

12. Transport and Access

Introduction

- 12.1 This chapter considers the effects of the Proposed Development on transport and mobility. In particular, it considers the anticipated effects of the Proposed Development on the operation of both the local and strategic highway networks in the vicinity. It provides an assessment of the potential transport environmental effects associated with construction and operation.
- 12.2 The Proposed Development refers to land that falls within the application boundaries A and B as identified in the Site Location Plans (**Figure 1.1** and **Figure 1.2**). The Proposed Development is part of a wider allocation which is hereafter referred to as the Site Allocation.
- 12.3 Baseline transport conditions for the local highway network in the vicinity have been considered along with future baseline conditions considering future traffic growth and committed developments. The Proposed Development (as part of the Site Allocation) is then considered.
- 12.4 The assessment, through full consideration of the proposals, is able to describe the methods used to assess the baseline conditions currently existing in the vicinity, the potential direct and indirect effects, the mitigation measures required to enable local living, active travel and shared travel, and the identification of the residual effects as a result of mitigation. It has been written by Vectos.
- 12.5 Further information in respect of transport and mobility is provided within a Transport Assessment that informs this chapter. In addition, a Framework Travel Plan provides details on mitigation measures relating to the further promotion of active and sustainable modes, initiatives looking to facilitate behavioural change and methods for highlighting the choices available for travel, all combining to ultimately reduce the need to travel by private car. These documents are presented in **Appendix 12.1** and **Appendix 12.2**.

Planning Policy Context

National Planning Policy

National Planning Policy Framework

- 12.6 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. The latest iteration of the NPPF was published by the Ministry for Housing, Communities and Local Government (MHCLG) in July 2021.

- 12.7 In terms of transport related policies, it places the sustainability of development at the heart of the decision-making process. The core principles include, amongst other matters, the management of patterns of growth to make use of public transport, walking and cycling and a focus on significant development in locations which are or can be made sustainable. The NPPF sets out three key dimensions to achieving sustainable development:
- An economic objective – ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including infrastructure;
 - A social objective – provision of accessible services that reflect the community's needs and support its health, social and cultural well-being; and
 - An environmental objective – using natural reserves prudently, minimising waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.
- 12.8 The NPPF advocates that to achieve sustainable development, economic, social, and environmental gains should be sought in a coordinated manner and the planning system should play an active role in guiding development to sustainable locations, with plans and decisions taking local circumstances into account. This is even more critical at this time with the important issues of the day increasingly becoming focussed on climate, healthy living and accessibility.
- 12.9 At the heart of the NPPF is a presumption in favour of sustainable development, which is to be seen as a golden thread for plan making and decision taking. This presumption in favour of sustainable development relates to both plan making and decision taking. It requires that planning authorities should positively seek opportunities to meet the development needs of their area and that Local Plans should meet objectively assessed needs unless the adverse impacts of doing so would 'significantly and demonstrably' outweigh the benefits when assessed against the policies of the NPPF, or where the Framework indicates development should be restricted.
- 12.10 The NPPF states that sustainable travel is about offering real choice with regards to modes of travel, with recognition given to the different travel needs of those who live in urban or rural areas. It advises that the safety and security of accesses to the site are achieved for all people, and that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe. The bar to what is therefore unacceptable in transport impact terms is set very high.

- 12.11 In respect of promoting sustainable transport, the NPPF outlines that transport issues should be considered from the earliest stages of development proposals, so that:
- The potential impacts of development on transport networks can be addressed;
 - Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example, in relation to the scale, location or density of development that can be accommodated;
 - Opportunities to promote walking, cycling and public transport use are identified and pursued;
 - The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
 - Patterns of movement, streets, parking, and other transport considerations are integral to the design of schemes and contribute to making high quality places.
- 12.12 The NPPF outlines the following objectives regarding transport:
- Facilitate economic growth by taking a positive approach to planning development;
 - Make the fullest possible use of sustainable modes of travel;
 - Support reductions in greenhouse gas emissions and congestion, and
 - Promote accessibility through planning for the location and mix of development.
- 12.13 The principles discussed above are further emphasised in the NPPF as it goes on to state that significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. The NPPF defines sustainable transport modes as *'any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra-low emission vehicles, car sharing and public transport'*.
- 12.14 The NPPF states that a Transport Statement or Transport Assessment is required for all developments that generate a significant amount of movements, and that plans, and decisions should take account of:
- Opportunities for promotion of sustainable transport modes, depending on the nature and location of the site, in order to reduce the need for major transport infrastructure;
 - Achieving a safe and suitable access to the site for all people; and
 - Whether any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

Planning Practice Guidance: Travel Plans, Transport Assessments and Statement in Decision-Taking

- 12.15 In March 2014, the MHCLG in conjunction with the Department for Transport (DfT), published national Planning Practice Guidance (PPG) on when Transport Assessments and Transport Statements are required in support of development proposals, what they should contain (which is intended to assist stakeholders in determining whether an assessment rather than a statement may be required) and, if so, what the level and scope of that assessment should be.
- 12.16 The PPG reflects current Government policy promoting a shift from the 'predict and provide' approach to transport planning to one more focused on sustainability. The PPG focuses on encouraging environmental sustainability, managing the existing network and mitigating the residual impacts of traffic from development proposals.
- 12.17 The PPG sets out that Travel Plans and Transport Assessments and Statements can positively contribute to:
- Encouraging sustainable travel;
 - Lessening traffic generation and its detrimental impacts;
 - Reducing carbon emissions and climate impacts;
 - Creating accessible, connected, inclusive communities;
 - Improving health outcomes and quality of life;
 - Improving road safety; and
 - Reducing the need for new development to increase existing road capacity or provide new roads.
- 12.18 The PPG continues to suggest that Transport Assessments and Travel Plans should support national planning policy which sets out that the planning system should actively manage patterns of growth in order to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable.
- 12.19 The PPG provides guidance as to what should be considered when setting the scope of the Transport Assessment, as well as the level of detail to be included, whilst acknowledging that this will vary from site to site. An assessment should include the likely associated environmental impacts of transport, particularly in relation to proximity to environmentally sensitive areas (such as Air Quality Management Areas), as well as an appropriate assessment of the cumulative impacts arising from other committed development.

Manual for Streets and Manual for Streets 2

The Department for Transport's 'Manual for Streets' replaced their general road and street design guidance manual 'DB32' in 2007 and specifically focuses on lightly trafficked residential streets and highways. In terms of design, it states that a key consideration for achieving sustainable development is how the design can influence how people choose to travel. Designers and engineers need to respond to a wide range of policies aimed at making car use a matter of choice rather than habit or dependence. Local transport plans and movement strategies can directly inform the design process as part of the policy implementation process.

- 12.20 By creating linkages between new housing and local facilities and community infrastructure, the public transport network and established walking and cycling routes are fundamental to achieving more sustainable patterns of movement and to reducing people's reliance on the car.
- 12.21 Manual for Streets 2 expands on the design advice in Manual for Streets 1 to include how to plan and improve busy urban and rural streets.

The Strategic Road Network: Planning for the Future

- 12.22 Highways England note that operating an effective and efficient strategic road network makes a significant contribution to the delivery of sustainable economic growth. To assist with this, Highways England's 'The Strategic Road Network: Planning for the Future' (2015) provides guidance and clarity on the key elements to be considered when assessing planning applications and Local Plan allocations. Key to all of this is early engagement and ensuring that any issues that take time to analyse and resolve are identified as soon as possible.
- 12.23 It acknowledges that Transport Assessments should be carried out in line with prevailing Government guidance. Where there are physical changes proposed to the network, schemes must also be subject to road safety, environmental and non-motorised user audits with all works conforming to requirements outlined in the Design Manual for Roads and Bridges (DMRB).

The Strategic Road Network and the Delivery of Sustainable Development (2013)

- 12.24 The Department for Transport's Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development' provides more detailed information relating to how Highways England engage with communities and the development industry to deliver sustainable development.
- 12.25 It highlights that development proposals are likely to be wholly acceptable if they can be accommodated within the existing capacity of a section of the strategic road network, or if they do not increase demand for use of the section that is already at full capacity.

12.26 In terms of infrastructure, it is noted that any capacity enhancements or new infrastructure required to deliver strategic growth should be identified at the Local Plan stage. In addition, where development proposals are consistent with an adopted Local Plan, Highways England would normally look to inspect the detail of the proposed transport solutions rather than the principle of the development itself.

Local Planning Policy

Lancashire County Council Local Transport Plan (LTP3)

12.27 LCC's LTP3 was adopted in May 2011 and covers the period 2011 to 2021 and sets out to increase prosperity and well-being for all communities within Lancashire. While the LTP3 does not provide a list of specific aims and objectives, the following transport priorities are listed:

- Improving access into areas of economic growth and regeneration;
- Providing better access to education and employment; and
- Improving people's quality of life and wellbeing.

12.28 To achieve this, The LTP3 sets out the following goals:

- To secure a strong economic future by making transport and travel into and between economic centres more effective and efficient by improving links to neighbouring major economic areas and beyond;
- To improve the accessibility, availability, and affordability of transport as a contribution to the development of strong and cohesive communities;
- To create more attractive neighbourhoods by reducing the impact of transport on our quality of life and by improving our public realm; and
- To make walking and cycling more safe, convenient, and attractive, to bring improvements in the health of Lancashire's residents.

Central Lancashire Core Strategy

12.29 The Central Lancashire Core Strategy was adopted in July 2012 and was produced by the Central Lancashire authorities of Preston, South Ribble and Chorley, with assistance from LCC. The Core Strategy is a key document in Central Lancashire's Local Development Framework. Its main purpose is to help coordinate development in the area and contribute to boosting investment and employment and aims to encourage sustainable growth.

12.30 The strategy refers to the Proposed Development by its location as land to the south of Penwortham and north of Farington and is one of three proposed Strategic Locations within Lancashire. The location is of strategic significance due its ability to significantly contribute to South Ribble's infrastructure and housing requirements. The Strategy outlines four strategic objectives which relate to the development site and associated transport infrastructure as follows;

- SO1 – To foster growth and investment in Central Lancashire in a manner that makes the best use of infrastructure and land by focusing on the Preston/South Ribble Urban Area, and the Key Service Centre of Leyland and Chorley.
- SO2 – To ensure there is sufficient and appropriate infrastructure to meet future needs, funded where necessary by developer contributions.
- SO3 – To reduce the need to travel, manage car use, promote sustainable modes of transport, and improve the road network to the north and south of Preston.
- SO4 – To enable easier journeys into and out of Preston City Centre and east/west trips across South Ribble, improve movement around Chorley, as well as safeguard rural accessibility, especially for mobility impaired people.

12.31 Policy 3 of the Core Strategy relates to travel. This policy states that the best approach to planning for travel will involve a series of measures which will include improving pedestrian facilities, improving opportunities for cycling by completing the Central Lancashire Cycle Network of off-road routes and supplementing this with an interconnected system of on-road cycle lanes and improving public transport.

Central Lancashire Highways and Transport Masterplan

12.32 The Central Lancashire Highways and Transportation Masterplan (CLHTM) was adopted in March 2013 and represents LCC's priorities for future investment in highways and transport across central Lancashire. The CLHTM is the start of a delivery programme which will see new road space built, public transport priorities along key corridors into Preston and between Leyland and Chorley, and public realm improvements in city, town, and local centres.

12.33 The CLHTM proposes major road schemes which are vital to the vision of creating more capacity on Lancashire's roads as follows:

- A major new road linking Preston and southern Fylde to the M55 and associated link roads [under construction];
- Capacity upgrades to accommodate more traffic along the A582 between Cuerden and the A59 at Penwortham [planning application progressing]; and
- Providing critical congestion relief on the A6 to the north of Preston by building the Broughton Bypass [completed].

- 12.34 In relation to better public transport, the CLHTM proposes improvements to the main railway stations and bus corridors within Lancashire and outlines that road space will be dedicated for public transport once the new distributor roads are open. The Masterplan will focus on:
- An investment focus on nine ‘public transport priority corridors’ that follow all the main routes into Preston City Centre, from Moss Side, Hutton, Warton, North West Preston, Broughton, Longridge, and Chorley as well as the route through Euxton / Buckshaw Village between Leyland and Chorley; and
 - Improvements to rail stations at Preston, Leyland, and Chorley to make them more attractive and expand capacity, and a new ‘parkway’ station to serve North West Preston would be pursued at Cottam.
- 12.35 The A582 South Ribble Distributor proposals also include the Penwortham Way Dualling Scheme. These proposals involve capacity improvements along the existing A582 between Cuerden/Moss Side and Preston City Centre to support delivery of the South of Penwortham/North of Farington strategic housing location and major housing sites at Croston Road and Moss Side.
- 12.36 In addition to increased capacity, the proposed dualling of the A582 will also provide opportunities for bus priority measures to be developed along this route into Preston City Centre. These works will also allow for public realm enhancements and improvements to prioritise and promote walking and cycling within the local area.

South Ribble Local Plan (2012 – 2026)

- 12.37 The South Ribble Local Plan was adopted in July 2015 and forms part of the Development Plan for South Ribble. The Local Plan sets out the vision for the borough and has been developed in line with Central Lancashire’s Core Strategy and includes references to their development management policies. It outlines the land use allocations for the local area and highlights land which has been protected for different uses including for housing, employment or play space.
- 12.38 The Local Plan identifies five major sites for development as follows:
- Pickering’s Farm;
 - Moss Site Test Track at Leyland;
 - Land between Heatherleigh and Moss Lane, Farington Moss;
 - Cuerden Strategic Site; and,
 - BAE Systems, Samlesbury.
- 12.39 As outlined previously, the Proposed Development is part of a Site Allocation known as Pickering’s Farm within the Local Plan.

- 12.40 Chapter A of the plan outlines two core strategy objectives to deliver infrastructure the Council feel is necessary to meet other objectives including the delivery of homes, employment, and other economic targets. It outlines that the provision of infrastructure is an integral part of this plan and is essential for the sustainability of the town and villages within South Ribble and will assist in the delivery of new development. Specifically, it identifies that land should be protected for the delivery of a Cross Borough Link Road (CBLR), part of which is envisaged to run through the Pickering's Farm Site Allocation.
- 12.41 Policy C1 outlines that the Proposed Development is dependent on the provision of infrastructure to ensure a sustainable development. An infrastructure delivery schedule is required and should be linked to the phases of development.
- 12.42 Policy F4 outlines that all developments will be required to provide car parking and servicing space in accordance with the parking standards adopted by the Council which are outlined in Appendix 4 of the Local Plan. Parking requirements should be kept to the standards set out unless there are significant road safety or traffic management implications related to the development of the site. The parking standards are broken down into three key areas with Area A referring to town centre locations, Area B referring to district or local centres and Area C referring to all other areas. The Proposed Development is located in Area C as it currently lies to the south/west of the existing built-up area and is therefore not located within a district or local centre area.

Penwortham Town Neighbourhood Development Plan 2016 – 2026

- 12.43 The Neighbourhood Plan refers to the Penwortham Bypass and the CBLR when describing the character of the area. As part of the Masterplan process for the Site Allocation, the Town Council were engaged in the preparation of this plan to allow consideration of its relevance to the character of the proposals as set out in Policy 2.
- 12.44 Policy 2 outlines the requirements for new large scale residential development, and states that the phased delivery of allocated large scale residential sites will be supported by the Town Council.
- 12.45 Policy 7 relates to cycle and walking routes including the identification of a new route which will be safeguarded for a dedicated circular route for cyclists and walkers. The southern part of the cycle and walking route passes through the Site Allocation along Bee Lane and Moss Lane. These routes will be preserved and enhanced as part of the development proposals. Proposals for development within the Neighbourhood Area that would prejudice the delivery of the route will be resisted.

Assessment Methodology and Significance Criteria

Guidance

12.45.1 The assessment methodology is based on the Guidelines for the Environmental Assessment of Road Traffic published by the Institute of Environmental Assessment (now the Institute of Environmental Management and Assessment (IEMA)) (the IEMA Guidelines) which states that in scoping the extent of the assessment, two broad rules of thumb could be used to delimit the scale and extent of the assessment. These rules are:

- 'Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.'

12.46 The IEMA Guidelines make it clear that a critical feature of environmental assessment is determining whether a given impact is significant. Indeed, it is only where impacts are likely to be significant is an Environmental Statement required. They also state for many effects there are no simple rules or formulae which define thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor backed up by data or quantified information whenever possible. Such judgements will include the assessment of the number of people experiencing a change in environmental impact.

12.47 The method adopted to assess the likely significant transport and mobility effects has been made in accordance with national and local planning policy, and industry best practice guidance. As previously noted, this chapter of the ES is supported by the Transport Assessment (**Appendix 12.1**) which sets out in more detail the methodology adopted to forecast changes in traffic flows for a range of scenarios starting with an existing baseline, a future year forecast accounting for known committed developments, and a future year forecast accounting for known committed developments plus the addition of traffic associated with the Proposed Development (as part of the Site Allocation).

Characterisation of Effect

12.48 An environmental impact can arise through the extra vehicle trips that might be generated as a result of new development and from new transport infrastructure. The potential impacts that may arise from additional traffic have been described in the IEMA Guidelines and include impacts on:

- Driver delay;
- Pedestrian/cycle delay;
- Pedestrian/cycle amenity;
- Fear and intimidation;
- Severance of drivers and pedestrians;

- Hazardous and dangerous loads; and
- Accidents and road Safety.

12.49 The IEMA Guidelines set out the broad principles of how to assess the magnitude of the effect for each criteria, which is summarised below:

- Driver delay – such delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system.
- Pedestrian/cycle delay – changes in the volume, composition or speed of the traffic may affect the ability of people to cross the roads. The guidance suggests that assessors should use their judgement to determine whether pedestrian delay is a significant impact.
- Pedestrian/cycle amenity – broadly defined as the relative pleasantness of a journey, it is affected by traffic flow, traffic composition and pavement width/separation from traffic. The guidance suggests a tentative threshold for judging the significance of changes in pedestrian amenity of where traffic flow (or its lorry component) is halved or doubled.
- Fear and intimidation – the impact of this is dependent upon the volume of traffic, its HGV composition, its proximity to people or the lack of protection caused by such factors as narrow pavement width.
- Severance – the guidance states that severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. It is acknowledged that the measurement and prediction of severance is extremely difficult. The assessment of severance should fully consider specific locations, particularly the location of pedestrian routes to key local facilities and whether or not crossing facilities are provided.
- Accidents and safety – the guidance suggests that professional judgement will be needed to assess the implications of local circumstances, or factors, which may elevate or lessen risks of accidents (i.e. junction conflicts).

12.50 The general principles that apply in determining the magnitude of the effect of the impact on the receiving environment in each case is as follows:

- Major (Beneficial/Adverse) - A magnitude of change that materially affects the receiving environment in a situation where there is little or no scope to accommodate change.
- Moderate (Beneficial/Adverse) - A magnitude of change that materially affects a receiving environment that may have the ability to accommodate change.
- Minor (Beneficial/Adverse) - A magnitude of change that has a limited effect on a receiving environment that has the ability to accommodate change.

- Negligible (Beneficial/Adverse) - A magnitude of change that has little effect on a receiving environment that has the ability to accommodate change.

12.51 A summary of the criteria used to assess the magnitude of change for each of the identified potentially significant effects are presented in **Table 12.1**.

Table 12.1: Criteria Used to Assess Magnitude of Change

Magnitude	Negligible	Minor	Moderate	Major
Driver Delay	Less than 5% increase in traffic	5%-10% increase in traffic	10%-30% increase in traffic	Greater than 30% increase in traffic
Pedestrian/ Cycle Delay	Less than 5% increase in traffic	5%-10% increase in traffic	10%-30% increase in traffic	Greater than 30% increase in traffic
	Accompanied by a qualitative assessment of pedestrian/cycle activity and infrastructure			
Pedestrian/ Cycle Amenity	Change in traffic flows greater than 100%		Qualitative assessment based on predicted increase in traffic, levels and predicted level of pedestrian activity	
Severance	Less than 30% increase in traffic	30%-60% increase in traffic	60%-90% increase in traffic	Greater than 90% increase in traffic
	Accompanied by qualitative assessment of pedestrian/cycle activity			
Accidents and Safety	Less than 5% increase in traffic	5%-10% increase in traffic	10%-30% increase in traffic	Greater than 30% increase in traffic
	Accompanied by qualitative assessment of highway infrastructure and traffic composition			

Sensitive Receptors

12.52 It is considered that the A582 corridor and Leyland Road corridor are sensitive receptors given their location and function in providing access to the highway network for the Proposed Development for all road users. In addition, the existing lanes and PRow at Bee Lane, Flag Lane, Moss Lane, Lord's Lane and Nib Lane are considered to be sensitive receptors given their use by vulnerable road users (i.e. pedestrians and cyclists).

12.53 Having identified the likely sensitive receptors, it is necessary to consider the sensitivity of each receptor. The sensitivity of a receptor is based on the relative importance of the receptor using the following scale:

- High - The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance;
- Moderate - The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance; and
- Low - The receptor/resource is tolerant of change without detriment to its character, or is of low or local importance.

12.54 It is considered that the A582 and Leyland Road would fall into the moderate category, with the existing lanes falling within the high category. The A582 and Leyland Road already accommodate regular vehicle flows with footways, lighting and crossing facilities where required, thereby providing the ability to accommodate change. The existing lanes (including PRow), given their predominantly rural nature and low traffic flows make them more susceptible to change, hence the high sensitivity.

Significance Criteria

12.55 The significance criteria take the following elements into account when considering the impact of the development proposals:

- Extent and magnitude of the effect;
- Effect duration (whether short, medium or long term);
- Effect nature (whether direct or indirect, reversible or irreversible);
- Whether the effect occurs in isolation, is cumulative or interactive;
- Performance against the IEMA environmental quality standards, DfT Standards set out in the Design Manual for Roads and Bridges, Manual for Street or other Industry Guidance;
- Sensitivity of the receptor; and,
- Compatibility with National and Local Transport Policies relating to the environment.

12.56 The magnitude of impact and the sensitivity of the affected receptor are both assessed using an established effect-significance matrix presented in **Table 12.2**.

Table 12.2: Effect-Significance Matrix

Sensitivity\Magnitude	Low	Moderate	High
Negligible	Negligible	Negligible	Negligible
Minor	Minor (Negligible)	Minor (Beneficial/Adverse)	Moderate (Beneficial/Adverse)
Moderate	Minor (Beneficial/Adverse)	Moderate (Beneficial/Adverse)	Major (Beneficial/Adverse)
Major	Moderate (Beneficial/Adverse)	Major (Beneficial/Adverse)	Major (Beneficial/Adverse)

Assumptions/Limitations

- 12.57 The overall assessment has been informed by a range of data sources supplemented with regular consultation with key stakeholders, site visits and observations at different times of day and different times of year over a period of time. It should be noted that this final assessment has been prepared during the time of a global pandemic, however appropriate use of traffic survey data from 2018-2021 has been used to validate the modelling assessments and ensure a full and comprehensive assessment has been completed.

Consultation

- 12.58 Consultation has been coordinated as part of the multi-disciplinary design process. This has included regular discussions and meetings with the local highway authority, the strategic highway authority and other key stakeholders with respect to transport and mobility.

Baseline Conditions

Location

- 12.59 This Proposed Development supports the principles and guidance as set out in the NPPF, in that it is located in a sustainable location, and provides residents with the opportunity to undertake journeys via active and sustainable modes of travel including walking, cycling and public transport.
- 12.60 It is situated immediately to the south of the existing residential area of Kingsfold. To the west is Penwortham Way which is a key route connecting the Proposed Development to Preston, Leyland and the M6 motorway. To the south is agricultural land (which is also Safeguarded Land in the Local Plan) extending towards Chain House Lane. The West Coast Mainline forms the eastern boundary. It is located approximately 5.5 kilometres north of Leyland and 5.5 kilometres south of Preston City Centre.

Local Highway Network

- 12.61 The local highway network in the vicinity of the Proposed Development includes Penwortham Way and Leyland Road. In addition, there are a number of rural lanes – Bee Lane, Flag Lane, Lord’s Lane and Moss Lane – which provide access to a number of residential properties. Bee Lane and Flag Lane currently provide the only vehicular access to the Proposed Development, with both crossing the West Coast Mainline and connecting to Leyland Road.

Penwortham Way

- 12.62 Penwortham Way is an ‘A’ classified road and forms part of the A582 which is a principal distributor road extending for approximately 8 kilometres from the M65/A6/A582 junction to the A582/A59 junction passing along the western boundary of the Proposed Development. In the vicinity, Penwortham Way is a single-carriageway road and continues in a north/south alignment past the Proposed Development.
- 12.63 Penwortham Way is approximately 7.3 metres wide with no footways along either side of the carriageway in the vicinity. There is a 50mph speed limit enforced which remains in operation along the A582 towards the A582/Golden Way and A582/A59 Golden Way Roundabout. Approximately 250 metres south of the Penwortham Way/Chain House Lane junction, the A582 increases in speed to 60mph.
- 12.64 To the north, Penwortham Way forms a signal-controlled junction with Pope Lane and Golden Way. To the south, Penwortham Way provides connections to Chain House Lane by way of a four-arm signalised cross-roads. Street lighting is provided along the length of the carriageway between the A582 Penwortham Way/Chain House Lane signalised cross-roads and the A582/A59 Golden Way roundabout.

Leyland Road

- 12.65 To the east, Leyland Road (B5254) runs along a north to south alignment between the Stanfield Lane/Farington Road/Lostock Lane/Watkin Lane junction to the A59/Leyland Road roundabout junction. It passes through an urban area with residential access road and residential and retail properties fronting directly onto both sides of the carriageway. Leyland Road provides connections to Tardy Gate, Penwortham Gate and Lower Penwortham.
- 12.66 In the vicinity of the Bee Lane and Flag Lane junctions there are footways and street lighting provided along both sides of the carriageway. These footways provide connections to the bus stops located along this road. Both controlled and uncontrolled crossing facilities are provided along the Leyland Road corridor to facilitate movement.

Bee Lane

- 12.67 Bee Lane forms the northern access from the B5254 Leyland Road and crosses the West Coast Mainline. It is a single-lane rural road extending for approximately 1.2 kilometres along an east-west alignment from the B5254 Leyland Road/Bee Lane/The Cawsey four-arm roundabout. The carriageway varies in width from 6.5 metres at its eastern end to 2.7 metres at its western end.

Flag Lane

- 12.68 Flag Lane forms the southern access from the B5254 Leyland Road and crosses the West Coast Mainline. It is a single lane residential/rural lane and extends for approximately 600 metres from the priority-controlled T-junction with Leyland Road and also continues in an east-west alignment parallel to Bee Lane.
- 12.69 There is a small section of Flag Lane between Leyland Road and the West Coast Mainline that is residential in nature with a carriageway width between 4.7 and 5 metres. Footways and street lighting are provided along both sides of the carriageway along this section of Flag Lane. Residential properties also front onto Flag Lane to the east of the railway line with driveway access situated along both sides of the carriageway.

Lord's Lane / Moss Lane / Nib Lane

- 12.70 Lord's Lane, Moss Lane and Nib Lane are all rural single-carriageway roads of varying widths which currently provide connections to the residential and farm buildings in the vicinity. Lord's Lane continues in a north/south alignment and provides connections between Bee Lane and Flag Lane. Nib Lane continues in an east/west alignment from its junction with Flag Lane. While Moss Lane continues in a north/south alignment from its junction with Bee Lane to the west.

Highway Safety

- 12.71 Analysis of accident records for the most recently available 5-year period has been conducted with reference to LCC's MARIO service. The study area predominantly covers the A582 corridor (including Penwortham Way) and Leyland Road.
- 12.72 There are few recorded accidents on Penwortham Way with small clusters identified at the Pope Lane junction to the north and the Chain House Lane junction to the south. The majority of these accidents are recorded as being slight with very few serious accidents and no fatal accidents identified within the available data. It is noted that the Pope Lane junction has been improved to incorporate signal control, cycle facilities and controlled crossing points within the 5-year period for which data is available.
- 12.73 Along the remainder of the A582 corridor which includes Farington Lane and Lostock Lane, there are small clusters of slight accidents at junctions, but very few serious and no fatal accidents. This part of the network includes junctions with Watkin Lane and the A6 which accommodate high volumes of traffic at certain times during the day. Again, it is noted that the Farington Lane/Watkin Lane junction was improved in 2015 to incorporate cycle facilities and controlled crossing points.
- 12.74 There are few accidents recorded on Leyland Road. Three accidents have been recorded at the Bee Lane roundabout, with two accidents recorded at the Flag Lane junction, all of which were slight accidents. There are small clusters of accidents on Leyland Road at junction with Coote Lane and Browndge Road, of which only three were recorded as being serious.

- 12.75 It is noted that one fatal accident has been recorded at the Fir Trees Road junction with Leyland Road which involved a minibus and motorcycle in 2016.
- 12.76 Overall, it is considered that although there are small clusters of accidents at junctions on the A582 corridor and Leyland Road, it does not suggest that there are any highway design features that might be contributing to the occurrence of accidents on the network.

Indicative Active Travel Catchments and Local Facilities

- 12.77 Contemporary local and national transport policy states that new developments should be focused on locations which are, or can be made, sustainable. Providing travel choice is policy compliant and essential in today's modern and dynamic society. This focus maximises social inclusion, minimises the number of single occupancy private car trips, limits the need to travel, helps reduce congestion and helps to improve air quality and health.
- 12.78 One of the primary factors when considering the suitability of a new development is its proximity, accessibility, and connectivity in relation to key local facilities by non-car modes. Within this context, the development should give priority first to pedestrian and cycle movements both within the scheme and with neighbouring areas.
- 12.79 Specific guidance on the distances that children will walk to school is found in the Department for Education's (DfE) July 2014 document, 'Home to School Travel and Transport' statutory guidance document. This guidance suggests that the maximum walking distance to schools is 2 miles (or 3.2km) for children under 8, and 3 miles (or 4.8km) for children over the age of 8. This is consistent with the National Travel Survey measured data.
- 12.80 In addition, a WYG report entitled 'Accessibility – How Far Do People Walk and Cycle' uses National Travel Survey data for the UK as whole, excluding London, and provides an 85th percentile walk distance for:
- All journey purposes – 1,950 metres;
 - Commuting – 2,400 metres;
 - Shopping – 1,600 metres;
 - Education – 3,200 metres or 4,800 metres; and
 - Personal Business – 1,600 metres.
- 12.81 In terms of time, this equates, for instance, to approximately 30 minutes for commuting.
- 12.82 It should be noted that accessibility is not exclusively a function of distance; it being also related to the quality of the local environment and peer culture. For example, with reference to cycle journeys, the tendency for people to choose this mode is related to quality of route, barriers, whether the bike is electrically assisted, attitude to health, the journey purpose, the facilities at either end and personal matters. A half hour journey by bike at a comfortable pace, on typical streets without cycle priority, will typically encompass a distance of approximately 8 km.

- 12.83 **Appendix 12.3** illustrates a 1km and 2km catchment from the access points on Moss Lane, Bee Lane and Flag Lane. A 5km and 10km typical catchment by bike is also presented. These catchments encompass an area covering the communities of Kingsfold, Penwortham, Tardy Gate and Lostock Hall in the immediate vicinity, but also Preston to the north, Farington and Leyland to the south, Bamber Bridge to the east and New Longton to the west.
- 12.84 The Proposed Development benefits from a wide range of local facilities being in its vicinity providing the potential to make it a very well-connected development. Such facilities are located in Kingsfold to the north and Tardy Gate to the east. **Table 12.3** provides a sample list of local facilities and services located within Kingsfold and Tardy Gate along with their distances from the centre of the Proposed Development.

Table 12.3: Distance to Local Services and Amenities

Local Amenity	Distance
Schools	
Kingsfold Primary School	1,080m
Our Lady and St Gerard's RC Primary School	1,190m
Penwortham Broad Oak Primary School and Marylands Nursery School	1,510m
Middleforth C of E Primary School	1,900m
Lostock Hall Community Primary School	2,400m
Penwortham Girls High School	2,700m
Lostock Hall Academy	3,000m
All Hallows Catholic High School	3,000m
Penwortham Priory Academy	3,800m
Community Infrastructure	
Penwortham Town Council and Community Hall	700m
Kingsfold Play Area	800m
Local Play Area (Eagleton Way)	970m
Local Play Area (Handshaw Drive)	990m
Kingsfold Library	1,100m
Lostock Hall Recreation Ground	1,380m
Services and Amenities	
Penwortham Lane Post Office	1,100m
Tardy Gate	1,130m
Spar	1,180m
Lostock Hall Post Office	1,180m
Kingsfold Pharmacy	1,200m
Cooperative	1,370m
McColl's Convenience Store	1,370m
Bargain Booze	1,450m
Cop Lane Post Office	1,450m
Kingsfold Medical Centre	1,500m

12.85 **Table 12.3** highlights that the Proposed Development is well connected and accessible by foot or by cycle to a wide range of local amenities within Kingsfold, Tardy Gate and Lostock Hall. This is consistent with the planning authority's judgement that this is a sustainable location, warranting its inclusion as a significant allocation within the Local Plan.

Active Travel Links for Local Living

12.86 The pedestrian facilities in the vicinity of the Proposed Development include formal footways, shared footways/cycleways, and Public Rights of Way (ProW). As shown in **Figure 12.1** there are currently twenty-one PRoW crossing or in the immediate proximity of the Proposed Development.

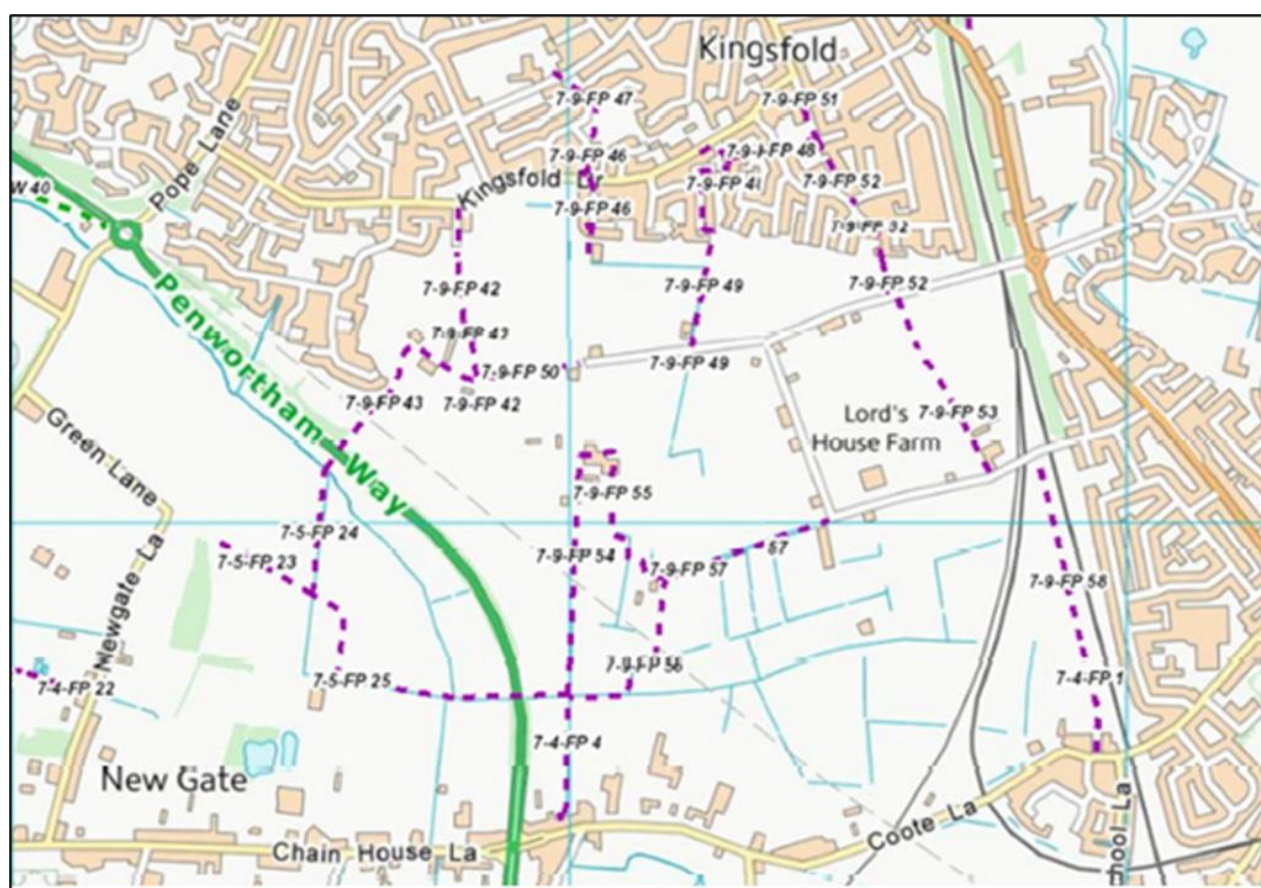


Figure 12.1: Public Rights of Way Map (source: Lancashire County Council)

12.87 **Figure 12.1** highlights that there are multiple points of existing connection with communities to the north, east and west either via the adopted highway on Bee Lane, Flag Lane and Moss Lane, or via the network of PRoW. Footpath 7-9-FP42 provides a connection between Bee Lane and Kingsfold Drive, as does Moss Lane and Footpath 7-9-FP46, Footpath 7-9-FP49 and Footpath 7-9-FP-52.

- 12.88 To the west, Footpath 7-9-FP42 connects to Footpath 7-9-FP43 (via Footpath 7-9-FP50) by way of a short, paved section which then provides access to the Clough Field residential area by way of a short alleyway. Onward journeys are then facilitated along quiet residential streets to controlled crossing facilities at the new A582 Penwortham Bypass roundabout to the west.
- 12.89 It is noted that there is a desire of Penwortham Town Council to improve this western part of the PRoW network to form part of a wider cycle loop which is referenced in their Neighbourhood Plan. This will be facilitated by the Proposed Development.
- 12.90 In addition to the PRoW network, there are sections of Bee Lane, Moss Lane, Lord's Lane and Flag Lane that are adopted highway and provide a network of quiet lanes connecting to routes and infrastructure further west. These lanes are currently lightly trafficked with some used to provide access to existing residential properties, as well as being leisure active travel routes. Many of the routes are well surfaced, with street lighting and good intervisibility, with the widths and verges providing a natural control of vehicle speeds.
- 12.91 Outside of the Proposed Development, the pedestrian facilities within the Kingsfold, Tardy Gate and Lostock Hall residential areas are generally of a good standard with footways and street lighting provided along all roads within the built-up area. There are dropped kerbs and tactile paving provided at some but not all key crossing points.
- 12.92 **Figure 12.2** provides an extract of the Preston and South Ribble Cycle Map which indicates that National Cycle Route 55 is located approximately 2.4 kilometres to the east of the Proposed Development. This route consists of a number of off-road cycle paths which ultimately form part of a route over the River Ribble into Preston city centre and Preston Railway Station. National Cycle Route 62 is located approximately 2.6 kilometres to the north west of the Proposed Development which connects Fleetwood on the Fylde region of Lancashire with Selby in North Yorkshire and form the west and central sections of the Trans Pennine Trail.
- 12.93 It is noted that the extract highlights a proposed cycle route along Penwortham Way and Flensburg Way which would provide an additional route option to connect the Proposed Development to Leyland and Leyland Business Park. This route would also provide northbound connections to Penwortham and the cycle route along Golden Way.

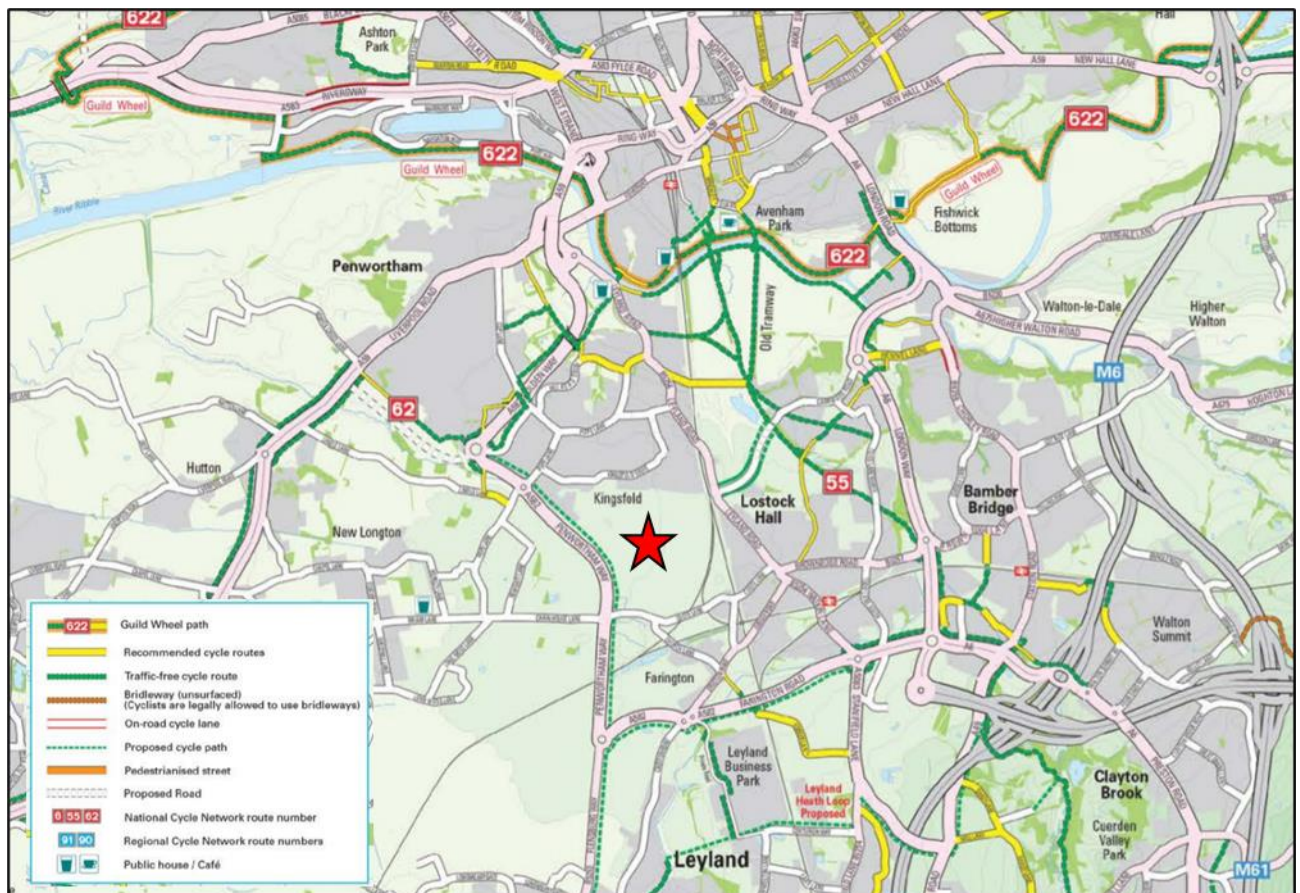


Figure 12.2: Extract of Preston and South Ribble Cycle Map (source; Visit Lancashire)

Shared Transport Links

- 12.94 **Appendix 12.4** shows the location of existing local bus stops and the frequency of the services provided at these stops. This plan shows that at both the Kingsfold Way and Leyland Road stops there is a service frequency of 4 to 6 services per hour. These services connect these stops with many local destinations including Preston, Lostock Hall and Moss Side. Higher frequency services are provided within Tardy Gate and Lostock Hall near Lostock Hall Railway Station.
- 12.95 A summary of the most frequent services provided at these stops and their approximate frequencies is provided in **Table 12.4** below.

Table 12.4: Summary of Existing Bus Services

No.	Route	Typical Frequency (minutes)						
		Mon. to Fri.			Sat.			Sun.
		Mor.	Day	Eve.	Mor.	Day	Eve.	Day
Kingsfold Drive Stops								
3	Preston – Preston Circular via Cop Lane	10 services	10	10-20	6 services	10	10-20	15
Leyland Road Stops								
111	Preston – Moss Side via Lostock Hall	8 services	12	13	3 services	12	13	30

- 12.96 As shown in **Table 12.4**, route 3 provides a very frequent service along Kingsfold Drive providing connections into Preston city centre. Route 111 operating from Leyland Road also provides a high frequency service into Preston city centre and south towards Moss Side via Lostock Hall.
- 12.97 In addition to route 3, route 719 operates along Kingsfold drive operating 1 service a day. This is a school service providing connections to Priory Technical College. In addition to the 111, routes 670, 698, 699, 714, 767 and 984 operate 1 service per day from the stops on Leyland Road. The majority of these routes are school services with the 670 and 984 providing connections to Hutton Grammar School, the 698 and 714 to Penwortham All Hallows RC High School and the 767 operating the return route from Penwortham All Hallows RC High School.
- 12.98 The closest railway station to the Proposed Development is Lostock Hall within a 20-30 minutes walk or 6-10 minutes cycle ride and is accessible via Leyland Road and Bee Lane / Flag Lane. The station is managed by Northern Trains and has two platforms and provides one service per hour to Preston, Blackburn, Burnley, Nelson, and Colne.
- 12.99 There is an off-road cycle route located to the east of the Proposed Development which provides a connection to the centre of Preston and Preston Railway Station which is within the 5km cycle catchment (less than 20 minutes cycle ride). Preston is on the West Coast Mainline with frequent local, regional, and national services provided to a range of destinations including Blackpool, Lancaster, Manchester, Liverpool, Barrow-in-Furness, London, Edinburgh, and Glasgow. Therefore, there would be potential for rail to be used by residents as part of a multi-modal journey with cycling. Preston Railway Station includes over 200 cycle parking spaces as part of a cycle hub.

Embedded Mitigation

- 12.100 The Proposed Development is very well connected to existing residential communities in Penwortham, Kingsfold, Tardy Gate and Lostock Hall. In addition, it forms part of a Site Allocation within the SRBC Local Plan which demonstrates that the Council consider it to be an excellent location for the promotion of sustainable development.

- 12.101 In addition to the Proposed Development location, it benefits from an existing network of lanes which provide local access to properties and provide part of an active travel network which also includes Public Rights of Way. These routes penetrate into the surrounding residential areas at numerous points providing existing opportunities for accessibility, which will be enhanced through a series of route improvements both physical (i.e. surface, widths and security) and where possible relating to legal status (i.e. footpaths upgraded to bridleways). These lanes are to be retained as existing and promoted primarily for active travel use only (i.e. no significant increase in motor vehicle traffic within the Proposed Development). It should be noted that although predominantly being promoted for active travel, existing use of these links to gain access to existing properties will be retained.
- 12.102 The Proposed Development location and existing lanes provide the perfect opportunity to promote local living. This is further enhanced through the mix of uses that are proposed as part of the development which include residential dwellings, a primary school, public open space and a local centre which will include a range of key local services. Local living, and indeed virtual mobility, is integral to promoting the internalisation of trips that is required to minimise the pressure on the existing transport networks, and is also the best contribution to happy living and reducing the impacts of climate change.
- 12.103 As part of the local centre, a mobility hub will be provided which is the focal point for active and shared travel. New and existing active travel routes will converge at the mobility hub within the local centre, which by design will prioritise pedestrians and cyclists. Such active travel routes that provide convenience over the motor vehicle route will be enhanced by the provision of e-bikes, bike share, e-scooters, electric car club, community concierge, micro-consolidation centre to take receipt of parcels and coordinate onward delivery, third-place shared working environment and access to public transport. The combination of these services, and the ability to access each service in a single location (or app) will provide residents with the real mobility choices that they desire.
- 12.104 In addition, in terms of shared travel, the provision of a new bus service will improve the sustainability and accessibility of the Proposed Development by ensuring residents have a quality public transport option available which provides them with a link to key services and local facilities within South Ribble and the wider area (i.e. Preston). Based on information provided by a local operator, it is envisaged that two buses would operate a fast and direct service every half hour between the Proposed Development and Preston city centre (including Preston Railway Station).
- 12.105 Overall, mitigation is embedded in the Proposed Development through good design that creates a community where local living is the norm. It is well placed to take advantage of the proximity of a range of day-to-day facilities provided both within and in surrounding residential communities. Infrastructure and facilities are provided that minimise the reliance on any single travel option which widens social inclusion and makes car use more of a choice and less of a necessity. Finally, the network within the Proposed Development can be managed in accordance with the user hierarchy advocated by national policy which sees active travel above car travel.

Assessment of Likely Significant Effects

Demolition and Construction

- 12.106 Due to the size of the development, a phased approach to construction will be undertaken, subject to future agreement with the planning authority and managed via condition. During the construction phase of the Proposed Development, the primary factors that generate potential environmental traffic impacts are:
- Transportation of construction materials to and from the Proposed Development;
 - Travel to and from the Proposed Development site by the construction workforce; and
 - Movement of construction materials and the construction workforce within the Proposed Development.
- 12.107 The environmental implications of construction traffic are considered to relate to issues of driver delay, pedestrian and cycle amenity and highway safety as a result of road works. This is primarily related to construction associated with the proposed new site access on Penwortham Way (which is envisaged to be delivered prior to first occupation), but also considers general construction traffic on the highway network accessing the site to construct the internal road layout, dwellings and other associated infrastructure. There are not anticipated to be any hazardous load deliveries and infrastructure (i.e. footways, controlled crossings and alternative routes) exists to limit the potential for any severance or increased fear/intimidation within the community.
- 12.108 Given the outline nature of the planning application, a detailed forecast of construction traffic has not been undertaken. However, from experience, the construction traffic movements associated with typical highway infrastructure schemes (i.e. to provide the new site access on Penwortham Way) are usually a low level of regular movements over the course of the working day.
- 12.109 In terms of construction activity, it is considered that the majority of construction traffic would access the Proposed Development from Penwortham Way, outside of the peak hours. Therefore, the possible implications of construction traffic are primarily considered to be focussed on Penwortham Way and the A582 corridor (i.e. Golden Way, Flensburg Way and Lostock Lane), including any vulnerable road users along sections of this route. It should be noted that a very small amount of construction activity using Bee Lane will occur to access the small parcel of up to 40 dwellings in the north east part of the Proposed Development only.
- 12.110 It should be noted that much of the proposed site access works on Penwortham Way can be constructed offline, thereby minimising potential impacts on Penwortham Way. When the time comes to connect the new site access to the existing highway, and modify the existing highway layout, driver delay and highway safety issues could arise as a result of temporary lane closures and road works associated with the phased delivery, but the majority of works would still be coordinated so as to be outside of peak times (where possible).

- 12.111 In addition to construction of the site access on Penwortham Way, the environmental implications of pedestrian and cycle amenity could arise within the construction site from the movement of construction vehicles. It is important that this is considered because of the existing properties that are located within the site and the network of lanes that serve predominantly as active travel corridors, although the Proposed Development will not add any additional construction vehicular traffic to these lanes. For clarity, there are unlikely to be any hazardous loads during the construction programme.
- 12.112 The nature of the environmental impact during construction and the likely significance of the effects are considered in **Table 12.5**.

Table 12.5: Potential Impacts and Effects - Construction

Receptor	Sensitivity	Potential Impact	Potential Short Term Effects
A582 Corridor	Moderate	Driver Delay Highway Safety Cycle Amenity	Increased Delay during Roadworks Increased Risk of Accidents Reduced Amenity
Leyland Road	Moderate	Highway Safety	Increased Risk of Accidents
Bee Lane	High	Highway Safety Amenity Fear and Intimidation	Increased Risk of Accidents Reduced Amenity Increased Intimidation
The Lanes (i.e. Bee Lane, Nib Lane, Lord's Lane, Flag Lane, Moss Lane)	High	Amenity	Reduced Amenity

- 12.113 It is considered that these effects would be short term and temporary during the construction phase. Without mitigation, the magnitude of effects of driver delay, pedestrian/cycle amenity and highway safety during construction are described in **Table 12.6**.

Table 12.6: Magnitude of Effects - Construction

Receptor	Driver Delay	Pedestrian/Cycle Amenity	Highway Safety
A582 Corridor	Moderate	Negligible	Moderate
Leyland Road	Negligible	Negligible	Negligible
Bee Lane	Negligible	Moderate	Moderate
The Lanes (i.e. Bee Lane, Nib Lane, Lord's Lane, Flag Lane, Moss Lane)	Negligible	Negligible	Negligible

12.114 The environmental impacts of the construction phase without mitigation may result in a short term, temporary major adverse impact on a short section of Bee Lane only, and a short term, temporary moderate adverse impact on some other identified sensitive receptors.

The Completed and Operational Development

12.115 The environmental implications associated with operation of the Proposed Development are primarily considered to relate to driver delay, pedestrian/cycle delay, pedestrian/cycle amenity, severance and highway safety. The possible implications of operation are primarily considered to affect the A582 corridor as well as any vulnerable road users along sections of this route. There are also other local highway links including the Leyland Road corridor which provide access to a range of local shops, services and amenities. The nature of the environmental impact during operation and the likely significance of the effects are considered in **Table 12.7**.

Table 12.7: Potential Impacts and Effects - Operation

Receptor	Sensitivity	Impact	Potential Long Term Effects
A582 Corridor	Moderate	Driver Delay Highway Safety Pedestrian/Cycle Delay Pedestrian/Cycle Amenity Severance	Increased Delay to Drivers Increased Risk of Accidents Reduced Amenity Increased Delay Crossing the Highway Increased Intimidation
Leyland Road	Moderate	Driver Delay Highway Safety Pedestrian/Cycle Delay Pedestrian/Cycle Amenity Severance	Increased Delay to Drivers Increased Risk of Accidents Reduced Amenity Increased Delay Crossing the Highway Increased Intimidation
Bee Lane	High	Driver Delay Highway Safety Pedestrian/Cycle Delay Pedestrian/Cycle Amenity Severance	Increased Delay to Drivers Increased Risk of Accidents Reduced Amenity Increased Delay Crossing the Highway Increased Intimidation
The Lanes (i.e. Bee Lane, Nib Lane, Lord's Lane, Flag Lane, Moss Lane)	High	Highway Safety Pedestrian/Cycle Delay Pedestrian/Cycle Amenity Severance	Increased Risk of Accidents Reduced Amenity Increased Intimidation

12.116 To assist in assessing the effects, **Table 12.8** summarises the forecast increases in traffic at key locations along the key receptors (as shown in **Figure 12.3**). This includes two-way annual average daily traffic (AADT) flows for the base year 2021, the future forecast year of 2031 (including committed development and existing highway network) and the future forecast year of 2031 with the Proposed Development (assessed as part of the Site Allocation). Further details are presented in **Appendix 12.1**.

Figure 12.3: Key Receptor Locations

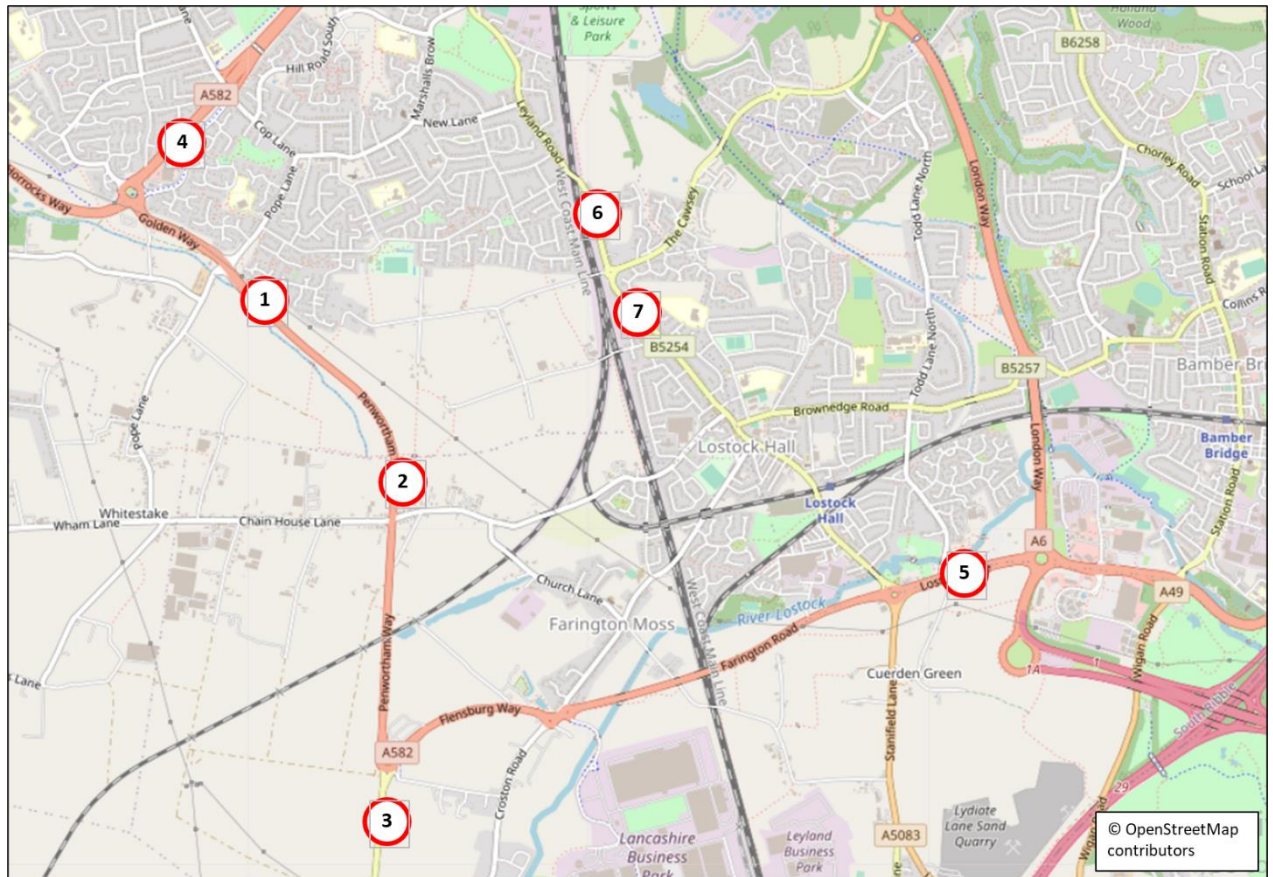


Table 12.8: Summary Forecast Traffic Changes (AADT) - Operation

Link ID	Location	Base 2021	2031 with Committed Development	2031 with Committed Development plus Site Allocation (1,350 dwellings)	Difference	% Difference
1	Penwortham Way (south of Pope Lane)	20,569	24,543	25,955	1,412	5.8%
2	Penwortham Way (north of Chain House Lane)	20,609	24,607	26,621	2,014	8.2%
3	Flensburg Way	15,983	22,719	22,783	64	0.3%
4	Golden Way (north of John Horrocks Way)	26,360	28,662	29,642	980	3.4%
5	Lostock Lane (east of Watkin Lane)	45,325	50,193	51,127	934	1.9%
6	Leyland Road (north of Bee Lane)	19,108	19,581	19,977	396	2.0%
7	Leyland Road (south of Bee Lane)	15,993	16,516	16,526	10	0.1%

12.117 Without mitigation, the effects of driver delay, pedestrian/cycle delay, pedestrian/cycle amenity, severance and highway safety during operation is described in **Table 12.9**.

Table 12.9: Magnitude of Effects - Operation

Receptor	Link ID	Driver Delay	Pedestrian/Cycle Delay	Pedestrian/Cycle Amenity	Severance	Highway Safety
A582 Corridor	1	Minor	Minor	Negligible	Negligible	Negligible
	2	Minor	Minor	Negligible	Negligible	Negligible
	3	Negligible	Negligible	Negligible	Negligible	Negligible
	4	Negligible	Negligible	Negligible	Negligible	Negligible
	5	Negligible	Negligible	Negligible	Negligible	Negligible
Leyland Road	6	Negligible	Negligible	Negligible	Negligible	Negligible
	7	Negligible	Negligible	Negligible	Negligible	Negligible
The Lanes (i.e. Bee Lane, Nibb Lane, Lord's Lane, Flag Lane, Moss Lane)	-	Negligible	Negligible	Negligible	Negligible	Negligible

12.118 The analysis of traffic flow data on the A582 corridor suggests that there may be some increases to driver delay associated with the provision of the main site access for motor vehicles on Penwortham Way. The introduction of a new signal junction on Penwortham Way to provide access to the Proposed Development is an additional potential point of conflict on the network and will result in some additional delay associated with the signal operation. However, the junction has been designed with reference to relevant local and national design standards thereby limiting any potential adverse impacts on highway safety.

12.119 Traffic modelling presented in the Transport Assessment highlights how the junction has been designed to be sufficient for the development demands. Those residents choosing to travel by car will access the network via Penwortham Way before immediately deciding whether to travel north or south, thereby limiting the vehicular trip impact at any one location on the network.

12.120 For much of Penwortham Way and other sections of the A582 corridor, there is no off-carriageway pedestrian or cycle provision with very few existing movements of this nature observed. As such, although there may be an increase in motor vehicle traffic along Penwortham Way, the impact on pedestrian/cycle delay, pedestrian/cycle amenity and severance is considered to be negligible.

- 12.121 It is recognised that there are parts of the A582 corridor that do provide footways and facilities for pedestrians and cyclists. Along Lostock Lane for example, footways are provided, cycle facilities are provided at existing junctions along with controlled crossing facilities. In addition, around sections of Farington Road, there are already alternative routes available for pedestrians and cyclists which serve to keep them away from links with high volumes of motor vehicle traffic. Whilst there may be an increase in development motor vehicle traffic alongside some of these facilities, the existing infrastructure and route alternatives assist in ensuring the impacts on pedestrian/cycle delay, pedestrian/cycle amenity and severance would be negligible.
- 12.122 The effects of the Proposed Development on the Leyland Road corridor in the vicinity of the junction with Bee Lane are predicted to be negligible in relation to driver delay, pedestrian/cycle amenity, pedestrian/cycle delay severance and highway safety. This is largely down to the fact that the main site access (for all but 40 units) is proposed from Penwortham Way to the west, with no vehicular link between the East – West, thereby significantly limiting the vehicular trip impact on the Leyland Road corridor. This is considered to be of benefit, particularly when considered in the context of the AQMA area at Tardy Gate and the County Council’s aspiration to improve the corridor for public transport services.
- 12.123 It is acknowledged that there will be an increase in person trips along the Leyland Road corridor associated with the principles of local living, active travel and existing shared travel, but footways are already provided along either side of the corridor, there are multiple routes along quiet residential streets (i.e. Bee Lane, Flag Lane, Fir Trees Road, Harold Terrace etc.) to get to the corridor, uncontrolled crossing points provide the opportunity to cross Leyland Road at some junctions and controlled crossings are then provided at the main signal junction in Tardy Gate to reduce the potential for severance when accessing local shops, services, amenities and bus stops.
- 12.124 As previously noted, the Proposed Development will not add any vehicular traffic to the network of lanes within the site (i.e. Bee Lane, Nib Lane, Lord’s Lane, Flag Lane and Moss Lane). Instead, the routes are to be retained for existing users (where required) and promoted as an active, primary travel network. These lanes currently experience very little vehicular traffic, with narrow carriageways providing a natural control of speeds in a predominantly rural environment. These are considered to be excellent routes for active travel, not just within the site, but also for providing connectivity to local shops, services and amenities in adjacent residential communities.
- 12.125 Overall, it is considered that the main impacts associated with the development will be on the A582 corridor, but through design of the development promoting a hierarchy of local living and virtual mobility, active travel, shared travel and design of appropriate highway infrastructure to accommodate some car trips, the magnitude of environmental effects are considered to be long term, permanent minor adverse or negligible.

Additional Mitigation / Enhancement Measures

Demolition and Construction

- 12.126 A Construction Environmental Management Plan (CEMP) will be prepared for the construction period, which will detail the pattern of HGV arrivals and departures, and routeings to be used. Any large items of plant, or other large loads that need to be brought to or from the site, will be transported during off-peak periods using appropriate routes along the A582 corridor.
- 12.127 In order to minimise any potential construction traffic impact at the site entrance, the CEMP will look to include temporary signing to highlight the presence of the works access from Penwortham Way. Wheel washing facilities will also be used to ensure that the road surfaces do not become muddied and slippery. Roadworks and temporary lane closures will be coordinated to have the least possible impact during peak times.
- 12.128 The CEMP will impose requirements for the various contractors to liaise with the Project Management consultant to ensure that the construction activities with high HGV generation do not occur together, to ensure the construction impact is managed. This CEMP provides some self-regulation, and the ability for the development manager to monitor and control the construction flows to those assessed here.

The Completed and Operational Development

- 12.129 As previously noted, through good design and provision for choice, in line with National Guidance, the Proposed Development provides the opportunity to promote local living, virtual mobility, active travel and shared travel before consideration is given to car travel.
- 12.130 In addition to design and choice, education and positively influencing behaviour regarding mobility through a Travel Plan and Personalised Travel Planning will be a significant factor in encouraging behavioural change. The Framework Travel Plan has been prepared which identifies both existing and new opportunities for promoting local living, active travel and shared travel. This includes provision for Personalised Travel Planning focussed on the residential elements within the site.
- 12.131 The Travel Plan covers the phased delivery of the Proposed Development with the appointment of a Travel Plan Coordinator who is responsible for the introduction of a range of measures (and a monitoring regime) which will seek to highlight the travel choices available and in doing so reduce further the number of vehicles travelling around the local highway network. The Travel Plan presents an Action Plan which creates a package of measures that are site specific and will assist in mitigating any adverse impacts associated with the Proposed Development.

Likely Residual Effects of the Development and their Significance

- 12.132 With regards to construction activity, and taking into account the successful implementation of the CEMP, the residual effects during construction would be short-term, temporary minor adverse.
- 12.133 In relation to ongoing operation, and taking into account the successful implementation of the Travel Plan and Personalised Travel Planning, the residual effects during operation would be long term, permanent minor adverse.

Conclusions

- 12.134 This chapter has considered the effects of the Proposed Development (as part of the Site Allocation) on transport and mobility. In particular, it considers the anticipated effects of the Proposed Development on the operation of both the local and strategic highway networks in the vicinity of the site.
- 12.135 The assessment has reviewed baseline conditions, along with a future year forecast accounting for known committed developments, and a future year forecast accounting for known committed developments plus the Proposed Development (as part of the wider Site Allocation). Active travel connections are available to the north, east and west of the site and form the primary movement network incorporating the existing lanes. The main vehicular access is provided on Penwortham Way.
- 12.136 The assessment concludes that the effects during construction can be appropriately mitigated and would be short term and temporary. The effects during future operation are already largely mitigated through the site location and excellent opportunities to promote local living, active travel and shared travel. Although likely to be long term and permanent effects, the additional mitigation associated with a Travel Plan and Personalised Travel Plan will ensure that the effects remain minor adverse.