Central Lancashire Local Cycling and Walking Infrastructure Plan

Lancashire County Council

21 April 2017

Updated: November 2019

Central Lancashire Walking and Cycling Delivery Plan

Project No:	B2237519
Document Title:	Central Lancashire Walking and Cycling Delivery Plan
Revision:	Rev4
Date:	21 April 2017 (updated November 2019)
Client Name:	Lancashire County Council
Project Manager:	John Davies
Author:	Laura Oliver/Paolo Medici/Katie Todd
File Name:	Central Lancashire Local Cycling and Walking Infrastructure Plan

Jacobs U.K. Limited

5 First Street
Manchester M15 4GU
United Kingdom
T +44 (0)161 235 6000
F +44 (0)161 235 6001
www.jacobs.com

Document history and status

Revision	Date	Description	By	Review	Approved
0	21/04/17	Issued for Client Review	LO/PM	ZS/DS	JD
1	10/09/17	Final for Client Approval	LO	DS	JD
2	01/06/18	Minor Amendments	KT	JD	JD
3	15/11/19	Updated to LCWIP Guidance	SS	KT	JD
4	25/11/2019	Updated following Client Comments	SS	KT	JD

Contents

Executive Summary

The Central Lancashire Local Cycling and Walking Infrastructure Plan (LCWIP) has been commissioned by Lancashire County Council, Preston City Council, South Ribble Borough Council and Chorley Council. The primary objective of the LCWIP is to identify cycling and walking investment priorities with a focus on Preston, Chorley, Leyland and the surrounding communities in order to create a coherent and comprehensive network of walking and cycling routes.

Firstly, this report sets out the methodology for the delivery of the recommended route network in the remainder of the LCWIP. This report then sets out a baseline position regarding data, evidence and existing conditions. The intention is that the methodology developed for this study will inform future LCWIPs which will be developed for other areas of Lancashire.

The report then moves on to recommending strategic routes for both the walking network and cycling network, based on intelligence gained from analysis of data and evidence. Following the establishment of the strategic routes, secondary route suggestions have been reported. These routes link from the strategic routes to employment and residential areas and link in with retail, leisure and other key opportunities. Together, the strategic and secondary routes provide a joined up and comprehensive network, developed for all journey purposes. Summary sheets have been produced which provide an overview of the proposed walking routes and proposed cycling routes.

The benefits of the strategic routes are calculated and explained in Chapter 6. The benefits are a high-level estimation and were calculated in order to give a broad range of potential benefits which could be realised on each route. These estimates demonstrate a high-level case for investment in walking and cycling and can aid in sequencing of investment. Further analysis and work would be required to develop these estimates to form business cases for individual projects and programmes. It is also important to recognise that a balanced approach to investment should be followed which takes account of various opportunities which will be specific to each route, such as securing developer contributions.

Engagement with the community, education centres and workplaces are important in raising awareness of infrastructure and facilities, aiding a behavioural shift to consider walking and cycling a natural choice for shorter journeys. This goes hand in hand with the promotion of walking and cycling, to make this a cultural norm alongside spreading the knowledge of events and routes.

It is important that the recommendations made in this plan are integrated into other local policy documents, such as the Local Transport Plan and Transforming Cities Fund business case in order to support the delivery of this network going forward.

1. Determining Scope

1.1 What is a Local Cycling and Walking Infrastructure Plan?

Following the publication of the Cycling and Walking Investment Strategy (CWIS) by the Department for Transport (DfT) in 2017, local authorities were encouraged to develop Local Cycling and Walking Infrastructure Plans (LCWIP) which provide a strategic approach to identifying improvements required at a local level. The strategy states that whilst "the preparation of LCWIPs is non-mandatory, local authorities who have developed such plans will be well placed to make the case for future investment".

The development of LCWIPs assists central Government in implementing the national CWIS at a local level. The national strategy includes detailed guidance on how LCWIPs should be produced to ensure plans are evidence based and achieve buy in from local communities and key stakeholders. As such, LCWIPs aim to create a long-term approach to increasing the number of cycling and walking trips across all local authorities, through the identification of preferred routes and the subsequent creation of a prioritised programme of infrastructure improvements for future investment.

1.2 Why Develop a Local Cycling and Walking Infrastructure Plan for Central Lancashire?

This LCWIP is a comprehensive, cohesive and inclusive document that is designed to deliver a series of related key outputs focused on increasing walking and cycling within Central Lancashire. The LCWIP aligns with the aspirations of the County to increase levels of walking, promoting accessible pedestrian environments and improvements to the urban realm, with the aim to produce inclusive places which support the local economy, improve air quality and better the residential environment. The aim is to increase the level of walking and cycling in Central Lancashire beyond the Government's current target for growth, attracting commuters, schoolchildren, families and other users.

The remainder of this LCWIP comprises the following sections, to align with the DfT LCWIP Technical Guidance:

- Section 2: Policy Review
- Section 3: Gathering Information
- Section 4: Network Planning for Cycling
- Section 5: Network Planning for Walking
- Section 6: Prioritisation and Appraisal
- Section 7: Integration and Application

1.3 Steering Group

A study steering group is in place as part of the LCWIP. This consists of:

- Marcus Hudson: Lancashire County Council
- Michelle Holroyd: Lancashire County Council
- Steven Brown: South Ribble Borough Council
- Alison Marland: Chorley Borough Council
- Nigel Roberts: Preston City Council (City Deal Team)
- Jimmy Kahn: Preston City Council

This steering group met at key points within the study to ensure the project was on track and to discuss which routes / zones to investigate further and the format of any output.

1.4 Stakeholder Consultation

A stakeholder workshop was held in Preston at which 45 stakeholders attended representing multiple organisations outlined in Table 1-1.

Engaging and consulting local stakeholders is critical to ensure widespread 'buy in' to the delivery plan. It is also an essential stage in capturing the local knowledge that many will have about potential schemes across the study area. This workshop informed both the strategic and secondary routes.

Local government stakeholders include:

- City Deal Team, Strategic Planners, Transport Planners, Transport Development Management, Districts, Town and Parish Councils, Public Health Partners.

Broader stakeholders include:

- Key trip generators such as University of Central Lancashire, local cycling clubs and groups, Bikeability Instructors, Sustrans, Cycling UK (formerly CTC), Living Streets, disability groups.

Through a mapping exercise, attendees were asked to identify:

- Key locations people travel to and from: employment sites, schools, transport interchanges, leisure routes.
- Existing routes.
- Current routes which need improvement.
- Opportunities to develop new routes.
- Missing links.

A key objective of this stakeholder workshop was to begin to understand where schemes might deliver across multiple agendas e.g. a leisure cycling route that also connects to schools and employment.

Table 1-1 Stakeholders Attending Workshop

Organisations	
University of Central Lancashire	Chorley School Sport Partnership / Chorley Cycling Club
Ramblers Association	Ribble Valley Juniors Cycling Club
Preston Community Transport	Lancashire County Council - Partnership Development Officer
Preston College	Chorley Borough Council - Planning
Cycling Projects / Preston on Wheels	Chorley & Lancs Access Forum
Preston Grasshoppers - Hoppers Rollers Cycling Club	British Cycling - Recreation Manager
Ribble Valley Cycling & Racing Club / CTT North	Sustrans - Partnerships Manager
Cycling UK	South Ribble Borough Council - Sports Development
Guild Wheel User Group / Preston Cycle Liaison	Ribble Valley Juniors Cycling Club
Preston Parks Service	Nordic Walking Preston
PSP	Lancashire County Council - PROW Capital Programme
Go Velo	Lancashire County Council - Planning

Organisations	
Lancashire City Council - Public Rights of Way Manager	Preston City Council - Health & Physical Activity Manager
Leisure Lakes Bikes	Preston City Council - Principal Urban Designer
Chorley Borough Council - Community Development Officer	Preston City Council - Head of Sports & Leisure
Chorley Ramblers	Preston City Council - Head of Engineering
Lancashire Local Access Forum	Preston City Council - Cycling Development Officer
Chorley Council - Parks & Open Spaces Officer	

2. Policy Review

2.1 National Policy

2.1.1 DfT Future Mobilisation Strategy

The Strategy sets out the approach which the Government will take to seize the opportunities from the changes currently taking place within the urban transport field. It sets out the benefits which the Government is seeking to delivery from mobility innovation and the Principles that will help achieve them.

One such Principle refers to “walking, cycling and active travel must remain the best options for short urban journeys”. This Principle is supported by LCWIPs which seek to increase the number of everyday journeys completed via bicycle or on foot.

2.1.2 Transforming Cities Fund

As part of the Autumn Budget 2017, the Government announced the creation of the Transforming Cities Fund (TCF) with the aim of driving up productivity and spreading prosperity through investment in public and sustainable transport in some of the largest English city regions.

Preston was one of the 12 selected cities eligible to submit a bid for funding from the TCF. A draft Strategic Outline Business Case (SOBC) was submitted in June 2019 for funding, with a more detailed Strategic Outline Business Case (SOBC) to be submitted in November 2019. The schemes which have been put forward for funding align with those within this LCWIP, and comprise of high-quality infrastructure since there is as a strong evidence base to suggest that infrastructure of this quality is successful in achieving a significant increase in walking and cycling levels.

2.1.3 Inclusive Transport Strategy

In 2018, the DfT released their Inclusive Transport Strategy which aims to improve accessibility across all types of travel for those both with visible and less visible disabilities.

The Strategy outlines the Government’s ambition for disabled people to have the same access to transport as everyone else, and be able to travel confidently, easily and without extra cost. By 2030, the DfT envisages equal access for disabled people using the transport system, with assistance if physical infrastructure remains a barrier.

The Strategy sets out five main themes:

- Awareness and enforcement of passenger rights
- Staff training
- Improving information
- Improving physical infrastructure
- The future of inclusive transport

2.1.4 Clean Air Strategy

The Clean Air Strategy was published by the Department for Environment, Food & Rural Affairs in 2019 and outlines how the Government plans to tackle all sources of air pollution, making our air healthier to breathe, protecting nature and boosting the economy. The Strategy outlines how new legislation will create a stronger and more coherent framework for action to tackle air pollution. This will be underpinned by new England-wide

powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem.

2.1.5 DfT Cycling and Walking Investment Strategy

In 2017 DfT produced its first Cycling and Walking Investment Strategy (CWIS). The Strategy sets out the Government's ambition to make walking and cycling the natural choices for shorter journeys or as part of a longer journey. The strategy sets out how central government will work towards achieving a shift to walking and cycling through investment and partnership working with local bodies, third sector and the private sector.

The Strategy's objectives, by 2020, are to:

- Increase cycling activity, where cycling activity is measured as the estimated total number of cycle stages made.
- Increase walking activity, where walking activity is measured as the total number of walking stages per person.
- Reduce the rate of cyclists killed or seriously injured on England's roads, measured as the number of fatalities and serious injuries per billion miles cycled.
- Increase the percentage of children aged 5 to 10 that usually walk to school.

In the longer term the strategy has set targets to 2025 including:

- To aim to double cycling, where cycling activity is measured as the estimated total number of cycle stages made each year, from 0.8 billion stages in 2013 to 1.6 billion stages in 2025, and to work towards developing the evidence base over the next year.
- To aim to increase walking activity, where walking activity is measured as the total number of walking stages per person per year, to 300 stages per person per year in 2025, and to work towards developing the evidence base over the next year.
- To increase the percentage of children aged 5 to 10 that usually walk to school from 49% in 2014 to 55% in 2025.

2.1.6 Local Cycling and Walking Infrastructure Plan – Technical Guidance

Alongside the CWIS, the DfT published technical guidance for local authorities to guide how infrastructure plans are developed to improve walking and cycling routes[1].

LCWIPs are a strategic approach to identifying cycling and walking improvements required at the local level, enabling a long-term approach to developing local cycling and walking networks. The key steps within the LCWIP process are detailed in Figure 2-1. The LCWIP guidance places emphasis on using internally and nationally best practice to achieve a high quality of infrastructure for both walking and cycling.

[1] https://www.gov.uk/government/publications/local-cycling-and-walking-infrastructure-plans-technical-guidance-and-tools

Stage	Name	Description
1	**Determining Scope**	Establish the geographical extent of the LCWIP, and arrangements for governing and preparing the plan.
2	**Gathering Information**	Identify existing patterns of walking and cycling and potential new journeys. Review existing conditions and identify barriers to cycling and walking. Review related transport and land use policies and programmes.
3	**Network Planning for Cycling**	Identify origin and destination points and cycle flows. Convert flows into a network of routes and determine the type of improvements required.
4	**Network Planning for Walking**	Identify key trip generators, core walking zones and routes, audit existing provision and determine the type of improvements required.
5	**Prioritising Improvements**	Prioritise improvements to develop a phased programme for future investment.
6	**Integration and Application**	Integrate outputs into local planning and transport policies, strategies, and delivery plans.

Figure 2-1 Key steps in the LCWIP process

2.2 Regional Policy

2.2.1 Transport for North Strategic Transport Plan

TfN's Strategic Transport Plan sets out the case and priorities for strategic transport infrastructure investment in the North of England and forms the main pan-northern sub-national transport policy document relevant to the TCF package of interventions.

The STP focuses on the contribution transport infrastructure can make towards meeting pan-northern transformational growth objectives, boosting the UK's international competitiveness, unlocking housing growth across the North and improving reliability and congestion on the transport network.

The LCWIP will contribute to creating a more reliable, less congested and better connected transport network due to the potential to create a modal shift towards sustainable travel modes for everyday journeys, thereby reducing the number of car journeys and relieving pressure on the network.

2.3 Local Policy

2.3.1 Preston City Centre Plan

The City Centre Plan sits within a planning framework for Preston within the Central Lancashire Core Strategy. The Plan identifies the main issues for Preston city centre, and suggests the overall vision and objectives for the city centre, which are informed by the Core Strategy and Local Plan. The Plan identifies five 'Opportunity Areas' within the city centre, each with its own policy, vision and development opportunity.

These opportunity areas have been considered within the LCWIP development and the priority areas taken forward.

2.3.2 City Deal

The Preston, South Ribble and Lancashire City Deal agreed with government builds on the strong economic performance of the area over the last decade. In the next ten years, the City Deal aims to generate significant economic and housing growth to boost the local economy.

A key element to the Deal is ensuring that key areas of housing and employment are easily accessible to all and therefore this LCWIP is directly supportive of the Deal through enhancing the connections between existing and new developments, and increasing access to opportunities for all.

2.3.3 Lancashire County Council Local Transport Plan (2011-2021)

The Local Transport Plan (LTP) was adopted in May 2011 and sets out priorities in Lancashire until 2021.

Through the aim of the LCWIP to increase walking and cycling levels across the Borough, the LCWIP positively contributes to the following LTP objectives:

- To provide all sections of the community with safe and convenient access to services, jobs, health, leisure and educational opportunities that they need.
- 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
- To reduce the carbon impact of Lancashire's transport requirements, whilst delivering sustainable value for money transport options to those who need them.

2.3.4 Lancashire Walking and Cycling Strategy (2018)

In the summer of 2018 Lancashire County Council and partners published their Lancashire Cycling and Walking Strategy 2016. The vision set out within this strategy was:

'More people walking and cycling for every day and leisure journeys in Lancashire'.

Within this strategy an action was agreed to develop Cycling and Walking Investment Plans at the Lancashire transport masterplan level which provide long term plans for future walking/cycling networks. These plans will enable development of the network in a coordinated and joined up way, noting *'developing a pipeline of schemes will enable us to secure funding from various sources by demonstrating the feasibility and cost effectiveness of schemes'.*

The headline targets included within the strategy include:

- Doubling the number of people cycling by 2026.
- Increasing the number of people walking by 10% by 2026 with a focus on increasing the percentage of children aged 5-10 usually walking to school.
- Bring levels of physical activity in all districts to at least the annual national average by 2026.

The strategy uses the concepts of developing *'centres of excellence'* based around the design principles of:

- **Cohesion**: People must be able to get from origins to destinations via routes of consistent quality.
- **Directness**: Connections must be as direct as possible in terms of distance and time.
- **Safety**: Routes should be safe and people must feel safe.

- **Comfort**: Routes must be comfortable e.g. ease of wayfinding (signage), little hindrance from other road users (car parking) and surfacing which is appropriate to the facility.
- **Attractiveness**: Routes and urban spaces should be pleasant and attractive spaces in which people want to spend time; this is particularly important in the context of urban centres.

In addition to those principles, the strategy makes clear an emphasis on **giving priority to people walking and cycling** stating; *"Local Transport Plans and Transport Masterplans in Lancashire have established prioritising walking and cycling above motorised modes of travel. We will implement this hierarchy when improving existing infrastructure and guiding new development to make walking and cycling convenient and attractive."*

Relevant goals within the strategy to this delivery plan are reproduced in Table 2-2.

Table 2-1 Goals Within the Draft Lancashire Cycling and Walking Strategy

How we will develop and Centres of Excellence	Why are we doing this?
We will provide connectivity by developing a comprehensive and high quality joined up walking and cycling network for everyday and leisure travel. These networks will **connect homes, schools, workplaces, shops, transport interchanges and leisure attractions**.	A good base of cycling and walking networks have been developed in Lancaster, **Preston**, Blackpool, East Lancashire and Blackburn with Darwen. There are however **key gaps** in these networks, which need to be addressed to provide fully joined up routes and connectivity.
Enable walking and cycling as part of multi-modal longer distance journeys through **developing hubs at transport interchanges.**	Areas in the south of Lancashire show higher proportions of commuting journeys 20-30km in length. These areas include West Lancashire, Chorley, Blackburn and Rossendale, indicating significant flows of people to Merseyside and Greater Manchester. **Developing hubs** which provide good quality facilities will **enable walking and cycling as a part of longer distance journeys**. These hubs could also serve visitors to Lancashire, providing the facilities and support to use leisure walking and cycling routes.
Develop high quality places which are vibrant, attractive, inclusive and which support walking and cycling for **everyday** and **leisure** travel.	Increasing walking and cycling accessibility within our towns, cities and public spaces will help build a comprehensive and joined up network of routes. High quality and vibrant public spaces which are not dominated by motorised vehicles can attract people to live, work, study and shop in these areas. We also need to ensure **consultation is held with specific user groups** to ensure infrastructure supports the needs of older people and people with disabilities.
Provide targeted investment to address key barriers for groups currently **underrepresented** in walking and cycling in Lancashire.	The uptake of walking and cycling in Lancashire is lowest amongst **females, young people, older people, lower income communities and ethnic minority communities**. We also need to address high levels of physical inactivity and negative health impacts amongst lower income populations, particularly within Blackburn with Darwen, Blackpool, Burnley, Hyndburn, Pendle, **Preston** and West Lancashire which have lower levels of physical activity than the national average.
Use Lancashire's enviable range of **inspiring environments** and recreational walking/cycling routes to encourage people to begin (or return to) walking/cycling for leisure, acting as a pathway for more everyday travel.	Research shows that people who do not currently cycle are more open to cycling for leisure purposes. This research also shows that once people do cycle for leisure they are then more open to considering cycling for everyday travel.

3. Gathering Information

This is a crucial step in the process and involves working with partners and stakeholders to create a rich and detailed picture of the study area, current behaviour and any changes likely through recent and proposed development.

3.1 Introduction

A review of baseline data has been undertaken to inform the location and prioritisation of the future walking and cycling network. The analysis and conclusions of the data review are outlined in the remainder of this section.

3.2 Population

The population covered by the study area is **421,386 (2001 Census)**. Of this:

- 18.4% are under 15
- 65.1% are of working age
- 16.6% are over 65 years old.

The gender breakdown within the study area is roughly equal with 50.3% female and 49.7% male.

3.3 Indices of Multiple Deprivation

The indices of deprivation provide measures of deprivation based on 7 domains of deprivation. These are weighted and combined to produce the index of multiple deprivation (2015). The domains are:

- Income deprivation;
- Employment deprivation;
- Education, skills and training deprivation;
- Health deprivation and disability;
- Crime;
- Barriers to housing and services;
- Living environment deprivation.

Figure 3-1 below shows that there are 20 areas that are within the top 10% most deprived nationally and a further 20 areas in the top 20%. All of these areas are also in the bottom two deciles for health deprivation. These areas mainly cover central and east Preston towards Samlesbury, with a small number of areas in Leyland and across central Chorley. This indicates that residents of these areas are likely to experience issues in terms of poor health and physical inactivity, affordability of travel and access to employment and educational opportunities. Improving routes in these areas will lead to benefits for residents and also wider benefits through increased employment and improvements to public health.

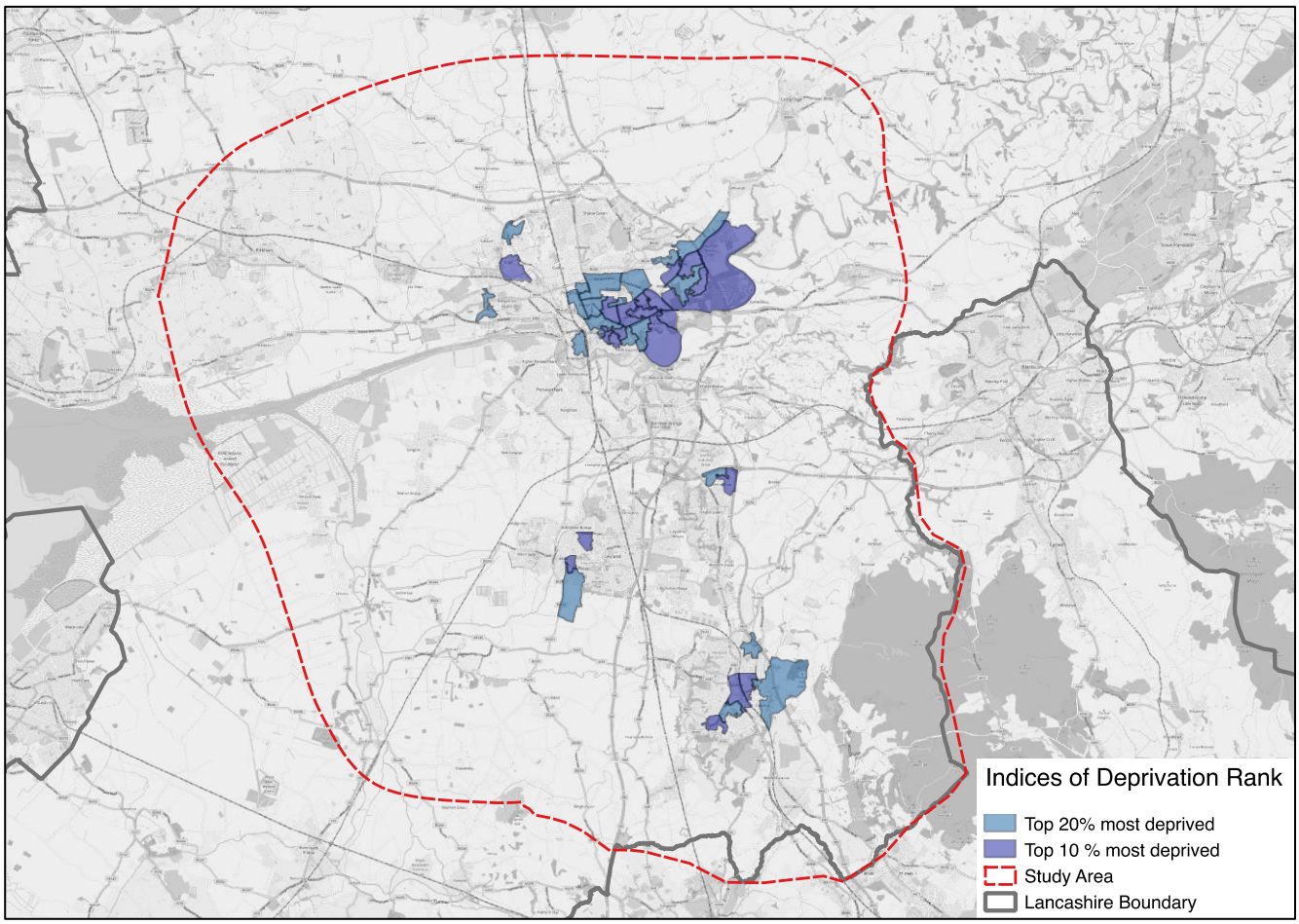

Figure 3-1 - Index of Deprivation Rank

3.4 Health Deprivation and Disability Domain

This domain measures the risk of premature death and the impairment of quality of life through poor physical or mental health. These indicators are weighted to create a domain. These are then ranked, with 1 being the most deprived. Health deciles are formed through creating 10 equal groups of data.

The indicators used are:

- Years of life lost: defined as death before the age of 75 by any cause, based on mortality data 2008-2012.
- Comparative illness and disability ratio: illness/disability that is work limiting, based on those receiving benefits through ill health.
- Acute morbidity: emergency hospital emissions, based on records.
- Mood and anxiety disorders: based on a combination of hospital data, prescriptions, suicides and health benefits.

Figure 3-2 shows there are 41 areas within the top 10% most health deprived nationally and 32 within the top 20%. These areas are within central Preston and slightly out towards the east; other deprived areas are in central and north of Chorley near Buckshaw Village. This shows that poor health is a problem in these LSOAs of the study area. This represents a substantial opportunity to improve public health through increased physical activity associated with walking and cycling. If the Draft Lancashire Walking and Cycling Strategy aim of 'bringing levels of physical activity in all districts to at least the annual national average by 2026' is to be achieved, significant increases in walking and cycling will be required in these areas suffering health deprivation.

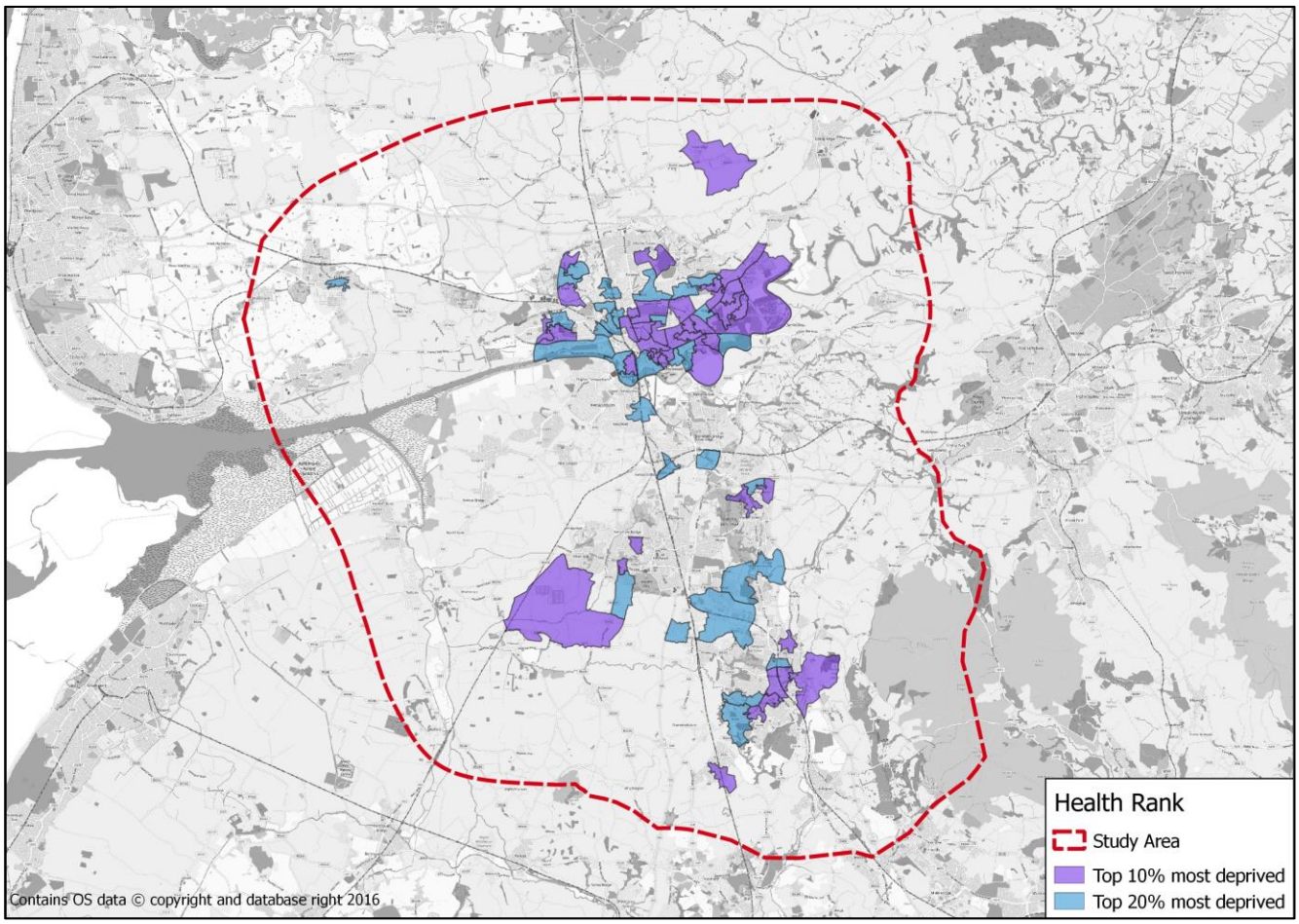

Figure 3-2 - IMD (Health Rank)

3.5 Air Quality Management Areas

There are a number of Air Quality Management Areas (AQMAs) within the study area, which are shown in Figure 3-3. The areas are within central Preston and Bamber Bridge; there are no AQMAs in Leyland and Chorley. These are the areas which are unlikely to meet the national air quality objectives by the relevant deadlines, and therefore it is an aim to improve the air quality in these areas in future.

Figure 3-3 Air Quality Management Areas

3.6 Employment

Figure 3-4 below shows the spatial nature of unemployment levels in Central Lancashire. As would be expected, areas of unemployment align broadly with areas experiencing higher levels of deprivation. This reinforces the need to provide affordable travel options for residents seeking employment and providing access to key strategic employment locations such as Preston City Centre, City Deal development sites and the development of the Cuerden Strategic Site.

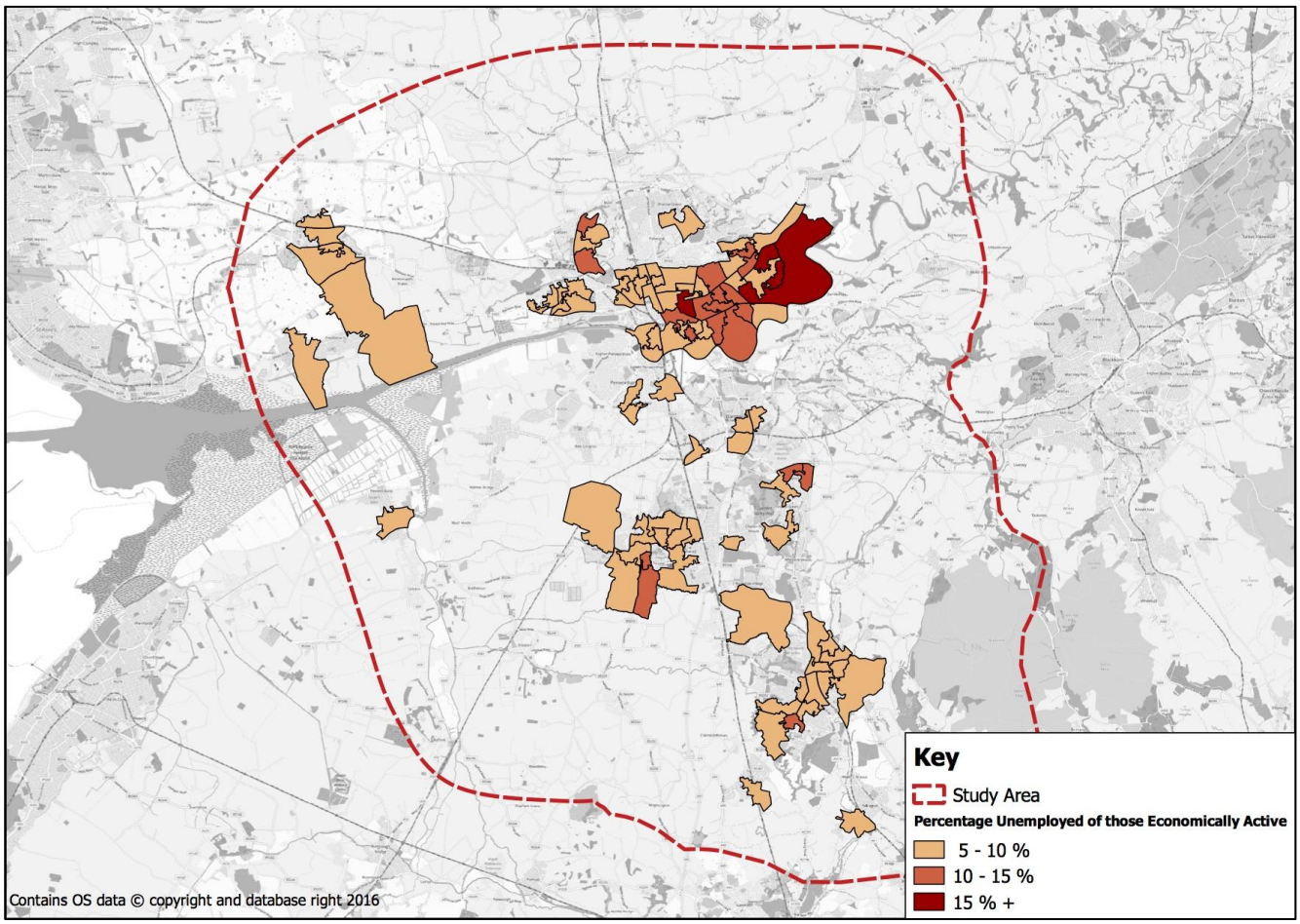

Figure 3-4 - Levels of Unemployment (Census 2011)

3.7 Travel to Work

This section presents data regarding travel to work as reported in the 2011 census. In total **202,123** workplace journeys to work were reported to take place in the study area for all modes of travel.

Table 3-1 - Travel to Work Modal Share for Study Area (Census 2011)

	Cycling	Walking	Bus	Train	Driving & passenger	Other	Total
Number (% percentage)	**4695 (2.3%)**	**19,914 (9.9%)**	12,736 (6.3%)	3,763 (1.9%)	157,659 (78.0%)	3,356 (1.7%)	202,123 (100%)

The following figures illustrate the main travel to work flows using origin/destination postcode data to census Lower Super Output Areas (LSOAs). This data shows travel by all modes.

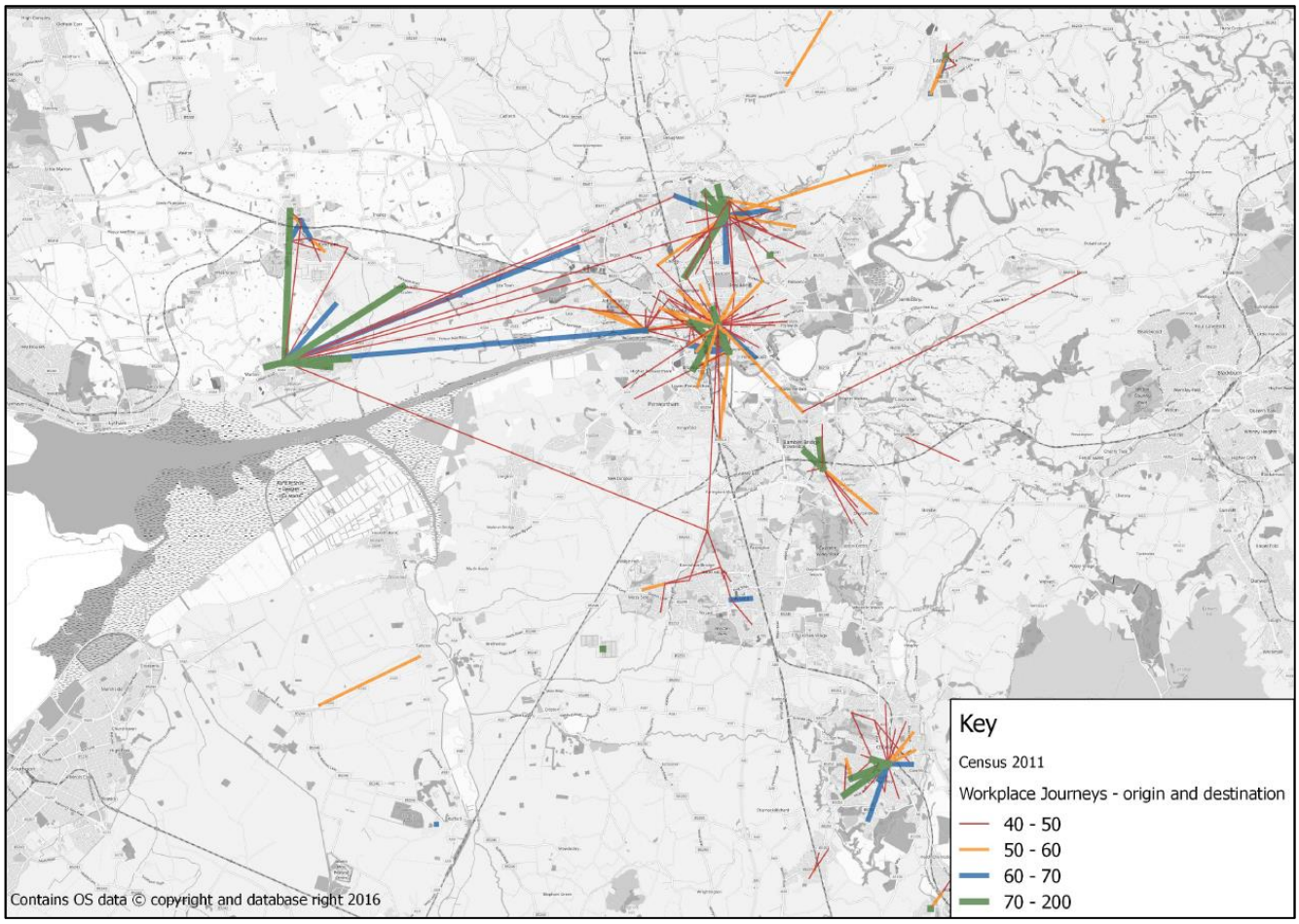

Figure 3-5 - Travel to Work Flows All Areas - LSOA Level

These plans only indicate the highest flows between LSOA areas.

- Major flows to central Preston and the Fulwood area in the north east of Preston and the Warton Aerodrome. Some of the key connections are also between these places.
- There appears to be more limited connections between Preston, Bamber Bridge, Leyland and Chorley. Travel in the areas external to Preston are predominately local journeys.

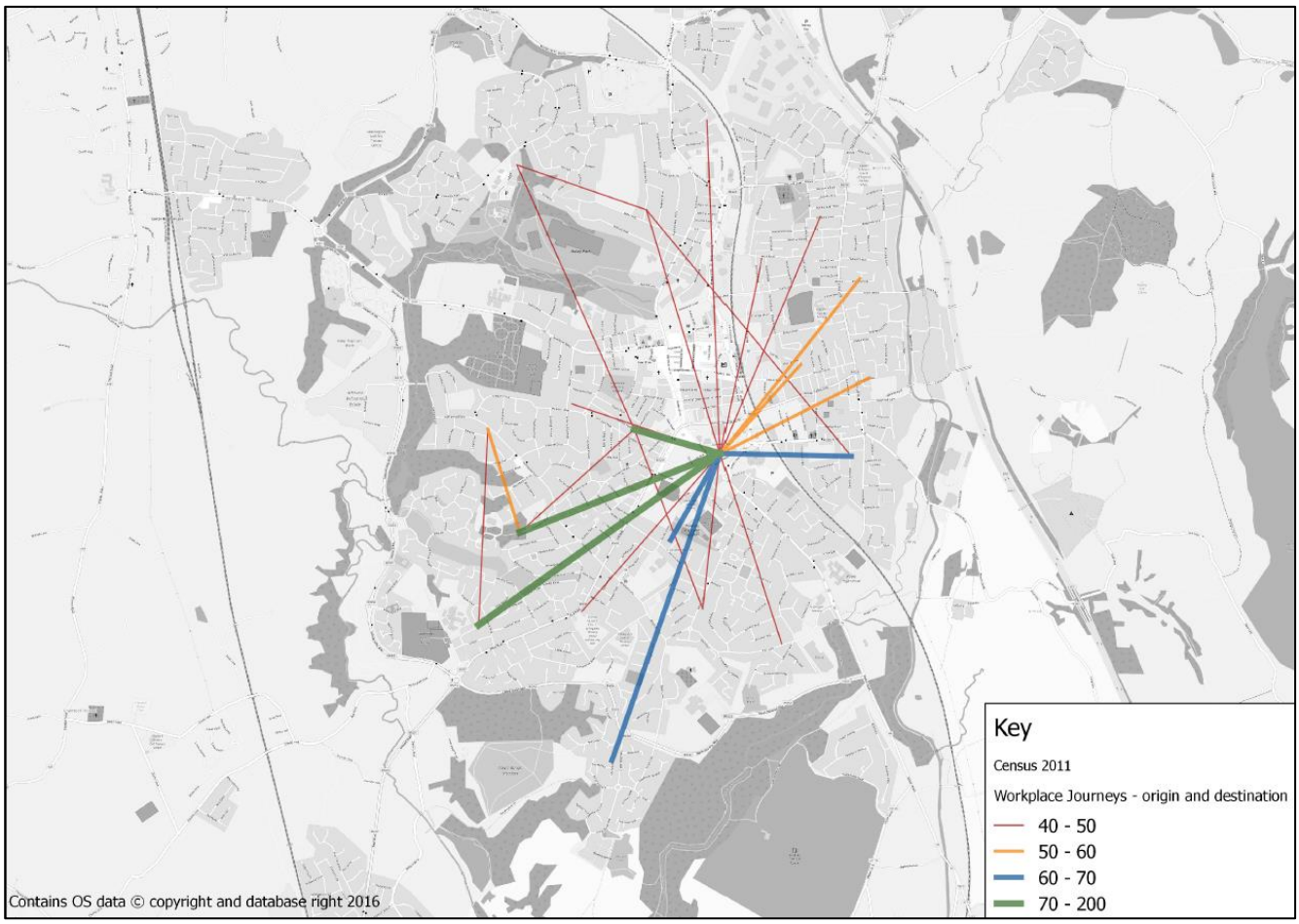

Figure 3-6 Travel to Work Flows Chorley - LSOA level

- Some larger flows from the south west to the centre of Chorley.
- The most prominent connections for those within Chorley are to other areas of Chorley.

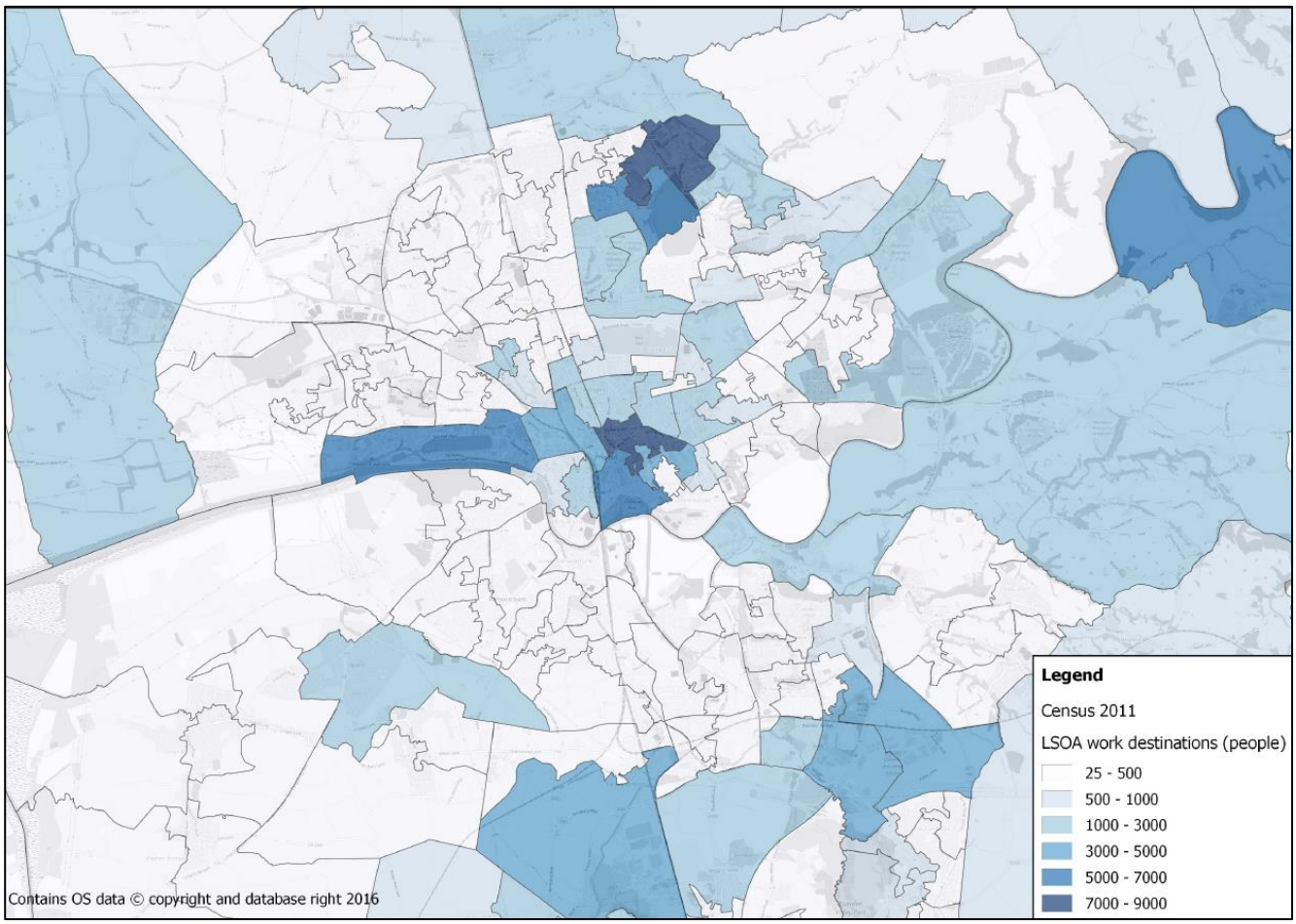

Figure 3-7 Workplace Destinations: Preston - LSOA Level

- Major workplace destinations immediately north of the River Ribble in central Preston and north east of Fulwood, where Fulwood Business Park is located.
- The number working in these major work destinations is 5000+.
- Another key work destination on the right of the map is the LSOA where BAE Systems are located at Samlesbury aerodrome.

The following Figures show travel to work patterns by walking and cycling. When looking at mode specific data from census travel to work data it is not possible to get information at LSOA level. Data is only available at MSOA level which reduces the accuracy of the data but still shows some interesting patterns.

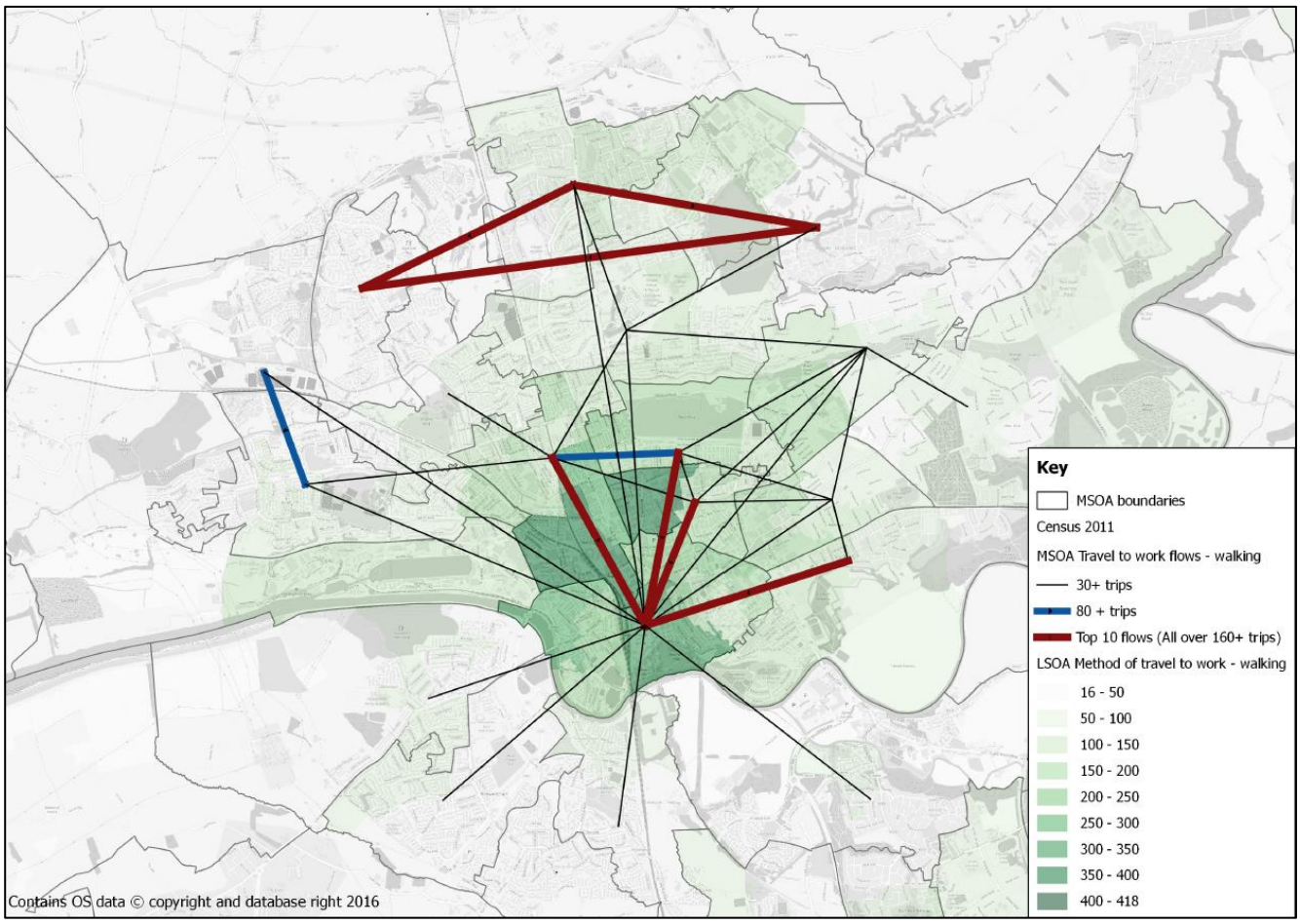

Figure 3-8 - Walking Flows: Preston - MSOA Level

- The key areas where people walk to work are within central Preston, who are most likely to live close to their work destination.
- 7 out of the 10 top walking flows to work occur in central Preston with the city centre being the main attractor. Other main areas generating sizeable walking numbers are:
  - The Preston North East Employment Area
  - The Tannerton / Ingol area of the city
  - The University of Central Lancashire (at both its City Centre and Sports Campus)
  - Royal Preston Hospital
- The largest flows are the locations of some of the key workplace destinations from the previous map.

Census data does not account for multimodal journeys whereby commuters travel by public transport and then walk to their destination. This fact should be borne in mind when considering key strategic routes and secondary connections. Also, it does not take into account people who travel different modes throughout the week, only capturing the most common mode used.

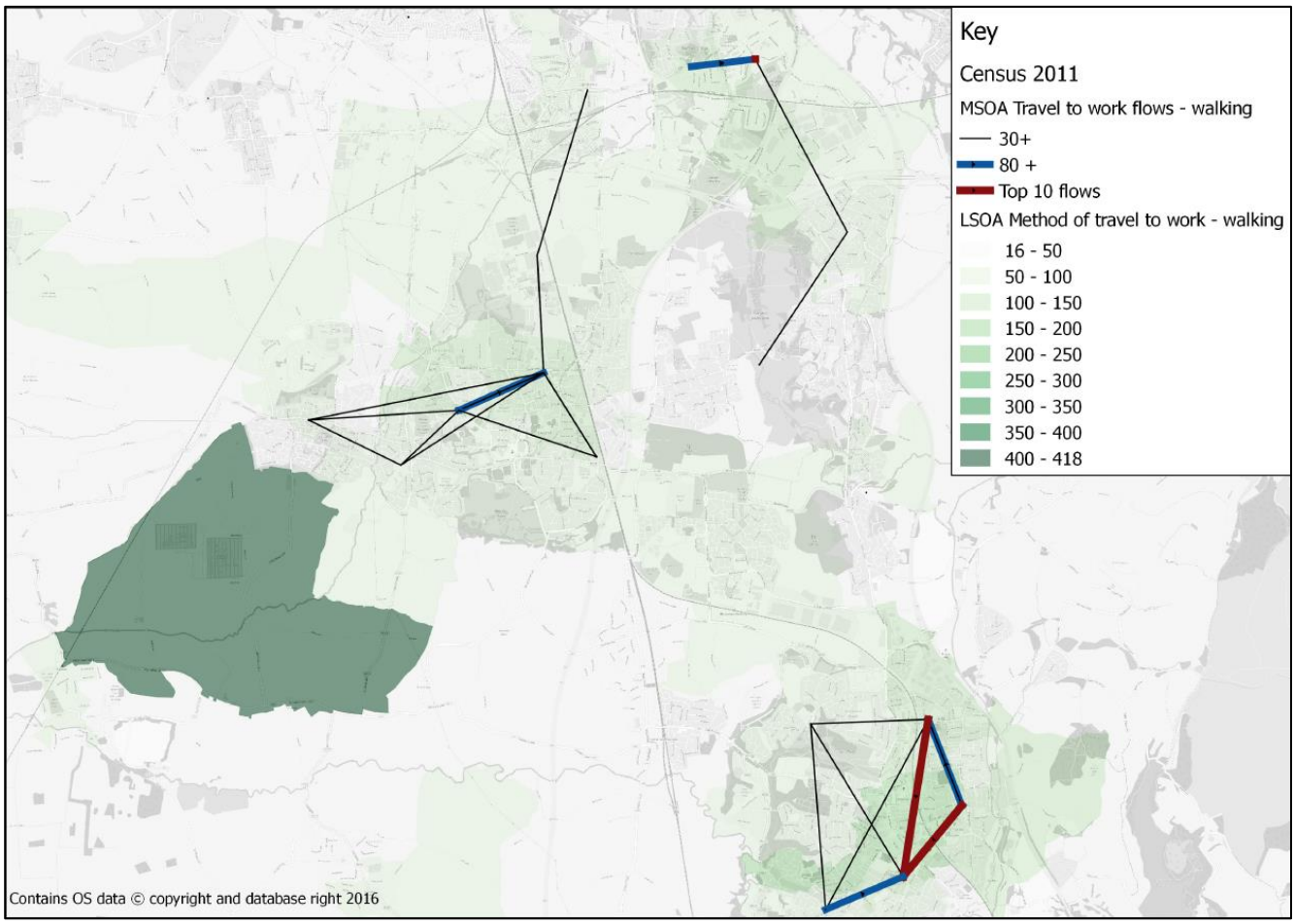

Figure 3-9 Walking Flows: South Ribble and Chorley - MSOA Level

- The key walking connections in this map show connections are within Chorley and Leyland, rather than connections between these places.
- Two of the top key flows occur within Chorley, from the north east towards the central area of Chorley.

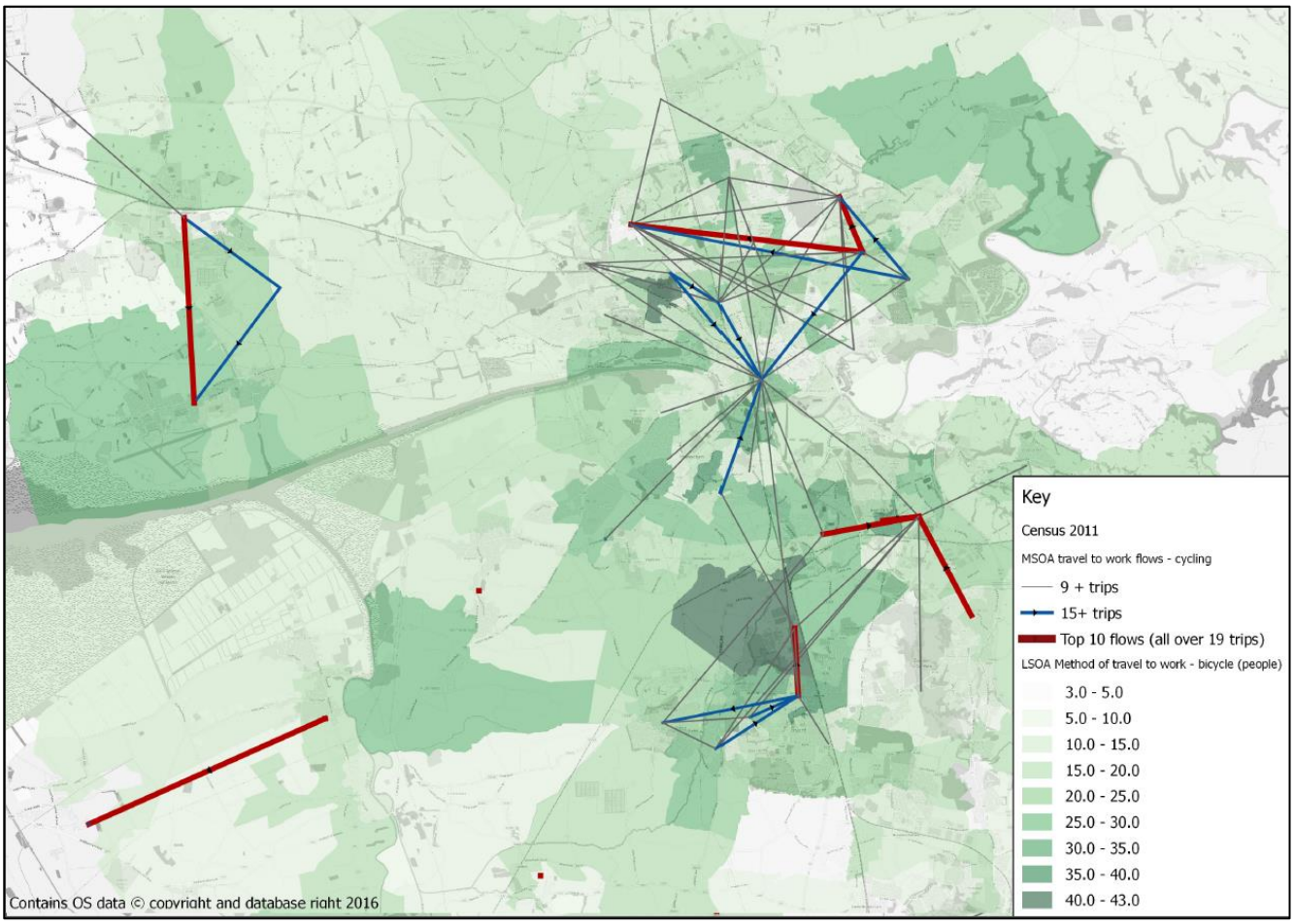

Figure 3-10 Cycling Flows: Preston and South Ribble - MSOA Level

- Numbers appear low for this Census data, possibly due to cycling not being individuals' most common mode of transport for everyday of the week.
- The top 10 flows are not concentrated in one area within the study area and dispersed across Central Lancashire.
- The map shows that there are some links between central Preston and the South Ribble area of Leyland and Bamber Bridge for cycle journeys.

3.8 Travel to Education

The PCT has recently published data which is associated with trips to and from schools and can be used to support the development of future connections which are intended to support sustainable trips to and from educational areas. The output of the school trips for the top 30% of trips from the PCT is shown below.

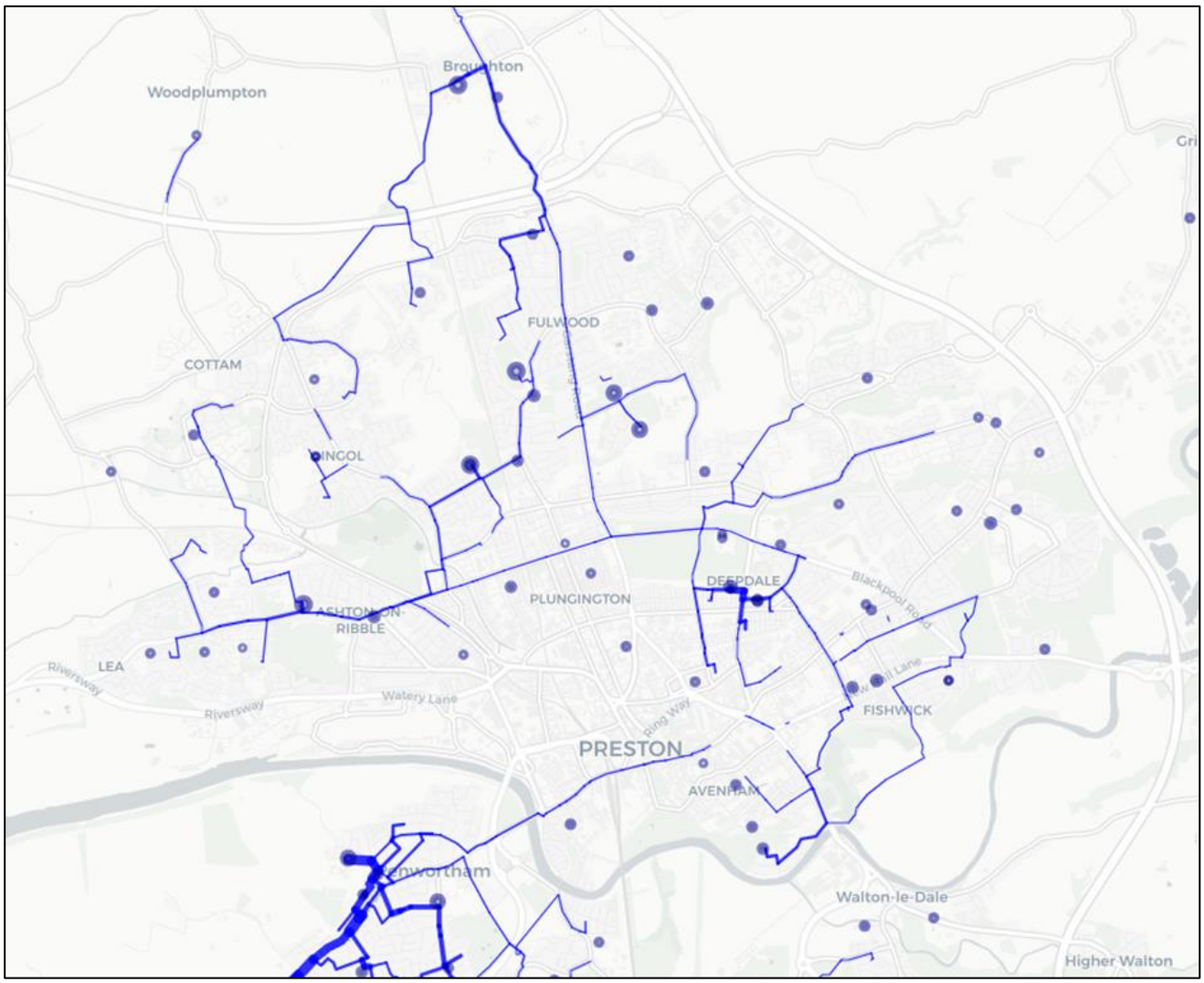

Figure 3-11 PCT School Trips, School Census 2011: Preston

Figure 3-11 PCT School Trips, School Census 2011: Preston and Figure 3-11 shows the greatest concentration of journeys to school are located within Deepdale and Penwortham, which is likely to be reflective of the high concentration of schools and high population density of 45+ people per hectare within these areas. A significant number of trips located along Blackpool Road are associated with movements to schools within Ashton on Ribble.

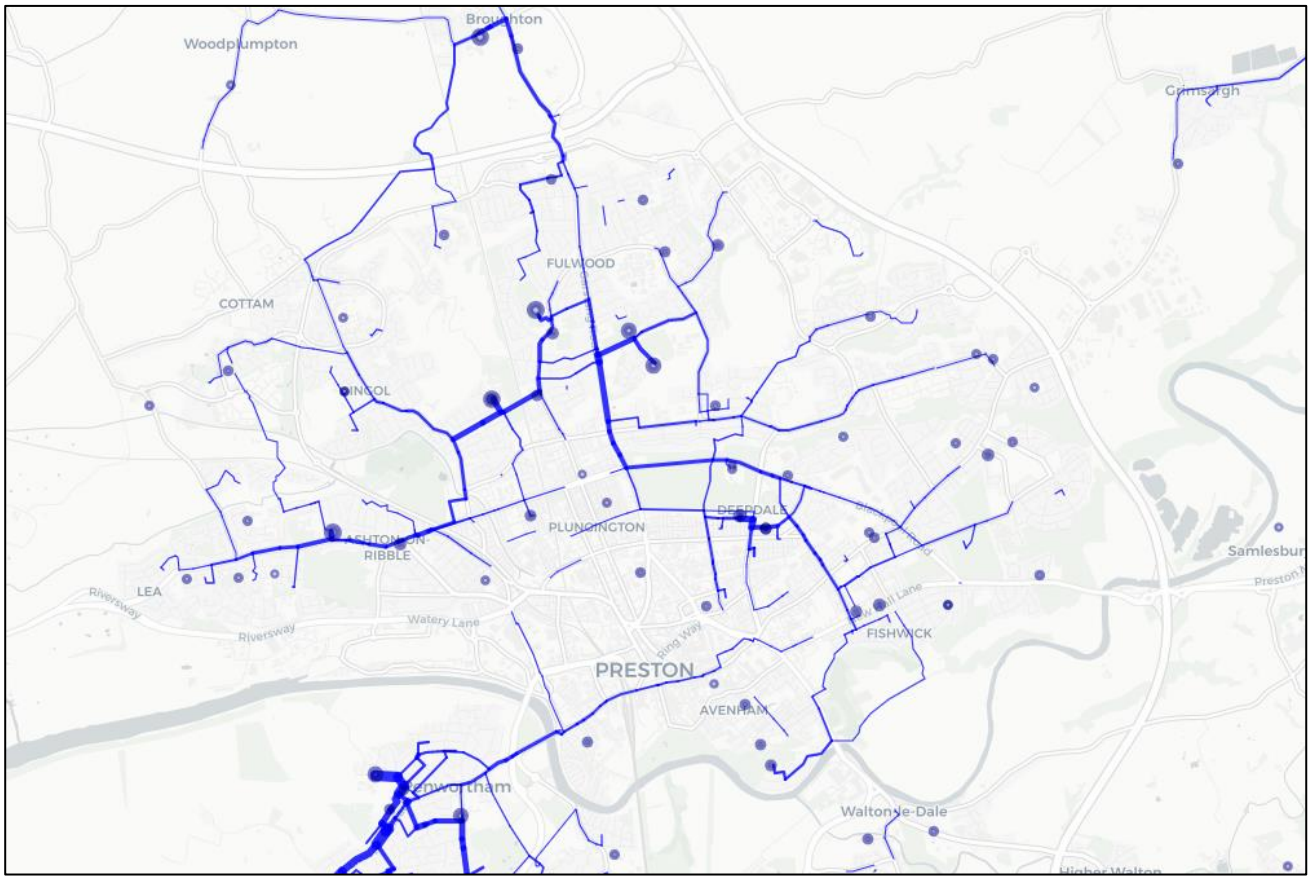

Figure 3-12 School Trips, Government Target: Preston

Figure 3-12 shows the potential school trips within Preston under a PCT Government Target Scenario. The output shows similar trips being completed to that under the School Census 2011 baseline in Figure 3-11. However, the greatest increase in trips is shown along Blackpool Road in Ashton on Ribble, Cadley Causeway, Garstang Road and Deepdale Road.

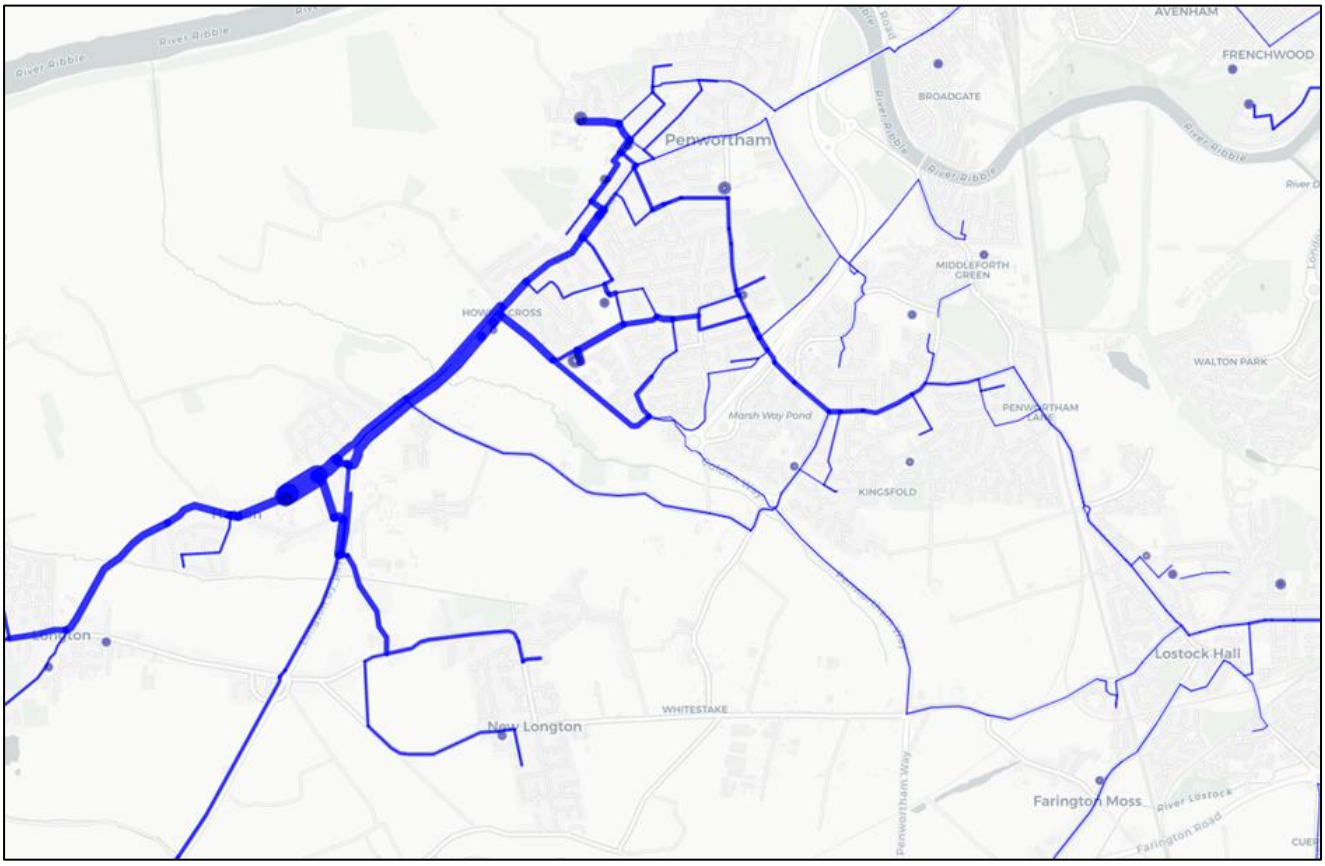

Figure 3-13 School Trips, School Census 2011: Penwortham

Figure 3-13 shows the majority of trips associated with journeys to school in Penwortham are located along the A59, which is likely to be a result of the concentration of schools along the A59 and Hutton. This is also likely to be influenced by the concentration of schools located within Howick Cross and Lower Penwortham.

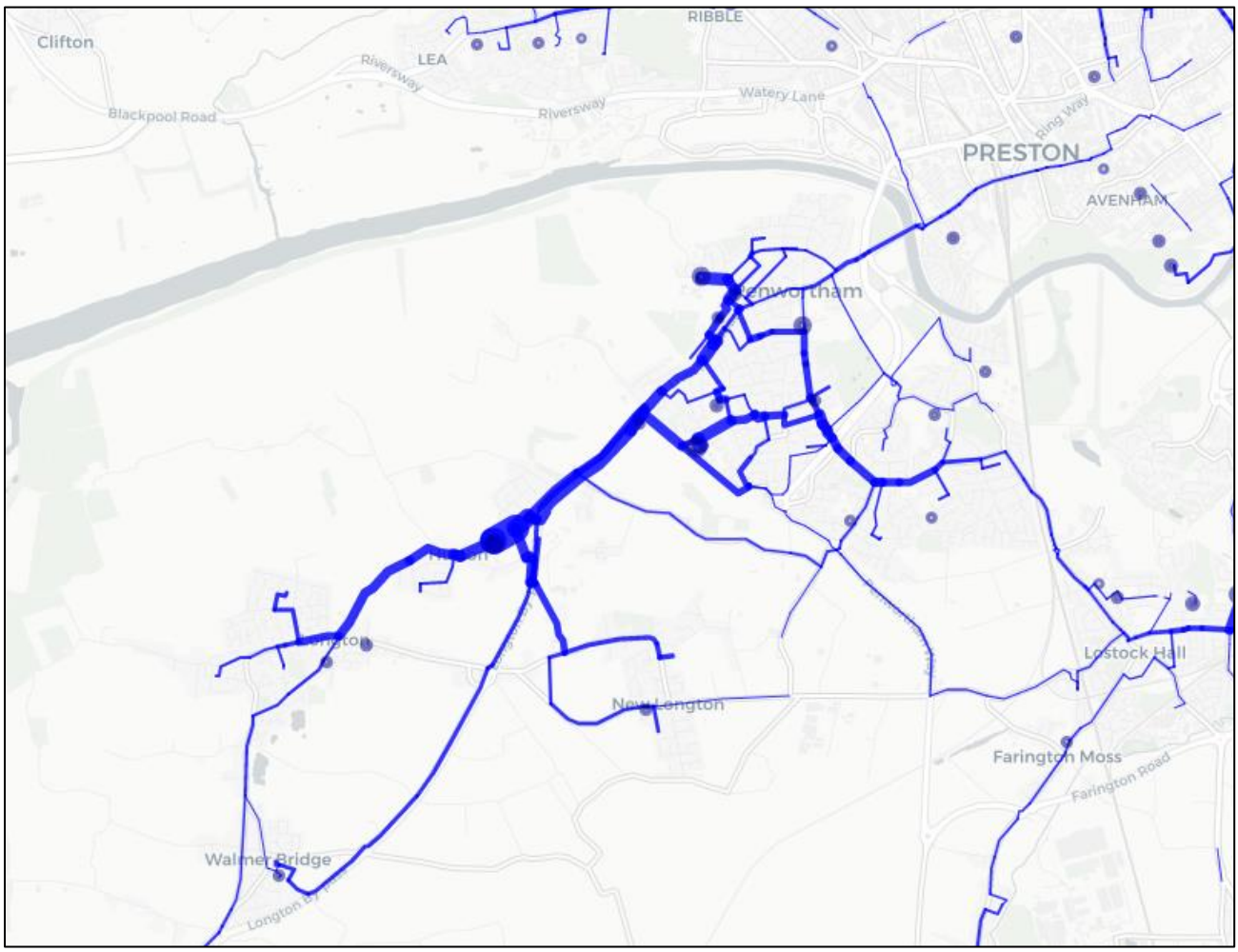

Figure 3-14 School Trips, Government Target: Penwortham

Figure 3-14 shows the trips completed under the PCT Government Target Scenario. The PCT output shows an increase in trips to school occurring along the A49, Howick Moor Lane, Birch Avenue and Cop Lane.

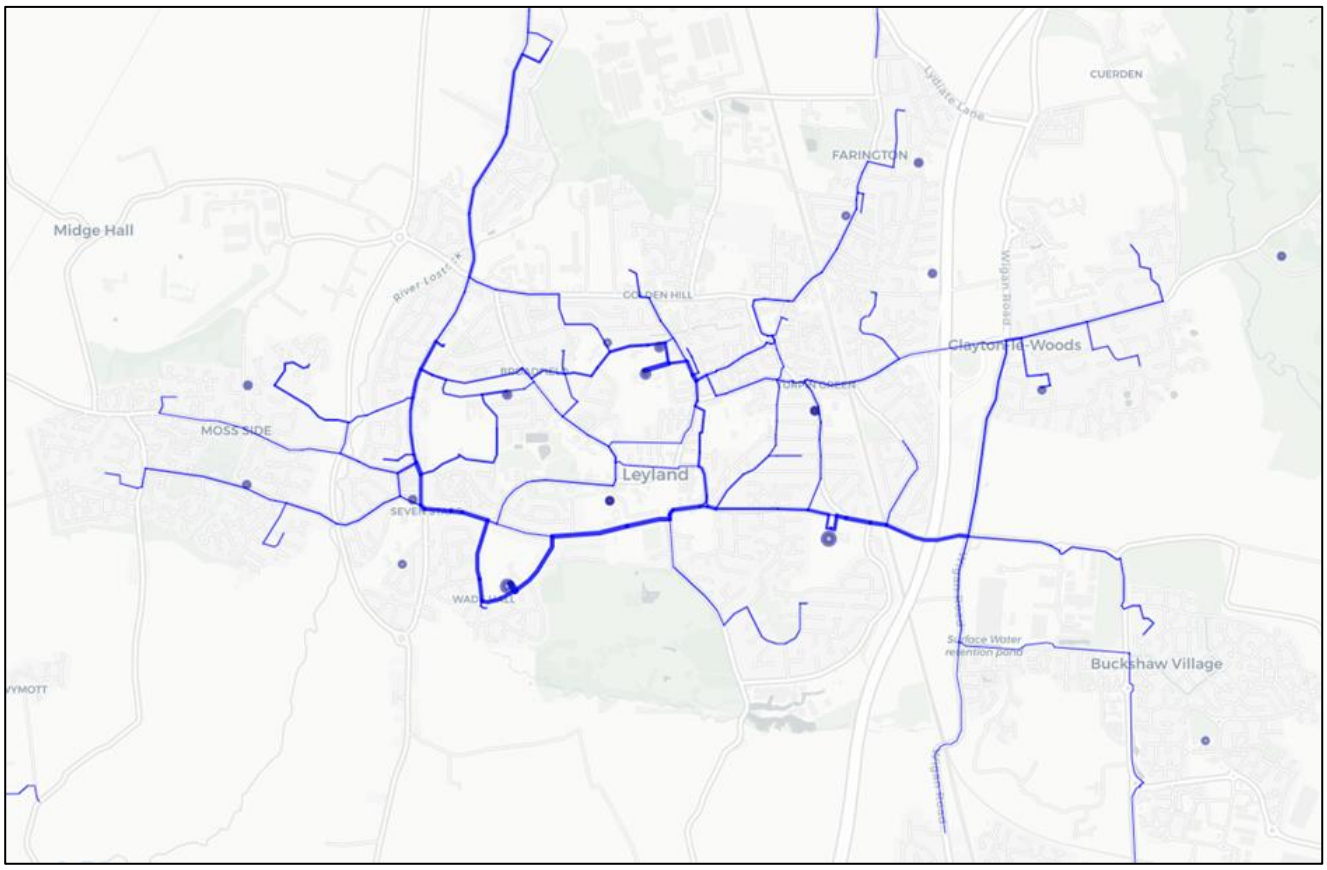

Figure 3-15 School Trips, School Census 2011: Leyland

Figure 3-15 shows the trips associated with journeys to school in Leyland Overall, movements are evenly distributed as a result of the spatial distribution of schools within Leyland, however, there are a considerable number of trips being made along Fox Lane (B5248), as there is a high concentration of schools within this area.

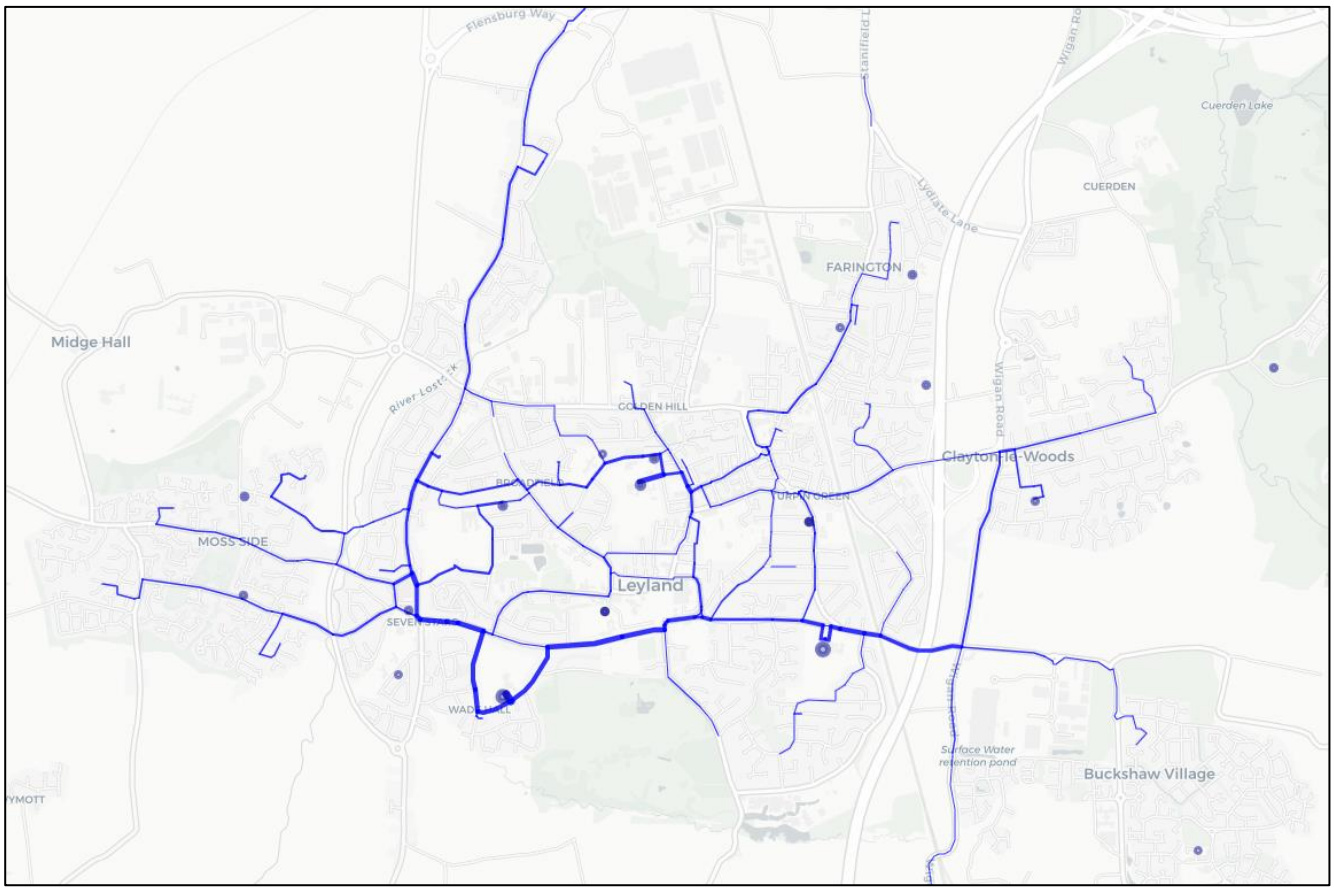

Figure 3-16 School Trips, Government Target: Leyland

Figure 3-16 shows the trips to school undertaken based on the PCT Government Target Scenario. The output shows an increase in trips occurs along Fox Lane, Haigh Avenue, Leyland Lane and Yewlands Road.

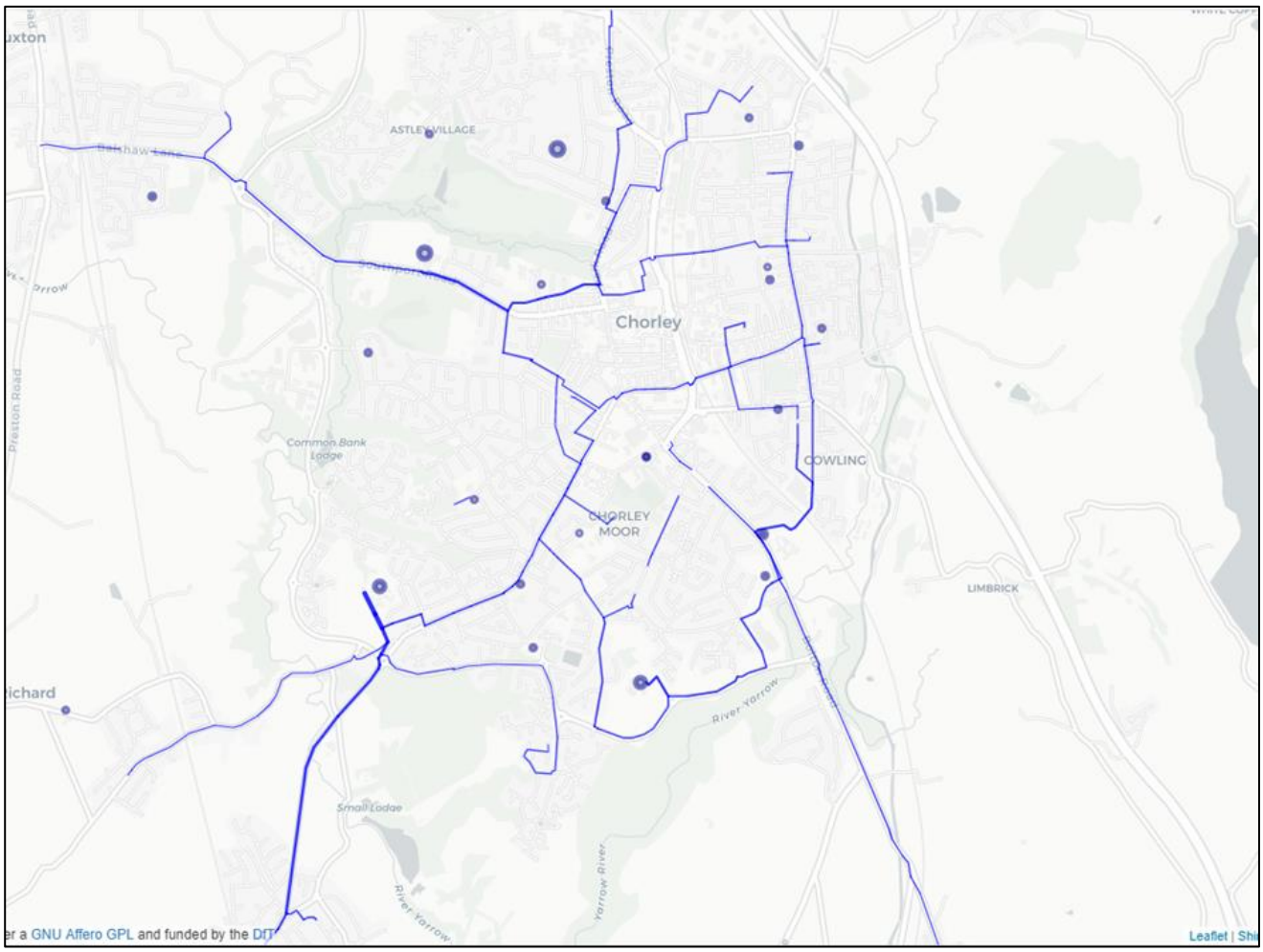

Figure 3-17 School Trips, School Census 2011: Chorley

Figure 3-17 shows the trips to school associated with journeys to school in Chorley under the Census scenario. The output shows trips are relatively evenly distributed, however movements are notably high along Clover Road since this provides access to Southlands High School, to the south west of Chorley.

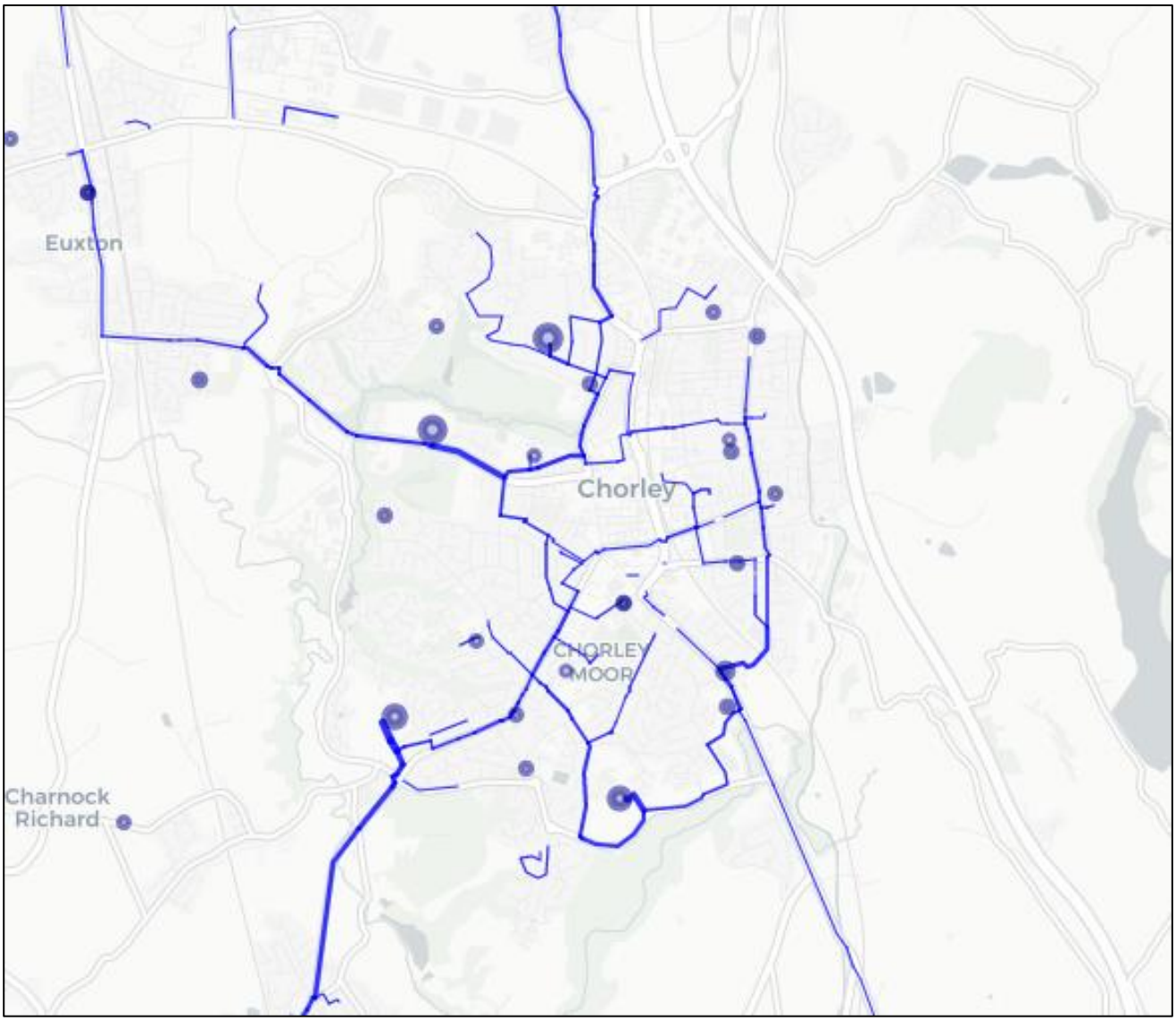

Figure 3-18 School Trips, Government Target: Chorley

Figure 3-19 shows the trips associated with the PCT Government Target Scenario in Chorley. The output shows an increase in trips to school along Clover Road, Coppul Lane and Southport Road.

3.9 Planned Development and Infrastructure

The broad pattern of planned development and improvements to infrastructure has been analysed to ensure strategic routes accommodate future flows and take advantage of wider opportunities related to infrastructure development and developer funding contributions.

3.9.1 City Deal

City Deal status was introduced by the Government to target economic growth in a number of key cities across the country. The Preston, South Ribble and Lancashire City Deal was signed in September 2013 with investment

of £434 million[2] aimed at expanding transport infrastructure in Preston and South Ribble to drive the creation of **20,000** new jobs and **17,000** new homes over a ten year period.

This is a period of transformational change in the Central Lancashire area and it is crucial that walking and cycling play a significant part in delivering the city deal programme. Many of the transport infrastructure schemes are already on site or at the planning or detailed design stage and work has already been undertaken to incorporate sustainable transport infrastructure into these works. Schemes such as the Broughton and Penwortham bypass projects will alleviate pressure on local centres, creating opportunities to create more pedestrian / cycle friendly spaces and reconnect communities. This represents opportunities to take advantage of walking and cycling routes already being constructed alongside major highways schemes and also dedicating more highway spaces alongside routes from which traffic is being removed. This study examines planned infrastructure schemes and their fit within a wider network of walking and cycling routes proposed through the strategic and secondary routes. The City Deal also aims to improve connections between a number of existing and future developments including the Leyland and Cuerden development sites, and improvements in Preston city centre.

The figure below shows the ambition of the City Deal programme with more detail available at the following link - http://www.lancashirelep.co.uk/city-deal.aspx

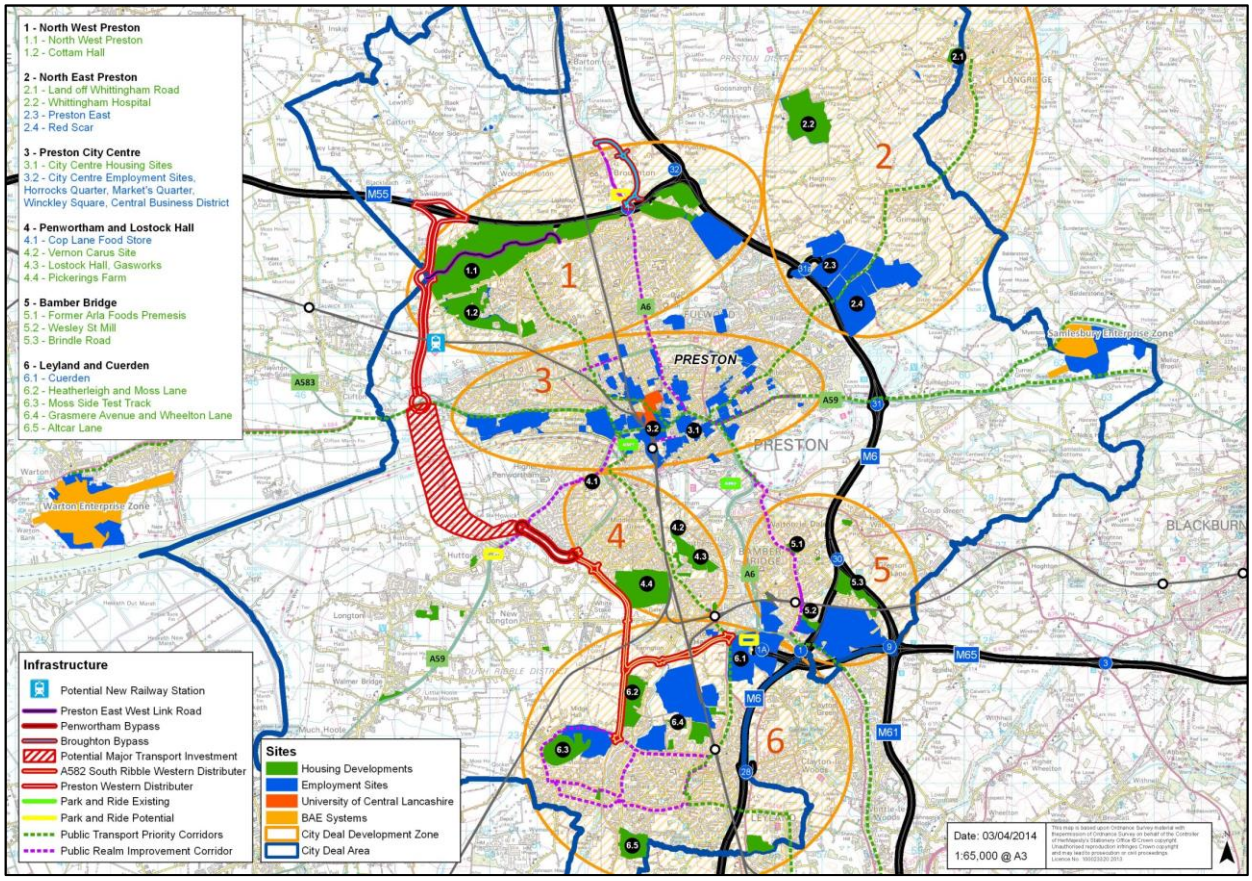

Figure 3-19 - Preston City Deal Infrastructure Programme and Development

3.9.2 Chorley

Chorley sits to the south of the City Deal area and is also experiencing considerable growth. Between 2014 and 2039 it is estimated that the population of Chorley will increase by 18.1%, the highest predicted growth rate in

[2] Public sector funding is expected to leverage a further £2.3 billion of commercial investment into housing and employment sites, some of which may be available to improve walking and cycling infrastructure.

Lancashire. The number of households is projected to increase by 24.6% over that period, also the highest figure in Lancashire. Chorley has almost 90 hectares of land allocated for employment in the period 2010 – 2026 set out in the 2015 Local Plan. This growth, particularly at mixed sites such as Buckshaw Village means that walking and cycling could play a far larger role than they currently do for everyday journeys. In addition, Chorley is very well served by the rail network presenting a major opportunity for walk / cycle rail integration.

3.10 Propensity to Cycle Tool

The Propensity to Cycle Tool (PCT) is an open source tool for sustainable transport planning using origin/destination data on travel to work from the 2011 Census. The data reports the number of people travelling by different modes from Middle Super Output Areas (MSOA) by trip lengths and hilliness helping identify those trips that could be undertaken by cycle. Different scenarios are possible using the tool aiming to answer the question at both the strategic and local level of where to prioritise high quality cycling infrastructure of sufficient capacity for a planned growth in cycling (Aldred et al 2016).

Different scenarios are presented including the government's draft Cycling Delivery Plan target to double cycling in a decade and the more ambitious 'Go Dutch' scenario, whereby Dutch cycling levels are reached in England to show what the rates of cycling could feasibly look like in different parts of study areas. The scenarios are:

- **Government Target:** double cycling from current levels by 2025.
- **Gender Equity:** A scenario where equal numbers of women and men cycled. Currently 75% of cycle commutes are by men in England.
- **Go Dutch:** If people in England had the same likelihood to cycle for commuter trips as people in the Netherlands.
- **E-bikes:** Where people consider E-bikes for longer and hillier trips.

Two scenarios are presented using the tool, 'fast' route and 'quiet' route. The tool then compares these scenarios giving information on distance and hilliness. Research during the development of the PCT illustrated that propensity to cycle declines as distance and hilliness rises. *"As we know that cyclists will preferentially choose quieter routes, this implies that where such routes are longer and / or hillier than busier alternatives, cycling demand will be suppressed"* (Rachel Aldred).

3.10.1 Current Cycling Levels

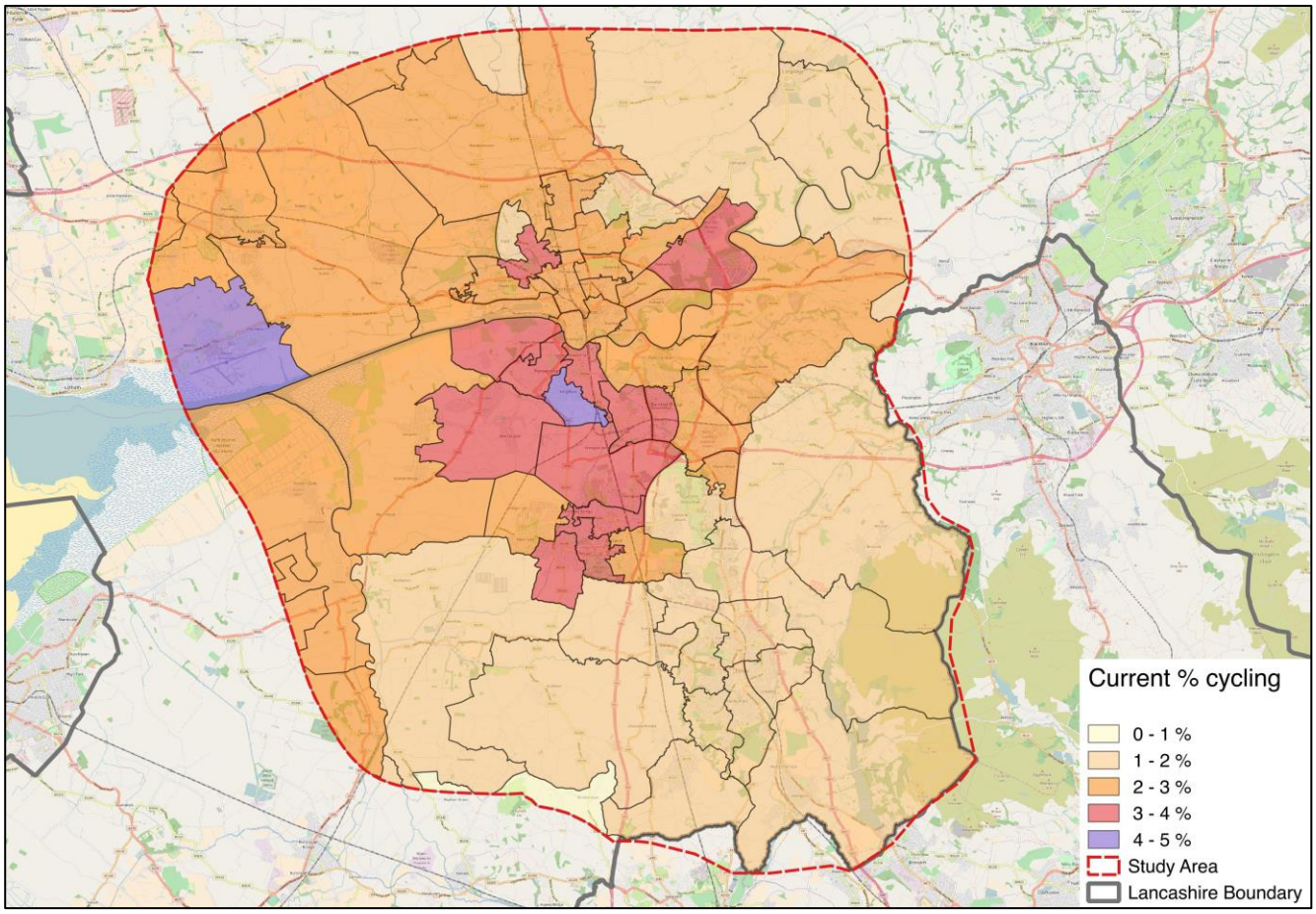

Figure 3-20 - PCT: Current Cycling Levels

The highest levels of cycling within Lancashire are in the Lancaster and Morecombe area where up to 6.8% stated they cycled to work and the average across the two urban areas is 5%.

Across the study area the average percentage cycling to work is 2.3% which is the same as Lancashire as a whole. This equates to 4,695 of the 202,213 workplace journeys that originate from within the study area. Breaking the study area down by the districts which are wholly within the study area:

- South Ribble MSOA the average is **3.1%** with the maximum being **4.4%** at the Kingsfold area of Penwortham.
- Chorley MSOA the average is **1.6%** with the maximum being **2.6%** in the Clayton Brook area.
- Preston MSOA the average is **2.4%** with the maximum being **3.8%** in the north west of the city along Tag Lane out towards the Ingol area. 3.4% were also reported in the Ribbleton area.
- Worthy of note is also Worton to the west of the study area where **4.2%** of residents cycle to work.

Of the top 10 MSOAs for current cycling, 7 are within South Ribble around the Bamber Bride, Leyland, Hutton and New Longton areas. Two are within Preston with the Ribbleton area and along Tag Lane out towards Ingol.

3.10.2 Government Target Scenario

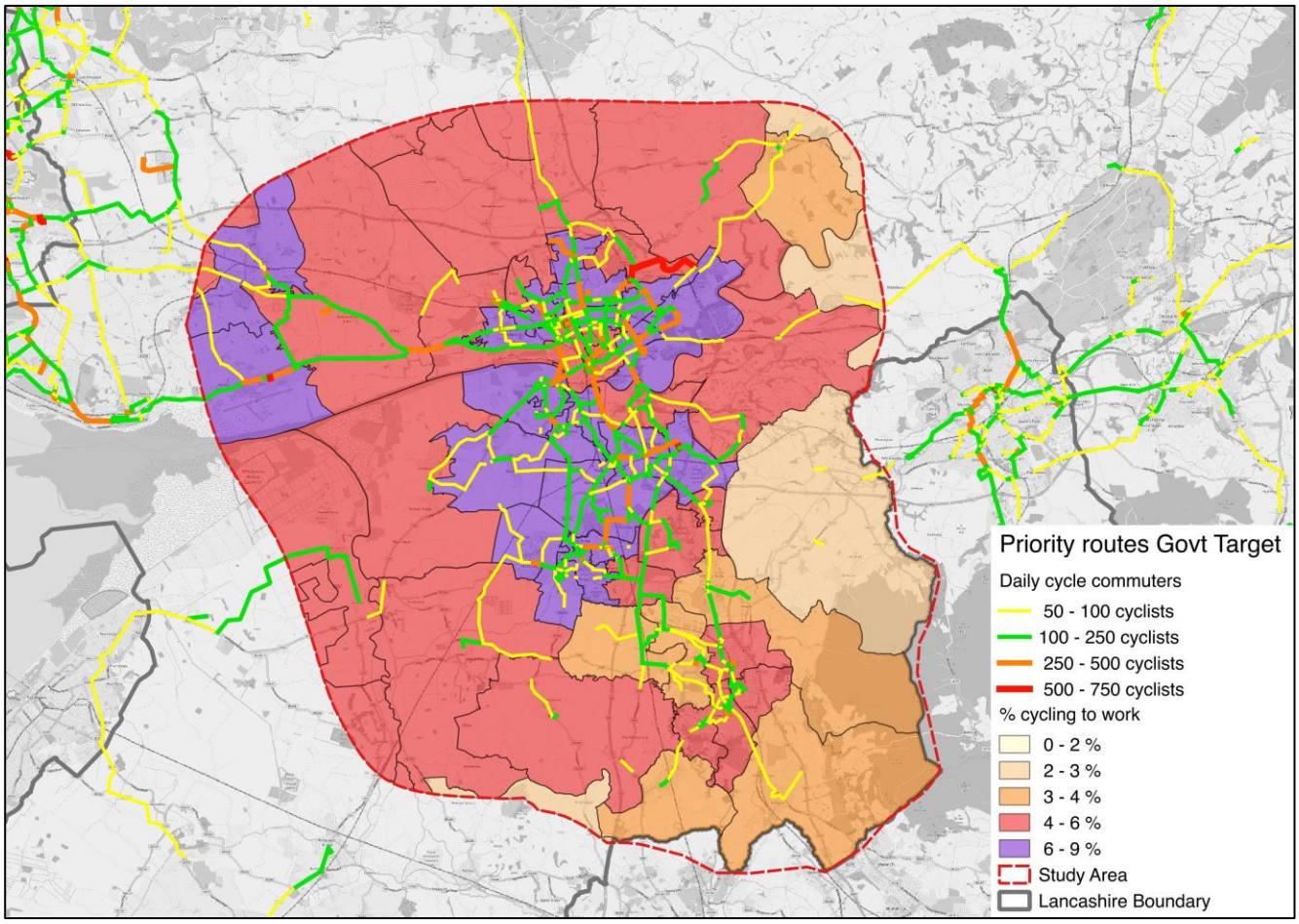

Figure 3-21 - PCT Government Target Cycling Rates

Across the study area this would see the levels of cycling to work rise from 2.3% to 5.5%. This would equate to an increase of 6,375 daily workplace cycle commuters (from 4,695 to 11,070).

Using the Government Target scenario, 25 MSOAs exhibited potential for over 6% of daily workplace commutes to be undertaken by bike. The majority of Preston fell within this with a large proportion of the centre of South Ribble. In addition Warton and Kirkham to the north also fall into this category.

Looking at the PCT data for the Government Target scenario there are a number of routes that emerge clearly where 100 – 250 daily cycle journeys could be expected. Sections of these routes have higher levels where two or more routes converge. The main observations are for potential high usage on the following routes:

- Warton to Preston.
- Broughton to Preston.
- Penwortham to Preston.
- 3 alternative routes from the Leyland area to Preston.
- 2 route options from Chorley to Preston via Cuerden and Bamber Bridge.
- Within Preston:
  - A number of east west route alternatives.
  - Routes from the centre to the north-east Cottam area.
  - Routes from the centre to the North-West employment areas.

3.10.3 Go Dutch Scenario

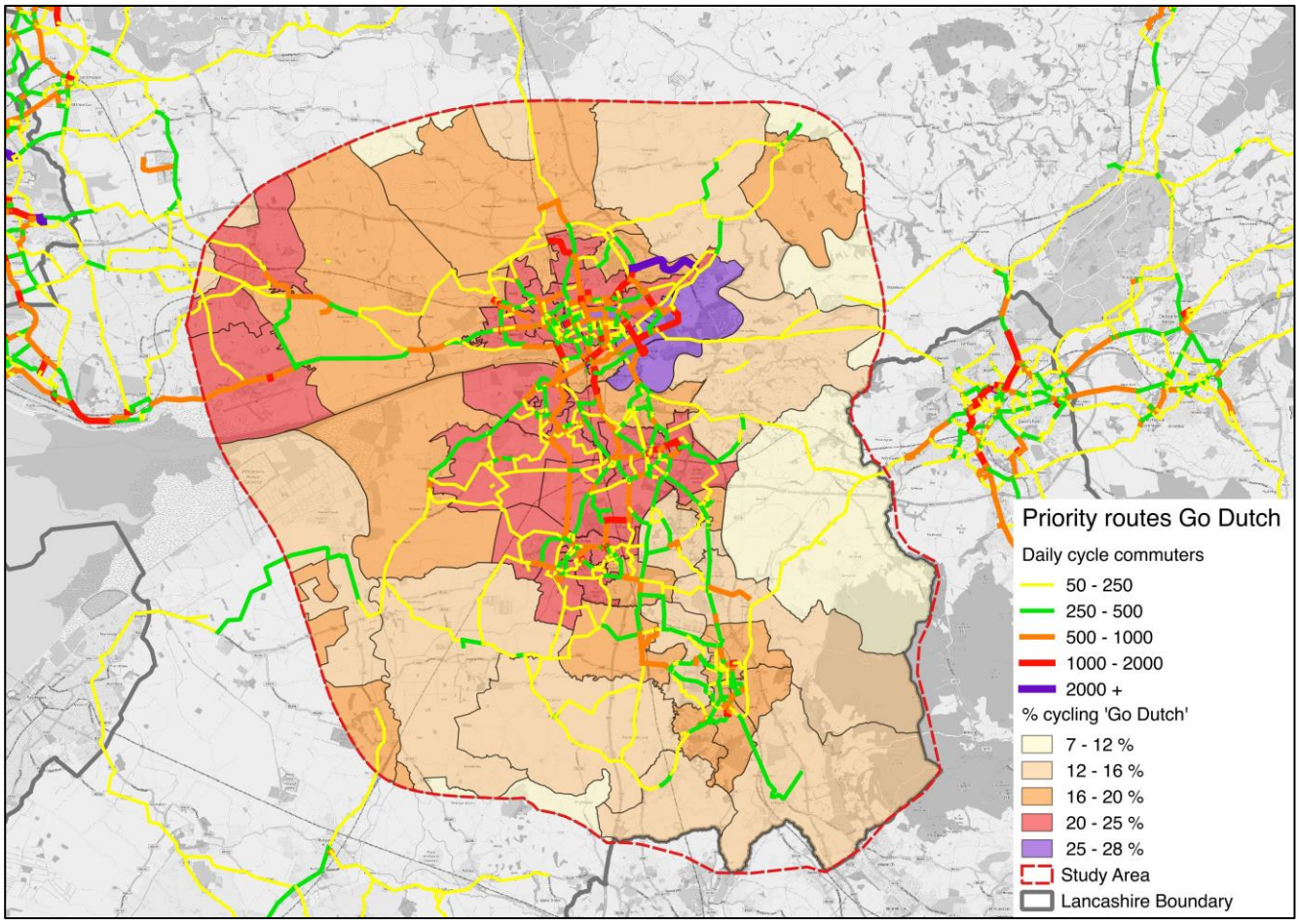

Figure 3-22 PCT Go Dutch Cycling Rates

Across the study area this would see the levels of cycling to work rise from 2.3% to 19%. This would equate to an increase of 34,050 daily workplace cycle commuters (from 4,695 to 38,745).

The range is from 7.8% in North East Chorley to 27.9% in the Ribbleton Lane area close to Preston City Centre where only 2.2% of trips are currently made by bicycle.

Of the top 10 MSOAs for increasing cycling using the Go Dutch model 9 are within Preston with the remaining being in Warton. Much of the South Ribble area around Bamber Bridge, Penwortham down as far as Leyland shows potential for over 20% of workplace commuter trips to be undertaken by bicycle under this scenario.

The patterns for the 'Go Dutch' scenario are similar to the Government Target but with daily usage figures rising to 250 – 500 commuters with many sections, particularly in Preston, having figures of between 500-1000 users.

3.11 Complementary Programmes

Running in parallel with the development of this delivery plan are a number of other work programmes where schemes could be linked to benefit pedestrians and cyclists.

3.11.1 Master Planning Exercise for Public Transport Priority Corridors / Local Centres

This project sets out a network of public transport priority corridors that will link Preston, Leyland and Chorley to the main housing and employment areas. It is also intended to make sure that the measures put in place improve the public realm along the corridors and in the local centres they run through, particularly in Leyland and Chorley town. The specific work will focus on appropriate and achievable measures and actions to encourage and cater

for increased use by pedestrians, cyclists and public transport over the motorised vehicles and improve attractiveness/viability/offer of retail and community service centres along routes.

Each masterplan will not only recommend proposals and practical solutions for the physical environment but also a strategy to manage movements and proposals for town centre initiatives that will enhance the use, experience and viability of the corridor and centres.

The initial seven corridors and ten local centres as defined by LCC and partners are:

- Bamber Bridge - Preston city centre; including Bamber Bridge and London Way local centres.
- Longridge - Grimsargh - Ribbleton - Preston city centre; including Ribbleton Lane local centre.
- Moss Side - Leyland ~ Cuerden ~ Lostock Hall ~ Lower Penwortham ~ Preston city centre; including Seven Stars and Tardy Gate local centres and Leyland town centre.
- Warton Enteprize Zone - Freckleton - Riversway - Preston city centre - New Hall Lane - Samlesbury Enteprize Zone; including New Hall Lane local centre.
- North West Preston/Cottam - Ingol - Preston city centre; including Lane Ends local centre.
- Hutton – Higher Penwortham – Preston city centre; including Penwortham town centre.
- Broughton – Fulwood - Preston city centre; including Broughton local centre.

The routes listed above align well with key routes noted in earlier sections of this report and joint review meetings have taken place. This has ensured coordination between the two work programmes and identifying synergies wherever feasible.

3.12 Trip Origin and Destination Mapping

A trip origin point typically refers to an area which is likely to be the starting point for frequent trips, such as residential areas. A trip destination typically refers to those areas which are likely to be the end point of a journey purpose, such as employment, schools or retail areas.

The areas considered likely to generate a significant number of trips include:

- City, town and district centres;
- Employment areas or large individual employers, commercial core areas, office and business parks;
- Educational establishments, including secondary schools, colleges and university campuses;
- Healthcare establishments, including hospitals, health centres and doctors' surgeries;
- Retail facilities, including local retail centres, district retail centres, shopping parades/malls, supermarkets and retail parks;
- Recreational facilities and leisure venues, including libraries, sports stadia, performance arenas, visitor attractions, leisure centres, post offices, parks, places of worship and cultural institutions; and
- Transport interchange facilities, including bus stops and rail stations; and Future development sites and planned transport links.

In order to identify significant origin areas which are predominantly residential areas, population density data from the Office for National Statistics, (Census 2011) was mapped in GIS.

To identify trips made a number of sources and policy documents were used including:

- Employment sites were plotted using Google Maps and Lancashire County Council website;
- Educational establishment were identified using GOV.UK (Government school service list); and
- Healthcare establishment were identified using the NHS Choices website.

Retail facilities, community facilities, and transport interchange facilities were also identified and are included on the map. Future development sites included within the Lancashire County Council Local Plan (2016) were also included on the maps.

Following the identification of trip origin and destinations, desire lines were identified to reflect the most popular origin/destination trips.

The outcomes of the origin and destination mapping exercises are displayed below:

3.12.1 Preston Trip Origin and Destination Mapping

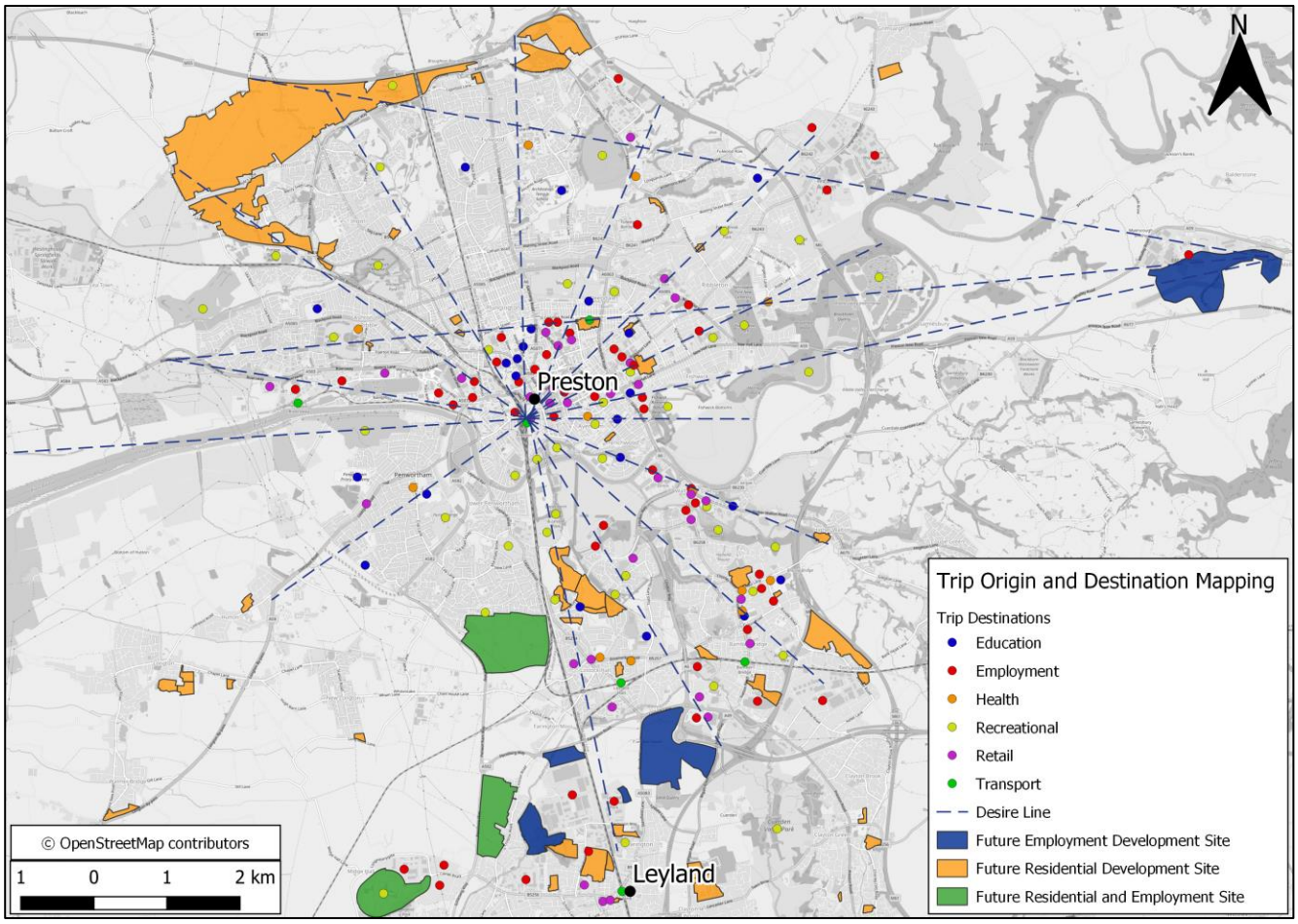

Figure 3-23 Preston Trip Origin and Destination Map

As shown in the trip origin and destination map in Figure 3-23 above, there are clusters of trip destinations within the town centre of Preston. The majority of trips are made via in a radial patterns around the city centre. This is because of the location of residential areas, employment centres, transport links and other key services within and around Preston.

3.12.2 Lostock Hall Trip Origin and Destination Mapping

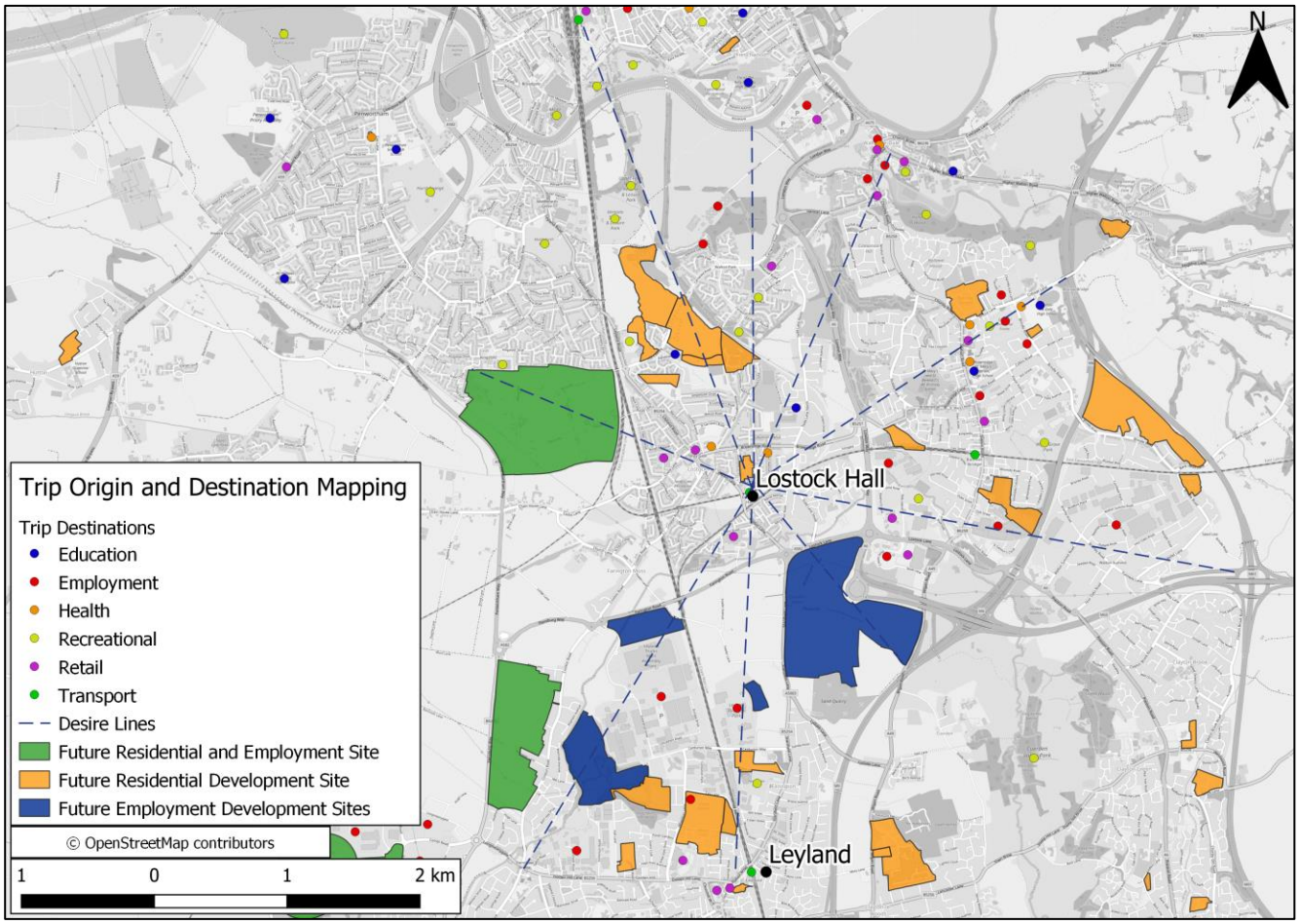

Figure 3-24 Lostock Hall Trip Origin and Destination Map

As shown in Figure 3-24 above, there are clusters of trip destinations predominantly located in the North East and North of Lostock Hall. This is due to the location of Lostock Hall, in proximity to nearby towns such as Preston, Bamber Bridge and Walton Le Dale. The future development sites located to the south of Lostock Hall, are likely lead to a significant increase in trips in the future, most notably the Cuerden Site in the South East.

3.12.3 Leyland Trip Origin and Destination Mapping

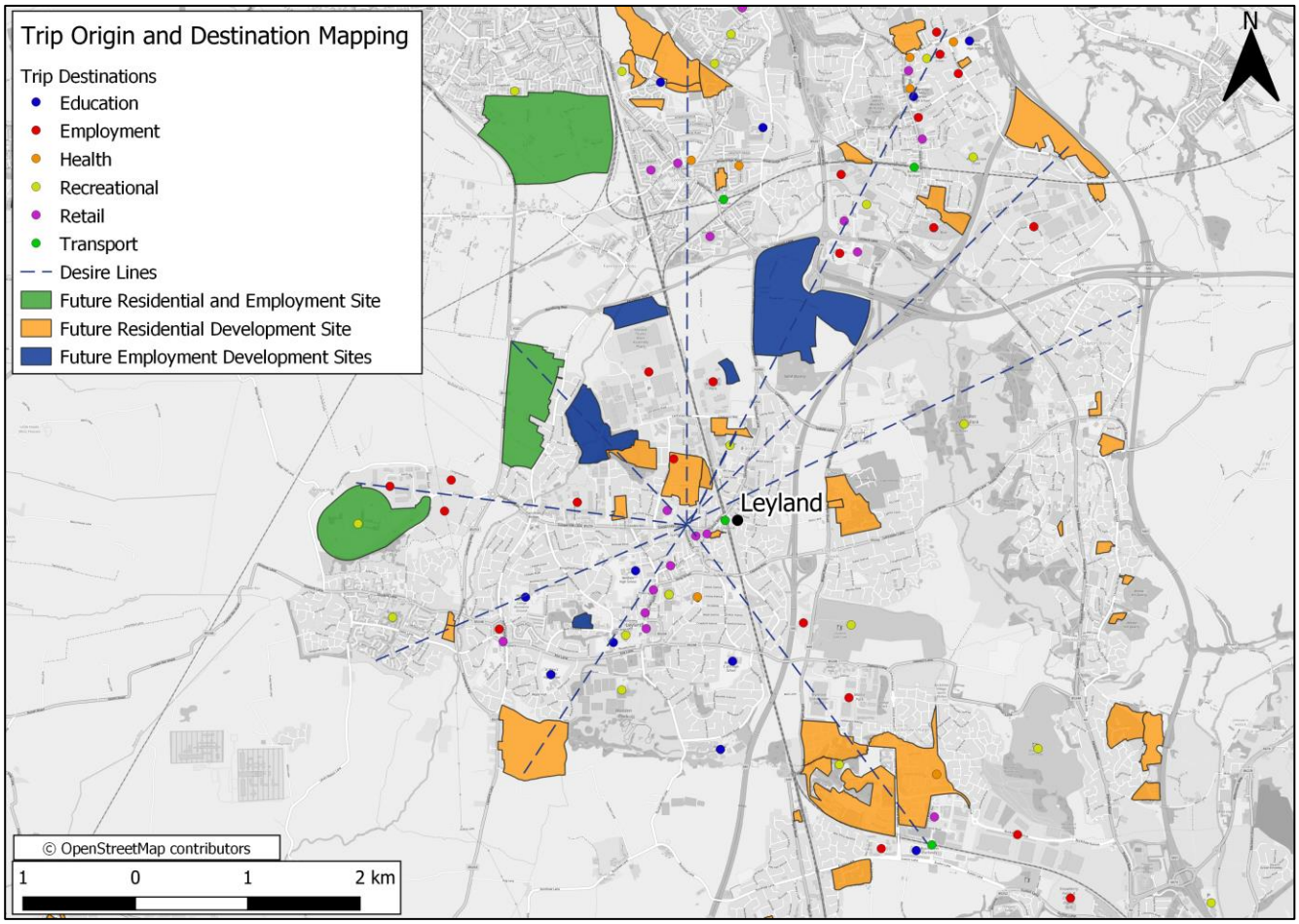

Figure 3-25 Leyland Trip Origin and Destination Map

As shown in Figure 3-25 above, there are clusters of trip destinations surrounding Leyland. This is due to the location of Leyland, in proximity to nearby towns such as Buckshaw Village, Euxton and Chorley to the South East and Lostock Hall, Bamber Bridge to the North East.

3.12.4 Chorley Trip Origin and Destination Mapping

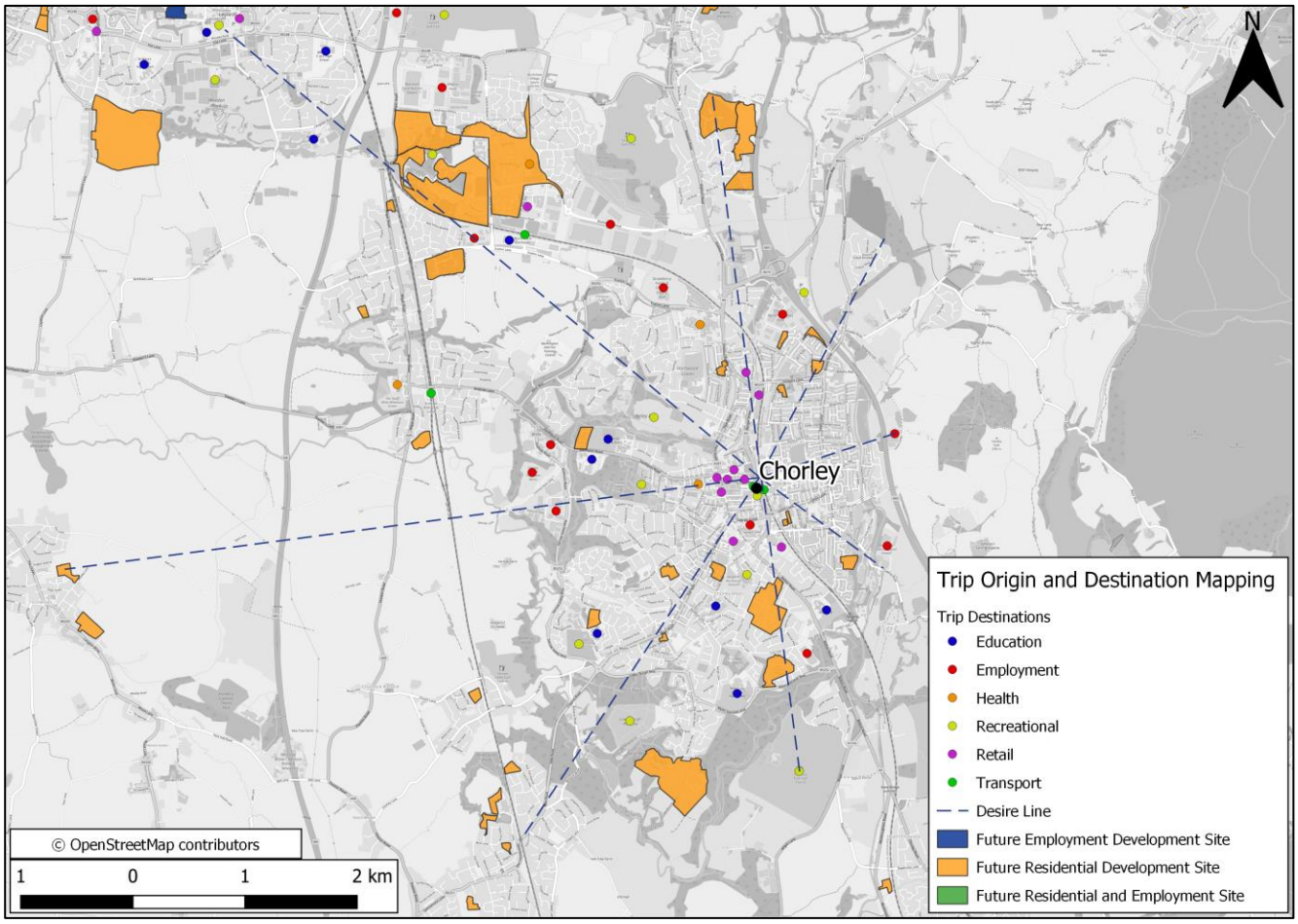

Figure 3-26 Chorley Trip Origin and Destination Map

As shown in the trip origin and destination map for Chorley above, there is a radial pattern with longer distance connections to Leyland and Preston. This is likely due to the location of residential areas, employment centres, transport links and other key services within and around Chorley. Plus, the location in which Chorley is in comparison to towns such as Euxton, Buckshaw Village and Leyland.