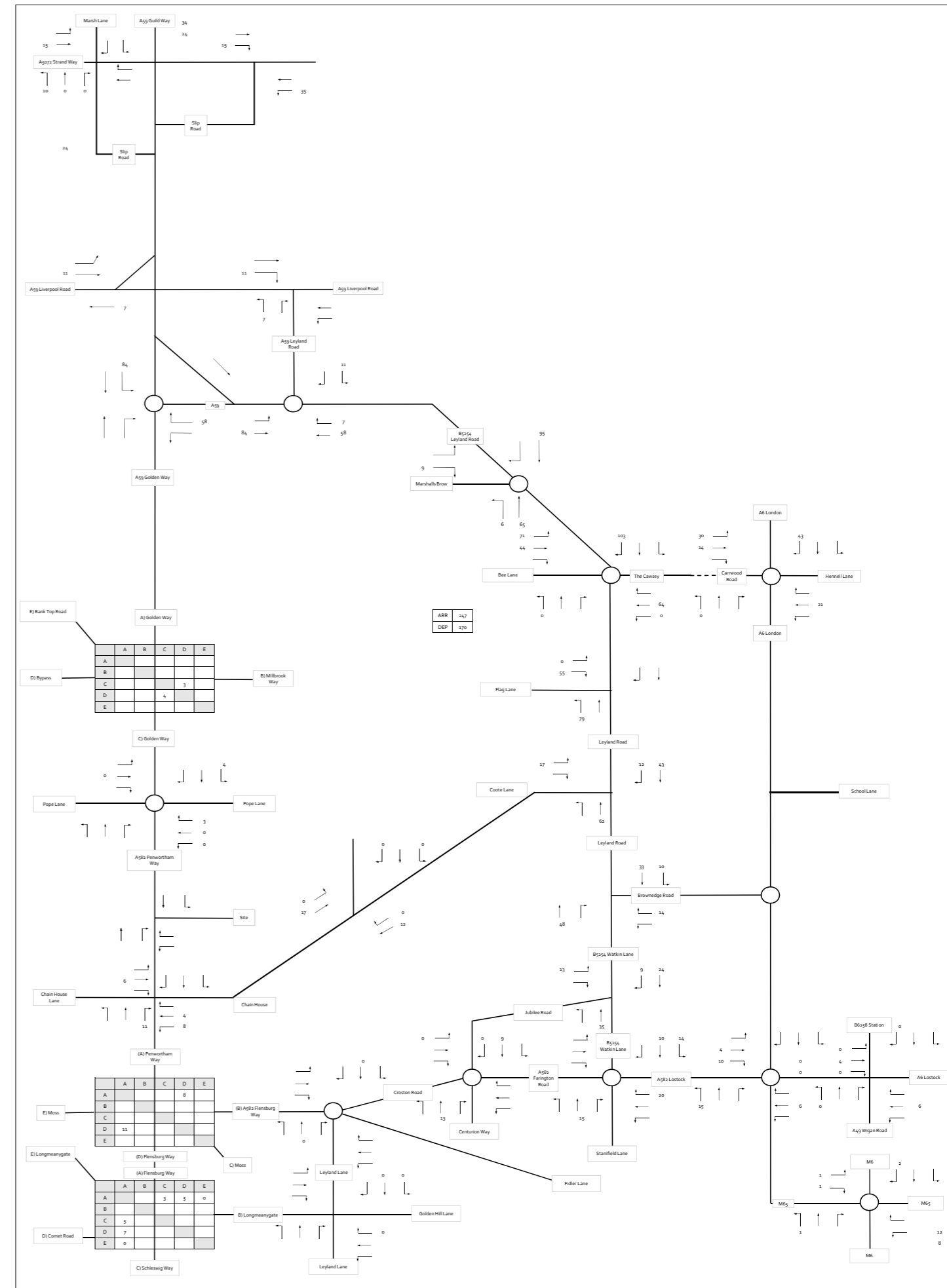


Figure 14 - Development Traffic B5254 Access PM Peak Distribution



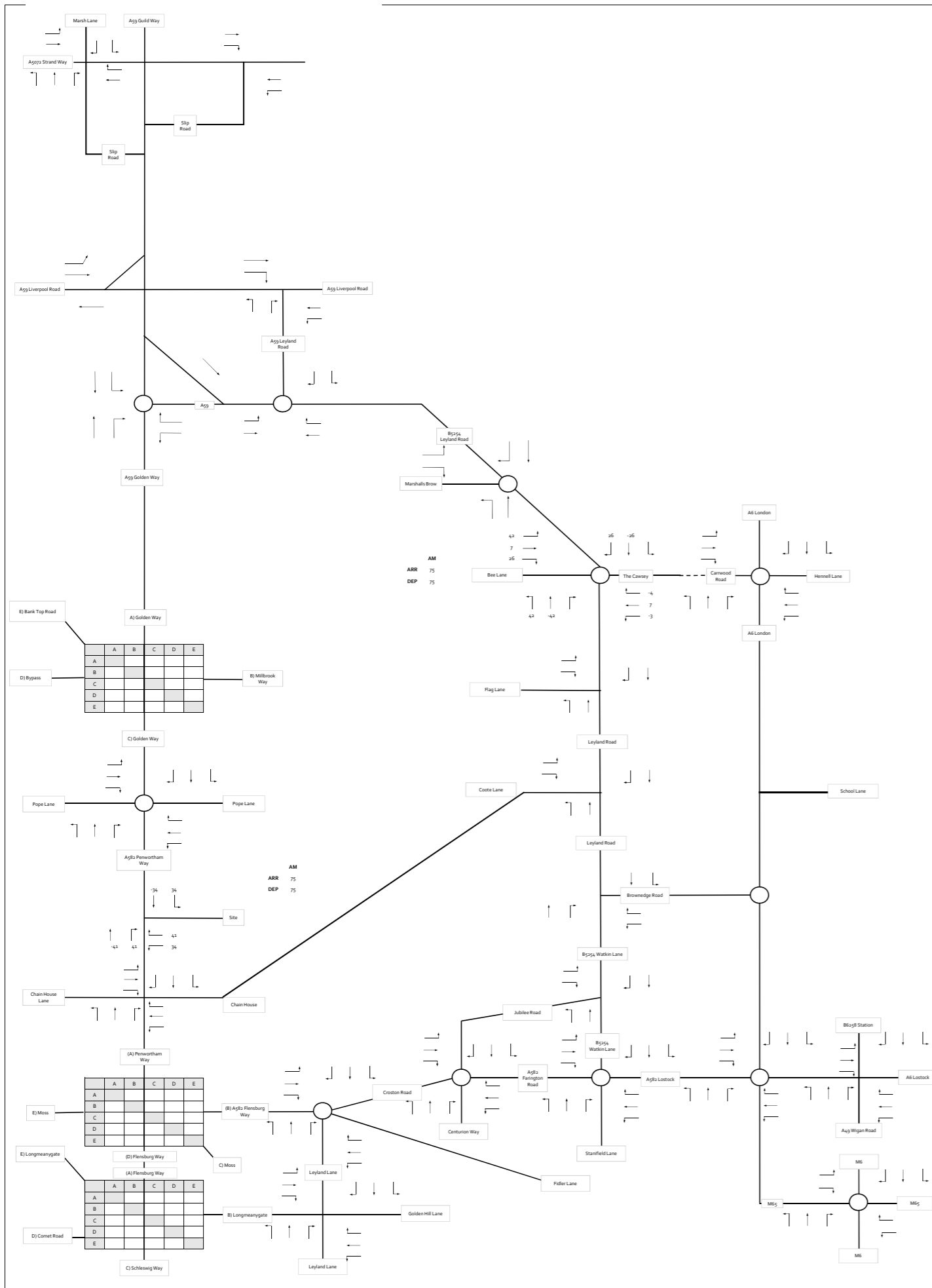


Figure C - CBLR Trip Attraction - 150 Two-Way Trips- AM Peak

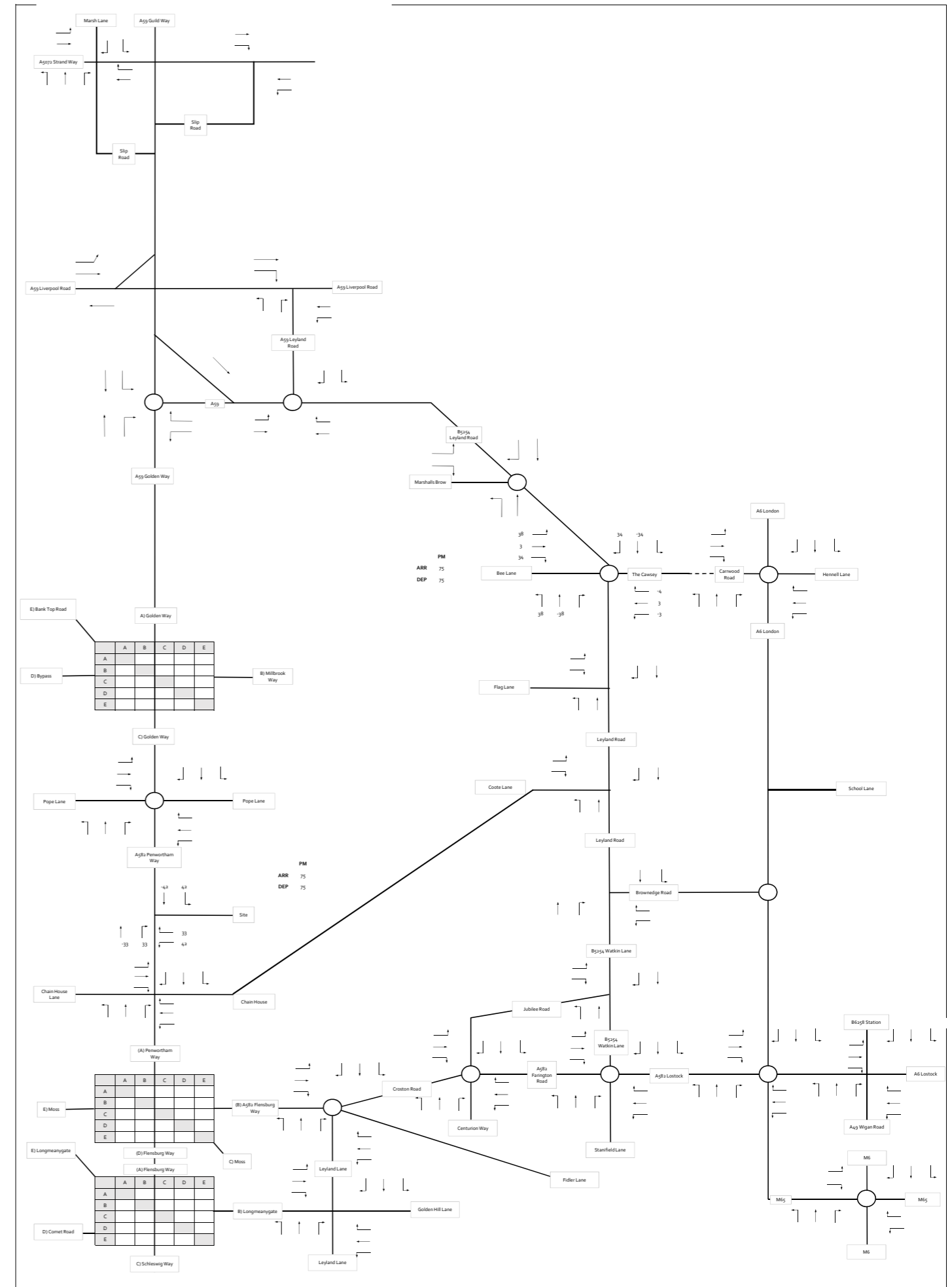


Figure D - CBLR Trip Attraction - 150 Two-Way Trips- PM Peak





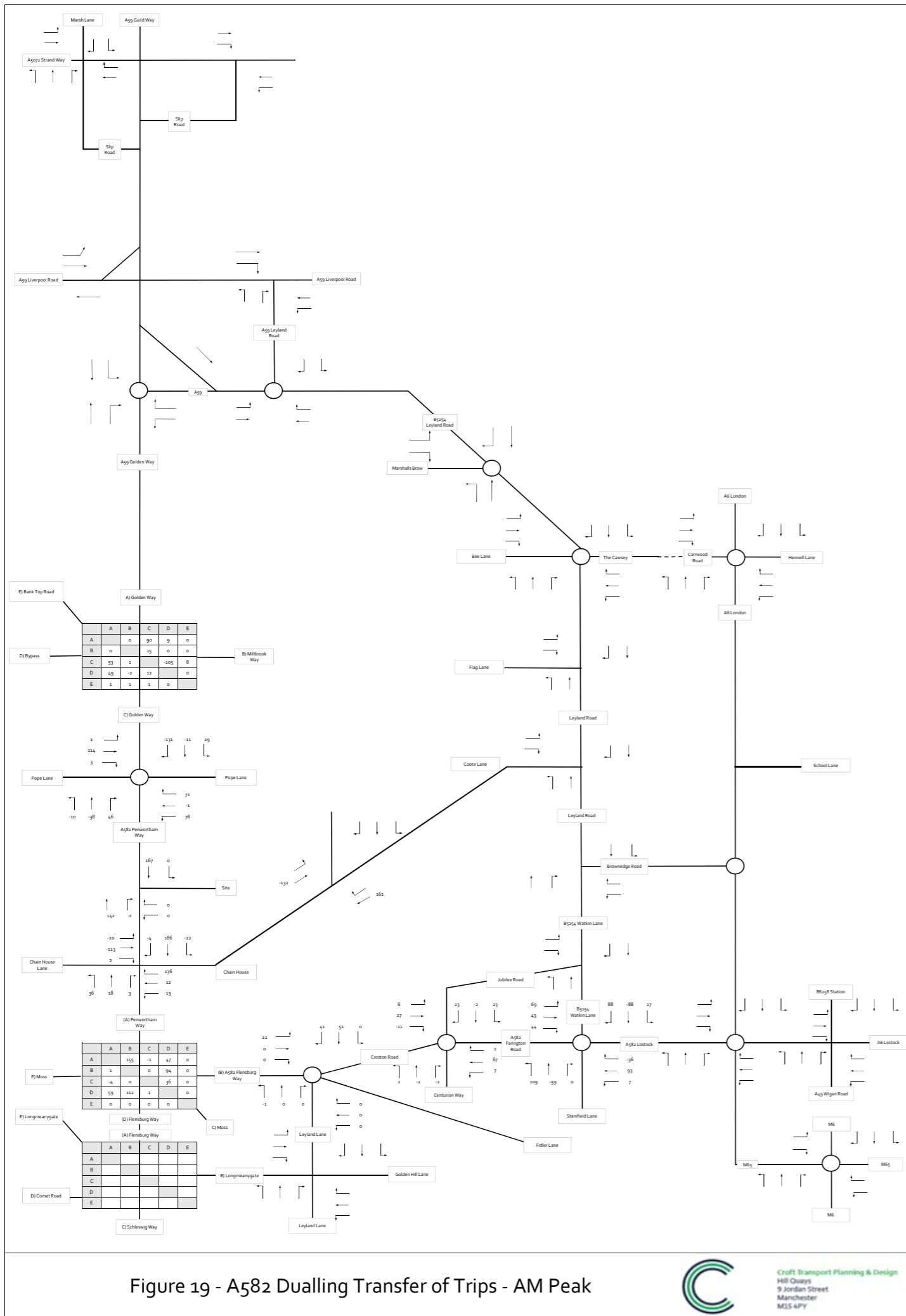


Figure 19 - A582 Dualling Transfer of Trips - AM Peak

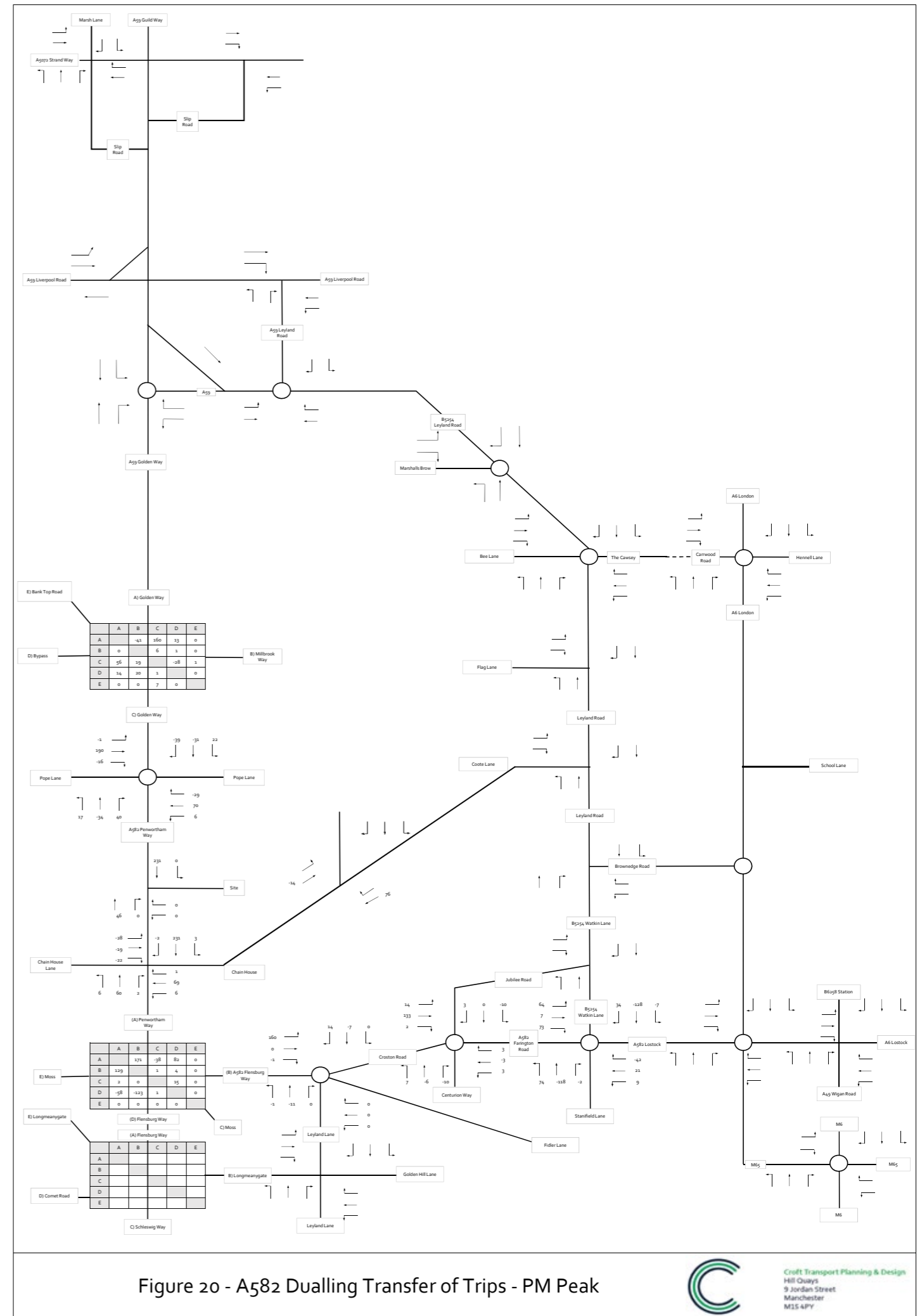
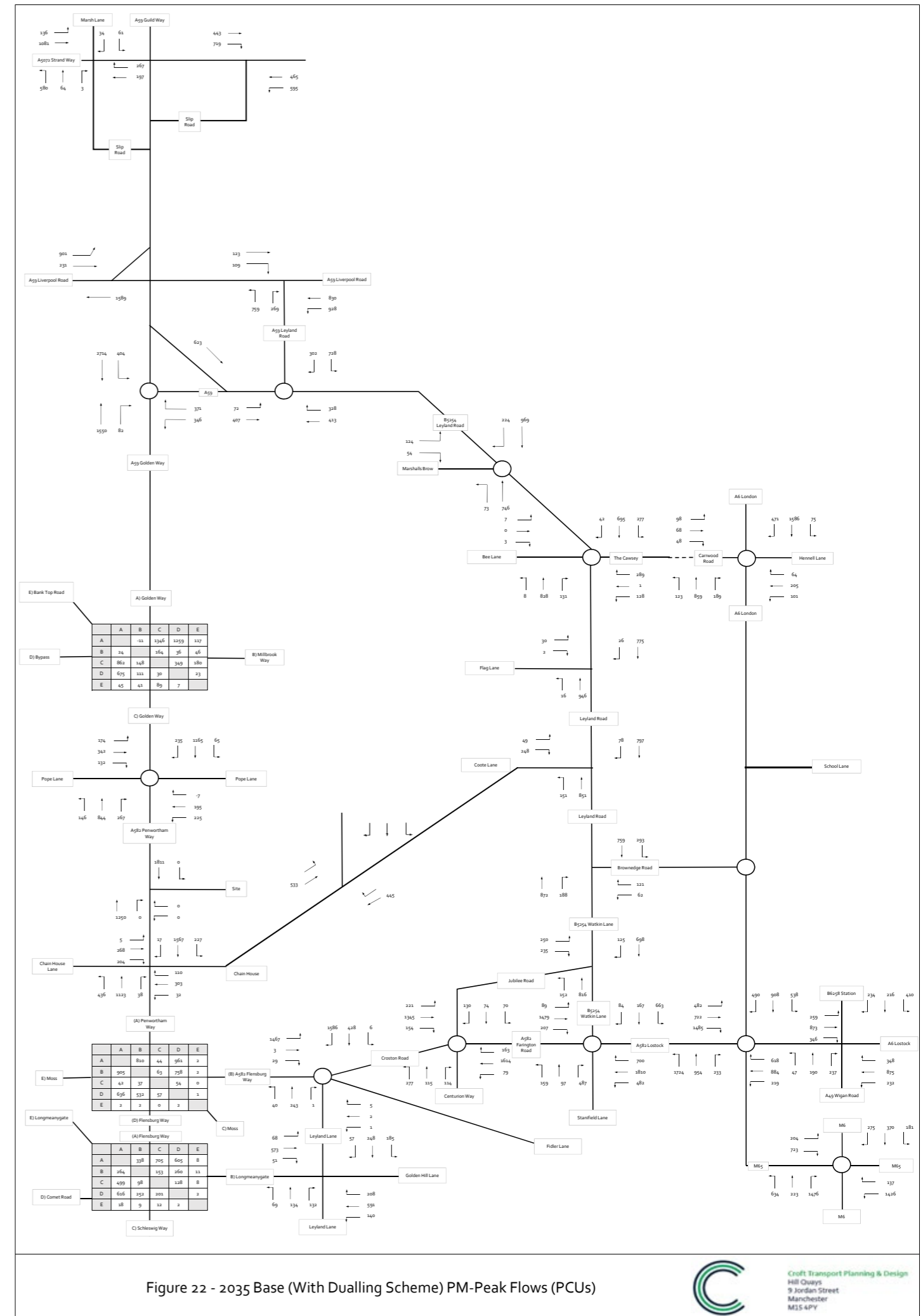
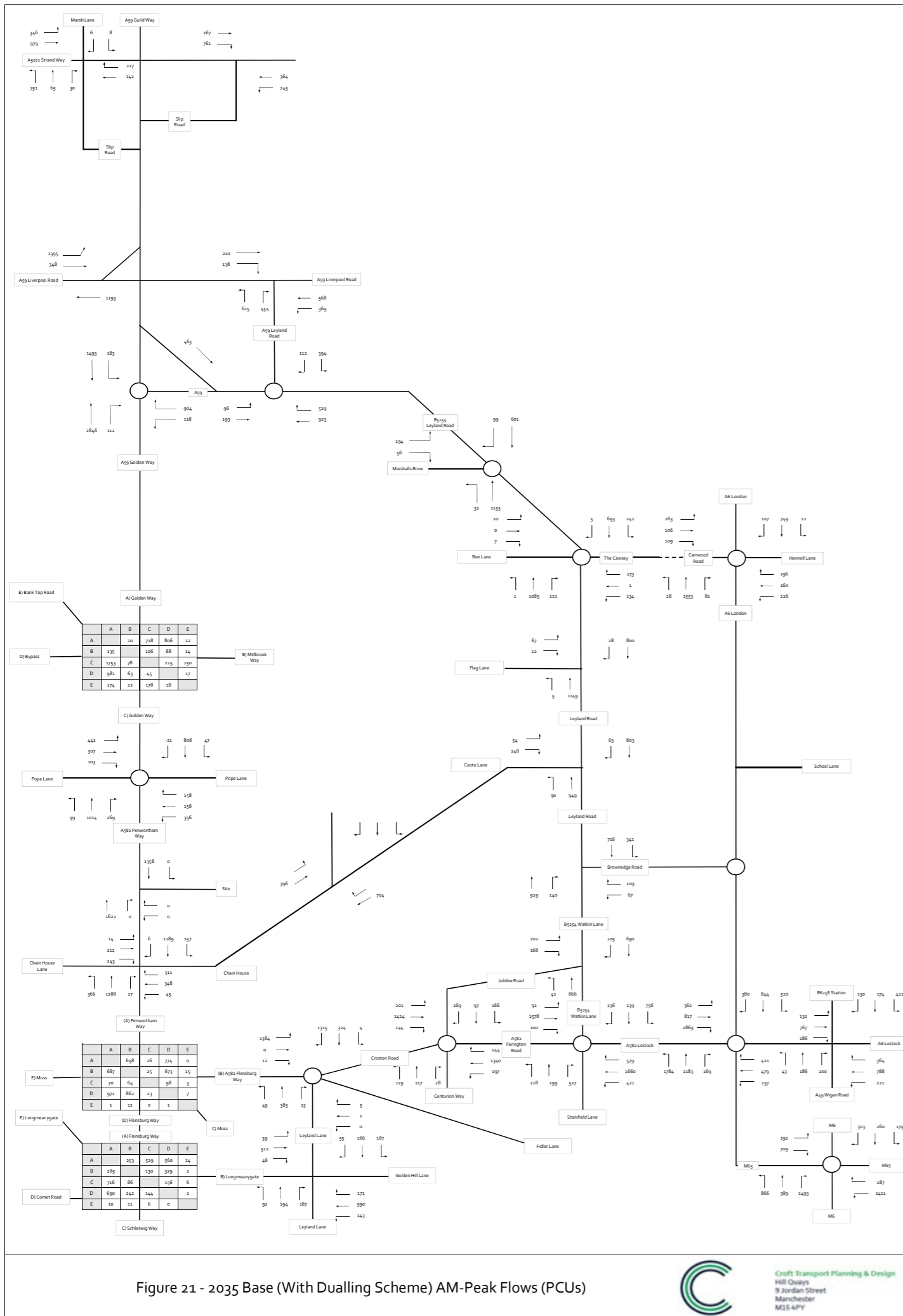


Figure 20 - A582 Dualling Transfer of Trips - PM Peak







## APPENDIX 3

<b>Junctions 9</b>										
<b>PICADY 9 - Priority Intersection Module</b>										
Version: 9.5.1.7462 © Copyright TRL Limited, 2019										
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk										
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution										

**Filename:** Proposed Site Access\_Chain House Lane.j9  
**Path:** Z:\projects\0372 Pickering's Farm, Penwortham\Picady  
**Report generation date:** 11/06/2020 10:44:41

»Proposed Site Access - 2035 With Dev, AM  
 »Proposed Site Access - 2035 With Dev, PM

## Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
<b>Proposed Site Access - 2035 With Dev</b>										
<b>Stream B-AC</b>	D3	0.3	11.07	0.22	B	D4	0.1	10.50	0.13	B
<b>Stream C-AB</b>		0.2	4.03	0.09	A		0.4	5.09	0.17	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

## File Description

<b>Title</b>	Proposed Site Access_Chain House Lane
<b>Location</b>	Penwortham
<b>Site number</b>	
<b>Date</b>	11/06/2020
<b>Version</b>	
<b>Status</b>	TIA
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	0372
<b>Enumerator</b>	EDD\Mark.Cleary
<b>Description</b>	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
<b>D3</b>	2035 With Dev	AM	ONE HOUR	08:00	09:30	15	✓
<b>D4</b>	2035 With Dev	PM	ONE HOUR	17:00	18:30	15	✓

## Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Proposed Site Access	✓	100.000	100.000

## Proposed Site Access - 2035 With Dev, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

## Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access_Chain House Lane	T-Junction	Two-way		0.96	A

## Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

## Arms

Arm	Name	Description	Arm type
A	Chain House Lane (W)		Major
B	Site Access		Minor
C	Chain House Lane (W)		Major

## Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			100.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

## Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	38	44

## Slope / Intercept / Capacity

## Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	499	0.091	0.230	0.144	0.328
B-C	635	0.097	0.246	-	-
C-B	632	0.245	0.245	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

## Traffic Demand

## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
----	---------------	------------------	----------------------	--------------------	---------------------	---------------------------	-------------------

D3	2035 With Dev	AM	ONE HOUR	08:00	09:30	15	✓
----	---------------	----	----------	-------	-------	----	---

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	437	100.000
B		ONE HOUR	✓	85	100.000
C		ONE HOUR	✓	757	100.000

### Origin-Destination Data

Demand (PCU/hr)

From	To		
	A	B	C
A	0	7	430
B	21	0	64
C	735	22	0

### Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A	B	C
A	0	0	0
B	0	0	0
C	0	0	0

### Results

#### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.22	11.07	0.3	B	78	117
C-AB	0.09	4.03	0.2	A	64	97
C-A					630	945
A-B					6	10
A-C					395	592

#### Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	16	479	0.133	63	0.0	0.2	8.643	A
C-AB	41	10	935	0.043	40	0.0	0.1	4.022	A
C-A	529	132			529				
A-B	5	1			5				
A-C	324	81			324				

08:15 - 08:30

Total	Junction	Start

Stream	Demand (PCU/hr)	Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	76	19	455	0.168	76	0.2	0.2	9.506	A
C-AB	59	15	1000	0.059	58	0.1	0.1	3.826	A
C-A	622	156			622				
A-B	6	2			6				
A-C	387	97			387				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	23	419	0.223	93	0.2	0.3	11.048	B
C-AB	94	23	1092	0.086	94	0.1	0.2	3.607	A
C-A	740	185			740				
A-B	8	2			8				
A-C	473	118			473				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	23	419	0.223	94	0.3	0.3	11.071	B
C-AB	94	24	1093	0.086	94	0.2	0.2	3.606	A
C-A	739	185			739				
A-B	8	2			8				
A-C	473	118			473				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	76	19	455	0.168	77	0.3	0.2	9.535	A
C-AB	59	15	1000	0.059	59	0.2	0.1	3.829	A
C-A	622	155			622				
A-B	6	2			6				
A-C	387	97			387				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	16	479	0.134	64	0.2	0.2	8.676	A
C-AB	41	10	935	0.044	41	0.1	0.1	4.027	A
C-A	529	132			529				
A-B	5	1			5				
A-C	324	81			324				

# Proposed Site Access - 2035 With Dev, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access_Chain House Lane	T-Junction	Two-way		0.93	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2035 With Dev	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	582	100.000
B		ONE HOUR	✓	47	100.000
C		ONE HOUR	✓	529	100.000

## Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	565
	B	12	0	35
	C	478	51	0

## Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.13	10.50	0.1	B	43	65
C-AB	0.17	5.09	0.4	A	105	157
C-A					381	571
A-B					16	23
A-C					518	778

### Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9	461	0.077	35	0.0	0.1	8.442	A
C-AB	71	18	780	0.091	71	0.0	0.2	5.078	A
C-A	327	82			327				
A-B	13	3			13				
A-C	425	106			425				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11	434	0.097	42	0.1	0.1	9.190	A
C-AB	98	24	813	0.120	97	0.2	0.3	5.031	A
C-A	378	94			378				
A-B	15	4			15				
A-C	508	127			508				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13	395	0.131	52	0.1	0.1	10.489	B
C-AB	145	36	863	0.168	144	0.3	0.4	5.018	A
C-A	438	109			438				
A-B	19	5			19				
A-C	622	156			622				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13	395	0.131	52	0.1	0.1	10.501	B
C-AB	145	36	863	0.168	145	0.4	0.4	5.029	A
C-A	437	109			437				
A-B	19	5			19				
A-C	622	156			622				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11	434	0.097	42	0.1	0.1	9.205	A

<b>C-AB</b>	98	25	814	0.120	99	0.4	0.3	5.045	A
<b>C-A</b>	378	94			378				
<b>A-B</b>	15	4			15				
<b>A-C</b>	508	127			508				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
<b>B-AC</b>	35	9	461	0.077	35	0.1	0.1	8.462	A
<b>C-AB</b>	72	18	780	0.092	72	0.3	0.2	5.093	A
<b>C-A</b>	326	82			326				
<b>A-B</b>	13	3			13				
<b>A-C</b>	425	106			425				

## APPENDIX 4

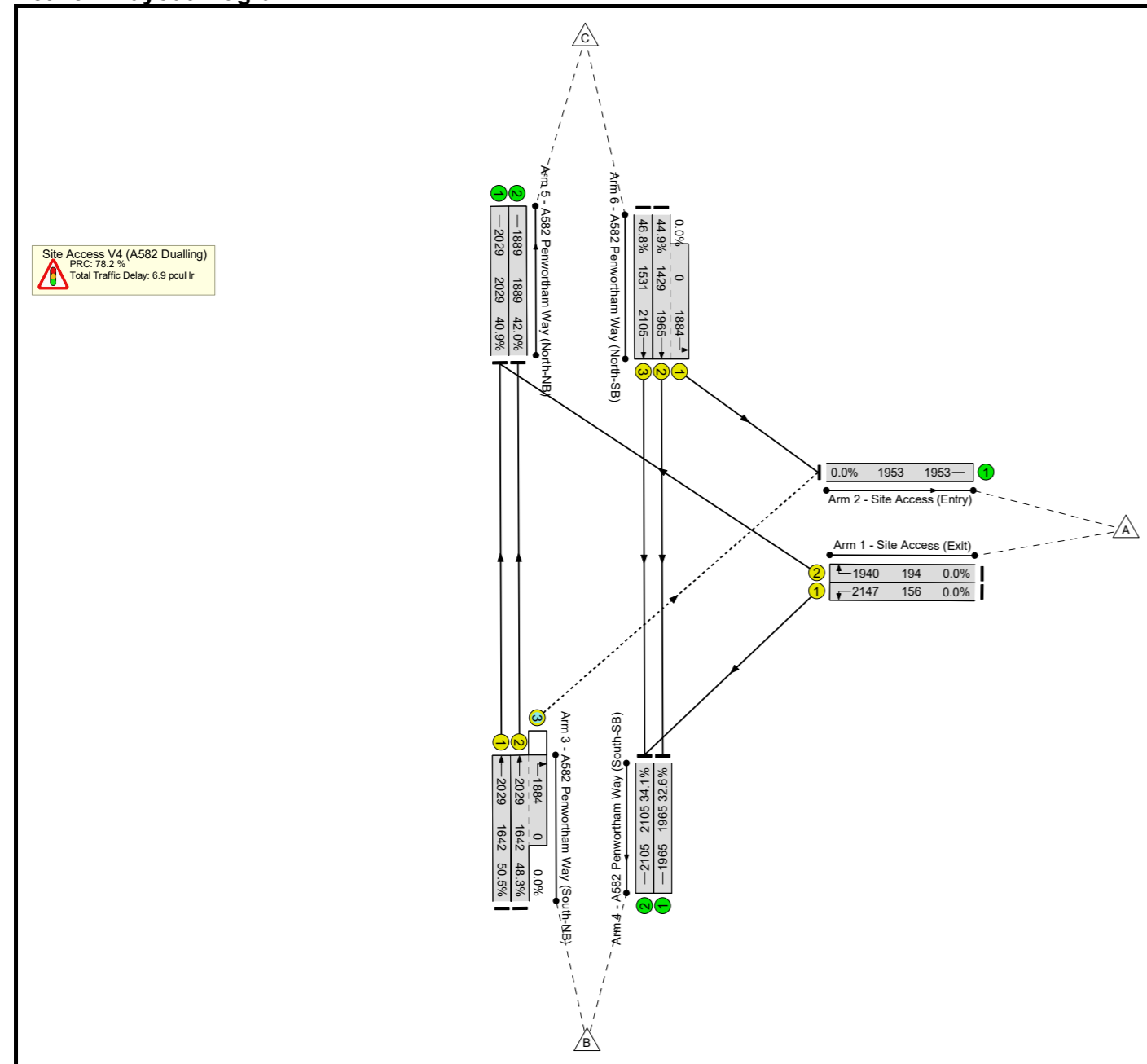
Basic Results Summary  
**Basic Results Summary**

**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>Additional detail:</b>	
<b>File name:</b>	Site Access V5 (A582 Dualling).lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	

**Scenario 1: '2035 Base AM'** (FG3: '2035 Base AM', Plan 1: 'Network Control Plan 1')

**Network Layout Diagram**



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	50.5%	0	0	0	6.9	-	-
Site Access V4 (A582 Dualling)	-	-	-		-	-	-	-	-	-	50.5%	0	0	0	6.9	-	-
1/1	Site Access (Exit) Left	U	F		1	7	-	0	2147	156	0.0%	-	-	-	0.0	0.0	0.0
1/2	Site Access (Exit) Right	U	C		1	10	-	0	1940	194	0.0%	-	-	-	0.0	0.0	0.0
2/1	Site Access (Entry)	U	-		-	-	-	0	1953	1953	0.0%	-	-	-	0.0	0.0	0.0
3/1	A582 Penwortham Way (South-NB) Ahead	U	A		1	88	-	829	2029	1642	50.5%	-	-	-	1.3	5.6	8.6
3/2+3/3	A582 Penwortham Way (South-NB) Right Ahead	U+O	A	G	1	88	9	793	2029:1884	1642+0	48.3 : 0.0%	0	0	0	1.2	5.4	8.0
4/1	A582 Penwortham Way (South-SB)	U	-		-	-	-	641	1965	1965	32.6%	-	-	-	0.2	1.4	0.2
4/2	A582 Penwortham Way (South-SB)	U	-		-	-	-	717	2105	2105	34.1%	-	-	-	0.3	1.3	0.3
5/1	A582 Penwortham Way (North-NB)	U	-		-	-	-	829	2029	2029	40.9%	-	-	-	0.3	1.5	0.3
5/2	A582 Penwortham Way (North-NB)	U	-		-	-	-	793	1889	1889	42.0%	-	-	-	0.4	1.7	6.2
6/2+6/1	A582 Penwortham Way (North-SB) Left Ahead	U	B		1	79	-	641	1965:1884	1429+0	44.9 : 0.0%	-	-	-	1.5	8.4	8.2



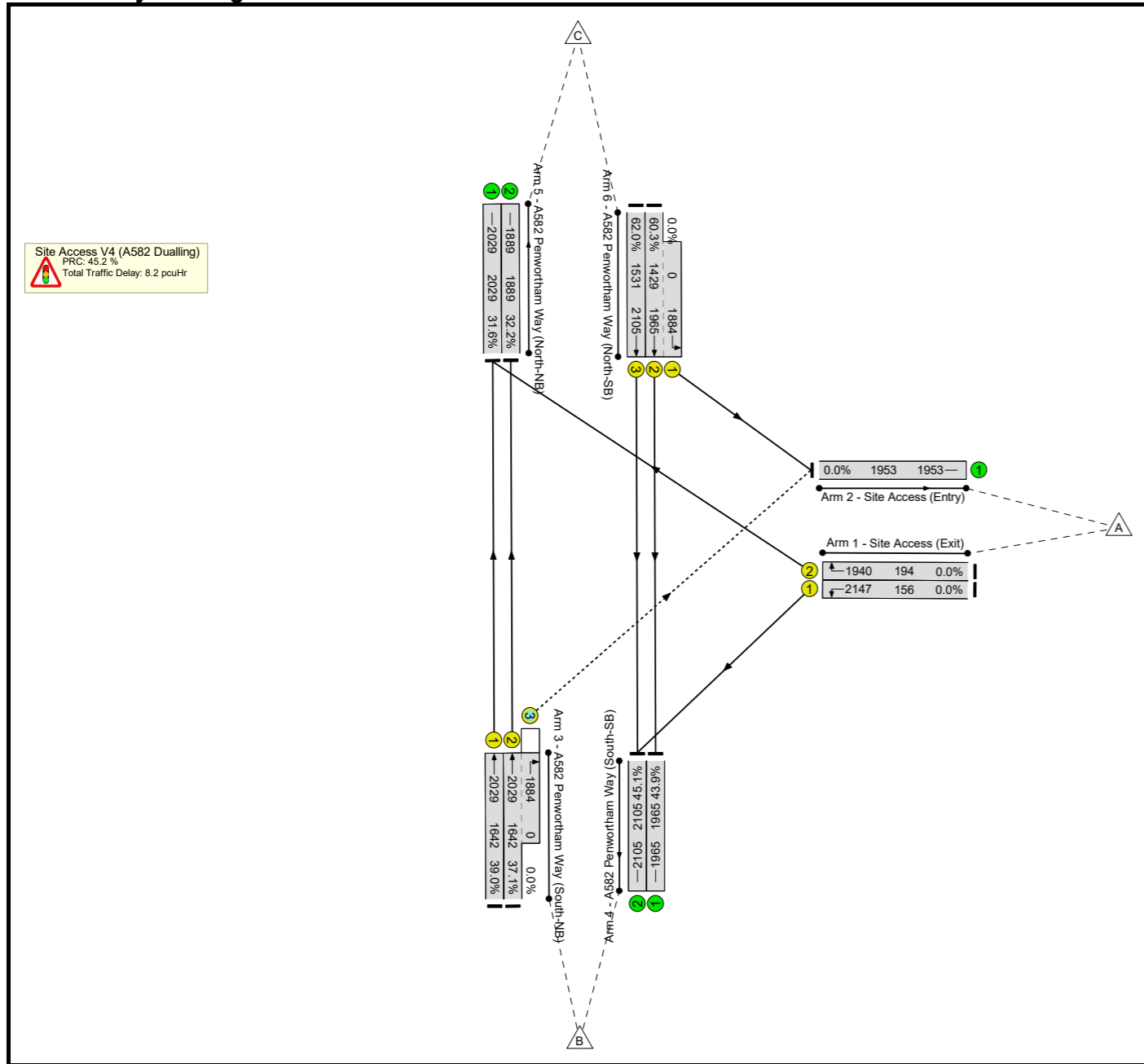
### Basic Results Summary

6/3	A582 Penwortham Way (North-SB) Ahead	U	B		1	79	-	717	2105	1531	46.8%	-	-	-	1.7	8.4	9.4
		C1	PRC for Signalled Lanes (%):		78.2		Total Delay for Signalled Lanes (pcuHr):		5.65		Cycle Time (s):		110				
			PRC Over All Lanes (%):		78.2		Total Delay Over All Lanes(pcuHr):		6.87								

Basic Results Summary

Scenario 2: '2035 Base PM' (FG4: '2035 Base PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	62.0%	0	0	0	8.2	-	-
<b>Site Access V4 (A582 Dualling)</b>	-	-	-		-	-	-	-	-	-	62.0%	0	0	0	8.2	-	-
1/1	Site Access (Exit) Left	U	F		1	7	-	0	2147	156	0.0%	-	-	-	0.0	0.0	0.0
1/2	Site Access (Exit) Right	U	C		1	10	-	0	1940	194	0.0%	-	-	-	0.0	0.0	0.0
2/1	Site Access (Entry)	U	-		-	-	-	0	1953	1953	0.0%	-	-	-	0.0	0.0	0.0
3/1	A582 Penwortham Way (South-NB) Ahead	U	A		1	88	-	641	2029	1642	39.0%	-	-	-	0.8	4.7	5.7
3/2+3/3	A582 Penwortham Way (South-NB) Right Ahead	U+O	A	G	1	88	9	609	2029:1884	1642+0	37.1 : 0.0%	0	0	0	0.8	4.6	5.4
4/1	A582 Penwortham Way (South-SB)	U	-		-	-	-	862	1965	1965	43.9%	-	-	-	0.4	1.6	0.4
4/2	A582 Penwortham Way (South-SB)	U	-		-	-	-	949	2105	2105	45.1%	-	-	-	0.4	1.6	0.4
5/1	A582 Penwortham Way (North-NB)	U	-		-	-	-	641	2029	2029	31.6%	-	-	-	0.2	1.3	0.2
5/2	A582 Penwortham Way (North-NB)	U	-		-	-	-	609	1889	1889	32.2%	-	-	-	0.2	1.4	3.0
6/2+6/1	A582 Penwortham Way (North-SB) Left Ahead	U	B		1	79	-	862	1965:1884	1429+0	60.3 : 0.0%	-	-	-	2.5	10.5	13.4

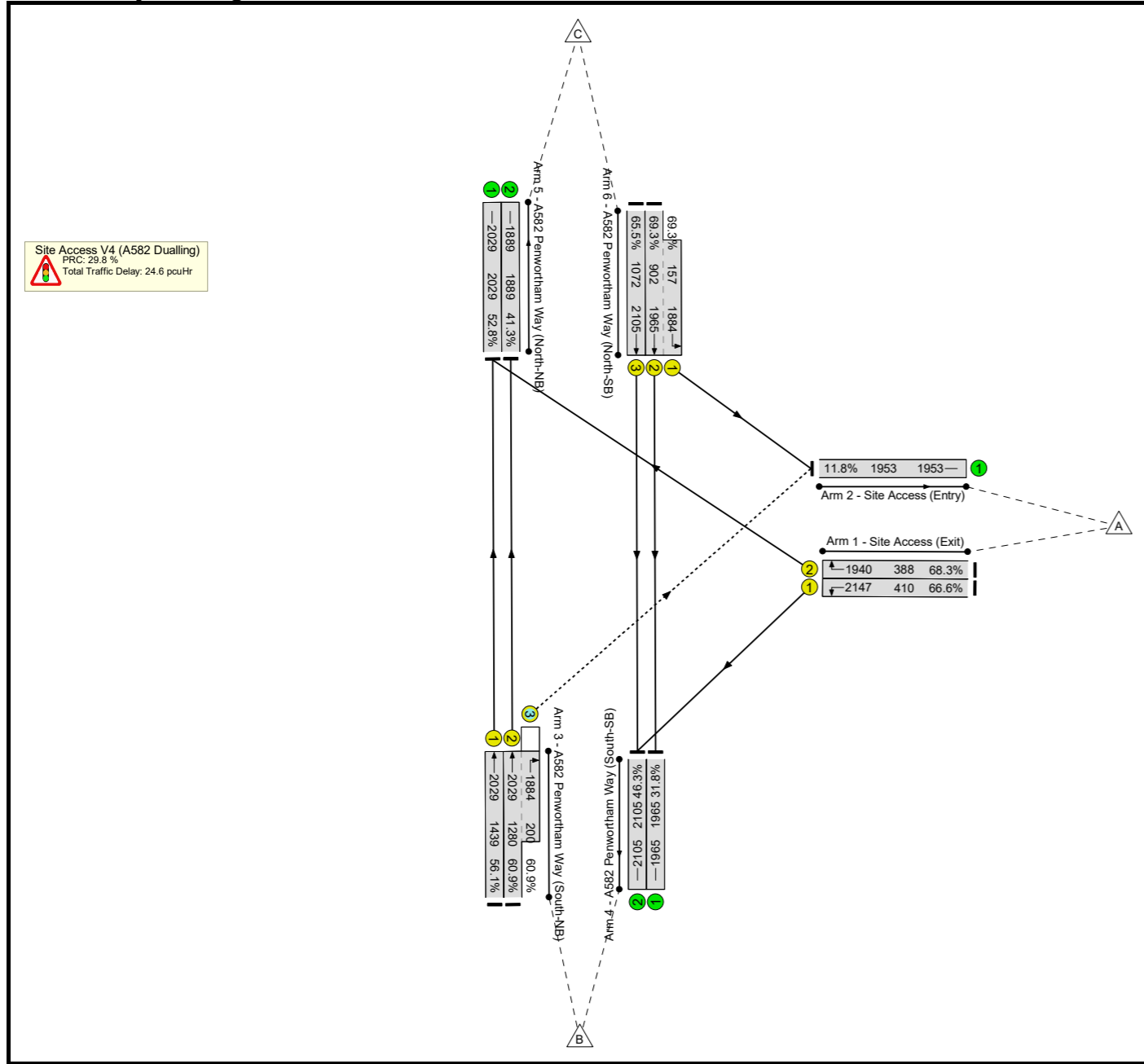
### Basic Results Summary

6/3	A582 Penwortham Way (North-SB) Ahead	U	B		1	79	-	949	2105	1531	62.0%	-	-	-	2.8	10.5	15.0
		C1	PRC for Signalled Lanes (%):		45.2		Total Delay for Signalled Lanes (pcuHr):		6.90		Cycle Time (s):		110				
			PRC Over All Lanes (%):		45.2		Total Delay Over All Lanes(pcuHr):		8.17								

Basic Results Summary

Scenario 3: '2035 Base + Development AM' (FG1: '2035 Base + Development AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	69.3%	0	120	2	24.6	-	-
Site Access V4 (A582 Dualling)	-	-	-		-	-	-	-	-	-	69.3%	0	120	2	24.6	-	-
1/1	Site Access (Exit) Left	U	F		1	20	-	273	2147	410	66.6%	-	-	-	4.1	54.2	8.6
1/2	Site Access (Exit) Right	U	C		1	21	-	265	1940	388	68.3%	-	-	-	4.1	55.2	8.5
2/1	Site Access (Entry)	U	-		-	-	-	231	1953	1953	11.8%	-	-	-	0.1	1.1	1.8
3/1	A582 Penwortham Way (South-NB) Ahead	U	A		1	77	-	807	2029	1439	56.1%	-	-	-	2.4	10.6	12.5
3/2+3/3	A582 Penwortham Way (South-NB) Right Ahead	U+O	A	G	1	77	22	902	2029:1884	1280+200	60.9 : 60.9%	0	120	2	2.6	10.4	12.6
4/1	A582 Penwortham Way (South-SB)	U	-		-	-	-	625	1965	1965	31.8%	-	-	-	0.2	1.3	0.2
4/2	A582 Penwortham Way (South-SB)	U	-		-	-	-	975	2105	2105	46.3%	-	-	-	0.4	1.6	4.6
5/1	A582 Penwortham Way (North-NB)	U	-		-	-	-	1072	2029	2029	52.8%	-	-	-	0.6	1.9	0.6
5/2	A582 Penwortham Way (North-NB)	U	-		-	-	-	780	1889	1889	41.3%	-	-	-	0.4	1.8	10.0
6/2+6/1	A582 Penwortham Way (North-SB) Left Ahead	U	B		1	55	-	734	1965:1884	902+157	69.3 : 69.3%	-	-	-	5.0	24.4	15.7

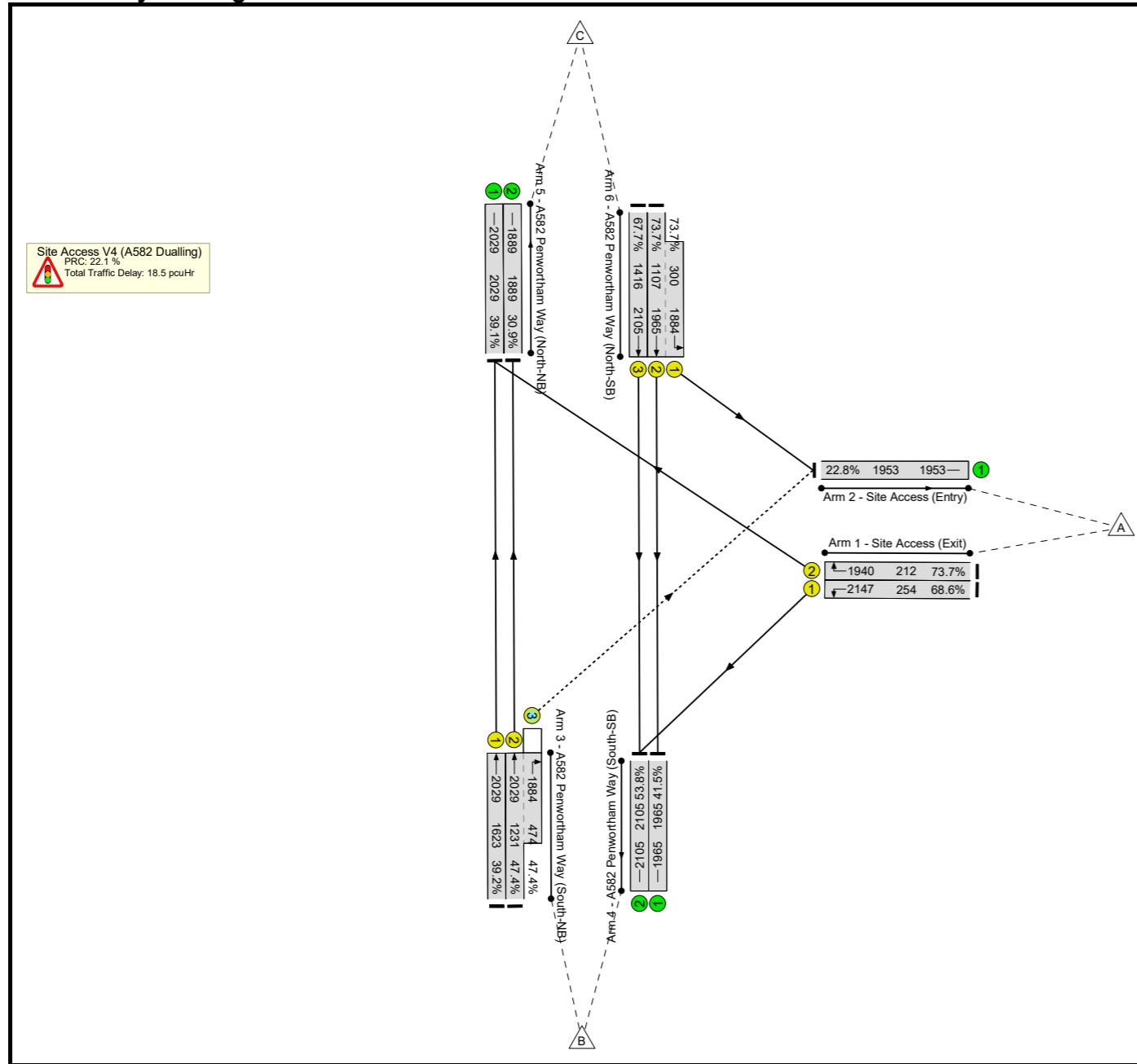
### Basic Results Summary

6/3	A582 Penwortham Way (North-SB) Ahead	U	B		1	55	-	702	2105	1072	65.5%	-	-	-	4.8	24.7	16.7
		C1	PRC for Signalled Lanes (%):		29.8		Total Delay for Signalled Lanes (pcuHr):		22.96		Cycle Time (s):		110				
			PRC Over All Lanes (%):		29.8		Total Delay Over All Lanes(pcuHr):		24.65								

Basic Results Summary

Scenario 4: '2035 Base + Development PM' (FG2: '2035 Base + Development PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram





Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	73.7%	0	221	4	18.5	-	-
<b>Site Access V4 (A582 Dualling)</b>	-	-	-		-	-	-	-	-	-	73.7%	0	221	4	18.5	-	-
1/1	Site Access (Exit) Left	U	F		1	12	-	174	2147	254	68.6%	-	-	-	3.3	68.5	6.1
1/2	Site Access (Exit) Right	U	C		1	11	-	156	1940	212	73.7%	-	-	-	3.4	78.4	5.9
2/1	Site Access (Entry)	U	-		-	-	-	446	1953	1953	22.8%	-	-	-	0.2	1.4	3.7
3/1	A582 Penwortham Way (South-NB) Ahead	U	A		1	87	-	637	2029	1623	39.2%	-	-	-	0.9	5.0	6.0
3/2+3/3	A582 Penwortham Way (South-NB) Right Ahead	U+O	A	G	1	87	14	809	2029:1884	1231+474	47.4 : 47.4%	0	221	4	1.1	4.9	5.3
4/1	A582 Penwortham Way (South-SB)	U	-		-	-	-	816	1965	1965	41.5%	-	-	-	0.4	1.6	0.4
4/2	A582 Penwortham Way (South-SB)	U	-		-	-	-	1132	2105	2105	53.8%	-	-	-	0.6	1.8	1.8
5/1	A582 Penwortham Way (North-NB)	U	-		-	-	-	793	2029	2029	39.1%	-	-	-	0.3	1.5	0.3
5/2	A582 Penwortham Way (North-NB)	U	-		-	-	-	584	1889	1889	30.9%	-	-	-	0.2	1.4	2.9
6/2+6/1	A582 Penwortham Way (North-SB) Left Ahead	U	B		1	73	-	1037	1965:1884	1107+300	73.7 : 73.7%	-	-	-	4.2	14.5	17.4

### Basic Results Summary

6/3	A582 Penwortham Way (North-SB) Ahead	U	B		1	73	-	958	2105	1416	67.7%	-	-	-	3.9	14.7	18.6
		C1	PRC for Signalled Lanes (%):		22.1		Total Delay for Signalled Lanes (pcuHr):		16.80		Cycle Time (s):		110				
			PRC Over All Lanes (%):		22.1		Total Delay Over All Lanes(pcuHr):		18.45								

## APPENDIX 5

<b>Junctions 9</b>									
<b>ARCADY 9 - Roundabout Module</b>									
Version: 9.5.1.7462 © Copyright TRL Limited, 2019									
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk									
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution									

**Filename:** J4 - Leyland Road\_The Cawsey\_Bee Lane Rdbt.j9  
**Path:** Z:\projects\0372 Pickering's Farm, Penwortham\Arcady\2,000 Scenario  
**Report generation date:** 11/06/2020 14:06:52

- »Existing Layout - 2035 Base Flows (With Dualling Scheme), AM
- »Existing Layout - 2035 Base Flows (With Dualling Scheme), PM
- »Existing Layout - 2035 Base + Dev (With Dualling Scheme), AM
- »Existing Layout - 2035 Base + Dev (With Dualling Scheme), PM

**Summary of junction performance**

		AM				PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
<b>Existing Layout - 2035 Base Flows (With Dualling Scheme)</b>										
Arm 1	D5	2.5	9.57	0.71	A	D6	3.4	12.05	0.77	B
Arm 2		0.6	5.03	0.36	A		0.6	5.27	0.38	A
Arm 3		8.2	25.27	0.90	D		2.8	10.40	0.74	B
Arm 4		0.1	16.18	0.11	C		0.0	10.22	0.03	B
<b>Existing Layout - 2035 Base + Dev (With Dualling Scheme)</b>										
Arm 1	D7	3.8	13.86	0.79	B	D8	9.2	30.34	0.91	D
Arm 2		0.7	5.66	0.41	A		1.0	7.10	0.49	A
Arm 3		24.5	73.02	0.98	F		5.0	18.53	0.84	C
Arm 4		58.0	746.16	1.24	F		1.2	21.29	0.54	C

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

**File summary****File Description**

<b>Title</b>	Leyland Road_The Cawsey_Bee Lane Rdbt
<b>Location</b>	Penwortham
<b>Site number</b>	
<b>Date</b>	30/01/2019
<b>Version</b>	
<b>Status</b>	TIA
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	0372
<b>Enumerator</b>	
<b>Description</b>	Based on agreed Penwortham Mills Model (0775)

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

**Analysis Options**

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2035 Base Flows	AM	FLAT	07:15	08:15	60	15	
D2	2035 Base Flows	PM	FLAT	16:15	17:15	60	15	
D3	2035 Base + Dev	AM	FLAT	07:15	08:15	60	15	
D4	2035 Base + Dev	PM	FLAT	16:15	17:45	90	15	
D5	2035 Base Flows (With Dualling Scheme)	AM	FLAT	07:15	08:15	60	15	✓
D6	2035 Base Flows (With Dualling Scheme)	PM	FLAT	16:15	17:15	60	15	✓
D7	2035 Base + Dev (With Dualling Scheme)	AM	FLAT	07:15	08:15	60	15	✓
D8	2035 Base + Dev (With Dualling Scheme)	PM	FLAT	16:15	17:15	60	15	✓

### Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Existing Layout	✓	100.000	100.000

## Existing Layout - 2035 Base Flows (With Dualling Scheme), AM

### Data Errors and Warnings

No errors or warnings

### Junction Network

#### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Leyland Road_The Cawsey_Bee Lane Rdbt	Standard Roundabout		1, 2, 3, 4	16.26	C

#### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

### Arms

#### Arms

Arm	Name	Description
1	Leyland Road (N)	
2	The Cawsey	
3	Leyland Road (S)	
4	Bee Lane	

#### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.65	5.21	8.5	15.0	36.0	28.0	
2	3.75	5.70	15.0	25.0	36.0	31.0	
3	3.60	5.50	13.0	20.0	36.0	23.0	
4	3.00	3.50	4.0	8.0	36.0	21.0	

#### Slope / Intercept / Capacity

##### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.585	1391
2	0.624	1563
3	0.621	1519
4	0.490	974

The slope and intercept shown above include any corrections and adjustments.

### Traffic Demand

#### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically

D5	2035 Base Flows (With Dualling Scheme)	AM	FLAT	07:15	08:15	60	15	✓
----	--	----	------	-------	-------	----	----	---

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	940	100.000
2		FLAT	✓	408	100.000
3		FLAT	✓	1207	100.000
4		FLAT	✓	27	100.000

### Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	242	693	5
	2	273	0	134	1
	3	1085	121	0	1
	4	20	0	7	0

### Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

### Results

#### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.71	9.57	2.5	A	940	940
2	0.36	5.03	0.6	A	408	408
3	0.90	25.27	8.2	D	1207	1207
4	0.11	16.18	0.1	C	27	27

#### Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	940	235	125	1317	0.713	930	1351	0.0	2.4	9.089	A
2	408	102	698	1128	0.362	406	358	0.0	0.6	4.971	A
3	1207	302	277	1347	0.896	1179	826	0.0	7.0	19.061	C
4	27	7	1449	264	0.102	27	7	0.0	0.1	15.157	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	940	235	128	1316	0.714	940	1375	2.4	2.5	9.558	A
2	408	102	705	1123	0.363	408	363	0.6	0.6	5.032	A
3	1207	302	279	1346	0.897	1204	834	7.0	7.7	24.384	C
4	27	7	1476	251	0.108	27	7	0.1	0.1	16.101	C

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	940	235	128	1316	0.714	940	1377	2.5	2.5	9.570	A
2	408	102	705	1123	0.363	408	363	0.6	0.6	5.032	A
3	1207	302	279	1346	0.897	1206	834	7.7	8.0	25.003	D
4	27	7	1478	250	0.108	27	7	0.1	0.1	16.163	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	940	235	128	1316	0.714	940	1377	2.5	2.5	9.573	A
2	408	102	705	1123	0.363	408	363	0.6	0.6	5.032	A
3	1207	302	279	1346	0.897	1206	834	8.0	8.2	25.267	D
4	27	7	1478	249	0.108	27	7	0.1	0.1	16.182	C

# Existing Layout - 2035 Base Flows (With Dualling Scheme), PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Leyland Road_The Cawsey_Bee Lane Rdbt	Standard Roundabout		1, 2, 3, 4	10.20	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2035 Base Flows (With Dualling Scheme)	PM	FLAT	16:15	17:15	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	1014	100.000
2		FLAT	✓	418	100.000
3		FLAT	✓	967	100.000
4		FLAT	✓	10	100.000

## Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	277	695	42
	2	289	0	128	1
	3	828	131	0	8
	4	7	0	3	0

## Vehicle Mix

Heavy Vehicle Percentages

		To			

		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.77	12.05	3.4	B	1014	1014
2	0.38	5.27	0.6	A	418	418
3	0.74	10.40	2.8	B	967	967
4	0.03	10.22	0.0	B	10	10

### Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1014	254	133	1313	0.772	1001	1113	0.0	3.2	11.124	B
2	418	105	731	1107	0.378	416	403	0.0	0.6	5.187	A
3	967	242	330	1314	0.736	956	816	0.0	2.7	9.785	A
4	10	3	1236	368	0.027	10	50	0.0	0.0	10.040	B

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1014	254	134	1312	0.773	1014	1124	3.2	3.3	12.013	B
2	418	105	740	1102	0.379	418	408	0.6	0.6	5.266	A
3	967	242	332	1313	0.736	967	826	2.7	2.7	10.378	B
4	10	3	1248	363	0.028	10	51	0.0	0.0	10.213	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1014	254	134	1312	0.773	1014	1124	3.3	3.3	12.046	B
2	418	105	740	1101	0.380	418	408	0.6	0.6	5.266	A
3	967	242	332	1313	0.737	967	826	2.7	2.8	10.392	B
4	10	3	1248	362	0.028	10	51	0.0	0.0	10.216	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1014	254	134	1312	0.773	1014	1124	3.3	3.4	12.049	B
2	418	105	740	1101	0.380	418	408	0.6	0.6	5.267	A
3	967	242	332	1313	0.737	967	826	2.8	2.8	10.396	B
4	10	3	1248	362	0.028	10	51	0.0	0.0	10.216	B

# Existing Layout - 2035 Base + Dev (With Dualling Scheme), AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Leyland Road_The Cawsey_Bee Lane Rdbt	Standard Roundabout		1, 2, 3, 4	113.22	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	2035 Base + Dev (With Dualling Scheme)	AM	FLAT	07:15	08:15	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	996	100.000
2		FLAT	✓	440	100.000
3		FLAT	✓	1258	100.000
4		FLAT	✓	311	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	242	679	75
	2	269	0	136	35
	3	1079	136	0	43
	4	191	87	33	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To

		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.79	13.86	3.8	B	996	996
2	0.41	5.66	0.7	A	440	440
3	0.98	73.02	24.5	F	1258	1258
4	1.24	746.16	58.0	F	311	311

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	996	249	229	1257	0.792	982	1455	0.0	3.6	12.505	B
2	440	110	770	1082	0.406	437	440	0.0	0.7	5.557	A
3	1258	315	376	1286	0.979	1201	832	0.0	14.2	32.230	D
4	311	78	1427	274	1.133	256	150	0.0	13.8	122.842	F

#### 07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	996	249	232	1255	0.794	995	1487	3.6	3.7	13.790	B
2	440	110	780	1076	0.409	440	447	0.7	0.7	5.658	A
3	1258	315	379	1284	0.980	1239	842	14.2	19.0	56.106	F
4	311	78	1466	256	1.216	253	152	13.8	28.2	325.887	F

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	996	249	232	1255	0.794	996	1492	3.7	3.7	13.841	B
2	440	110	781	1076	0.409	440	447	0.7	0.7	5.659	A
3	1258	315	379	1284	0.980	1245	842	19.0	22.1	66.045	F
4	311	78	1472	253	1.231	252	153	28.2	43.0	532.775	F

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	996	249	232	1255	0.794	996	1494	3.7	3.8	13.858	B
2	440	110	781	1076	0.409	440	447	0.7	0.7	5.659	A
3	1258	315	379	1284	0.980	1249	842	22.1	24.5	73.024	F
4	311	78	1475	251	1.238	251	153	43.0	58.0	746.157	F

# Existing Layout - 2035 Base + Dev (With Dualling Scheme), PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Leyland Road_The Cawsey_Bee Lane Rdbt	Standard Roundabout		1, 2, 3, 4	21.52	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2035 Base + Dev (With Dualling Scheme)	PM	FLAT	16:15	17:15	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	1146	100.000
2		FLAT	✓	491	100.000
3		FLAT	✓	996	100.000
4		FLAT	✓	200	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	277	690	179
	2	285	0	138	68
	3	810	140	0	46
	4	116	47	37	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To

		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.91	30.34	9.2	D	1146	1146
2	0.49	7.10	1.0	A	491	491
3	0.84	18.53	5.0	C	996	996
4	0.54	21.29	1.2	C	200	200

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1146	287	220	1262	0.908	1116	1192	0.0	7.6	21.399	C
2	491	123	882	1013	0.485	487	453	0.0	0.9	6.805	A
3	996	249	525	1193	0.835	978	845	0.0	4.5	15.602	C
4	200	50	1216	378	0.529	196	287	0.0	1.1	19.296	C

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1146	287	224	1260	0.910	1142	1210	7.6	8.6	28.716	D
2	491	123	903	1000	0.491	491	463	0.9	1.0	7.074	A
3	996	249	531	1189	0.838	995	863	4.5	4.8	18.259	C
4	200	50	1234	369	0.541	200	292	1.1	1.1	21.154	C

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1146	287	224	1260	0.910	1144	1211	8.6	9.0	29.840	D
2	491	123	905	999	0.492	491	464	1.0	1.0	7.091	A
3	996	249	532	1189	0.838	996	864	4.8	4.9	18.460	C
4	200	50	1235	369	0.542	200	293	1.1	1.2	21.263	C

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1146	287	224	1260	0.910	1145	1211	9.0	9.2	30.340	D
2	491	123	905	998	0.492	491	464	1.0	1.0	7.096	A
3	996	249	532	1189	0.838	996	864	4.9	5.0	18.531	C
4	200	50	1235	369	0.542	200	293	1.2	1.2	21.290	C



## APPENDIX 6

<b>Junctions 9</b>									
<b>PICADY 9 - Priority Intersection Module</b>									
Version: 9.5.1.7462 © Copyright TRL Limited, 2019									
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**Filename:** J13 - Flag Lane.j9

**Path:** Z:\projects\0372 Pickering's Farm, Penwortham\Picady\2,000 Scenario

**Report generation date:** 11/06/2020 14:23:41

- »Existing Layout - 2035 Base Flows (With Dualling Scheme), AM
- »Existing Layout - 2035 Base Flows (With Dualling Scheme), PM
- »Existing Layout - 2035 Base + Dev (With Dualling Scheme), AM
- »Existing Layout - 2035 Base + Dev (With Dualling Scheme), PM

#### Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
<b>Existing Layout - 2035 Base Flows (With Dualling Scheme)</b>										
Stream B-AC	D5	0.4	17.81	0.28	C	D6	0.1	10.63	0.09	B
Stream C-AB		0.0	8.37	0.04	A		0.1	7.50	0.06	A
<b>Existing Layout - 2035 Base + Dev (With Dualling Scheme)</b>										
Stream B-AC	D7	31.8	711.27	1.18	F	D8	0.8	33.83	0.45	D
Stream C-AB		0.1	8.78	0.05	A		0.1	7.89	0.06	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

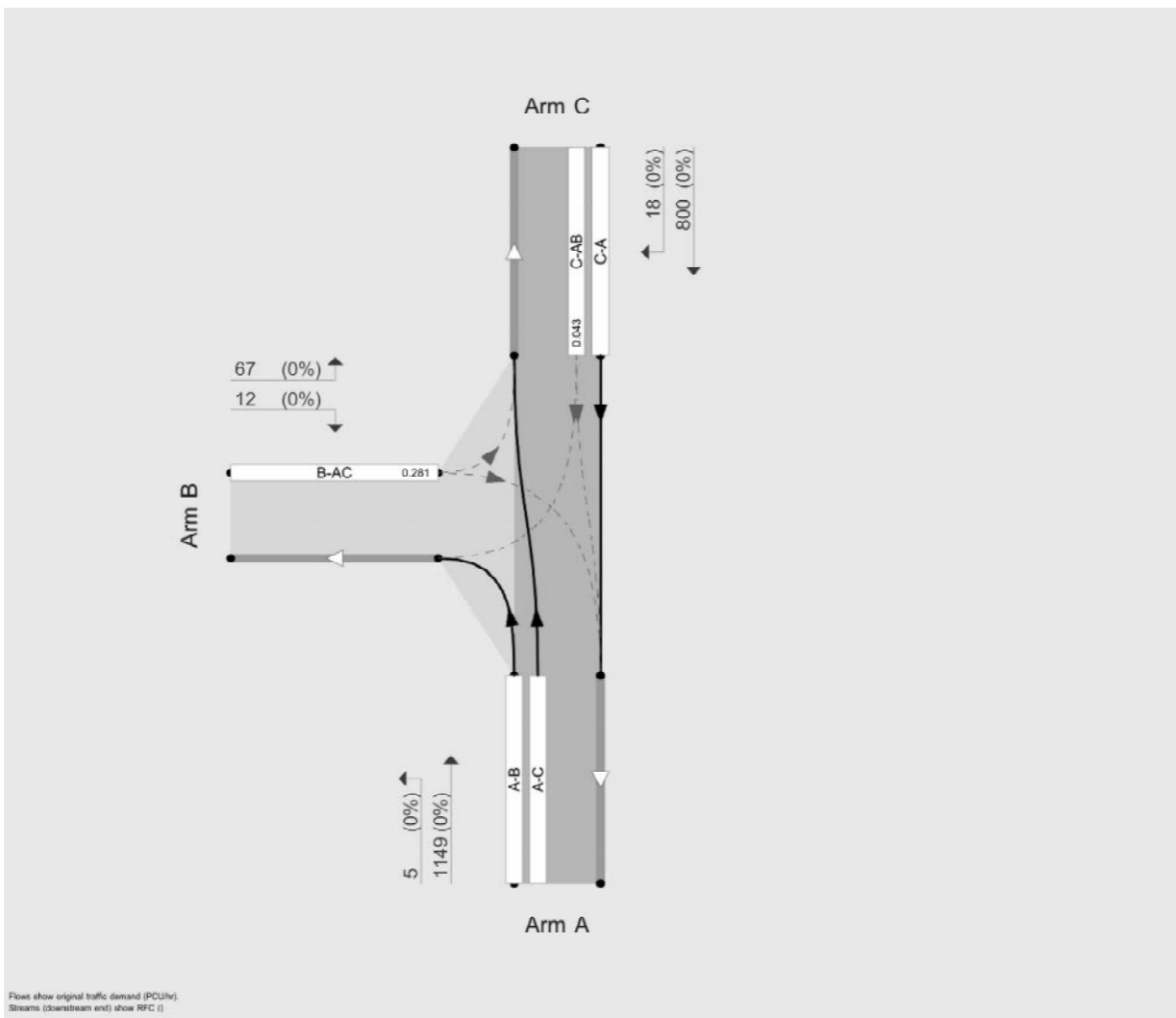
#### File summary

##### File Description

Title	
Location	
Site number	
Date	28/11/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-LO9M3E4\New User
Description	

#### Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



**Analysis Options**

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

**Demand Set Summary**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D5	2035 Base Flows (With Dualling Scheme)	AM	FLAT	08:00	09:00	60	15
D6	2035 Base Flows (With Dualling Scheme)	PM	FLAT	17:00	18:00	60	15
D7	2035 Base + Dev (With Dualling Scheme)	AM	FLAT	08:00	09:00	60	15
D8	2035 Base + Dev (With Dualling Scheme)	PM	FLAT	17:00	18:00	60	15

**Analysis Set Details**

ID	Name	Network flow scaling factor (%)
A1	Existing Layout	100.000

# Existing Layout - 2035 Base Flows (With Dualling Scheme), AM

**Data Errors and Warnings**

No errors or warnings

**Junction Network**

**Junctions**

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.77	A

**Junction Network Options**

Driving side	Lighting
Left	Normal/unknown

**Arms**

**Arms**

Arm	Name	Description	Arm type
A	B5254 Leyland Road NB		Major
B	Flag Lane		Minor
C	B5254 Leyland Road SB		Major

**Major Arm Geometry**

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.25			250.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

**Minor Arm Geometry**

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	17	15

**Slope / Intercept / Capacity**

**Priority Intersection Slopes and Intercepts**

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	478	0.082	0.208	0.131	0.297
B-C	618	0.090	0.226	-	-
C-B	719	0.263	0.263	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

**Traffic Demand**

**Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D5	2035 Base Flows (With Dualling Scheme)	AM	FLAT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

**Demand overview (Traffic)**

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1154	100.000

B		✓	79	100.000
C		✓	818	100.000

### Origin-Destination Data

Demand (PCU/hr)

From	To		
	A	B	C
A	0	5	1149
B	12	0	67
C	800	18	0

### Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A	B	C
A	0	0	0
B	0	0	0
C	0	0	0

### Results

#### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.28	17.81	0.4	C
C-AB	0.04	8.37	0.0	A
C-A				
A-B				
A-C				

#### Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	281	0.281	77	0.4	17.550	C
C-AB	20	450	0.043	19	0.0	8.364	A
C-A	798			798			
A-B	5			5			
A-C	1149			1149			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	281	0.281	79	0.4	17.804	C
C-AB	20	450	0.043	20	0.0	8.372	A
C-A	798			798			
A-B	5			5			
A-C	1149			1149			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	281	0.281	79	0.4	17.809	C
C-AB	20	450	0.043	20	0.0	8.372	A
C-A	798			798			
A-B	5			5			
A-C	1149			1149			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	281	0.281	79	0.4	17.809	C
C-AB	20	450	0.043	20	0.0	8.372	A
C-A	798			798			
A-B	5			5			
A-C	1149			1149			

B-AC	79	281	0.281	79	0.4	17.812	C
C-AB	20	450	0.043	20	0.0	8.371	A
C-A	798			798			
A-B	5			5			
A-C	1149			1149			

# Existing Layout - 2035 Base Flows (With Dualling Scheme), PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.31	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D6	2035 Base Flows (With Dualling Scheme)	PM	FLAT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	962	100.000
B		✓	32	100.000
C		✓	801	100.000

## Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	16	946
	B	2	0	30
	C	775	26	0

## Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	10.63	0.1	B
C-AB	0.06	7.50	0.1	A
C-A				

A-B				
A-C				

## Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	371	0.086	32	0.1	10.606	B
C-AB	28	509	0.056	28	0.1	7.493	A
C-A	773			773			
A-B	16			16			
A-C	946			946			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	371	0.086	32	0.1	10.629	B
C-AB	28	509	0.056	28	0.1	7.500	A
C-A	773			773			
A-B	16			16			
A-C	946			946			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	371	0.086	32	0.1	10.629	B
C-AB	28	509	0.056	28	0.1	7.503	A
C-A	773			773			
A-B	16			16			
A-C	946			946			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	371	0.086	32	0.1	10.629	B
C-AB	28	509	0.056	28	0.1	7.503	A
C-A	773			773			
A-B	16			16			
A-C	946			946			

# Existing Layout - 2035 Base + Dev (With Dualling Scheme), AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		56.30	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D7	2035 Base + Dev (With Dualling Scheme)	AM	FLAT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1238	100.000
B		✓	178	100.000
C		✓	836	100.000

## Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	38	1200
	B	111	0	67
	C	818	18	0

## Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	1.18	711.27	31.8	F
C-AB	0.05	8.78	0.1	A
C-A				

A-B				
A-C				

## Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	178	151	1.180	137	10.2	168.486	F
C-AB	20	430	0.046	20	0.1	8.768	A
C-A	816			816			
A-B	38			38			
A-C	1200			1200			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	178	151	1.180	148	17.6	376.062	F
C-AB	20	430	0.046	20	0.1	8.777	A
C-A	816			816			
A-B	38			38			
A-C	1200			1200			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	178	151	1.180	149	24.8	545.451	F
C-AB	20	430	0.046	20	0.1	8.775	A
C-A	816			816			
A-B	38			38			
A-C	1200			1200			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	178	151	1.180	150	31.8	711.266	F
C-AB	20	430	0.046	20	0.1	8.777	A
C-A	816			816			
A-B	38			38			
A-C	1200			1200			

# Existing Layout - 2035 Base + Dev (With Dualling Scheme), PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.59	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D8	2035 Base + Dev (With Dualling Scheme)	PM	FLAT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1070	100.000
B		✓	87	100.000
C		✓	842	100.000

## Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	96	974
	B	57	0	30
	C	816	26	0

## Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.45	33.83	0.8	D
C-AB	0.06	7.89	0.1	A
C-A				

A-B				
A-C				

### Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	193	0.450	84	0.8	32.095	D
C-AB	29	486	0.060	29	0.1	7.880	A
C-A	813			813			
A-B	96			96			
A-C	974			974			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	193	0.450	87	0.8	33.753	D
C-AB	29	486	0.060	29	0.1	7.890	A
C-A	813			813			
A-B	96			96			
A-C	974			974			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	193	0.450	87	0.8	33.808	D
C-AB	29	486	0.060	29	0.1	7.889	A
C-A	813			813			
A-B	96			96			
A-C	974			974			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	193	0.450	87	0.8	33.828	D
C-AB	29	486	0.060	29	0.1	7.890	A
C-A	813			813			
A-B	96			96			
A-C	974			974			

# APPENDIX 7

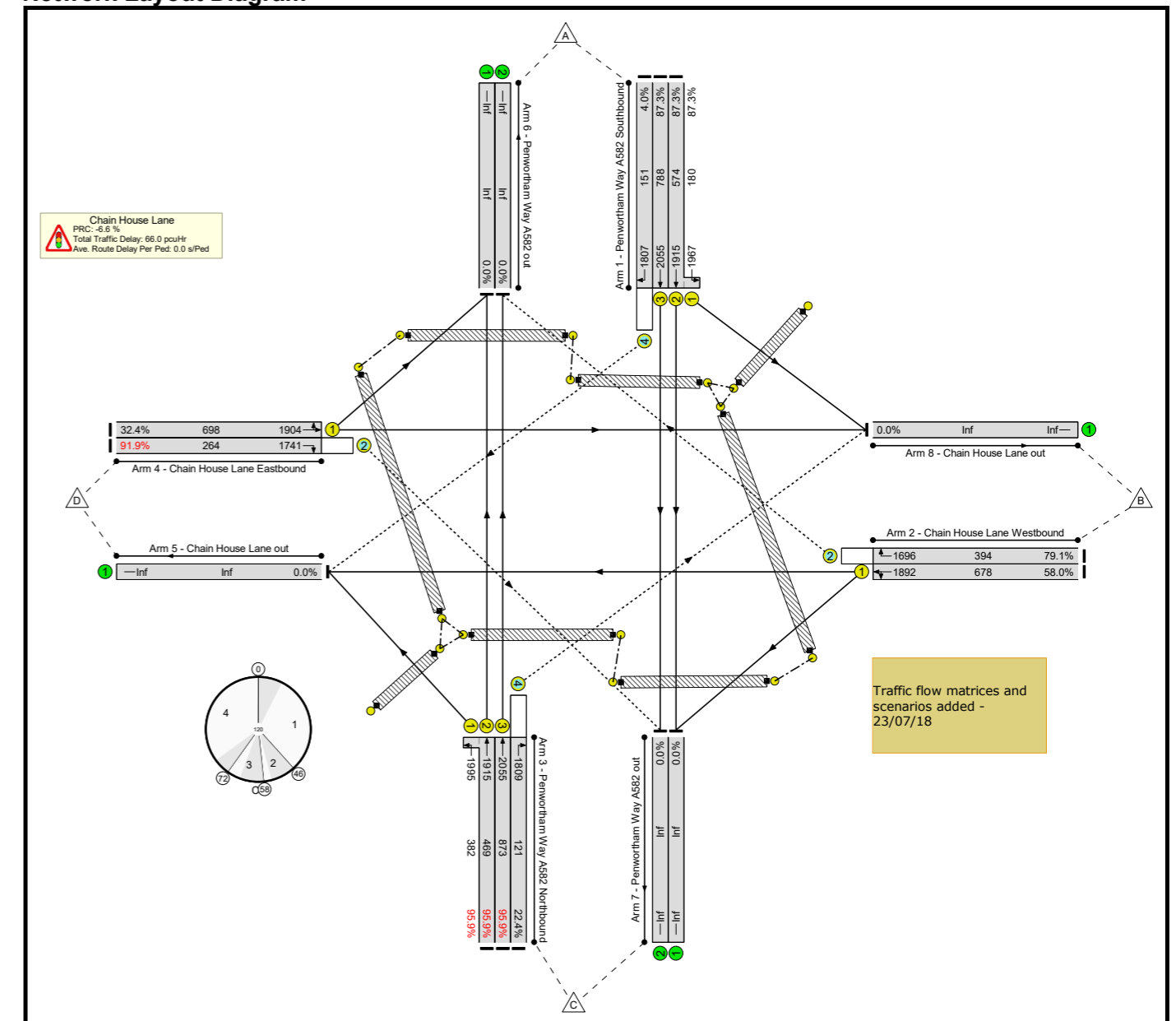
## Basic Results Summary Basic Results Summary

### User and Project Details

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>Additional detail:</b>	
<b>File name:</b>	J15 - A582_Chainhouse Lane.lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	

Scenario 5: '2035 Base AM (With Dualling Scheme)' (FG5: '2035 Base AM (With Dualling Scheme)', Plan 5: 'As constructed')

### Network Layout Diagram



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	95.9%	501	32	56	66.0	-	-
Chain House Lane	-	-	-		-	-	-	-	-	-	95.9%	501	32	56	66.0	-	-
1/2+1/1	Penwortham Way A582 Southbound Ahead Left	U	B		2	44	-	658	1915:1967	574+180	87.3 : 87.3%	-	-	-	7.3	40.0	18.5
1/3	Penwortham Way A582 Southbound Ahead	U	B		2	44	-	688	2055	788	87.3%	-	-	-	7.7	40.1	19.9
1/4	Penwortham Way A582 Southbound Right	O	D		1	9	-	6	1807	151	4.0%	0	6	0	0.1	63.3	0.2
2/1	Chain House Lane Westbound Ahead Left	U	E		1	42	-	393	1892	678	58.0%	-	-	-	4.1	37.5	11.3
2/2	Chain House Lane Westbound Right	O	E		1	42	-	312	1696	394	79.1%	309	0	3	5.4	62.1	11.1
3/2+3/1	Penwortham Way A582 Northbound Left Ahead	U	A		1	50	-	816	1915:1995	469+382	95.9 : 95.9%	-	-	-	15.5	68.3	33.5
3/3	Penwortham Way A582 Northbound Ahead	U	A		1	50	-	838	2055	873	95.9%	-	-	-	15.9	68.4	35.1
3/4	Penwortham Way A582 Northbound Right	O	C		1	7	-	27	1809	121	22.4%	0	26	1	0.5	72.3	1.0
4/1	Chain House Lane Eastbound Left Ahead	U	F		1	43	-	226	1904	698	32.4%	-	-	-	2.0	31.1	5.6



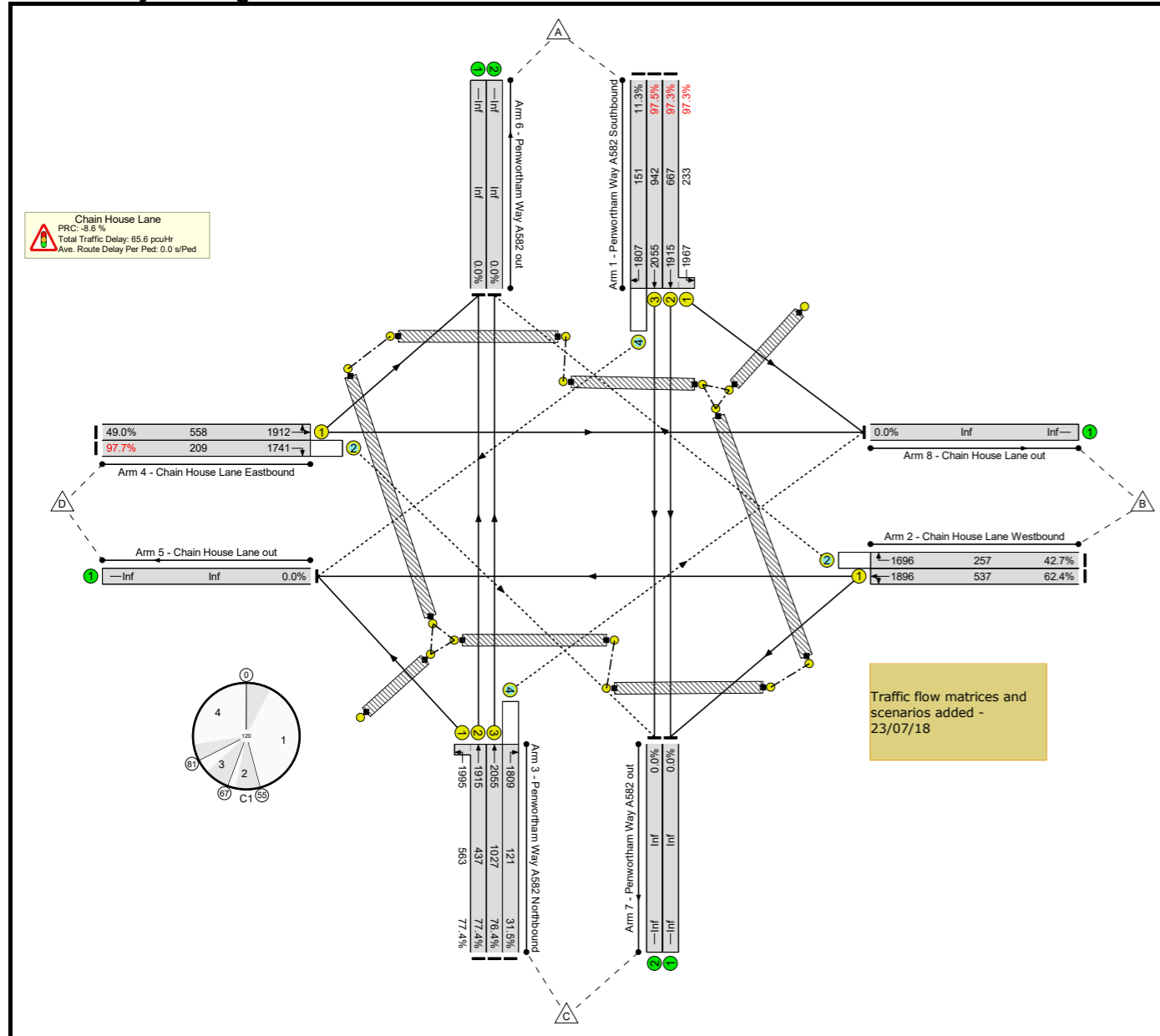
Basic Results Summary

4/2	Chain House Lane Eastbound Right	O	F		1	43	-	243	1741	264	91.9%	191	0	52	7.5	111.4	11.9	
Ped Link: P1	Unnamed Ped Link	-	M		1	57	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P2	Unnamed Ped Link	-	N		1	49	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P3	Unnamed Ped Link	-	L		1	57	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P4	Unnamed Ped Link	-	K		1	3	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P5	Unnamed Ped Link	-	I		2	50	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P6	Unnamed Ped Link	-	H		2	50	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P7	Unnamed Ped Link	-	G		1	5	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P8	Unnamed Ped Link	-	J		2	42	-	0	-	0	0.0%	-	-	-	-	-	-	
		C1			PRC for Signalled Lanes (%):		-6.6	Total Delay for Signalled Lanes (pcuHr):		65.97	Cycle Time (s):		120					
					PRC Over All Lanes (%):		-6.6	Total Delay Over All Lanes(pcuHr):		65.97								

Basic Results Summary

**Scenario 6: '2035 Base PM (With Dualling Scheme)'** (FG6: '2035 Base PM (With Dualling Scheme)', Plan 5: 'As constructed')

**Network Layout Diagram**



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	97.7%	246	60	63	65.6	-	-
Chain House Lane	-	-	-		-	-	-	-	-	-	97.7%	246	60	63	65.6	-	-
1/2+1/1	Penwortham Way A582 Southbound Ahead Left	U	B		2	53	-	876	1915:1967	667+233	97.3 : 97.3%	-	-	-	15.7	64.6	33.5
1/3	Penwortham Way A582 Southbound Ahead	U	B		2	53	-	918	2055	942	97.5%	-	-	-	16.6	65.3	35.6
1/4	Penwortham Way A582 Southbound Right	O	D		1	9	-	17	1807	151	11.3%	0	16	1	0.3	64.4	0.6
2/1	Chain House Lane Westbound Ahead Left	U	E		1	33	-	335	1896	537	62.4%	-	-	-	4.3	46.3	10.5
2/2	Chain House Lane Westbound Right	O	E		1	33	-	110	1696	257	42.7%	109	0	1	1.7	56.7	3.2
3/2+3/1	Penwortham Way A582 Northbound Left Ahead	U	A		1	59	-	774	1915:1995	437+563	77.4 : 77.4%	-	-	-	6.8	31.6	21.8
3/3	Penwortham Way A582 Northbound Ahead	U	A		1	59	-	785	2055	1027	76.4%	-	-	-	6.9	31.6	22.7
3/4	Penwortham Way A582 Northbound Right	O	C		1	7	-	38	1809	121	31.5%	0	37	1	0.8	75.1	1.4
4/1	Chain House Lane Eastbound Left Ahead	U	F		1	34	-	273	1912	558	49.0%	-	-	-	3.1	41.4	8.0

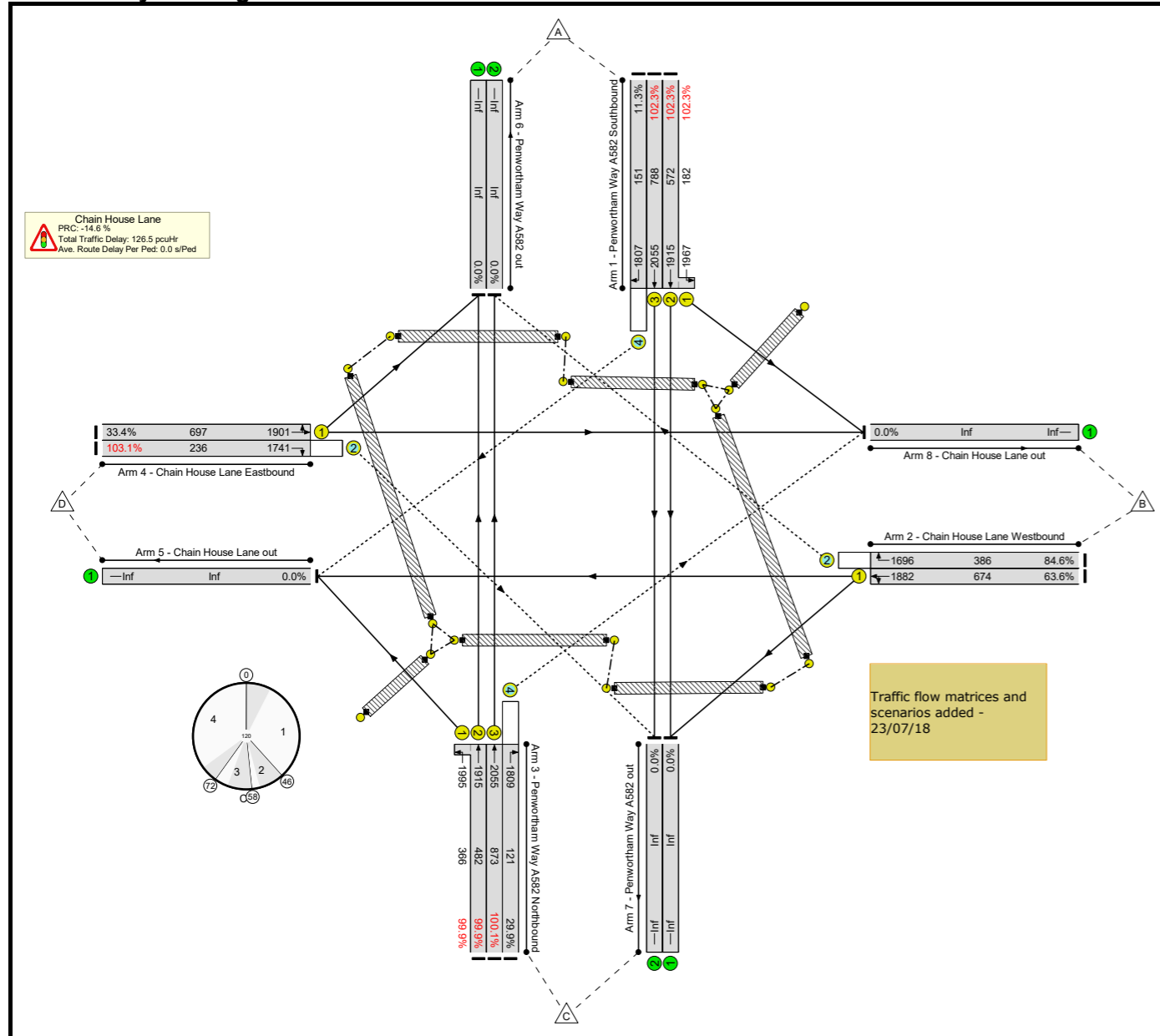
Basic Results Summary

4/2	Chain House Lane Eastbound Right	O	F		1	34	-	204	1741	209	97.7%	137	7	60	9.3	164.1	12.8
Ped Link: P1	Unnamed Ped Link	-	M		1	48	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	N		1	58	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	L		1	48	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	K		1	3	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	I		2	41	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P6	Unnamed Ped Link	-	H		2	41	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P7	Unnamed Ped Link	-	G		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P8	Unnamed Ped Link	-	J		2	51	-	0	-	0	0.0%	-	-	-	-	-	-
		C1			PRC for Signalled Lanes (%):		-8.6	Total Delay for Signalled Lanes (pcuHr):		65.63	Cycle Time (s):		120				
					PRC Over All Lanes (%):		-8.6	Total Delay Over All Lanes(pcuHr):		65.63							

Basic Results Summary

**Scenario 7: '2035 Base + Development AM (With Dualling Scheme)' (FG7: '2035 Base + Development AM (With Dualling Scheme)', Plan 5: 'As constructed')**

**Network Layout Diagram**



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	103.1%	486	65	64	126.5	-	-
Chain House Lane	-	-	-		-	-	-	-	-	-	103.1%	486	65	64	126.5	-	-
1/2+1/1	Penwortham Way A582 Southbound Ahead Left	U	B		2	44	-	771	1915:1967	572+182	102.3 : 102.3%	-	-	-	25.7	119.8	40.5
1/3	Penwortham Way A582 Southbound Ahead	U	B		2	44	-	806	2055	788	102.3%	-	-	-	26.7	119.3	42.4
1/4	Penwortham Way A582 Southbound Right	O	D		1	9	-	17	1807	151	11.3%	0	16	1	0.3	64.4	0.6
2/1	Chain House Lane Westbound Ahead Left	U	E		1	42	-	429	1882	674	63.6%	-	-	-	4.7	39.3	12.7
2/2	Chain House Lane Westbound Right	O	E		1	42	-	327	1696	386	84.6%	324	0	3	6.4	70.4	12.5
3/2+3/1	Penwortham Way A582 Northbound Left Ahead	U	A		1	50	-	848	1915:1995	482+366	99.9 : 99.9%	-	-	-	22.4	95.2	41.7
3/3	Penwortham Way A582 Northbound Ahead	U	A		1	50	-	874	2055	873	100.1%	-	-	-	23.4	96.2	44.1
3/4	Penwortham Way A582 Northbound Right	O	C		1	7	-	36	1809	121	29.9%	0	35	1	0.7	74.5	1.4
4/1	Chain House Lane Eastbound Left Ahead	U	F		1	43	-	233	1901	697	33.4%	-	-	-	2.0	31.3	5.8

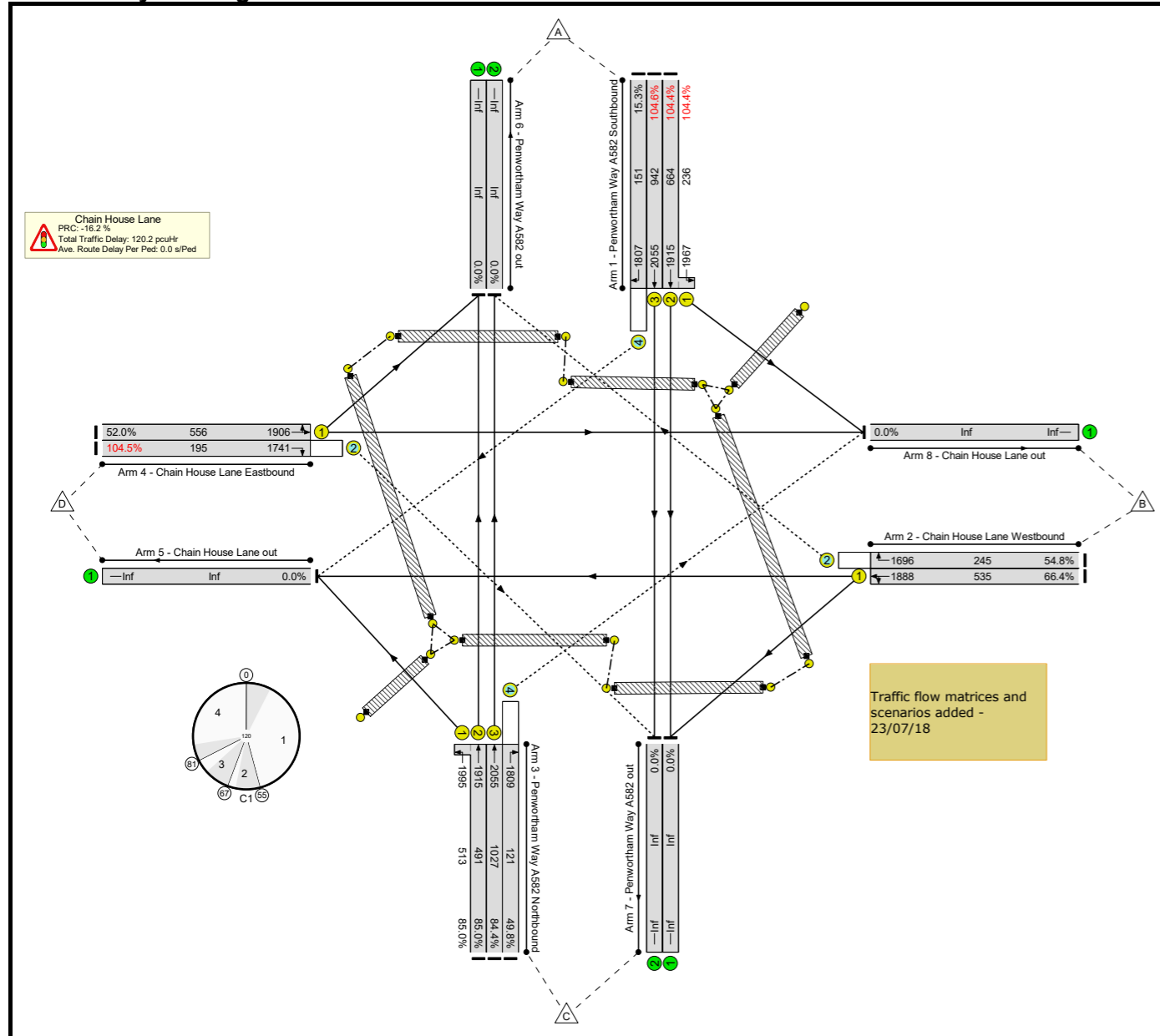
Basic Results Summary

4/2	Chain House Lane Eastbound Right	O	F		1	43	-	243	1741	236	103.1%	162	14	60	14.2	209.9	18.2
Ped Link: P1	Unnamed Ped Link	-	M		1	57	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	N		1	49	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	L		1	57	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	K		1	3	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	I		2	50	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P6	Unnamed Ped Link	-	H		2	50	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P7	Unnamed Ped Link	-	G		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P8	Unnamed Ped Link	-	J		2	42	-	0	-	0	0.0%	-	-	-	-	-	-
		C1			PRC for Signalled Lanes (%):		-14.6	Total Delay for Signalled Lanes (pcuHr):		126.46	Cycle Time (s):		120				
				PRC Over All Lanes (%):		-14.6	Total Delay Over All Lanes(pcuHr):		126.46								

Basic Results Summary

**Scenario 8: '2035 Base + Development PM (With Dualling Scheme)'** (FG8: '2035 Base + Development PM (With Dualling Scheme)', Plan 5: 'As constructed')

**Network Layout Diagram**





Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	104.6%	256	93	64	120.2	-	-
Chain House Lane	-	-	-		-	-	-	-	-	-	104.6%	256	93	64	120.2	-	-
1/2+1/1	Penwortham Way A582 Southbound Ahead Left	U	B		2	53	-	941	1915:1967	664+236	104.4 : 104.4%	-	-	-	37.3	142.6	56.4
1/3	Penwortham Way A582 Southbound Ahead	U	B		2	53	-	985	2055	942	104.6%	-	-	-	39.4	144.1	59.5
1/4	Penwortham Way A582 Southbound Right	O	D		1	9	-	23	1807	151	15.3%	0	22	1	0.4	65.2	0.8
2/1	Chain House Lane Westbound Ahead Left	U	E		1	33	-	355	1888	535	66.4%	-	-	-	4.7	47.9	11.3
2/2	Chain House Lane Westbound Right	O	E		1	33	-	134	1696	245	54.8%	133	0	1	2.3	62.8	4.6
3/2+3/1	Penwortham Way A582 Northbound Left Ahead	U	A		1	59	-	853	1915:1995	491+513	85.0 : 85.0%	-	-	-	8.7	36.8	26.2
3/3	Penwortham Way A582 Northbound Ahead	U	A		1	59	-	867	2055	1027	84.4%	-	-	-	8.9	36.8	27.4
3/4	Penwortham Way A582 Northbound Right	O	C		1	7	-	60	1809	121	49.8%	0	58	2	1.4	83.3	2.4
4/1	Chain House Lane Eastbound Left Ahead	U	F		1	34	-	289	1906	556	52.0%	-	-	-	3.4	42.2	8.6

Basic Results Summary

4/2	Chain House Lane Eastbound Right	O	F		1	34	-	204	1741	195	104.5%	123	12	60	13.7	241.5	16.9
Ped Link: P1	Unnamed Ped Link	-	M		1	48	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	N		1	58	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	L		1	48	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	K		1	3	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	I		2	41	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P6	Unnamed Ped Link	-	H		2	41	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P7	Unnamed Ped Link	-	G		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P8	Unnamed Ped Link	-	J		2	51	-	0	-	0	0.0%	-	-	-	-	-	-
		C1			PRC for Signalled Lanes (%):		-16.2	Total Delay for Signalled Lanes (pcuHr):		120.23	Cycle Time (s):		120				
				PRC Over All Lanes (%):		-16.2	Total Delay Over All Lanes(pcuHr):		120.23								



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## Appendices D

### Ecology

This document has been produced to accompany the Masterplan produced by 5plus Architects (ref: 05745\_Masterplan\_200708). It sets out the design principles to be adopted as part of the Masterplan with regard to ecology. This document also addresses the comments raised by the relevant stakeholders during the consultation process.

#### Ecology Design Principles

The following design principles will be implemented within the Masterplan and subsequent development proposals at The Lanes site. These principles have been selected with due consideration to the ecology survey data collected by TEP between 2017 and 2019. The design principles are:

- Habitats of value, in particular the hedgerows and trees at the site will be retained and enhanced where possible.
- Native species planting of locally sourced stock will be used, where appropriate, during habitat creation.
- 2:1 replacement tree planting and 1:1.5 replacement hedgerow planting will be implemented.
- Sustainable Urban Drainage Systems (SUDS) within the site will be enhanced to hold water permanently and will include native species planting.
- New habitat creation will seek to maintain and enhance ecological connectivity through the site. Consideration towards protected species will be given, for example by maintaining a network of hedgerows to allow bats to commute and forage through the site and including rough grassland planting for barn owl.
- The habitat types and areas to be provided are outlined in the Landscape Parameters Plan within the Masterplan.
- A 10% Biodiversity Net Gain (BNG) will be achieved for the scheme and this will be provided on the site itself. Should this not be achievable for any reason then suitable offsite locations for compensatory habitat creation will be sought.
- 20% of the dwellings will incorporate bat and bird boxes to mitigate for habitat losses and to enhance the site for bats and birds.
- 5 barn owl boxes will be installed on retained trees, away from disturbance, to mitigate and enhance roosting and nesting opportunities.
- A sensitive lighting strategy will be incorporated to reduce light spill on to key habitats.
- Gaps under fences will be included to enable hedgehogs to move through the site.

A 30 year management plan will be adopted for the scheme to ensure that the above design principles are implemented and maintained. Impact on Statutory Protected Nature

#### Conservation Sites or Landscapes

A full assessment of the impacts on designated sites has been provided in the Environment Impact Assessment (EIA) for the Developers outline planning application (ref: 07/20/00015). Details of the impact assessment against these designated sites are provided below, which take into account impacts arising during construction and when the development is complete.

The site lies within the Impact Risk Zone for Ribble Estuary Site of Special Scientific Interest (SSSI), which is located approximately 6.79km to the west of the site and is designated for its coastal habitats and bird assemblages. However, residential development does not fall under a category that would trigger a consultation between the Local Planning Authority (LPA) and Natural England.

The following statutory designated sites lie within 10km of the site:

- Ribble and Alt Estuaries Ramsar and Special Protection Area (SPA);
- Beeston Brook Pasture SSSI;
- Ribble Estuary SSSI and NNR;
- Red Scar and Tun Brook Woods SSSI; and
- Newton Marsh SSSI.

The closest of these designations (Beeston Brook Pasture SSSI) lies 5.77km from the site. All of the sites are considered to be of sufficient distance, beyond urban development that no direct or indirect impacts, associated with construction, are anticipated as a result of the proposals.

It is likely that a small (but not significant) increase in visitor numbers to Ribble and Alt Estuaries Ramsar and SPA, Ribble Estuary SSSI and NNR will occur and Red Scar and Tun Brook Woods SSSI, however, given the distance to this designations (6.79km is the closest), dog walkers and recreational users are more likely to use the public open space provided on the site on a regular basis. There are no public rights of way through Beeston Brook Pasture SSSI and Newton Marsh SSSI and therefore no post-construction related impacts are anticipated on these designations.

The following non-statutory designated sites lie within 2km of the site:

- Preston Junction BHS and LNR;
- Cop Lane Cutting BHS;
- Hurst Grange Park BHS;
- Carr Wood BHS; and
- Ribble Estuary Upper Tidal Section BHS.

The closest of these designations (Preston Junction BHS and LNR) lies 850m from the site. All of the sites are considered to be of sufficient distance, beyond urban development that no direct or indirect impacts, associated with construction, are anticipated as a result of the proposals.

There are no public rights of way through Carr Wood BHS and therefore no post-construction related impacts are anticipated on this designation.

The proposed development comprising up to 1,100 residential units has potential to have an indirect negative impact on the other five non-statutory designated sites identified, through an increase in public pressure. An increase in public pressure could lead to nitrification of the habitats present (associated with dog fouling) and physical disturbance/erosion of susceptible habitats. However review of aerial imagery suggests there are no visitor facilities or parking for these designations nor any public right of way links which may limit visitors from the far side of the proposed development. The designations already have a good network of paths which would limit physical degradation of habitats due to increased visitor numbers. In addition, recreational users are likely to also use the public open space provided on the site on a regular basis. Therefore no impact in relation to increased visitor number is expected.

#### Approach to Site Ecology Surveys

A desk based assessment was undertaken of the entire Masterplan area. Full ecology surveys have only be undertaken on land controlled or owned by the Developers within the Masterplan. Third party land was viewed from publicly accessible areas and was found to be similar, in terms of usage and the habitat types present, to the other areas of the site. Therefore it is anticipated that the ecology design principles detailed above, will be sufficient to minimise impacts to ecology as a result of the Masterplan.

#### Biodiversity Net Gain

A Biodiversity Net Gain target of 10% will be achieved, in line with local planning policy.

#### Lords Lane Orchard

The orchard will be retained or will be replaced in the Masterplan if all or part of the land is required for future residential development.

#### Hedgerows

It is not feasible to determine hedgerow impacts as part of the Masterplan. This will be addressed as part of future planning applications. Species-rich hedgerows will be removed from curtilages of properties where possible or will be considered as a loss. However the ecology design principle of 1:1.5 replacement hedgerow planting should be sufficient to minimise any impacts and to provide enhancement for hedgerows within the Masterplan.

#### Bats and Barn Owls

Ecology design principles relevant to barn owls and bats are included above. More detail will be provided as part of future planning applications, where appropriate.

#### Sustainable Urban Drainage System (SUDS)

The SUDS will be enhanced for biodiversity in line with the ecology principles outlined above and as shown in the Landscape Parameters Plan within the Masterplan.

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## Appendices E

### Flood Risk & Drainage

#### Introduction

This Flood Risk and Drainage Statement has been prepared by Lees Roxburgh as a Technical Appendix to the Lanes, Penwortham, Masterplan. The Statement has been informed by Chapter 11 Flood Risk and Drainage and Appendix 11.1 Flood Risk Assessment (“FRA”) prepared by Lees Roxburgh submitted in support of the Developers’ outline planning application (LPA Ref 07/20/00015). The outline planning application proposes a residential led mixed-use development at the site comprising 1,100 dwellings on land controlled and owned by the Developers which is allocated as a Major Site for Development in the adopted South Ribble Local Plan. This site comprises the Allocated Land which contains the Application Site and the Safeguarded Land.

The Statement addresses:

Section 2: The Allocated Land - Flood Risk and Surface Water Drainage and Foul Drainage Strategy; and

Section 3: The Safeguarded Land – Surface Water and Foul Drainage Strategy and should be read in conjunction with the attached plan.

#### 2. The Allocated Land

##### **Flood Risk and Surface Water Drainage**

The FRA has identified that the site lies in an area of Zone 1 Flood Risk and is not at fluvial flood risk.

The Sequential and Exception Tests do not therefore apply.

The risks associated with Mill Brook, the northern culvert, surface water sewers and general surface water flooding, Penwortham Way, development surface water drainage proposals and development land drainage proposals have been identified and addressed by the FRA.

Existing land, properties and the lanes will be retained and flows from which have been taken into account within the existing and proposed surface water run off assessments.

The site is substantially underlain by boulder clay and it is considered that ground conditions will be unsuitable for surface water infiltration based drainage.

Two surface water outfalls are therefore proposed, the main one (Outfall 2) being to the Mill Brook tributary culvert where it crosses Penwortham Way to the north west, downstream of Kingsfold, and the second to the same system upstream (Outfall 3) where it is culverted along the northern boundary.

The area most vulnerable to surface water flooding lies to the northern area of the site and relies for drainage on the northern tributary culvert which flows through the adjacent Kingsfold development.

It is proposed to redirect flows currently entering this system from upstream (Outfall 3) to downstream (Outfall 2) of the existing development and hence reducing the volume of water reaching the most vulnerable area of the site.

Further, it is proposed to restrict run off from the site into the Mill Brook tributary and overall achieve a significant reduction in the rate of surface water run off from the site.

McCloy Consulting has undertaken a Flood Study which has confirmed that the area of most significant flooding on and adjacent to the northern site boundary is caused by surface water runoff from within the site and from land adjacent to the site including runoff from urban drainage networks to the north. This runoff is restricted by the culverted tributary to Mill Brook, which at this location effectively performs as an extension to the urban drainage network, and which is of insufficient capacity to freely convey predicted inflows.

Modelling has confirmed that the Developers’ proposals have a beneficial effect offsite for all flood scenarios considered, consistent with the effect which would be anticipated by the significant reduction in rates of runoff proposed.

A cumulative proposed scenario has also been modelled which incorporates opening up of the northern culvert and reprofiling of the land to form a flood basin, in combination with surface water management measures, and has confirmed that the effect of the development has no adverse effect offsite. The proposed basin area ensures connectivity with flooding on land to the north of the site and that predicted flooding up to the 1 in 100 year plus 40% cc event is not exacerbated.

The flood basin will be contained by raising levels to a minimum of 27.6m AOD and proposed development levels in the area will be set accordingly.

Blockage scenarios have also been modelled for 4 No. structures arising from which it is further recommended that minimum development levels in the area of the Penwortham Way south culvert be set at 28.7m. However it is noted that existing ground levels in this area are already at or above 29.0m.

The risk due to overtopping of the Penwortham Way highway drainage system will be dealt with by the natural topography which will convey flows away from development areas.

Surface water flows from development and retained land within Catchment A will be contained onsite within an attenuation basin and swale system located alongside the CBLR and the west boundary.

Surface water flows from development within Catchment B will be pumped via an adoptable pumping station into the northern culvert. The overall design standard will inherently provide the required storage provision in the event of a pump failure. Runoff from retained land within Catchment B will substantially be maintained as existing.

Highways, houses and associated hard surfaces will be served by piped surface water systems designed to adoptable standards to ensure, at minimum, no flooding up to the 1 in 30 year event.

Overall flows up to the 1 in 100 year event plus allowance for 40% climate change will be contained on site within the basin, swale and pipe systems, supplemented by appropriate setting of levels.

These proposals will provide additional betterment to that delivered via the catchment reallocation and the proposed run off rate restriction in that flows up to the overall design event which previously flowed uncontrolled across the site will be controlled and managed by the development drainage systems.

The existing land drainage system will be maintained, upgraded and diverted as necessary to ensure that land drainage flows, including flows from the retained land, continue to drain to outfall independently of the main pipe systems, either into the basin and swales system, or to the northern boundary culvert.

It is proposed that the main piped system and pumping station will be adopted under a S104 agreement by United Utilities with the management company for the development taking on responsibility for those elements of the basin and swale system, control structures and outfalls which will not be adoptable.

The existing land drainage system within the retained land will remain the riparian responsibility of the relevant landowners. Responsibility for those systems within the area proposed for development, including the flood basin area and associated infrastructure, will be placed with the management company for the development.

Responsibility for the northern boundary tributary will remain with the relevant riparian landowners supported by the Local Lead Flood Authority’s (LLFA) enforcement powers.

Development floor levels will generally be set a minimum of 0.15m above external ground levels which will encourage any flows generated by an exceedance event (i.e. greater than the 1 in 100 year plus 40% climate change design event) to pass safely through the development.

Overall development levels will be set to create overland flow paths to ensure that there is no increase risk of surface water flooding to retained property and, where achievable, any existing risk is mitigated. In this regard it is noted that the development will inherently reduce uncontrolled surface water run off within the site.

Ground conditions preclude infiltration, limiting opportunities to address water quality. However, the risks associated with residential housing range from low to very low.

Notwithstanding trapped road gullies and the attenuation basin/swale system will achieve two levels of treatment to Catchment A which incorporates the CBLR, to address any perceived risk to water quality with trapped road gullies to Catchment B, where levels dictate a piped solution, providing one level of treatment.

In accordance with the NPPF, the Developers’ proposals can be delivered so as not to be at risk of flooding from external sources or from within the development, will deliver a reduction in flood risk to the surrounding area and is therefore appropriate.

##### **Foul Drainage**

There is an extensive United Utilities public sewer network within the residential development to the north and north west. The main combined system comprises a 525mm diameter sewer which runs to the north of the development along Kingsfold Drive. This connects into a 675mm diameter system at Pope Lane to the west which continues down the lane before turning north west just before the roundabout junction with Penwortham Way.

There are existing properties within the Developers outline application boundary but outside the development area and which will be retained. There are no recorded sewers within the area proposed for development. It has been reasonably concluded therefore that these properties drain to septic tanks.

The proposed surface water drainage assessment has split the site into two catchments, A and B. The surface water drainage within Catchment B is to be conveyed via the CBLR to outfall from the north west corner of the development into a tributary of Mill Brook which is culverted under Penwortham Way to the north.

## Appendices E

### Flood Risk & Drainage

This leaves Catchment A to drain into the same tributary, but upstream, at the north boundary of the site. It is proposed that foul drainage arrangements will mimic the surface water drainage proposals. More specifically;

#### · **Catchment A**

A gravity foul drainage system will substantially follow the topography down the CBLR to a pumping station located in the area of the proposed access onto Penwortham Way.

From here flows will be pumped along Penwortham Way and will be connected into the United Utilities combined sewer system at MH 2501.

#### · **Catchment B**

Again, a gravity network will be run down to a location close to the north boundary and will be pumped across the open space area and connected to the United Utilities combined sewer system in Kingsfold Drive at a location to be confirmed.

All adoptable foul sewers and the pumping stations will be designed and constructed in accordance with Sewers for Adoption, currently at 6th Edition for the gravity system and 7th Edition for the pumped elements.

These proposals have been agreed in principle by United Utilities.

#### **The Safeguarded Land**

##### **Surface Water Drainage**

Mill Brook enters the land from the south west, forms a field boundary before turning west and passing in culvert under Penwortham Way.

Mill Brook then continues in a north / north westerly direction alongside Penwortham Way.

There is a ditch which forms the boundary between the Safeguarded Land and the Allocated Land which forms a field boundary and which connects into Mill Brook at the point it turns west and under Penwortham Way. This effectively cuts off land drainage and surface water run off generated by the Safeguarded Land from the Allocated Land.

It is proposed that surface water flows from a development of the Safeguarded Land will substantially be connected direct into Mill Brook with flows limited to existing greenfield runoff rates all in compliance with the requirements of the NPPF with respect to flood risk and surface water drainage. However it is anticipated there will be a requirement for an area to the south to drain into the ditch alongside Chain House Lane, again with flows limited to greenfield rates.

Surface water flows will be attenuated on site up to the 1 in 100 year event plus an appropriate allowance for climate change. The required volume of surface water attenuation will be provided within the combination of attenuation basin(s) and the development pipe network to an extent to be determined at a later stage once information on the development proposals becomes available.

The surface water drainage system will be adopted by the appropriate body at that time, currently United Utilities.

##### **Foul Drainage**

There is an extensive United Utilities public sewer network within the residential development to the north and north west of the Masterplan area

The main combined system comprises a 525mm diameter sewer which runs to the north of the application site along Kingsfold Drive. This connects into a 675mm diameter system at Pope Lane which continues down the lane before turning north west at the junction with Penwortham Way.

There is also a small diameter combined system running west in Chain House Lane to the south of the Safeguarded Land.

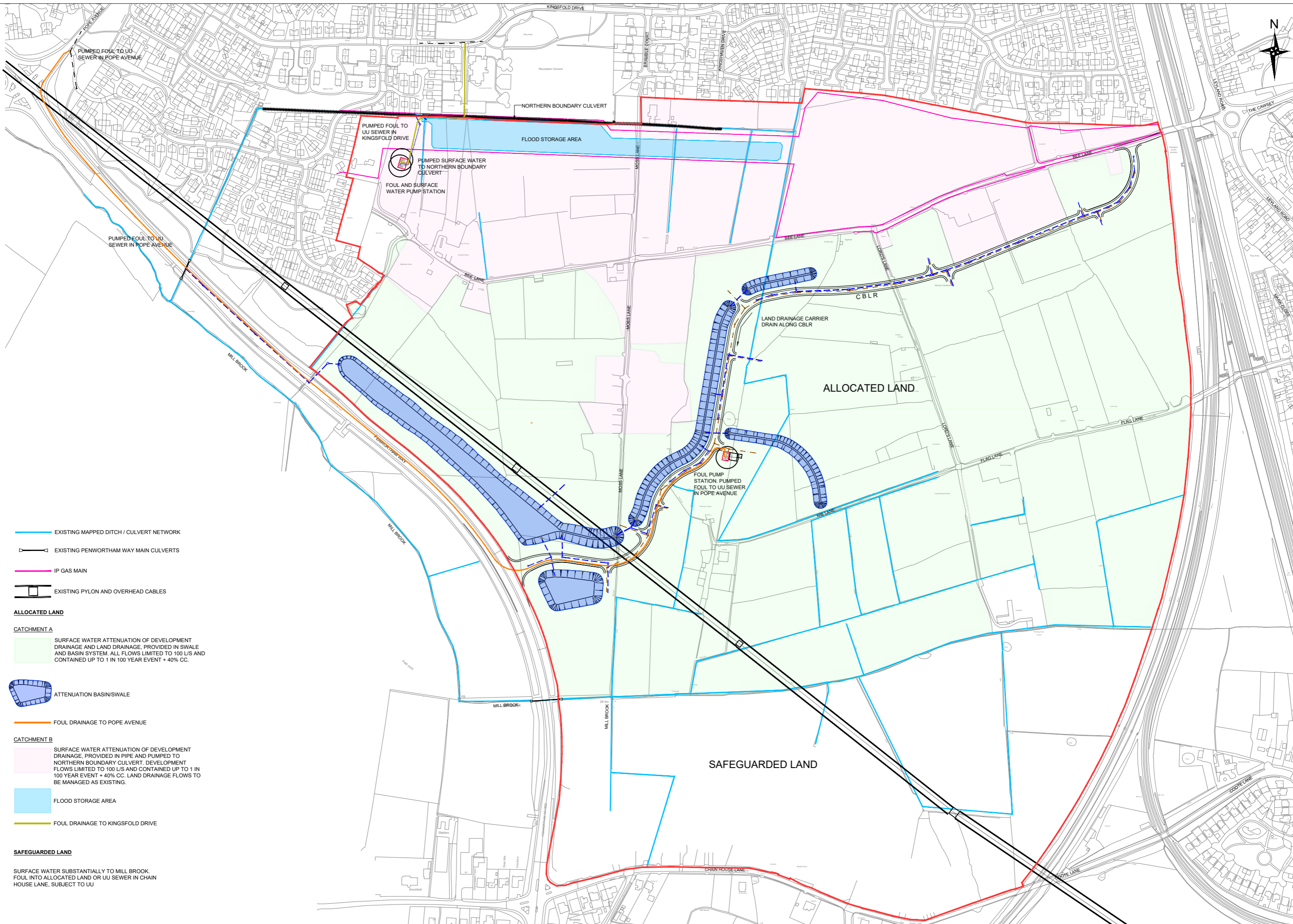
It is conjectured that properties fronting onto Chain House Lane drain either to the public sewer or to septic tank.





It is proposed that foul drainage arrangements within the Allocated Land will mimic the surface water drainage proposals with pumped connection to the combined sewer network to the north and north west.

The options for providing foul drainage to the Safeguarded Land comprise connection into the Allocated Land system, connection into the Chain House Lane sewer or a combination of the two.

An assessment will need to be undertaken of these options in consultation with United Utilities at the appropriate stage.

It is anticipated all adoptable foul sewers and the pumping stations will be designed and constructed in accordance with Sewers for Adoption, currently at 6th Edition for the gravity system and 7th Edition for any pumped element.

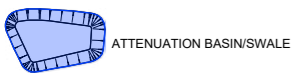


-  EXISTING MAPPED DITCH / CULVERT NETWORK
-  EXISTING PENWORTHAM WAY MAIN CULVERTS
-  IP GAS MAIN
-  EXISTING PYLON AND OVERHEAD CABLES

**ALLOCATED LAND**

**CATCHMENT A**


SURFACE WATER ATTENUATION OF DEVELOPMENT DRAINAGE AND LAND DRAINAGE, PROVIDED IN SWALE AND BASIN SYSTEM. ALL FLOWS LIMITED TO 100 L/S AND CONTAINED UP TO 1 IN 100 YEAR EVENT + 40% CC.



 FOUL DRAINAGE TO POPE AVENUE

**CATCHMENT B**

SURFACE WATER ATTENUATION OF DEVELOPMENT DRAINAGE, PROVIDED IN PIPE AND PUMPED TO NORTHERN BOUNDARY CULVERT. DEVELOPMENT FLOWS LIMITED TO 100 L/S AND CONTAINED UP TO 1 IN 100 YEAR EVENT + 40% CC. LAND DRAINAGE FLOWS TO BE MANAGED AS EXISTING.

 FLOOD STORAGE AREA

 FOUL DRAINAGE TO KINGSFOLD DRIVE

**SAFEGUARDED LAND**

SURFACE WATER SUBSTANTIALLY TO MILL BROOK. FOUL INTO ALLOCATED LAND OR UU SEWER IN CHAIN HOUSE LANE, SUBJECT TO UU

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The Lanes,  
Penwortham

## Landscape Strategy

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## CONTENTS

### **1.0 Introduction**

### **2.0 Site Analysis**

- 2.0 Introduction
- 2.1 Landscape character
- 2.2 Site character
- 2.3 Ground conditions, topography and historic grain
- 2.4 Pedestrian and Cycle Routes
- 2.5 Greenspace
- 2.6 Trees
- 2.7 Hedgerows
- 2.8 Key issues and design drivers

### **3.0 Vision for the site**

- 3.1 Landscape vision
- 3.2 Public open space
- 3.3 Biodiversity and Bio-corridors
- 3.4 Pedestrian and cycle provision
- 3.5 Trees and hedgerows

### **4.0 Developing the Masterplan**

- 4.1 Types and location of proposed green space
- 4.2 Public open space contributions and formal recreation provision
- 4.3 Typical open space lay-outs
- 4.4 Supporting biodiversity gain

### **5.0 Design Codes**

- 5.1 Design code areas
- 5.2. Bees Lane East
- 5.3 Bees Lane West
- 5.4 Penwortham Edge
- 5.5 The Heart of the Lanes
- 5.6 Urban Edge



Site location plan with red line boundary (not to scale)

## 1.0 INTRODUCTION

### The Site

The Masterplan area which proposes the comprehensive development of Pickering's Farm now known as The Lanes and referred to here after as ("the site") extends to 99.78 hectares and comprises land bound by Chain House Lane / Cootes Lane to the south and Penwortham Way to the west. Immediately to the north of the site lies the community of Kingsfold and to the east lies Lostock Hall. The site is located within the administrative boundary of South Ribble Borough Council (SRBC) and within the ward of Chamock.

The site is currently occupied by a number of individual properties in private ownership, the majority of which are accessed via Bee Lane, Flag Lane, Lords Lane, Moss Lane and Nibb Lane which bisect the site. The remaining properties on the site are accessed directly from Chain House Lane and Cootes Lane from the south.

The site is partially bordered to the east by the West Coast mainline railway, to the south by Cootes Lane, to the west by Penwortham Way and to the north by existing residential development to the south of Kingsfold Drive. Key corridors on the local highway network include Penwortham Way which provides a primary north/south route; Leyland Road which is a local distributor road on the eastern side of the site and Cootes Lane which runs east/west on the south side of the site.

### The Site's Context

Penwortham is a town in South Ribble on the south bank of the River Ribble facing the city of Preston. Located close to the M6 / M61 junction, it has excellent connections to Preston, located less than 3 miles to the north, and Manchester, located 35 miles to the south east.

The town consists of three main shopping centres, Middleforth, Kingsfold and Liverpool Road.

Liverpool Road is the main through road in Penwortham leading from the city of Preston out to Liverpool and Southport. Liverpool Road and Leyland Road are main commuter routes into and out of the city of Preston, as well as the Penwortham Bypass. It is proposed by LCC that some parts of the Penwortham Bypass will be widened to alleviate traffic pressure through the shopping area on Liverpool Road, and ensure a freer flow of traffic both into and out of Preston. Works on the dualling of Penwortham Way are anticipated to begin in 2021.

Penwortham also has excellent rail links with train stations at Lostock Hall to the south and Preston to the north, with hourly services from these stations to Blackburn, Burnley and Colne and Blackpool and peak services from York and Leeds.

## 2.0 SITE ANALYSIS

### 2.1 Landscape Character

The sites falls within:

- The Character Map of England - NCA 32: Lancashire & Amounderness Plain
- The Landscape Strategy for Lancashire - RCA 15 B: Longton - Bretherton

The sites locality is broadly typical of types and areas at national and regional levels; key features include rectilinear landscape forms and angular woodland blocks. Extensive drainage systems define fields, raised ditches, causeways within flat /gently undulating landform.

At Lancashire level shelterbelts and urban fringe elements are characteristic: the site is surrounded by suburban and industrial age built influences.



Landscape Strategy Character areas and Types for Lancashire



Longton - Bretherton landscape

## 2.0 SITE ANALYSIS

### 2.2 Site Character

To build an understanding of landscape character at a local level a detailed analysis of the principal components was undertaken, the details of which are provide as follows:

#### 1. Enclosed Pasture

Intact high-quality hedgerows, regular field pattern, mature hedgerow.

#### 2. Rough Grazing

Poor quality boundaries, a mix of different fence types and hedges, rough grazing and horses.

#### 3. Open Pasture

Large fields, gappy hedgerows, isolated trees

#### 4. Enclosed Domestic

High quality, well-maintained lane, mature trees, mixed hedgerows with a wet ditch, traditional materials

**Bee Lane West** Domestic properties line the west end, marked Private Lane, mixed boundaries of high quality (hedge, wet ditch with trees, mixed fence types), surfaced lane, mature tree specimens.

**Bee Lane Mid** Surfaced lane with mature hedgerows, tall to north side of road, clipped and short with ditch on the south side, mature hedgerow trees, clipped privet hedge to domestic boundaries.

**Bee Lane East** Surfaced lane, clipped mixed hedge, open views over expansive fields to housing beyond.

**Moss Lane North** Mature mixed hedgerows (species include Hawthorn, Hazel, Elder, Ash and Buckthorn) with ditches, mixed hedge heights and management regimes, surfaced lane leading to properties and footpath to playing field, residential area to north.

**Moss Lane South** Wide grass verge, ditch and clipped low hedges, mixed ornamental hedges and fencing around domestic properties, industrial feel around section of lane near dairy. Lane narrows to unsurfaced track to south end.

#### Lords Lane North

Managed domestic garden boundaries (including ornamental hedging and shrubs, stone and brick walls) to west side of lane, native mixed hedgerow to east overlooking poor quality grazing, isolated large mature hedgerow trees.

#### Lords Lane South

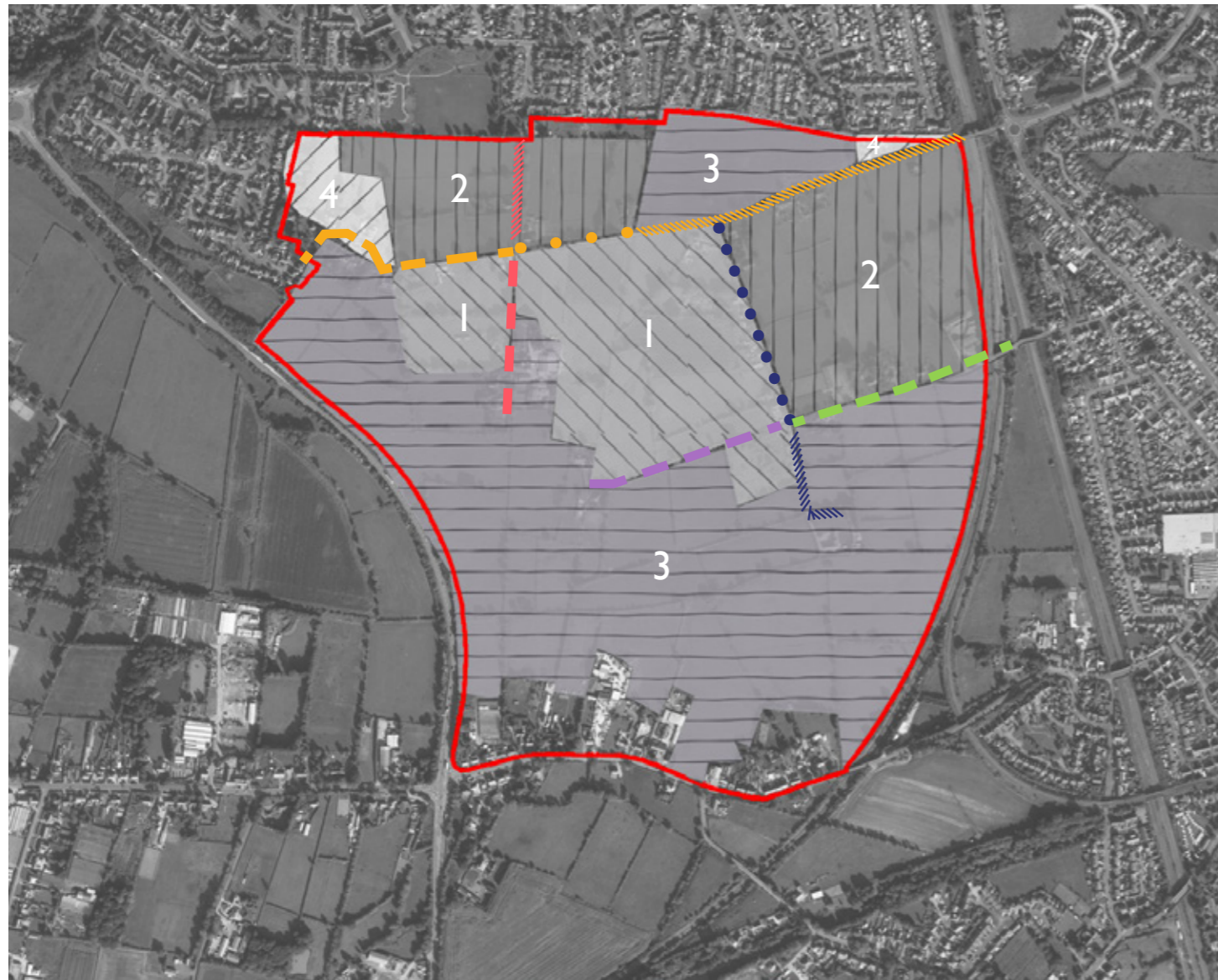
Unsurfaced, narrow rough track with high security fencing around derelict red brick barn and orchard to north end of lane (on west side). Enclosed by hedging further south with high conifer planting to screen large property at end of lane.

#### Nibb Lane

Rough, unsurfaced narrow track with symmetrical hawthorn hedges of medium height to both sides and unmown grass verge. Evidence of hedgerow management (hedge laying) to some sections of hedge) isolated mature trees.

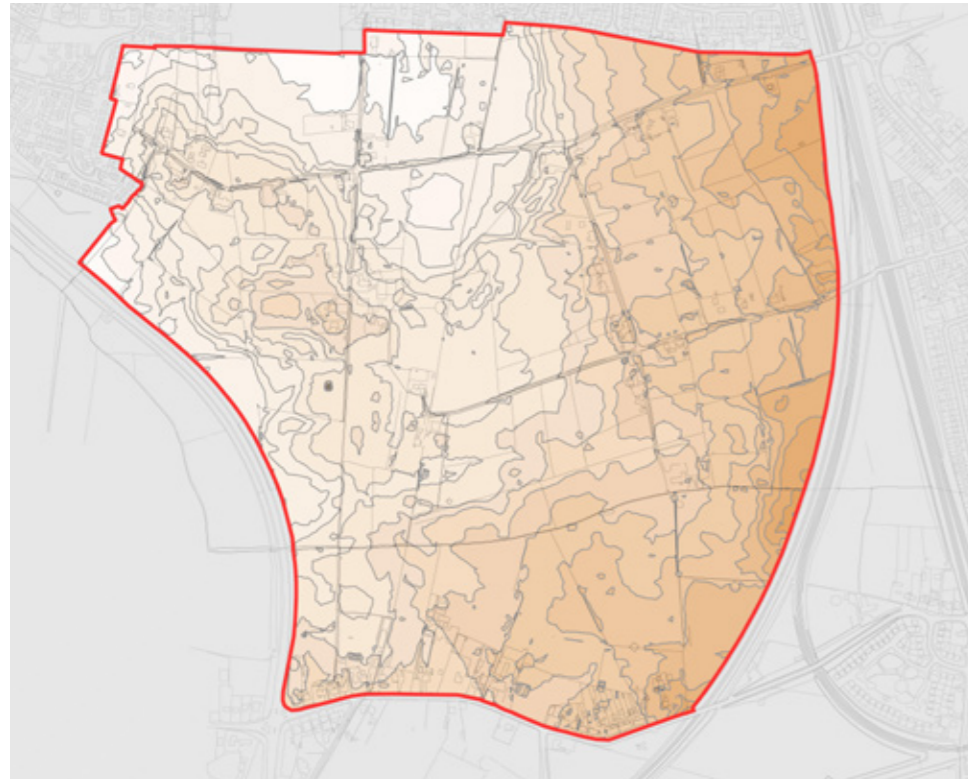
#### Flag Lane

Surfaced lane with built development along both sides, predominately to the north. Equine centre and poultry farm to either end of lane, residential properties with tightly clipped formal privet hedging in-between native hedgerow with trees to opposite side of lane.



Site Character diagram

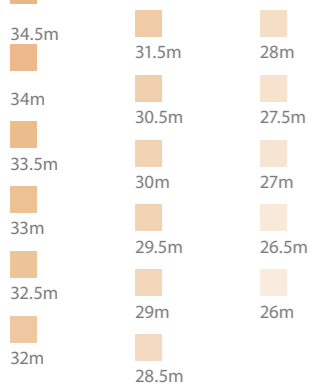
- Bee Lane West
- Bee Lane Mid
- ▨ Bee Lane East
- ▨ Moss Lane North
- ▨ Moss Lane South
- ▨ Lords Lane North
- Lords Lane South
- ▨ Nibb Lane
- ▨ Flag Lane



Topography

Key

Masterplan Boundary



Historical Grain 1848

## 2.0 SITE ANALYSIS

### 2.3 Ground Conditions & Topography

The site has remained largely as undeveloped agricultural land since earliest mapping records with the exception of residential properties and light industrial activities (e.g. dairy farm and garages). Numerous drainage ditches, tertiary water courses and ponds are present across the site, including in-filled pond features.

The gently undulating ground falls broadly from 34m AOD on its eastern boundary to 26m on the western side.

Topographically, the site is relatively flat with occasional areas of undulation including one mounded area of note in a field on the western portion of the site and it is unlikely that bulk earthworks will be required for the creation of development platforms.

Historical borehole records (covering approximately 50% of the site footprint) indicate that ground conditions across the site comprise topsoil to depths ranging between 0.3 and 0.6 metres below ground level (mbgl) overlying generally firm to stiff (locally soft) clay to depths in excess of 6.6mbgl. It is considered that, given the strengths recorded, these clays are likely to provide a suitable founding stratum for low-rise residential houses subject to completion of a detailed site investigation.

It is considered that site features encountered during the site walkover and findings from the desk-based study would not preclude the site's future development.

### 2.4 Historical Grain

The site falls within the post medieval enclosure period. i.e.. period of private enclosures in Lancashire. Description makes reference to Causeways and Windmills in the locality. The grain of the landscape, formed largely by hedgerows and lanes, is broadly north – south and east – west.

## 2.0 SITE ANALYSIS

### 2.4 Pedestrian and Cycle Routes

#### *Public Rights of Ways*

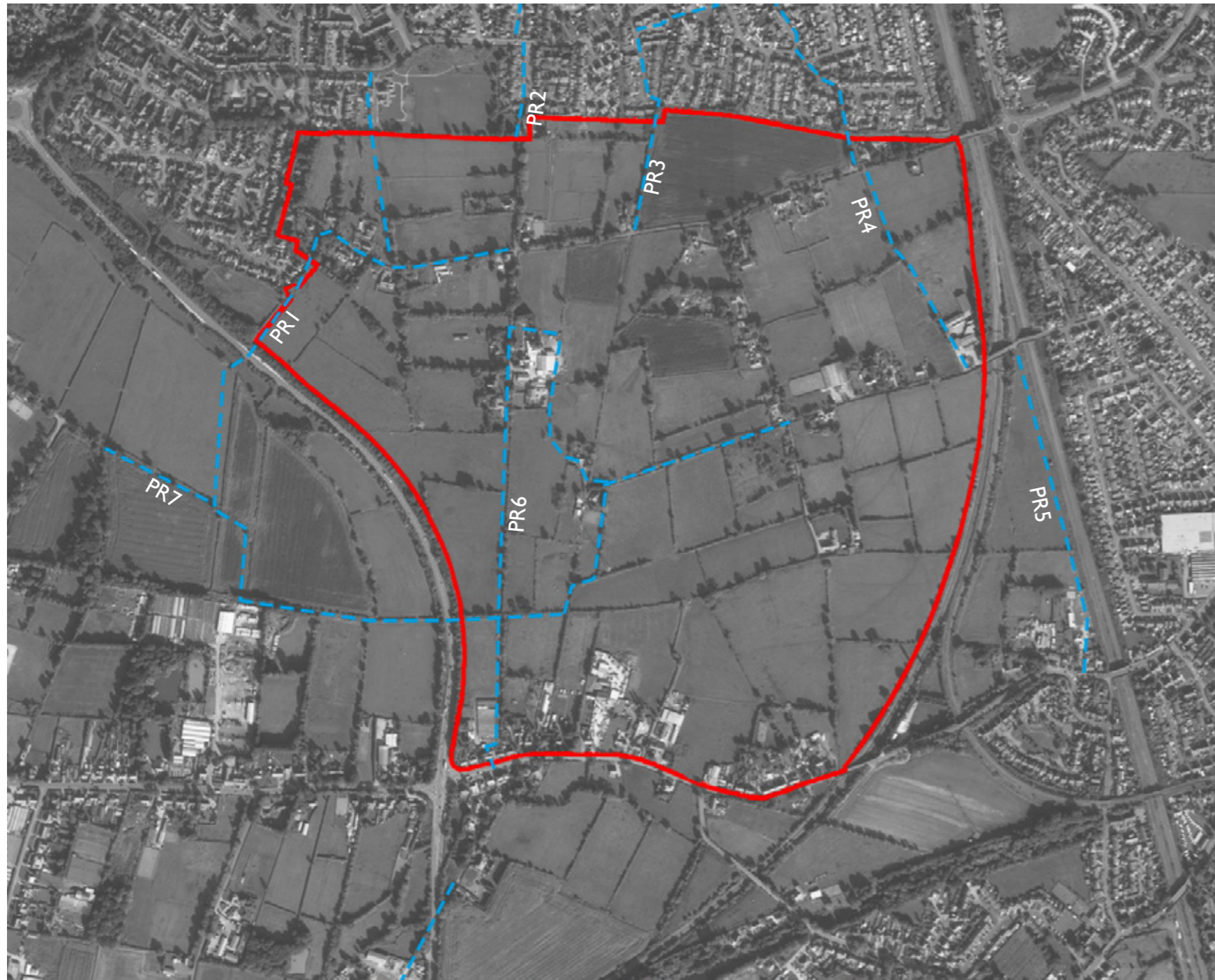
The definitive rights of way and their unique reference codes are indicated on the adjacent plan; both within the site and links to adjacent landscape and existing residential areas.

#### *Cycle routes*

In the context of the site are two national cycle routes (not shown):

Route 62 Preston - Lytham St Annes - Blackpool - Fleetwood runs west of the site from Howick Cross into Preston

Route 55 Preston - Chorley - Adlington runs east of the site from Loctock Hall into Preston.



Pedestrian and Cycle Routes

Public Rights of Ways ——— Masterplan Boundary ———

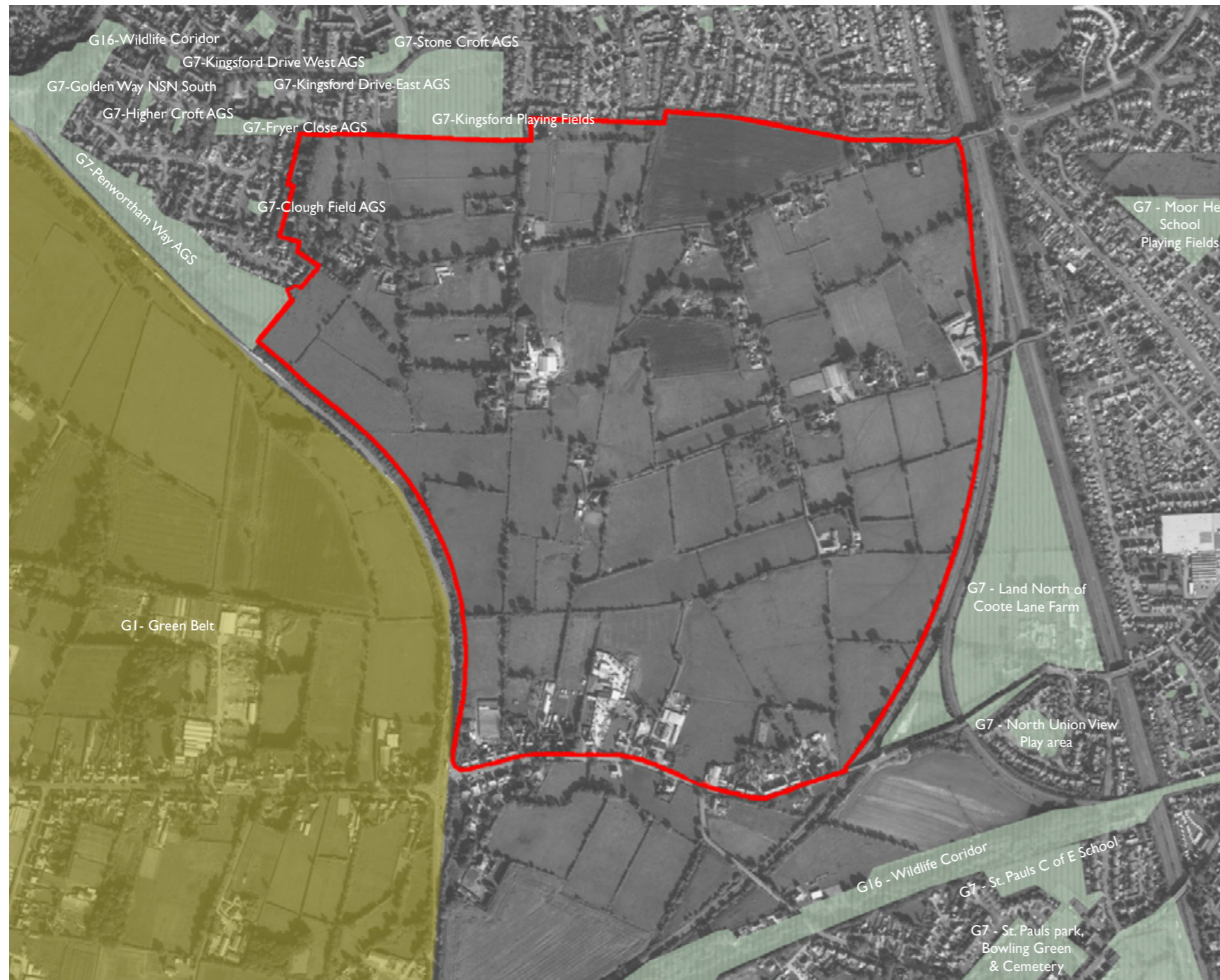
## 2.0 SITE ANALYSIS

### 2.5 Greenspaces

The key green infrastructure features in the context of the site are indicated on the adjacent plan. As is shown the site sits in close proximity to

The Local Plan (2018) has identified the key green infrastructure (their references and names are indicated) as parks and gardens, nature reserves, playgrounds, recreation grounds, playing fields, sports pitches, private and institutional open space, amenity open spaces, allotments, woodlands, green corridors / green wedges, natural and semi-natural greenspaces and wildlife corridors.

Green Belt along Western side of Penwortham Way only (but includes portion of Farington Curve).



Green Infrastructure

— Masterplan Boundary ■ Green Belt ■ Green Infrastructure

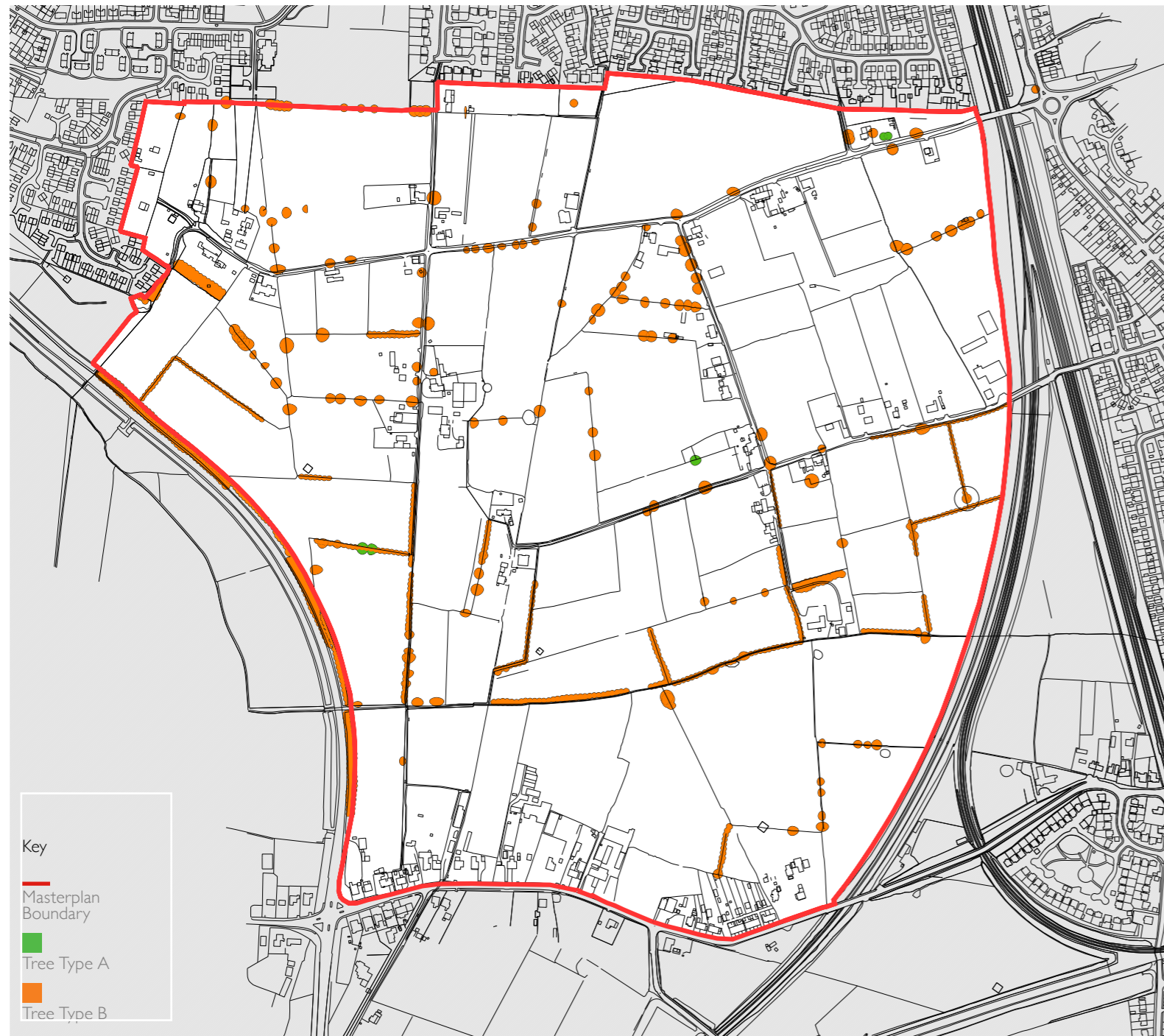


## 2.0 SITE ANALYSIS

### 2.6 Trees

Spread throughout the site are numerous trees that are high quality, these are indicated as Tree Types A in Green. Those of good quality, Type B, are indicated in Orange.

The design team have considered the arboricultural character of the site as a key attribute throughout the development of the Masterplan.



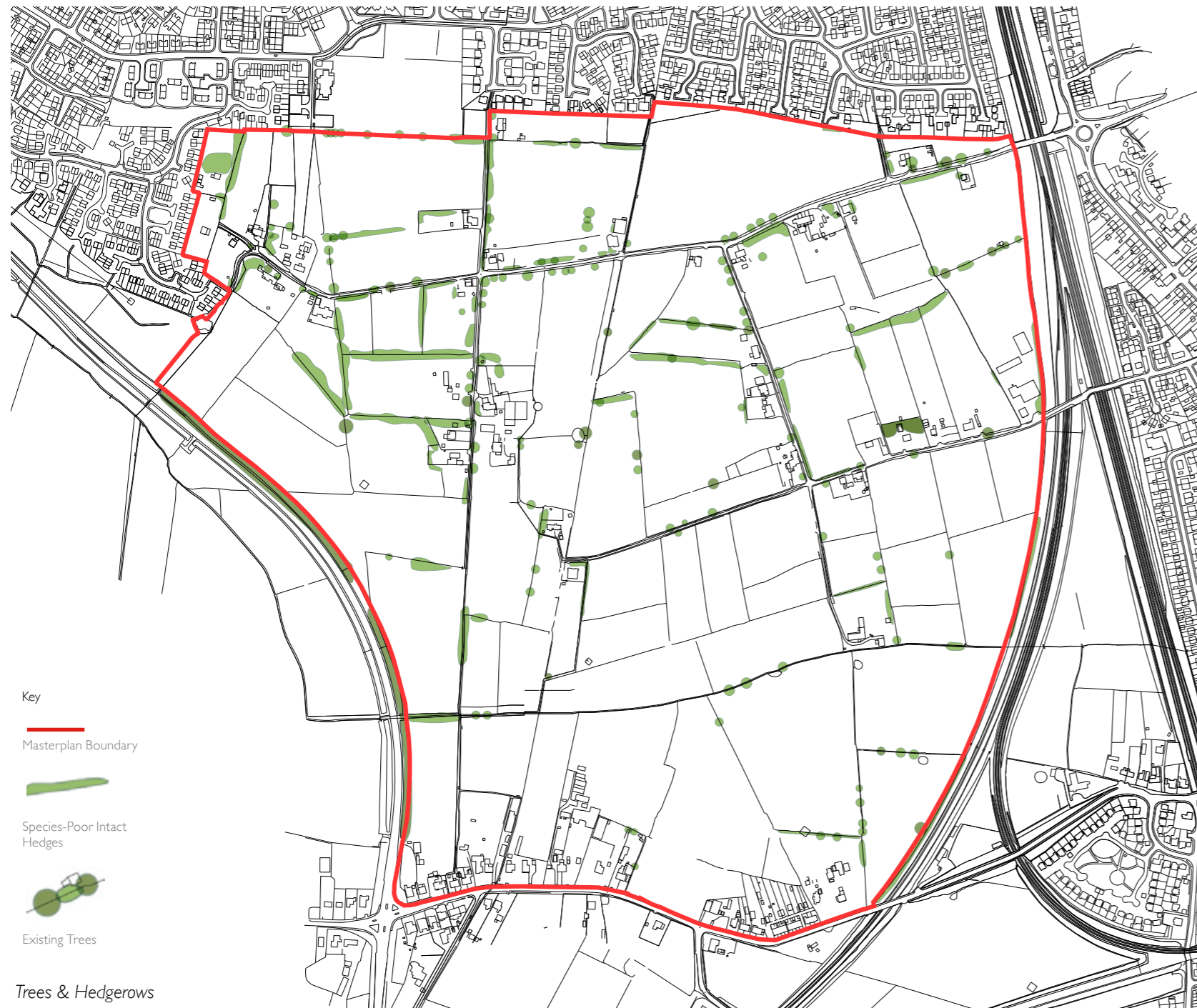
Tree Quality

## 2.0 SITE ANALYSIS

### 2.7 Hedgerows

Hedgerows are important landscape and ecological features at the site. The approximate location and extent of these features are indicated on the adjacent plan. Over 10,000 linear metres are located across the site area, defining field boundaries and minor roadways. They, with associated hedgerow trees, give the low lying landscape a verdant and wooded character.

A number of the hedgerows have been assessed to be 'important' from an ecological perspective.





Local Site Context

## 2.0 SITE ANALYSIS

### 2.8 Key Issues & Design Drivers

The key landscape issues and design influences across the site have been identified as follows:

- The strong character of the lanes on the site (Moss Lane, Bee Lane, Nibb Lane and Lords Lane) which are widely used by existing communities for both circular routes within the existing neighbourhood of Kingsfold and for inter-settlement journeys, for example to Lostock Hall;
- The importance of the western boundary of the site and its interface with the wider Ribble Valley landscape, and Green Belt, to the west of Penwortham Way;
- The significant challenge of the high voltage pylon corridor across the site and the potential for a range of landscape typologies for the positive integration of this feature within future development parcels; and
- The prevalence of straight line landscape forms and patterns in the landscape, and the potential to shape new, appropriate development within this established landscape pattern.

### 3.0 VISION FOR THE SITE

#### 3.1 Landscape Vision

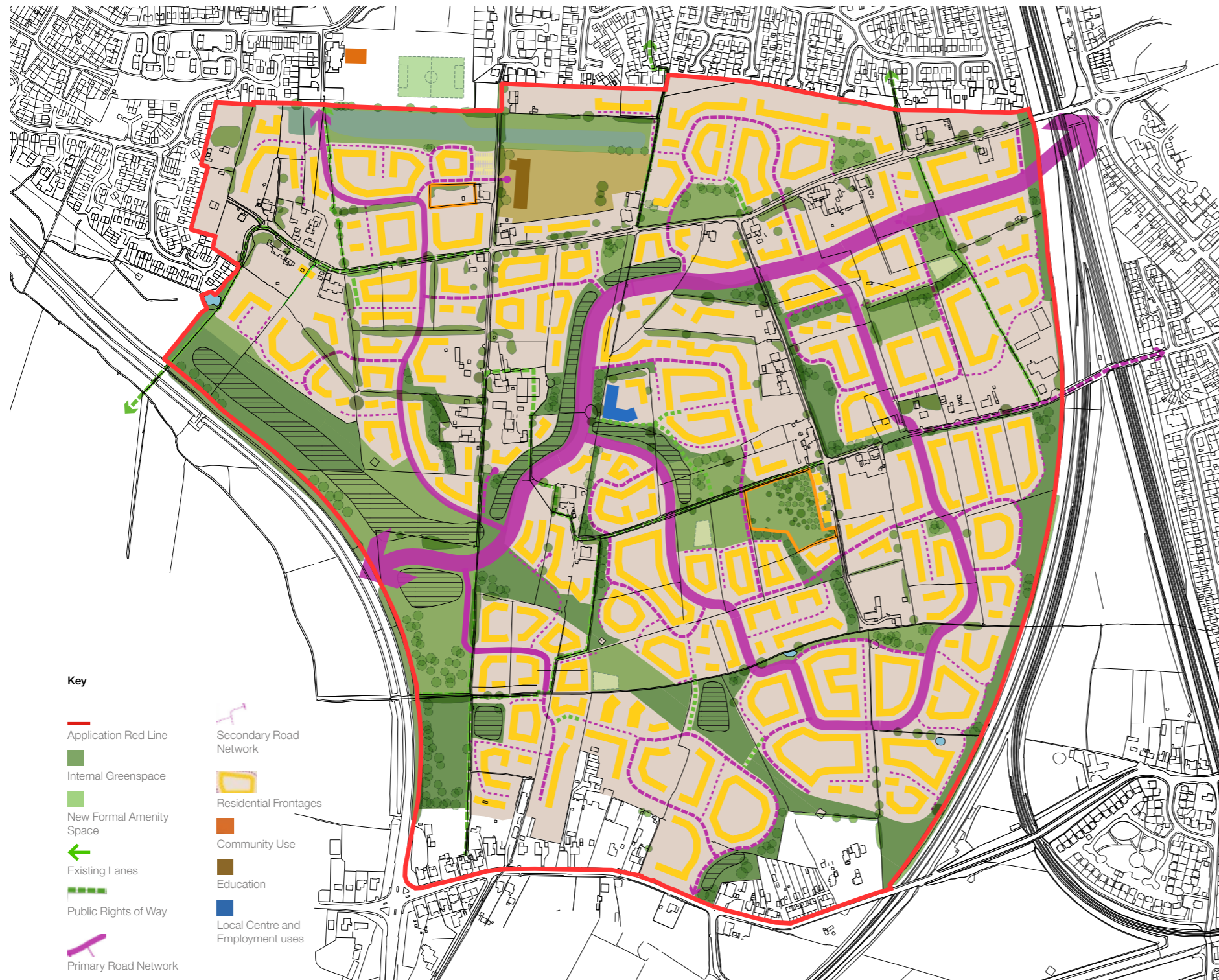
The landscape strategy supports the key themes of the Masterplan Vision:

- A place to settle down, a place for the future
- A new neighbourhood
- A well connected place
- A place that encourages activity
- Garden Village principles

The development will respond to the design drivers identified in the analysis stage and meet the vision for the site by:

- The retention of the lanes as routes primarily for pedestrians and cyclists, both connecting key locations within the site area and providing wider connectivity with the Green Belt to the west and the broader communities of Kingsfold, Middleforth, Lostock Hall and Leyland;
- The retention and integration of hedgerow boundaries within public realm and open spaces to reinforce a sense of place as well as integrate ecological corridors within the structure of the development and connections with the wider landscape to the west, as well as linkages to local green infrastructure, for example Penwortham Way and Kingsfold public open space;
- The shaping of public open space within the development to optimise liveability and useability, for example micro-climate and accessibility; and
- The retention and potential expansion of wet ditches on site with a view to the development of an on-site, integrated water management system (see section on SUDs - page 14).

Through the above a landscape led approach for the masterplan vision has been achieved, one which centres on retaining, enhancing and building on the existing green infrastructure resource to provide a multifunctional system for the new neighbourhood, for the long term. The objectives of a garden community approach have therefore been embodied into the Masterplan at the earliest stage of the process in an exemplary manner.



Landscape Vision



SUDS Examples

### 3.0 VISION FOR THE SITE

#### 3.2 Public Open Space

The landscape strategy will support the delivery of the vision for the site by delivering a range of high quality amenity and natural green public spaces. They will be designed to be fully accessible, safe and inclusive, encourage formal and informal activities, and be rich in character and so support the health and well being of residents. For example by creating attractive public space close to key routes and making sure that public space relates well and is connected with key facilities and landmarks. The use of planting and hard landscape materials will also aid the creation of distinctive, memorable places through utilising specific palettes for different parts of the development (See Section 5.0). In this way the landscape will support a sustainable, cohesive community, welcoming to both existing and new residents.

#### Amenity Green Space

Amenity space will be sited to provide a positive setting to community facilities and at key gateways to the scheme and thresholds within it. A community 'village green' is to be delivered in the heart of the site to provide a centre for community meeting and activity as well as be a distinctive space within the new neighbourhood. To ensure easy access by all residents further pocket parks will be provided at locations within the Masterplan. The spaces will provide for informal use and play as well as opportunities for proximity to nature through the introduction of biodiversity features.

#### Provision for Children

Formal and informal play provision will be an integrated component of the proposed green space ensuring relevant accessibility and walk distance standards are met. The opportunity to play creatively in high-quality environments is essential to the development of children. The quality of what is provided affects the quality of what children learn. The greater the complexity of that environment the greater the quality of learning. There will be suitable provision for both children and young people, offering a range of activities and experiences including natural play opportunities as well as equipped play. They will be located to be safe with good relationships to wider public open space and housing and include wildlife features as well as ornamental components.

#### Allotment / Communal Garden Spaces

There has been an upsurge of interest in food growing in recent years, in response to concerns about food prices, food miles and the environment. People want better access to good, healthy and affordable food, and to enjoy cultivating beautiful green spaces and meeting local people. In support of the garden community vision the landscape strategy has identified locations for an allotment garden located to be easily accessible to local residents close to amenity space and play facilities to support family use and community cohesion.

#### Natural & Seminatural Space

These more naturalistic areas will provide for informal uses natural play, dog walking, nature watching, community woodland and off-road cycling as well as key movement corridors. These greenspaces also naturally align with the sustainable drainage vision for the site, and so create the opportunity for the delivery of ecological features including swales, wetlands and ponds.

### 3.0 VISION FOR THE SITE

#### 3.3 Biodiversity and Bio-corridors

The vision includes the delivery of biodiversity net gain across the site focused within 'biodiversity corridors' where proposed green space is ordered around existing landscape features to create rich wildlife areas within a coherent network which in turn links existing resource to areas outwith the masterplan area. This is so that existing biodiversity can be maintained and enhanced with opportunities for movement of species within and through the site. In this way the development will deliver a step change in the ecological capital of the site drawing together the existing features and significantly enhancing habitat connectivity both within the site and the wider landscape for local wildlife.

Corridors are commonly 20m wide made up of predominately green space. 'Stepping stones features' (less than 20m wide,) can be utilised to link corridors to each other and existing resources. If the stepping stones can be linked with hedges, strips of wildflower meadow or ditches or a mix the stepping stones has the most value. Retaining as much of the existing vegetation as reasonably possible is encouraged. This includes, existing mature trees, hedges, and even previous field boundaries.

The proposed development will therefore incorporate wildlife-friendly features which can be accessed and enjoyed by local residents. So amenity space will be planned to be made-up of more than just mown grassland i.e.. a mixture of native and ornamental tree & shrub planting and new boundaries with native hedges and meadows / wildflower grassland strips. Play areas set in wildflower meadows, woodland walks, and potentially a community orchard. A biodiversity offsetting scheme will be designed to mitigate for habitat losses and enhance opportunities. Taken together these interventions will result in a net gain in biodiversity as a result of the development.

Within the natural and semi natural greenspace on the site, an ecology wildlife area will also be created. This will include habitat areas, woodlands, educational boards, seating and footways etc. This facility will be for the use of the existing community, the new residents of the scheme and local schools.



Bio-corridors

### 3.0 VISION FOR THE SITE

#### 3.4 Pedestrian and Cycle Provision

The transformation of the area within the Masterplan boundary will provide a range of Character Areas, connected by a new network of well-defined streets and public spaces. These areas of formal and informal greenspaces can be located to ensure clear biodiversity corridors as well as pedestrian and cycle routes.

Connecting Kingsfold Community Centre via green corridors to new public green spaces across the site could help provide intuitive linkages throughout.

Additional 'connective' internal greenspace will be provided within the Masterplan area, associated with the key amenity spaces and principal movement corridors as well as Public Rights of Way and hedgerows, with the express intention of delivering a continuous, coherent, green and mature landscape setting for development at the earliest opportunity.

All walkways and Public Rights of Way are to be wide, illuminated spaces with good natural surveillance and attractive spaces. There should be safe and accessible walkways to all bus stops. A distance of around 400m is seen to be a reasonable distance to walk to the nearest bus stop. Around the school there should be an inclusion for safe drop off zones, promoting safer routes to schools and community services.

A circular walking route should be developed as indicated on the adjacent plan.

Cycling a mixture of shared and segregated cycleways should be included on site. With a connection linking to the Sustrans 55 route.



- Key
- Masterplan Boundary
  - Segregated Footpaths and cycleways
  - Shared Footpaths and cycleways
  - Existing Footpaths
  - Circular Footpath

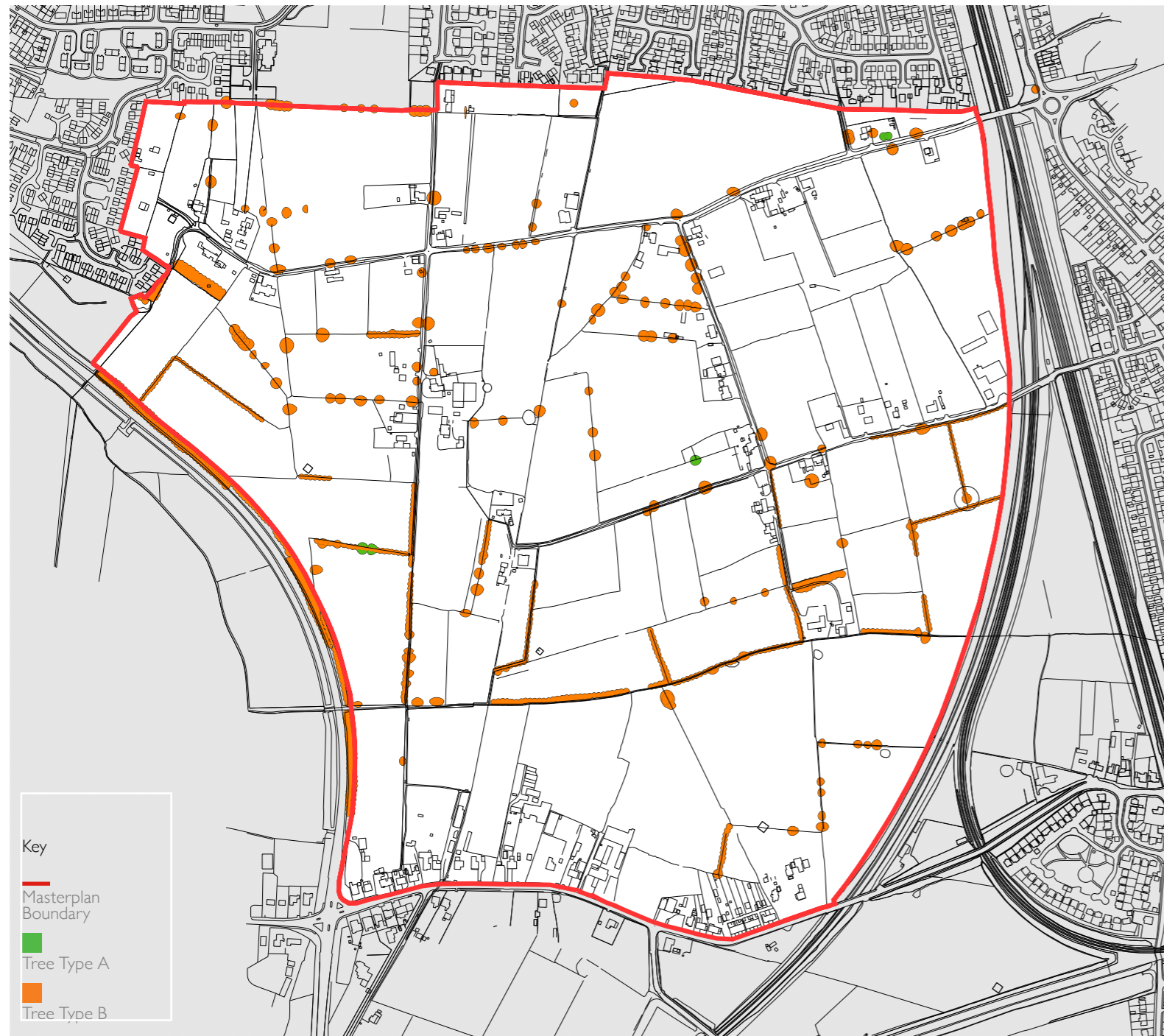
Pedestrian and Cycle Provision

### 3.0 VISION FOR THE SITE

#### 3.5 Trees and Hedgerows

The masterplan will retain all Type A and B trees. These trees will have a buffer zone around their current canopy spread to allow further growth without affecting new development.

Existing species rich hedgerows to be retained will be included within public realm including streets and open spaces. This existing resource will be complemented with the planting of new native hedgerows to form curtilages of new gardens where appropriate, and to form a links between new and existing features to increase connectivity between resource.



Trees to be retained



## 4.0 DEVELOPING THE MASTERPLAN

This section explains how the principles set in the Vision will be delivered into the detail.

### 4.1 Types and location of proposed Green Space

The adjacent Public Open Space (POS) masterplan indicates the extent and location of the different types of proposed green space across the masterplan:

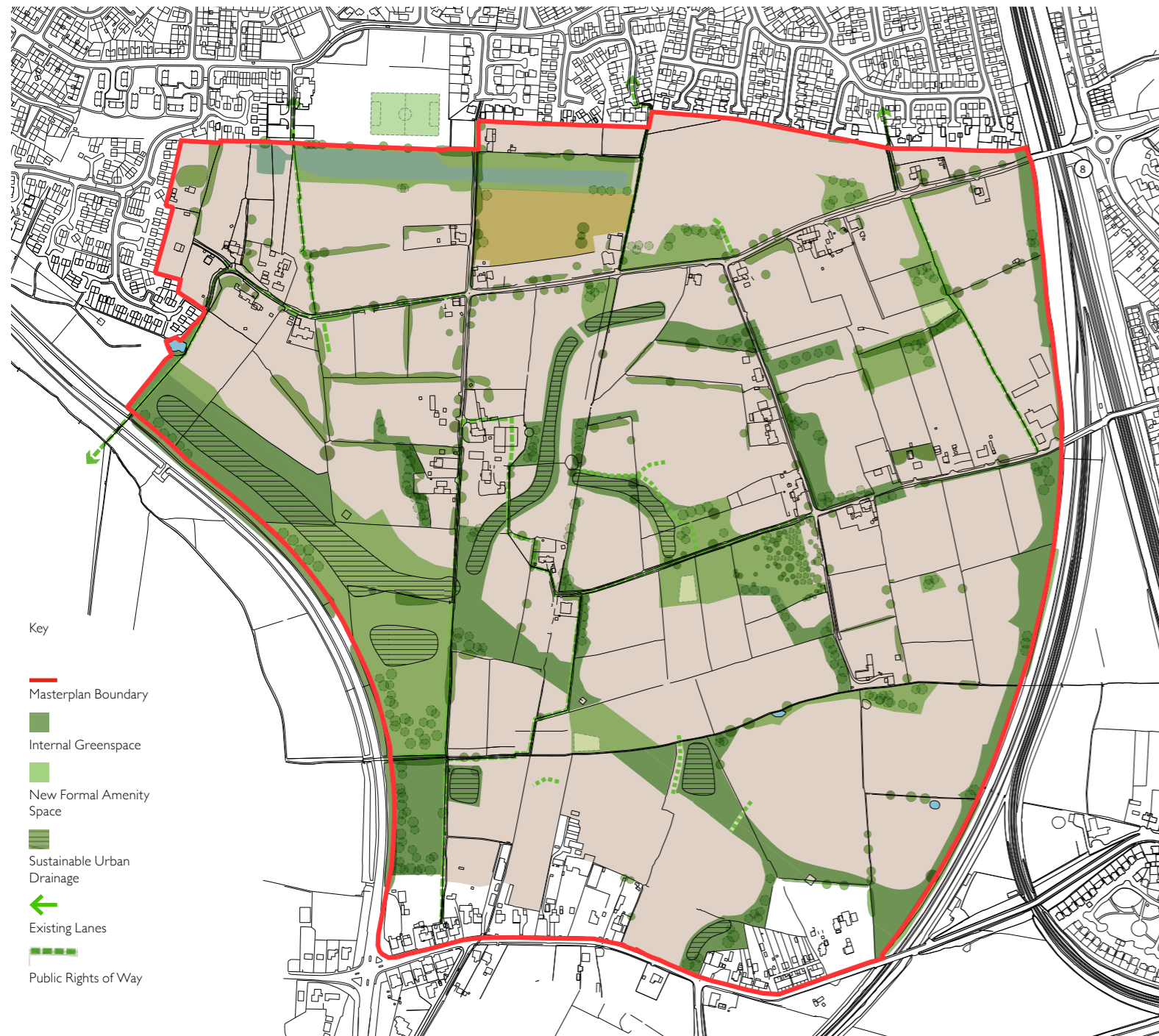
- Amenity Green Space (14.2 ha in total)
- Natural/Semi Natural Space (16.1 ha in total)
- Allotments (0.2 ha in total)
- Provision for Children (LEAP) (0.62 ha in total)
- Swales (1.6 ha in total)

The POS masterplan illustrates how the masterplan will therefore be delivered:

- A generous provision of amenity green space including amenity space for community events at the centre of the site in the vicinity of Nibb Lane, namely the Village green.
- A strong green corridor for the setting of the CBLR through the neighbourhood
- Pocket parks within each local residential area to ensure easy access to green space for all residents
- Positive alignment between POS and The Lanes/ Public Rights of Way network creating attractive, safe routes for active travel.
- Comprehensive provision for children's play and community growing space
- Integrate with the surface attenuation strategy and flood management for the site.
- Substantial expansion of natural green space linking with key existing green infrastructure resource, namely Golden Way Local Nature reserve and Mill Brook.

Indicative layouts for the Village Green and pocket parks are provided at Section 4.4

More information about the quality and character of each area is provided with in the Design Codes at Section 5.0.



Key

Masterplan Boundary

Internal Greenspace

New Formal Amenity Space

Sustainable Urban Drainage

Existing Lanes

Public Rights of Way

Proposed Green Space

## 4.0 DEVELOPING THE MASTERPLAN

### 4.2 POS Contributions and Formal Recreation Provision

#### POS Contributions

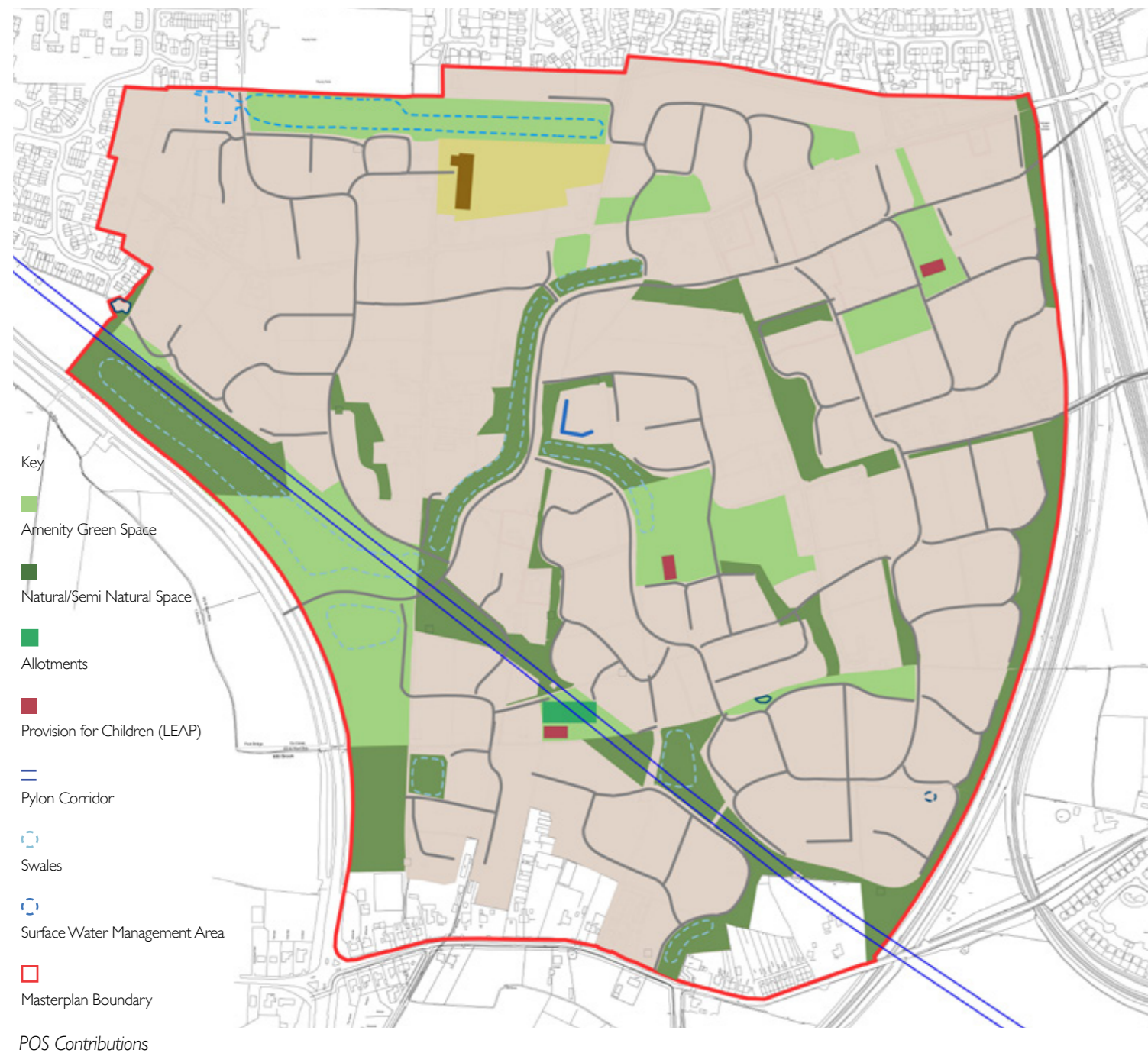
The POS Masterplan have been developed to meet the POS standards for each green space type (typology) as set out in Central Lancashire Open Space and Playing Pitch Supplementary Planning Document (Adopted in May 2014). The adjacent table indicates the policy target for 2,000 dwellings or 4,640 people (based on household occupancy of 2.32 persons in line with the Central Lancashire PPG17 Open Space Study 2012) and the actual provision delivered through the Masterplan.

The table indicates that in all cases where the council seek contribution, the POS requirement is met or is significantly exceeded.

It should be noted that the POS provided underneath the pylons and SUDS are not required to meet the POS policy requirement.

#### Formal Recreation Provision

Following consultation with SRBC and Penwortham Town Council investment for formal recreation provision is proposed at the existing Kingsfold community centre. A 3G pitch to FA Senior standard is proposed here.



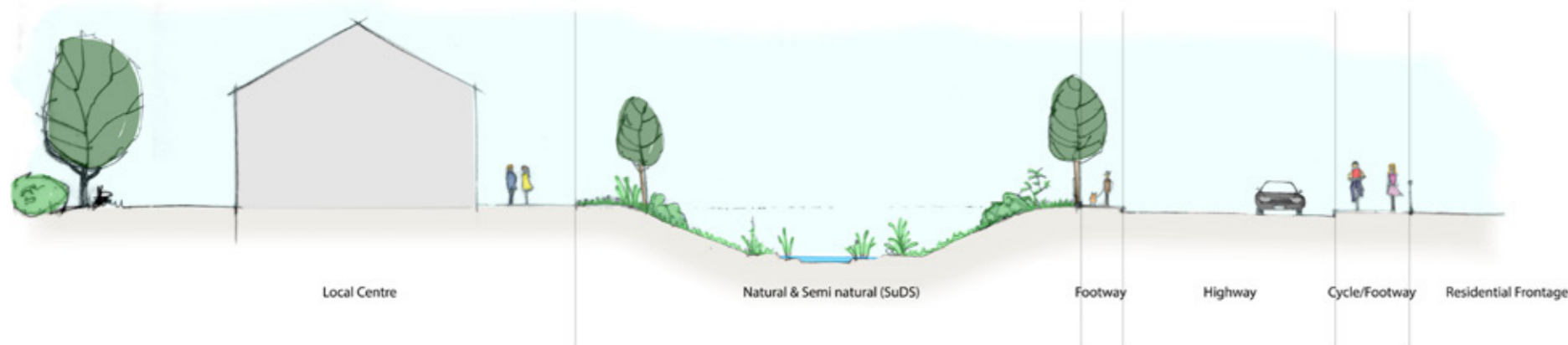
POSTypology	Contribution Required	Amount Proposed by the Masterplan
Amenity Green Space	6.39ha	14.2ha
Provision for Children	0.39ha	0.62ha
Parks & Gardens	N/A (not looking for on-site provision as within 1000m of Central Parks)	n/a
Natural & Semi-natural	9.19ha	16.1ha
Allotments / Community Gardens	0.37ha	0.2ha
<b>Total</b>	<b>16.36ha</b>	<b>30.92ha</b>



**Pocket Park Locations**

The masterplan provides locations for a number of pocket parks. These provide a smaller collection of landscaped areas with opportunity for mown grass and informal play areas within a landscape setting.

**A typical swale**



**4.0 DEVELOPING THE MASTERPLAN**

**4.3. Typical Open Layouts**

The adjacent layouts indicate how the designs of spaces could come forward for the proposed Village Green and a typical amenity green space. A typical treatment for a swale is also included.

**4.4 Supporting Biodiversity Gain**

In order to achieve biodiversity net gain across the site wildlife features are intended to be accommodated within each type of green space utilising the following percentage approach:

**Amenity greenspace**

- Ornamental shrub planting (including hedges) 5%
- Native shrub planting (including hedges) 10%
- Ornamental Woodland (Including Individual trees, tree groups and orchards) 5%
- Amenity grassland 60%
- Rough grassland (including wildflower meadows and swales) 20%

**Natural & Semi natural (Including LAPs)**

- Native shrub planting 15%
- Native Woodland 20%
- Amenity grassland (allowance for maintained margin to roadways and relating to LAPs) 5%
- Rough grassland (including wildflower meadows and swales) 60%

**Play (LEAPs)**

- Hard surfacing 70%
- Native shrub planting (including hedges) 5%
- Ornamental shrub planting (including hedges) 15%
- Ornamental Woodland (Including individual trees, tree groups and orchards) 10%

Flexibility will be needed across the site to enable contextual response to the character areas.

**Swales**

In combination with the surface drainage and flood management strategy for the site a network of swales will be delivered as integrated components of the above areas of green space. Swales are shallow, broad and vegetated channels designed to store and/or convey runoff and remove pollutants. The swales should be integrated into the surrounding land use, for example public open space or road verges. Local wild grass and flower species should be introduced for visual interest and to provide a wildlife habitat.

## 5.0 DESIGN CODES

### 5.1 Character Areas

The Design Code sets out the Character Areas in more detail. In brief, the Masterplan has been divided into smaller zones that have been established based on their context and individual boundary conditions. There are to be five small zones, or Character Areas, of which four wrap around the perimeter with one towards the centre. This is graphically illustrated below. Within each of these areas the look and feel will vary subtly to reflect the existing landscape and buildings. Creating this subdivision creates interest and will ensure a positive contribution to the local area, and prevent a copy-paste style landscape and architecture.

#### **A: Bee Lane East**

The existing red brick terrace houses to the eastern end of Bee Lane provide the character reference for this area. Linear frontages facing the road in more traditional materials.

#### **B: Bee Lane West**

The rural character of the existing buildings becomes more informal in this area, with dwellings set back from the road, and a collection of both direct fronting and side fronting properties.

#### **C: Penwortham Edge**

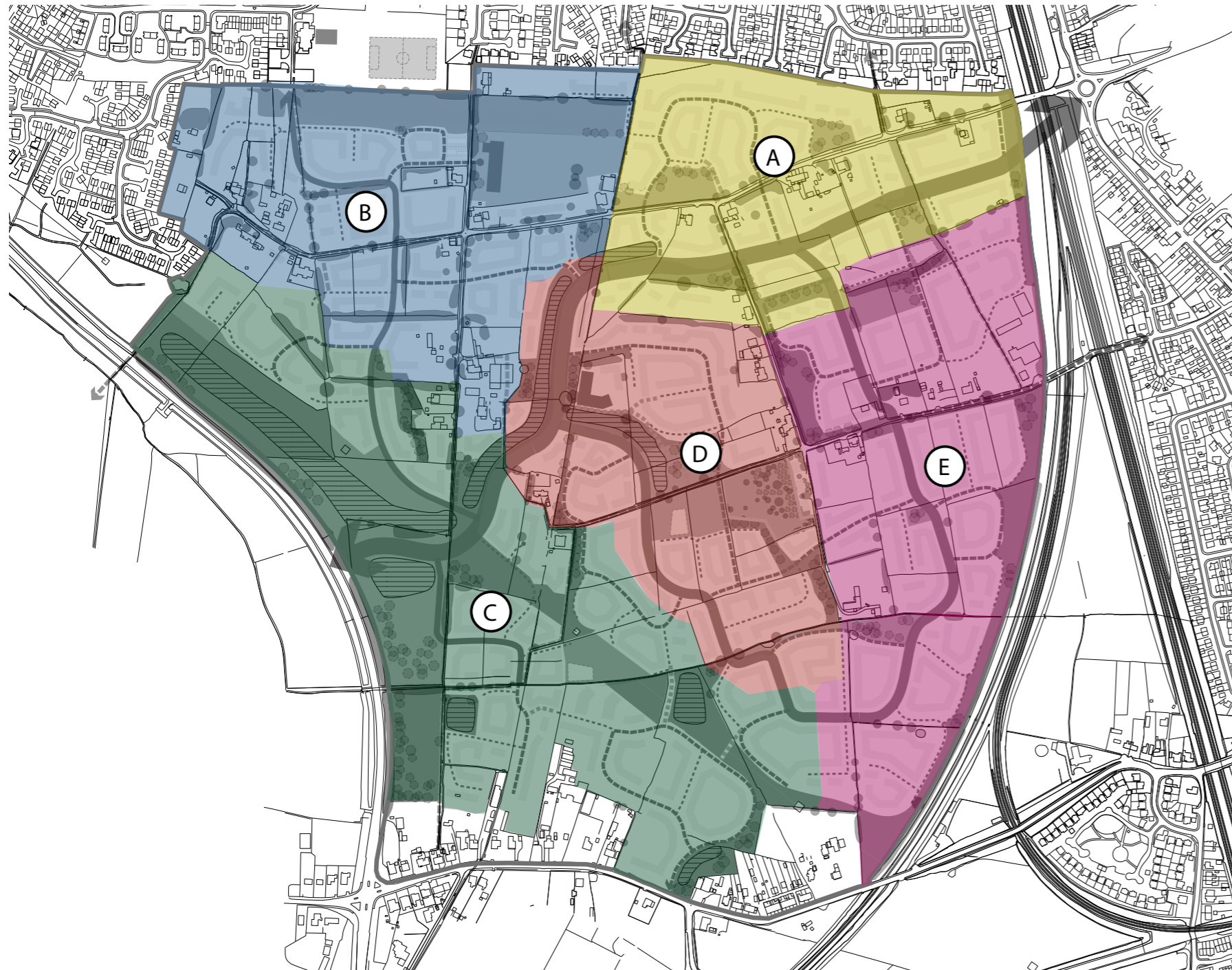
The most rural and green of the 5 character areas, the character of this development is typically 2 to 3 stories, surrounded by landscaped areas. This area is the interface to both Penwortham Way and visually to the Green Belt beyond.

#### **D: The Heart of the Lanes**

This area is more modern in character, using quality materials and detailing to create a new identity for 'The Lanes' and form the heart of the community.

#### **E: The Urban Edge**

Of all the areas, the existing field pattern boundary is the most rectilinear; this area has the least existing context and can be more urban in character.



## 5.0 DESIGN CODES

### 5.1 Bee Lane East

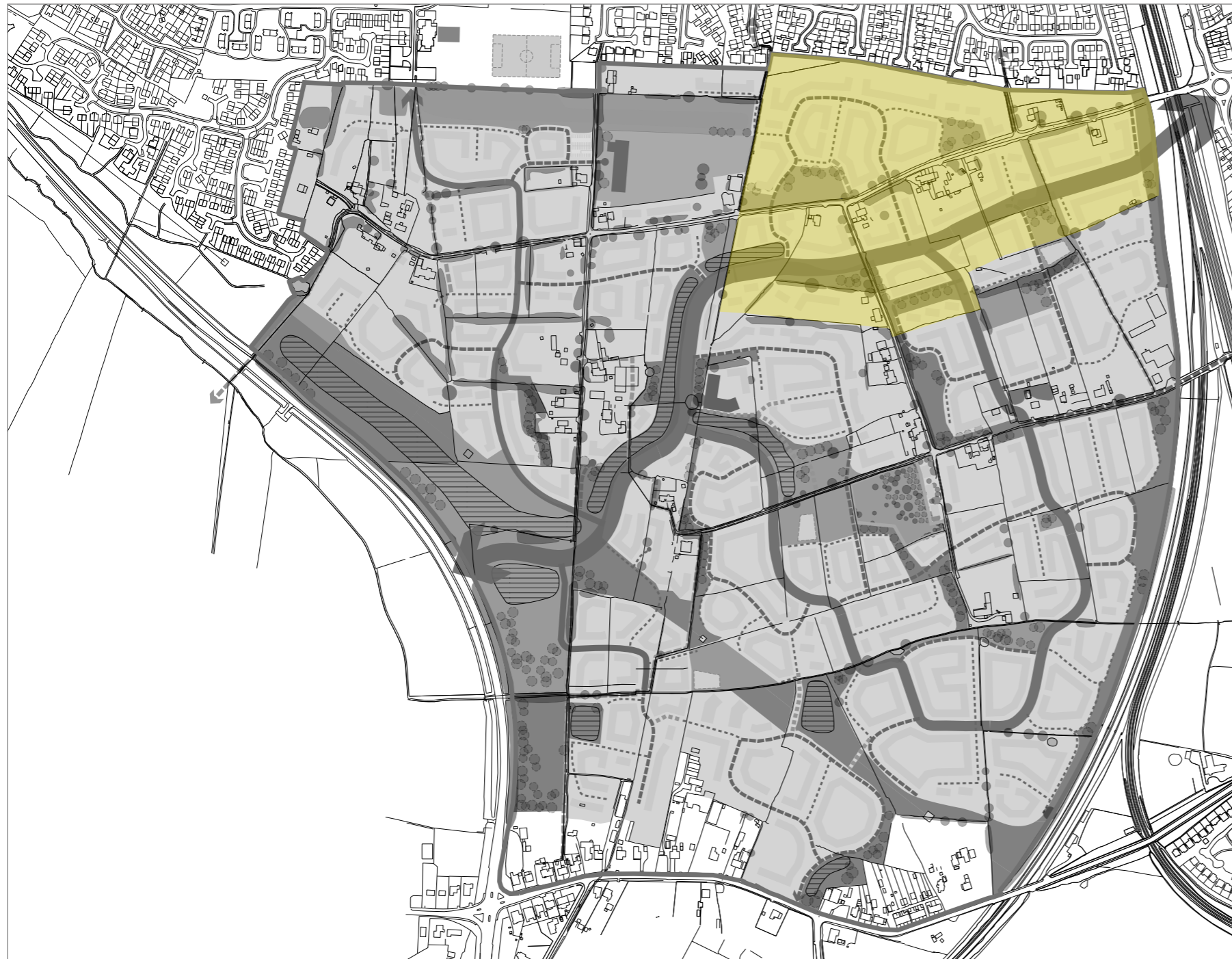
Located in the north east of the site adjacent to Bee Lane, this flat expanse of low density housing will realise the opportunity to knit together degraded and fragmented existing landscape elements which includes high value native hedgerows and mature trees.

This area will take its character reference from the existing dwellings from within the site perimeter. Bee Lane is predominately fronted by linear terraces facing directly onto the road. The red brick properties give a distinct and traditional character to the area that is to be preserved.

The typology is predominately terraced dwellings; the urban form sets the buildings close to the road and parallel to the road.

Parking is generally on driveways at the front and to the side of the properties with boundary treatments of native hedge species to reflect the existing typology.

The hard material palette will comprise of natural tones, reds and brindle to match the existing fabric and landscape character.



The extent of the Bee Lane East character area.



Existing Area Character with terraced red brick and brindle housing along Bee Lane



Existing mature hedgerows and the use of marker trees.



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**Key**

1. Tarmacadam for all road areas with white and beige coloured aggregates in feature areas.
2. A variety of paving and grassy edges
3. Keyblock brindle paving for feature areas (subject to adoption)
4. Tegular heather paving for feature areas (subject to adoption)
5. Grassy margins to edges of streets
6. Opportunities for wildflower planting marking road side verges and edges of amenity spaces

## 5.0 DESIGN CODES

### 5.1 Bees Lane East

#### Landscaping and Paving

Located in the north east of the site adjacent to Bee Lane, this flat expanse of low density housing will build on established character of Bee Lane including retention of existing landscape elements; that is the landscape structure of native species rich hedgerows and mature albeit isolated, trees which line the lane and associated grassy margins, as well as existing Public Rights of Way. New roadways to the new housing area will have grass verges.

The character area will predominately include new amenity green space, ordered along Bee Lane, incorporating SUDs as well as provision for children. Semi-natural space will be delivered along the interface of the development with the railway (eastern boundary).

#### Materials

- The hard material palette will comprise of gentle greys, reds and brindle tones to reference the strongly red palette of existing fabric.
- High quality hard landscape materials using a range of man-made surface materials to articulate street hierarchy and movement patterns to adoptable standards, including tarmacadam and some feature block paving
- Colour palette of reds and brindle tones with a range of unit sizes / orientation to differentiate car parking and pedestrian only areas;
- Flush/low kerbs and edges (in matching materials) and careful positioning of street trees to emphasise pedestrian and cycle priority and reduce vehicle speeds

#### Hierarchy of highway material selection

##### Primary Streets

Carriageways;

##### Secondary Streets

Macadam carriageways;

##### Tertiary Streets / Private Shared Driveways

Macadam / Tegular paving at focal points (subject to South Ribble Council adoption)

##### Pavements

Macadam;

#### Vegetation/Biodiversity Enhancements

- Existing landscape structure to be retained and enhanced where possible;
- New native hedging and amenity grass banks to new green garden boundaries defined by mixed hedgerows, mirroring existing character on site.
- New tree cover along the link road to include Oak and Maple cultivars to create strong seasonal interests in red tones.
- Marker trees within streetscenes to be Maple cultivars.
- Use of trees and vegetation to help determine/establish street hierarchy from Primary to Tertiary.
- Inclusion of nest boxes in gardens.

## 5.0 DESIGN CODES

### 5.2 Bee Lane West

In the north west corner of the site adjacent to Bee Lane and Lower Penwortham, there will be medium density housing with a more mature character to tie into the existing mature vegetation within the landscape character area.

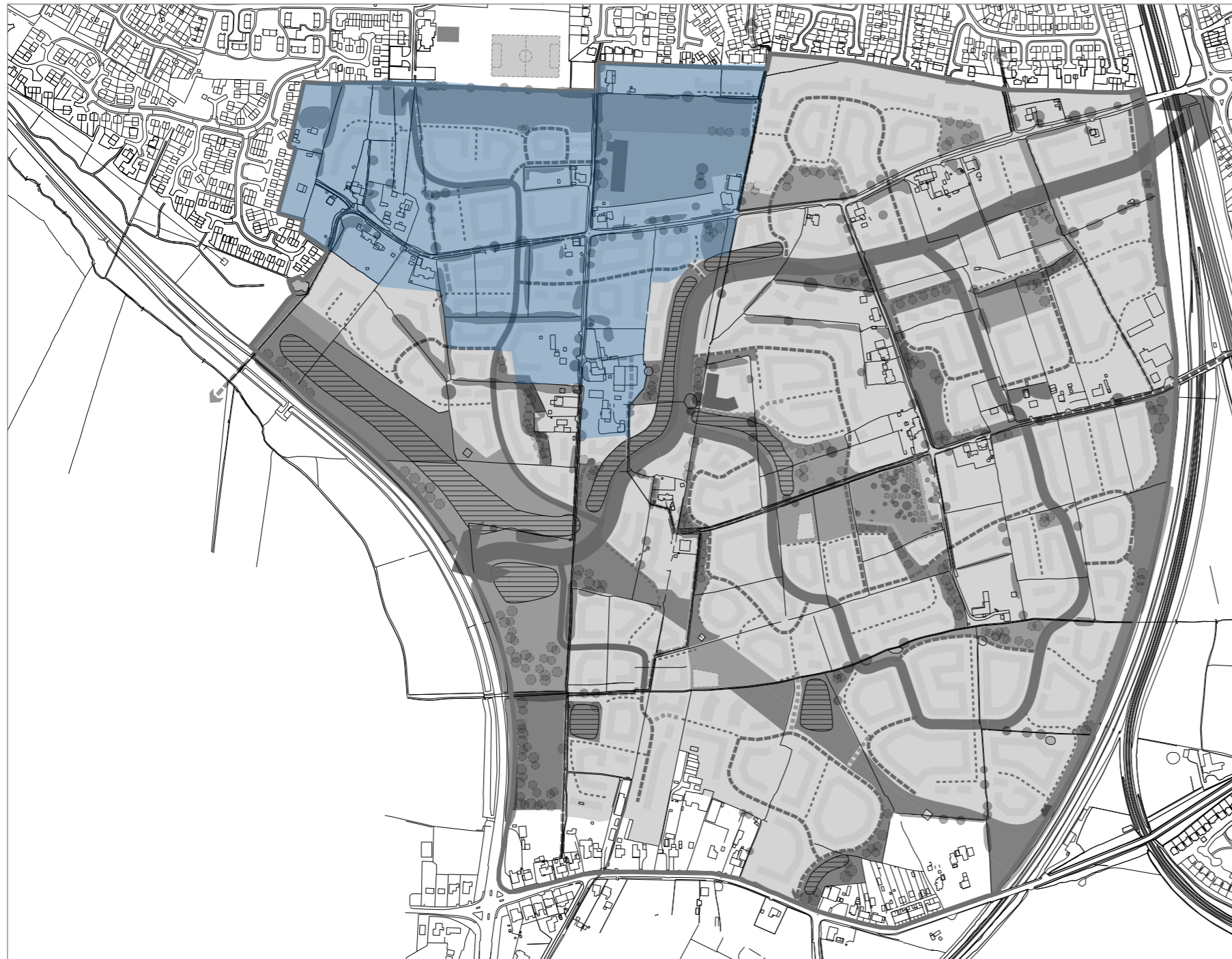
This part of the site is characterised by native hedge and mature tree boundaries

The area will include both the school and the Apprentice Skills Centre /community centre, and the residential form should take a lead from the design of these; i.e. a more open pattern language with more honest and authentic detailing.

In the north west corner of the site adjacent to Bee Lane and Lower Penwortham, there will be medium density housing with a more mature character to tie into the existing mature vegetation within the landscape character area.

This part of the site is characterised by native hedge and mature tree boundaries

The area will include both the school and the Apprentice Skills Centre /community centre, and the residential form should take a lead from the design of these; i.e. a more open pattern language with more honest and authentic detailing.



The extent of the Bee Lane West character area.



Existing Area Character  
Mature and rich hedgerows along Bee Lane, a housing sample on Bee Lane plus, an existing mature feature Oak Tree.  
The Lanes, Penwortham | Landscape Strategy24



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**Key**

1. Tarmacadam for all road areas with white and beige coloured aggregates in feature areas.
2. Keyblock vintage bracken paving for focal points (subject to adoption)
3. Keyblock cedar paving for feature areas (subject to adoption)
4. Hazel to be used in hedgerows
5. Blackthorn to be used in hedgerows
6. Hawthorn to be used in hedgerows
7. Existing pockets of bluebells are to be replicated in amenity green space

## 5.0 DESIGN CODES

### 5.2 Bee Lane West

#### Landscaping and Paving

In the north west corner of the site adjacent to Bee Lane and Lower Penwortham, there will be medium density housing in a more organic style to tie into the existing character of the area. This part of the site is characterised by native hedge and mature tree rectilinear boundaries, much of which are intact and will be retained to provide a mature setting for new as well as existing development. The existing lanes will be retained and enhanced for sustainable movement purposes and new routeways will be predominately small scale and respond to this existing character of the residential area with greened residential boundaries of naturalistic species. Existing Public Rights of Way will be retained and integrated within the existing green infrastructure framework.

The northern extent of the character area (adjacent to Kingsfold Playing Fields) will be designed for surface water storage purposes. The character area will predominately include retention of existing green infrastructure features as well as the flood management area to the north, which will be framed by informal public open space to provide a naturalistic boundary to Kingsfold playing fields and new residential areas as well as play provision.

#### Materials

The hard material palette will comprise of natural tones, buffs and greys which will draw together the range of existing architectural fabric in the locality, their rustic qualities, and be appropriate with the mature wooded nature of the landscape setting.

- High quality hard landscape materials, a combination of man-made surface materials;
- Small, domestic, pedestrian and cycle friendly streets;
- Colour palette in natural buff - red tones which aligns with existing architecture on site along Bee Lane;

#### Hierarchy of highway material selection

Primary Streets

Macadam carriageways;

Secondary Streets

Macadam carriageways;

Tertiary Streets / Private Shared Driveways

Macadam / Tegular paving at focal points (subject to adoption)

Pavements

Macadam;

#### Vegetation/Biodiversity Enhancements

- Concentration of 'important' native hedgerows located in the north west corner of the site to be retained
- Feature trees to mirror existing Ash trees along Bee Lane and Oak trees along the northern boundary of the site;
- Semi-natural space to include wildflower meadow planting with pockets of bluebells which are currently found on site.



## 5.0 DESIGN CODES

### 5.3 Heart of the Lanes

The central area of the site will be made up of higher density housing centred on a village green and Local Centre. This will form the heart and identity of the Lanes development.

The Village Centre will have good frontage on to the CBLR and good visibility from the entrance to the site. It will also relate well to the pedestrian movement from Kingsfold to the village green.

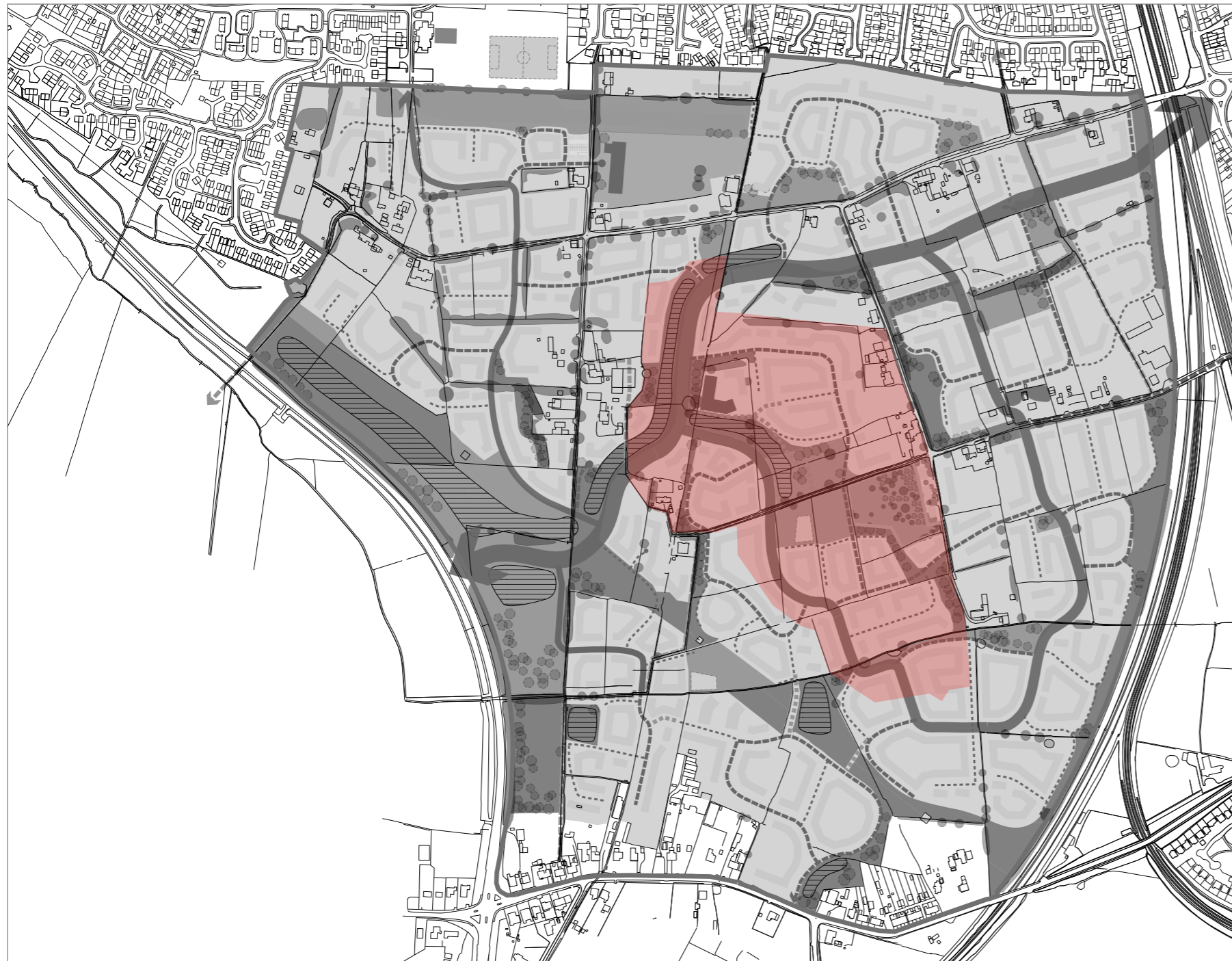
The area will have a suburban feel with a mature character due to retained trees, hedges and amenity green space verges along Flag Lane and Lord's Lane ensuring the existing landscape pattern is retained.

The area is well connected by pedestrian and cycle routes as well as being predominate on the CBLR extension.

The remaining green space will have an open, flexible feel with open amenity space receding into meadow / wild grassland boundaries, encouraging natural play. Existing vegetation will be developed for the creation of an edible landscape to encourage sustainable food production.

The area contains a mixture of use classes, including residential, retail, commercial, employment, leisure and community. The buildings are modern in character, with a height up to 4 storeys.

The hard material palette will comprise of red and brindle tones to replicate a semi-urban feel, with high quality materials used in the central communal areas.



The extent of the Heart of The Lanes character area.



Existing Area Character  
Existing red brick terraced housing on Lords Lane and mature hedgerows along Lord's Lane.



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**Key**

1. Tarmac for all road areas with red and white coloured aggregates in feature areas.
2. Keyblock brindle paving for feature areas (subject to adoption)
3. Keyblock cedar paving for feature areas (subject to adoption)
4. Orchard Tree planting
5. Woodland Edge Planting
6. Meadow Boundaries
7. Opportunities for wildflower planting marking road side verges and edges of amenity spaces

## 5.0 DESIGN CODES

### 5.3 Heart of the Lanes

#### Landscaping and Paving

The central area of the site will be made up of higher density housing centred on a village green and community events space with a Local Equipped Area Play provision for children. Some areas will have a mature character due to retained trees, hedges and amenity green space verges associated with Nibb Lane and Lord's Lane where the existing landscape pattern and sustainable movement corridors are retained. New landscape infrastructure will also be delivered in this character area; semi-natural space with swales associated with new road infrastructure and amenity green space at the village green which will include productive landscape (an Orchard) and be open for flexible use with meadow grassland and woodland edge boundaries, encouraging natural play.

#### Materials

- The hard material palette will comprise of crisp red and brindle tones to create a semi-urban feel.
- High quality hard landscape materials, a combination of man-made surface materials to differentiate spaces and intended use;

#### Hierarchy of highway material selection

##### Primary Streets

macadam carriageways;

##### Secondary Streets

Macadam carriageways;

##### Tertiary Streets / Private Shared Driveways

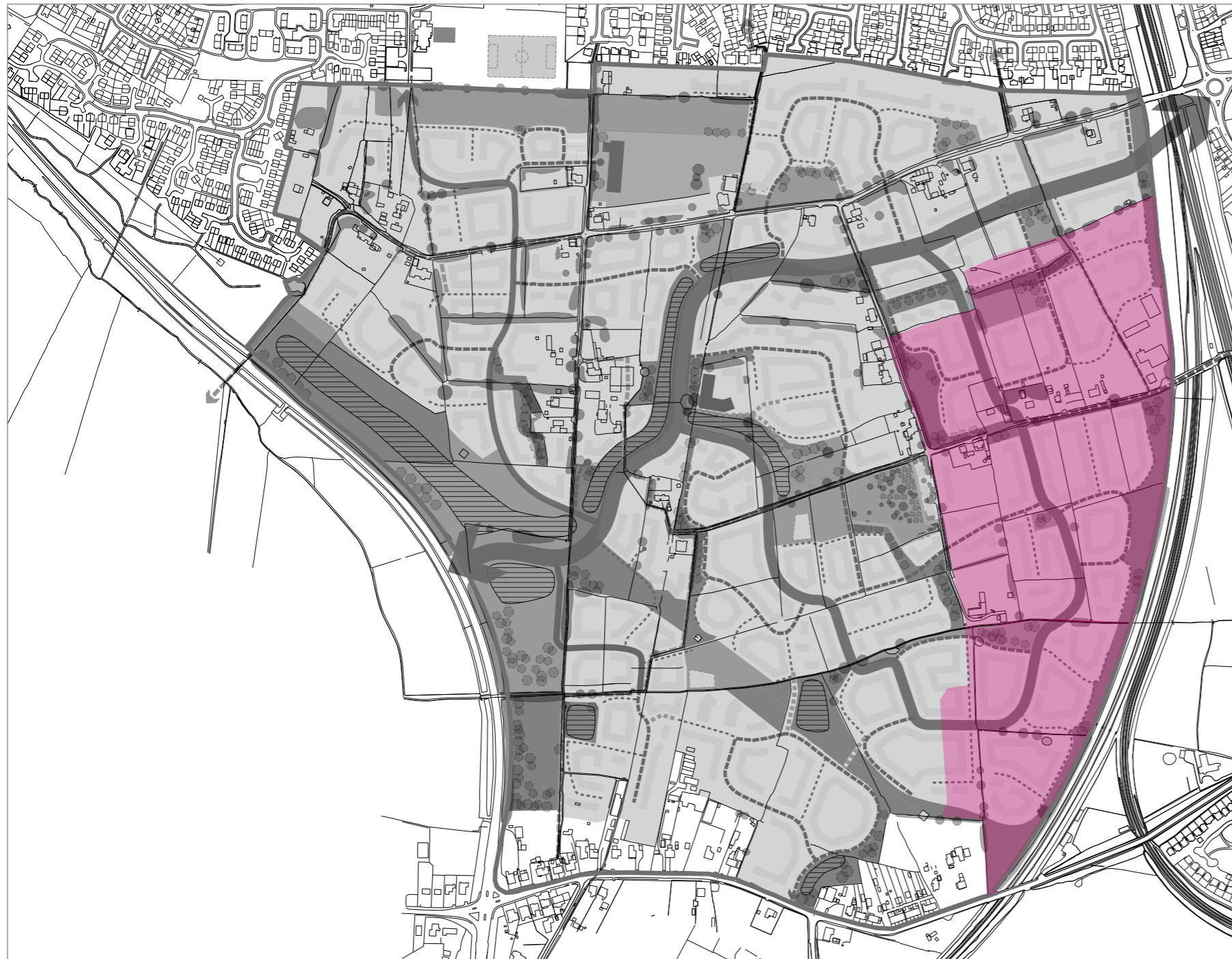
Macadam / Tegular paving at focal points (subject to adoption)

##### Pavements

Macadam;

#### Vegetation/Biodiversity Enhancements

- Existing biodiversity to be retained and enhanced where possible;
- Clipped hedgerow garden and field boundaries, retaining mature planting where possible;
- Village green amenity and green space to include communal planting (Orchard);
- Mosaic of habitats in green space to filter into residential streets (via hedges, street trees, gardens);
- Use of trees and vegetation to help determine/establish street hierarchy with use of oaks, ash and alder trees building on the existing species found on site;
- Swales integrated into open space
- Removal of invasive species (Japanese Knotweed).



The extent of the Urban Edge character area.

## 5.0 DESIGN CODES

### 5.4 Urban Edge

The historic field patterns give an orthogonal, more gridded approach to the urban layout.

Macadam will be used for the primary streets whilst grey key block and Tegula setts can be used for some feature areas of the secondary/tertiary streets subject to LCC adoption criteria.

The eastern extent of the site adjacent to the railway line will have a tighter grain with a higher density, linear and urban feel with a natural/grey colour palette.

The area will have a contemporary suburban feel with modern and elegant materials forming rich and characterful architecture. The massing within this area is to be up to a height of 4 storeys.

In comparison to the rest of the site, there is minimal mature vegetation, with the predominant tree species being Ash. There will be a substantial amenity and natural green space provision, with a planted margin providing a buffer against the railway boundary.



Existing Area Character  
Rectilinear and formal hedgerows with existing clipped and unclipped mature hedgerows.



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Key

1. Tarmacadam for all road areas with white and grey coloured aggregates in feature areas.
2. Tegular Slate paving for feature areas (subject to adoption)
3. Grey Lotis paving for driveways and feature areas (subject to adoption)
4. Blacthorn to be used in hedgerows
5. Rosehip to be used in hedgerows
6. Acai tree planting
7. Hawthorn to be used in hedgerows

## 5.0 DESIGN CODES

### 5.4 Urban Edge

#### Landscaping and Paving

The eastern extent of the site adjacent to the railway line will have a tighter grain. The general absence of mature landscape features provides the opportunity for character creation and as such a muted palette of grey-blue colours are proposed to offer a crisp setting to the proposed modern architectural building façades. Semi-natural green space is proposed along the interface with the railway line with east-west provision to provide green infrastructure to connectivity. To the northern amenity green space is orientated alongside road infrastructure and includes swales, a LEAP and Public Right of Way connecting Kingsfold with Lostock Hall. Given the opportunity for character creation, there is a particular opportunity to create public greening with fruiting/productive species.

#### Generally

High quality hard landscape materials, a combination of manmade surface materials; Colour palette in greys and natural tones to emphasise semi-urban feel with a range of unit sizes/orientation to differentiate street uses (car parking, highway, pedestrian only);

#### Hierarchy of highway material selection

##### Primary Streets

Macadam carriageways;

##### Secondary Streets

Macadam carriageways;

##### Tertiary Streets / Private Shared Driveways

Macadam / Tegular paving at focal points (subject to adoption)

##### Pavements

Macadam;

#### Vegetation/Biodiversity Enhancements

- Existing biodiversity to be retained and enhanced where possible;
- Regular street trees of Ash, Pear and Apple with a single species hedging to form a simple vegetation palette for streetscenes. Single species hedges to be hawthorn, hornbeam and hazel.
- Removal of invasive species (Japanese Knotweed).
- Inclusion of nest boxes in gardens.

## 5.0 DESIGN CODES

### 5.5 Penwortham Edge

The south western extent of the site will have a very rural feel with a significant buffer of natural green space referencing the neighbouring green belt beyond Penwortham Way.

Within this zone, there can be a mixture of architectural styles and materials that form the gateway, with a strong landscape entrance as a visual marker for the whole development.

The character area will comprise of low density housing set out around a network of amenity green space. A significant portion of natural green space will include swale and wetland areas.

There will be a selection of resilient materials and techniques which will incorporate the use of sustainable drainage design with a diversity of plant species that tolerate climatic extremes.

Tree planting within the natural green space provision will include oak, elm, lime, poplar, ash, hawthorn and cherry, which can already be found along the Penwortham Way boundary.



The extent of The Penwortham Edge character area.



Existing Area Character  
Characterful red brick architecture along Chain House Lane, mature vegetation along Penwortham Way and existing clipped hedge garden boundaries on Chain House Lane.



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**Key**

1. Tarmacadam for all road areas with white and beige coloured aggregates in feature areas.
2. Keyblock burnt ocre paving for feature areas (subject to adoption)
3. Tegular heather paving for feature areas (subject to adoption)
4. Semi Natural Grassland landscape
5. Naturalistic grassy margins to edges
6. Homes with good outlook over more natural and planted landscaping

## 5.0 DESIGN CODES

### 5.5 Penwortham Edge

#### Landscaping and Paving

The south western extent of the site will have a transitional character as the interface between the settlement and wider rural landscape west of Penwortham Way. This green corridor extends the full length of the site and connects the north west corner of the site with the south west at Coot Lane. Residential neighbourhoods will define the eastern side of the character area and the corridor itself will comprise of a patchwork of semi-natural space, amenity open space and allotments, and incorporate play provision. A significant portion of natural green space will include swale area for surface water attenuation.

Tree planting within naturalistic space will include oak, elm, lime, poplar, ash, hawthorn and cherry, which can already be found along the Penwortham Way boundary. Feature trees within residential areas will take reference from these established, largely native species, but using street tree cultivars. There will be a creation of new grassland and shrub habitats to improve biodiversity and increase the robustness of the existing ecological network.

The hard material palette will be consistent with those used in adjacent character areas to provide a cohesive transition.

#### Materials

- Colour palette in brindle and red tones referencing adjacent character areas and existing development on Chain House Lane.
- Natural surfaces to semi-natural routes eg Hoggin or site worn material.

#### Hierarchy of highway material selection

##### Primary Streets

Macadam carriageways;

##### Secondary Streets

Macadam carriageways;

##### Tertiary Streets / Private Shared Driveways

Macadam / Tegular paving at focal points (subject to adoption)

##### Pavements

Macadam;

#### Vegetation/Biodiversity Enhancements

- Existing biodiversity to be retained and enhanced where possible;
- Neat, clipped hedgerow garden and field boundaries as found on Chain House Lane;
- Amenity green space to include swale planting



THE  
LANES  
PENWORTHAM



Clients

Taylor Wimpey



Homes England



Project Team

5plus Architects  
Masterplanners



Eddisons  
Transport Consultant



Xanthe Quayle  
Landscape Architects



Avison Young  
Planning Consultants

