Lancaster Local Cycling & Walking Infrastructure Plan

Stage 1 - 4 Report

LANCASHIRE COUNTY COUNCIL

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03						
04						
05						

Contents


ROEBURN DRIVE
Roeburn Drive
Lune Drive
Morecambe Road
Northgate
Morecambe
2
69

1. Introduction

1.1 Introduction

AtkinsRéalis has been commissioned by Lancashire County Council (LCC), in partnership with Lancaster City Council, to develop stages 1 to 4 of a Local Cycling and Walking Infrastructure Plan (LCWIP) for Lancaster District.

An LCWIP is a key transport planning document that has been defined by the Department for Transport (DfT), which aims to support an uptake in the number of people wheeling, walking and cycling. It is intended to support a strategic approach to identifying cycling and walking improvements needed at the local level.

The primary objective for the LCWIP is to increase the number of people wheeling, walking and cycling in the Lancaster District. This includes aims to:

- Make wheeling, walking and cycling safe, attractive and convenient modes of transport for everyone, regardless of age, gender and ability.
- Expand the existing cycle network and establish an extensive, continuous active travel network.
- Enhance mobility with improved access and connectivity in the areas around railway stations, local high streets and commercial areas, schools, employment areas, and other key destinations.
- Foster a high quality of life in the Lancaster District for its residents, visitors, and workers by supporting a wide range of social, economic, health, and environmental aspirations.

The Lancaster LCWIP outlines a long-term plan (10+ years) to enhance active travel in the region. It has considered the full extent of the District, with an emphasis on links to key trip attractors and destinations that will help encourage a greater mode share for wheeling, walking and cycling.

The main outputs at this stage of the LCWIP are:

- Network plans to identify key cycling and walking corridors.
- Classification of the networks.
- Initial high-level concepts as to the type of infrastructure improvements which may be considered in the higher priority areas.

This LCWIP report documents the development of these key outputs.

This LCWIP report is the first step in the process for identifying priorities for future active travel investment. Future stages will examine potential routes and schemes in more detail, prioritise potential schemes, and, if appropriate, advance them through subsequent design and delivery stages as funding becomes available.

1.2 Methodology

The study approach follows DfT guidance for an LCWIP.[1] This study focuses on the first four stages of an LCWIP, as outlined in Table 1. Additional elements of the LCWIP will be developed in future stages.

This report is structured around the following stages of the LCWIP process:

- Section 2: Determining the Scope (stage 1) - summary of the geographic extent and stakeholder input during the course of the study.
- Section 3: Policy Review (stage 2) - summary of previous studies and policies relevant to active travel and development of the LCWIP.
- Section 4: Data Gathering (stage 2) - summary of the spatial data reviewed to support the network planning stages.
- Section 5: Network Planning for Cycling (stage 3) - summary of the process to identify a priority network for cycling and potential types of improvement along the higher priority corridors.
- Section 6: Network Planning for Walking (stage 4) - summary of the process to identify a priority network for walking and potential types of improvements within the higher priority core walking zones.
- Section 7: Next Steps - summary of the anticipated next steps in the development of the Lancaster LCWIP.

[1] Local Cycling and Walking Infrastructure plan, Technical guidance for local authorities, DfT (2017)

Table 1. LCWIP Process

Stage	Name	Description
1	Determining the 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[1] and determine the type of improvements required.
5 *(Future Stage)*	Prioritising Improvements	Prioritise improvements to develop a phased programme for future investment.
6 *(Future Stage)*	Integration and Application	Integrate outputs into local planning and transport policies, strategies, and delivery plans.

source: Local Cycling and Walking Infrastructure plan, Technical guidance for local authorities, DfT (2017)

1 Note: detailed audits (e.g., walking route assessment tool) were not undertaken during this phase of LCWIP development


Scale Hall

2. Determining the Scope (Stage 1)

2.1 Introduction

This section summarises the scope of the Lancaster LCWIP, including the geographic scope and stakeholder input into the LCWIP development process.

2.2 Geographic Scope

The geographic scope of the LCWIP is Lancaster District (shown in Figure 1). Lancashire County Council is the highway authority for Lancaster District.

While there is naturally an emphasis on the potential for active travel in more urbanised and densely populated areas (e.g., the western portion of the study area), development of the Lancaster LCWIP considered the full extent of the region as part of the study process.

2.3 Stakeholder Engagement

2.3.1. Project Steering Group

Throughout the development of the LCWIP, fortnightly meetings took place with officers from LCC, Lancaster and the AtkinsRéalis project team to review, discuss, and provide feedback on the direction of the study and development of the cycle and walking network proposals. This provided frequent opportunities to obtain local knowledge as the study progressed.

2.3.2. Internal Workshop

In addition to the regular progress meetings, one workshop was held on 06 December 2023 with a wider group of local officers to get feedback on development of the draft networks. Fifteen officers attended, representing a variety of disciplines including transport planning, planning policy, active travel, transport projects, and development control. A representative from Sustrans also attended the session.

The workshop was divided into three main parts. The first included a presentation of the project and work so far (data and information gathering), the second part a presentation of the proposed cycle network, and the third part included a presentation of the identified core walking zones (CWZs). After the presentation of the cycle and walking networks, there was an interactive session where participants' comments were added to the draft network maps. The proposed cycle and walking networks were refined following the comments received.

2.3.3. Public Engagement

Early public engagement and input was carried out prior to the start of the LCWIP via two web-based surveys conducted by LCC. The survey gathered information from the general public on county-wide issues related to active travel and suggested improvements. The interactive site allowed the public to leave geo-located comments about deficiencies and desired improvements related to walking and cycle routes in additional to proposing routes of their own. The information was used to help identify the proposed walking and cycling networks presented in this document and is summarised in Section 4.9 on page 63 and Section 4.10 on page 65.

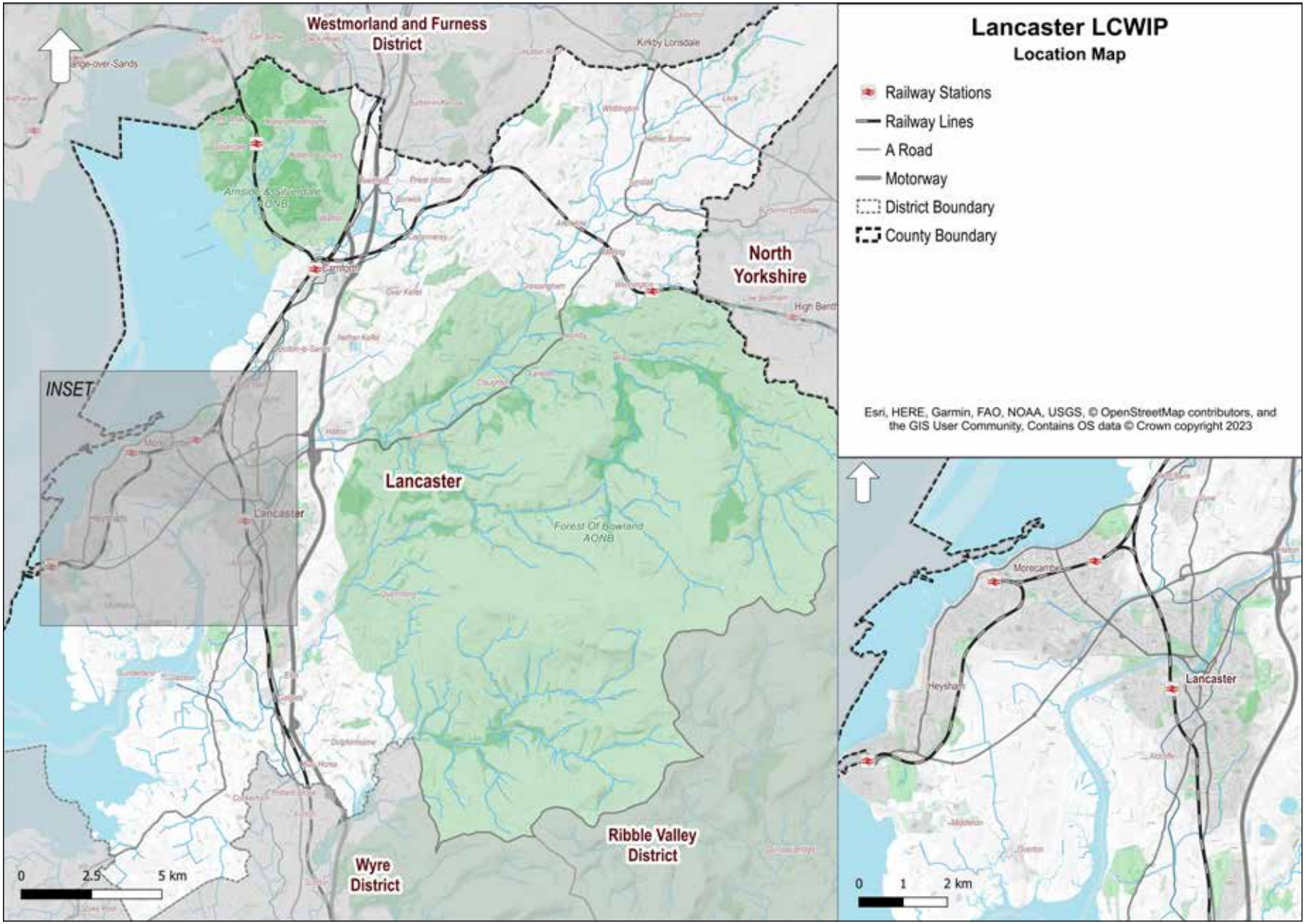


Figure 1. Lancaster LCWIP study area

Photo credit: Lancashire County Council

3. Policy & Previous Study Context (Stage 2)

3.1 Introduction

The Lancaster Local Cycling and Walking Infrastructure Plan (LCWIP) is supported and informed by existing and emerging policies, previous and on-going studies, and existing scheme proposals. Where appropriate, it is expected that the LCWIP will incorporate existing proposals and studies and build upon their findings and recommendations.

This chapter reviews previous work relevant to the LCWIP to inform the:

» Policy context of the LCWIP.
» Understanding and identification of key trip attractors and destinations.
» Identification of preferred cycling and walking routes, existing issues, deficiencies and opportunities.
» Development of a programme of infrastructure improvements.

3.2 National Policy Context

3.2.1. DfT and Active Travel England's Cycling and Walking Investment Strategy 2 (2022)

The Cycling and Walking Investment Strategy (CWIS1, 2017) has recently been updated, with the Cycling and Walking Investment Strategy 2 (CWIS2) setting out updated objectives and investments for active travel in England between April 2021 and March 2025. CWIS2 sets out the following ambition, which maintains the aim put forward in CWIS1:

'To make walking and cycling the natural choices for shorter journeys, or as part of a longer journey by 2040'.

Building on CWIS1 and Gear Change, CWIS2 sets out updated objectives up to 2025, to:

» Increase the percentage of short journeys in towns and cities that are walked or cycled from 41% in 2018 - 2019 to 46% in 2025.
» Increase walking activity, where walking activity is measured as the total number of walking stages per person per year, to 365 stages per person per year in 2025.
» Double cycling, where cycling activity is measured as the estimated total number of cycling stages made each year, from 0.8 billion stages in 2013 to 1.6 billion stages in 2025.
» Increase the percentage of children aged 5 to 10 who usually walk to school from 49% in 2014 to 55% in 2025.

CWIS2 also promotes two longer-term objectives, aligning with the DfT's Gear Change and Transport Decarbonisation Plans and HM Government's Net Zero Strategy, to:

» Increase the percentage of short journeys in towns and cities that are walked or cycled to 50% in 2030 and to 55% in 2035.
» Deliver a world-class cycling and walking network in England by 2040.

CWIS2 outlines investment principles to achieve the objectives and enable everyone to walk, wheel and cycle. Central to this is a long-term investment approach to deliver high-quality infrastructure, supported by the development and delivery of LCWIPs, adherence to DfT's Cycle Infrastructure Design Guidance (LTN 1/20), and a revised Manual for Streets[1]. The development of the Lancaster LCWIP will support the achievement of the CWIS2 objectives and targets locally.

3.2.2. DfT's Decarbonising Transport: A Better, Greener Britain (2021)

The Transport Decarbonisation Plan (TDP) sets out a series of actions to decarbonise transport by 2050 and deliver against the UK Government's carbon budgets, focusing on 'in use' greenhouse gas (GHG) emissions from transport.

1 in development as of March 2024

Figure 2. Cover images for DfT's Decarbonising Transport: Setting the Challenge (left) and A Better, Greener Britain (right)

Figure 3. Cover images for DfT's Gear Change (left) and LTN 1/20 (right)

The TDP retains the six strategic priorities identified in 'Decarbonising Transport: Setting the Challenge', and outlines a range of measures to support these priorities. Related to active travel, these reiterate many of the actions and commitments of the CWIS and Gear Change, including:

- Investing £2 billion on walking and cycling over five years with the aim that half of all journeys in towns and cities will be cycled or walked by 2030.
- Delivering a world class cycling and walking network in England by 2040.
- Creation of Active Travel England (ATE) to promote walking and cycling and act as statutory consultee in the planning process.
- Funding for electric cycle trials.

The LCWIP is a fundamental element of the national policy strategy, and identifying walking and cycling improvements at the local level.

3.2.3. DfT's Decarbonising Transport: Setting the Challenge (2020)

The strategy sets out the evidence and DfT's vision for the decarbonisation of the transport system. Transport is the largest contributor to UK domestic greenhouse gas emissions, contributing around 34% of all carbon dioxide emissions in 2019.

The strategy identifies six strategic priorities:

- Accelerating modal shift to public and active transport.
- Decarbonisation of road vehicles.
- Decarbonising how we get our goods.
- Place-based solutions.
- UK as a hub for green transport technology and innovation.
- Reducing carbon in a global economy.

Development of the LCWIP is aligned with accelerating the shift to active modes and supports place-based solutions.

3.2.4. DfT's Gear Change & Cycle Infrastructure Design (LTN 1/20) (2020)

In 2020, the DfT published Gear Change and its updated Cycle Infrastructure Design (Local Transport Note 1/20). Both publications advance the DfT's ambitions for a step-change in the provision of cycle infrastructure, a modal shift to cycling nationally, and establishing cycling as a form of mass transit. This supports issues related to public health, well-being, the economy and local business, climate change, the environment and air quality, and congestion.

Gear Change outlines four key themes to achieve a step-change in cycling:

- Better streets for cycle and people.
- Cycling at the heart of decision making.
- Empowering and encouraging Local Authorities.
- Enabling people to cycle and protecting them when they do.

LTN 1/20 provides a refresh of national cycle infrastructure design guidance (previously LTN 2/08), reflective of latest best practices. It is intended to support the delivery of the high-quality infrastructure necessary to achieve the ambitions of the CWIS and Gear Change. Inclusive cycling is an underlying theme, so that people of all ages and abilities are considered and empowered to take up cycling.

As with the CWIS, development of the Lancaster LCWIP is central to achieving the ambitions of Gear Change locally. LTN 1/20

has been integrated into the LCWIP process, establishing the design aspirations of schemes identified as part of the LCWIP.

3.2.5. DEFRA's Clear Air Strategy (2019)

The Department for Environment, Food and Rural Affairs (DEFRA) published a strategy to reduce emissions, whereby transport has a major role to play. The strategy proposes an increase in levels of cycling and walking for short journeys as an effective means to reduce emissions, reduce traffic congestion and provide health benefits. The strategy estimates that shifting 10% of journeys from car to cycle would save 400 productive life years and recommends that investments in walking and cycling should be prioritised at national, regional and local levels for maximum impact. The Lancaster LCWIP is a fundamental element of the local level implementation.

3.2.6. DfT's Inclusive Transport Strategy (2018)

The DfT has set out a strategy on inclusivity and accessibility with regards to transport, largely aimed at disabled and vulnerable users of transport infrastructure, systems and services. A number of the recommendations to improve infrastructure for inclusivity intersect with provisions to enable better walking, cycling and wheeling, such as well-maintained pavements, appropriately placed dropped kerbs and navigable and legible routes in public realm. The development of the LCWIP details aspirations for active travel routes which will enable inclusive connectivity for cyclists, pedestrians and mobility-impaired users.

DfT's LCWIP Technical Guidance (2017)

To assist local authorities, the DfT published guidance which broadly outlines the core elements and tasks that should be considered when developing an LCWIP. The methodology is intended to be flexible and adaptable to a given local authority's context, geographic scope, and resources. The study approach used for the Lancaster LCWIP reflects the DfT guidance.

3.2.7. Manual for Streets (2007 & 2010)

Manual for Streets (MfS) is the UK Government guidance for street design practitioners. It is comprised of MfS1 (2007) which explains how to design, construct, adopt and maintain new and existing residential streets, and MfS2 (2010) which expands on the design advice in MfS1 to include how to plan and improve busy urban and rural streets. Both documents provide useful information on designing less motor traffic-centric streets and their aim is to promote designs that meet the needs of pedestrians and cyclists.

3.3 Regional Policy Context

3.3.1. Transport for the North Strategic Transport Plan 2 (2024)

The Transport for the North's (TfN) second Strategic Transport Plan (STP) sets the vision, strategic ambitions and the North's long term strategic transport priorities up to 2050.

The STP sets out how better connecting the key economic centres across the North can transform economic performance; open opportunities for people, businesses, and communities; and facilitate the rapid decarbonisation of our transport network while recognising the impact of our transport choices on the environment. The Transport for the North Strategic Transport Plan identifies the lack of agglomeration as a key weakness of the North's economy, and poor transport connectivity as a key barrier to creating integrated labour markets that can drive sustainable productivity growth. There are three pan-Northern transport objectives:

- Transforming economic performance.
- Rapid decarbonisation of the transport network in the North.
- Enhancing social inclusion and health.

The plan recognises walking and cycling as important enablers to reduce congestion, to encourage shift to sustainable modes

and which are essential in creating a more integrated, healthy, and resilient transport system. Therefore, active travel is vital to achieving the North's collective ambitions and decarbonisation outcomes.

3.4 Local Policy Context

3.4.1. Local Transport Plan 3 2011–2021: A Strategy for Lancashire (2011)

The Local Transport Plan (LTP3) highlights the following issues in Lancashire:

- Reliance on private transport for longer journey distances.
- Steady increases in congestion and carbon emissions.
- Public health.
- Poor quality of public spaces.
- Air quality.
- Deprivations.

To address the issues, LTP3 identifies the following priorities through to 2021:

- Improve access into areas of economic growth and regeneration.
- Provide better access to education and employment.
- Improve people's quality of life and well-being.
- Improve the safety of our streets for our most vulnerable residents.
- Provide safe, reliable, convenient and affordable transport alternatives to the car.
- Maintain our assets.
- Reduce carbon emissions and their effects.

The LCWIP identifies key corridors for active travel routes linking residential areas with education and employment hubs in the Lancaster area. Proposals for improved walking and cycling infrastructure aim to improve safety for pedestrians and cyclists, encouraging a modal shift away from the private car.

As the original time horizon for LTP3 has now elapsed, a new LCC Local Transport Plan (LTP4) is in development.

3.4.2. District of Lancaster Highways and Transport Masterplan (2015)

The masterplan establishes a commitment to support the economy, tackle inequalities, revitalise communities and provide safe, high-quality neighbourhoods. The strategies posed seek to provide a highways and transport network that supports prosperity, health and well-being.

The masterplan identifies six key issues affecting walking and cycling:

- Congestion in Lancaster city centre (especially around the gyratory system), Morecambe town centre, Galgate and Carnforth.
- Limited connectivity between public transport and cycling.
- Road safety for vulnerable road users: pedestrians and cyclists, as well as children and young people.
- Private cars are still the preferred transport mode and sometimes the only feasible mode, especially for rural residents and businesses.

» The Heritage status of Lancaster has not translated into higher cycle ridership.
» Current cycle facilities do not cater to all users.

The masterplan specifies both strategic and local route schemes to improve access to high quality walking and cycling routes as part of an overall 'Lancaster Links' network.

» Superhighways will be on-road/on-pavement, dedicated routes aimed at confident cyclists, where speed and convenience are the primary concern.
» Quiet roads will be on-road routes chosen to be safe, with limited traffic on them and which will be suitable for less confident cyclists or those who are in less of a hurry.
» Greenways will be dedicated multi-user off road routes free from motorised traffic; and will provide a key leisure and tourism facility.

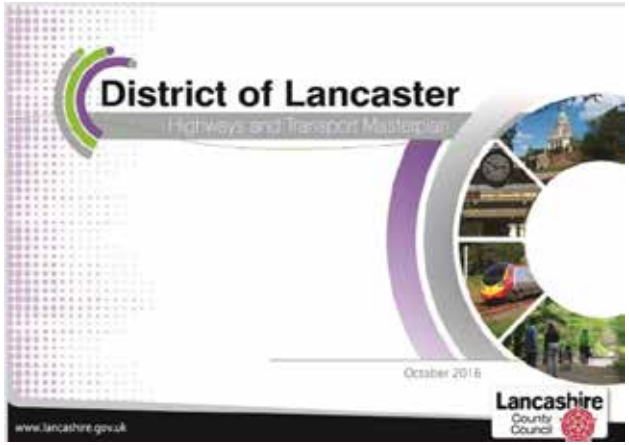


Figure 4. Cover images for the District of Lancaster's Highways and Transport Masterplan

The Masterplan proposes that the first of these new Strategic Routes will be the Heysham to Lancaster Greenway Route stating that there is already evidence of significant demand for this link, and it will, with other work to be carried out in Morecambe, allow the creation of a complete loop of attractive off-road/quiet road links. Since the Heysham to Lancaster link is at a more advanced stage than other parts of the proposed multi-user network, it provides an early quick win for the whole strategic multi-user network concept in the District.

Local Route Links allow the short journeys in the local community to take place. Active travel to school, to the shops or just to enjoy being out and about, are key to local economies and facilitate any journey involving public transport, even simply walking to the bus stop.

The Masterplan also introduces out the 'Lancaster Reach' bus rapid transit concept which incorporates a new Park and Ride service from M6 Junction 34 to Lancaster City Centre.

The development of the Lancaster LCWIP supports improvements to walking and cycling infrastructure and subsequently addresses the key issues identified in the District of Lancaster Highways and Transport Masterplan.

3.4.3. Lancashire Rights of Way Improvements Plan (2015-2025)

The Rights of Way Improvement Plan (RoWIP) recognises the role of PROWs in providing opportunities to access parks, the countryside and coastal landmarks such as the Morecambe Promenade. The RoWIP also acknowledges the importance of urban PROWs in linking residential areas with education and employment hubs away from the road network.

The RoWIP highlights the following as focal points of the Plan:

» Access to and within attractive areas of countryside.
» Attractive routes to support local tourism and economic regeneration.
» Opportunities for cycling, horse riding, driving, walking, other than roads used mainly by motor vehicles.
» Routes from centres of population.
» Links which create circular routes and better facilities for users.
» Improving routes that provide utility functions.

The principles adopted in these improvements will consider:

» The needs of people with reduced mobility, reduced dexterity and visual impairments.
» Integrating communities and volunteers in the design and delivery.
» Affecting the greatest positive health outcomes to address social inequalities (e.g. deprived and vulnerable communities).

The public rights of way network provides opportunities for off-road routes which have been incorporated into the development of cohesive active travel networks as part of the Lancaster LCWIP.

3.4.4. Lancashire Actively Moving Forward: A Ten Year Strategy for Walking and Cycling (2018)

The strategy sets three targets:

- To double the number of people cycling at least once a week by 2028 to 268,000 adults in Lancashire.
- To increase the number of people walking by 10% by 2028, with 873,000 adults walking at least once a week and 67,000 primary school aged children usually walking to school.
- To bring levels of physical inactivity in every district below the national average by 2028, with 10,500 fewer adults being active for less than 30 minutes a week.

The foundation of the delivery programme is based on themes of place, people and promotion. The targets will be achieved by developing a high-quality walking and cycling network and promoting walking and cycling routes in Lancashire to encourage a modal shift. Publishing LCWIPs is one the key actions of the strategy to provide long term plans for future walking and cycling networks in the county.

Figure 5. Cover images for LCC's Actively Moving Forward

3.4.5. Lancashire County Council Highways and Transport Strategy 2023-2025

The strategy focuses on developing better links, improving journey times and reliability giving sustainable forms of travel a priority.

Available funding will be used to improve connectivity and promote active travel to improve walking and cycling rates for Lancashire which fall below the national average. The low rates are outlined to be a result of disproportionately increasing casualties for young road users, pedestrians and cyclists. The strategy aims to prioritise the development of walking and cycling infrastructure to provide physical and mental health benefits, increase leisure opportunities and harness Lancashire's heritage environment.

A major part of the strategy is to maintain close dialogue with Active Travel England and publish LCWIPs for the Lancashire region. The Lancaster LCWIP broadly aligns with the pedestrian and cyclist priority approach raised by the Strategy to improve connectivity, the public realm, and health and wellbeing.

3.4.6. Lancashire 2050 Framework

In 2023, a strategic Framework for Lancashire was developed which sets out a vision for Lancashire to be 'a place where every single person can live their best life'.

One of the eight priority areas is Transport and Infrastructure. The framework sets out to enable Lancashire to 'become better-connected and accessible, with infrastructure that links opportunities to need, and travel choices that are safe, inclusive, affordable and low carbon'.

The framework has four main theme priorities:

- Reducing carbon emissions in support of a net zero county.
- Reducing the need to travel by providing fast reliable access to digital technology.
- Tackling isolation and connecting economic clusters.
- Taking a place-focused approach to transport and infrastructure.

Walking and cycling enable better connection of people and communities. The LCWIP focuses on the development and improvements to walking and cycling routes and infrastructure to enhance connectivity and sustainable travel within the region.

3.4.7. Lancashire County Council (LCC) Corporate Strategy 2022

The LCC Corporate Strategy sets out the Council's vision for Lancashire with one of the main objectives being the access to good quality and reliable travel through public transport, well-maintained cycle routes, bridleways and public footpaths.

The Council estimates that by 2031 Lancashire's 65+ population will increase by 20.4% prompting the need for more accessible sustainable transport modes. To improve the quality of life for the aging population, the Council aims to promote continued use and enjoyment of the country parks, public rights of way, cycle routes, bridleways and areas of outstanding natural beauty.

The walking and cycling network facilitated through the Lancaster LCWIP aids the Council in achieving their Vision.

3.4.8. Lancaster Local Plan Part 1: SPLA (2011 - 2031)

The Local Plan sets out a spatial vision for Lancaster as the principal centre for business, culture and education in the area.

The Local Plan identifies five goals to achieve this vision:

- Sustainable development and future growth.
- Sustainable, distinctive, healthy and cohesive communities minimizing the need to commute.
- Natural and historic environment protection.
- Meet increased travel and mobility needs through multimodal transport options and increased levels of walking, cycling and public transport.
- Strategic transport network that supports an excellent business growth environment.

The Local Plan also outlines local area-specific ambitions:

- Lancaster – Prosperous and growing city driven by universities, where the student population helps to boost economic activity.
- Morecambe and Heysham – Regenerated local area with the town as the focal point in Morecambe Bay.
- Carnforth – Growing market town with developed transport links and significant transport heritage to act as busy centre for rural areas of north Lancashire and south Cumbria.
- Coast and Countryside - Diverse network of rural communities acting as hubs for services and businesses catering for local need.

Plans for future development will help inform identification of the LCWIP active travel networks. The LCWIP aligns with Lancaster's core policies on connectivity and green infrastructure and will support the achievement of the goals identified in the Local Plan.

Development of the Lancaster LCWIP is central to creating an active travel network that connects Lancaster City Centre, Morecambe, South Lancaster and residential areas. This will also improve health and wellbeing in communities across Lancaster's most deprived areas. The improved active travel offer will support sustainable housing developments in Carnforth and Heysham as well as open up tourism opportunities to the rich heritage areas of Lancaster.

3.4.9. The Morecambe Area Action Plan (MAAP 2014)

The MAAP aims to make improvements to the Morecambe Area. One of the major actions the Plan covers is improved connectivity within the area and other parts of Lancaster, and a more efficient transport network for both visitors and residents. A number of action strategies relating to walking and cycling include investment in key routes and spaces for a well-connected public realm, and improvements to major pedestrian and cyclist routes.

One major route outlined in the plan is the route to and from the seafront; to the Festival Market; through to the Lancaster to Morecambe cycle path "Greenway"; through to West End Road; to/from the train station; and through the former Frontierland site, which is earmarked for re-development.

Other routes mentioned include:

- Marine Road Central.
- Arndale and surrounding area (including Queen and Pedder streets).
- Victoria Street and environs.
- Land west of Northumberland Street.
- Morecambe's main seafront and promenade.

3.4.10. The Carnforth Town Council Neighbourhood Plan (2022)

The Neighbourhood Plan outlines two major objectives related to walking and cycling:

» To retain, enhance and provide new pedestrian and cycling facilities within Carnforth and the surrounding area.
» To ensure that the desired pedestrian access to all retail space in the town centre is given top priority.

Important existing routes for walking and cycling in Carnforth include both the Bay Cycle Way, a popular cycling path that runs along the coast for 80 miles from Barrow-in-Furness to the canal port of Glasson Dock, and the Lancaster Coastal Way, a 66-mile-long coastal footpath between Merseyside and Cumbria. The English Coastal Path, when completed, will also go through Carnforth, likely increasing the number of visitors the town receives.

The provision of improved cycleways and, where possible, new cycleways, is strongly encouraged by the Town Council, including better connections with the existing network as well as new points of access.

The Plan outlines a number of routes for improvement and potential new routes;

Improved Routes:

» The Canal towpath.
» Along the A6 north and south.
» To Over Kellet.
» To Nether Kellet along Back Lane.
» To Warton along Warton Road, although a new route from Millhead is proposed.

Proposed New Routes:

» From the A6 (near Keer Bridge) to Netherbeck and Carnforth Brow; through Scotland Road development amenity land.
» Through development at Lundsfield Quarry (SG11) via Tipping Lane.
» From Carnforth to Nether Kellet.
» From Carnforth to Thwaites/Crag Bank/Mount Pleasant Lane.
» From Carnforth to Bolton-le-Sands via Highfield Lane.
» From Lundsfield Quarry Site (SG11) to adjacent sites, including new links to Windermere Road and improvements to the public right of way onto Kings Drive and Dunkirk Avenue, improving connectivity with shops and schools in the area.
» New links into the town centre (via a new foot and cycle bridge).

These routes have been considered as part of the LCWIP for the Lancaster area.

3.4.11. Planning Advisory Note 08 (PAN08) Walking and Cycling (2019)

The Advisory Note supports the Lancaster Local Plan and focuses on the strategic sites identified in the Local Plan and Lancaster City Centre and supports the need to ensure cycling and walking infrastructure associated with other sites and developments.

The paper focuses on three strategic sites identified in the emerging Local Plan, as well as Lancaster City Centre:

» North Lancaster;
» East Lancaster; and
» South Carnforth.

The inclusion of the city centre reflects its significance as the principal trip attractor for the Lancaster area.

The proposals in the PAN place priority on routes of utility value (which substitute essential trips usually made by other modes e.g: work, school, shopping trips etc.) over leisure routes.

The paper identifies site access points and connectivity within these sites, outlining existing infrastructure and proposals for improvements as well as additional new infrastructure to promote walking and cycling both within these sites and between them.

Details of proposed routes within each site are provided and rated against the five criteria; Directness, Gradient, Safety, Connectivity and Comfort. These proposals have been considered in the development of the Lancaster LCWIP.

3.4.12. Lancashire Net Zero Pathways (2022)

Commissioned by Lancashire County Council (LCC), Blackburn with Darwen Council, Blackpool Council and the Lancashire Economic Partnership, the Lancashire Net Zero Pathways Options ('Pathways Report') provides an evidence-based assessment of Lancashire's current carbon footprint at territorial level and to generate robust and realistic carbon reduction pathways that would put the region on track to achieve target scenarios (against the national target of net zero by 2050) - net zero by 2030, 68% emissions reduction by 2030, and 78% emissions reduction by 2035. The Pathways Report is one of four reports on climate change commissioned by the above local authorities and organisations to provide an evidence base and inform future plan development.

The Pathways Report highlights active travel as a central element of strategies to reduce emissions associated with transport, shifting trips currently made by private car. A core recommendation is to 'support increased active travel / micro-mobility use through measures to improve the range and quality of provision for walking, cycling and scooting and measures to encourage behaviour change, with the aim of achieving a 300% increase in cycling relative to reference levels by 2030.'

The development of the LCWIP contibutes to achieving this strategy and the associated net zero targets.

3.4.13. Emerging Lancashire Climate Strategy

LCC also have an emerging Climate Change Strategy (update to 2009 strategy), which together with ideas from the 2022 Lancashire Climate Summit, the Pathways Report and other climate change reports, will help map out how to get to net zero as quickly as possible and protect the environment.

3.4.14. Climate Emergency Declaration

Lancaster City Council declared a climate emergency in 2019 and committed to reducing carbon emissions and reaching net zero by 2030, in line with the UK Government targets. The Council also reviewed their operations to support the net zero target, which includes promotion of active travel for council staff.

Similarly, Lancashire County Council agreed an ambition in December 2020 to "transition the Lancashire economy away from carbon by 2030, address the biodiversity crisis; while also protecting against poverty and improving social inclusion."

The climate emergency declarations all highlight the need to swiftly reach net zero targets, to which active travel is a contributing strategy.

3.4.15. Local Plan for the Lancaster District (2011-2031): Climate Emergency Local Plan Review

The adopted Lancaster District Local Plan has been subject to partial review in light of the declaration of a Climate Emergency by Lancaster City Council in 2019. The Local Plan is undergoing revision to seek environmental outcomes for the District as a whole, ultimately assisting with the delivery of the net zero carbon ambition of the council. As a result, some amendments have been made to policies concerning walking and cycling.

The key policies within this latest version of the Local Plan as it relates to active travel are:

- **T2 Developing the Cycling and Walking Network** – The Local Plan Policies Maps identifies the existing cycling network, as well as aspirational routes that would improve connectivity through the District. This policy states that new cycle and pedestrian routes should be accessible to all users, and should be segregated where possible and supported by enhanced associated infrastructure that includes secure cycle parking.
- **Policy T2 Figure 24.1** – This policy map identifies aspirational cycle routes including new routes within Lancaster city centre, an extension to the North and South Lancaster areas, improvements towards Heysham, and extensions through the more rural areas towards Stake Pool in the southwest, Burton-in-Kendal to the north, and Kirkby Lonsdale to the northeast.

- **DM60 Enhancing Accessibility and Transport Linkages** – This policy states that sustainable travel patterns are prioritised as part of development proposals, maximising opportunities for walking, cycling and public transport. Developments will be supported where there is convenient access for walking and cycling, and ensure the provision of streets that prioritise the safety of vulnerable road users.
- **DM61 Prioritising Walking and Cycling** – This policy states that development proposals should seek to maintain and improve existing pedestrian infrastructure, improve safety and security, and provide infrastructure that is accessible to all users, without adverse impact to the pedestrian environment. It states that developments should also prioritise cycling movements, and that cycling infrastructure should be of a high quality.
- **Appendix E Car Parking Standards** (includes cycle parking and mobility scooters) – This policy sets out the minimum number cycle parking (and non-standard cycle parking) spaces for proposed developments. These standards vary by the type and size of development.

The LCWIP aligns with these Local Plan policies and supports the aspirations of an expanded and enhanced walking and cycling network across the District.

3.4.16. Lancaster Sustainable Travel Supplementary Planning Document (SPD) 2022

As part of the Climate Emergency Local Plan Review (CELPR) for the Lancaster Local Plan, a draft SPD was issued in June 2022 to focus on policies relating to Active and Sustainable Travel Networks addressed in the Local Plan. It sets out the active travel networks expected to be delivered as part of the development. The SPD outlines specific sites around Lancaster City Centre targeted by these policies of the Local Plan. These include:

- North Lancaster strategic site (Policy SG9).
- East Lancaster strategic site (Policy SG7).
- Lancaster City Centre (Canal Quarter Policy SG5).
- Wyresdale Road allocations (Policies H4 and H5).

Existing and proposed route options for walking and cycling within these sites are outlined and site connectivity is evaluated for movement within and across other sites. These existing and proposed route plans and evaluation have formed part of the considerations in the development of the Lancaster LCWIP.

3.4.17. Lancaster, Heysham and Morecambe W&C Route Study (2018)

Jacobs undertook a workshop to discuss Walking and Cycling routes in the Lancaster-Heysham-Morecambe area. The workshop considered connectivity between these 3 main centres based on various demographics and existing local and transport masterplans. The output from the workshop identified 3 corridor options. These include:

- Corridor 1: Lancaster – Morecambe;
- Corridor 2: Morecambe - Heysham; and
- Corridor 3: Heysham – Lancaster.

Findings from preliminary observation indicated that Corridor 1 and 2 require minor interventions at different points to improve the walkability and cyclability of these routes; however, Corridor 3 requires major infrastructure modifications and interventions to enable effective walking and cycling along the route. These routes and findings have been considered as part of the LCWIP process.

3.4.18. The Lancaster and Morecambe Labour Market Intelligence (LMI) Report 2019

The LMI report provides an analysis of the Travel to Work Area Report (TTWA) for Lancaster and Morecambe. The report provides analysis of employment data across various demographics within the area and provides a forecast of population and employment numbers for the next 10 years. Analysis of the distribution of residents across workplaces

indicates that about 78% of residents work within their home local area. An additional 10% work within the rest of Lancashire and about 10% in the rest of the North West. This indicates the potential to convert some commuting trips to walking and cycling trips for those that work within their home local area.

Improving walking and cycling within the local home area is a major focus of the LCWIP in order to encourage a modal shift for work trips to more sustainable modes.

3.5 Other Schemes / Proposals

In addition to the policies and studies summarised in the previous sections, several additional schemes related to active travel and/or the road network were noted during the policy review. These include:

- **Lancashire Levelling Up Fund: Safer, Greener and Healthier Streets** – The Safer, Greener and Healthier Streets (SGHS) scheme involves public realm improvements to identified local neighbourhoods in Lancashire. The objectives of this scheme, namely improving safety, walking and cycling convenience, and fostering a sense of place, mirror the wider objectives of the LCWIP. Therefore, where possible, the LCWIP should seek to support and supplement the public realm improvements, connecting the SGHS neighbourhoods to the wider active travel network. There is one SGHS area proposed in the Lancaster District in the Sandylands and West End area of Morecambe. Public engagement was held in early 2024, co-design workshops within community groups are planned for mid-2024 and scheme implementation is targeted for autumn 2024.
- **Lancaster University Health Innovation Campus** – The Health Innovation Campus will incorporate cycling and pedestrian access, with positive linkages to the existing network, including improvements to cycling and walking links from this site into Lancaster University Campus and Lancaster City Centre, and proposals will seek to connect with the Cycling and Walking Superhighway proposed in this area.
- **Lancaster City Centre** – Based on the Lancaster District Highways and Transport Masterplan, the City and County Councils are working on a Movement Strategy for Lancaster City Centre. This strategy aims to support the achievement of a modal shift in transport movements, reducing the need to use private cars by promoting more sustainable modes of transport, including a Better Buses Scheme, as well as cycling and walking.
- **Infrastructure in South Lancaster** – Planned improvements to cycling and walking linkages from South Lancaster to the north, towards Lancaster City Centre, and to the south, towards Galgate, are being proposed by the City Council. This will take place through the creation of a Cycling and Walking Superhighway which will provide a safe and attractive route for pedestrians and cyclists. Improvements will also be investigated along walking and cycling links along the Lancaster Canal.
- **Lancaster Canal Quarter** – Building on the objectives set in the Lancaster District Highways and Transport Masterplan, especially SO5, the City and County Councils are working on proposals for the Lancaster Canal Quarter. These proposals aim to improve elements of connectivity to enhance an accessible and inclusive transport system in the area as well as contribute to meeting net zero targets. Major focuses for connectivity are:

  - Minimise car use and promote walking and cycling by providing safe and well-overlooked streets and a mixed of uses and homes to create a walkable neighbourhood.
  - Improve permeability and access to the City Centre, surrounding key destinations and residential areas to the east of the Quarter
  - Increase access points to Lancaster Canal to ensure everyone can enjoy this natural asset.
- **The Heysham Gateway** – The Heysham Gateway is a joint development project between Lancashire County Council and Lancaster City Council, where the ambition is to transform the Heysham industrial site into a premier North West business destination. With Heysham's two nuclear power stations and the upgraded Port of Heysham, the gateway will provide easy access into the area and improve connectivity with Lancaster City Centre.
- **The Royal Lancaster Infirmary Relocation** - Lancashire has been successful in securing funding to create new hospital facilities for Lancaster, to be completed in the next decade. This will mean the relocation of health facilities to a 'New Royal Lancaster Infirmary' site, the location of which is yet to be confirmed. The construction and eventual operation of the new facility will attract trips from all over Lancaster and wider Lancashire. Accessibility to this facility will be a key factor in the design of all future transport networks and services in Lancashire.
- **The Eden Project** - The Eden Project is expected to transform the Morecambe seafront to create a world class cultural and tourism destination consisting of seven inter-connecting gardens. It is estimated to attract about 740,000 new visitors to the Morecambe seafront per year boosting the local tourism economy and forcing growth and regeneration within the area. This is also expected to increase active travel in the area as the main access to the Eden Project will be via walking and cycling.

Connectivity with these developments and schemes has been considered when developing the Lancaster LCWIP to provide good accessibility and cross-boundary continuity.

3.6 Summary of Policy and Previous Proposals Review

Figure 6 on the following page shows the planned or proposed schemes identified in the policy and previous study review which are most relevant to the LCWIP. This has informed the development of the active travel networks to consider consistency and connectivity with existing plans and proposals.

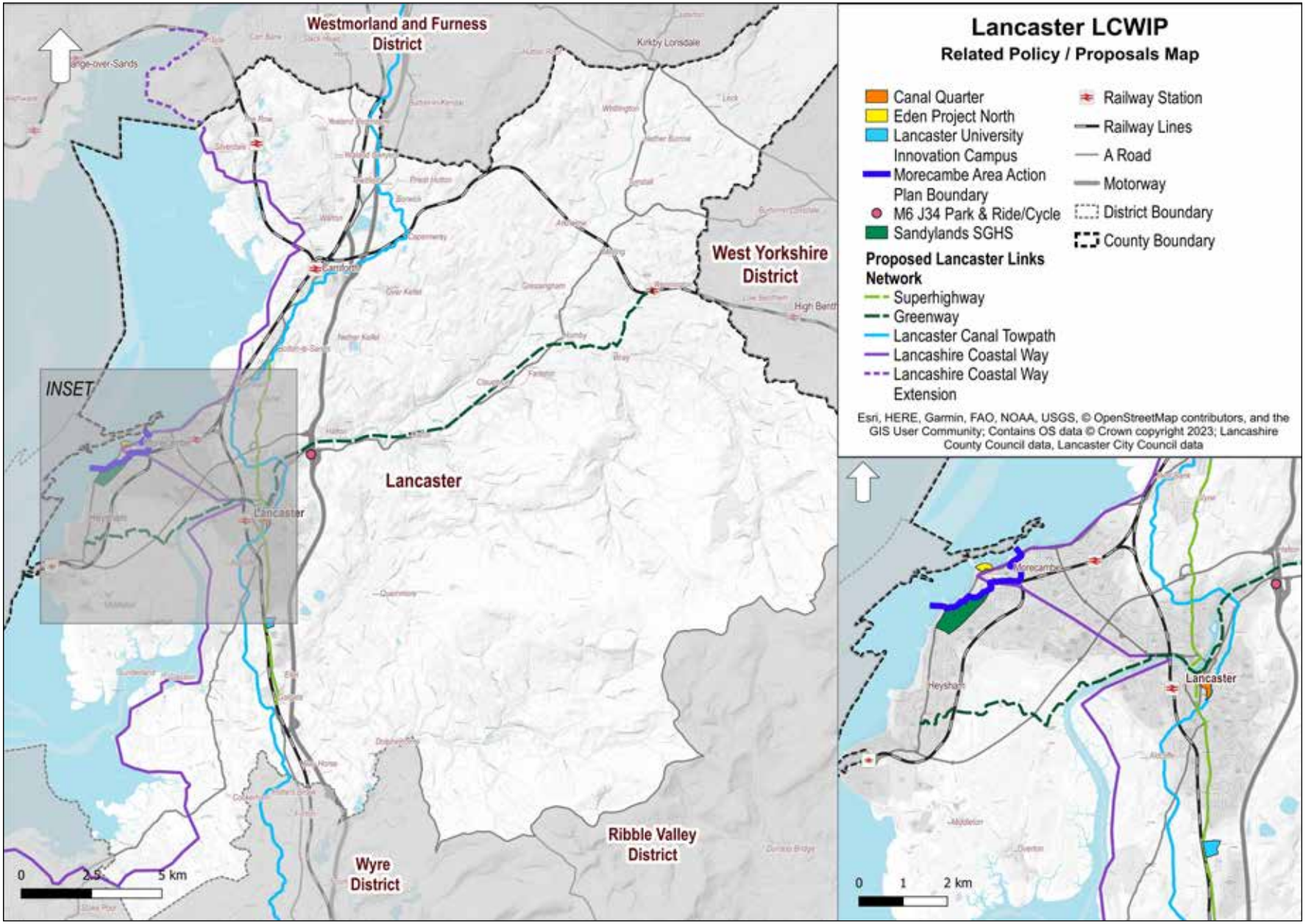


Figure 6. Illustration of the location of previous studies and proposals relevant to active travel and the Lancaster LCWIP

4. Gathering Information (Stage 2)

4.1 Introduction

To support development of the Lancaster LCWIP, a range of existing spatial data was compiled and reviewed. This data helped to provide an understanding of existing and potential demand, issues, opportunities, and barriers for active travel. Where appropriate, the data was mapped to overlay different pieces of information. This background data informed the identification of key cycling corridors and core walking zones, which are discussed in following chapters.

The analysis included the following data sets:

- Population and demographics, such as resident and workplace population, car ownership, and indices of multiple deprivation;
- Key destinations, employment sites and development areas;
- Existing active travel networks and infrastructure;
- Railway, bus and road networks;
- Journey to work data;
- Propensity to Cycle Tool (PCT) data;
- Strava Metro data;
- Collision data involving people walking and/or cycling;
- Early engagement survey data; and
- Barriers and topography.

Mapping and summaries for each of the datasets is provided in the following sections.

Photo credit: Lancashire County Council

4.2 Population and Demographics

4.2.1. Population

The total population of the Lancaster study area was approximately 145,173 residents in 2021. This is shown in Table 2. The population grew by 4.9% since the 2011 Census, slightly lower than Lancashire as a whole, the North West, and England.

4.2.2. Age Structure

As of the 2021 Census, the average age across the Lancaster study area is approximately 41, which is slightly older than the regional and national average (see Table 3). Overall, approximately 18% were under 18, 62% of working age (18 to 65), and 20% were over 65 years of age.

Table 2. Population data for the Lancaster study area (Office of National Statistics)

Area name	2011 Census	2021 Census	% Change	Population Density, 2021 (usual residents per km^2)
Lancaster	138,375	145,173	4.9%	252.1
Lancashire	1,171,339	1,239,377	5.8%	426.9
North West	7,052,177	7,416,591	5.2%	525.8
England	53,012,456	56,475,699	6.5%	433.5

source: Office of National Statistics

Table 3. Age structure for the Lancaster study area (2021 Census)

Area name	Mean age	% < 18 years old	% 18 to 65 years old	% over 65 years old
Lancaster	41.6	18.3%	62.2%	19.4%
Lancashire	41.9	20.3%	60.1%	19.6%
North West	40.6	21.1%	61.3%	17.6%
England	40.6	20.8%	61.8%	17.4%

source: Office of National Statistics

4.2.3. Population Density

Figure 7 shows the distribution of population within the Lancaster area, which can give an idea of the potential demand for cycling and walking trips. Many trips begin or end at home, therefore higher population densities can indicate a higher propensity for walking or cycling trips. The higher density can also indicate a more urban built environment, where there may be more opportunity for short trips to local shops, schools, etc.

It is apparent that the most densely populated areas are located in the centres of Lancaster, Morecambe, and Heysham. Further north, other population centres include the town centres of Hest Bank and areas surrounding Carnforth railway station, including the Morecambe Lodge Caravan Park. Further south, the village of Galgate, and the nearby Lancaster University campus, is another population centre. The West End area of Morecambe records the highest population density, followed by the Primrose area of Lancaster.

Conversely, the density in other parts of Lancaster District, especially in the eastern areas of the study area, remain very low. It is in these less-densely populated areas where reliance on cars will be greatest (as also seen in the car availability data in section 4.2.5), due to greater distances to trip attractors, and where service frequency and access to public transport will typically be lower (see summary of public transport services in section 4.6.2). There is potential opportunity to improve accessibility in rural areas through active travel schemes which help link settlements and improve transport options.

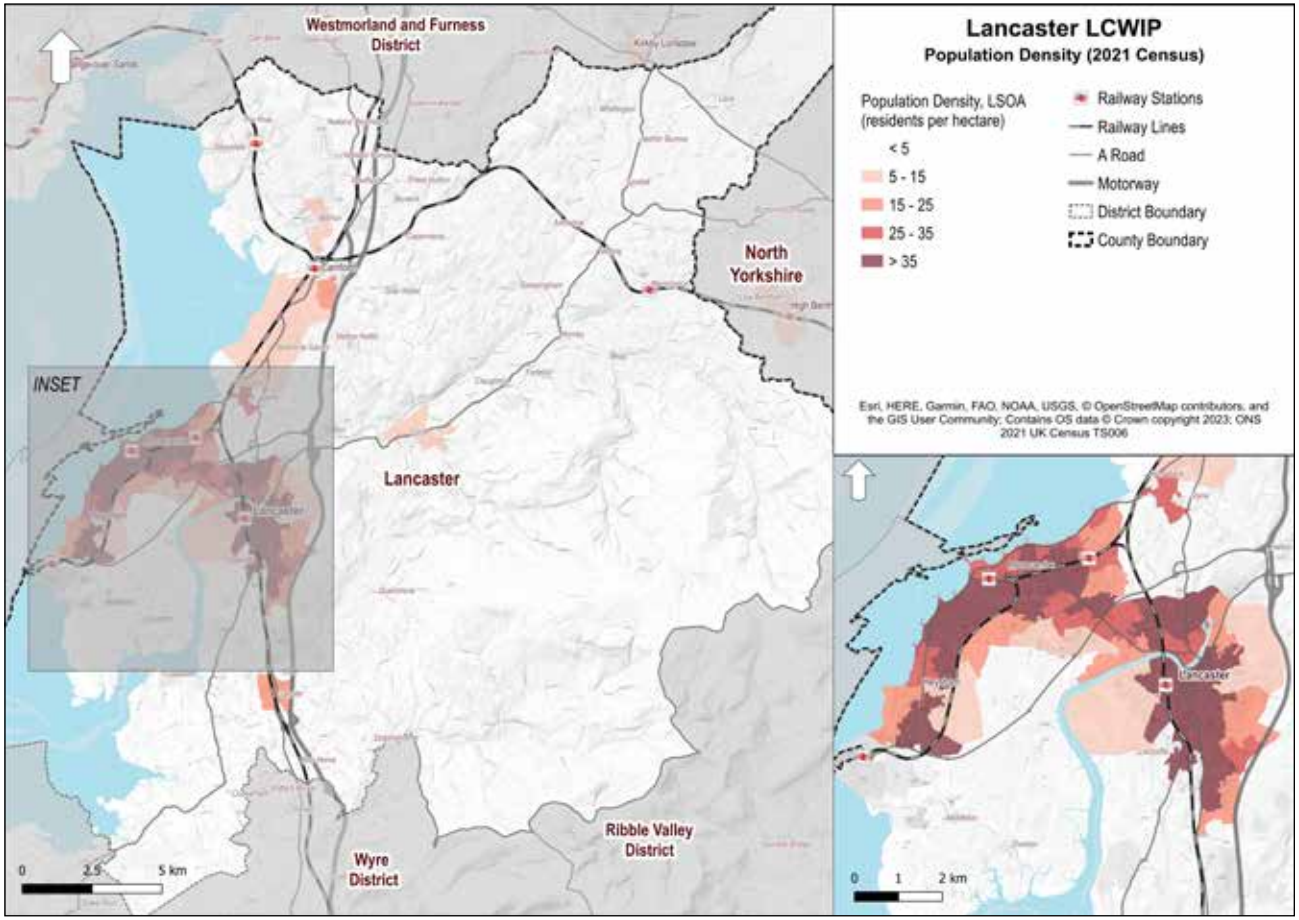


Figure 7. Population density in the Lancaster study area (*source: Office of National Statistics, 2021 Census*)

4.2.4. Workplace Population Density

Figure 8 highlights the key workplace zones within the Lancaster study area, which provides an indication of job density and key destinations for journeys to work. These are areas where improved access for active travel should be considered in the LCWIP network development.

Higher density workplace zones are concentrated in Lancaster, with smaller zones identified in the town centre of Morecambe, Carnforth and Bailrigg where the Lancaster University campus is located. The majority of commuter trips in the study area would therefore end in these locations.

The majority of workplace zones are located close to rail services. However, there are a few exceptions such as the White Lund Industrial Estate and the Lancaster University campus which are only accessible via bus or private vehicles.

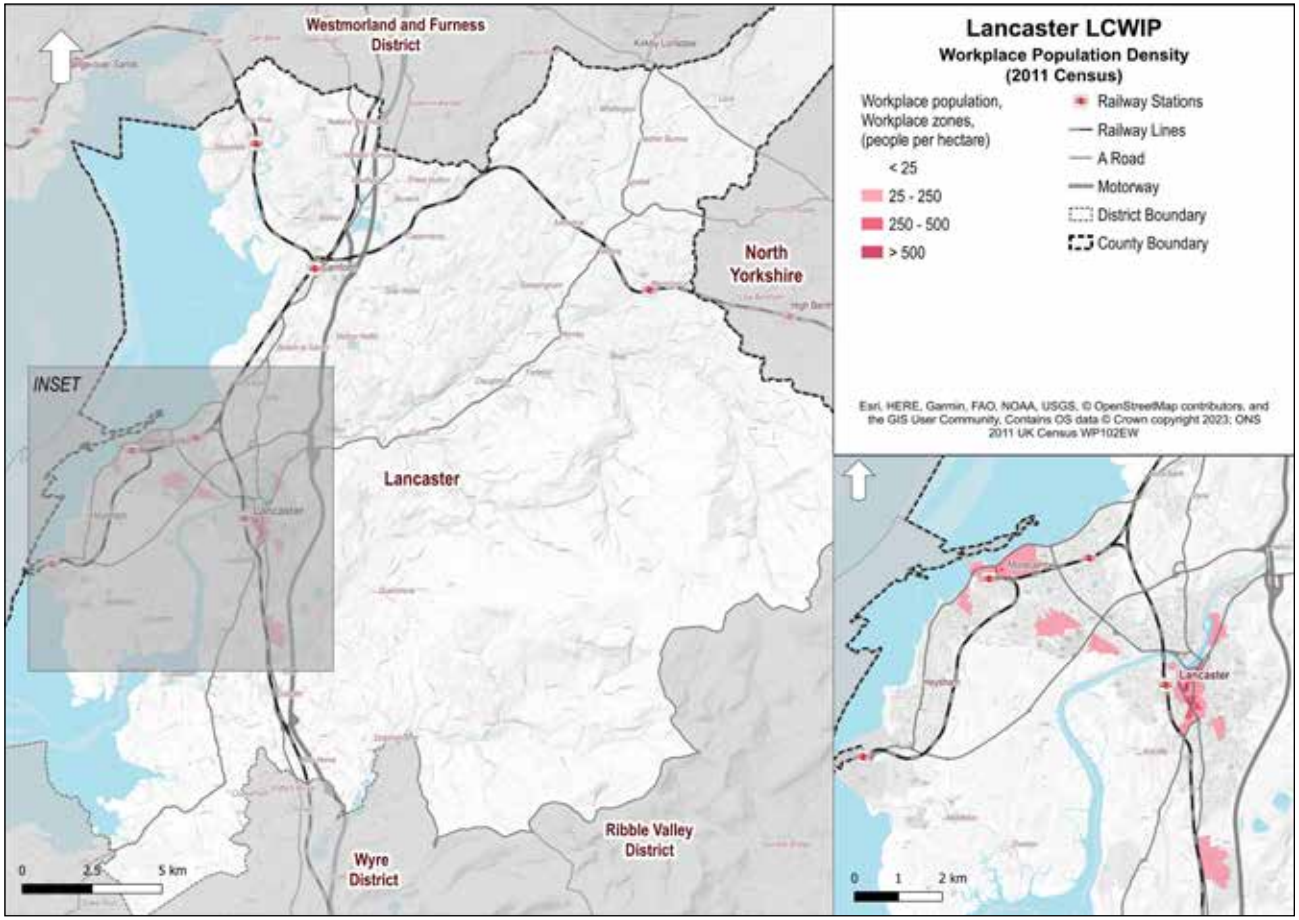


Figure 8. Workplace population density in the Lancaster study area (*source: Office of National Statistics, 2011 Census*)

4.2.5. Car Availability

Figure 9 shows the proportion of households in the Lancaster area with no access to a car or van. This indicates the areas where access to a car or van is lower and where there might also be greater reliance on walking, cycling or public transport. These areas may have a higher benefit from improved active travel infrastructure.

Overall, 23% of households in the Lancaster District do not have access to a car or van, which is slightly higher than the rest of Lancashire and comparable to the North West and national averages (see Table 4).

In comparing Figure 9 and Figure 7, a correlation has been noted between population density and the number of households without access to a car or van, whereby the more densely populated areas in Morecambe and Lancaster are generally where households have fewer cars. Car availability is lowest in Morecambe town centre and Lancaster city centre, where upwards of 40% of households do not have access to car. Conversely, over 90% of households in the more rural northern and eastern areas of the Lancaster District have access to a car or van.

Data for privately registered vehicles illustrates Lancaster is similar to the Lancashire, the North West and England averages (Table 4).

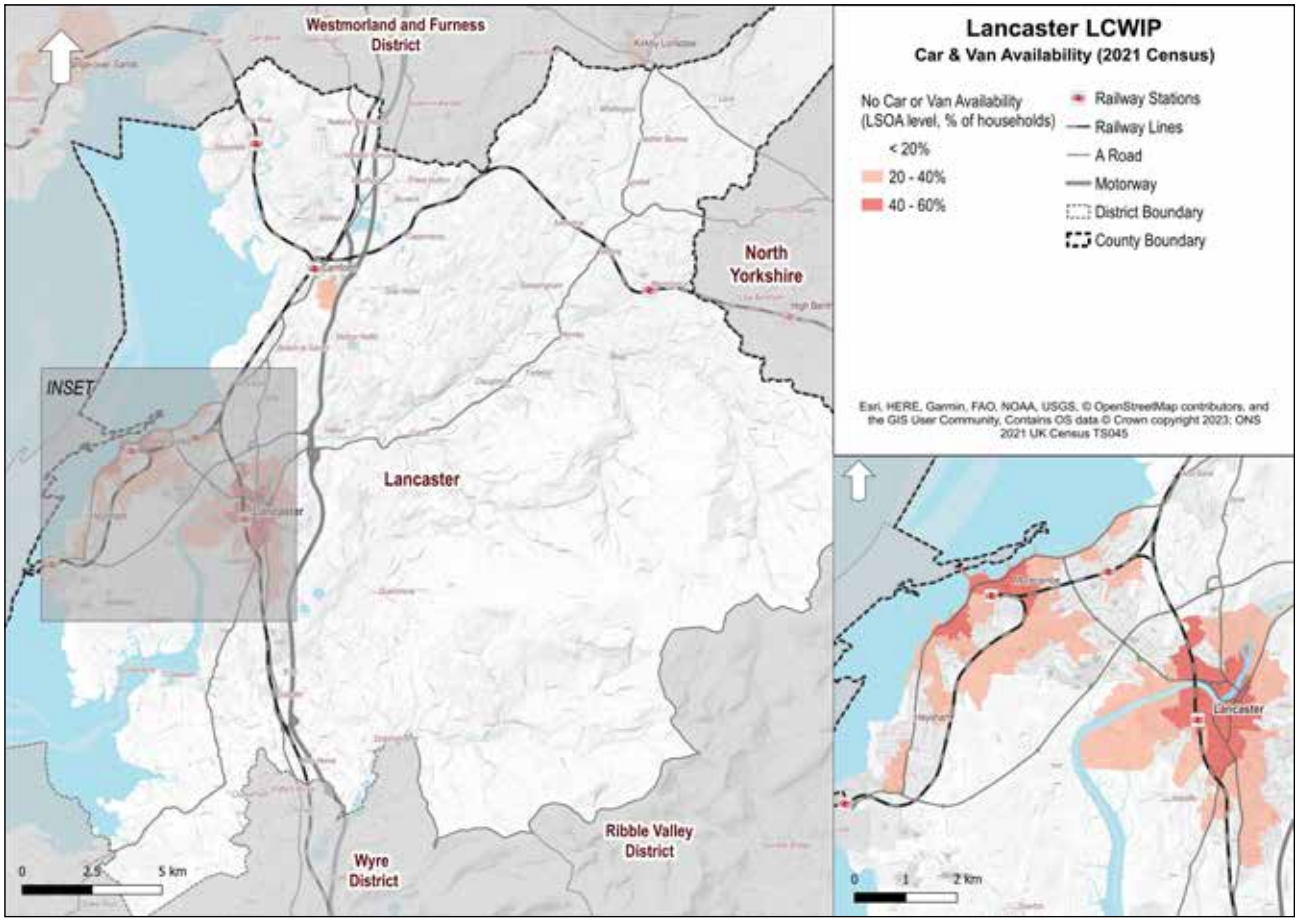


Figure 9. Households with no car/van availability in the Lancaster study area (*source: Office of National Statistics, 2021*)

Table 4. No car/van availability (2021 Census) and privately registered vehicles (DfT and DVLA) (2023 Q3)

Area name	Lancaster	Lancashire	North West	England
% Households with no car/van availability	23%	20%	25%	24%
Privately registered vehicles/person (2023 Q3)	0.51	0.54	0.49	0.51

source: Office of National Statistics; Department for Transport (DfT) and Driver and Vehicle Licensing Agency (DVLA)

4.2.6. Indices of Multiple Deprivation

Figure 10 shows the 2019 indices of multiple deprivation (IMD). The IMD is a measure of relative deprivation for small areas/ neighbourhoods in England (lower super output area (LSOA) census boundaries). It measures income, employment, health, education, crime, living environment and barriers to housing and services. Areas in the first decile represent the most deprived areas, whereas the tenth decile represents least deprived areas. The information was used for the identification of under-served areas and therefore the areas that may most benefit from walking and cycle improvements.

The IMD indicates relatively low levels of deprivation in the Lancaster District. A total of 13 lower super output areas (LSOAs) in the Lancaster District are within the top 10% most deprived nationally and a further 8 are in the top 20%. Most of these areas are also in the first decile of health deprivation. These areas are concentrated in Morecambe and Lancaster – particularly along the coast and in the town centres. The areas of deprivation indicate that residents may experience issues related to poor health, physical inactivity, travel affordability, and access to employment and education. Active travel improvements in these areas would support benefits to public health, travel affordability, and access to employment and opportunity.

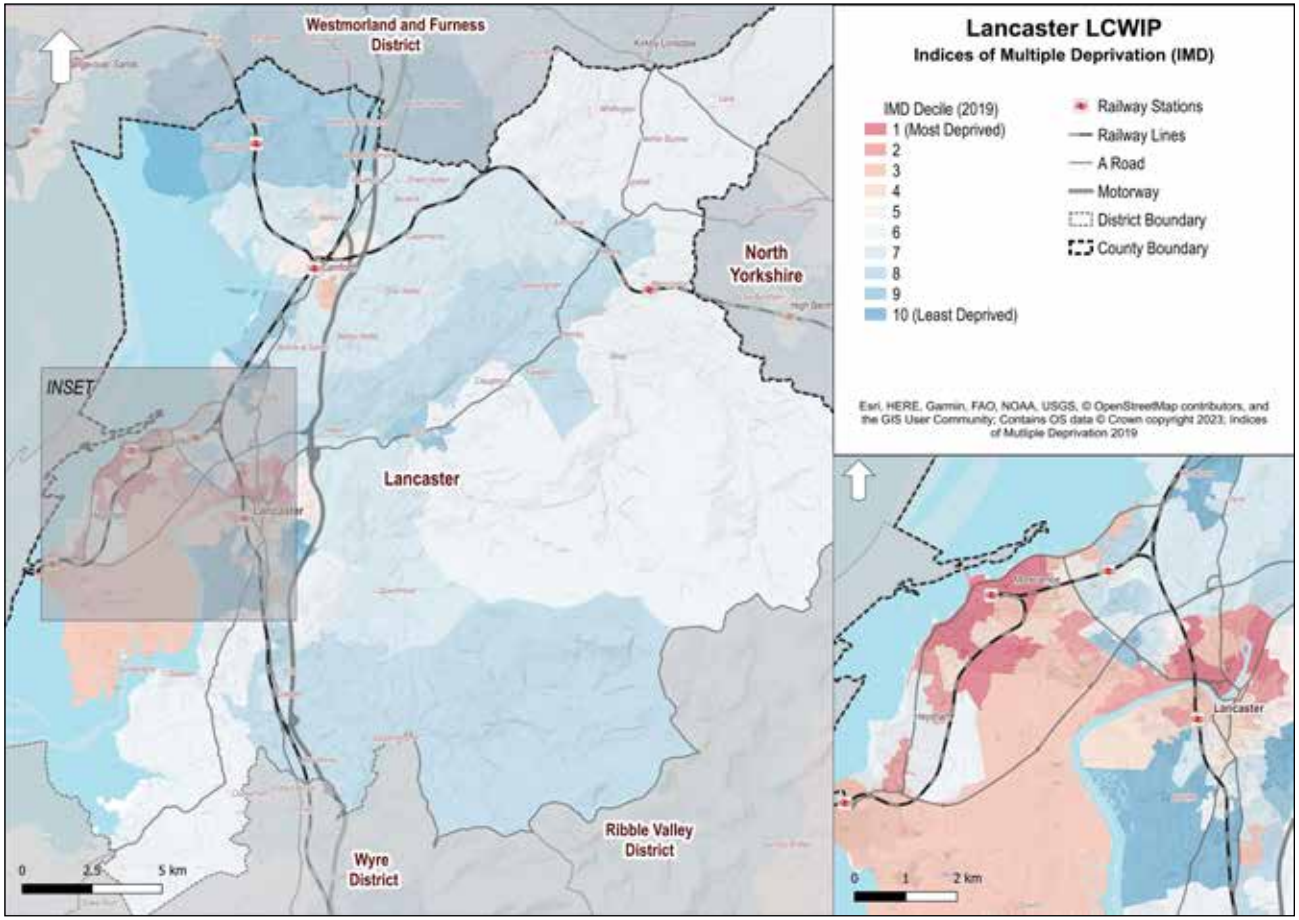


Figure 10. Indices of Multiple Deprivation in the Lancaster study area (*source: Office of National Statistics, 2019*)

4.2.7. Future Growth and Development Opportunities

Information regarding planned development and site allocations was reviewed to identify areas of planned growth and potential future demand for cycle and walking infrastructure to provide linkages between growing residential areas and key destinations. The locations of larger development sites are shown in Figure 11 on the following page and summarised below.

4.2.7.1. Lancaster

Lancaster City Centre is the main retail and service centre in the Lancaster District and is a key focus for economic growth, development and investment. There are two development sites and a development opportunity site located in the city centre area (Canal Quarter, White Cross Business Park and Bulk Road/ Lawson's Quay) which will help drive economic growth in the town centre, strengthen its vitality and viability, and enable the sites to integrate more closely with the city centre.

In west Lancaster, Lune Industrial Estate is another development opportunity site. Caton Road Industrial Estate and Business Park is also an employment development site in the north Lancaster area. Planned residential development sites, comprising of 700 and 930 units, are also located in north Lancaster and east Lancaster respectively.

Other housing site allocations in Lancaster include:

- 242 units – Wyresdale Road
- 207 units – Grab Lane;
- 148 units – Luneside East; and
- 137 units – Royal Albert Fields, Ashton Road.

4.2.7.2. Morecambe and Heysham

There are no residential development sites planned in Morecambe and Heysham currently. Employment and leisure development sites include:

- White Lund Industrial estate;
- Port of Heysham Industrial Estate;
- Port of Heysham Facilities expansion;
- Royd Mill;
- Lancaster West Business Park;
- Heysham Industrial Estate;
- Middleton Towers, Carr Lane;
- Eden Project North; and
- Morecambe Festival Market and Surrounding Area.

4.2.7.3. Carnforth and the other surrounding towns and villages

Housing site allocations in the other towns and villages within the Lancaster District include:

- 250 units – Lundsfield Quarry, South Carnforth;
- 213 units – land east of Scotland Road; and
- 114 units – land between Brewers Barn and A601(M), Carnforth.

There are other housing site allocations throughout the study area with less than 100 units which are not described here but are shown in Figure 7.

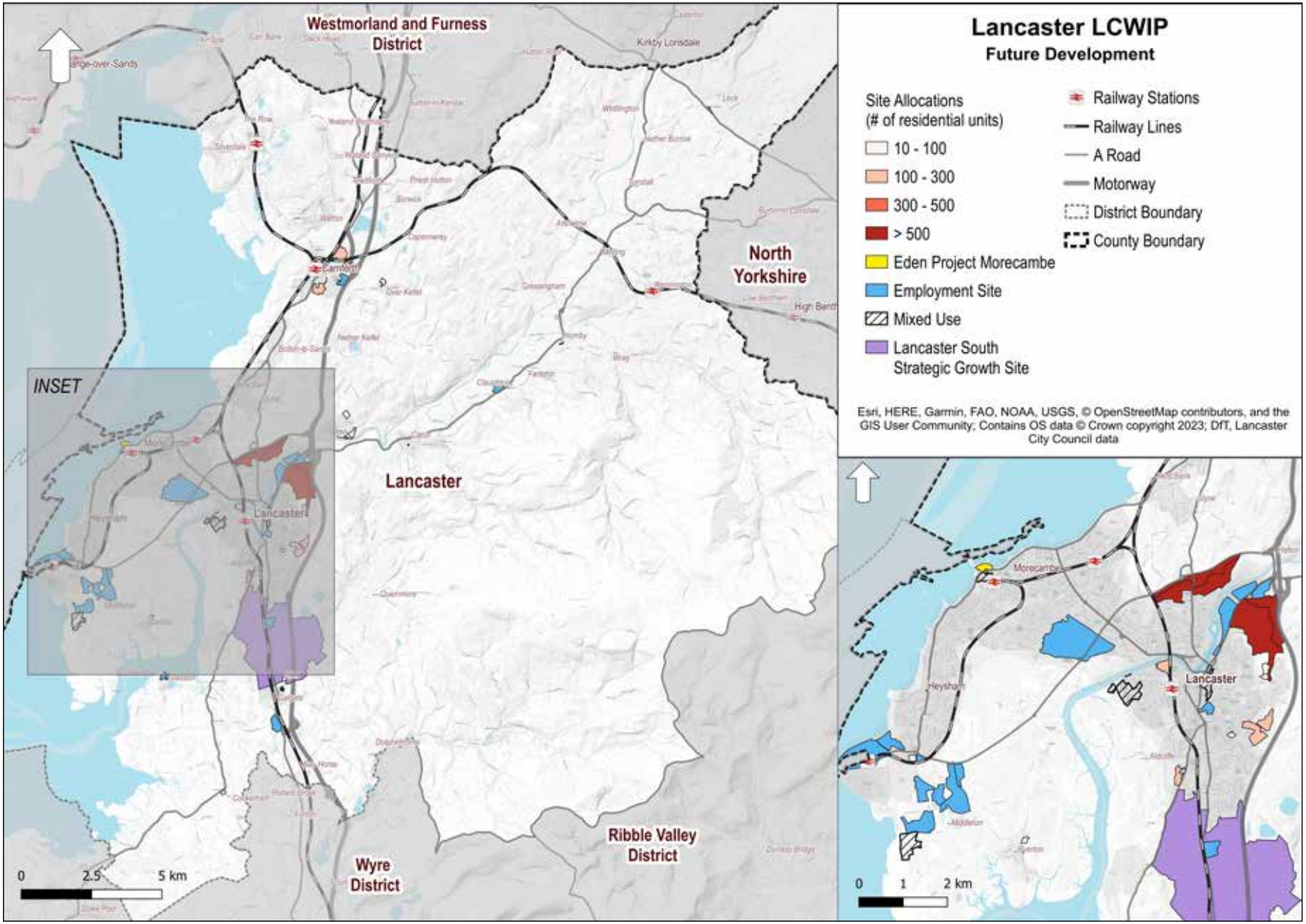


Figure 11. Development areas in the Lancaster study area (*source: Lancaster Local Plan/site allocations*)

4.3 Barriers to Mobility

Severance is a barrier to mobility, particularly for walking and cycling. Severance issues can create longer journeys, making them less attractive to be made by foot or by cycle. Issues in the Lancaster study area that contribute to severance are illustrated in Figure 12, including:

- Multiple railways and waterways traverse the District, which sever the local road network and funnel traffic for all modes to a limited number of crossing points. The severance issues are most apparent in the built-up areas in the west of the study area.
- Major roads (e.g., A roads, motorway) can also sever local street networks and create barriers to active travel due to high traffic flows and speeds and wide crossings, which are unattractive and hostile environments for walking and cycling. Examples include the M6, the A683, the A589, and the A6 one-way gyratory around Lancaster City Centre.
- In addition to the major roads, high traffic flows and speeds throughout the network can be a barrier and deterrent to walking and cycling, negatively impact the perceived safety, comfort, and attractiveness of a route. LTN 1/20, for example, advises that traffic flows should be less than 2,500 vehicles/day with speeds 20mph or less to be suitable for most people to comfortably cycle with motor vehicle traffic and without segregation[1].
- The road network outside of the urban, built-up areas is limited throughout the study area due in part to its more rural character and settlement patterns. This creates very limited options to link the town centres east/west across the region and to link rural villages to each other, the town centres, or key destinations. This is compounded by other barriers such as severance of the railways and/or natural features.
- Topography is a constraint in the east Lancaster area, immediately east from Lancaster City Centre, and also between Lancaster and Carnforth, to the east of the canal. However, the terrain is relatively flat within the more urban areas, making cycling a more attractive option in those locations.
- Within the built urban environment, there are many common constraints which affect current levels of walking and cycling and the potential to provide quality infrastructure for active travel. Narrow streets within built-up areas often have limited existing provision and limited scope to widen footways or provide dedicated cycle facilities without significant change to motor vehicle circulation. Competing needs for public highway space also affect the quality of the environment for walking and cycling. For example, footway parking can impede pedestrian access for some users. Management of kerbside activity (e.g., servicing requirements, on-street parking), particularly in high street areas, can also impact pedestrian comfort and the attractiveness of the area.

1 DfT, LTN 1/20, Figure 4.1

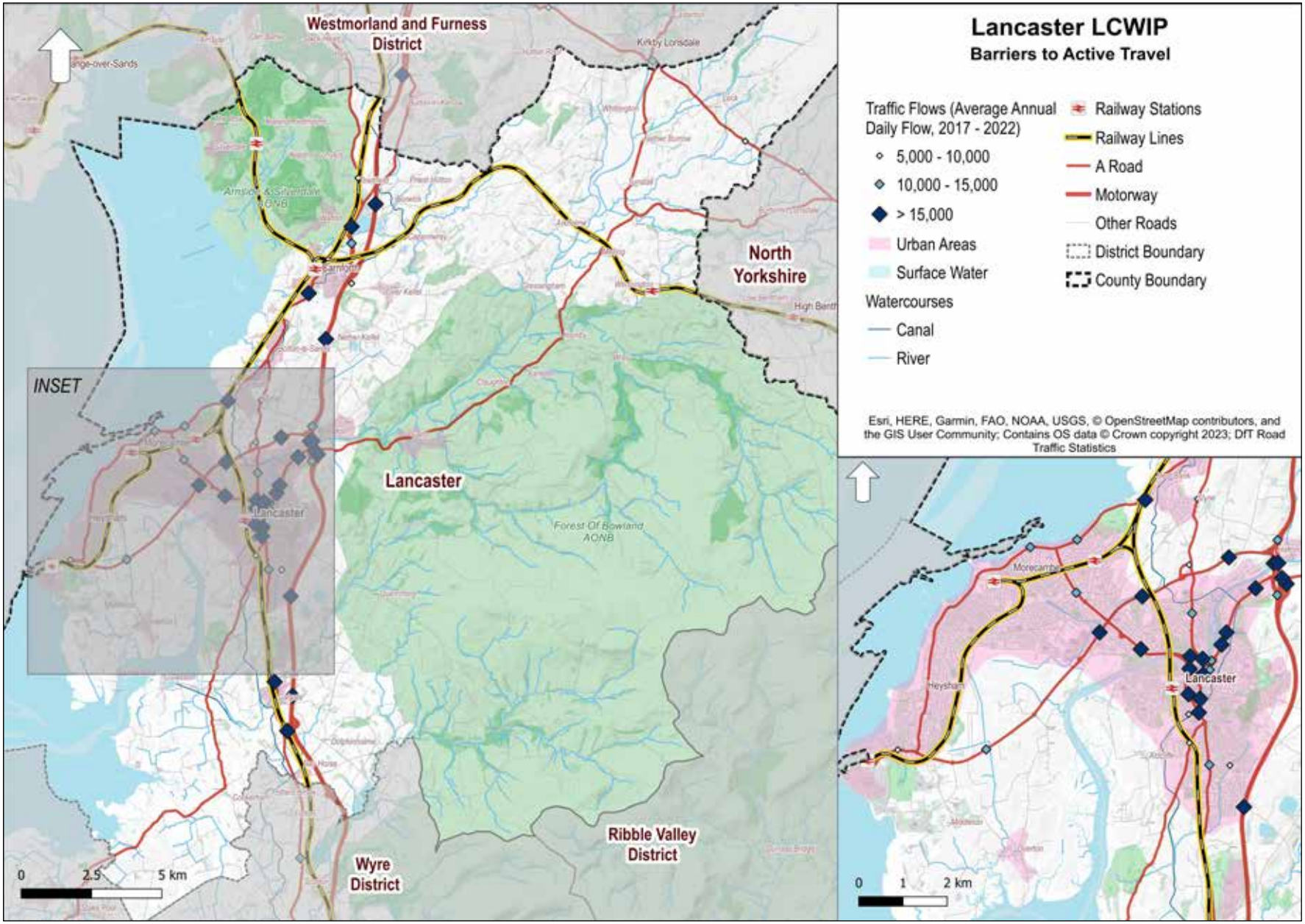


Figure 12. Barriers and constraints to walking and cycling

4.4 Key Destinations

Key destinations (see Figure 13, following page) were mapped to illustrate clusters of trip attractors, which would indicate likely greater potential for journeys to be made by active travel and help to identify potential desire lines as part of the LCWIP development. Types of destinations captured include:

- Educational facilities (primary schools, secondary schools and higher education facilities);
- Hospitals;
- Doctor surgeries;
- Leisure centres;
- Tourist attractions;
- Railway stations;
- Retail areas; and
- Employment sites / enterprise zones.

As would be expected, key destinations tend to be concentrated around the more densely populated areas in Lancaster, Heysham and Morecambe, as well as around other town centre areas such as Carnforth and Bailrigg.

Clusters of primary schools in urban areas such as Morecambe, Carnforth, Heysham and Lancaster indicate a greater potential to increase walking journeys. Primary schools tend to have smaller catchment areas and have potential for school trips to be made on foot or by cycle, likely with children accompanied by a parent.

Meanwhile, areas with secondary, further and higher education facilities provide a greater potential to increase active travel journeys among young people who are more confident and able to walk or cycle independently.

Secondary and higher education facilities also tend to have larger catchment areas, which may make cycling a more attractive mode than walking. Secondary and higher education facilities are located in Lancaster District, which include:

- Lancaster City Centre (six facilities, including University of Cumbria in Lancaster);
- Morecambe (two facilities);
- Heysham (one facility);
- Carnforth (one facility); and
- Bailrigg - the Lancaster University campus.

There are key employment sites and enterprise zones throughout the study area and these are generally located adjacent to major transport links such as major roads or rail links. Larger sites or clusters of sites include:

- Kingsway Retail Park (Lancaster);
- Lansil Industrial Estate (Lancaster);
- Lune Industrial Estate (Lancaster);
- White Lund Industrial Estate (Morecambe);
- Central Retail Park (Morecambe);
- Heysham Industrial Estate (Heysham);
- Heysham Port and Nuclear Power Station (Heysham);
- Heysham Business Park (Heysham);
- Middleton Business Park (Middleton);
- Bridgeside Industrial Park (Carnforth); and
- Carnforth Business Park and Kellet Road Industrial Estate (Carnforth).

Several of the barriers and constraints referenced in the previous section (Figure 12) are also overlaid in Figure 13 to illustrate potential severance issues near key destinations.

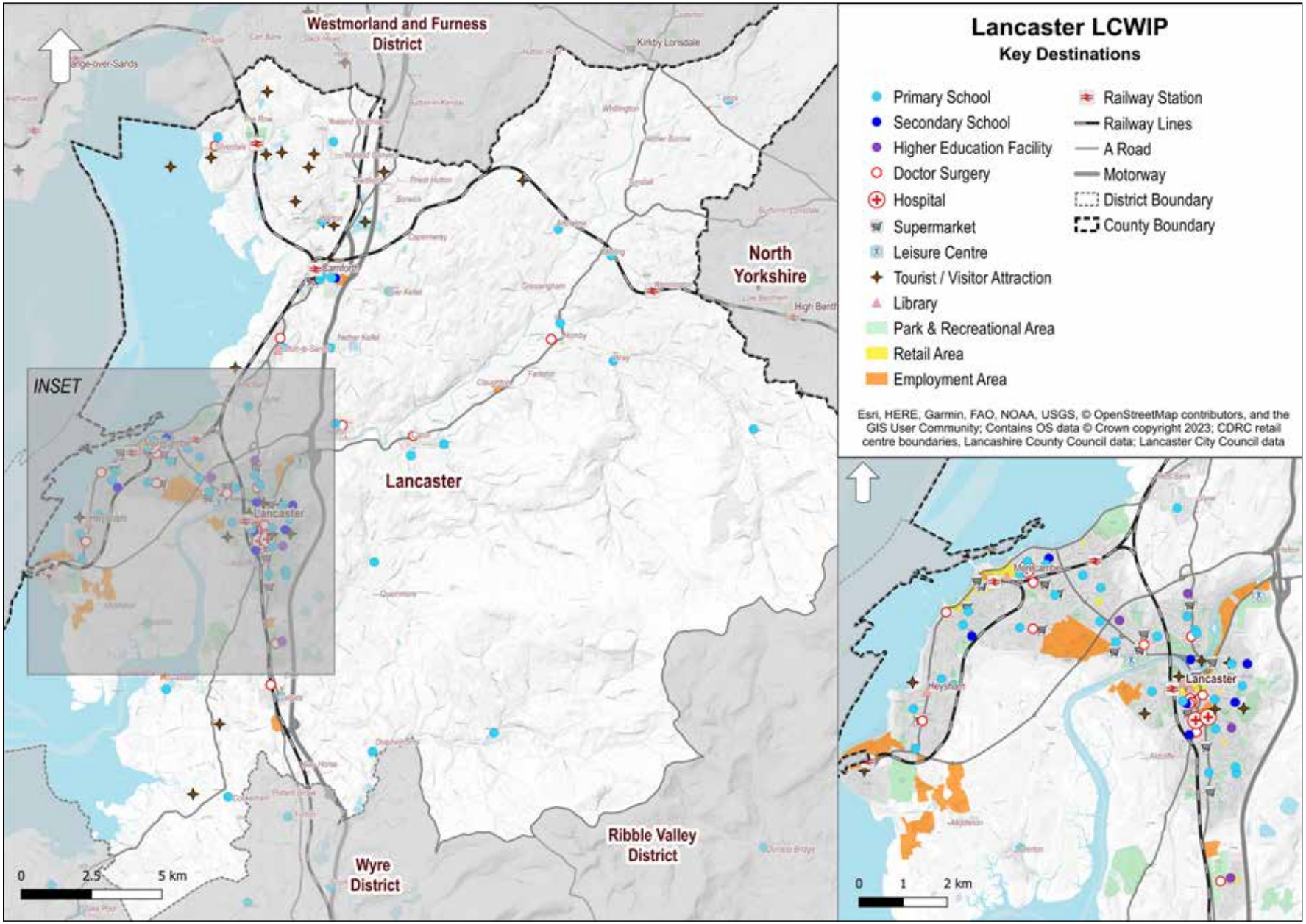


Figure 13. Key destinations within the Lancaster study area

4.5 Centres

Similar to the key destinations mapping, the classification of designated centres from the Lancaster Local Plan indicates concentrations of shopping and community services and facilities. The hierarchy of centres identifies the key hubs of activity within the study area and potential demand for short trips which can be made by foot or by cycle. Development of the LCWIP network should consider linking nearby town centres and improving access to other centres.

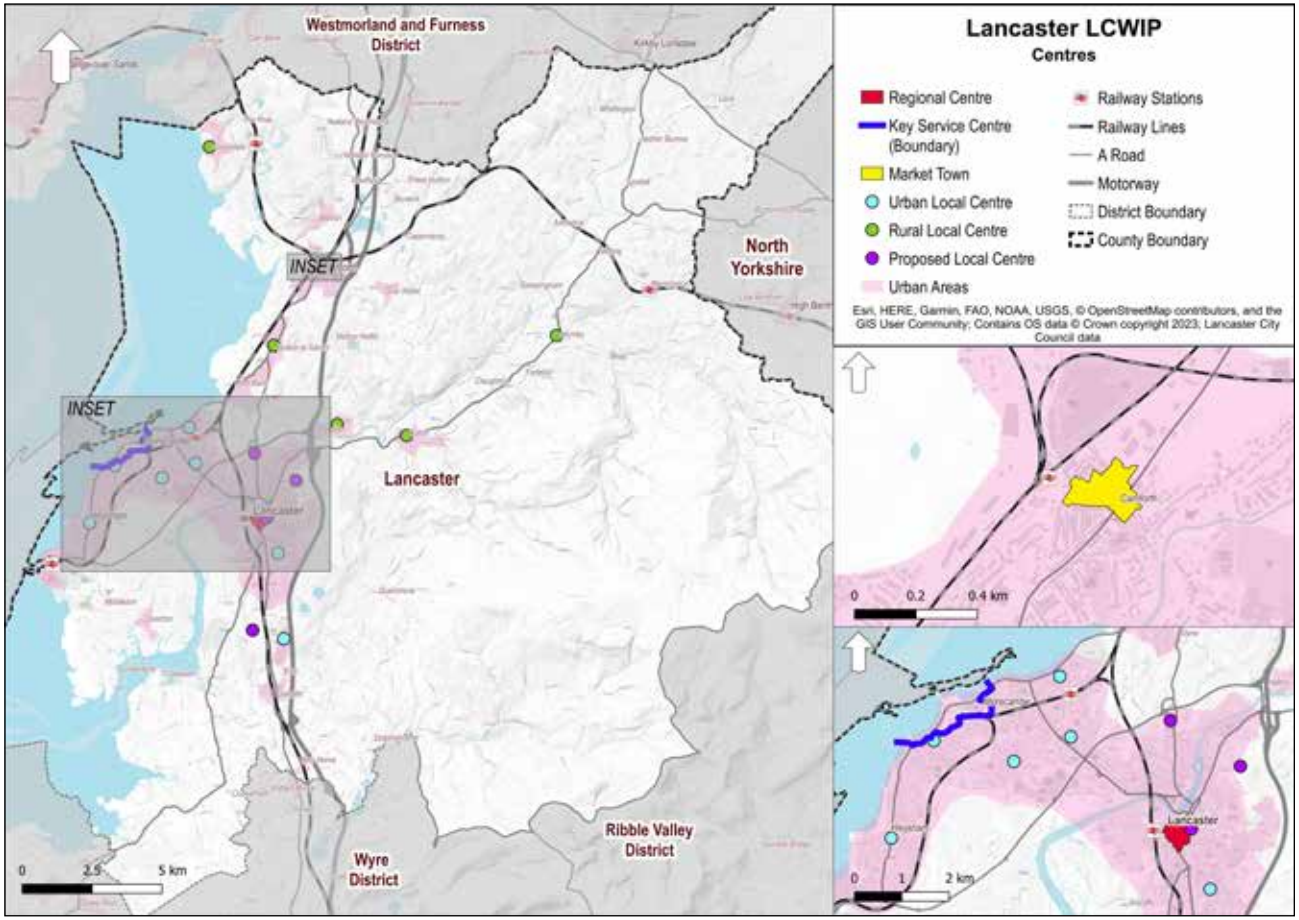


Figure 14. Centres within the Lancaster area

4.6 Transport Infrastructure

4.6.1. Existing and Proposed Cycle Network

There are several regionally significant existing cycle facilities in the study area, including:

- Lancaster Canal Towpath: A route along the canal from Preston, Lancashire up to Kendal, Cumbria.
- National Cycle Network (NCN) route 6: A 442-mile (711.4 km) long route from London to the Lake District. This route follows the Lancaster Canal Towpath between Lancaster and Carnforth and parts of the Lancashire Coastal Way between Glasson Dock and Lancaster.
- NCN 69: An east-west route connecting Morecambe with Grimsby. The route is traffic-free between Lancaster and Morecambe – following the Lancaster-Morecambe Greenway before joining the Morecambe Stone Jetty and Lancashire Coastal Way.
- NCN 700: Also named the Bay Cycle Way, a route between the southwest coast of Cumbria to Glasson Dock in Lancashire, along Morecambe Bay.

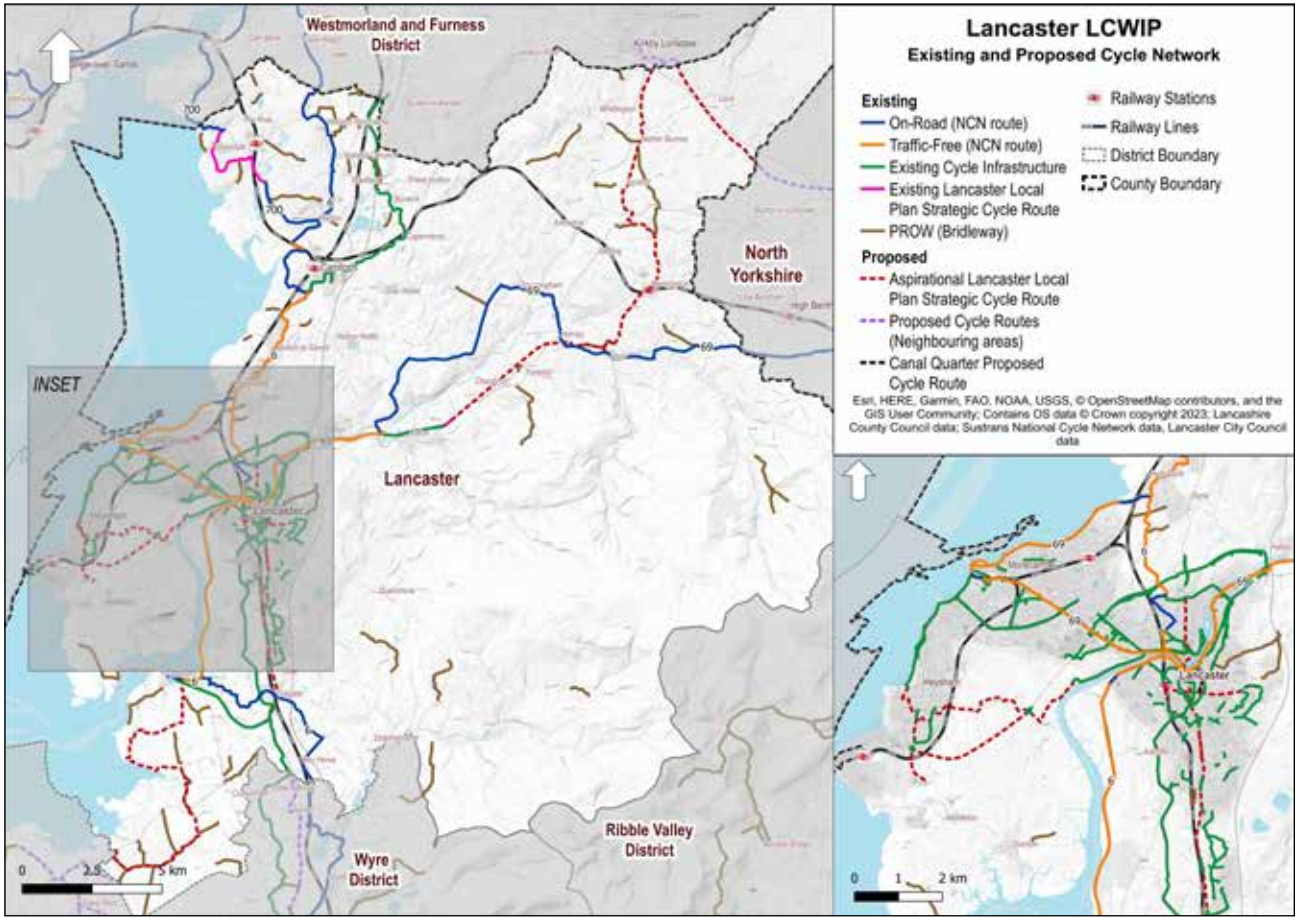


Figure 15. Existing and proposed cycle network

There are several proposed schemes to expand or improve the cycle network, as referenced in section 3.5. There are also aspirations to expand the NCN, including along the Lune Valley corridor from Bull Beck through to Kirkby Lonsdale and Ingleton.

Connectivity to the existing and proposed facilities, and/or improvements to these facilities, should be considered as part of the LCWIP network development.

4.6.2. Public Transport

Several public transport services operate in the Lancaster study area, including four railway lines and an extensive bus network.

Walking and cycling are important first/last mile travel options to/from the area railway stations, and so connections to the stations should be a consideration in development of the LCWIP network. High-quality long-term cycle parking should also be provided at the stations. The station with the highest usership is Lancaster (>500,000 annual station entries and exits). The stations at Morecambe and Carnforth have moderate usership (100,000 - 500,000 annual station entries and exits).

Bus services do not allow unfolded cycles on-board. There also tends to be a higher frequency of stops, generally making walking a more suitable option to access the stops. The bus stop locations indicate areas of demand for short walking trips, linking bus passengers with surrounding residential areas or trip attractors. There is a relatively high density of stops (and hence short walking trips) around the built-up areas surrounding Lancaster, Morecambe, and Heysham.

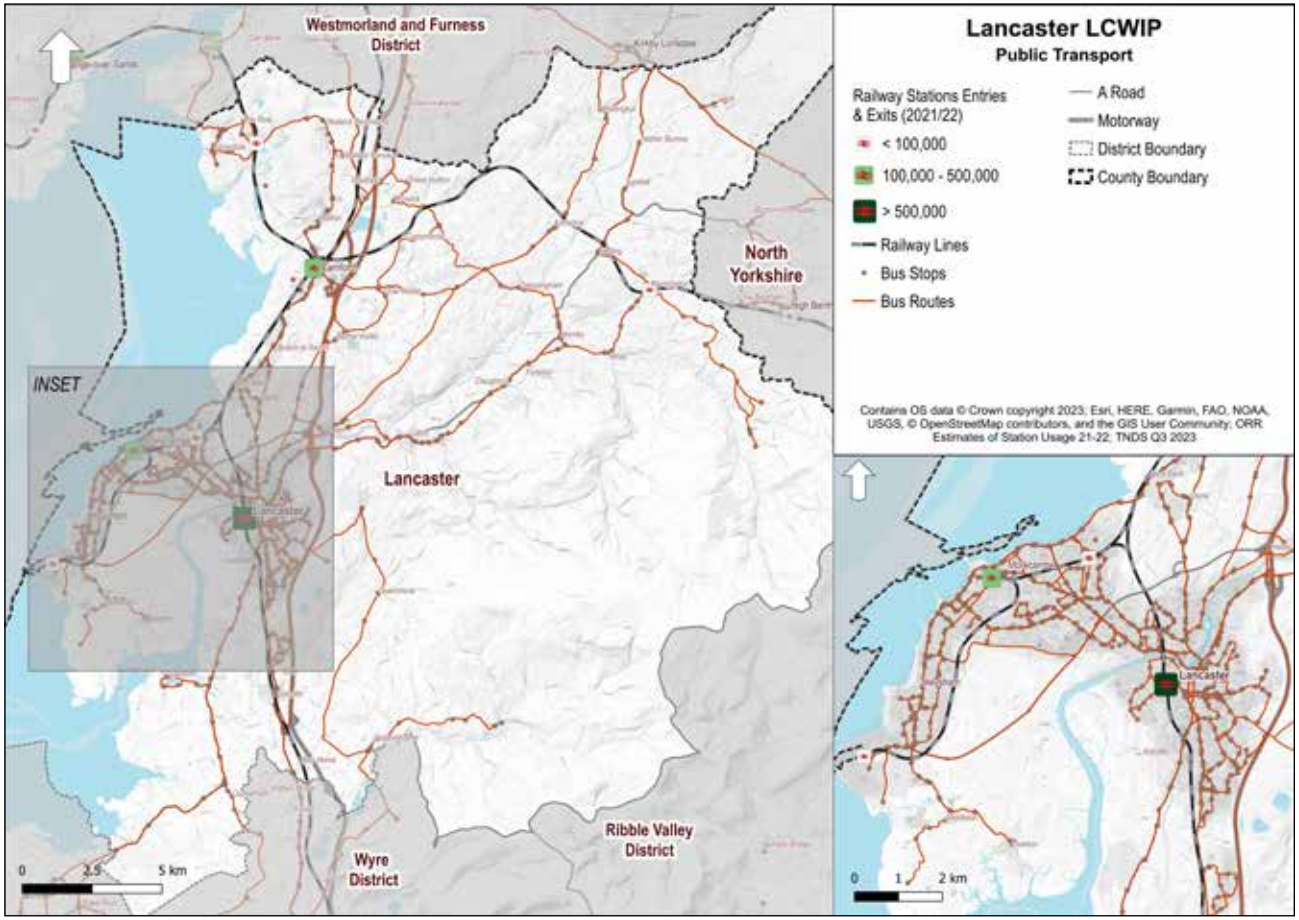


Figure 16. Public transport services

4.6.3. Air Quality Management Areas

There are three air quality management areas (AQMA) within the Lancaster District:

- Carnforth AQMA: An area encompassing parts of central Carnforth, centred on the junction between Market Street and the A6.
- Lancaster City Centre AQMA: An area encompassing parts of Lancaster City Centre, along three interconnecting gyratory roads on the A6 and the A589.
- Galgate AQMA: An area encompassing a section of Main Road in Galgate.

The AQMAs are areas which currently do not meet national air quality objectives and therefore where there is a need to improve the air quality in future. Encouraging a shift to active travel modes in these areas through walking and cycling infrastructure improvements could support the objectives of the AQMAs.

It should be noted that at the time of producing this LCWIP, the AQMAs in Carnforth and Galgate are in the process of being revoked and it is envisioned that the Lancaster City Centre AQMA will become the only AQMA in the District.

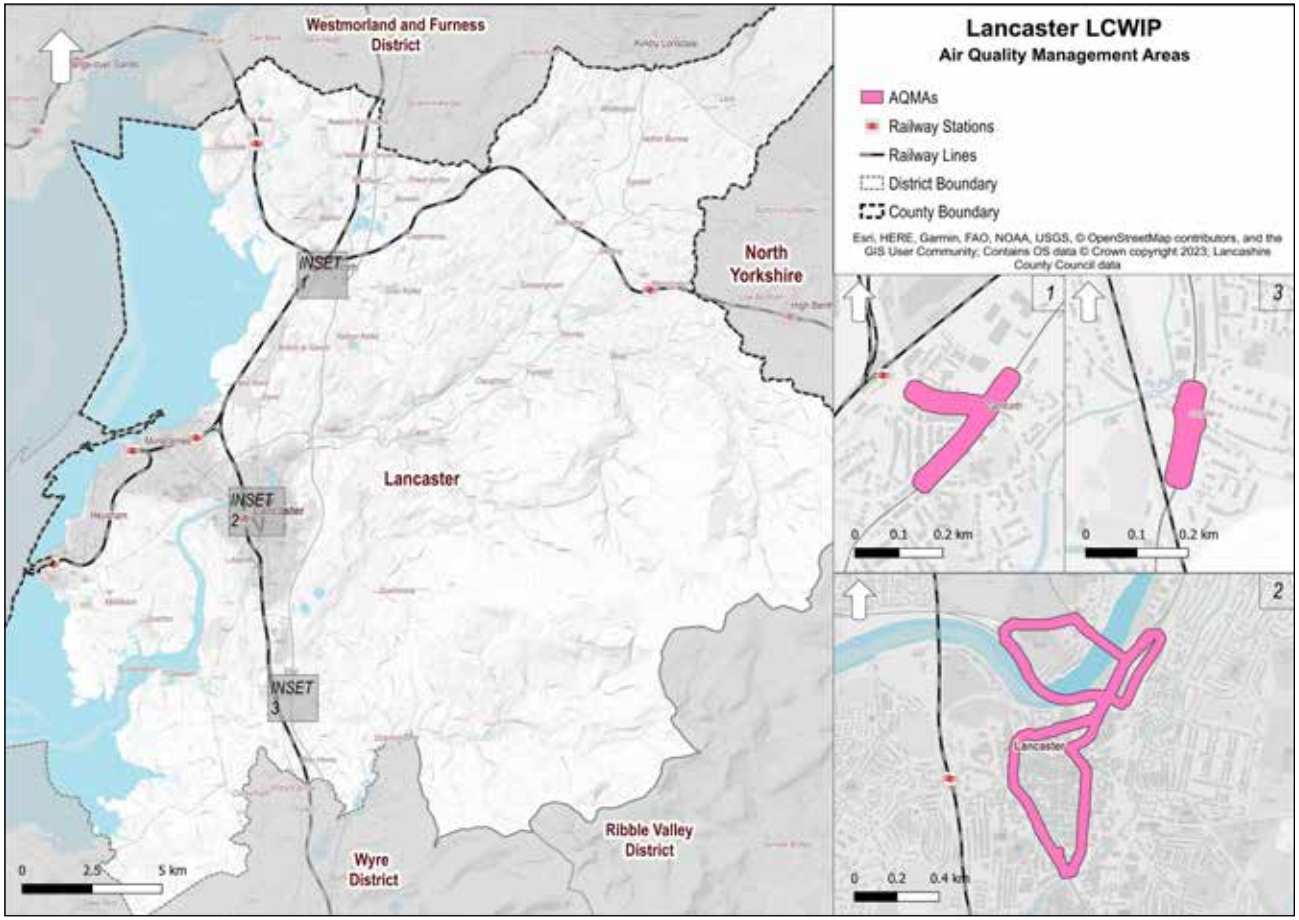


Figure 17. Air quality management areas within the Lancaster study area.

4.7 Travel Patterns

4.7.1. Journey to Work Mode and Trip Distance

Table 5 summarises the mode share and trip distance for commuter trips based on the 2021 Census[1].

Of those in employment, using a private car remains the primary mode of transport in the region at 56% of all commuter trips. Active travel comprises 14% of all commuter trips - 11% by walking and 3% by cycle. Active travel mode share is higher in Lancaster than the Lancashire, North West and national average.

Figure 18 and Figure 19 show the percentage of commuter trips in each LSOA which are completed on foot or by cycle respectively. As shown, a higher concentration of both walking and cycling commuter trips are completed in areas such as Morecambe and Lancaster where there is existing cycle infrastructure.

Journey to work distances indicate the potential for growth in walking and cycling as viable modes of travel. Across the Lancaster District, over 40% of commuter journeys are less than 5km, which is within the desirable maximum distance for cycling. An additional 16% are 5 - 10km, which is also within a reasonable cycle distance for some cycle users.

Table 5. Travel to work mode share and trip distance (2021 Census)

Area Name	Residents in Employment	Mode Share			Trip Distance		
		% walk	% cycle	% driving or passenger in car/van	< 2km	2- 5km	5-10 km
Lancaster	62,401	10.8%	2.7%	55.6%	16%	15%	13%
Lancashire	556,874	8.1%	1.4%	59.5%	13%	14%	13%
North West	3,341,743	8.0%	1.7%	54.3%	12%	15%	14%
England	26,405,214	7.6%	2.1%	48.4%	11%	13%	12%

source: Office of National Statistics

Figure 20 and Figure 21 show the percentage of commuter trips in each LSOA which are within a 5km and 10km distance respectively. As shown, a higher concentration of trips within urban areas such as Lancaster, Morecambe and Heysham are within 10km. These trips have a higher potential for modal shift to cycling or walking if high-quality infrastructure is provided.

1 The 2021 Census took place during COVID-19 lockdown restrictions and the data is not necessarily representative of normal journey to work patterns and the location of work for residents in the UK.

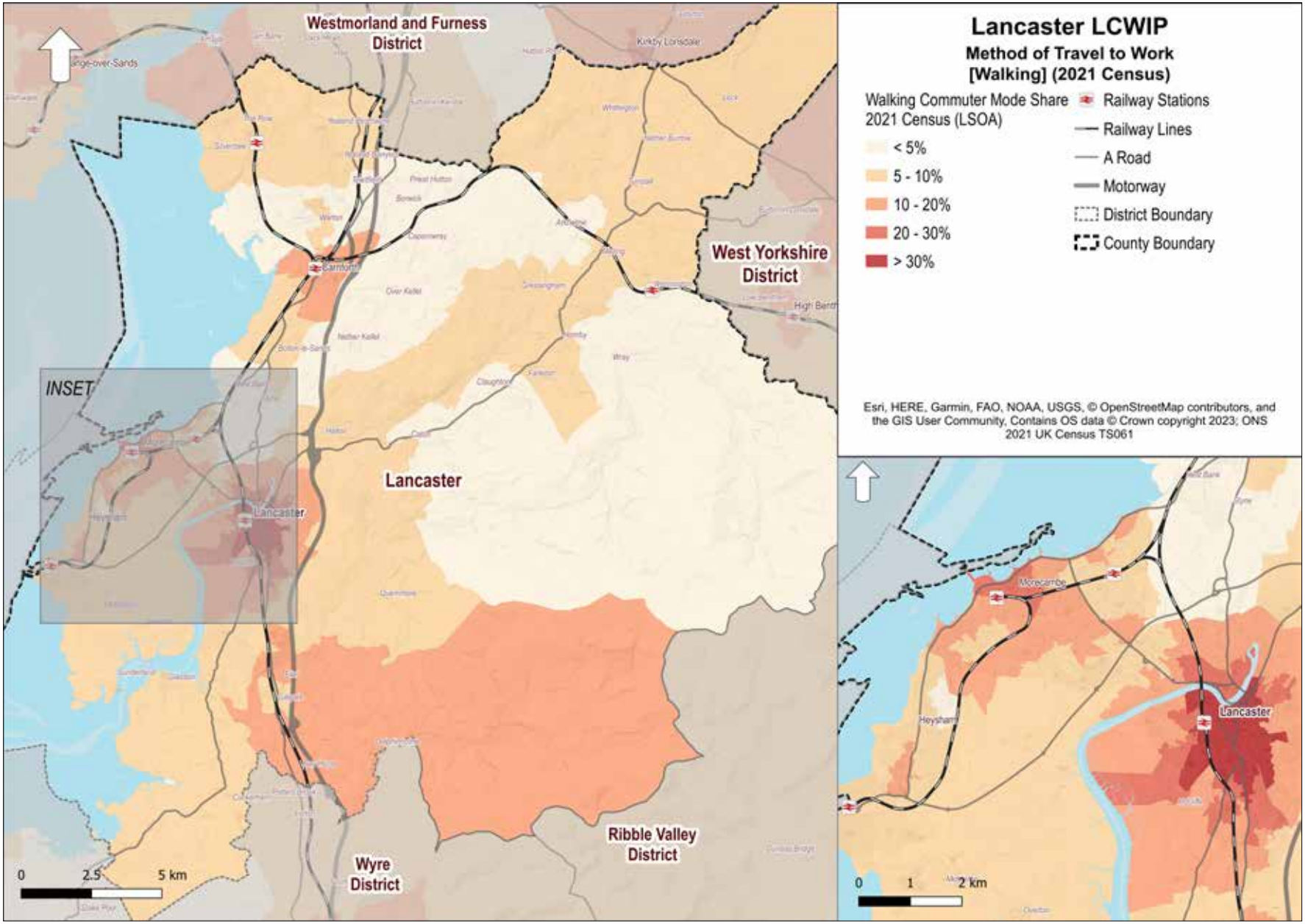


Figure 18. Method of Travel to Work (Walking), (2021 Census)

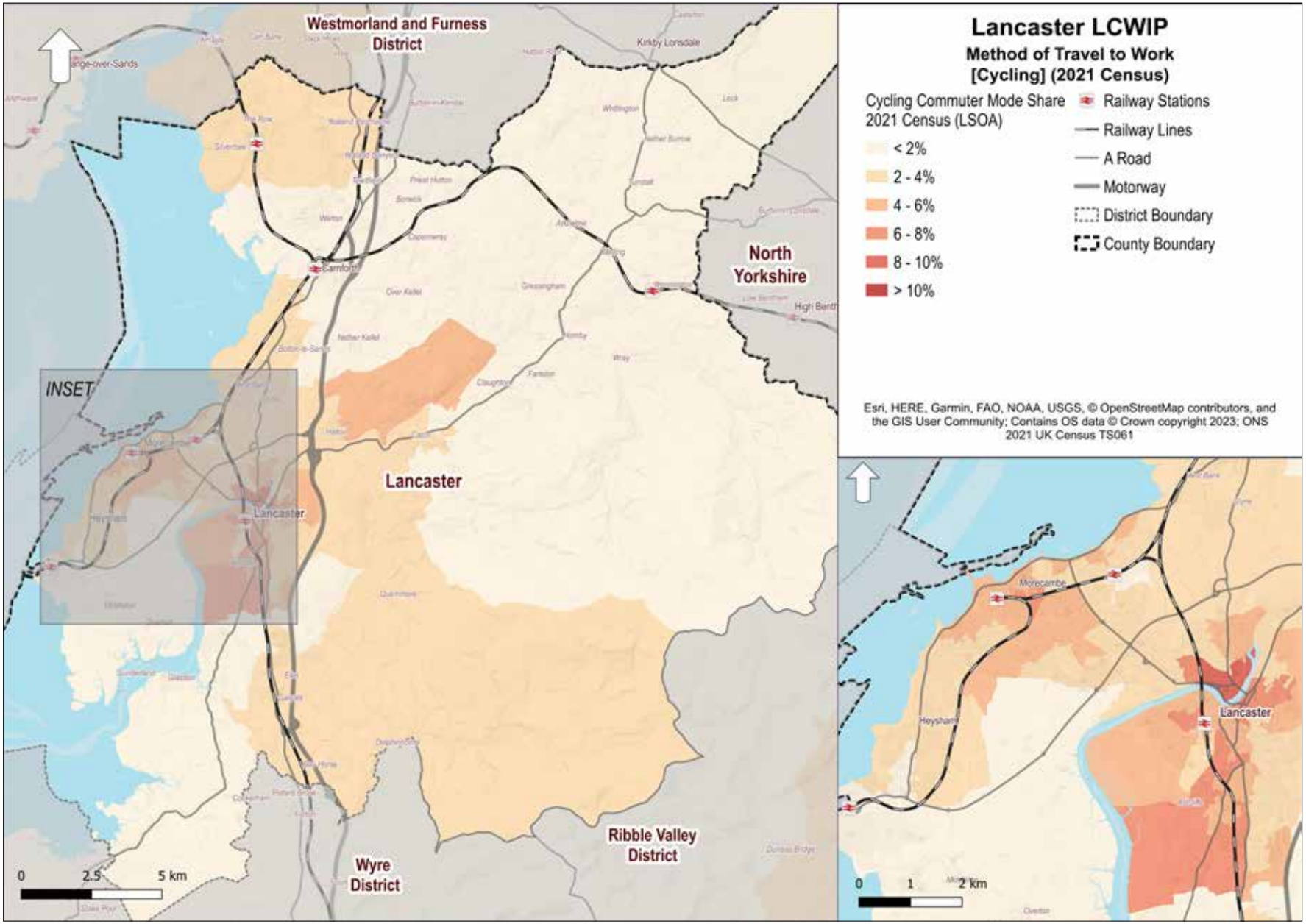


Figure 19. Method of Travel to Work (Cycling), (2021 Census)

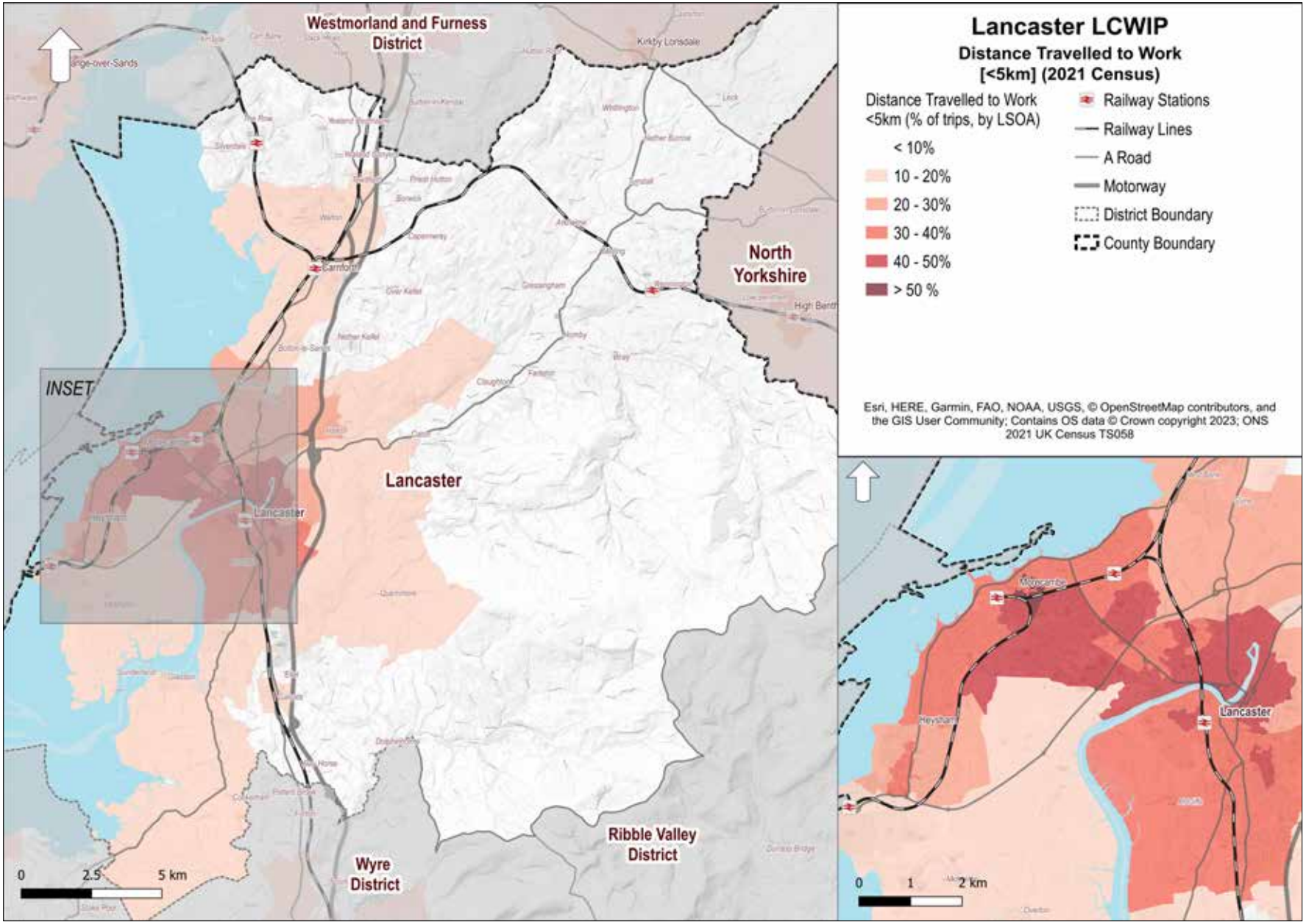


Figure 20. Distance Travelled to Work (less than 5km), (2021 Census)

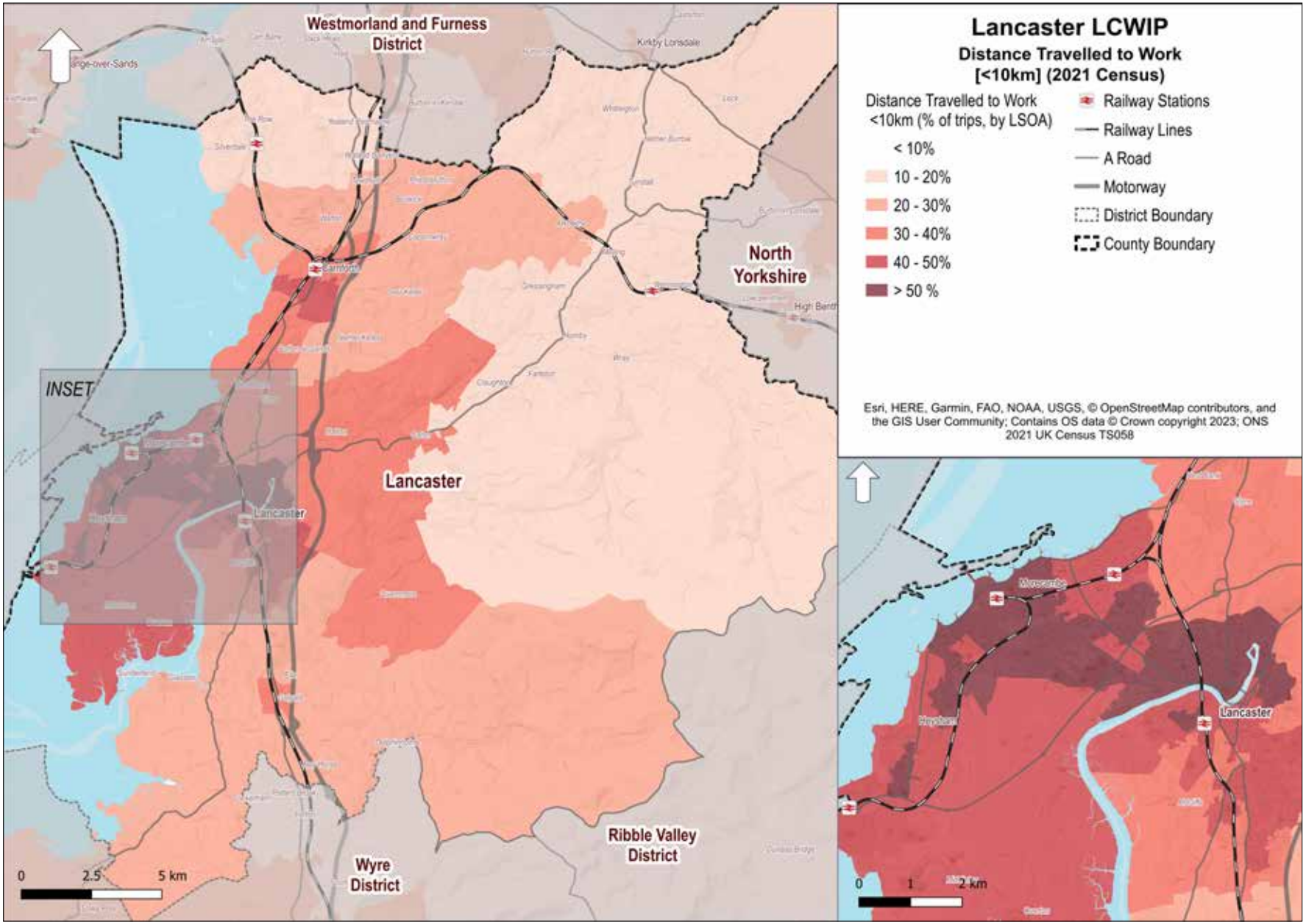


Figure 21. Distance Travelled to Work (less than 10km), (2021 Census)

4.7.2. Commuter Trip Patterns

4.7.2.1. MSOA Origin/Destination Pairs

Journey to work data at the middle super output area[1] (MSOA) level was reviewed to broadly illustrate commuter flows and key commuter pairs across the Lancaster study area. Commuter trips (MSOA to MSOA) with origins/destinations less than 10km apart are illustrated in Figure 22. This indicates desire lines with concentrations of short trips with the potential to be undertaken by walking or cycling.

As shown in Figure 22, there are:

» Strong desire lines in and out of Lancaster City Centre, linking employment sites in the city to neighbouring areas of Morecambe, Heysham, Hest Bank/Slyne and Caton.
» High flows between and within Morecambe and Heysham.
» A relatively high number of short commuter trips between Lancaster and the Lancaster University area (Bailrigg).

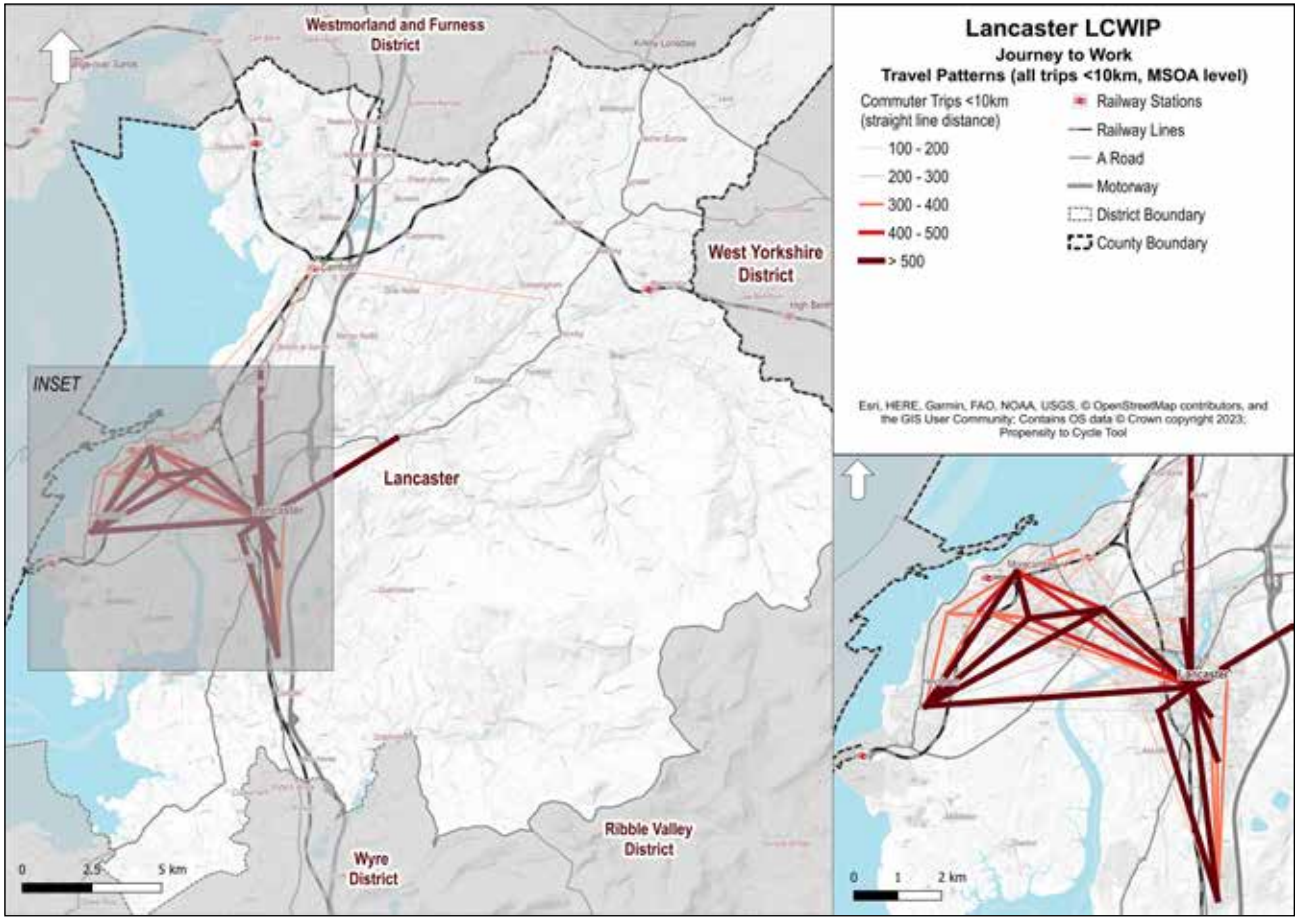


Figure 22. Origin-destinations pairs for journeys to work at the middle super output area (MSOA) level for trips less than 10km in the Lancaster study area (2011 Census, Office of National Statistics; Propensity to Cycle tool)

1 MSOAs are part of the Census' Neighbourhood Statistics Geography, which have a 3-level hierarchy (output area, lower super output area, middle super output area). MSOAs have an average population of approximately 7,200 people.

4.7.2.2. LSOA Origin/Destination Pairs

Commuter data was also available at the lower super output (LSOA) level, providing some additional granularity in reviewing origin-destination pairs (LSOA to LSOA), particularly where MSOAs are very large in the more rural areas[1]. All short commuter trips (less than 10km) between LSOAs which start and/or end in the Lancaster study area are illustrated in Figure 23. This indicates areas with concentrations of short trips with the potential to be undertaken by walking or cycling.

The commuting pattern is similar to those seen in Figure 22 at the MSOA level, but the additional granularity in origin/destination pairs also illustrates:

» The distribution of short commuter trips in the Lancaster City Centre.
» Relatively high flows within Carnforth and also between Galgate and the Lancaster University area (Bailrigg).

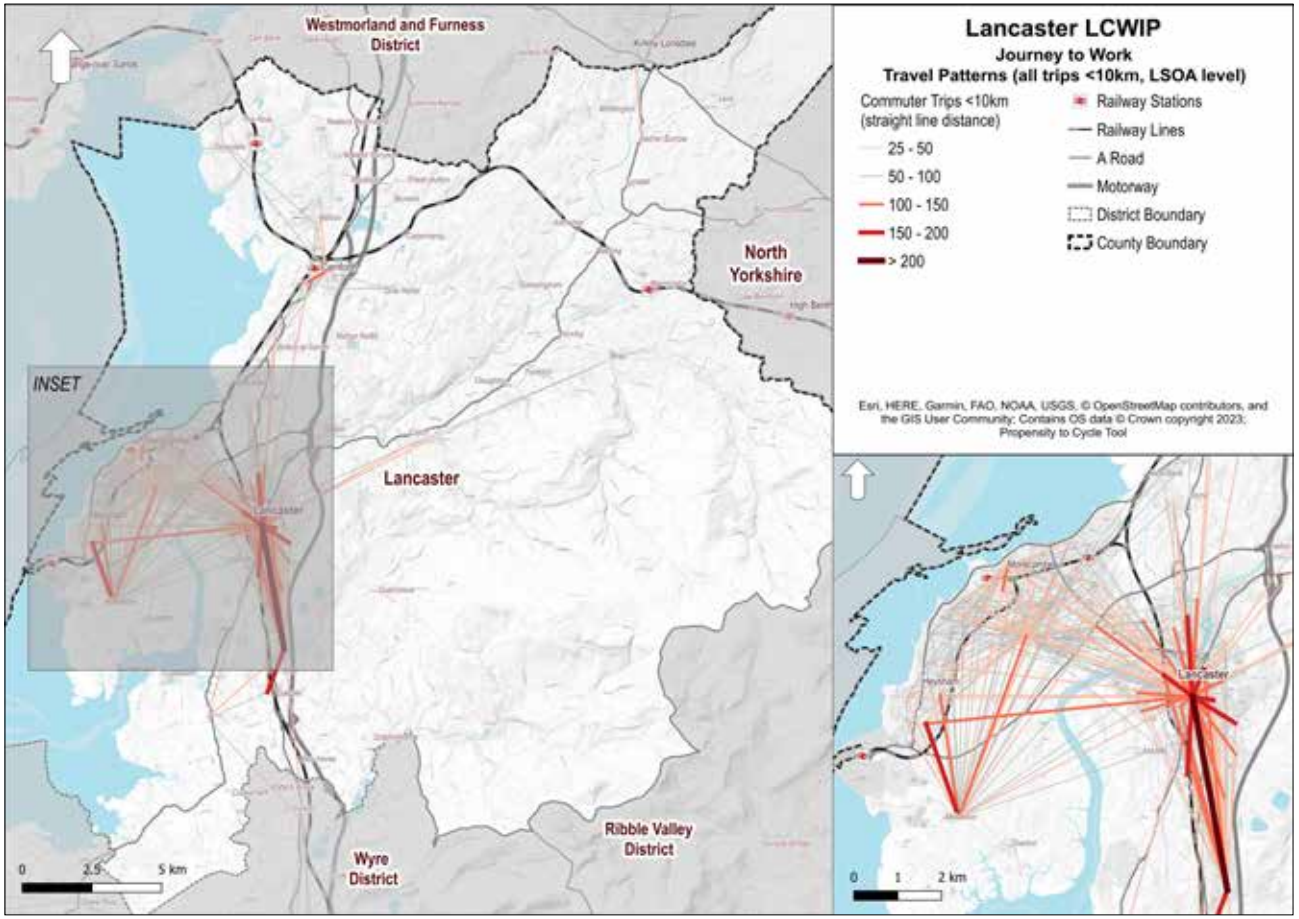


Figure 23. Origin-destinations pairs for journeys to work at the lower super output area (LSOA) level for trips less than 10km in the Lancaster study area (2011 Census, Office of National Statistics; Propensity to Cycle tool)

1 LSOAs typically consist of 4 to 6 output areas, and have an average total population of approximately 1,500 people.

4.7.3. Historic Cycle Count Data

Cycle count data are available through the Department of Transport's Road Traffic Statistics data portal.[1] Available count data within the study area from 2017 through 2022 is shown in Figure 24.

Overall, cycling numbers in Lancaster District show a slight positive trend, from 2017 to 2022 cycling counts have increased 2%. The peak year for cycling was 2020, where an increase of 28% was recorded against 2017, equivalent to an additional 4,600 cycle trips being recorded at DfT count locations. However, 2020 data is from during the COVID-19 pandemic and is not considered representative of typical travel patterns. Since 2020, cycling has reduced to near 2017 levels.

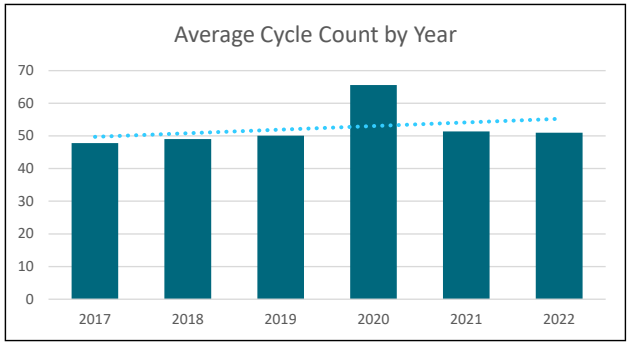


Figure 25. Average cycle count per site across the study period (2017-2022), including trendline

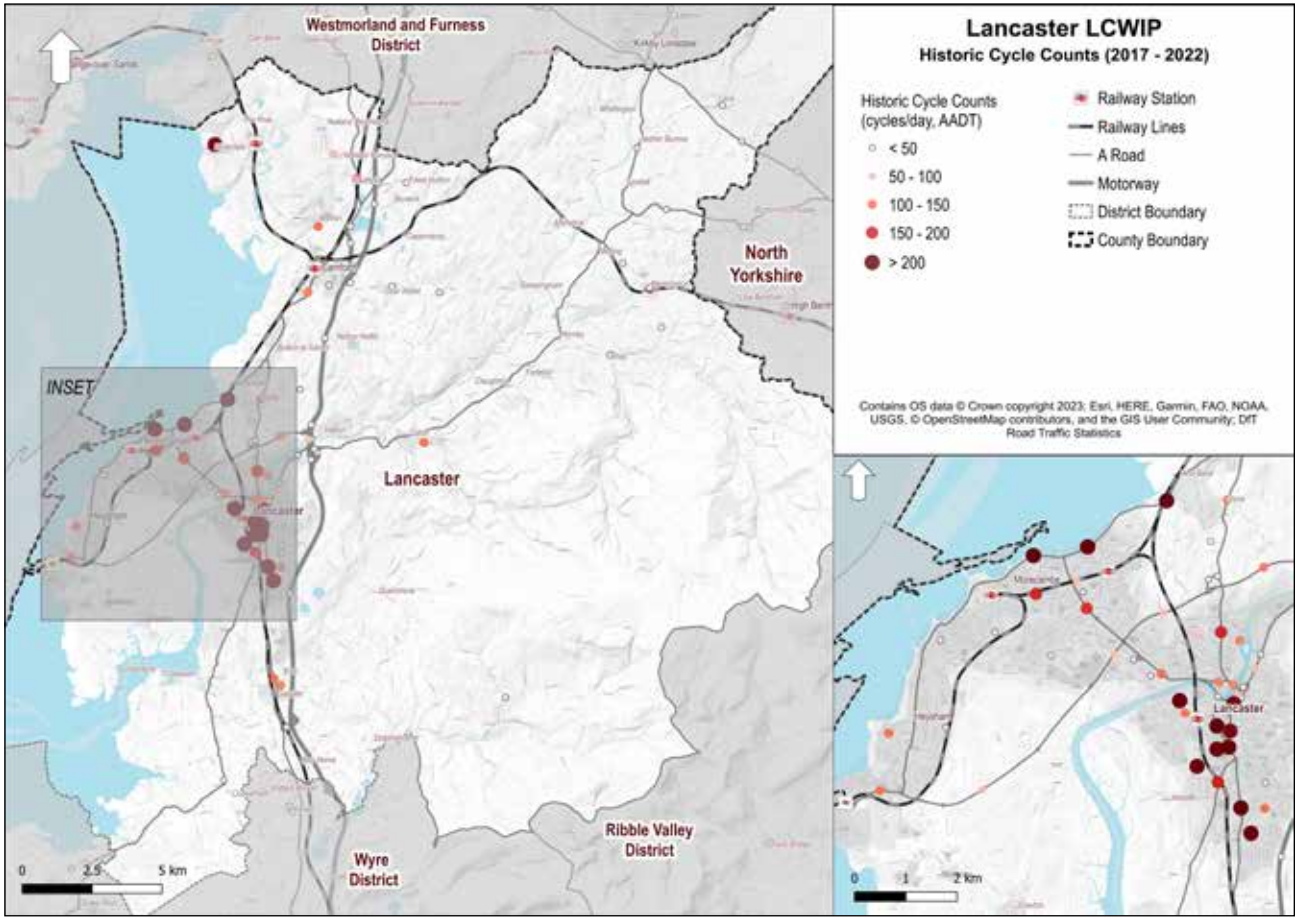


Figure 24. DfT cycle count data

Individual spot count locations indicate moderate existing cycle flows (>200/day) within Lancaster City Centre as well as locations in Morecambe (A589) and one location in Silverdale. These indicate areas with existing cycle demand which may benefit from high-quality cycle facilities.

1 https://roadtraffic.dft.gov.uk/#12/54.0531/-2.7770/basemap-regions-countpoints

4.7.4. Propensity to Cycle Tool

The Propensity to Cycle Tool (PCT)[1] is an online tool and dataset designed to assist with strategic planning of cycling networks. It illustrates an indicative current and potential future distribution of cycle trips to work and to school based on different growth scenarios. The model identifies preferred 'fast' and 'quieter' cycle routes between origin and destination pairs, and assigns trips to these routes. 'Fast' routes are based primarily on the shortest distance (i.e., most direct route), while 'quieter' routes also consider motor vehicle traffic volumes. The hilliness of a route is also a key factor considered within the model when estimating the propensity for cycling.

The Lancaster LCWIP PCT analysis was conducted using PCT data downloaded in September 2023, which was based on the 2011 Census. The following data categories were utilised for the analysis:

- Geography: Lower Super Output Area (LSOA) geography was selected because it provides greater granularity of origin/destination pairs within the study area.
- Growth Scenario: 'Go Dutch' was selected to reflect the high aspirations of the LCWIP for a step-change in levels of cycling. The 'Go Dutch' scenario models the potential for growth in cycling as a function of trip distance and hilliness, plus a number of socio-demographic and geographical characteristics, to reflect the proportion of commuters that would be expected to cycle if all areas of England and Wales had the same infrastructure and cycling culture as the Netherlands, where approximately 28% of trips are made by cycle[2] .
- Direct Desire Lines: Direct point-to-point desire lines in the PCT (desire lines between LSOAs) were reviewed to identify desire lines with higher levels of potential demand. The PCT model then applied these desire lines to the actual network, and the outputs were analysed as described below.
- Cycling Flows: 'Fast' routes were the primary output as they represent the most direct desire lines for cycling, which are more likely to attract new cyclists and support growth in cycling. The top 50 'quieter' routes (in terms of highest cycle flows) were also reviewed during network refinement for potential alternative route options with minimal detour.
- Most Cycled Network Links: The PCT aggregates all 'fast' route trips to provide a total of cycle flows along each link in the network. Commuter and school flows, however, are disaggregated and viewed independently. Cycle flows were categorised as high, medium, and low to illustrate the preferred routes (i.e., highest flows) and identify an initial cycle network with coverage across the Lancaster District. This is the key output of the PCT utilised from the PCT analysis.

The following sections summarise the analysis of the journey to work and journey to school PCT data. However, it is important to note that commuting and education only account for 28% of all trips.[3] Therefore, the available data is only representative of a small percentage of overall trips and potential demand for cycling.

1 https://www.pct.bike/

2 Propensity to Cycle (PCT) Manual C1, https://npct.github.io/pct-shiny/regions_www/www/static/03a_manual/pct-bike-eng-user-manual-c1.pdf

3 2022 National Travel Survey, Table NTS0409a. Commuting accounts for 14% of all trips, education/escort to education 14% of all trips.

4.7.4.1. PCT Commuter Mode Share

Based on the 2011 Census, cycle mode share for commuting was low across the Lancaster study area, typically less than 5% as illustrated in Figure 26. The PCT, however, illustrates strong potential for growth in cycling. Under the 'Go Dutch' scenario (Figure 27, following page), the more urban western areas of the District including Lancaster, Morecambe and Heysham would have a cycle commuter mode share of over 20%. This reflects the relatively high proportion of short commuter trips and generally flat terrain of the area.

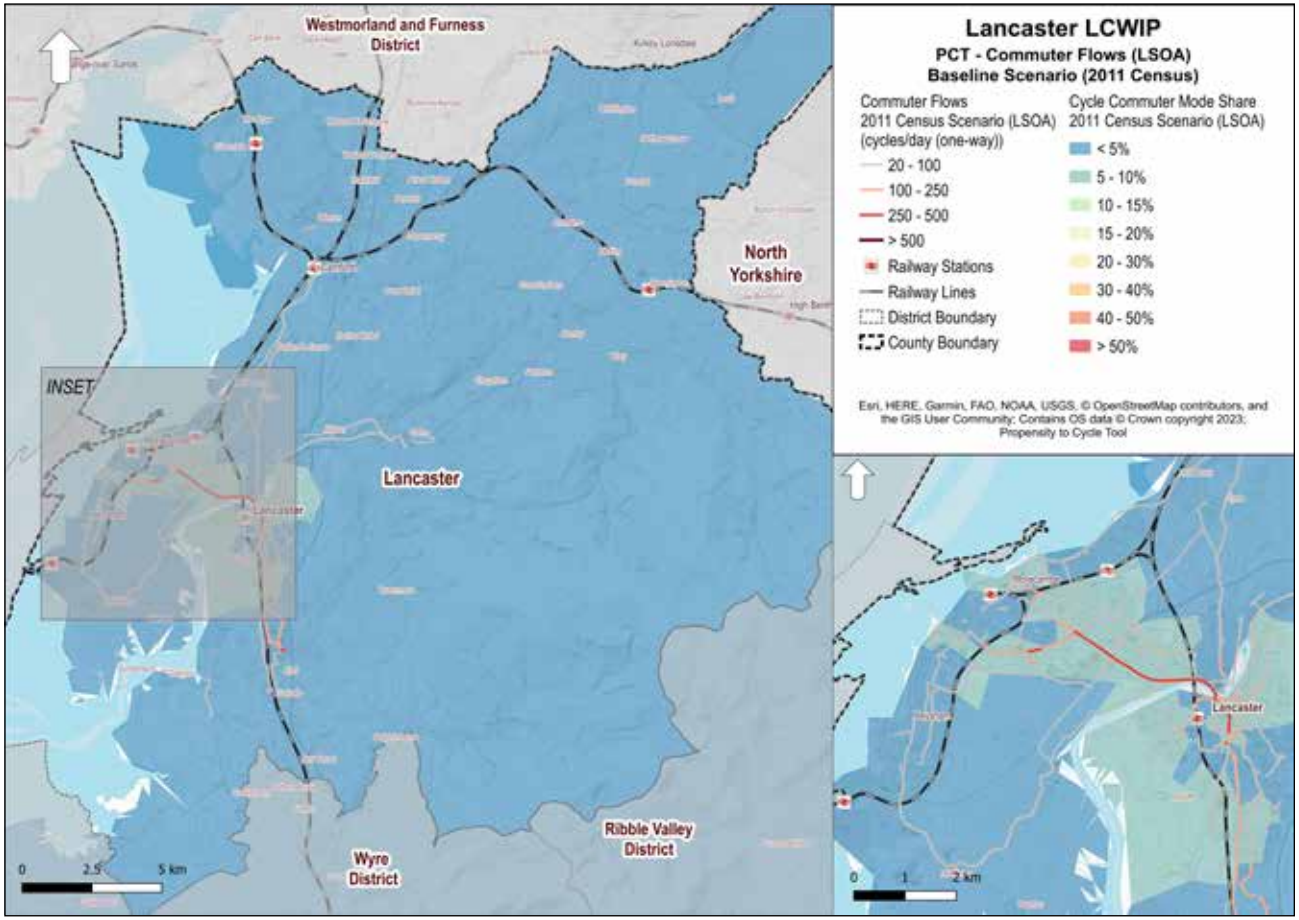


Figure 26. PCT daily commuter cycle flows and journey to work cycling mode share based on the PCT '2011 Census' scenario

4.7.4.2. PCT Commuter Flows

Estimated daily commuter cycle flows from the PCT Go Dutch scenario are illustrated in Figure 27. This indicates the routes with the highest relative propensity for cycling in the Lancaster District based on journey to work data.[1] As would be expected, the highest propensity for cycle flows are forecast within and linking the more densely populated areas in the west of the study area and the Lancaster University campus area in Bailrigg. The remainder of the study area has comparatively lower cycle flows, with the exception of around Carnforth.

Indicative key corridors and links with relatively high flows include:

- East/west route linking Lancaster and Morecambe/Heysham (Lancaster-Morecambe Greenway).
- Route on Middleton Road and Downeyfield Road linking to Middleton.
- Link from Lancaster City Centre to the south towards Bailrigg, Ellel, and Galgate.
- East/west route linking Lancaster to Halton and Caton (partly NCN 69).
- Relatively high flows within the Morecambe area.
- North/south link to Carnforth (A6).

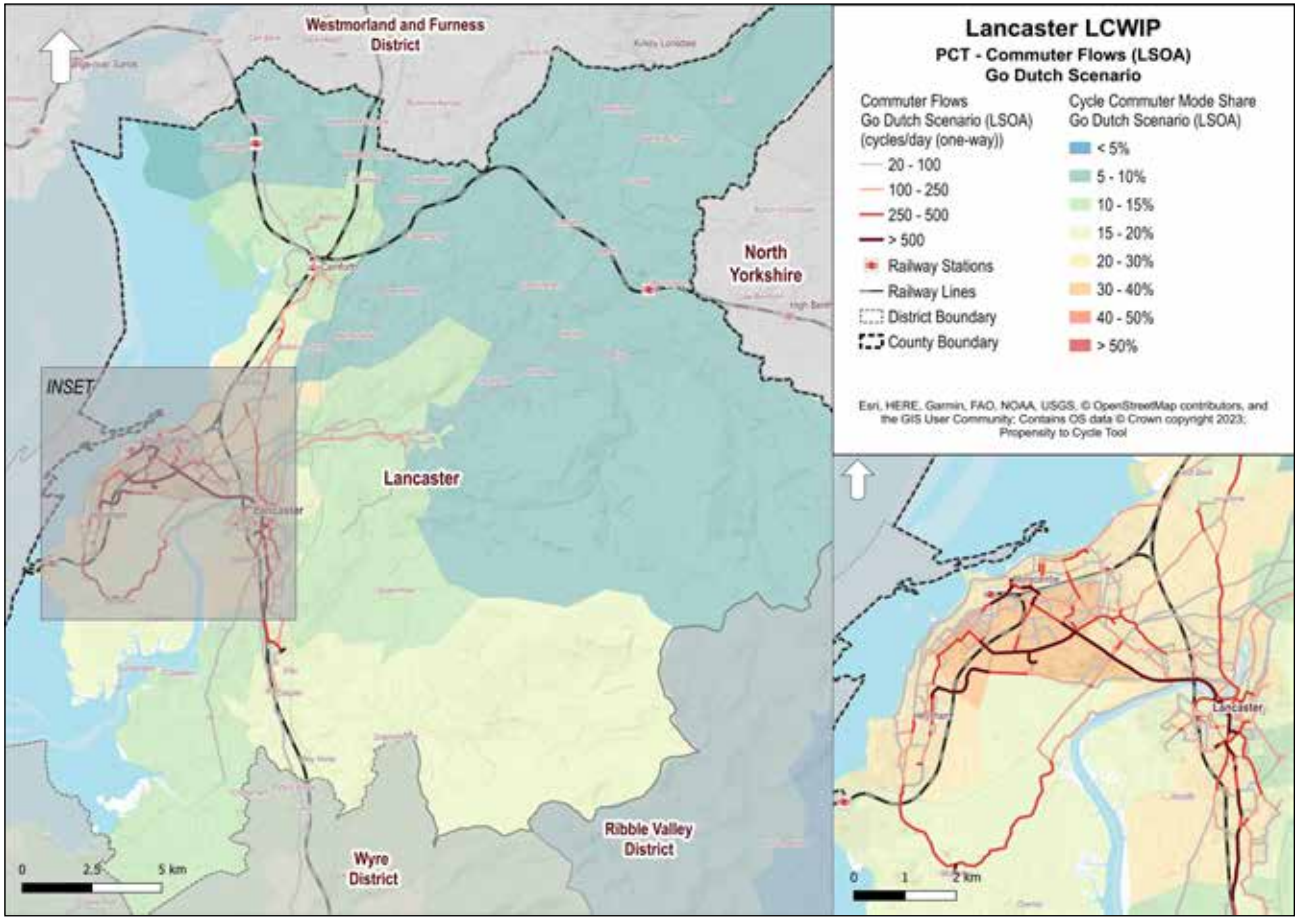


Figure 27. PCT daily commuter cycle flows and journey to work cycling mode share based on the PCT 'Go Dutch' scenario

1 To approximate the number of cycle trips on a link for all trip purposes, the PCT commuter flows can be multiplied by 6 (based on National Travel Survey data for the share of cycle trips which are for commuting purposes and doubling the journey to work flows to account for roundtrip commuting).

4.7.4.3. PCT School Mode Share

Based on the 2011 PCT baseline, cycle mode share for trips to school is generally less than 5%, with some slightly higher rates in the Lancaster and Morecambe areas. The existing journey to school cycle mode share is illustrated in Figure 28.

As with the commuter data, the PCT school data indicates a high propensity for cycling to school in the Lancaster District. In the Go Dutch scenario, (Figure 29, following page) cycling to school could be a preferred option for over 40% of children across much of the more densely populated areas in the west and south of the study area.

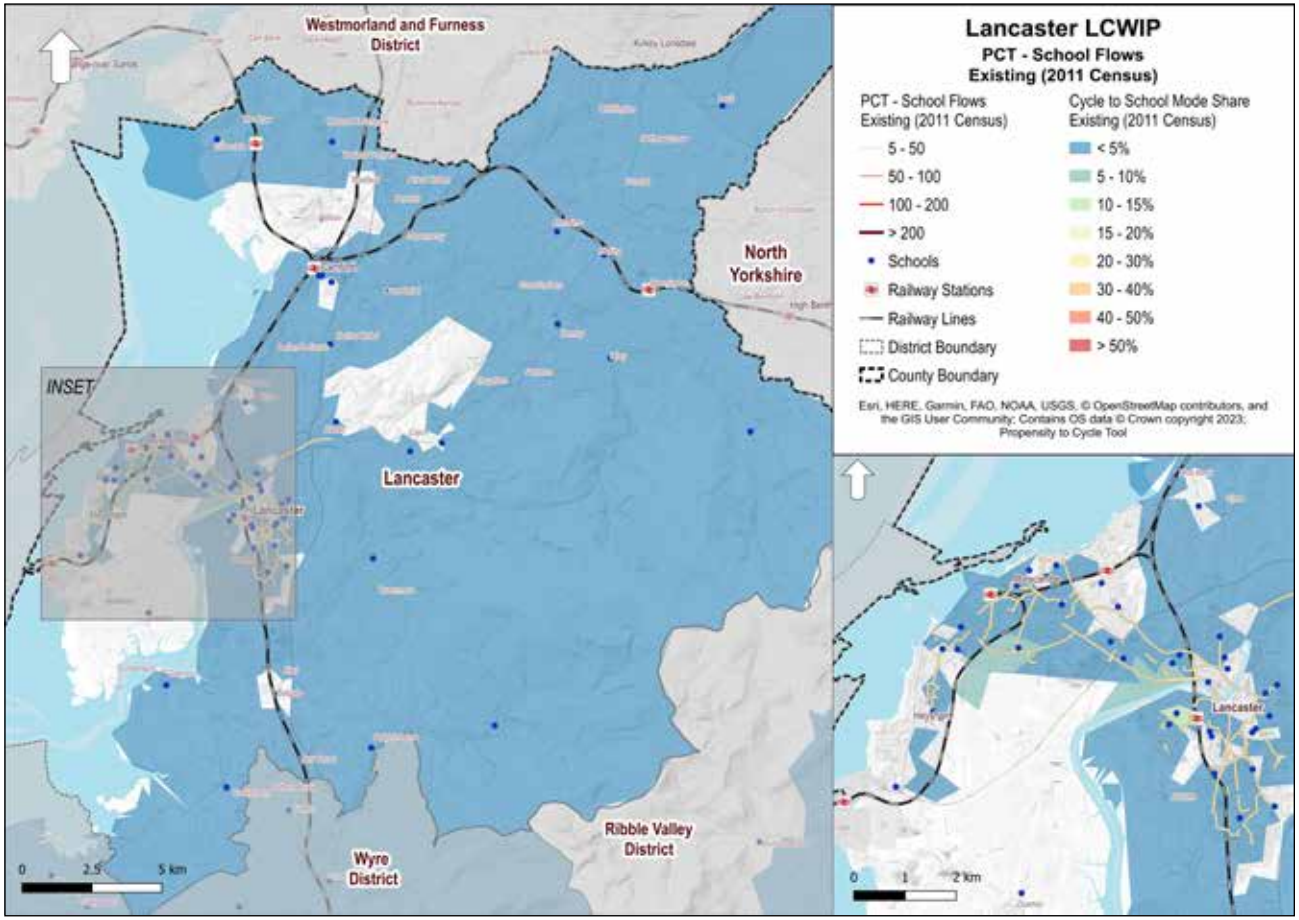


Figure 28. PCT journey to school cycle flows and cycling mode share based on the PCT '2011 Census' scenario

4.7.4.4. PCT School Flows

Estimated daily journey to school cycle flows from the PCT Go Dutch scenario are illustrated in Figure 29. This indicates the routes with the highest relative propensity for cycling based on journey to school data. The higher propensity for cycle trips to school are again concentrated in the west and south of the study area. These include the following areas:

- East/west route across linking Lancaster and Morecambe/Heysham (Lancaster-Morecambe Greenway).
- Traffic free route south of Halton (NCN 69).
- Relatively high flows within the Morecambe area.
- Lancaster Road and B6254 in Carnforth.
- A588 south to Lower Thurnham.

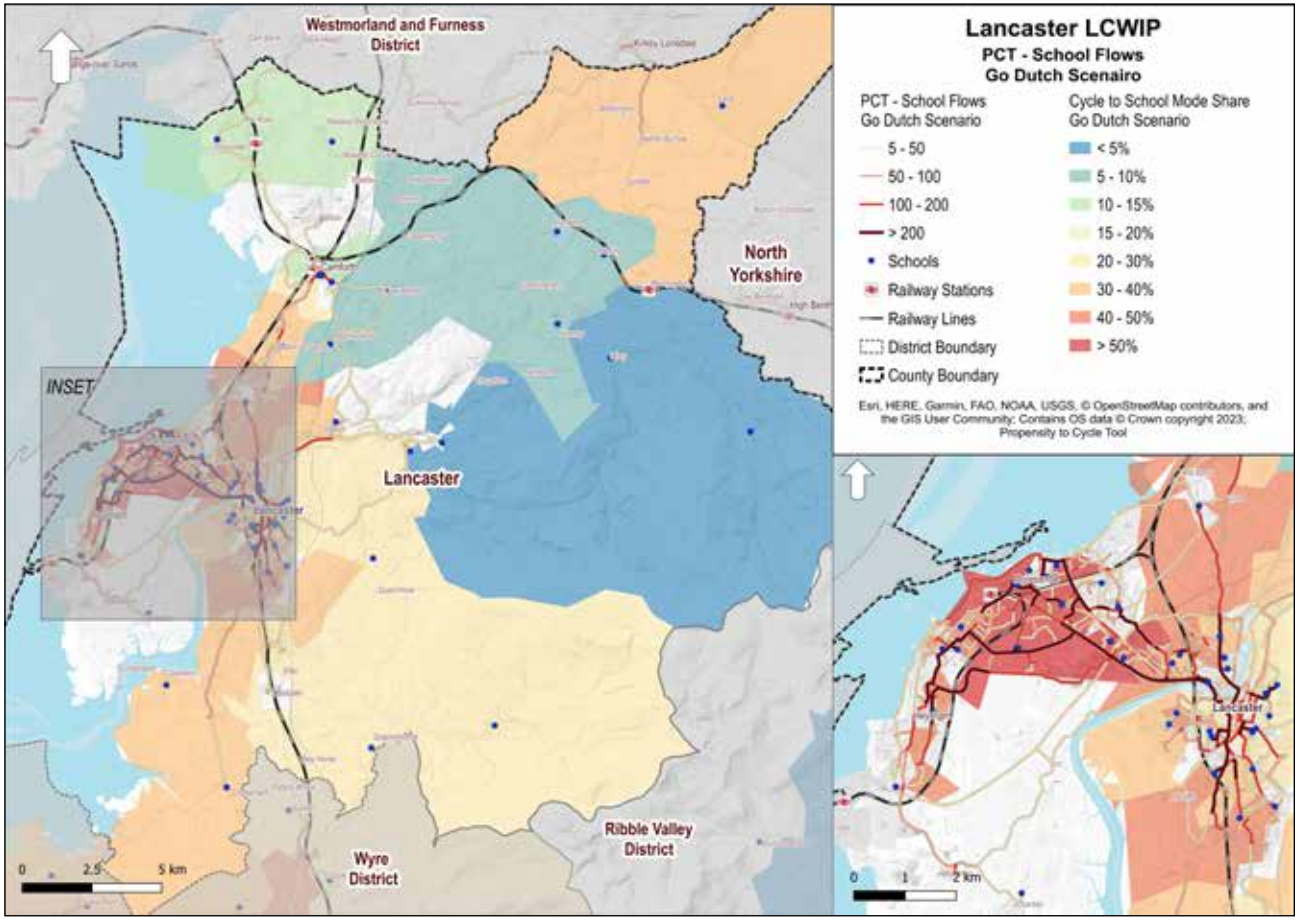


Figure 29. PCT journey to school cycle flows and cycling mode share based on the PCT 'Go Dutch' scenario

4.7.5. Strava Data

Strava Metro data for the Lancaster District was available for 2022. Strava is a mobile and internet-based application for tracking various activities (i.e., cycling, running, etc.). The data presented represents trips recorded by users of Strava's app. Although the data tends to be skewed more heavily towards leisure/ recreational trips rather than utility trips, it provides a snapshot of preferred routes that supplement the commuter trips provided in the PCT analysis.

4.7.5.1. Strava Cycle Data

Strava data for cycle trips is shown in Figure 30. The Strava data highlights high usage of the walking and cycle path between Lancaster and Morecambe, as well as the coastal corridor from Heysham alongside Morecambe and up the A5105 and A6 to Carnforth. High usage continues north into the Arnside & Silverdale AONB and Lancaster Road to the south of Lancaster is also highly used. Usage on other routes through the more densely populated western portion of the study area is relatively high. However, some routes through the more rural eastern sections of the study area are apparent, suggesting potential longer distance leisure/ sport cycling activity, including:

- East/west traffic-free route parallel to the A683 and then continuing on the A683.
- North/south traffic-free route between Lancaster and Bailrigg/Lancaster University.
- Salt Ayre cycle circuit.

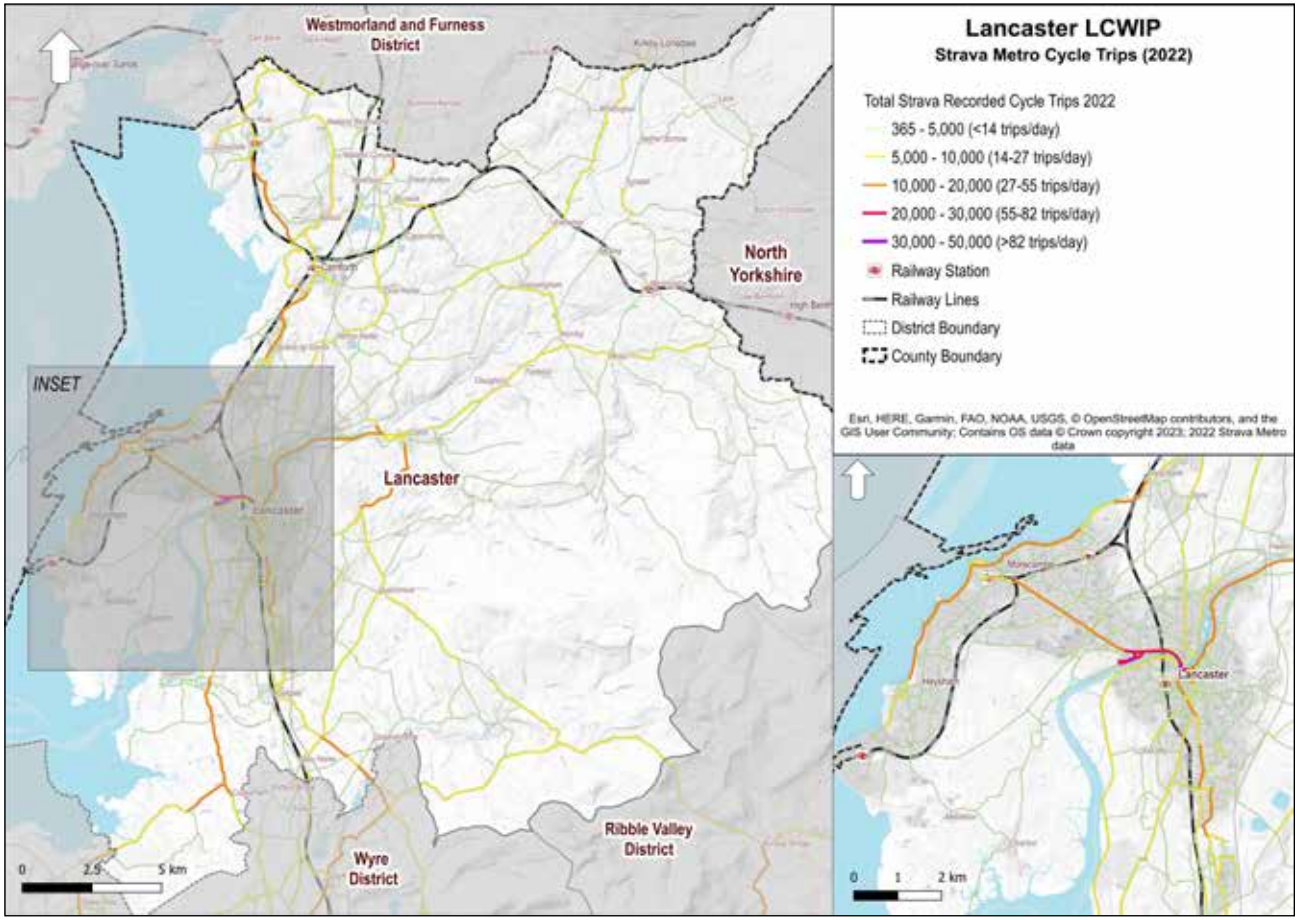


Figure 30. Cycle journeys recorded via Strava in 2022

- North/south route on Quernmore Road near Caton.
- East/west route via the B6480.
- North/South route via the B6254.
- East/west route connecting Wyre District and Ribble Valley District.

4.7.5.2. Strava Cycle Data - Commuting

Strava data for cycle commuting trips only is shown in Figure 31. Trips recorded via Strava are categorised as 'commuter journeys' if they are manually categorised as such by the user or if Strava's algorithm detects a commute journey.

The Strava data highlights a higher concentration of commuting trips to and from Lancaster, namely on the Lancaster-Morecambe Greenway and between Lancaster and the university campus in Bailrigg via the A6. There are also numerous commuting trips between Halton and Lancaster via NCN route 69 along the River Lune and along the Morecambe coastal path.

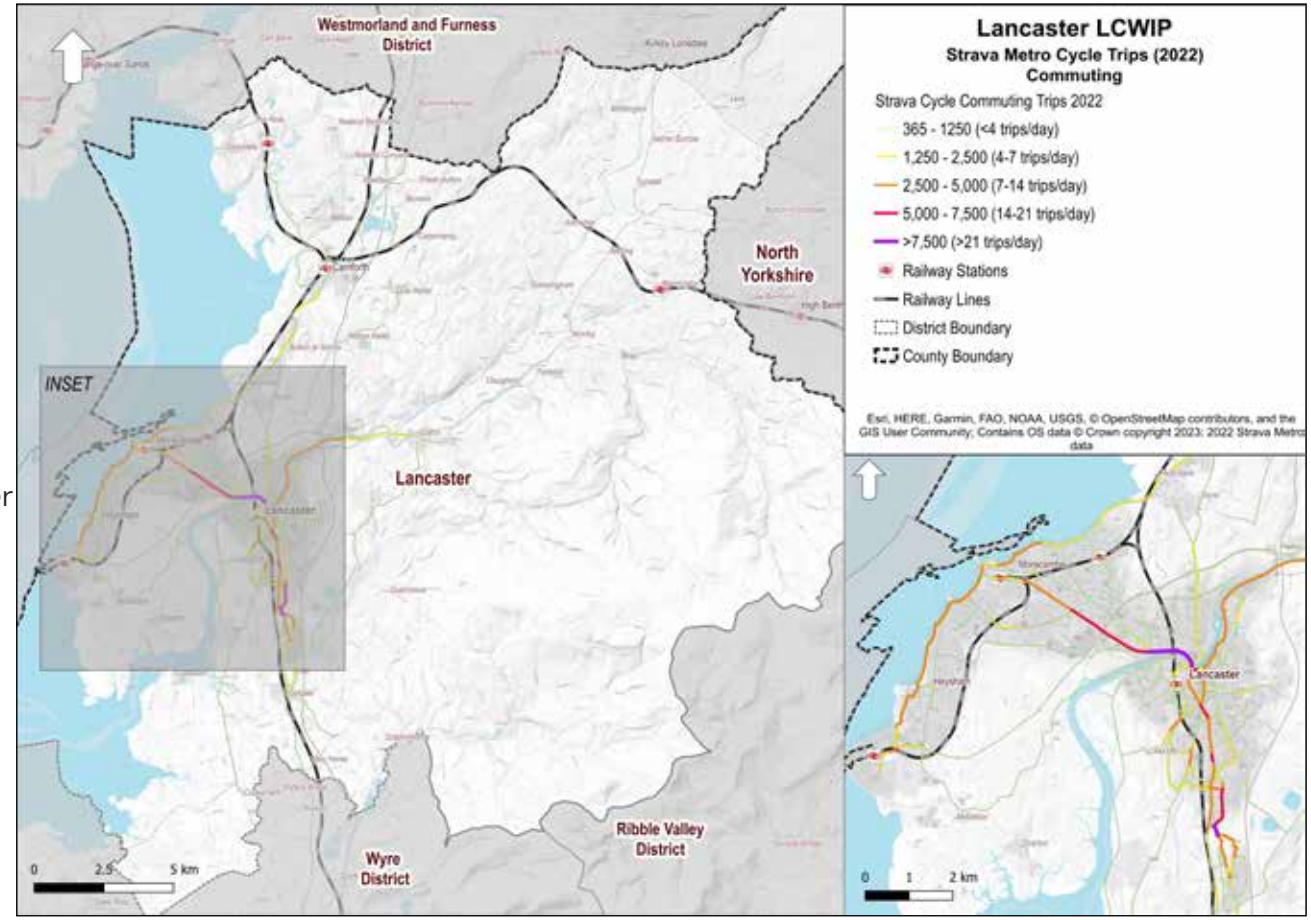


Figure 31. Cycle commuter journeys recorded via Strava in 2022

4.7.5.3. Strava Walking Data

Strava data for walking trips is shown in Figure 32. Strava data for trips made by walking are likely even more skewed to leisure trips, as these would typically include activities such as running or hiking.

Similar to the cycle data, the coastal corridor is clearly apparent as the most heavily utilised area in Morecambe for walking/running.

The perimeter of Williamson Park in Lancaster is also heavily used, but the nature of the route suggests it is likely a popular running loop around the park and unlikely to be reflective of utility purposes. The canal towpath to the north-east of Lancaster is also a popular pedestrian route.

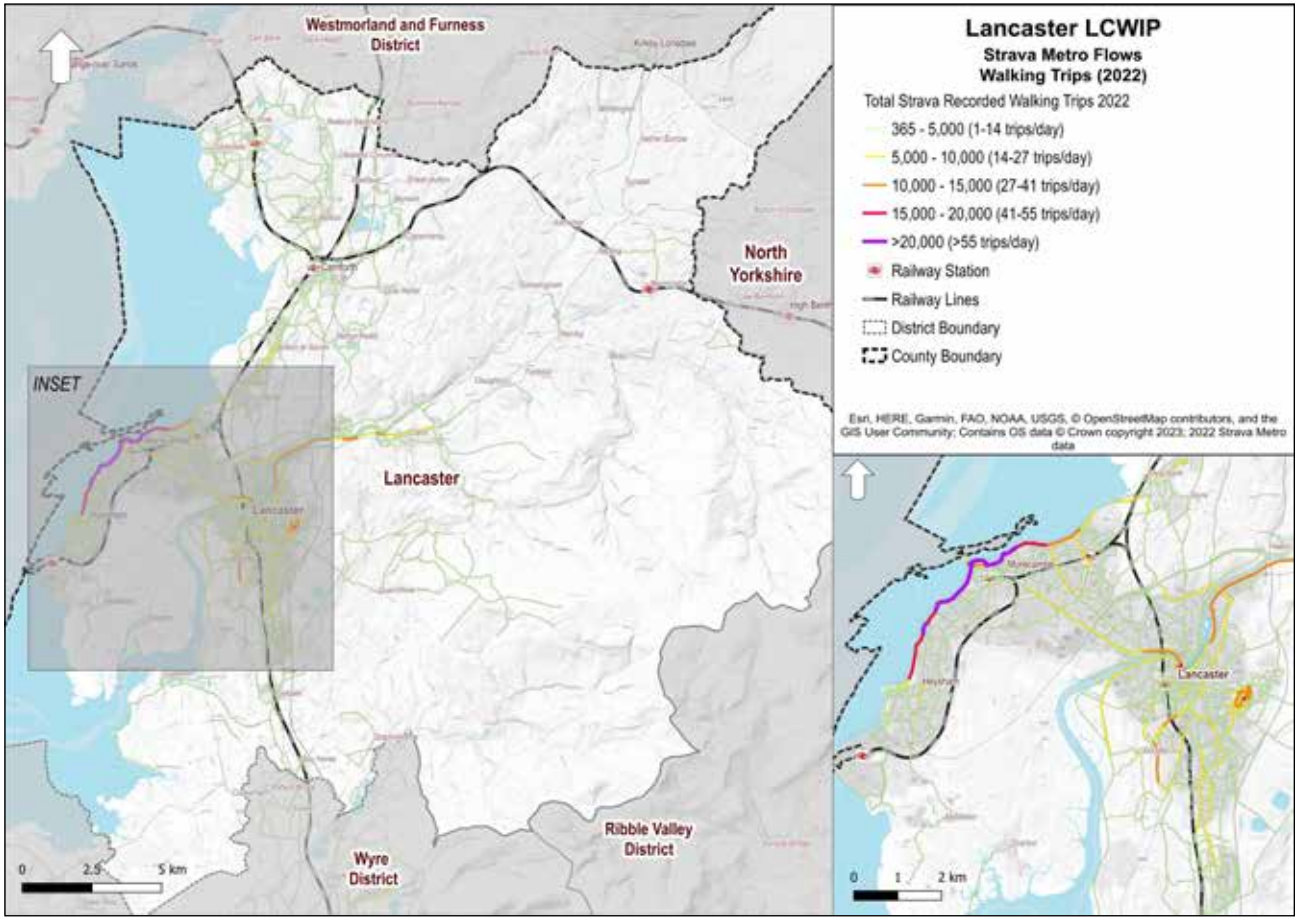


Figure 32. Walking journeys recorded via Strava in 2022

4.8 Collision Data

As part of the LCWIP, a high-level review of collision data involving pedestrians and people cycling within the last five years was undertaken. This provided an understanding of where collisions are occurring and routes which could benefit from safety improvements as part of an LCWIP scheme. Data was available for areas within the Lancaster District for 2018 through July 2023. It should be noted that a lack of collision data does not confirm a route is safe as it could also indicate the route is currently unused.

During the assessment period, there were 140 collisions involving pedestrians and 245 involving people cycling in the Lancaster District. The collisions are tabulated by year and severity in Table 6 (cyclist) and Table 7 (pedestrian), and the locations illustrated in Figure 33 (cyclist) and Figure 34 (pedestrian) on the following pages.

Collisions are generally concentrated in the more urban areas in the west of the study area, where there is higher potential for short trips to be made by foot or by cycle.

Examining the more severe incidents involving people cycling (killed or seriously injured (KSI) incidents), there was one fatality which occurred on Chipping Road south of Dolphinholme and another which occurred on Balshaw Road to the east. Corridors with multiple KSI collisions include:

» A6 through Lancaster.
» A589 in Morecambe.
» Bowerham Road in Lancaster.
» North Road in Carnforth.

For pedestrian collisions, there were four fatalities across the study area. High concentrations of KSI incidents are evident in areas such as:

» Lancaster city centre.
» Morecambe town centre – concentrated on the A589 coastal corridor.

Table 6. Cyclist casualties, by severity

Severity	2018	2019	2020	2021	2022	2023	Total
Lancaster							
fatal	1	0	0	1	0	0	**2**
serious	22	19	18	11	15	8	**93**
slight	34	28	22	29	22	15	**150**
Total	**57**	**47**	**40**	**41**	**37**	**23**	**245**

Table 7. Pedestrian casualties, by severity

Severity	2018	2019	2020	2021	2022	2023	Total
Lancaster							
fatal	1	1	0	1	0	0	**3**
serious	8	14	7	11	12	4	**56**
slight	16	16	10	13	18	8	**81**
Total	**25**	**31**	**17**	**25**	**30**	**12**	**140**

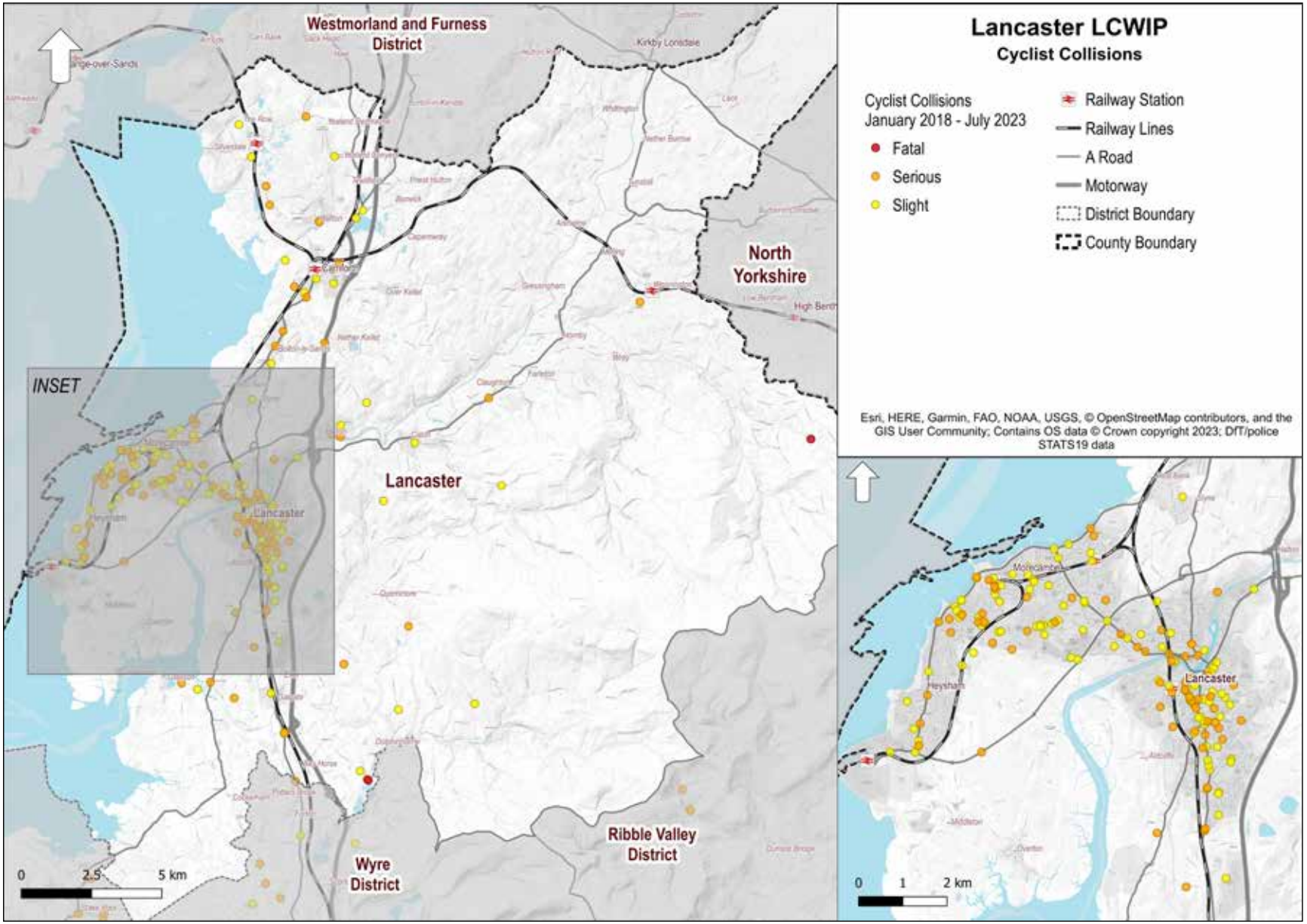


Figure 33. Collisions involving people cycling, by severity

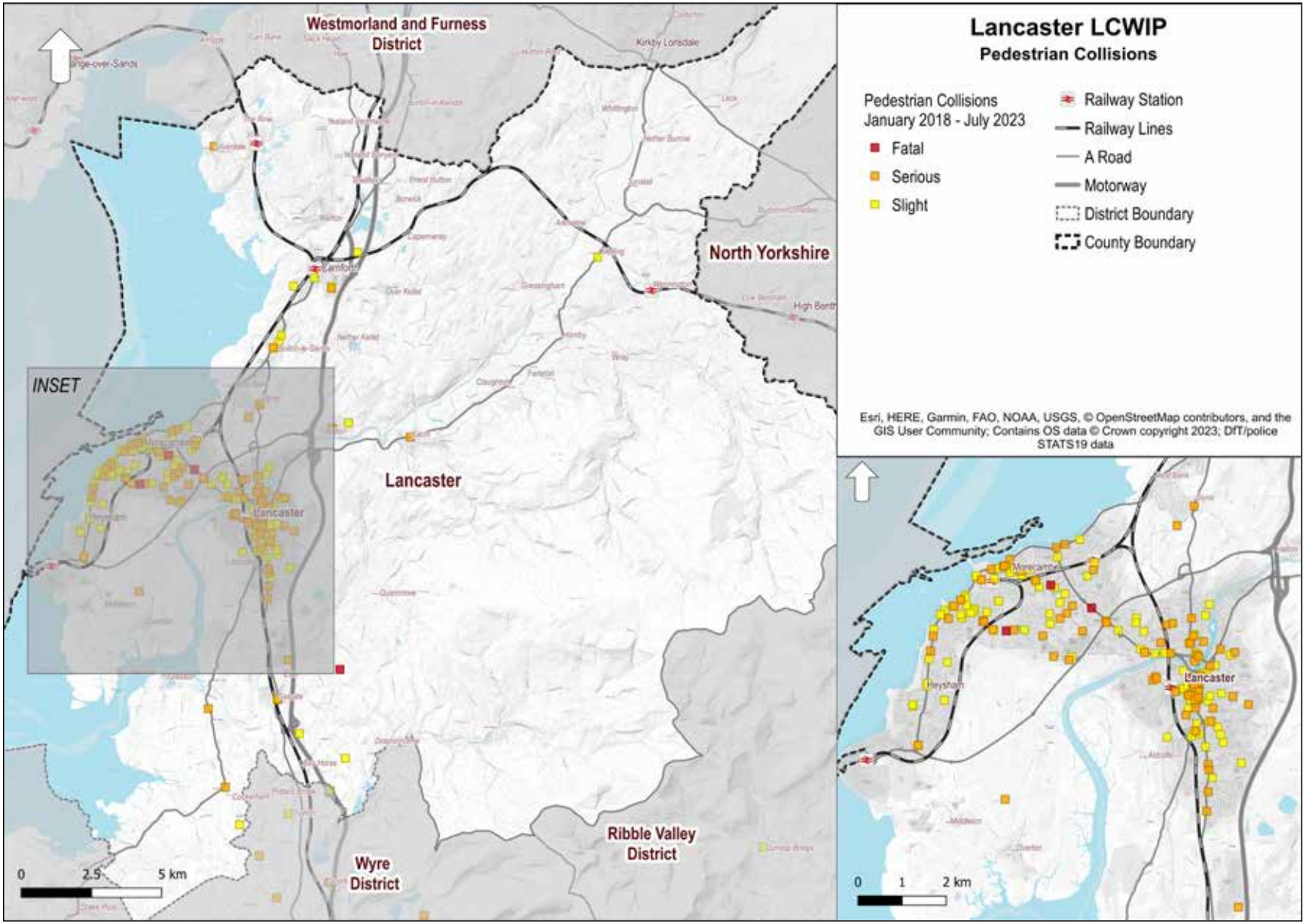


Figure 34. Collisions involving pedestrians, by severity

4.9 Stage 1 Engagement Survey

In spring 2022, LCC undertook an engagement survey to obtain input from the general public on existing issues and desired improvements related to active travel county-wide. The survey included an interactive online map, which allowed participants to identify specific locations for issues/requests.

There were 1431 responses or 'pins' placed within the Lancaster study area. These are summarised by mode(s) in Table 8. The majority of comments were cycling-related issues or requests (1133 of 1431 responses).

Figure 35 illustrates the comment locations. Of particular relevance to the development of the LCWIP are potential active travel corridors emerging from clusters of survey responses. These included potential corridors in:

- East/west corridor across Lancaster District on the A683 and the B6480 (includes parts of National Cycle Network Routes 69 and 90).
- National Cycle Network 69 between Morecambe and Lancaster.
- North/south corridor on National Cycle Network Route 6 between Bolton-le-Sands and Carnforth.
- North/south corridor between Lancaster and Bailrigg/Lancaster University, particularly on the A6.
- A concentration of points across Lancaster City Centre.
- The A65 corridor between West Yorkshire and the Westmorland and Furness District.

Table 8. Stage 1 Engagement Responses, summarised by active travel mode(s)

Comment related to:	Lancaster
Cycling	744
Walking	235
Cycling & Walking	389
Not Stated	63
Total	1431

source: LCC Stage 1 engagement survey

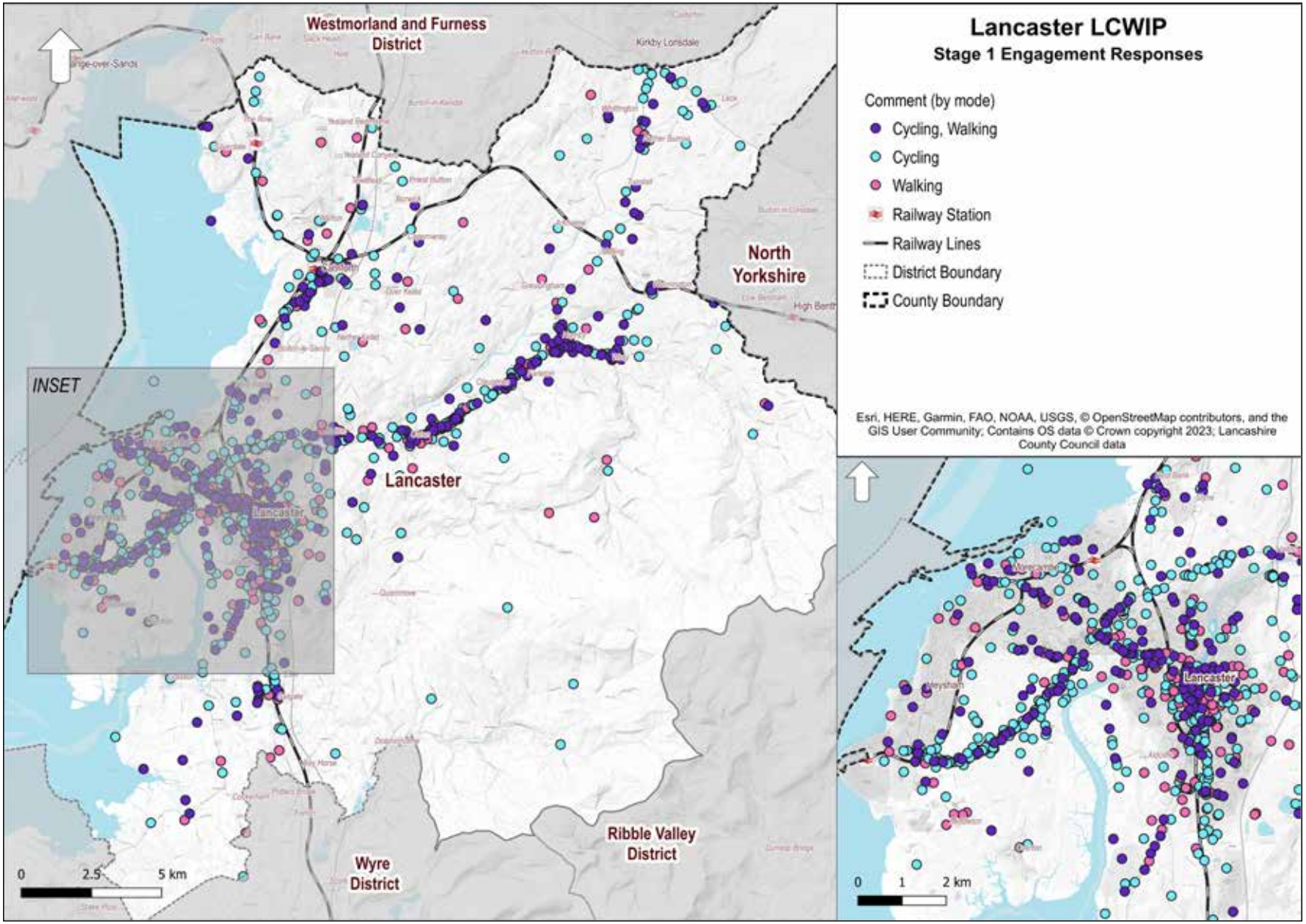


Figure 35. Stage 1 Engagement responses

4.10 Stage 2 Engagement Survey

In September 2023, LCC undertook a second engagement survey to obtain input from the public on proposed walking and cycling routes as part of the LCWIP process. The survey included sections requesting feedback on the draft active travel network as well as an interactive online map which allowed participants to draw additional routes they deemed essential but missing from the plan. There were 1480 responses within the Lancaster study area.

The feedback on the draft active travel network provided key input to the LCWIP network development. The output from the survey is illustrated in Figure 37.

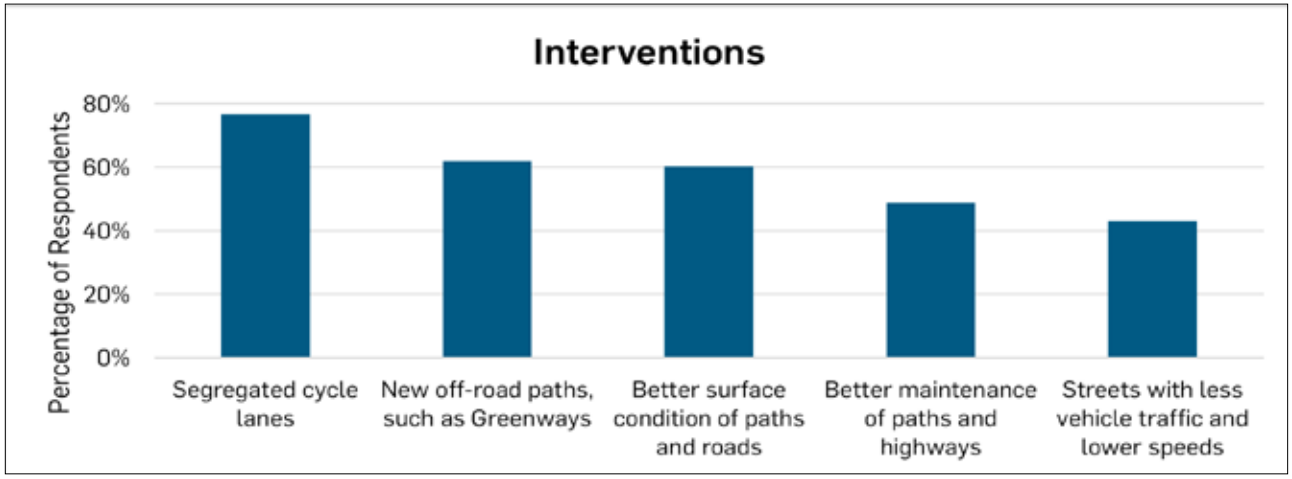


Figure 36. Most highlighted Interventions to encourage walking, wheeling and cycling. (LCC Stage 2 engagement survey)

4.10.1. Proposed Routes

701 respondents commented on the proposed routes. The top five most popular routes were:

- Lancaster – Heysham (51%)
- Lune Valley Extension to Hornby (21%)
- Wray Link (13%)
- Ingleton – Kirkby Lonsdale (11%)
- South Lancaster Cycleway (7%)

The responses from the consultation indicated that these routes were high-priority because they are used frequently for commuting and leisure trips, and that the existing highways along these routes (especially the A683, A65 and A6) are currently unsafe for walking and cycling due to vehicular traffic moving at high speeds with little consideration for pedestrians and cyclists. These routes reflect those identified for priority intervention within the Stage 1 Engagement responses.

4.10.2. Drawn Routes

Some of the more popular routes that were drawn using the interactive online map include:

- Heysham to the Bay Gateway along the A683 connecting to the A589.
- Lancaster – Galgate via Preston Lancaster Road.
- Clay Lane – Moss Lane – Heysham Bypass, connecting to the proposed Clay Lane Link.
- Middleton – Overton via Middleton Road.
- From the Denny Beck Lane Bridge through Denny Beck Lane and Grimeshaw Lane to both Ridge Lane and Moor Lane; connecting to the Newton Beck Link Ridge and East Lancaster routes respectively.

The first two of these drawn routes reflect the popular routes identified in the Stage 1 Engagement, however the other three were not identified as popular routes in the Stage 1 Engagement.

4.10.3. Interventions

The survey also asked for feedback on a selection of the types of interventions that would enable people to cycle, walk or wheel more. Figure 36 identifies the most popular responses. In addition to the interventions shown, 43% of respondents supported the provision of mobility hubs to encourage active travel.

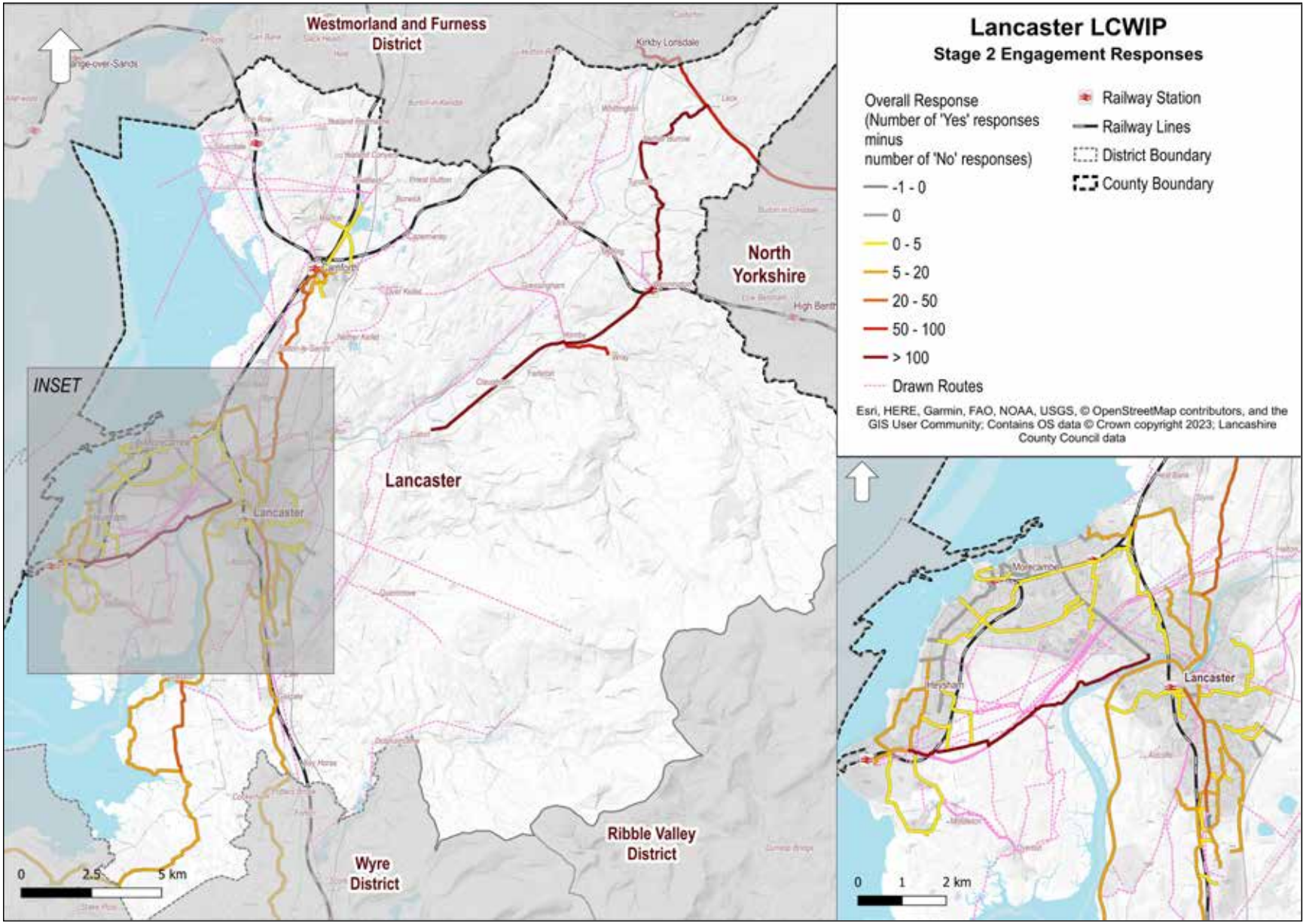


Figure 37. Stage 2 Engagement responses

4.11 Summary of Key Findings

The information gathering provided a wealth of data and information related to walking and cycling in the Lancaster District, which were used to help inform the identification of key cycle corridors and walking areas in the following sections (stages 3 and 4). Some of the key themes included:

- Settlement patterns are heavily concentrated in the west of the study area, as well as south Lancaster (Lancaster University campus). The main settlement area is Lancaster. This was illustrated in the population data and locations of town centres and other key destinations. The higher density and proximity of trip attractors leads to a higher propensity for walking and cycling in these areas, as demonstrated by the PCT data.
- Severance issues in the Lancaster District primarily relate to the major roads, railways and waterways that traverse the District. Examples include the M6, the A683, the A589, and the A6 one-way gyratory around Lancaster City Centre.
- The collision history data indicate that the highest occurrences of cycle and pedestrian collisions are in the more urban areas in the west of the study area, again reflective of settlement patterns. Areas with relatively higher concentrations of KSI collisions include Lancaster City Centre and Morecambe town centre.
- Commuting data highlights a high number of short commuter trips (via car, cycle, or public transport and less than 10km) between Lancaster, Morecambe and Heysham. There are also a high density of short trips between Lancaster and Lancaster University, Hest Bank/ Slyne and Caton.
- The PCT indicates a relatively high propensity for cycling in Lancaster, both for commuter and school trips. Propensity is again highest in the west due to the denser settlement patterns. The generally flat terrain of the Lancaster District also supports a high propensity for cycling.
- Strava Metro data also illustrates highest existing cycle flows along the existing National Cycle Network routes. Other high Strava flows are in the interior, rural areas of the study area, likely indicative of longer distance leisure/fitness rides.
- Stage 1 online public engagement responses captured public input on active travel issues and suggestions. Mapping of this data highlights perceived local priorities amongst the general public.
- Stage 2 online public engagement responses captured public feedback on proposed walking and cycling routes and provided the opportunity to suggest other routes. The most popular intervention to encourage walking and cycling was segregated cycle lanes.

Photo credit: Lancashire County Council

5. Network Planning for Cycling (Stage 3)

5.1 Introduction

This chapter summarises the identification of the cycle network for the Lancaster LCWIP. The primary aim of the proposed network is to identify strategic cycle corridors, connecting settlements both to each other and to clusters of key destinations (e.g. town centres, schools, railway stations, etc.). Additionally, local links were identified to connect the strategic corridors to residential areas (origins) and key destinations and enhance cycle network connectivity. This is illustrated in the schematic in Figure 38.

Development of the cycle network included:

- Identification of key trip generators, representing areas with potential higher demand for active travel connections.
- Identification of the key desire lines that have a higher potential for mode shift.
- Development of the 'aspirational cycle network', which identified key cycle corridors in the study area, providing links within Lancaster and to neighbouring districts.
- Selection of the strategic and primary corridors within the study area for initial concept development as part of the LCWIP.

5.2 Cycle Network Development

Lancaster has a high potential for growth in levels of cycling. Whilst the area's generally flat topography, urban areas, and the relatively close proximity between towns and to key destinations allows many types of short trips (e.g., commuting, school, shopping, leisure, etc.) to be easily be made on a cycle, its cycling infrastructure generally does not offer enough protection to support new or less confident cyclists.

A key barrier to cycling at present is the inconsistent quality, accessibility, and continuity of the cycling network. In order to identify and close the gaps, a network of preferred corridors has been defined drawing on the analysis from the existing data (Section 4). The background information included mapping trip origins and destinations, identifying desire lines for cycle movement, and review of PCT flows and key movement patterns.

The development of the cycling aspect of the Lancaster LCWIP focused on identification of a Cycle Network Map detailing key corridors for further development, as per the DfT's LCWIP Technical Guidance.

Development of the cycle network considers potential usage by both conventional pedal cycles and e-bikes, the latter of which would extend the range of cycle trips.

The proposed network considers the existing road network, off-road paths and towpaths, and potential new connections, reflecting opportunities to link off-road assets with urban areas and provide cycle facilities away from motorised traffic.

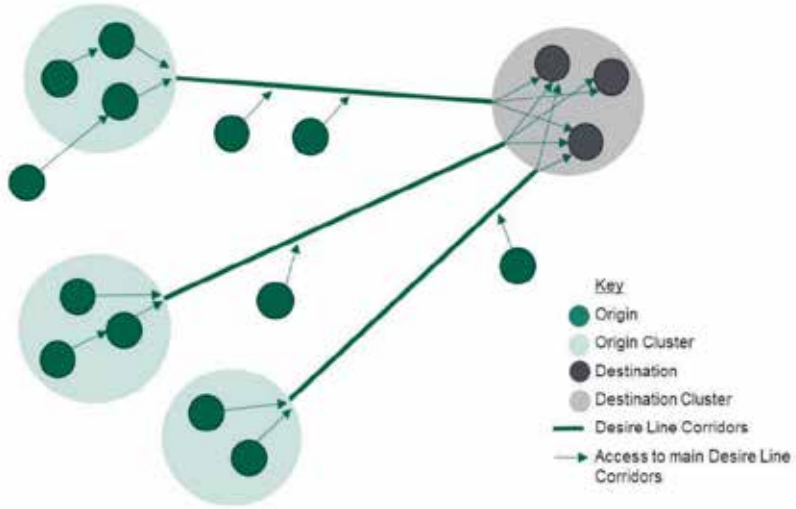


Figure 38. Clusters of trip origins and destinations and desire lines connecting them (DfT LCWIP Technical Guidance)

5.2.1. Identification of Cycle Corridors

A wealth of background information was available which can inform cycling patterns and highlight areas in need of improvement. The aim of this analysis is to meet the goal of significant mode shift to more sustainable travel, targeting short trips and utility trips such as school travel and commuting, as well as access to town centres and leisure areas, which can make active and sustainable travel attractive to local residents.

5.2.1.1. Clusters of Key Destinations

The first step for the cycle network development was to identify the key trip origins and destinations in the study area. The data gathered in the background analysis identified and mapped key trip attractors, including:

- City, town and local centres
- Educational facilities (primary schools, secondary schools and higher education facilities)
- Hospitals
- Doctor surgeries
- Leisure centres
- Tourist attractions
- Railway stations
- Retail areas
- Employment sites / enterprise zones
- Development sites
- Areas with high population density
- Areas with high workplace population density

The mapping of trip attractors indicated the locations of key clusters across the study area, which represent groups of trip attractors within close proximity to each other. The clusters were categorised based on the relative concentration or number of trip attractors and/or the classification of the centre in the area (e.g., regional centre, key service centre, urban local centre, etc.).

The output of this process is shown in Figure 39.

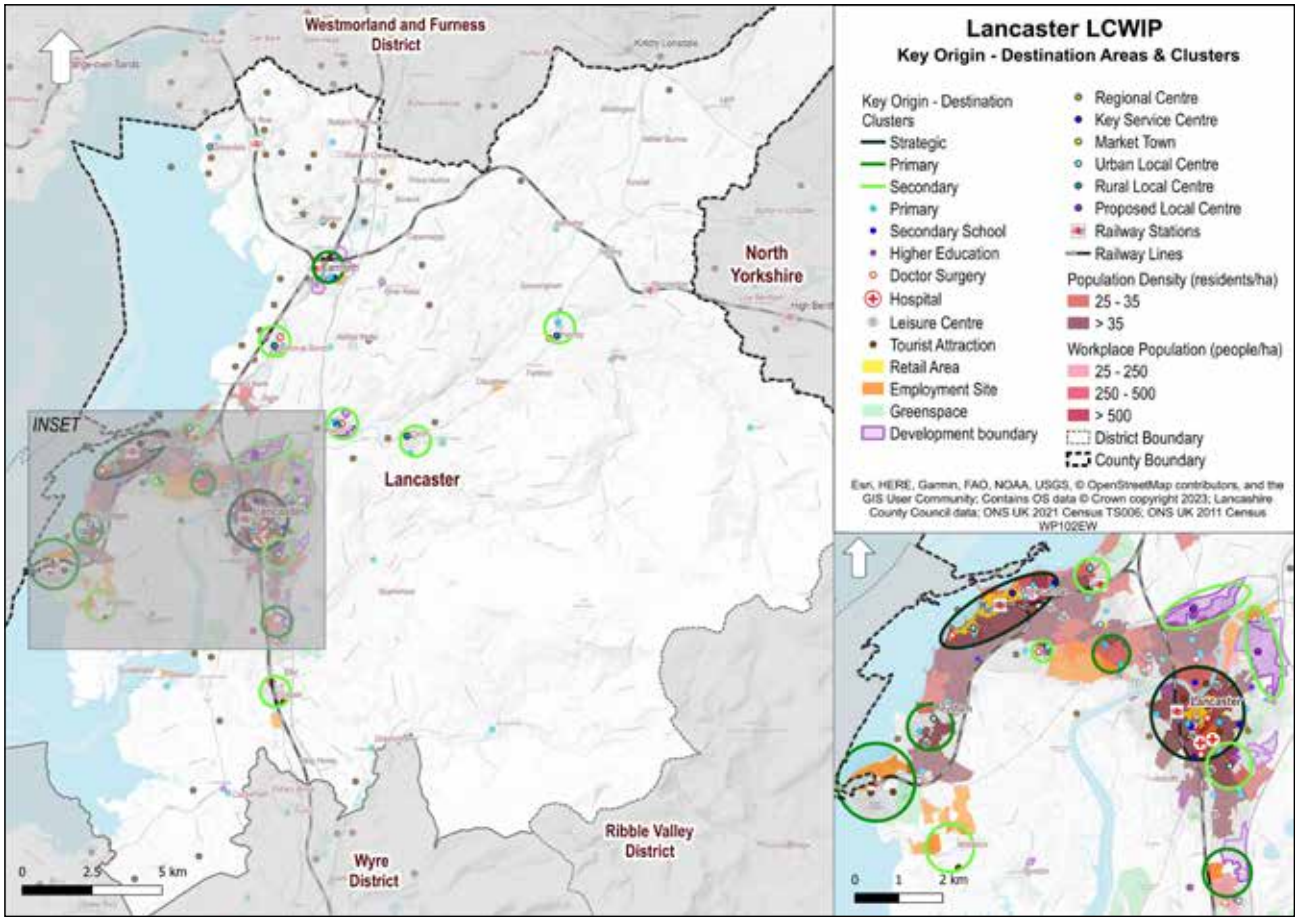


Figure 39. Identification and classification of trip attractor clusters

5.2.1.2. Key Desire Lines

Following the mapping of the clusters of origins and destinations within the study area, the main desire lines for all trips between those clusters were identified. These indicate the key movement patterns which corridors in the cycle network should aim to support.

The data gathered in the previous steps and local knowledge from officers from Lancaster City Council and Lancashire County Council informed the development of the desire lines.

The Propensity to Cycle Tool was utilised to obtain data for 2011 Census travel to work trips. Straight lines between the Lower Super Output Areas (LSOAs) were mapped for all methods of travel, indicating the number of commuters between each LSOA pair. Trip distance was limited to 10km to capture a large sample size of origin/destination pairs, while also keeping the LSOA pairs within a reasonable cyclable distance[1]. Trips were categorised based on the commuter flows.

Additionally, links between each of the clusters were mapped to help identify potential desire lines between the key cluster areas. These links were categorised based on the distance between destinations as shorter trips will have higher propensity for mode shift. Trip distance was limited to 10km.

Figure 40 illustrates the output from mapping desire lines for connections between clusters and existing commuter patterns.

1 10km is equivalent to approximately 37 minutes cycling at 10mph (16kph)

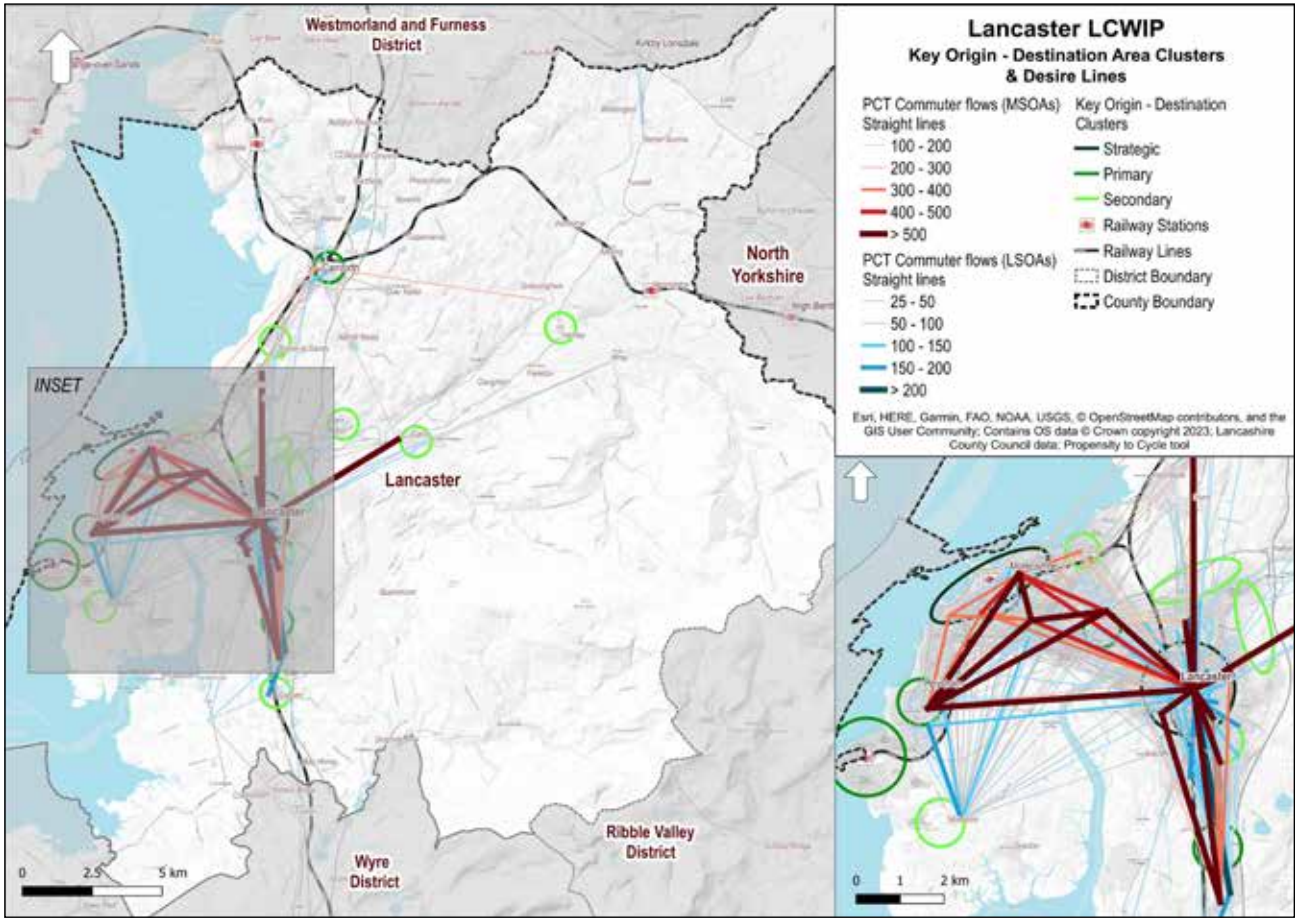


Figure 40. Straight lines between LSOAs and between the clusters to inform the desire lines for the cycle network. The width and colour intensity of the desire lines indicate potential higher demand.

Based on the clusters and commuter flow patterns, the information was distilled to identify the key desire lines across the study area, as shown in Figure 41. The desire lines were classified based on the concentration of commuter flows across the area, the type of clusters/destinations they serve, local officer input, and observations from other components of the data gathering analysis. The classification is discussed in further detail in section 5.2.1.4 on page 76.

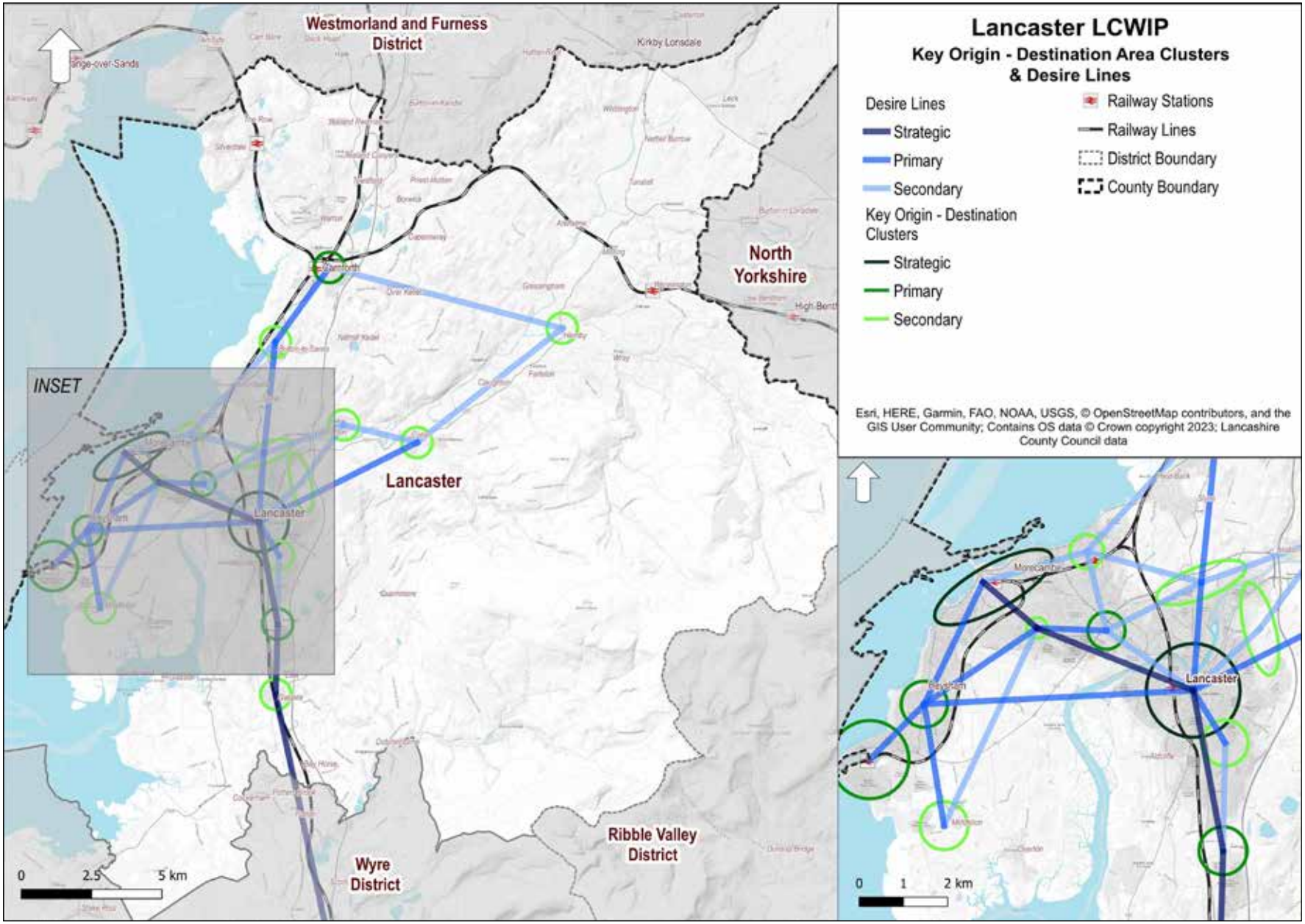


Figure 41. Key desire lines between the selected clusters

5.2.1.3. Identification of the Cycle Network

The methodology used to identify key links in the study area involved the gradual overlaying of the following information to create a qualitative 'Heat Map' where the overlap of relevant criteria suggests locations where infrastructure improvements could provide the greatest level of service, connectivity, and safety benefits.

The following data were considered for the identification of the initial cycle network:

- Key trip attractors: railway stations, retail centres and high streets, schools, employment areas, parks, and centres.
- Key trip origins: such as denser residential areas and planned developments.
- Indices of Multiple Deprivation and areas of low car-ownership (targeting areas of higher deprivation and lower car ownership, which would benefit from cycle improvements).
- Propensity to Cycle Tool: highlighting areas with potential for higher cycle commuter and school flows (Go Dutch scenario).
- Origin-Destination data: highlighting the routes, origins, and destinations of short motor vehicle commuter trips (<5km) which could reasonably be replaced by cycling trips.
- Strava Metro data: mainly leisure/sport trips by pedal cycle recorded by Strava users.
- Cycle collisions: locations of incidents during the latest five years of available data.
- Geolocated public suggestions for active travel improvements from LCC's early engagement survey.
- Existing cycle facilities and recently proposed facilities.

When overlaying these datasets, areas in higher intensity colour indicate a potential higher demand for utility cycling trips or where there is higher potential for mode shift or new users (Figure 42). Corridors were selected along the road network to align with these areas, forming an initial cycle network (see Figure 43 on the following page).

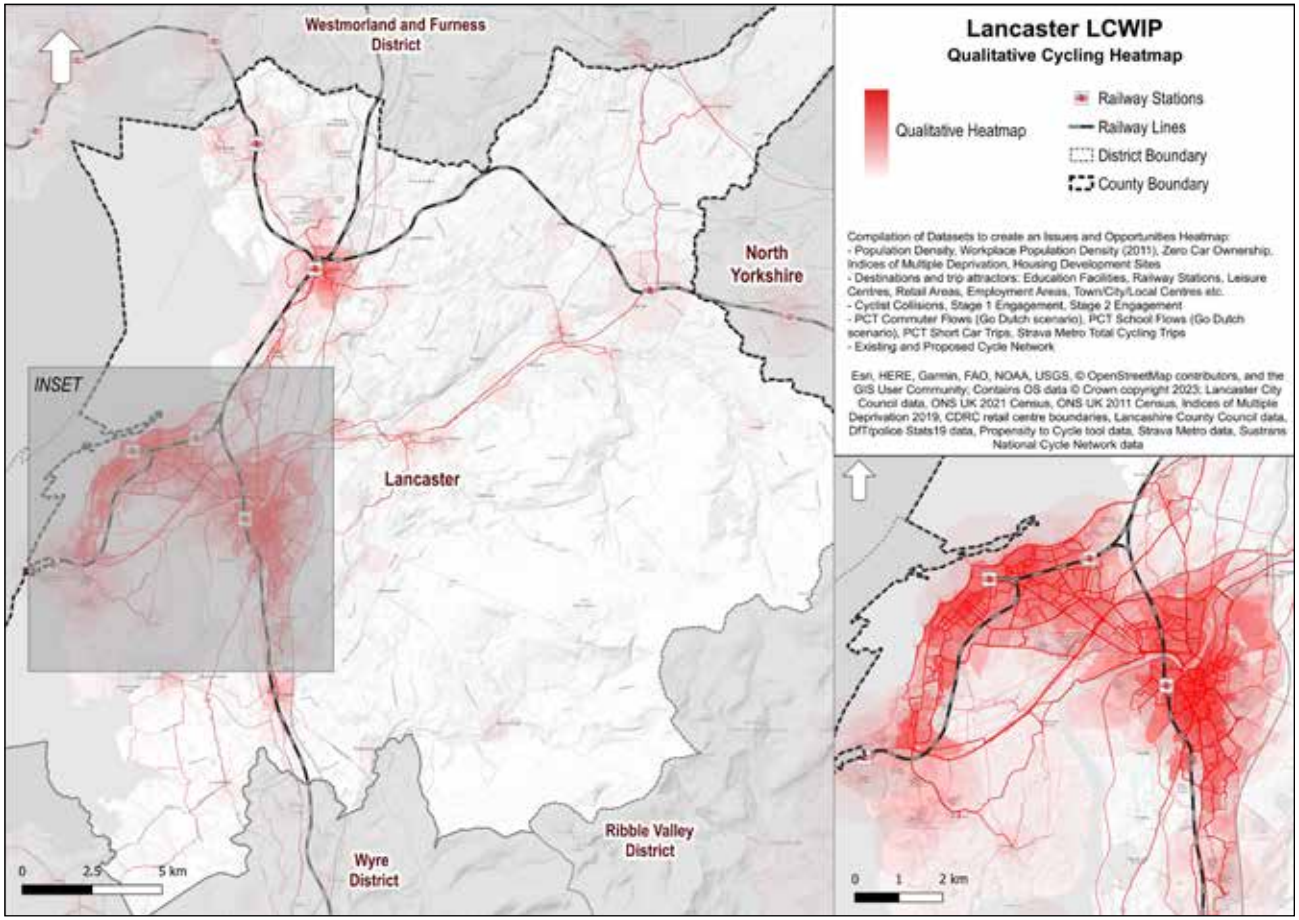


Figure 42. Qualitative 'heatmap' of data related to the potential for cycle trips

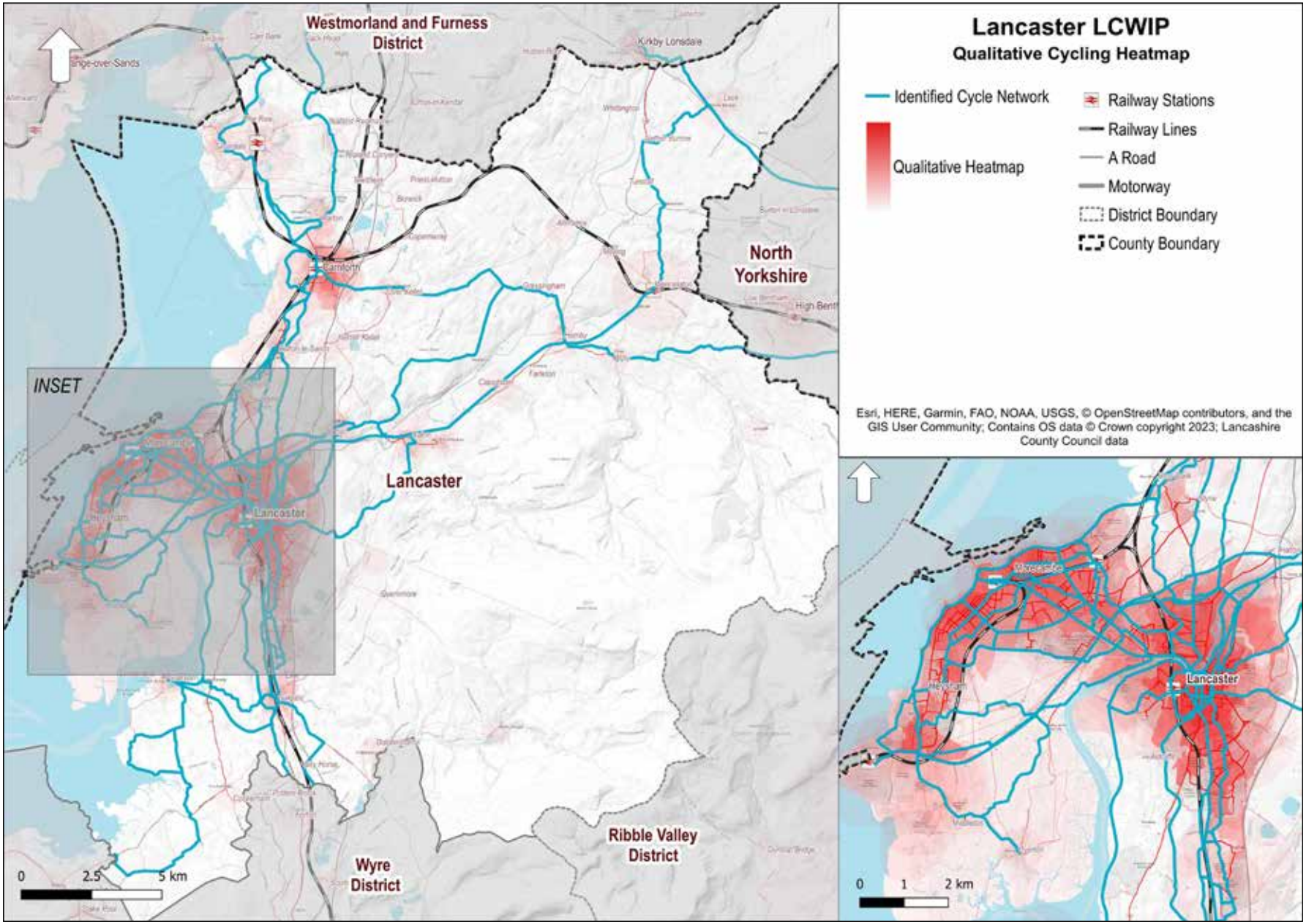


Figure 43. Identified cycle network map resulting from the 'heatmap' analysis

5.2.1.4. Classification of the Identified Cycle Network

The identified cycle network was classified following the identified desire lines, as follows:

» Strategic: Sections of the network connecting the different town centres along the Lancaster - Morecambe route, as well as connections to Lancaster University, and Garstang in the Wyre District.

» Primary: Sections of the network feeding the strategic network and providing connections to town and urban local centres, serving all the clusters, following the identified desire lines.

» Secondary: Sections of the network providing connections between the strategic, primary and secondary corridors to/from local destinations and neighbourhoods to enhance local network connectivity. Additionally, longer distance connections between urban centres and neighbourhoods to enhance local network connectivity. Additionally, longer distance connections between urban centres and neighbouring areas and large village centres, and leisure routes are identified within the network and proposed as Secondary corridors

The cycle network was divided into different corridors/sections. Each corridor was selected to be clipped to approximately 5-8km in length, which corresponds to a relatively easily cyclable distance. It was also intended to facilitate more manageable design and implementation in future, in a way that each corridor/section could be developed independently.

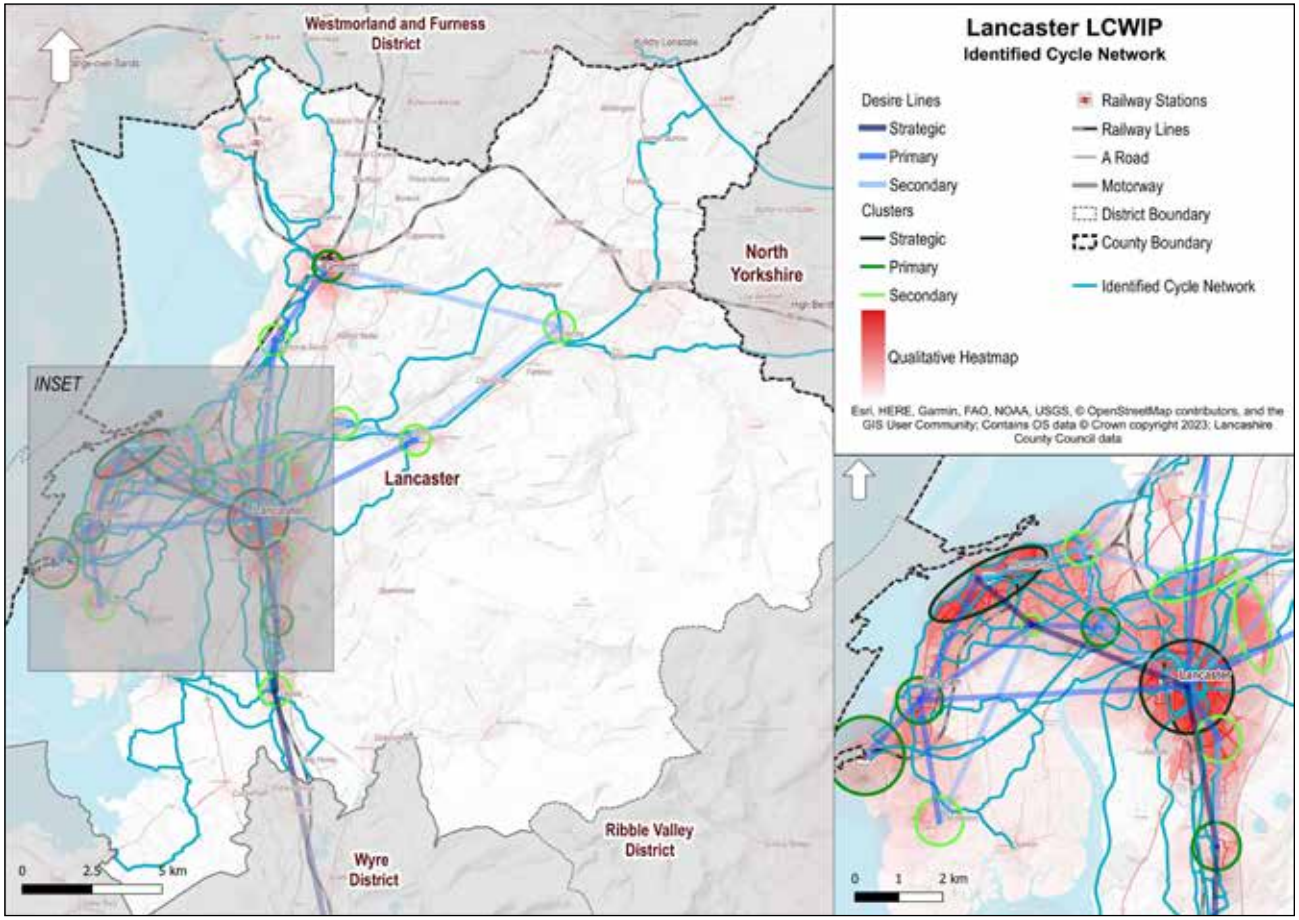


Figure 44. Identified cycle network map overlaid with the desire lines and the clusters

Based on this process, the early engagement cycle network (Figure 45) was developed to be discussed with the project steering group and additional officers from LCC and Lancaster City Council in an early engagement workshop.

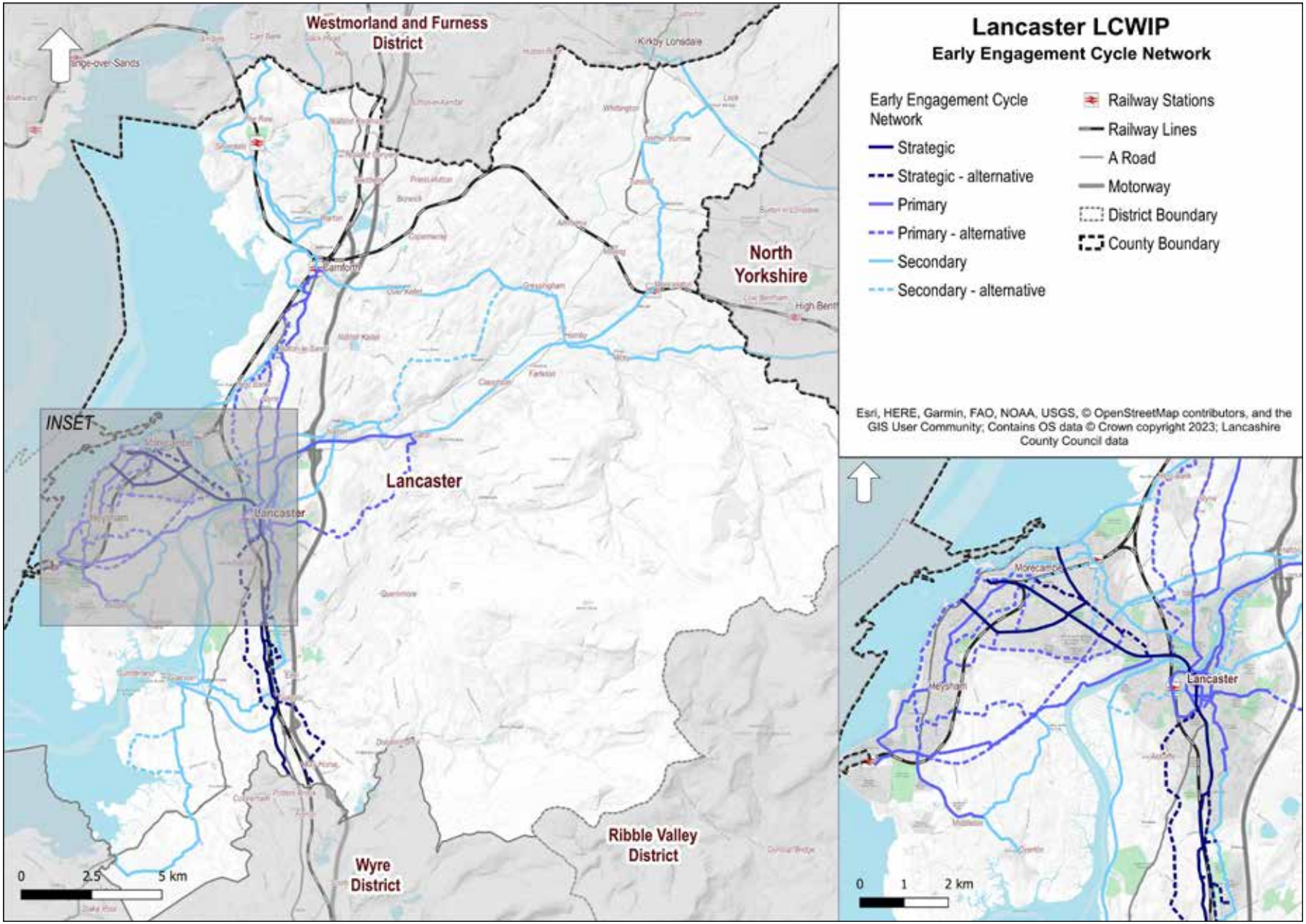


Figure 45. Initial cycle network developed for the early engagement workshop

5.2.2. Early Engagement

Stakeholder engagement is a key element of the LCWIP as it ensures that the views and knowledge of local people are taken into account. During the project, three early engagement activities were undertaken (see section 2.3 Stakeholder Engagement on page 11 for more information):

- Public engagement via online surveys.
- Stakeholder workshop to discuss the draft cycle network.
- Regular project meetings with the project steering group to discuss the cycle network development.

Early engagement was carried out by LCC via two web-based surveys. The first survey included an interactive online map, which allowed participants to identify specific locations for issues and desired improvements related to active travel county-wide (see section 4.9 Stage 1 Engagement Survey on page 63). The second survey allowed participants to provide feedback on a draft active travel network for Lancaster (see section 4.10 Stage 2 Engagement Survey on page 65). The results of the surveys informed the identification of the initial cycle network.

A stakeholder workshop was held in December 2023 for representatives from LCC, Lancaster City Council and Sustrans. The purpose of the workshop was to present the objectives of the study, the work so far (data collected) and the methodology followed for the identification of the active travel network as well as to obtain input from the stakeholders on the initial cycle network and core walking zones.

Participants were generally in agreement with the identified network for cycling. Comments received included:

- Concerns on the feasibility of some of the routes along the A roads and in the city centre (e.g. the A6 Lancaster City Centre gyratory and Penny Street).
- Comments on ensuring connections to the Heysham Power Station and White Lund Industrial Estate given their status as key employers for the District.
- Suggestions to upgrade the Lune Valley Greenway to the primary network as it is an important local priority and a current focus for Sustrans. It was also a very popular route in the Stage 2 engagement survey.

Following the stakeholder workshop, the project steering group had several meetings and discussions on the initial cycle network. Officers from LCC and Lancaster City Council provided further feedback on the classification of the network, proposing amendments to the classification of corridors reflecting their local knowledge of the area, perceived potential demand and local priorities. The initial LCWIP network was also compared to the Stage 2 Engagement network. Where similar routes were identified, but with slightly different alignments, input from the project steering group helped determine the preferred alignment option. Proposals for additional routes and alternative alignments to the identified corridors were also discussed and added to the proposed cycle network.

The key priority for the cycle network is to provide a coherent, direct, safe, comfortable and attractive environment for cyclists. The stakeholder feedback focused on ensuring (early on) that the proposed corridors will achieve these criteria. Therefore LCC and Lancaster City Council officers provided early comments on the potential feasibility of some corridors and promoted alignments away from high vehicular traffic flows and speeds (e.g., off-road options or via quieter routes), as a more attractive option for less confident cyclists. Discussions considered the directness of some links, the existing use (deriving information from Strava data), and potential for future change. Where applicable, corridors along the main road network were retained in the aspirational network to ensure that, in the future, direct links between key areas will be further considered.

Additional recommendations were proposed through development sites to future proof opportunities for inclusion of cycle schemes and connections to these areas.

5.2.3. Aspirational Cycle Network

Following stakeholder feedback and network refinement, the proposed aspirational cycle network is shown in Figure 46 to Figure 51. The aspirational cycle network is distributed across the study area and extends for approximately 355km.[2] In total 103 cycle corridors were identified. In some instances, alternative alignments were also captured where there may be parallel options in close proximity:

- 7 Strategic corridors (of 27km total length) with 3 alternative alignments proposed in some sections (e.g., Lancaster-Heysham Greenway was selected as a strategic corridor and the existing path along the A683 Bay Gateway was selected as an alternative alignment option if the creation of the greenway may not be feasible).
- 28 Primary corridors (of 131km total length) with 3 alternative alignments.
- 55 Secondary corridors (of 166km total length) with 6 alternative alignments.

The proposed corridors provide coverage throughout the District with a relatively higher density in the urban areas (Lancaster, Morecambe, Heysham and Carnforth). Cross-boundary connections are also provided to neighbouring districts.

While the proposed aspirational cycle network seeks to promote best case options for routes through and around Lancaster City Centre, it is recognised that future feasibility studies will need to consider the various masterplanning activities and infrastructure proposals in the area. These may include any masterplans for the City Centre or wider movement strategies, and new infrastructure in and around the Canal Quarter.

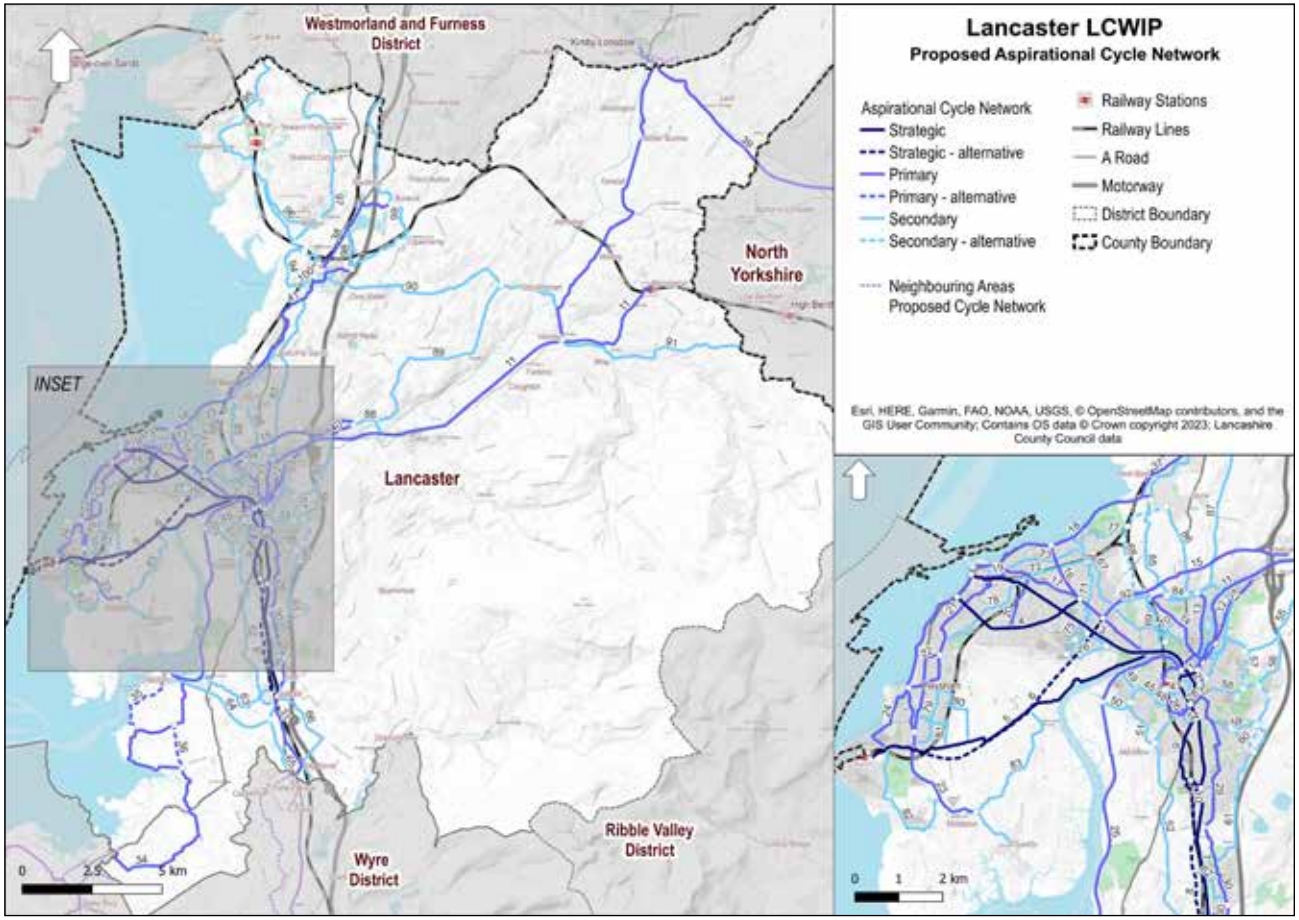


Figure 46. Proposed aspirational cycle network

All identified cycle corridors are tabulated, by category, in Table 22 to Table 24 in the Appendices.

2 including potential alternative alignments

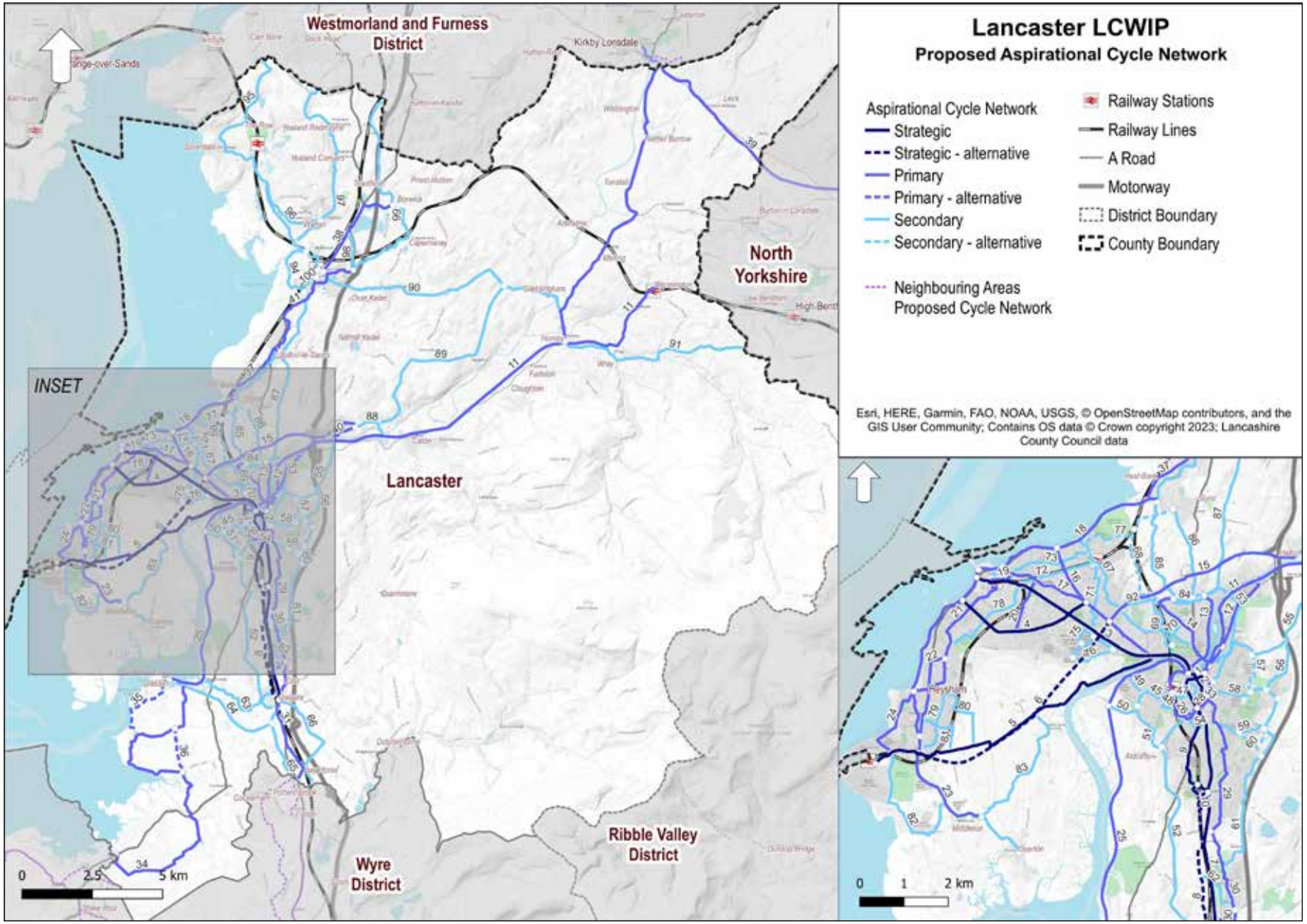


Figure 47. Proposed aspirational cycle network

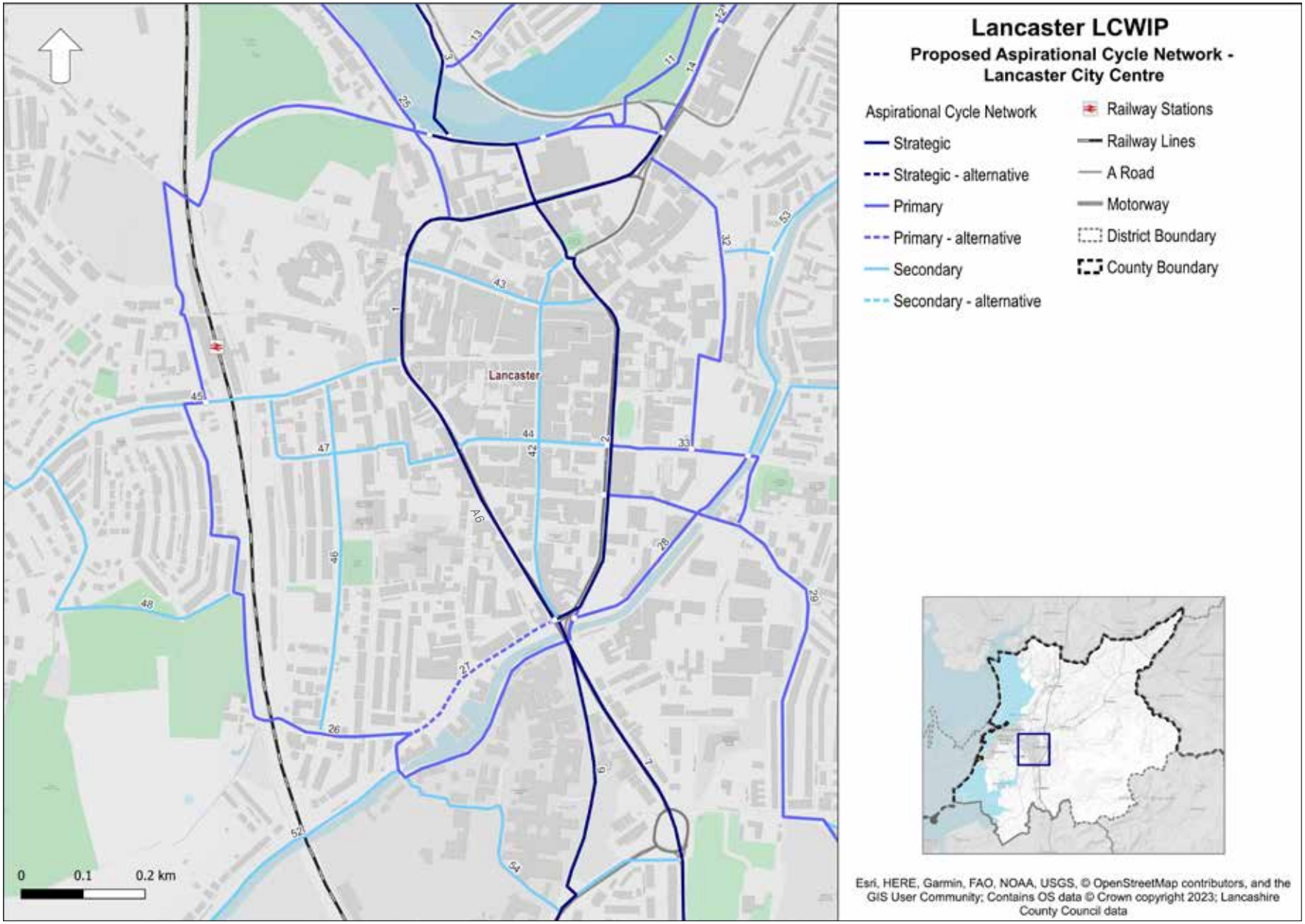


Figure 48. Proposed aspirational cycle network - Lancaster City Centre

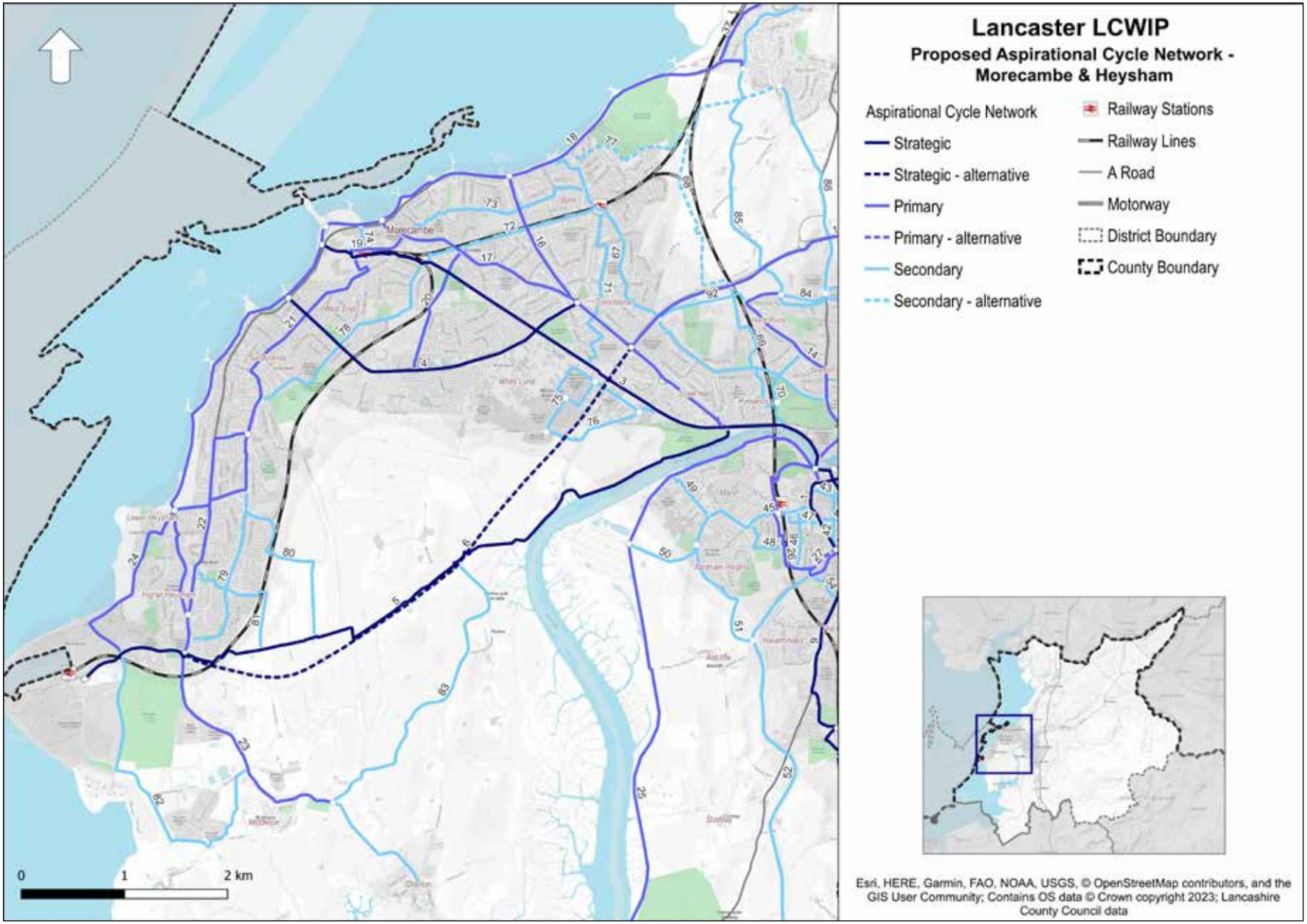


Figure 49. Proposed aspirational cycle network - Morecambe and Heysham

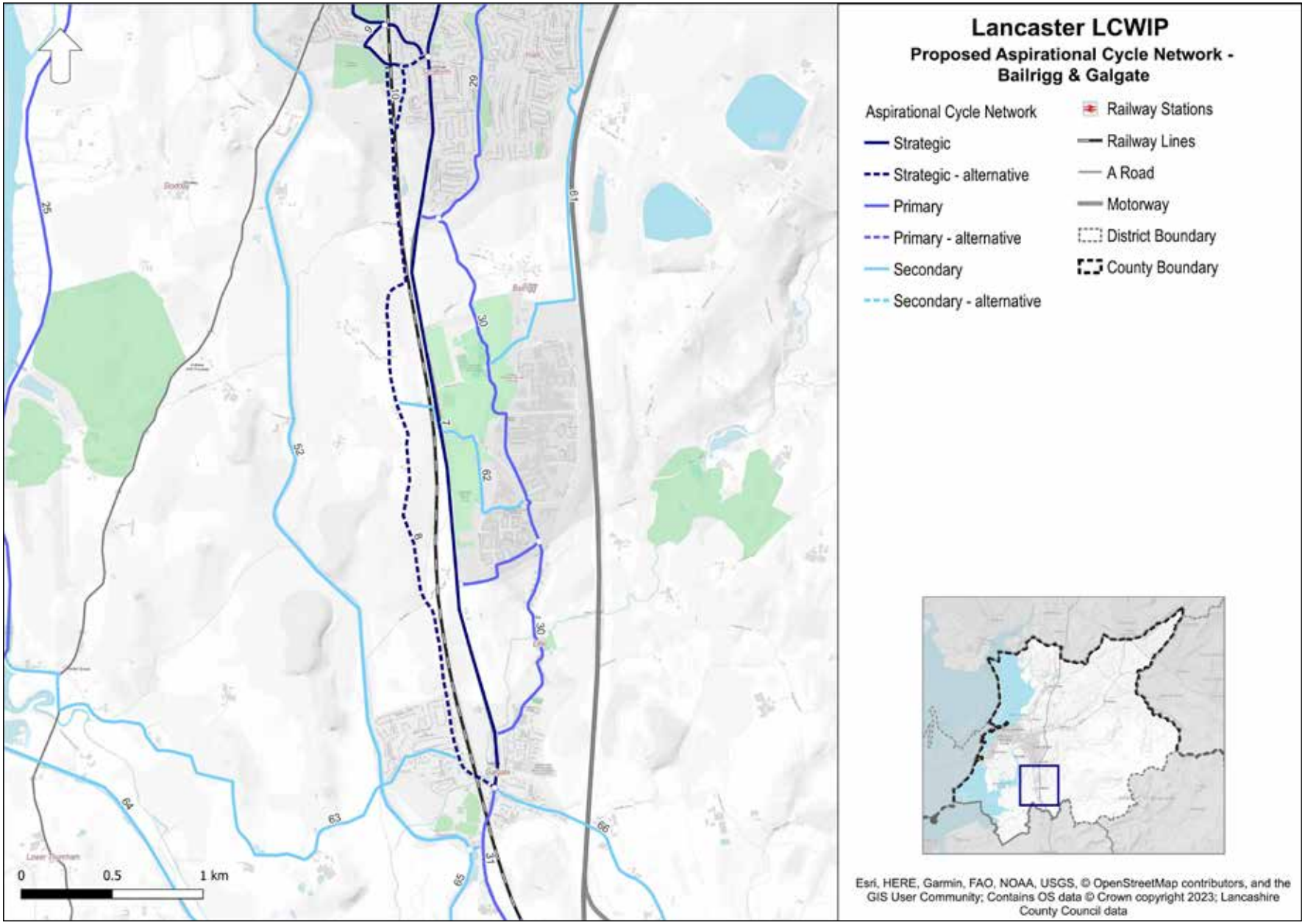


Figure 50. Proposed aspirational cycle network - Bailrigg and Galgate

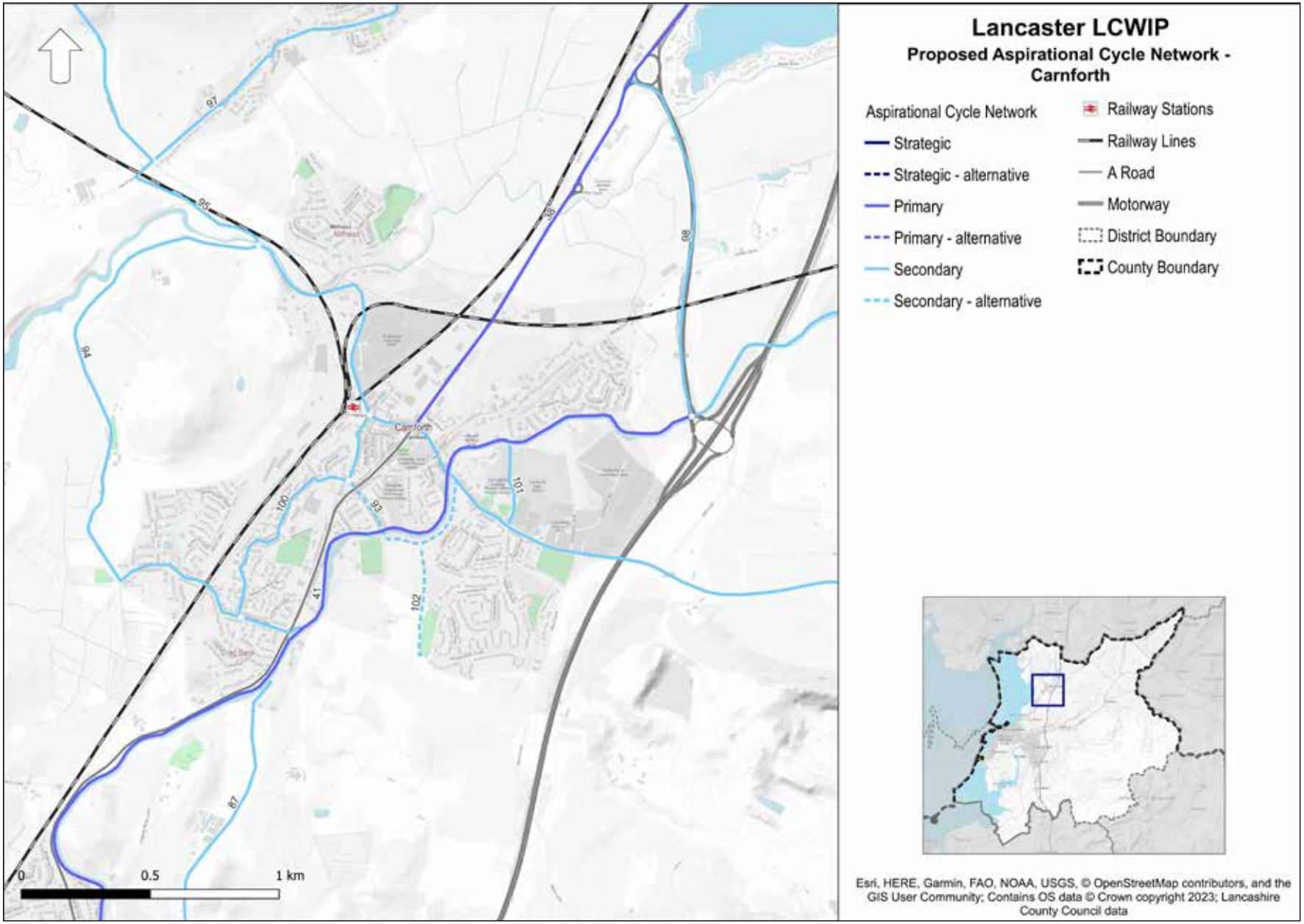


Figure 51. Proposed aspirational cycle network - Carnforth

5.2.4. Strategic and Primary Cycle Network

The strategic and primary cycle network for Lancaster is shown in Figure 52. This highlights the core cycle network within the District, along with its connections to existing or proposed facilities in neighbouring authorities.

The strategic and primary network reflects:

» Local priorities to link the centres of Lancaster, Morecambe and Heysham.
» Higher propensity / potential demand for short utility trips in the urban areas around the town centres.
» Local opportunities to utilise existing or proposed off-road assets, such as greenways and canal towpaths (e.g., Lune Valley Greenway).

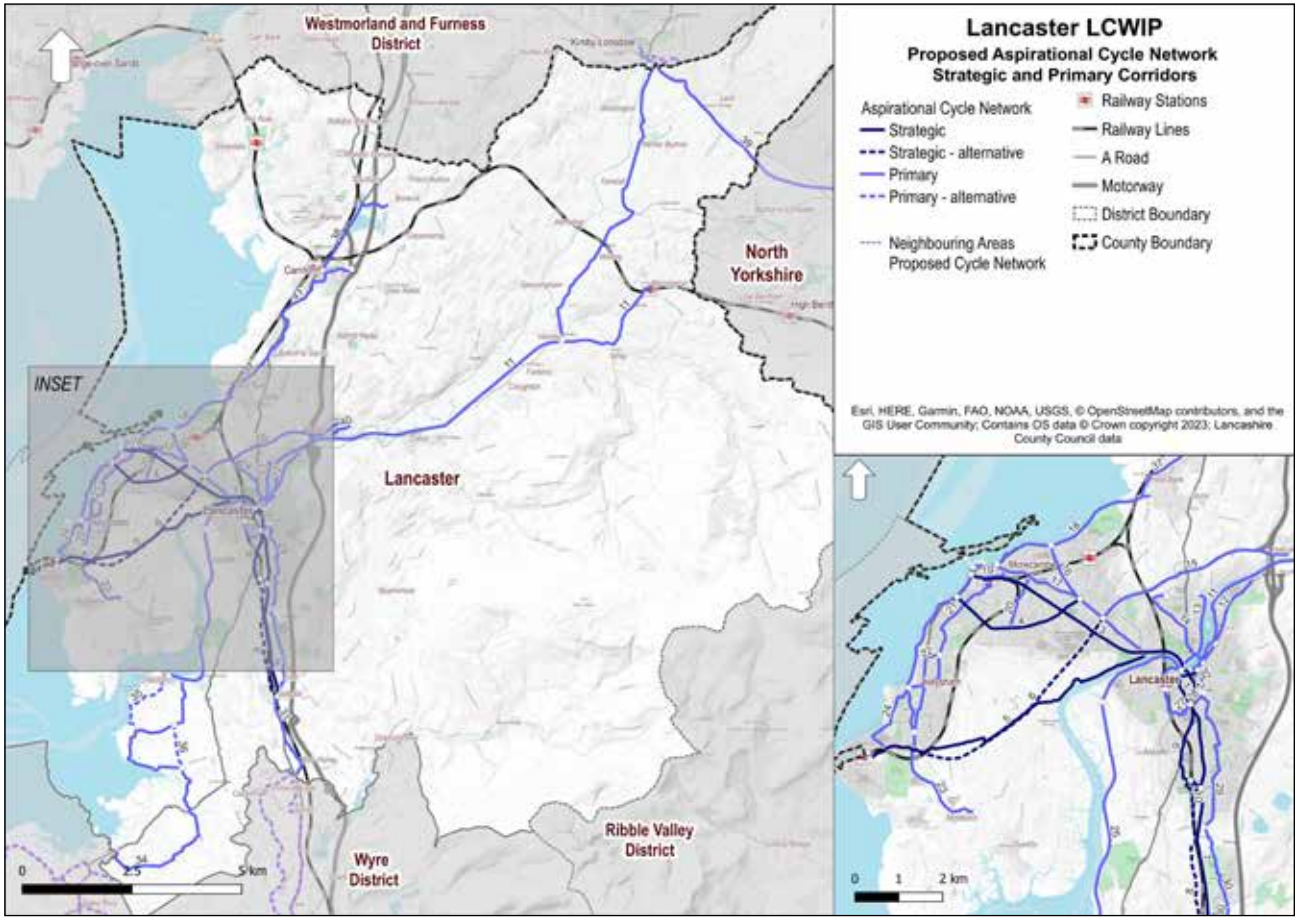


Figure 52. Strategic and primary cycle corridors

5.2.5. Selected Cycle Corridors

The strategic and some primary cycle corridors were selected for further development.

It was agreed with LCC and Lancaster City Council that in total 13 cycle corridors will be advanced for identification of high-level interventions as part of the LCWIP. The remaining primary and the secondary cycle corridors remain part of the broader, aspirational cycle network, and will be reviewed and assessed as opportunities arise.

Therefore, the following 13 cycle corridors are being progressed (Figure 53):

- **#1 & #2 Lancaster City Centre A6 gyratory**
- **#3 Lancaster-Morecambe Greenway**
- **#4 Westgate to Regent Road**
- **#5 Lancaster-Heysham Greenway**
- **#7 Lancaster to Galgate via the A6**
- **#11 Lune Valley Greenway (Lancaster to Kirkby Lonsdale)**
- **#12 Caton Road**
- **#13 North Lancaster**
- **#16 Morecambe Road to Broadway**
- **#21 Morecambe to Heysham via Westminster Road**
- **#25 West Lancaster to Lune Industrial Estate**
- **#29 Lancaster to Scotforth**

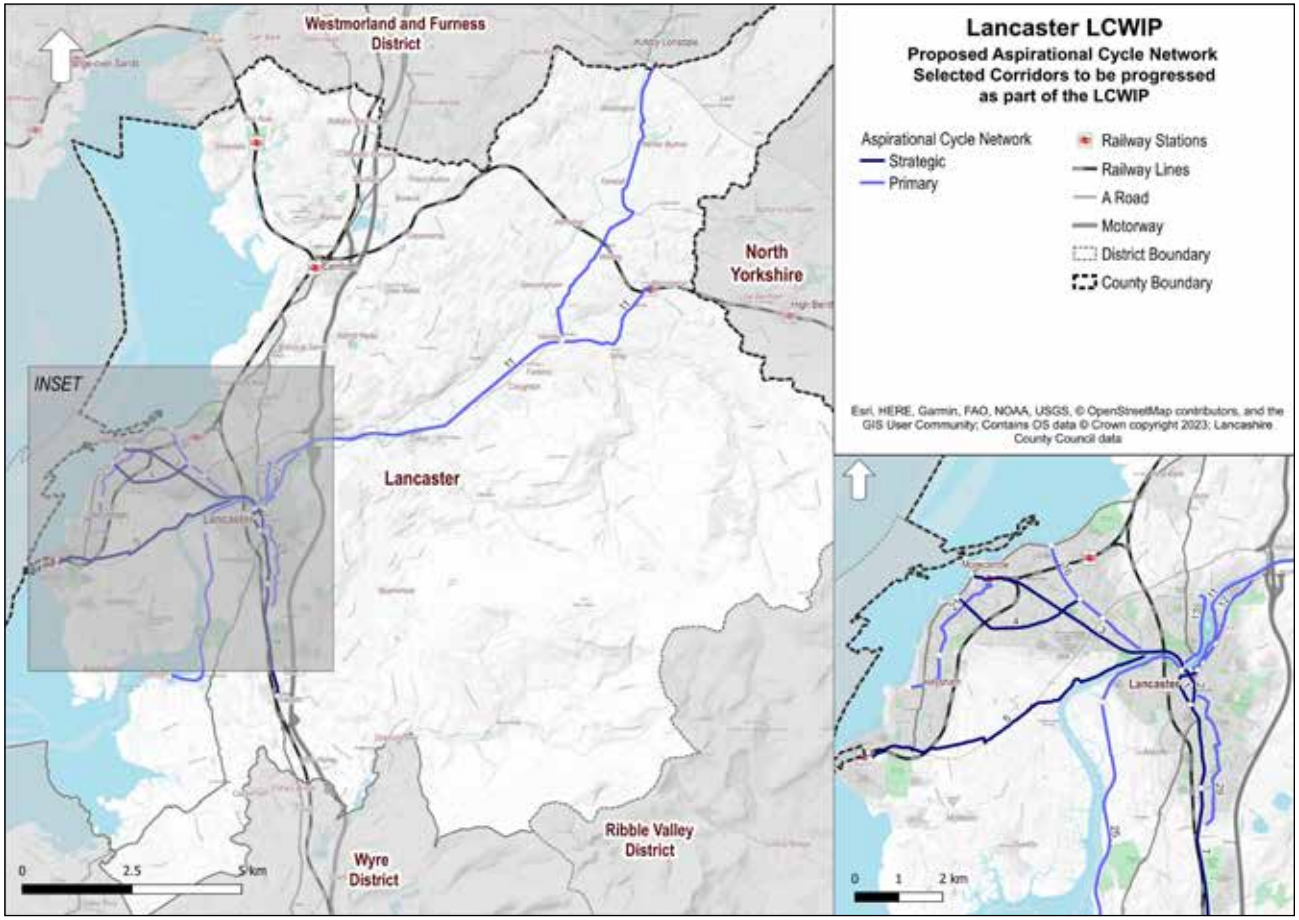


Figure 53. Strategic and primary cycle corridors, advanced for identification of potential cycle improvement measures

5.3 Strategic & Primary Cycle Corridors and Potential Improvements

5.3.1. Introduction

This section outlines potential infrastructure interventions to enhance the selected strategic and primary cycle corridors identified in the previous section (5.2.5). The proposed measures are high level and indicate potential interventions for consideration in the next stage of scheme development. Note that significant further work will be needed on each corridor to assess the feasibility of proposed interventions.

5.3.1.1. Indicative Potential Interventions

The potential interventions for cycling seek to follow DfT's LTN 1/20 design guidance. The overall aim of the LCWIP is to provide a coherent, direct, safe, comfortable, attractive and inclusive cycle network, as outlined in the LTN 1/20 design principles[1] and DfT's Inclusive Mobility guidance[2].

To support LTN 1/20 design principles, examples of considerations in identifying the network and potential infrastructure measures included improved access to schools, town centres and other key destinations; potential for segregation from other road users; lower traffic speeds and/or measures to reduce vehicular flows through sensitive areas; opportunities to reallocate road space for pedestrians and cyclists; and junction and crossing improvements. Potential interventions should complement and enhance the character of an area, adapted to fit the local context and constraints. Finally, cycle infrastructure should be inclusive and accessible to everyone, regardless of ability.

The proposed interventions are based on desktop review only.[3] The steering group provided general information to the project team on potential issues and constraints.

5.3.1.2. Next Steps for Further Development

The proposed high-level interventions are intended to characterise the corridors and potential improvement opportunities for further consideration. Audits of the cycle corridors and potential interventions (e.g., Route Selection Tool, Cycling Level of Service, or Active Travel England (ATE) tools) are suggested in future stages to better understand the existing conditions, issues, and constraints and the improvements which are required.

The proposed interventions indicate initial concepts as to the type of cycle infrastructure which may be required. All proposed interventions would be subject to additional assessments and feasibility design to refine and develop the initial proposals and review constraints, potential impacts, and potential alternatives. This is likely to require additional surveys (e.g., traffic, topographic, utilities, parking, environmental) and further assessment/engagement including reviewing land ownership information and stakeholder and public consultation.

As proposed cycle interventions are advanced, design stages should utilise the latest best practice design guidance and standards available at the time, such as:

- Cycle Infrastructure Design (DfT, LTN 1/20)
- Manual for Streets 1 & 2[4]
- Inclusive Mobility (DfT, 2022)

5.3.1.3. Section Outline

The potential infrastructure interventions are presented for each cycle corridor on the following pages. While these proposals are focused along the strategic and primary cycle corridors, they also provide examples of the types of improvements that could be implemented elsewhere in the study area as needs or opportunities arise.

Potential interventions for the 13 selected corridors are presented by:

- District-wide overview of potential interventions (cycle typology maps);
- Summary of interventions by individual corridors; and,
- Photo examples and descriptions of different types of cycle infrastructure are provided in 5.4 on page 120.

1 Department for Transport, Cycle Infrastructure Design (LTN 1/20), section 1.5 .

2 Department for Transport, Inclusive Mobility, section 1.5.

3 The LCWIP team went on a site visit to walk along some routes in the identified cycle network in December 2023; however, no audits were undertaken. The primary purpose of the site visit was for the team to understand the character of the area and any major issues, constraints and opportunities that are not easy to identify during desktop analysis.

4 At the time of development of this LCWIP report, a revised Manual for Streets is in development by DfT

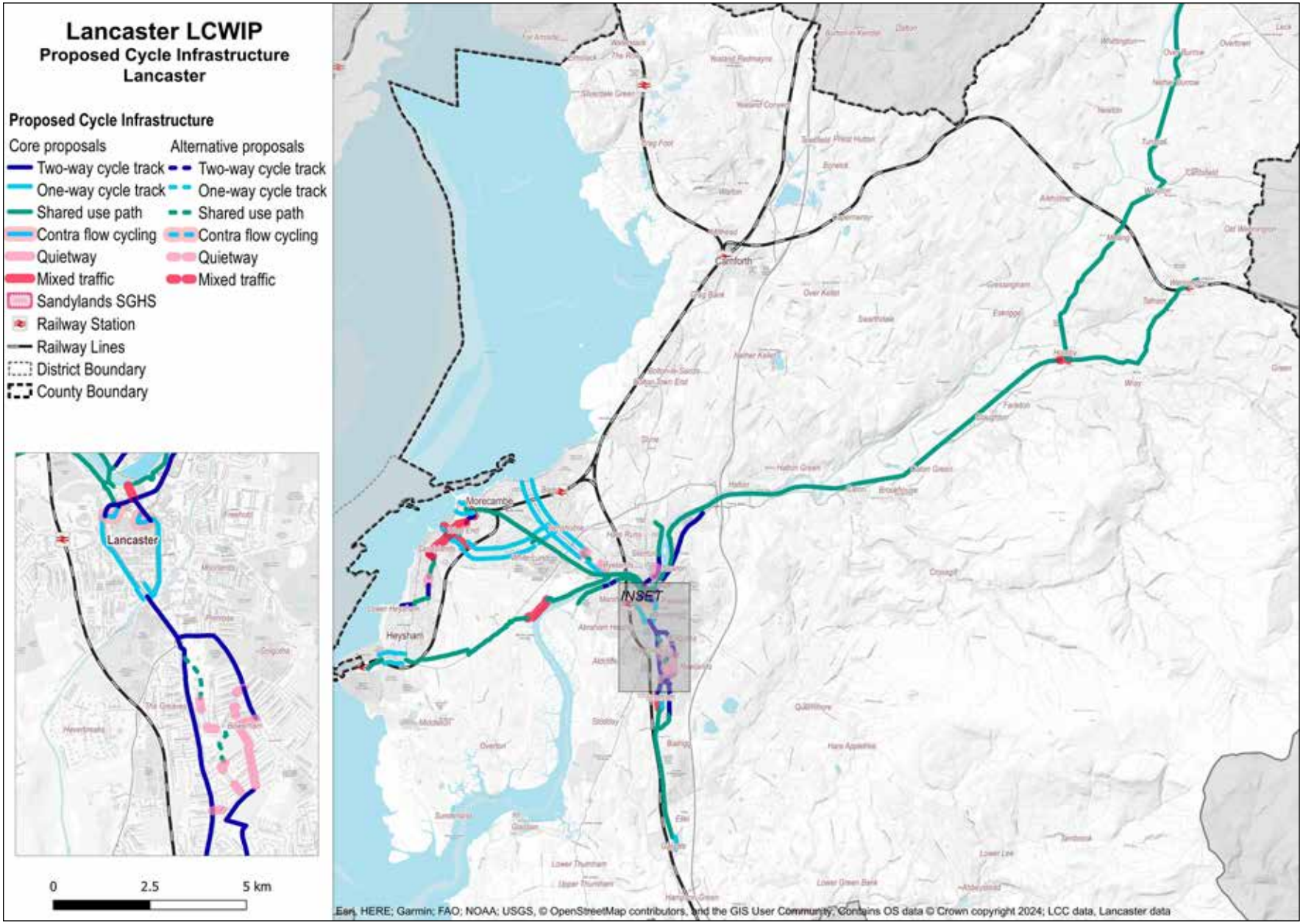


Figure 54. Indicative proposed cycle infrastructure, Lancaster District

5.3.1.4. Cycle Corridors 1 & 2: Lancaster City Centre A6 Gyratory

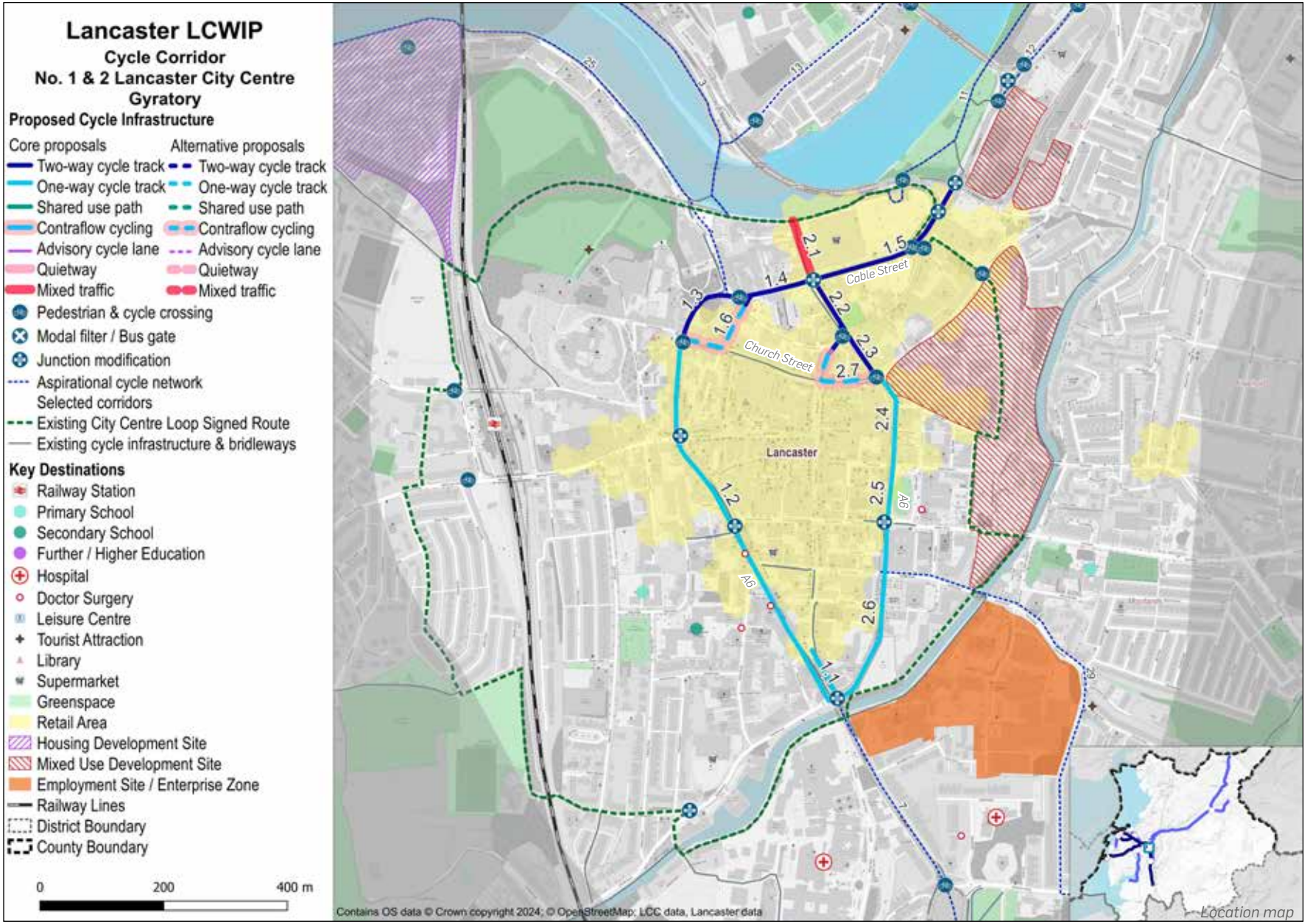


Figure 55. Indicative proposed cycle infrastructure, Cycle Corridors 1 & 2: Lancaster City Centre A6 Gyratory

Cycle Corridors 1 & 2: Lancaster City Centre A6 Gyratory

The strategic cycle corridors, approximately 2.1km in total, follow the existing A6 gyratory in Lancaster City Centre, between the River Lune to the north and the canal to the south. The corridor is in close proximity to schools such as Lancaster Girls' Grammar School and Dallas Road Community Primary School, and connects with several employment areas including St Nics Shopping Centre, Royal Lancaster Infirmary to the south, White Cross Business Park, as well as the Canal Quarter mixed-use regeneration site. It provides a connection to existing Lancaster City Centre Loop cycle route, canal towpaths and NCN Routes 6 & 69. It extends along a dual carriageway with high traffic flows and speeds. The interventions presented here pay due cognisance to those previously proposed in other strategies and schemes, while suggesting additional improvements to recognise the need to meet new national policies and design guidelines. Given the complexities of the existing movement networks, it is expected that further feasibility and masterplanning exercises are likely to be necessary in order to confirm what might be possible, with a phased approach to delivery and funding.

Table 9. Proposed indicative typology and high-level interventions along cycle corridors 1 & 2

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
1.1	Penny Street	Aldcliffe Road to King Street	85	Segregated cycle track	Upgrade the one-way cycle tracks through provision of a segregated route on the northbound lane. Consider reallocating space from the carriageway and removing parking to increase the cycle track width. Provide priority treatments on Henry Street.
1.2	King Street/ China Street	Penny Street to Church Street	563	Segregated cycle track	Segregate the current northbound advisory cycle track from traffic. Where possible widen the cycle track. Create a modal filter at Middle Street to simplify the junction/maintain segregation. Improve crossing facilities for cyclists to the city centre by providing a toucan/parallel crossing to Common Garden Street. Provide cycle-only traffic phases or early-release at the Market Street Junction. Modify crossing points and junction between China Street and Church Street to improve crossing opportunities for cyclists e.g. narrow the carriageway on Church Street. Consideration to be given to relocating loading bays. Future consideration to be given to reallocating a traffic lane to pedestrians and cyclists.
1.3	Bridge Lane	Church Street to Damside Street	153	Segregated cycle track	Creation of a two-way cycle track through space reallocated from one traffic lane. Additionally, consider providing a new controlled crossing to allow safer crossing movements between Damside Street and the city centre.
1.4	Cable Street	New Road to Chapel Street/ Water Street	117	Segregated cycle track	Creation of a two-way cycle track through the space reallocated from traffic lane nearest the bus station. Provide raised table treatments with bus station vehicle entrances/exits. Provide improved crossing facilities at the Water Street/Chapel Street/Cable Street junction through segregating cycle flows from motor vehicles and pedestrians.
1.5	Cable Street East	Chapel Street/ Water Street to Parliament Street	293	Segregated cycle track	Creation of a two-way cycle track through space reallocated from the carriageway/footway.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
2.1	Water Street	NCN 69 to Cable Street	97	Mixed traffic	Introduce traffic calming measures on Water Street e.g. through narrowing carriageway and provide connections to improved crossing facilities at the Water Street/Chapel Street/Cable Street junction. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
2.2	Chapel Street	Cable Street to North Road	143	Segregated cycle track	Upgrade the current two-way cycle track and provide traffic calming and priority measures at junctions.
2.3	Rosemary Lane	North Road to Church Street	105	Segregated cycle track	Creation of a two-way cycle track through space reallocated from one traffic lane.
2.4	Great John Street	St Leonard's Gate to Sulyard Street	152	Segregated cycle track	Segregate current southbound advisory cycle track from traffic. Where possible widen the cycle track. Consider raised table treatment with Moor Lane.
2.5	Dalton Square	Sulyard Street to Brock Street/ Nelson Street	92	Segregated cycle track	Segregate current southbound advisory cycle track. Increase width through the space reallocated from one traffic lane and potential small reallocation from the footway. Provide segregated cycle crossing of Dalton Square/ Nelson Street junction arm. Improve crossing opportunities from Brock Street on to Thurnham Street to allow access from the city centre on to the cycle Gyratory.
2.6	Thurnham Street	Brock Street/ Nelson Street to Penny Street	303	Segregated cycle track	Segregate current southbound advisory cycle track using light segregation. Where possible widen the cycle track. Provide side road treatments.
				Alternative Alignment	
1.6	Church Street/ New Road	China Street to Cable Street	139	Mixed traffic (contraflow)	Alternative to reallocating space from traffic on Bridge Lane should modelling show this is not possible. Traffic calming measures on Church Street/New Road to provide improved cycling and walking conditions e.g. include raised tables. Changes to and potential removal of parking will be required on New Road. There is the potential to add an advisory or mandatory contra flow cycle track to provide city centre / Castle connectivity. Future improvements should consider closure of Church Street to traffic. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
2.7	Church Street East/North Road	Chapel Street to Rosemary lane (A6)	131	Mixed traffic (contraflow)	Alternative to reallocating space from traffic on Rosemary Lane should modelling show this is not acceptable. Upgrade the current advisory contra flow cycle track by providing traffic calming measures such as raised tables. Connect to a realigned and improved crossing on the A6 through reallocation of carriageway space on St Leonard's Gate. Consider making St Leonard's Gate one-way only. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.

It is envisioned that cyclists who require access to Lancaster railway station would use secondary routes 42 and 47. Therefore, interventions on these routes should also be considered when the Lancaster City Centre gyratory interventions are further developed. It is also envisioned that primary route 32 would be heavily used and interventions on this route should be developed as part of the Canal Quarter site development. Improvements should also be considered on the existing signed Lancaster City Centre Loop route, suggested crossing points and junction modifications are shown in Figure 55.

5.3.1.5. Cycle Corridor 3: Lancaster-Morecambe Greenway

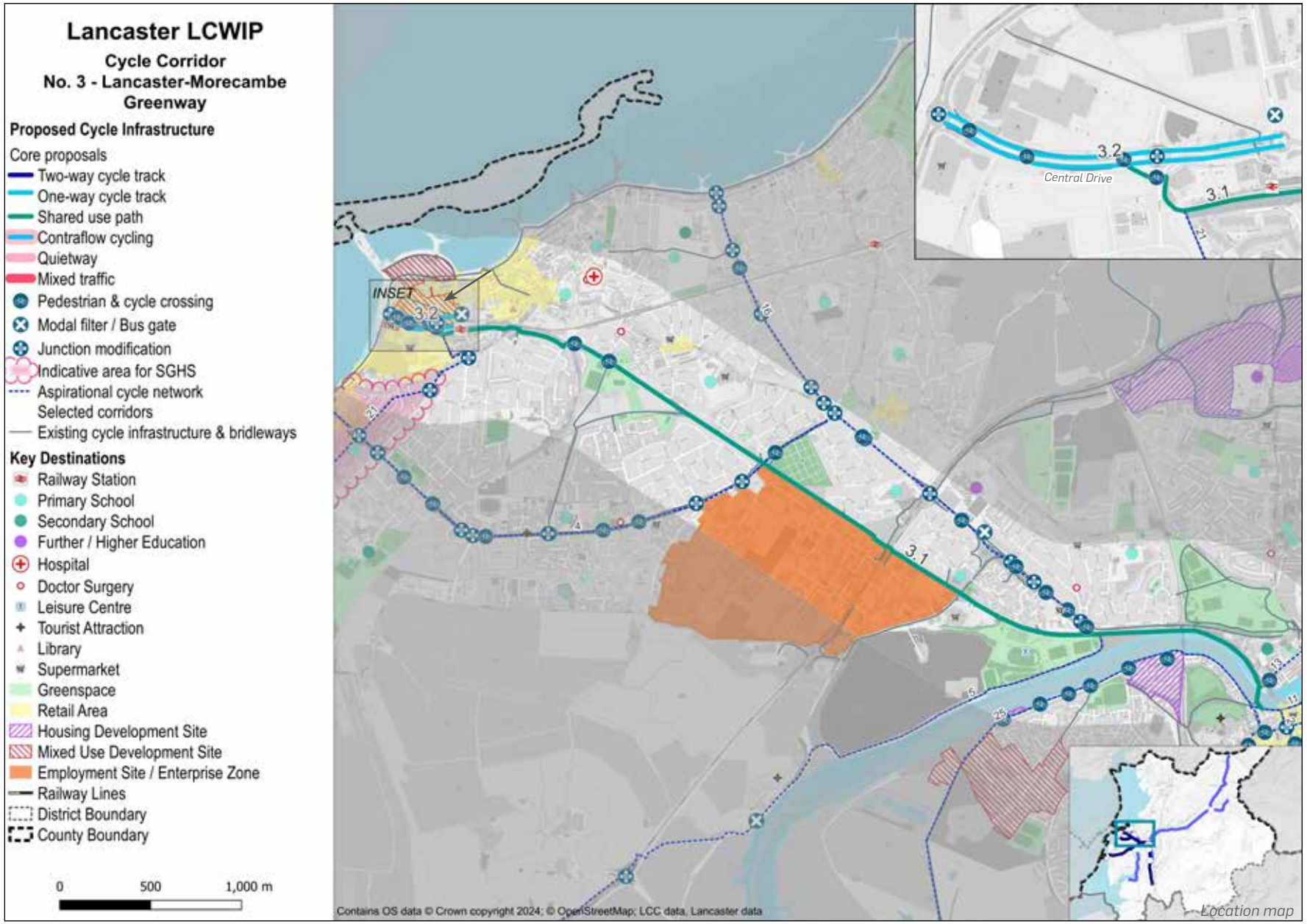


Figure 56. Indicative proposed cycle infrastructure, Cycle Corridor 3: Lancaster-Morecambe Greenway

Cycle Corridor 3: Lancaster-Morecambe Greenway

The strategic cycle corridor links Lancaster and Morecambe, and is approximately 5.6km in length. The corridor follows the popular National Cycle Network 69 connecting Lancaster and Morecambe railway station and further extends to Marine Road Central via Central Drive. Strava 2022 data shows this route is highly used and therefore would benefit from interventions to further improve its level of provision. This route was recently audited by Sustrans in 2021 and also in Stage 2 of the Lancaster University I-Connect research project in Spring 2023[1].

Table 10. Indicative proposed typology and high-level interventions along cycle corridor 3

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
3.1	Lancaster - Morecambe Greenway (NCN 69)	Millenium Bridge to Central Drive	5409	Shared use path	Undertake a review of the existing cycle route and ensure surfacing, width and lighting is to standard. Ensure access points are compliant with LTN 1/20 and inclusive design guidance. Introduce a priority crossing point at Out Moss Lane to give cyclists priority over vehicular traffic. Introduce a new crossing over the railway line to avoid cyclists needing to dismount.
3.2	Central Drive	Northumberland Street to Marine Road Central	402	Segregated cycle track	Upgrade existing facilities to provide one-way cycle tracks on both sides of the road by reallocating space from the carriageway, which may require removal of a traffic lane in both directions and introducing bus stop bypasses. Upgrade existing crossing points and remove railings. Additional measures could include reducing junction geometries to discourage fast traffic speeds. This section would connect to a Sustrans scheme on Northumberland Street (secondary route 74) which proposes the introduction of a bus gate which cyclists would be able to use.

1 wp.lancs.ac.uk/i-connect/stage/

5.3.1.6. Cycle Corridor 4: Westgate to Regent Road

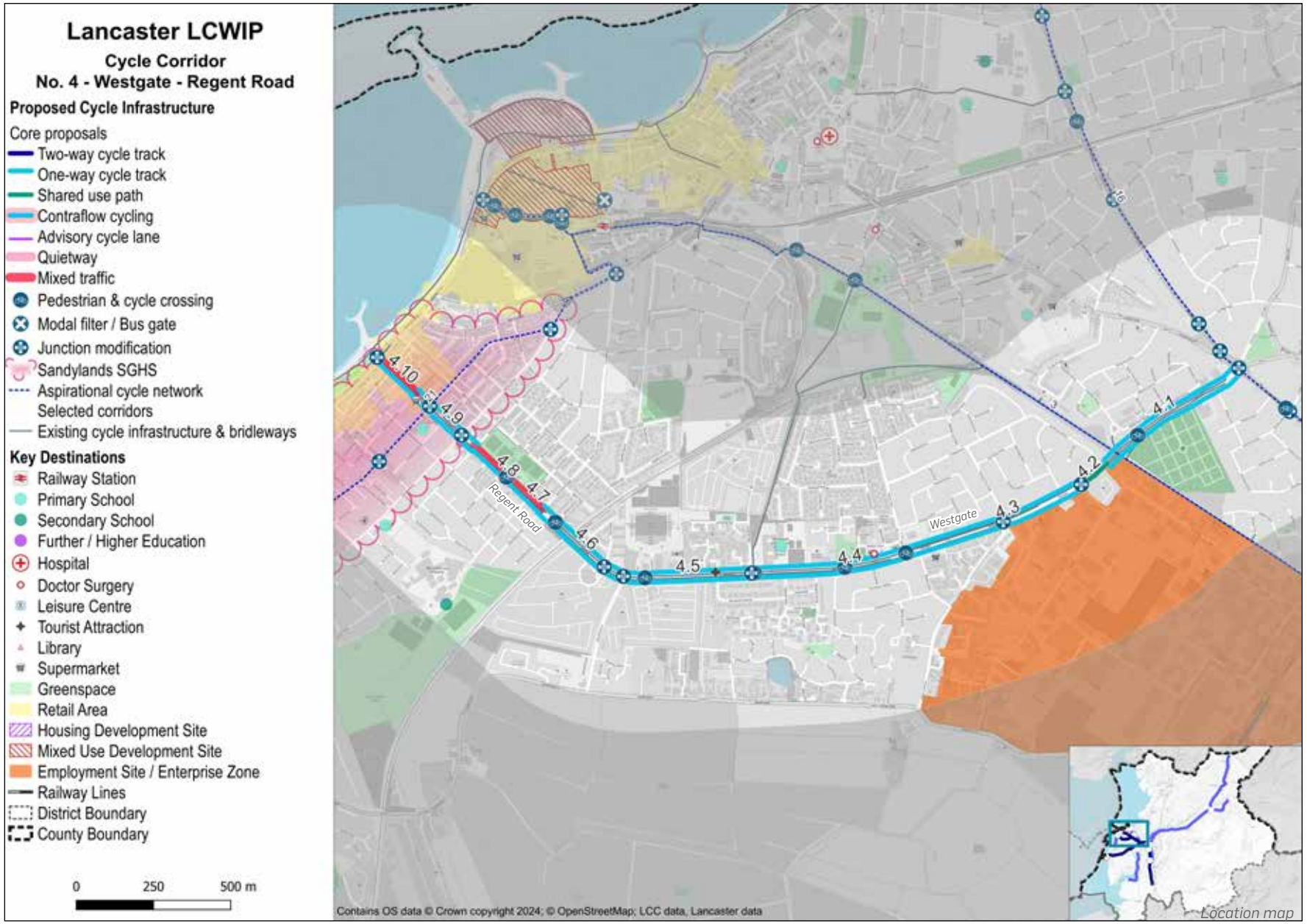


Figure 57. Indicative proposed cycle infrastructure, Cycle Corridor 4: Westgate to Regent Road

Cycle Corridor 4: Westgate to Regent Road

The strategic cycle corridor, approximately 3.2km, connects Torrisholme to the south of Morecambe with the West End and Sandylands areas near the coast. The corridor is in close proximity to Westgate Primary School and West End Primary School as well as Morecambe FC Mazuma Stadium. The corridor is also in close proximity to the White Lund Industrial Estate which is a key employer for the District. The proposed Safer, Greener, Healthier Streets (SGHS) area in Sandylands would also be served by this cycle corridor.

Table 11. Indicative proposed typology and high-level interventions along cycle corridor 4

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
4.1	Westgate	Shrimp Roundabout to Winthorpe Avenue	530	Segregated cycle track	Upgrade existing facilities to provide one-way cycle tracks on both sides of the road by reallocating space from carriageway and the verge. Potential constraints include trees within the verge. Additional measures include reducing junction geometries.
4.2	Westgate	Winthorpe Avenue to Northgate	109	Shared use path	Shared use path proposed due to geometric constraints. There may be potential in the future to continue the segregated cycle track which would require removal of the left turning traffic lane. Transitions between shared use path and on-carriageway provision would need to be created.
4.3	Westgate	Northgate to Lidl Entrance	491	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway and the verge. Potential constraints include trees within the verge. Additional measures include removal of on-street/ footway parking.
4.4	Westgate	Lidl Entrance to Langridge Way	619	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway and the verge. Potential constraints include trees within the verge.
4.5	Westgate	Langridge Way to Westcliffe Drive	423	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway and the verge. Potential constraints include trees within the verge. The Langridge Way junction should be modified and the pedestrian refuge island near Wentworth Crescent should be replaced with a priority crossing point. Introduce a priority crossing near the Hurley Flyer public house.
4.6	Westgate/ Regent Road	Westcliffe Drive to Buckingham Road	347	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from the carriageway and verge. Replace pedestrian refuge islands with priority crossings which will also create space to continue one-way cycle tracks. Footway widths should only be reduced where it wouldn't have a detrimental impact on pedestrian comfort levels.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
4.7	Regent Road	Buckingham Road to Osbourne Road	58	Segregated cycle track	One-way cycle track on the south side of the road, with mixed traffic provision on the north side of the road, by reallocating space from the carriageway and removing on-street parking, rejoining the carriageway at Osbourne Road. Additional measures to consider relocating parking to side roads. Footway widths should only be reduced where it wouldn't have a detrimental impact on pedestrian comfort levels. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
4.8	Regent Road	Osbourne Road to Regent Park Avenue	235	Segregated cycle track	One-way cycle track on the south side of the road, with mixed traffic provision on the north side of the road, by reallocating space from the carriageway and removing on-street parking. Additional measures to consider relocating parking to side roads. Footway widths should only be reduced where it wouldn't have a detrimental impact on pedestrian comfort levels. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
4.9	Regent Road	Regent Park Avenue to Clarendon Road West	263	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from the carriageway and removing on-street parking. Additional measures to consider relocating parking to side roads. Footway widths should only be reduced where it wouldn't have a detrimental impact on pedestrian comfort levels.
4.10	Regent Road	Clarendon Road West to Marine Road West	170	Segregated cycle track	One-way cycle track on the south side of the road, with mixed traffic provision on the north side of the road, by reallocating space from the carriageway. Additional measures to consider relocating parking to side roads. Footway widths should only be reduced where it would not have a detrimental impact on pedestrian comfort levels. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.

5.3.1.7. Cycle Corridor 5: Lancaster-Heysham Greenway

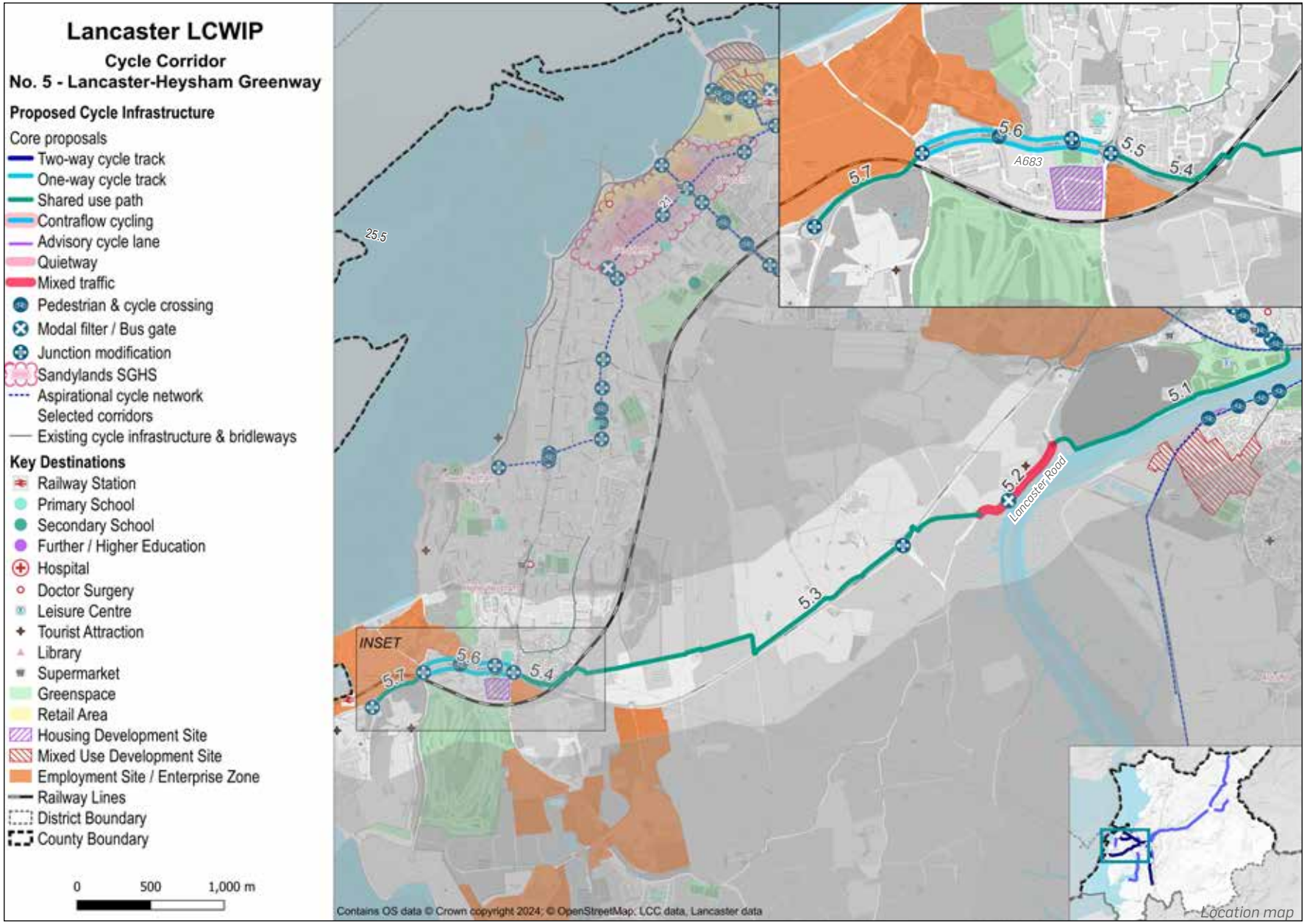


Figure 58. Indicative proposed cycle infrastructure, Cycle Corridor 5: Lancaster-Heysham Greenway

Cycle Corridor 5: Lancaster-Heysham Greenway

The strategic cycle corridor links Lancaster and Heysham and extends for 7.4km. The corridor serves Heysham Port as well as a proposed housing development west of Middleton Road. The corridor is in close proximity to the Heysham and Middleton Business Parks. This route is subject to discussions with landowners as Section 5.3 of the route is proposed on private land. The alignment of the route could change from what is proposed in Figure 58.

Table 12. Indicative proposed typology and high-level interventions along cycle corridor 5

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
5.1	Lancaster - Heysham Greenway	Lancaster - Morecambe Greenway to Lancaster Road	1863	Shared use path	Undertake a review of the existing cycling facilities to ensure width, surfacing and lighting is to standard along entire greenway. Additional measures include removing any bollards along the route and introducing more wayfinding posts.
5.2	Lancaster Road		725	Mixed traffic	Mixed traffic provision in both directions. This would require traffic calming measures or speed limit reduction to be LTN 1/20 compliant as it is currently national speed limit. A modal filter could be introduced south of the holiday park to restrict the road to local access only (to those using the holiday park and visiting local amenities) in order to reduce flows. Segregated cycle tracks or a bi-directional cycle track on the south-east side could be considered, along with flood defence measures, through reallocating space from the carriageway and the verge.
5.3	Lancaster - Heysham Greenway (Public Footpaths & Private Land)		3137	Shared use path	Shared-use path proposed to match other greenways in the area. Ensure surfacing, wayfinding and lighting is to standard and access points are compliant with LTN 1/20 and inclusive design guidance.. This section utilises the public footpaths FP0116003, FP0121009, and FP0102037, in addition to current private land which would require discussions with landowners. Alternative alignment could be to modify the A683 / Moss Road roundabout junction to provide parallel crossings.
5.4	Lancaster - Heysham Greenway (Public Footpath FP0102038)		591	Shared use path	Utilises existing public footpath FP0102038. Review the existing conditions for a shared-use path and ensure width, surfacing, wayfinding and lighting is sufficient for safety.
5.5	Lancaster - Heysham Greenway (Public Footpath FP0102038) to Middleton Road		73	Shared use path	New shared-use path proposed to connect the quietway to the roundabout. Ensure width, surfacing, wayfinding and lighting is sufficient for safety.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
5.6	A683 Trumacar Lane / Rothesay Road	Middleton Road to Port Way	590	Segregated cycle track	One-way cycle tracks on both sides of the road by allocating space from the carriageway and the verge. Ensure wayfinding posts are provided. Additional measures to consider side road/driveway treatments.
5.7	Princess Alexandra Way	Port Way to Heysham Port	435	Shared use path	Shared use path could be proposed, through reallocation of space from carriageway. Segregated cycle tracks could be proposed closer to the port. Ensure cycle facilities reach the port.

5.3.1.8. Cycle Corridor 7: Lancaster to Galgate via the A6 and Cycle Corridor 29: Lancaster to Scotforth

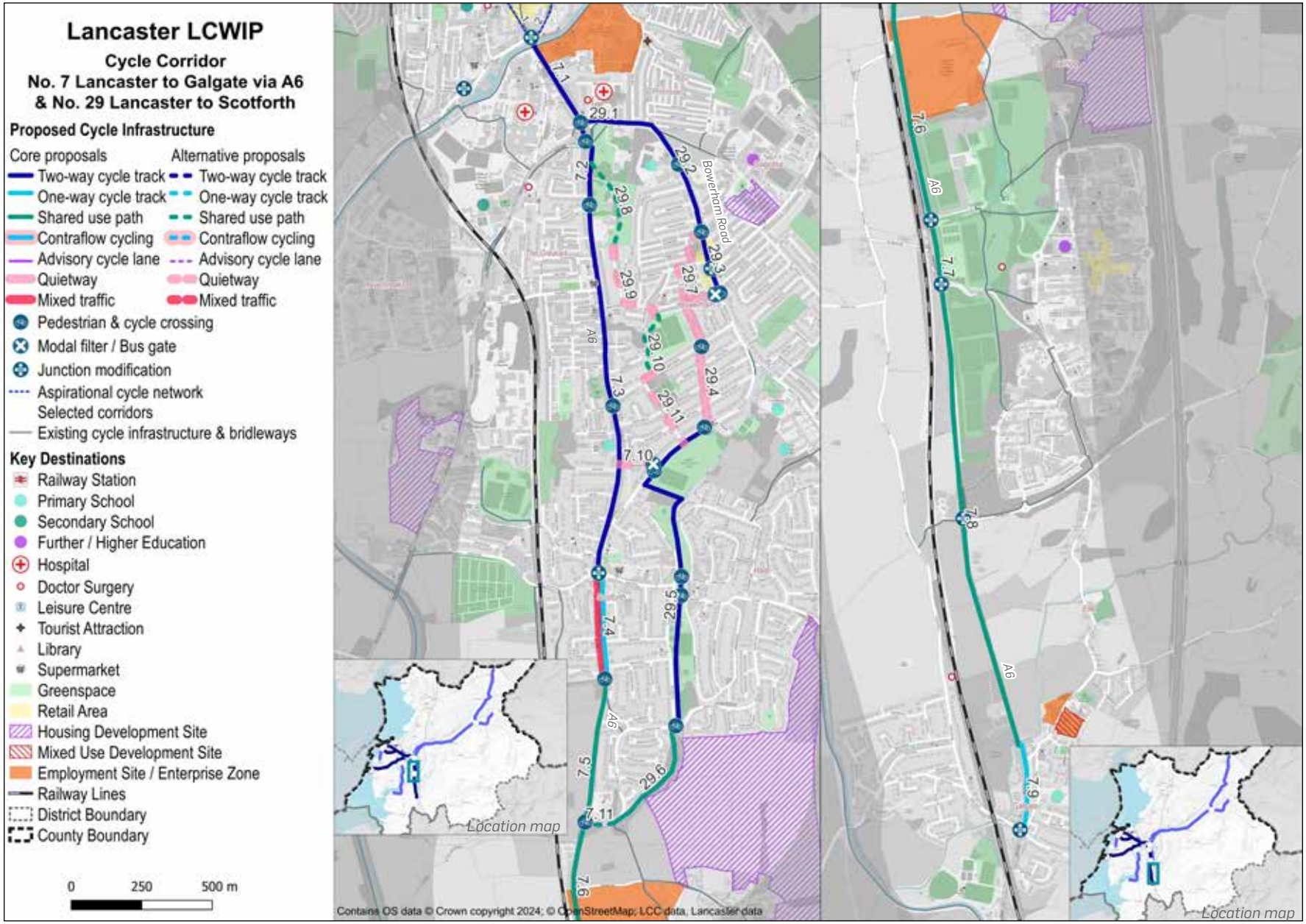


Figure 59. Indicative proposed cycle infrastructure, Cycle Corridor 7: Lancaster to Galgate via the A6 and Cycle Corridor 29: Lancaster to Scotforth

Cycle Corridor 7: Lancaster to Galgate via the A6

The strategic cycle corridor connects Lancaster and Galgate via Scotforth and Bailrigg, and extends for 6km. Employment sites at Royal Lancaster Infirmary, White Cross Business Park and a proposed employment site in Bailrigg are served by the corridor. The proposed corridor is on a busy A road with high traffic flows and frequent on-street parking in the residential areas towards the north of the corridor. An alternative alignment to the main corridor is proposed via connecting to Cycle Corridor 29: Lancaster to Scotforth along Burrow Beck, as shown in Figure 59 and Table 13. The interventions presented here pay due cognisance to those previously proposed in other strategies and schemes, while suggesting additional improvements to recognise the need to meet new national policies and design guidelines. Given the complexities of the existing movement networks, it is expected that further feasibility and masterplanning exercises are likely to be necessary in order to confirm what might be possible, with a phased approach to delivery and funding.

Table 13. Indicative proposed typology and high-level interventions along cycle corridor 7

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
7.1	South Road	Aldcliffe Road/ Thurnham Street to The Pointer gyratory	352	Segregated cycle track	Two-way cycle track created through reduction in lane width. Additional reallocation from footway also likely to be needed. Consider side road treatments where necessary.
7.2	Greaves Road	The Pointer gyratory to Belle Vue Terrace	295	Segregated cycle track	Provide improved cycle facilities at the gyratory junction e.g. constructing a two-way cycle track across the junction including signalised or priority crossings. Upgrade or relocate space from existing shared-use path to create two-way cycle track around Greaves Park. Space constraints may mean loss of parking in this area.
7.3	Greaves Road/ Scotforth Road	Belle Vue Terrace to Ashford Road/ Hala Road	1338	Segregated cycle track	Provide two-way cycle track through reallocation of space partially from the carriageway and partially from on-street residential parking and short stay parking. Pinch-points may require re-allocation of space from footways. Provide new crossing facilities around Vine Street or Brunton Road and Church Avenue/ Palatine Avenue to provide for connections across the A6.
7.4	A6 - Scotforth Road	Ashford Road/ Hala Road to Rays Drive	377	Segregated cycle track	Due to limited space, only a one-way segregated cycle track would be provided on this section, with mixed traffic provision on the other side of the road, through reallocation of space from the carriageway. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
7.5	A6 - Scotforth Road	Rays Drive to Bailrigg Student Living	622	Shared use path	Shared use path created by removing ghost islands and road hatching. Potential to create segregated cycle lanes in the future should development increase usage levels although this may require land acquisition.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
7.6	A6 - Scotforth Road	Bailrigg Student Living to Sir John Fisher Drive	952	Shared use path	Existing shared use path. Provide more direct and better crossing facilities at the Sir John Fisher Drive junction. Provide side road treatments. Potential to create segregated cycle lanes in the future should development increase usage levels although this may require land acquisition.
7.7	A6 - Scotforth Road	Sir John Fisher Drive to South of Green Lane	173	Shared use path	Upgrade footway to shared use path in areas where this doesn't currently exist. Provide more direct and better crossing facilities at the Hazelrigg Lane junction. Potential to create segregated cycle lanes in the future should development increase usage levels although this may require land acquisition.
7.8	A6 - Preston Lancaster Road	Green Lane to Tanhouse	1654	Shared use path	Widen existing footway through narrowing of carriageway lanes or using verge space. Upgrade existing signalised crossing at Hazelrigg Lane to toucan or parallel crossing to better cater for cyclists.
7.9	A6 - Main Road	Tanhouse to Salford Road/ Stoney Lane	305	Segregated cycle track	Due to limited space, only a one-way segregated cycle way would be provided on this section through reallocation of space from the carriageway. Alternative route for cyclists travelling in the counter direction via Chapel Street. Provide improved junction for cyclists segregating them from traffic flows.
			Alternative Alignment		
7.10	Wakefield Road	Scotforth Road to Barton Road	130	Mixed traffic	Quietway through the residential area as an alternative to continuing along the A6, avoiding width restrictions south of Hala Road. Possible improvements to include a modal filter with cycle bypasses to reduce vehicular flows, tightening of Barton Road junction radii, and other traffic calming measures. New crossing to be provided on Barton Road, with consideration given to a new crossing across the A6 depending on final layout of cycle tracks.
29.5	Burrow Beck Off-Road Path	Barton Road to Bentham Road	1231	Segregated cycle track	Alternative alignment sharing infrastructure with route 29 (Lancaster to Scotforth).
29.6	Burrow Beck Existing	Bentham Road to Collingham Park	428	Shared use path	Alternative alignment sharing infrastructure with route 29 (Lancaster to Scotforth).
7.11	Collingham Park	Burrow Beck to Scotforth Road	104	Shared use path	New shared use path to connect the current shared use path, alongside Burrow Beck, to the proposed shared use path alongside the A6.

Cycle Corridor 29: Lancaster to Scotforth

The primary cycle corridor connects the south of Lancaster City Centre with Scotforth via the Bowerham Road, quiet residential streets and off-road facilities, and extends for 3.1km. The corridor connects with employment hubs such as Royal Lancaster Infirmary and retailers on Bowerham Road, as well as the University of Cumbria in Lancaster and Bowerham Primary School. The core alignment differs slightly from Figure 53 to allow better connections to Wakefield Drive and the Cycle Corridor 7 alternative alignment. This reduces the length of the intervention needed to connect both Cycle Corridors 7 and 29, should the alternative alignment for Cycle Corridor 7 be implemented. An alternative alignment to the main corridor is proposed via Graves Park due to geometric constraints at Bowerham Road (narrow carriageway for two-way traffic and segregated cycle facilities) in addition to a quieter alternative alignment through residential streets near the Bowerham Road retail area.

Table 14. Indicative proposed typology and high-level interventions along cycle corridor 29

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
29.1	Bowerham Road	The Pointer gyratory to Dale Street	167	Segregated cycle track	Two-way cycle track provided through reallocation of space from the carriageway and footway. May require the loss of some informal on-street parking. Additional measures include providing raised side street treatments.
29.2	Bowerham Road	Dale Street to Avondale Road	511	Segregated cycle track	Two-way cycle track provided through reallocation of space from the carriageway, informal and formal parking areas, and under utilised footway areas. Provide crossing facilities at Bowerham School and at Avondale Road. Additional measures include providing side street treatments.
29.3	Bowerham Road	Avondale Road to Wellington Road	225	Segregated cycle track	Two-way cycle track provided through reallocation of space from the carriageway and parking areas. Provide crossing at Wellington Road. Consider signalising Coulston Road junction to provide better crossing facilities for pedestrians and cyclists. Additional measures include providing raised side street treatments.
29.4	Wellington Road/York Road/Warwick Avenue	Bowerham Road to Barton Road	575	Mixed traffic	Quietway through residential streets. Potential to provide modal filter, narrowed junction radii, or one-way traffic restrictions on Wellington Road to reduce potential rat running. Consideration should be given to other Safer Green Healthier Streets measure such as raised tables at junctions and traffic calming measures. Consider a crossing on Palatine Avenue. Provide parallel or signalised crossing at Barton Road.
29.5	Burrow Beck Off-Road Path	Barton Road to Bentham Road	1231	Segregated cycle track	Provide an off road two-way cycle track or shared use path along Burrow Beck. Provide priority crossings on Hala Square and Bentham Road.
29.6	Burrow Beck Existing	Bentham Road to Collingham Park	428	Shared use path	Consider widening the existing shared use path where possible.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
				Alternative Alignment	
29.7	Avondale Road/ Newsham Road	Bowerham Road to Wellington Road	326	Mixed traffic	Potential alternative route to Bowerham Road. This could potentially form an earlier and lower cost phase of the route and avoids removing on-street parking. Interventions include traffic calming existing roads, improving surfaces, and improving lighting through alleyways. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
29.8	Greaves Park	A6 to Belle Vue Drive	332	Segregated cycle track	Alternative route to Bowerham Road and the A6. A new two-way cycle track or shared use path through Greaves Park. This would require a new connection between Greaves Park and Belle Vue Drive.
29.9	Belle Vue Drive / Newsham Road	Belle Vue Drive / Newsham Road	343	Mixed traffic	Alternative route to Bowerham Road and the A6. Resurface Newsham Road and provide traffic calming measures including reduction in the carriageway width. Explore the potential for a modal filter on Bowerham Road to reduce through traffic and speeds. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
29.10	Off-Road Path (Private Land)	Newsham Road to Palatine Avenue	241	Shared use path	Create a new lit shared use path between Newsham Road and Palatine Avenue via private land. This would allow for a more direct alternative route to Bowerham Road and the A6 than via York Road. Due to gradient this may require construction of ramp near Palatine Avenue.
29.11	Durham Avenue	Palatine Avenue to Barton Road	303	Mixed traffic	Provide improved crossing opportunities and traffic calming measures on Palatine Road to connect alleyway to Durham Avenue. Provide raised tables at junctions along Durham Avenue and other measures to control speeds such as narrowing the carriageway. Improve crossing opportunities at Barton Road and connect with the proposed Burrow Beck Off-Road Path (29.5). Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.

Should cycle corridors 7 and/or 29 be found infeasible at later stages, interventions on strategic route 9 on Ashton Road could be developed to provide improved cycle facilities south of Lancaster given that it has lower traffic volumes. Corridor 7 has the potential to form a key cycle route due to it's directness between Lancaster University and the city centre, and relatively gentle gradients compared to corridor 29. Consequently, corridor 7 will likely be prioritised for development over the northern sections of corridor 29, including southern sections of corridor 29 (29.5 and 29.6) which complement corridor 7. Primary route 30 could also be further improved and developed as an alternative route as it provides connections to Bailrigg, the Lancaster University Campus and Galgate.

5.3.1.9. Cycle Corridor 11: Lune Valley Greenway (Lancaster to Kirkby Lonsdale)

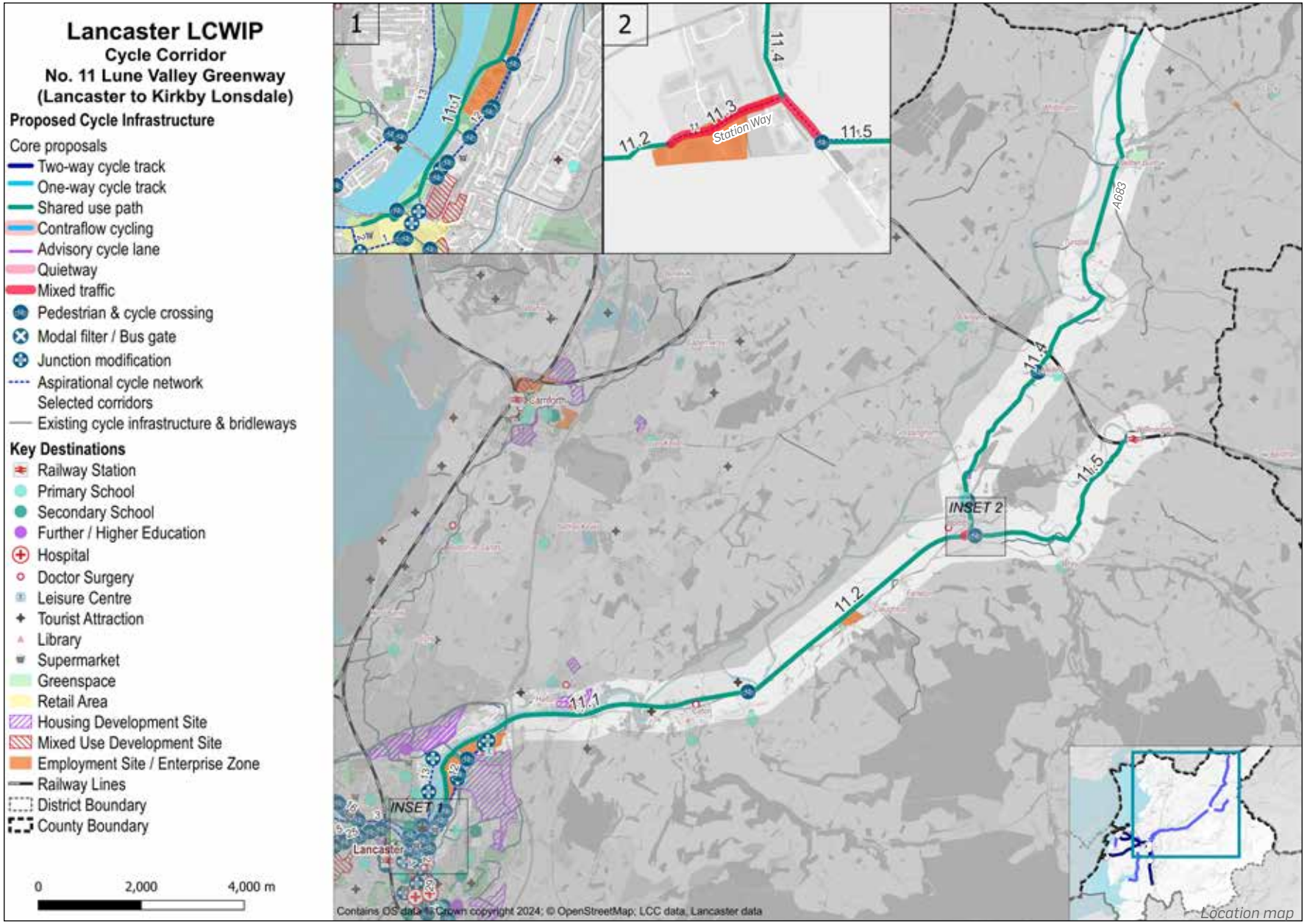


Figure 60. Indicative proposed cycle infrastructure, Cycle Corridor 11. Lune Valley Greenway (Lancaster to Kirkby Lonsdale)

Cycle Corridor 11: Lune Valley Greenway (Lancaster to Kirkby Lonsdale)

The primary cycle corridor connects Lancaster and Kirkby Lonsdale via Caton, Hornby and Nether Burrow, with a spur to Wennington, and it extends for 30km. It should be noted that Sustrans are currently undertaking a study to extend the Lune Valley Greenway (NCN 69) from Bull Beck to Kirkby Lonsdale and Ingleton. The route alignment presented in this LCWIP may not be the final alignment of this route and Sustrans are currently undertaking Route Option Assessments to choose their preferred route alignment. The interventions presented in this LCWIP are only high-level suggestions specific to the known alignment at the time of production of this LCWIP.

Table 15. Indicative proposed typology and high-level interventions along cycle corridor 11

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
11.1	National Cycle Network Route 69 / Lune Valley Greenway	Lancaster to Bull Beck	8298	Shared use path	Undertake a review of the existing cycle route and ensure surfacing, wayfinding and lighting are sufficient. Consider widening the path where possible.
11.2	Lune Valley Greenway	Bull Beck to Station Way (Hornby)	5107	Shared use path	Provide a shared use path. Additional measures include providing wayfinding signs.
11.3	Station Way/ Station Road (Hornby)	Station Way / Station Road (Hornby)	251	Mixed traffic	Mixed traffic provision proposed due to geometric constraints. Additional measures include appropriate wayfinding signs and traffic calming measures (e.g., speed limit reduction) to ensure LTN1/20 compliance. Shared use path could be considered.
11.4	Lune Valley Greenway, parallel to the A683	Station Road (Hornby) to A683 Burrow Road	11287	Shared use path	Provide an off-road shared use path parallel to the road. Additional measures include providing wayfinding signs.
11.5	B6480 / Spout Lane / Back Lane	Station Road (Hornby) to Wennington railway station / Old Moor Road	4690	Shared use path	Provide a shared use path. Additional measures include providing wayfinding signs.

5.3.1.10. Cycle Corridor 12: Caton Road

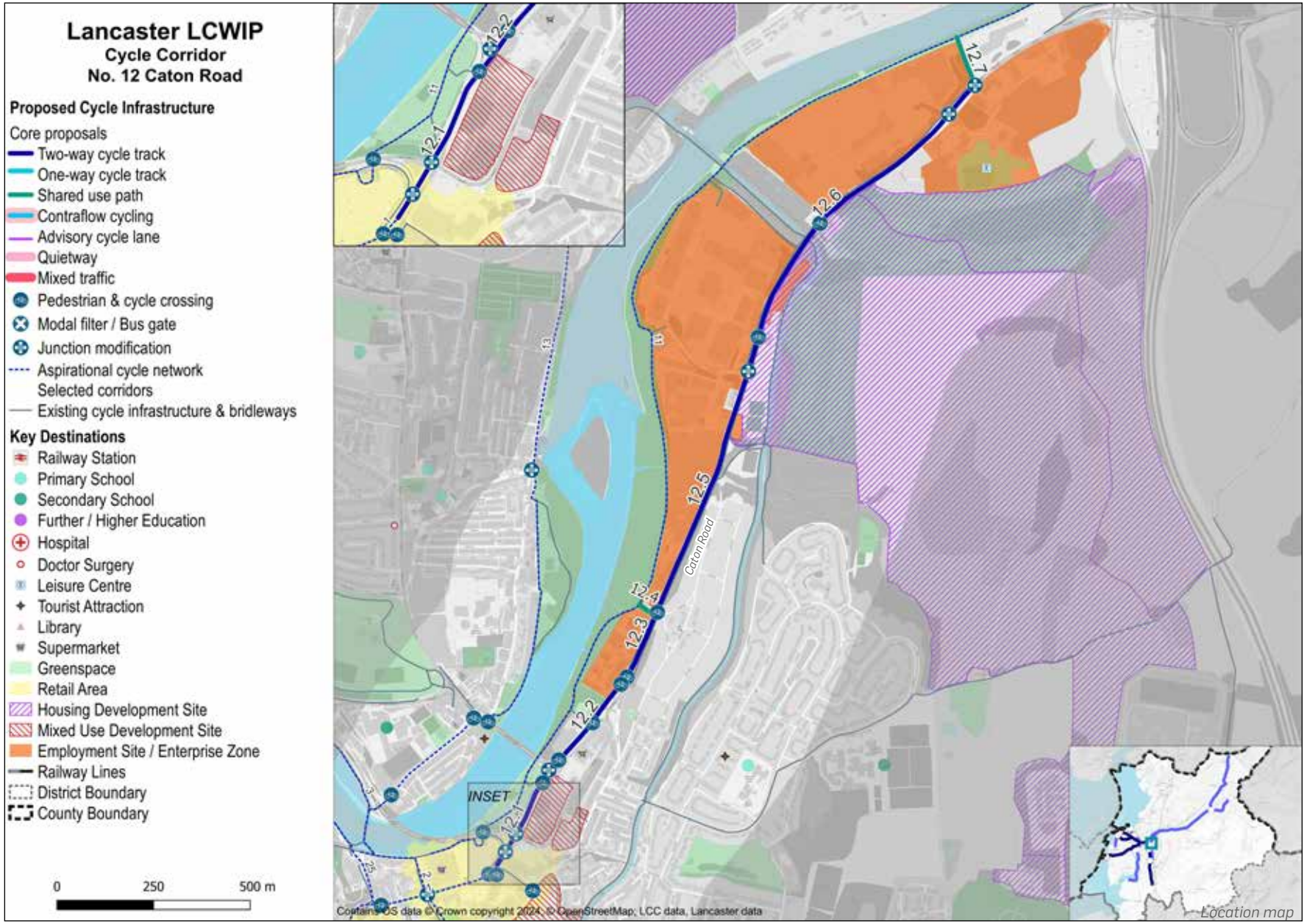


Figure 61. Indicative proposed cycle infrastructure, Cycle Corridor 12: Caton Road

Cycle Corridor 12: Caton Road

The primary cycle corridor links Lancaster City Centre to the retail and industrial area on Caton Road and provides an alternative to using the cycle route (NCN 69) along the River Lune, extending for 2.6km. The corridor serves an industrial estate and the strategic development site to the north east of Lancaster.

Table 16. Indicative proposed typology and high-level interventions along cycle corridor 12

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
12.1	Parliament Street	Sainsbury's layby Bus stop to Owen Road	244	Segregated cycle track	Creation of a two-way cycle track on the northern side of the carriageway through reallocation of road space. Junction modifications should be considered to provide safe crossing points and connections to nearby amenities.
12.2	Caton Road	Owen Road to Ladies Walk	396	Segregated cycle track	Creation of two-way cycle track on the northern side of the carriageway through reallocation of road space. Consider providing an additional crossing at the Owen Road and Caton Road /Bulk Road junction. Further consider modifying junctions to provide safe crossing points and upgrade the existing crossing on Caton Road.
12.3	Caton Road	Ladies Walk to Langdale Place	142	Segregated cycle track	Creation of two-way cycle track on the left side of the carriageway through reallocation of road space. Provide a crossing at the Langdale Place junction. Additional measures to consider include side road/ driveway treatments.
12.4	Langdale Place to Lune Valley Greenway		51	Shared use path	Creation of off road cycle track to link to Lune Valley Greenway (route 11) through space reallocated from the 'Onyerbike cycles' car park. This would require third party engagement.
12.5	Caton Road	Langdale Place to Lansil Way	669	Segregated cycle track	Creation of two-way cycle track on the northern side of the carriageway through reallocation of road space. Consider modifying the Lansil Way junction. Additional measures to consider include side road/ driveway treatments.
12.6	Caton Road	Lansil Way to Business Park bus stop	972	Segregated cycle track	Creation of two-way cycle track on the left side of the carriageway through reallocation of road space. Upgrade the existing crossing on Caton Road. Consider modifying the Mannin Way junction and the junction near to the Business Park Bus stop linking to Lune Greenway. Consider relocating upstream signalised crossing southward to junction. Additional measures to consider side road/driveway treatments and possible relocation of the Business Park Bus stop.
12.7	Business Park bus stop to Lune Valley Greenway		133	Shared use path	Creation of a shared-use path to link to Lune Valley Greenway (Route 11) through reallocation of road space. Additional measures include considering making the route more direct through removal of the existing fence. These proposals would require third party engagement.

5.3.1.11. Cycle Corridor 13: North Lancaster

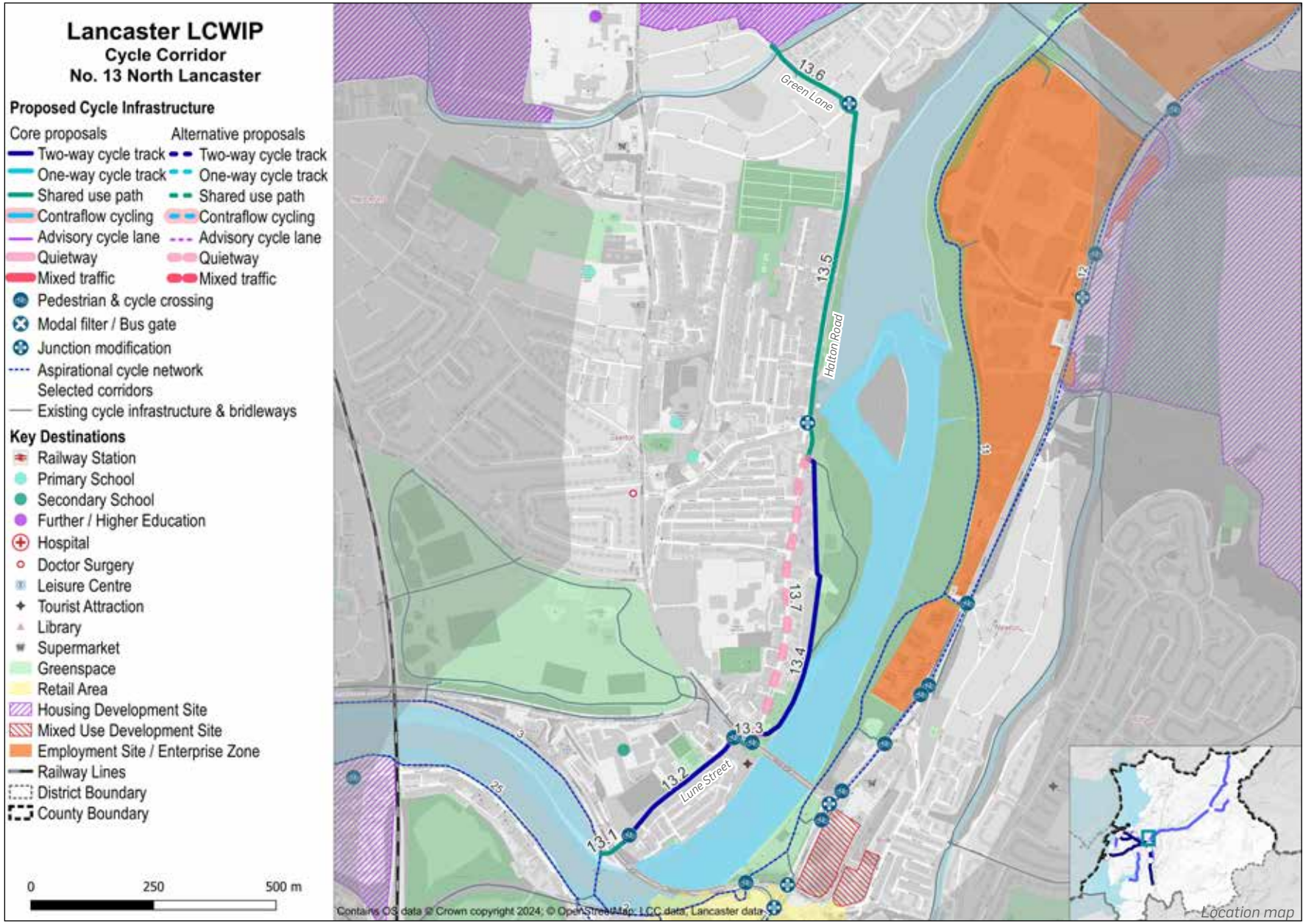


Figure 62. Indicative proposed cycle infrastructure, Cycle Corridor 13: North Lancaster

Cycle Corridor 13: North Lancaster

The primary corridor, approximately 2km, connects Lancaster City Centre with North Lancaster via Skerton. The corridor is in close proximity to Our Lady's Catholic College and St Joseph's Catholic Primary School.

Table 17. Indicative proposed typology and high-level interventions along cycle corridor 13

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
13.1	Millenium Bridge to Lune Street		58	Shared use path	Undertake a review of the existing cycle route and ensure surfacing, wayfinding and lighting are to standard. Consider widening the path where possible.
13.2	Lune Street		308	Segregated cycle track	Provide a two-way cycle track on the western side of the carriageway through reallocation of road space. Provide new crossing facilities around Lune Street/Sidings Close to provide for connections across Lune Street. Additional measures include side road/driveway treatments.
13.3	Owen Road	Lune Street to Existing Off Road Path	70	Shared use path	Provide a suitable crossing facility over Owen Road linking to the existing off road shared use path. Further considerations include possible changes to the existing bus layby to accommodate a crossing facility.
13.4	Mainway via off road path to The Ramparts		618	Shared use path	Widen the existing shared use path where possible.
13.5	Main Street and Halton Road	The Ramparts via Halton road to Green Lane	745	Shared use path	Shared use path proposed due to geometric constraints. Consider narrowing lane widths to encourage slower traffic speeds. Consider other traffic calming measures, such as speed limit reduction. Modify the Halton Road/Green Lane junction to provide cycle facilities. Opportunity for segregated cycle facilities to be investigated further in next stages of scheme development.
13.6	Green Lane	Halton road to Lancaster Canal	201	Shared use path	Shared use path proposed due to geometric constraints. Consider narrowing lane widths to encourage slower traffic speeds. Consider other traffic calming measures, such as speed limit reduction. Consider formalising on-street parking through reallocating space from one traffic lane. Opportunity for segregated cycle facilities to be investigated further in next stages of scheme development.
				Alternative Alignment	
13.7	Mainway / Main Street	Owen Road to The Ramparts	582	Mixed traffic	Alternatively, Mainway and Main Street is proposed to be a quietway to provide a more direct route.

5.3.1.12. Cycle Corridor 16: Morecambe Road to Broadway

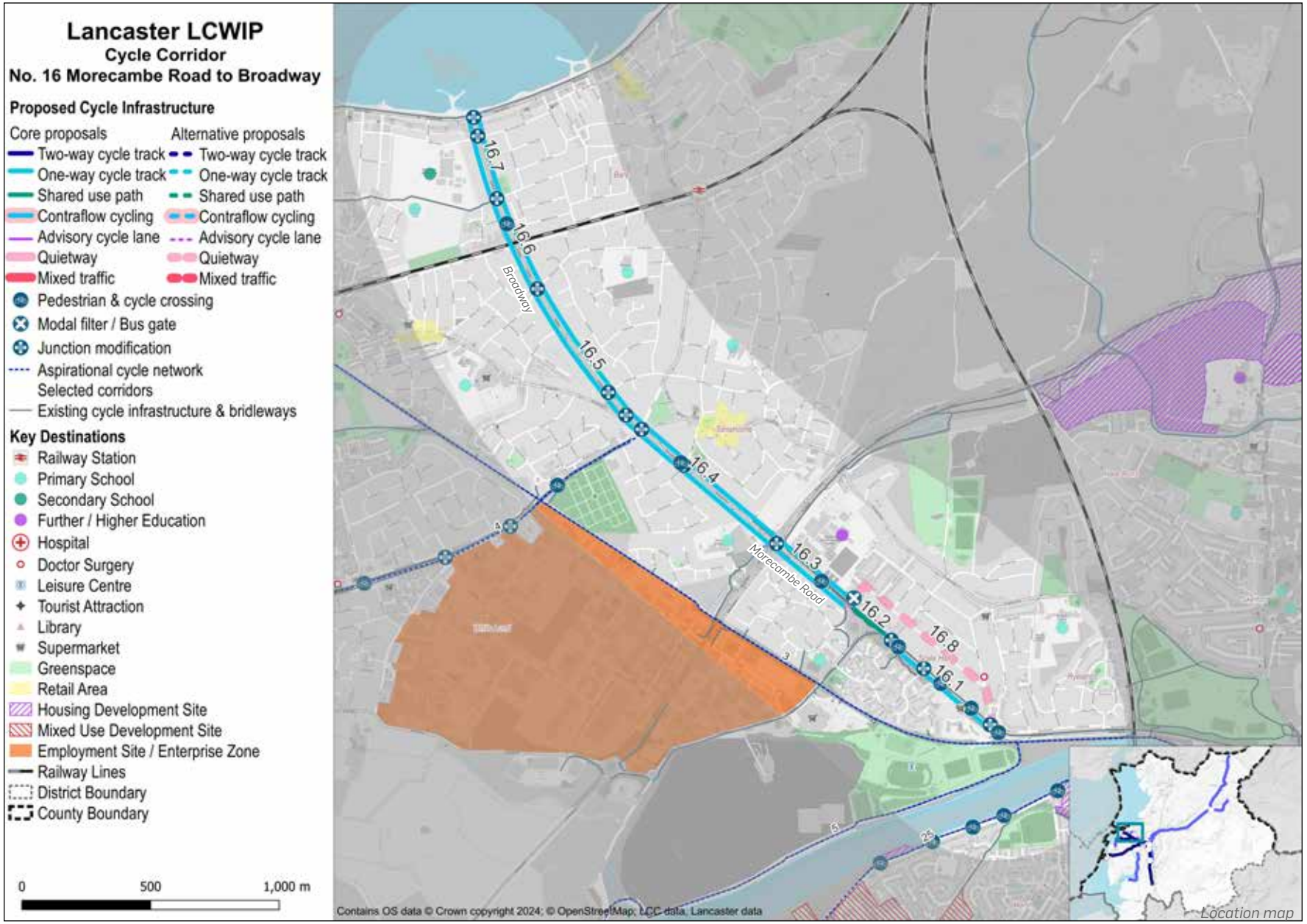


Figure 63. Indicative proposed cycle infrastructure, Cycle Corridor 16: Morecambe Road to Broadway

Cycle Corridor 16: Morecambe Road to Broadway

The primary cycle corridor links Lancaster and Morecambe via Morecambe Road / Broadway (A589) and extends for 3.2km. The corridor serves Lancaster and Morecambe College, Morecambe Road School, Morecambe High School and St Mary's Catholic Primary School, as well as being in close proximity to Great Wood Primary School, Torrisholme Community Primary School and Grosvenor Park Primary School. An alternative alignment is proposed via Cleveleys Avenue to provide a quieter option due to the high traffic flows on Morecambe Road.

Table 18. Indicative proposed typology and high-level interventions along cycle corridor 16

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
16.1	Morecambe Road	Salt Ayre Lane to Penrhyn Road	549	Segregated cycle track	A segregated cycle track can be provided on the south side of the road. Cyclists travelling towards Lancaster can use the existing shared use path provided on the northern side of the road. Additional measures include upgrading existing crossing points, removing footway parking and reducing junction geometries.
16.2	Morecambe Road	Penrhyn Road to Burton Avenue	231	Shared-use path	Improve the existing shared-use path. Improved transitions between shared use path and on-carriageway provision would need to be created. Junction modifications could be considered at Shrimp Roundabout to provide fully segregated cycle facilities.
16.3	Morecambe Road	Burton Avenue to The Way	466	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway and consider junction modifications with the Bay Gateway.
16.4	Morecambe Road	The Way to Westgate	573	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway and the verge. Potential constraints include trees within the verge. Additional measures include reducing junction geometries.
16.5	Broadway	Westgate to Beaufort Road	683	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway and the verge. Exact position of cycle track may require removal of some street furniture along the verge. Additional measures include reducing junction geometries, driveway treatments, removing on-street parking and providing additional crossing points e.g. at the junction with Beaufort Road and Burlington Avenue.
16.6	Broadway	Beaufort Avenue to Stuart Avenue	385	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway. Potential constraints include trees within the verge.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
16.7	Broadway	Stuart Avenue to Marine Road	328	Segregated cycle track	One-way cycle tracks on both sides of the road by reallocating space from carriageway and the verge. Exact position of cycle track may require removal of some street furniture along the verge. Additional measures include reducing junction geometries, driveway treatments, removing on-street parking, and providing addition crossing points e.g. the junction with Stuart Avenue and St Christopher's Way.
				Alternative Alignment	
16.8	West Drive / Cleveleys Avenue	Scale Hall Lane to Burton Avenue	872	Mixed traffic	Alternatively, cyclists traveling towards Lancaster could use Cleveleys Avenue as an on-carriageway quiet route. This would require confirmation of traffic levels. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.

5.3.1.13. Cycle Corridor 21: Morecambe to Heysham via Westminster Road

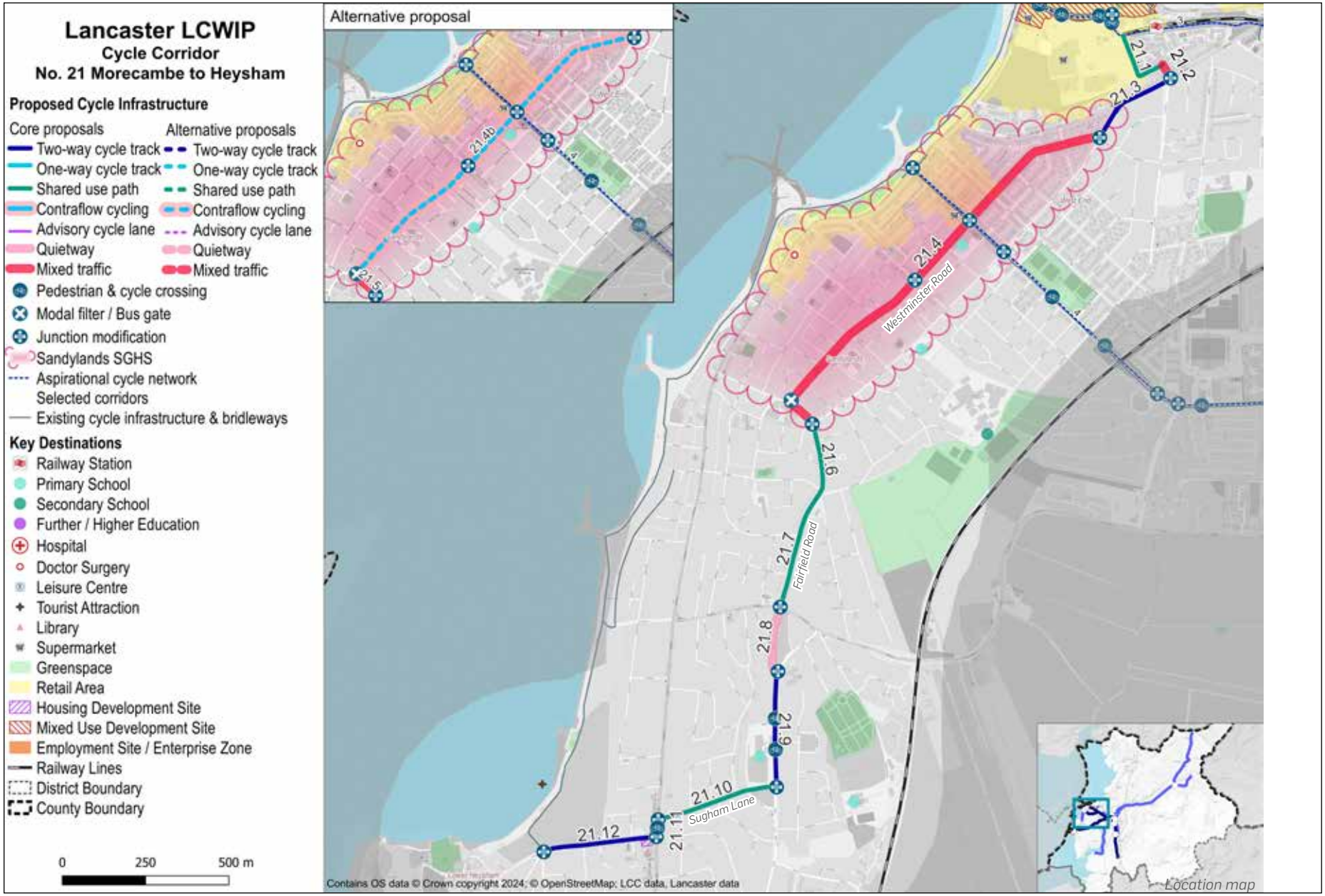


Figure 64. Indicative proposed cycle infrastructure, Cycle Corridor 21: Morecambe to Heysham via Westminster Road

Cycle Corridor 21: Morecambe to Heysham via Westminster Road

The primary cycle corridor links Morecambe and Heysham via Westminster Road, Fairfield Road and Kingsway, and extends for 3.8km. The corridor also serves the proposed Sandylands Safer, Greener Healthier Streets area and schools such as West End Primary School and Mossgate Primary School. An alternative provision is proposed on Westminster Road which would restrict traffic and cyclists to one direction, with a contraflow cycle track.

Table 19. Indicative proposed typology and high-level interventions along cycle corridor 21

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
21.1	Hilmore Road to Kilnbank Avenue		210	Shared use path	Undertake a review of the existing cycle route and ensure surfacing, wayfinding and lighting are sufficient. Consider widening the path where possible.
21.2	Kilnbank Avenue	Kilnbank Avenue to West End Road	46	Mixed traffic	Mixed traffic provision proposed due to geometric constraints. This would require traffic calming measures or speed limit reduction to be LTN 1/20 compliant.
21.3	West End Road/Balmoral Road	Kilnbank Avenue to Westminster Avenue	289	Segregated cycle track	Provide two-way cycle track through reallocation of space from carriageway and a mix of on-street residential parking, and short stay on-street parking. Modify the mini-roundabout to provide cycle crossing facilities.
21.4	Westminster Road	Balmoral Road to Fairfield Road	1261	Mixed traffic	Mixed traffic provision proposed due to geometric constraints. Consider narrowing lane widths to encourage slower traffic speeds along with other traffic calming measures. Additional measures include side road/driveway treatments. Consider the inclusion of bus gates to divert through traffic. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
21.5	Fairfield Road	Westminster Avenue to Balmoral Road	96	Mixed traffic	Mixed traffic provision proposed due to geometric constraints. Consider narrowing lane widths to encourage slower traffic speeds along with other traffic calming measures. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
21.6	Fairfield Road	Balmoral Road to Woodlands Drive	217	Shared use path	Shared use path on both sides could be proposed, through reallocation of space from carriageway to widen the existing footpaths. Additional measures include side road/driveway treatments.

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
21.7	Fairfield Road	Woodlands Drive to Oxcliffe Road	362	Shared use path	Shared use path on both sides could be proposed, through reallocation of space from carriageway to widen existing footpaths. Additional measures to consider side road/driveway treatments. Junction improvement at Oxcliffe Rd to provide safe crossing point.
21.8	Bleasdale Grove	Oxcliffe Road to Kingsway	206	Mixed traffic	Quietway through the residential area. Ensure access points are compliant with LTN 1/20 and inclusive design guidance. Additional measures include providing sufficient signage for wayfinding. Proposal potentially not LTN 1/20 compliant dependent on traffic flows. Proposal to be investigated further in next stages of scheme development.
21.9	Kingsway	Bleasdale Grove to Sugham Lane	349	Segregated cycle track	Provide two-way cycle track through reallocation of space from carriageway, verge and on-street parking. Providing cycle crossings at the mini-roundabout.
21.10	Sugham Lane	Kingsway to Heysham Road	371	Shared use path	Shared use path on both sides could be proposed, through reallocation of space from carriageway to widen existing footpaths. Additional measures include side road/driveway treatments. Modify junctions to provide safe cycle crossings.
21.11	Heysham Road	Sugham Lane to Knowlys Road	52	Shared use path	Creation of adequate crossing facilities to link shared use path on Sugham Lane to segregated cycle track on Knowlys Road through reallocating space from carriageway and considering junction modifications. Further considerations include possible relocation of bus stop, existing signals and crossing.
21.12	Knowlys Road	Heysham Road to Eardley Road	342	Segregated cycle track	Provide two-way cycle track on the north side of the carriageway through reallocation of space from carriageway and on-street parking. Modify the Knowlys Rd/Woborrow Road junction to provide a safe connection to the shared use path leading to coastal path. Additional measures include side road/ driveway treatments.
				Alternative Intervention	
21.4b	Westminster Road	Balmoral Road to Fairfield Road	1261	Segregated cycle track (contraflow)	Alternatively, consider traffic restrictions to make Westminster road one-way for all vehicles. Cyclists travelling in the direction of traffic would use the carriageway and cyclists in the opposite direction could use a segregated contraflow cycle lane provided through reallocation of space from one traffic lane. Additional measures include traffic calming and improved signage for the existing 20mph speed limit. Also consider side road/driveway treatments. This would require relocation of bus routes to Balmoral Road. Further additional measures include possible modal filters to divert through traffic.

5.3.1.14. Cycle Corridor 25: West Lancaster

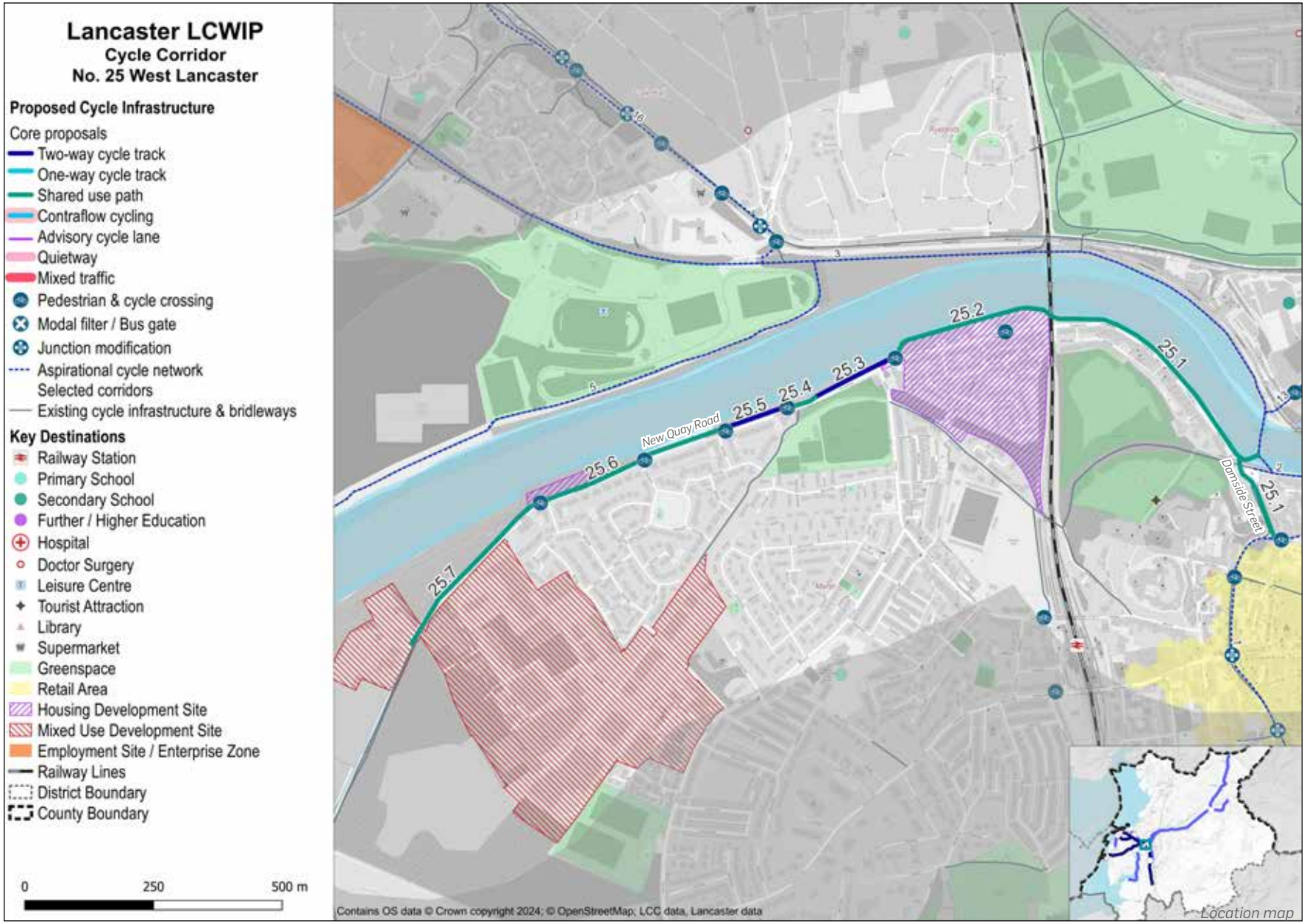


Figure 65. Indicative proposed cycle infrastructure, Cycle Corridor 25: West Lancaster

Cycle Corridor 25: West Lancaster

The primary cycle corridor follows NCN Route 6 connecting the Millennium Bridge to the start of the greenway on New Quay Road, extending approximately 2.2km. In Figure 53, this route continues south to Glasson Dock, however for the high-level proposals focus on improvements to the end of the carriageway on New Quay Road to the west of Thetis Road. The corridor serves recent residential development on New Quay Road as well as the Lune Industrial Estate.

Table 20. Indicative proposed typology and high-level interventions along cycle corridor 25

Link ID	Road name	From - To	Length (m)	Indicative Typology	High-level Initial Proposal Summary
25.1	Damside Street / St George's Quay	Cable Street and Millenium Bridge to Railway Overbridge	701	Shared use path	Undertake a review of the existing cycle route and ensure width, surfacing and lighting is sufficient. Consider providing cycle provision on Damside Street to connect to the A6 gyratory.
25.2	St George's Quay	Railway Overbridge to Lune Road	344	Shared use path	Undertake a review of the existing cycle route and ensure surfacing and lighting is sufficient. Consider widening the path to reduce bends. Two-way cycle track could be considered through reallocating space from the grass verge west of the car park.
25.3	New Quay Road		167	Segregated cycle track	Provide two-way cycle track on the northern side of the road through reallocating space from the grass verge and consider removing on-street parking.
25.4	New Quay Road		59	Shared use path	Shared use path due to geometric constraints. Review the existing shared use path to ensure surfacing and width is sufficient. Continuation of the two-way cycle track could be considered through adjusting the highway alignment.
25.5	New Quay Road		140	Segregated cycle track	Provide two-way cycle track on the northern side of the road through reallocating space from the grass verge and realigning the carriageway.
25.6	New Quay Road		478	Shared use path	Shared use path due to geometric constraints. Review the existing shared use path to ensure surfacing and width is sufficient. Continuation of the two-way cycle track could be considered through adjusting the highway alignment.
25.7	New Quay Road to NCN 700 Bridleway		273	Shared use path	Provide shared use path on the northern side of the road through reallocation of space from the verge and provide a connection to the NCN 700 Bridleway.

5.4 Examples of Cycle Infrastructure

The following pages provide examples of types of cycle facilities that could be considered in the Lancaster LCWIP proposals, as referenced in Section 5.3.

Segregated Cycle Lane / Cycle Track
Provides raised, physical separation between people cycling and motor vehicles, providing a more comfortable, more attractive, and safer facility for people cycling of all ages and abilities. A segregated cycle track can be one-way or two-way and can be used to accommodate contraflow cycling on one-way streets. Side road treatments are required to provide continuity of the facility and priority at junctions. (*Source: Lancashire County Council)*

Lightly Segregated Cycle Lane
Provides some physical barrier from motor vehicles to improve comfort for people cycling. May be applicable where space constraints limit segregation options. Types of segregation could include kerbing, bollards (as shown above), planters, or armadillo humps / orcas. Side road treatments are required to provide continuity of the facility and priority at junctions.

Quiet Mixed Traffic Street / Quietway
Where traffic flows are light and speeds are low, people cycling are likely to be able to cycle on-carriageway without segregation. Traffic calming and/or traffic management measures may be required to reduce traffic speeds and/or flows to provide appropriate conditions for an inclusive and attractive facility.

Shared Use Path
Provides an off-carriageway facility shared with people walking. While segregated from motor vehicles, conflicts between people walking, wheeling and cycling may arise, depending on the relative flows of each. If space allows, light segregation may be considered to encourage separation of people walking and cycling (e.g., raised trapezoidal strip). Side road treatments are required to provide continuity of the facility and priority at junctions.

'Dutch-Style' Cycle Street Facilities
Seeks to prioritise people cycling over motor vehicles. Elements may include advisory cycle lanes to delineate space for people cycling, 20mph speed limit, and removal of the centre line to narrow the apparent space for motorists and prioritise the outside of the carriageway for people cycling. The design elements should make it understood that the streets are principally for cycling.

Pedestrian/Cycle Priority Street
Reduces vehicle dominance of the street and prioritises people walking, wheeling and cycling. Elements may include restricted motor vehicle access, materials/ markings to delineate space for different users, low traffic speeds, or features of a shared space environment.

Lower Traffic Speeds
Improves safety for all road users and fosters a more comfortable environment for walking, wheeling and cycling. Should be supported by traffic calming measures, as needed, to make the speed limit self-enforcing. An area-wide policy could be considered rather than on a street by street basis. (*Source: Lancashire County Council)*

Greenway
Path away from the highway for active travel users. Typically along an undeveloped strip of land, such as a canal tow path, disused railway, or linear park.

Signal-Controlled Cycle Crossing / CYCLOPs Junction
Provides a controlled crossing, segregating cyclists from pedestrians as well as motor vehicles. A 'cycle optimised protected signals' ('CYCLOPS') junction separates people walking, cycling and wheeling from motor vehicles, reducing the risk of conflict between users.(*Source: Lancashire County Council)*

Parallel Crossing
Provides priority for people walking, wheeling, and cycling at a crossing location, minimising the delay for people cycling, improving the directness of the route, maintaining separation from pedestrians, and connecting off-carriageway cycle facilities.

Toucan Crossing
Provides a controlled crossing for people walking, wheeling and cycling, improving user comfort and safety, reducing delay at busy streets where there are limited gaps in traffic, and connecting off-carriageway shared use facilities.

Safer, Greener and Healthier Streets
Residential (primarily) areas with features that increase the comfort, safety and accessibility of walking, wheeling and cycling; create space for community facilities; and reduce the dominance of cars resulting in improved safety, air quality and noise pollution to encourage more walking, cycling and social interactions.

Modal Filter
Supports a safer, more attractive environment for walking, wheeling and cycling by reducing motor vehicle traffic and permitting more direct, convenient access by foot or by cycle. Temporary or permanent highway features that may permit access by certain vehicles (e.g., emergency vehicles, buses, blue badge holders). (*Source: Lancashire County Council)*

Bus Gate
A type of modal filter that allows buses (and /or other vehicles) to move through a road section but prohibits other motor vehicle traffic. It usually permits cycling and operates with ANPR cameras to enforce the access restrictions. Restrictions may be enforced during specific days or times of the day to reduce traffic volumes. (*Source: Lancashire County Council)*

Bus Stop Bypass
Provides a continuous cycle facility around a bus stop, maintaining separation from the carriageway. The island should be wide enough to accommodate the bus stop and people waiting, boarding, and alighting. Pedestrian crossing points should be controlled if cycle traffic speed and flows are high. *Source: Lancashire County Council)*

Cycle Wayfinding
Improves the coherence of the cycle network, making it easier for people to navigate and encouraging more trips to be taken by cycle. Signage can also include indicative journey lengths or times. A consistent system should be applied county-wide. *Source: Lancashire County Council)*

School Street
Implements timed vehicle access restrictions during school arrival/dismissal times to encourage more pupils to walk and cycle to school and improve the safety, comfort, and attractiveness of these modes. School streets may be configured to permit access by certain vehicles.

6. Network Planning for Walking (Stage 4)

6.1 Introduction

This chapter summarises the development of the walking network for the Lancaster LCWIP, which is the key output for this stage of the study.

Development of the walking network included:

- Identifying key trip generators and areas with higher potential for walking activity.
- Identifying and classifying core walking zones (CWZs).
- Identifying the key routes within and providing access to the primary CWZs.
- Identifying potential types of walking infrastructure measures within the primary CWZs, for further consideration in future stages.

6.2 Core Walking Zones Development

6.2.1. Identification of Core Walking Zones

Development of the walking network for the Lancaster LCWIP focused on identification of 'core walking zones' (CWZs), as per the DfT's LCWIP technical guidance, which is illustrated in Figure 66. The CWZs represent nodes of relatively high pedestrian activity within the study area, typically consisting of several walking trip generators that are located close together – such as a high street, schools, or employment areas / business parks. CWZs are intended to enhance the pedestrian environment around, as well as from and to, these key trip generators. The CWZs play a significant role in promoting walking to key trip attractors, supporting the local economy, and achieving the LCWIP objective of encouraging more short utility trips to be made on foot.

6.2.1.1. Centres

The CWZs were defined primarily around the centres designated in the Local Plan (see Section 4.5). These were selected as the key trip generators because they typically indicate nodes or clusters of different attractors (e.g., retail, services, community facilities, etc.) within the study area. The centres (e.g., regional centres, key service centres, etc.) typically encompass the high streets and areas with local commercial activity.

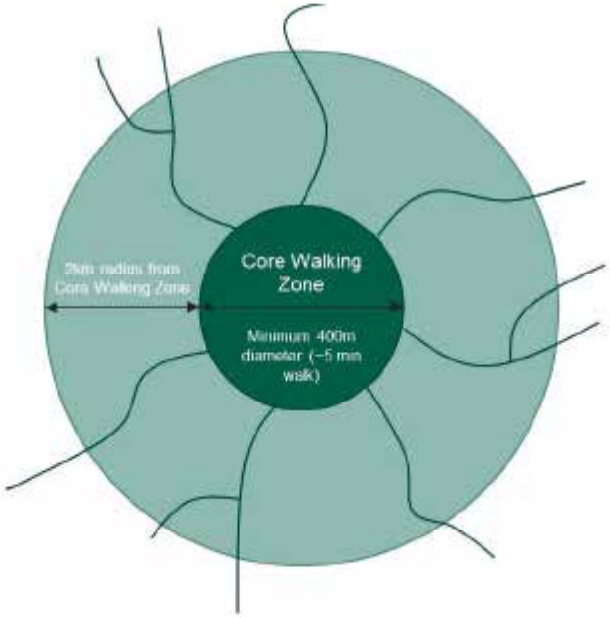


Figure 66. Process of identifying the walking network (DfT, LCWIP - Technical Guidance for Local Authorities)

The CWZs were defined by plotting 400m isochrones around the centres using GIS tools. This was in keeping with DfT guidance that a CWZ should be a minimum diameter of 400m (approximately a 5-minute walk). In instances where isochrones around neighbouring centres of the same typology (e.g., regional centre, urban local centre, etc.) overlap, these were merged to create one CWZ.

6.2.1.2. Additional Data Review

To verify that the centres captured the key areas for potential walking trips, additional data was also reviewed.

Trip Attractor Clusters

As part of the data gathering process (see Sections 4.4 and 4.5), key trip attractors were identified and mapped, including:

- City, town and local centres
- Educational facilities (primary schools, secondary schools and higher education facilities)
- Hospitals
- Doctor surgeries
- Leisure centres
- Tourist attractions
- Railway stations
- Retail areas
- Employment sites / enterprise zones
- Areas with high resident population and workplace density

The mapping of trip attractors indicated the locations of key clusters across the study area. These could then be categorised based on the relative concentration or number of trip attractors, the classification of the centre in the area (e.g., regional centre, key service centre, etc.), and/or local officer input. These were qualitatively categorised as:

- Strategic cluster - higher concentration of destinations
- Primary cluster - moderate concentration of destinations
- Secondary cluster - lower concentration

The output of this process is shown in Figure 67.

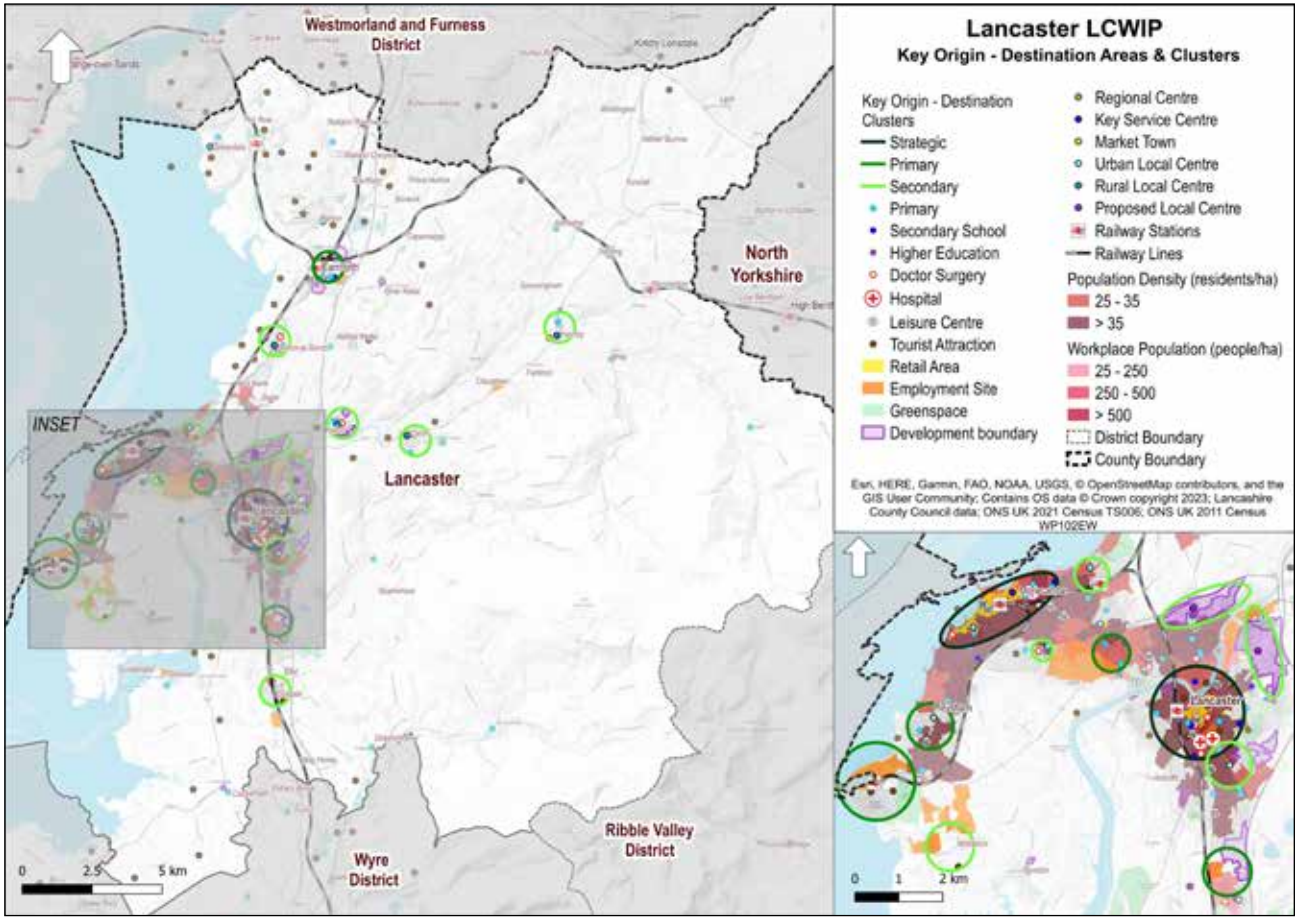


Figure 67. Identification and classification of trip attractor clusters

Data Heatmap

Additionally, a heatmap was created using the data gathering in Stage 2 (see Section 4) to illustrate areas of overlap. The data overlaid included:

- Population density
- Workplace population density
- Zero car/van availability
- Indices of multiple deprivation
- Development sites
- Key destinations/trip attractors (e.g., public transport facilities, schools, retail areas, employment areas, urban centres, leisure centres)
- Collisions involving pedestrians
- Early engagement results
- Public rights of way network
- Strava Metro data for walking trips
- Short commuter trips less than 2km

The output is a qualitative heatmap, shown in Figure 68, where the darker, more intense colour indicates greater potential or opportunity for short utility walking trips.

The heatmap was then overlaid with the clusters of trip attractors and the centres, as shown in Figure 69.

Based on this process, as well as feedback from the internal stakeholder workshop and project steering group, changes were made to the CWZs to capture areas with potential trip generators not formally classified as a centre in the local plans. These changes included:

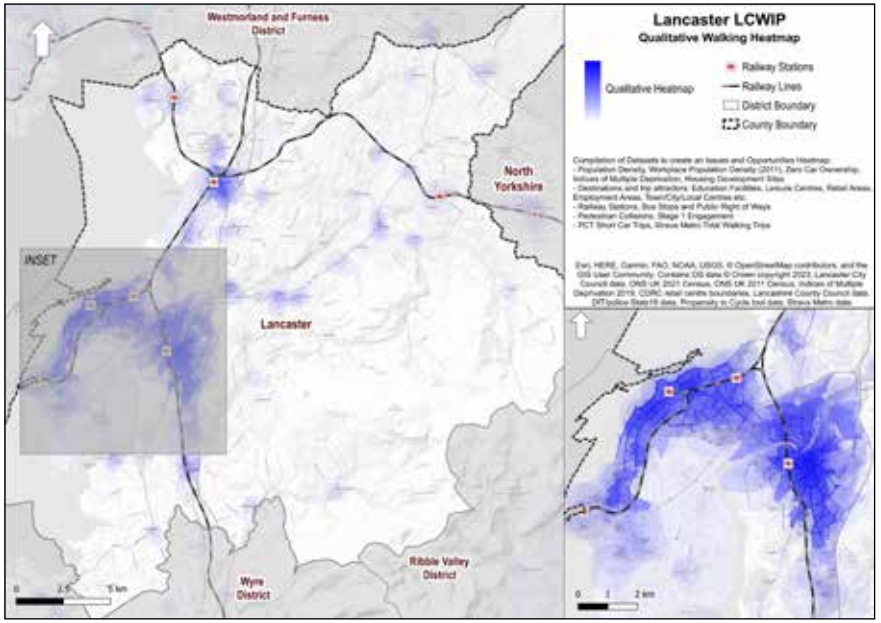
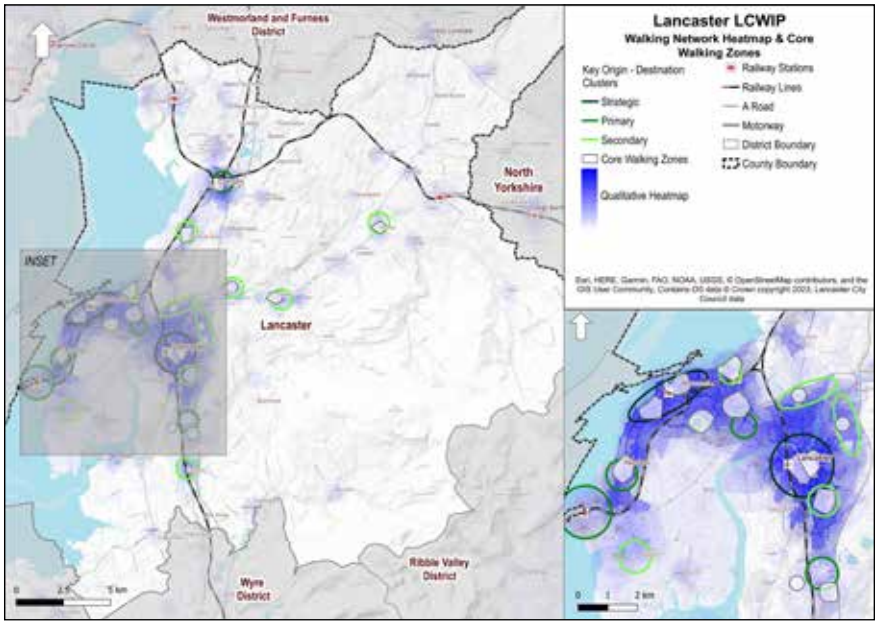


Figure 68. Qualitative 'heatmap' of data related to the potential for short, utility walking trips

Figure 69. Qualitative 'heatmap' overlaid with the trip attractor clusters and centres

- Addition of Lancaster Road CWZ, instead of the Torrisholme CWZ.
- Removal of Local Centre CWZs in Caton, Halton, Hornby & Bailrigg.
- Canal Quarter and Lancaster City Centre CWZs were combined.
- Adjustments to the CWZ extents to match natural boundaries, such as canals and major roads.



6.2.2. CWZ Classification

In total, 11 CWZs were identified.

The CWZs were classified following the designation of the centres, as follows:

» Primary CWZ: regional centre, key service centre, market town and proposed SGHS[1] area
» Secondary CWZ: key urban local centre
» Tertiary CWZ: other urban local centre and rural local centre

The main city and town centres are the primary core walking zones, as they are key hubs of pedestrian activity with clusters of different destinations and serving multiple journey types (e.g., shopping, dining, employment, personal business, leisure/social, etc..). The city/town centres and high street areas also tend to be a more compact urban environment and have a higher population and job density, thus increasing the propensity for utility walking trips. The primary CWZs were advanced for further development as part of the LCWIP, while the secondary and tertiary remain as part of the broader walking network, which is shown in Figure 70 and listed in Table 21 below.

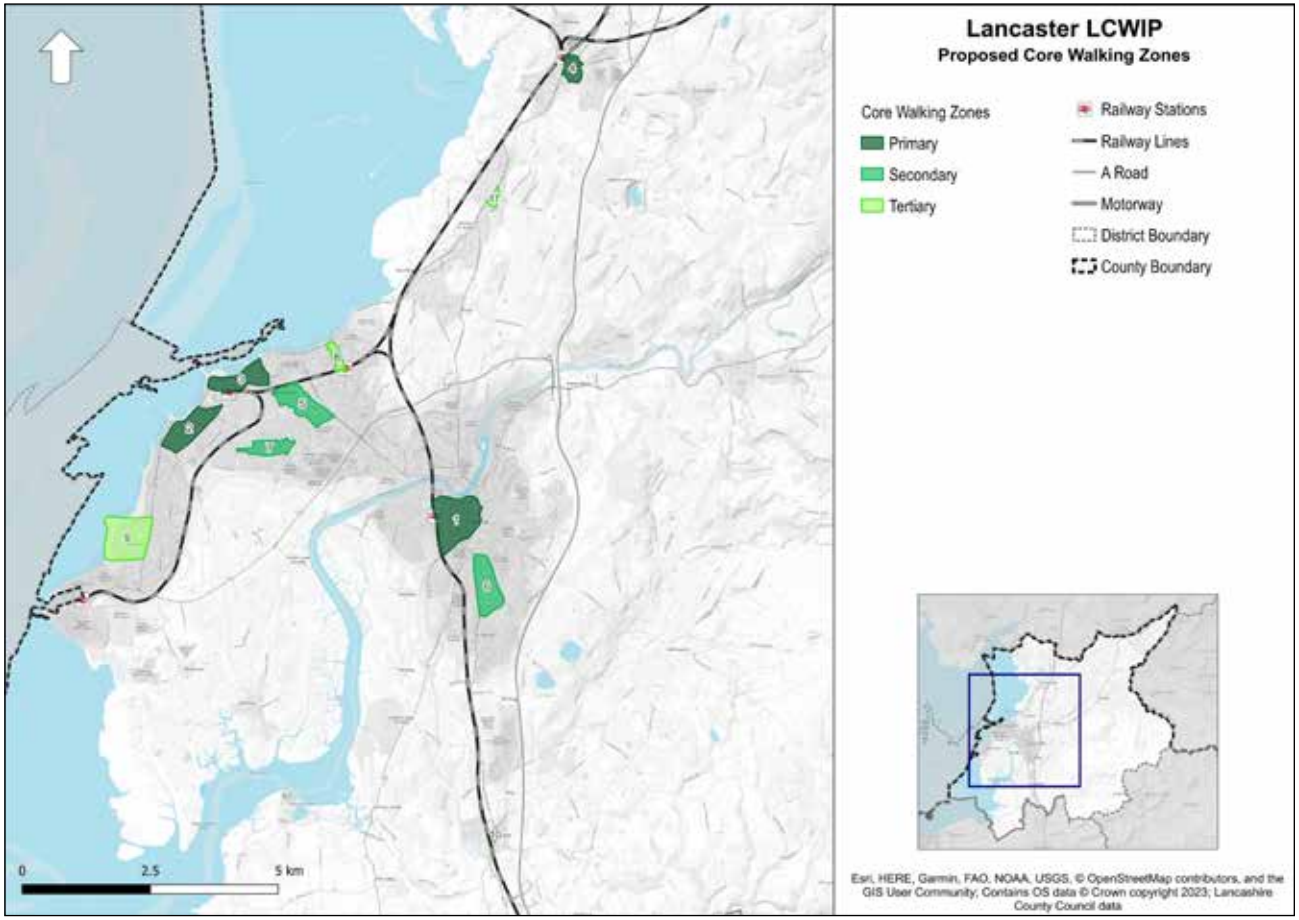


Figure 70. Network of potential CWZs in the Lancaster District

Table 21. Summary of Core Walking Zones

Primary	
ID	Core Walking Zone
1	Lancaster City Centre
2	Sandylands SGHS
3	Morecambe
4	Carnforth

Secondary	
ID	Core Walking Zone
5	Lancaster Road
6	Bowerham
7	Westgate

Tertiary	
ID	Core Walking Zone
8	Bare
9	Heysham
10	Galgate
11	Bolton-le-Sands

1 SGHS = Safer, Greener and Healthier Streets

6.3 Primary Core Walking Zones and Potential Improvements

6.3.1. Introduction

6.3.1.1. Identification of Walking Routes

For each of the primary CWZs, key walking routes were identified based on the layout of the street network and the location of trip attractors. The walking routes aimed to capture the main 'funnel' routes which provide access to the CWZs. 'Funnels' may be created by severance issues, such as bridges, waterways, or railways, or by the layout of the street network, which channels pedestrian flows (and potentially other modes) to a few network links to access the CWZ.

As per DfT LCWIP guidance, key walking routes were identified up to 2km from the centroid of the CWZs.

The walking routes were categorised as primary or secondary. Primary routes were defined as providing direct access to high street / retail frontage, schools, or railway stations; routes that provide crossings of the key barriers and routes that are considered as key local priorities. Secondary routes consisted of the remaining key walking routes. Also included in the network were aspirational routes, which present potential future connections through development sites to future proof walking links or local aspirations for new alignments.

6.3.1.2. Indicative Potential Interventions

For each area, a list of key issues and potential types of walking infrastructure improvements are provided. The proposed measures are high level and indicate potential interventions for consideration in the next stage of scheme development. The proposed measures are intended to characterise the area and potential opportunities to improve the quality of the walking environment, including attractiveness, comfort, directness, safety, and coherence.

The proposed interventions are based on desktop review only[1]. The project steering group provided general information to the project team on potential issues and constraints.

6.3.1.3. Next Steps for Further Development

Significant further work will be needed on each CWZ to assess existing issues and the feasibility of proposed interventions. Audits of the CWZs (e.g., using the Walking Route Audit Tool, Active Travel England (ATE) tools) are suggested in future stages to better understand the existing conditions, issues, and constraints and the improvements which are required.

All proposed interventions would be subject to additional assessments and feasibility design to refine and develop the initial proposals and review constraints, potential impacts, and potential alternatives. This is likely to require additional surveys (e.g., traffic, topographic, utilities, parking, environmental) and further assessment/engagement including reviewing land ownership information and stakeholder and public consultation.

As proposed interventions are advanced, design stages should utilise the latest best practice design guidance and standards available at the time, such as:

» Manuals for Streets 1 & 2;
» Inclusive Mobility (DfT, 2022)

In the next stages of the LCWIP development a prioritisation exercise will need to be undertaken to identify the potential interventions / schemes that may have greater benefit for users and potential quick wins to enhance the pedestrian environment in the short term.

6.3.1.4. Section Outline

The following pages present each of the primary CWZs and their key walking routes and potential interventions. A summary and indicative examples of the various types of facilities are provided in Section 6.4 on page 138.

1 The LCWIP team went on a site visit to walk through some roads in the identified CWZs in December 2023; however, no audits were undertaken. The primary purpose of the site visit was for the team to understand the character of the area and any major issues, constraints and opportunities that are not easy to identify during the desktop analysis.

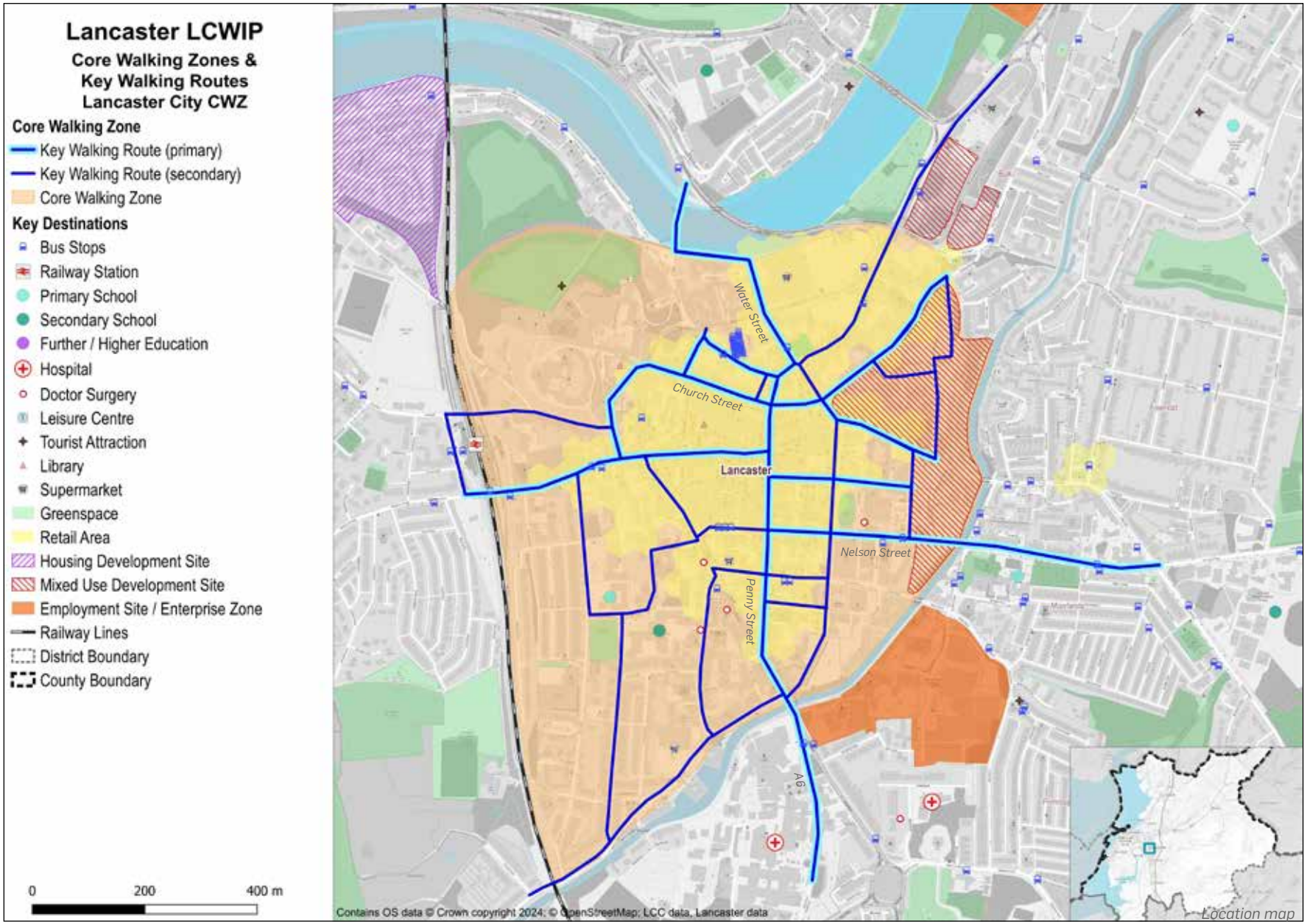


Figure 71. Lancaster City Centre (CWZ 1)

6.3.2. Lancaster City Centre (CWZ 1)

The Lancaster City Centre CWZ is a large area encompassing the main retail, tourism (Lancaster Castle), and leisure attractions of Lancaster as well as some of the key employment centres. Public transport facilities include Lancaster railway station and Lancaster bus station.

Key trip generators within and near to the CWZ include educational facilities such as: Dallas Road Community Primary School, Lancaster Girls Grammar School, and The Cathedral Catholic Primary School. Also located within or near the CWZ are four health centres, a major employment site (White Cross Business Park), Royal Lancaster Infirmary, and The Lancaster Hospital. The CWZ also includes the Canal Quarter strategic development site. Additionally, the newly constructed Luneside housing development is located to the north west of the CWZ, and allocated employment development sites are located to the north east.

6.3.2.1. Potential Key Issues

- High traffic flows along the main roads through the CWZ[1].
- Connectivity between the railway station, bus station and the city centre.
- Connectivity across the city from Castle Hill to Dalton Square, and Water Street to South Road.
- Severance created by the city centre gyratory and lack of crossings on key desire lines.
- Streets dominated by on street parking.
- High concentration of activities and trip attractors.
- Relatively high concentration of pedestrian collisions in the city centre retail area and eastern gyratory.
- Pedestrian space impacted by loading and presence of large vehicles including buses and LGVs.
- Narrow footways not suitable for pedestrian flows.

6.3.2.2. Potential Opportunities and Walking Infrastructure Interventions

- Review accessibility throughout the CWZ and provide appropriate tactile paving and dropped kerbs.
- Consider expanding the existing pedestrianised area of the city centre to provide improved urban realm. Improve compliance with vehicle restrictions in existing pedestrian zones. Potential early interventions could include Lodge Street, Castle Hill, Middle Street, and Church Street. Longer term interventions could include Penny Street and Dalton Square.
- Review desire lines and potential need for additional or improved crossings, particularly along the key walking routes within the CWZ and linking to other key destinations. This includes potential relocation of crossings to better meet desire lines (A6 St Leonard's Gate, and A6 Gage Street); potential additional crossings to meet desire lines (North Road A6). Add new crossing points at existing signalised junctions (Aldcliffe Road, Market Street/A6) and provide pedestrian only phases (Market Street/A6).
- Investigate opportunities for 'school streets' and other measures to improve road safety and encourage walking and cycling to schools such as Lancaster Girls' Grammar School and Dallas Road Community Primary School.
- Consider developing Safer, Greener and Healthier Streets (SGHS) areas. Potential intervention areas include the residential area bounded by Meeting House Lane, Aldcliffe Road, and the A6. Interventions could include further traffic calming and reduction measures, footway widening, reduced crossing distance, continuous crossings, and road space relocation for community priorities.
- Consider side road entry treatments (e.g., tighten kerb radii, raised tables, continuous footways) along the key walking routes to slow turning traffic, supporting the new Highway Code and prioritising pedestrian movement. Potential initial interventions could include narrowed crossing distance on Regent Street and Carr House Lane's junction with Aldcliffe Road and at Castle Hill's junction with Market Street.
- Investigate potential for a 20mph speed limit along major roads including the city centre gyratory, along with associated traffic calming measures.
- Investigate introducing traffic restrictions to create one-way streets, allowing carriageway space to be reallocated to pedestrians. Potential initial interventions include creating a Canal Quarter gyratory and restrictions on Bulk Street.

1 Estimated Annual Average daily flow (AADF) of 13,580 (2.5% HGVs) northbound on the A6 gyratory and 18,360 (1.8% HGVs) southbound on the A6 gyratory (2022 data, DfT Road Traffic Statistics)

- Consider opportunities to reallocate road space, declutter, and refresh and soften the public realm, such as plantings (e.g., street trees), parklets, cycle parking, places to rest (seating), shelter, removing guardrail / unnecessary street furniture, and resurfacing. Reallocate space from on-street parking and loading to reduce car-dominance and traffic flows. Potential initial intervention areas could include Brock Street, Gage Street, George Street, and Chapel Street.
- Consider kerb buildouts to recess on-street parking, widen the public realm, and improve visibility at informal crossing points.
- Consider a network for mobility hubs at the railway stations and across the CWZ to encourage uptake of active travel modes and support placemaking.
- Improve lighting and urban realm on streets with informal surveillance and active frontage including Calked Lane, and Gage Street.
- Review / improve access to bus stops.
- Review / prohibit footway parking to allow sufficient space for pedestrians, including wheel chair users, prams, etc.
- Review existing wayfinding and consider potential updating, such as providing totems or incorporating public art.
- Incorporate improvements for cycle corridors 1, 2, 26, 27, 28, 29, 32, 33, 42, 43, 44, 45, 46 and 47, which traverse the CWZ.

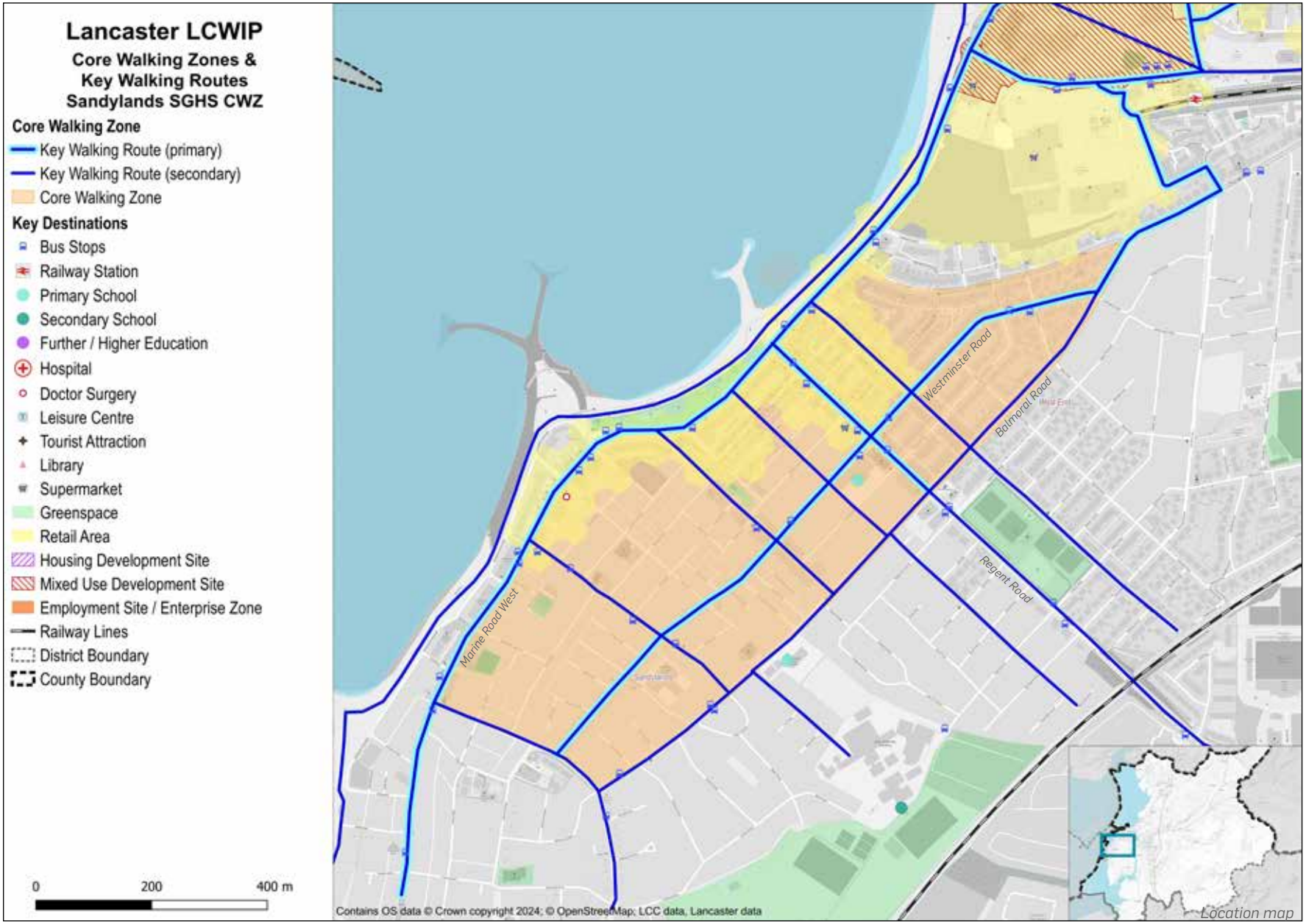


Figure 72. Sandylands SGHS (CWZ 2)

6.3.3. Sandylands SGHS (CWZ 2)

The Sandylands SGHS is focused around the residential areas of Sandylands and West End. This CWZ is within a proposed Safer, Greener and Healthier Streets (SGHS) area. This is an area where people are better able to walk, cycle, wheel, and enjoy their streets, due to lower traffic levels and slower vehicle speeds. Introducing measures to help people to walk or cycle for local trips, rather than using their car, can encourage healthier lifestyles and create a more pleasant place to live.

Other destinations within the area and nearby include West End Primary School, Bay Leadership Academy and Sandylands Community Primary School.

Potential Key Issues

- Amongst the most deprived areas in England (Indices of multiple deprivation).
- Lack of greenery / 'harsh' character of streetscape.
- Perceived car dominance along the main roads through the CWZ.
- Anti-social behaviour in this area.
- History of pedestrian and cyclist collisions in this area.
- Existing footway surface quality and accessibility.

6.3.3.1. Potential Opportunities and Walking Infrastructure Interventions

- Consider opportunities to reallocate road space, declutter, and refresh and soften the public realm, such as plantings (e.g., street trees), parklets, cycle parking, places to rest (seating), shelter, removing guardrail / unnecessary street furniture and resurfacing.
- Review accessibility throughout the CWZ and provide appropriate tactile paving, dropped kerbs, etc.
- Consider side road entry treatments (e.g., tighten kerb radii, raised tables, continuous footways) along the key walking routes to slow turning traffic supporting the new Highway Code and prioritise pedestrian movement.
- Review desire lines and potential need for additional or improved crossings, particularly along the key walking routes within the CWZ and linking to other key destinations, such as on Westminster Road and Regent Road.
- Consider a network for mobility hubs at Morecambe railway station and across the CWZ to encourage uptake of active travel modes and support placemaking.
- Review / prohibit footway parking to allow sufficient space for pedestrians, including wheelchair users, prams, etc.
- Review existing wayfinding and consider potential updating, such as providing totems or incorporating public art.
- Incorporate improvements for cycle corridors 4 and 21 which traverse the CWZ.
- Review / improve accessibility at bus stops.

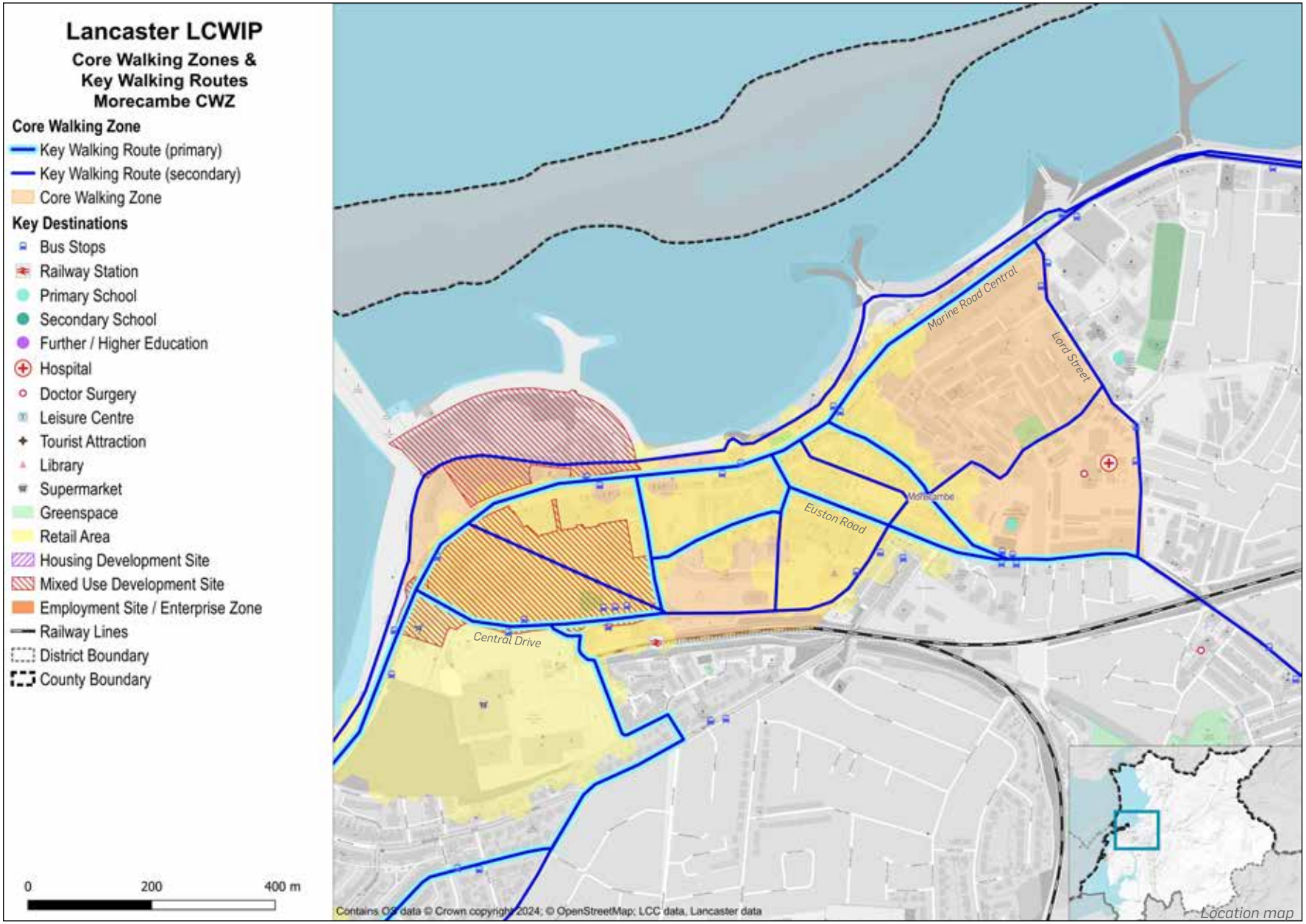


Figure 73. Morecambe town centre (CWZ 3)

6.3.4. Morecambe Town Centre (CWZ 3)

The Morecambe town centre is focused around the Central Drive Retail Park, the Marine Road Central area and its shopping, dining, and other services and amenities. Also within the CWZ is Morecambe Railway Station and employment hubs such as Queen Victoria Health Centre, Arndale Shopping Centre and the proposed Eden North site.

Other key destinations within the area and nearby include Morecambe Bay Primary School, Poulton-Le-Sands CofE Primary School, St Mary's Catholic Primary School, and Morecambe Bay Academy.

Figure 74. Euston Road in Morecambe

6.3.4.1. Potential Key Issues

- High traffic flows along the main roads through the CWZ[1].
- Connectivity between the railway station and the town centre.
- High traffic flows along the Promenade/ Marine Road.
- Amongst the most deprived areas in England (Indices of multiple deprivation).
- Lack of greenery.
- History of pedestrian and cyclist collisions in this area.
- Conflict between pedestrians and cyclists along pedestrianised streets in the town centre and the Promenade on existing shared facilities .

6.3.4.2. Potential Opportunities and Walking Infrastructure Interventions

- Review accessibility throughout the CWZ and provide appropriate tactile paving, dropped kerbs, etc.
- Review desire lines and potential need for additional or improved crossings, particularly along the key walking routes within the CWZ and linking to other key destinations (e.g. Eden Project North, Arndale Shopping Centre)
- Investigate opportunities for 'school streets' and other measures to improve road safety and encourage walking and cycling to school, such as at Morecambe Bay Community Primary School and Poulton-Le-Sands CofE Primary School.
- Review existing wayfinding and consider potential updating, such as providing totems or incorporating public art.
- Review / prohibit footway parking to allow sufficient space for pedestrians, including wheelchair users, prams, etc.
- Review / improve accessibility at bus stops.
- Incorporate improvements for cycle corridors 3, 17, 18, 19, 73 and 74, which traverse the CWZ.
- Consider side road entry treatments (e.g., tighten kerb radii, raised tables, continuous footways) along the key walking routes to slow turning traffic, supporting the new Highway Code and prioritising pedestrian movement.
- Consider a network of mobility hubs at the railway station and across the CWZ to encourage uptake of active travel modes and support place-making.
- Consider modifications to the junction of Central Drive / Euston to improve access for pedestrians and reduce car dominance, such as tightening the junction (reduce kerb radii) and widening the footway / public realm.
- Consider public realm improvements to improve connectivity and natural wayfinding between the railway station and town centre.
- Consider opportunities to declutter, refresh and soften the public realm, such as plantings (street trees), parklets, cycle parking, places to rest (seating), shelter, removing guardrail / unnecessary street furniture and resurfacing.

1 Estimated Average Annual Daily Flow of 13,159 (1.9% HGVs) on Marine Road east of town centre (2022 data, DfT Road Traffic Statistics)

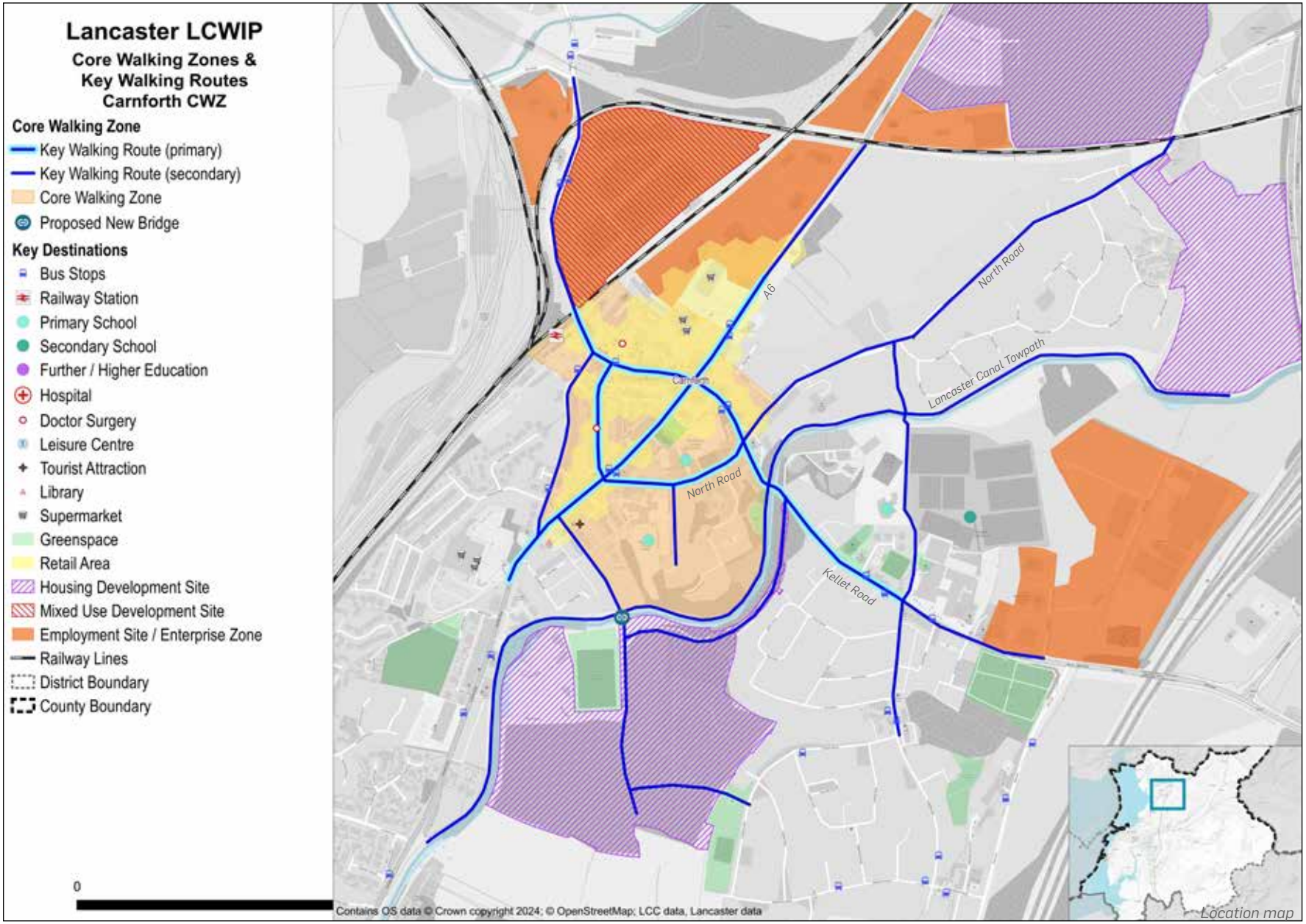


Figure 75. Carnforth town centre (CWZ 4)

6.3.5. Carnforth Town Centre (CWZ 4)

The Carnforth CWZ is focused on the town centre between the railway and the canal. The CWZ includes Carnforth Railway Station, shopping, dining, and other services and amenities.

Other key destinations in the area include Carnforth Christ Church CofE Voluntary Aided Primary School and in short vicinity to the CWZs are Carnforth Community Primary School, Our Lady of Lourdes Catholic Primary School, Carnforth High School and key employment sites and industrial estates to the north and east.

6.3.5.1. Potential Key Issues

- Severance caused by the railway line and canal, which separates the core of the town centre from residential areas, schools and employment sites.
- Car dominance along the main roads through the CWZ.
- High traffic flows along the A6[1].
- Lack of greenery.

6.3.5.2. Potential Opportunities and Walking Infrastructure Interventions

- Consider side road entry treatments (e.g., tighten kerb radii, raised tables, continuous footways) along the key walking routes to slow turning traffic, support the new Highway Code and prioritise pedestrian movement.
- Consider public realm improvements to improve connectivity and natural wayfinding between the railway station and town centre.
- Consider a network of mobility hubs at the railway station and across the CWZ to encourage uptake of active travel modes and support place-making.
- Review desire lines and potential need for additional or improved crossings, particularly along the key walking routes within the CWZ and linking to other key destinations (e.g. Market Street retail area and local supermarkets).
- Review accessibility throughout the CWZ and provide appropriate tactile paving, dropped kerbs, etc.
- Investigate opportunities for 'school streets' and other measures to improve road safety and encourage walking and cycling to school, such as Carnforth Community Primary School, Our Lady of Lourdes Catholic Primary School and Carnforth High School.
- Review existing wayfinding and consider potential updating, such as providing totems or incorporating public art.
- Review/improve accessibility at bus stops.
- Review/prohibit footway parking to allow sufficient space for pedestrians, including wheelchair users, prams, etc.
- Incorporate improvements for cycle corridors 38, 41, 90, 93, 95 and 100, which traverse the CWZ.
- Consider opportunities to declutter, refresh and soften the public realm, such as plantings (street trees), parklets, cycle parking, places to rest (seating), shelter, removing guardrail / unnecessary street furniture and resurfacing.

1 Estimated Annual Average daily flow (AADF) of 15,857 (1.2% HGV) south of town centre (2022 data, DfT Road Traffic Statistics)

6.4 Examples of Pedestrian Infrastructure

The following pages provide examples of types of infrastructure that could be considered in the Lancaster LCWIP proposals to improve facilities for people walking, as referenced in Section 6.3.

Uncontrolled Crossing
Provide tactile paving and dropped kerbs at side roads and crossing points following the desire lines where the visibility is good and traffic speeds and flows are appropriate to facilitate pedestrian crossings. A refuge island can be provided if the carriageway width allows, enabling a crossing to be made in stages.

Zebra or Parallel Crossing
Provide priority for people walking, wheeling and cycling at a crossing location, minimising the delay for non-motorised users and improving the directness of the route. (*Source: Lancashire County Council)*

Signalised Crossing
Provides a controlled crossing for people walking and wheeling, improving user comfort and safety, reducing delay for non-motorised users at busy streets where there are limited gaps in traffic, and connecting off-carriageway facilities.(*Source: Lancashire County Council)*

Raised Table (Side Road Entry Treatment)
Reinforces the Highway Code 2022 update by enhancing priority for people walking and wheeling and making the side road crossing easier and more convenient by maintaining the continuity of the route at footway level. It indicates pedestrian activity, encourages lower traffic speeds, and more driver attention. Variations also referred to as a continuous footway, blended crossing or Copenhagen crossing, as shown above.

Raised Junction
Similar to the raised table, a raised junction reinforces the updated Highway Code (2022) by enhancing priority for the most vulnerable road users, encourages motorists to reduce speeds at a junction, and also provides uncontrolled crossing facilities at all arms of a junction. Proposal to also consider tightening the junction.

One-way System
Reallocates space from the carriageway to footways, public realm, cycle facilities and/or parking. Reduces conflicts at junctions.

Raised Loading/Parking Pad
Reallocates carriageway space to the footway, providing a wider, more comfortable pedestrian environment. The pads may be used for servicing or parking as needed, but allow a more flexible use of space to better accommodate pedestrians and narrow the carriageway.

Review On-street Parking
Ensures footway width is maintained to accommodate wheelchair users, mobility scooters, or prams. Supports a more attractive, accessible and safer walking and wheeling environment; allows safer and easier informal crossings; and improves visibility.

Pedestrian Priority Street
Reduces vehicle dominance of the street and prioritises people walking, wheeling and cycling. Features may include a raised carriageway to provide a more flexible space for all users, distinct materials to delineate space for different users, low traffic speeds, and/or vehicle access restrictions. (*Source: Lancashire County Council)*

Safer, Greener and Healthier Streets
Residential (primarily) areas with features that increase the comfort, safety and accessibility of walking, wheeling and cycling; create space for community facilities; and reduce the dominance of cars resulting in improved safety, air quality and noise pollution to encourage more walking, cycling and social interactions.

Wayfinding System
Improves the coherence of the walking network, making it easier for people to navigate through the area and encouraging more trips to be taken on foot. A consistent system should be applied town/area-wide.

Modal Filter
Supports a safer, more attractive environment for walking, wheeling and cycling by reducing motor vehicle traffic and permitting more direct, convenient access by foot or by cycle. Modal filters may be configured to permit access by certain vehicles (e.g., emergency vehicles, buses, blue badge holders).(*Source: Lancashire County Council)*

Places to Rest
A component of 'Healthy Streets' principles, more specific and localised public realm improvements providing a pedestrian friendly environment with places to sit and rest, shelter opportunities, planters and planting offering shade and enhanced public realm.

School Street
Implements timed vehicle access restrictions during school arrival/dismissal times to encourage more pupils to walk and cycle to school and improve the safety, comfort, and attractiveness of these modes. School streets may be configured to permit access by certain vehicles.

Lower Speed Limit
Improves safety for all road users and fosters a more comfortable environment for walking, wheeling and cycling. It should be supported by traffic calming measures, as needed, to make the speed limit self-enforcing. An area-wide policy could be considered rather than changes on a street by street basis.

7. Next Steps

7.1 Next Steps

The Lancaster LCWIP sets out a long-term strategy of potential infrastructure to improve conditions for active travel and support a shift from car journeys to sustainable modes. Development of the LCWIP is the first step in the process to support future investment in active travel.

Stages 1 - 4, summarised in this report, developed preferred networks for cycling and walking within the Lancaster study area, with the focus on identifying strategic/primary corridors for cycling and primary core walking zones.

Further steps in the LCWIP development process are anticipated to be:

Prioritisation (stage 5)

Develop a process (e.g., multi-criteria assessment framework (MCAF)) to prioritise the cycle corridors and CWZs and their potential cycling and walking infrastructure measures. This could include information from the data gathering stage (e.g., potential demand), stakeholder feedback and support, alignment with other policies, timescale, cost, existing condition, or other factors.

This stage may also include:

» Continued stakeholder engagement to obtain feedback and input on the LCWIP outputs.

» Audits of the prioritised areas (e.g., using the walking route assessment tool (WRAT), route selection tool (RST), Active Travel England tools) to better understand existing conditions, issues, opportunities, constraints and compliance of potential interventions with best practice design guidance.

» Review and refinement of the initial concepts for potential improvements outlined in stages 3 (Section 5.3) and 4 (Section 6.3), as needed, based on further engagement feedback and information from the audits.

Integration and Application (stage 6)

Integrate the LCWIP into other local planning and transport policies, strategies, and delivery plans. The LCWIP report should be used to support the case for further stages of design, assessment and stakeholder engagement and secure funding to progress interventions for the corridors and areas identified.

As funding becomes available (e.g., Active Travel Fund, Levelling-Up Fund), advance LCWIP proposals through the scheme development and delivery process, including feasibility and preliminary design, detailed design, and implementation.

The LCWIP should be viewed as a 'living document' and reviewed and updated periodically to reflect evolving needs and opportunities. This could be in response to significant changes in local circumstances, such as the publication of new policies or strategies. Additional active travel opportunities may also be identified and incorporated into the LCWIP in response to major new development sites and as walking and cycling networks mature and expand.

8. Appendices

Summary of Cycle Network and Amendments to the Networks

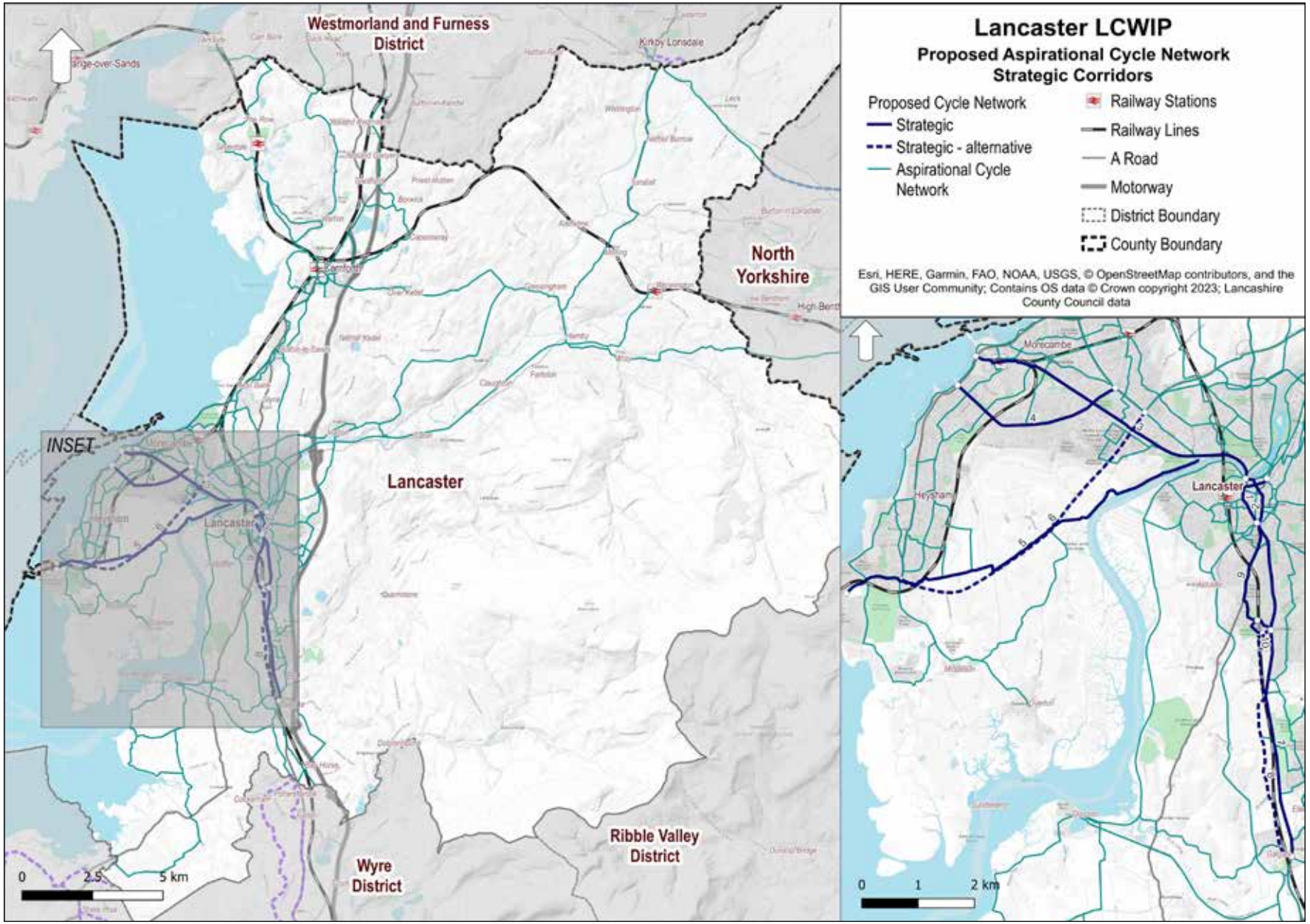


Figure 76. Summary of strategic cycle corridors

Table 22. Summary of strategic cycle corridors

Strategic		
ID	Cycle Corridor	Length (m)
1	Lancaster City Centre A6 Gyratory - West	1148
2	Lancaster City Centre A6 Gyratory - East	1002
3	Lancaster-Morecambe Greenway	5652
4	Westgate to Regent Road	3248
5	Lancaster-Heysham Greenway	7500
6	Bay Gateway*	5728
7	Lancaster to Galgate via the A6	6058
8	Scotforth to Galgate via the Bailrigg Greenway*	4380
9	Ashton Road	2662
10	Cinder Lane*	359

* Routes with the asterisk (*) indicate an alternative alignment to the main corridor

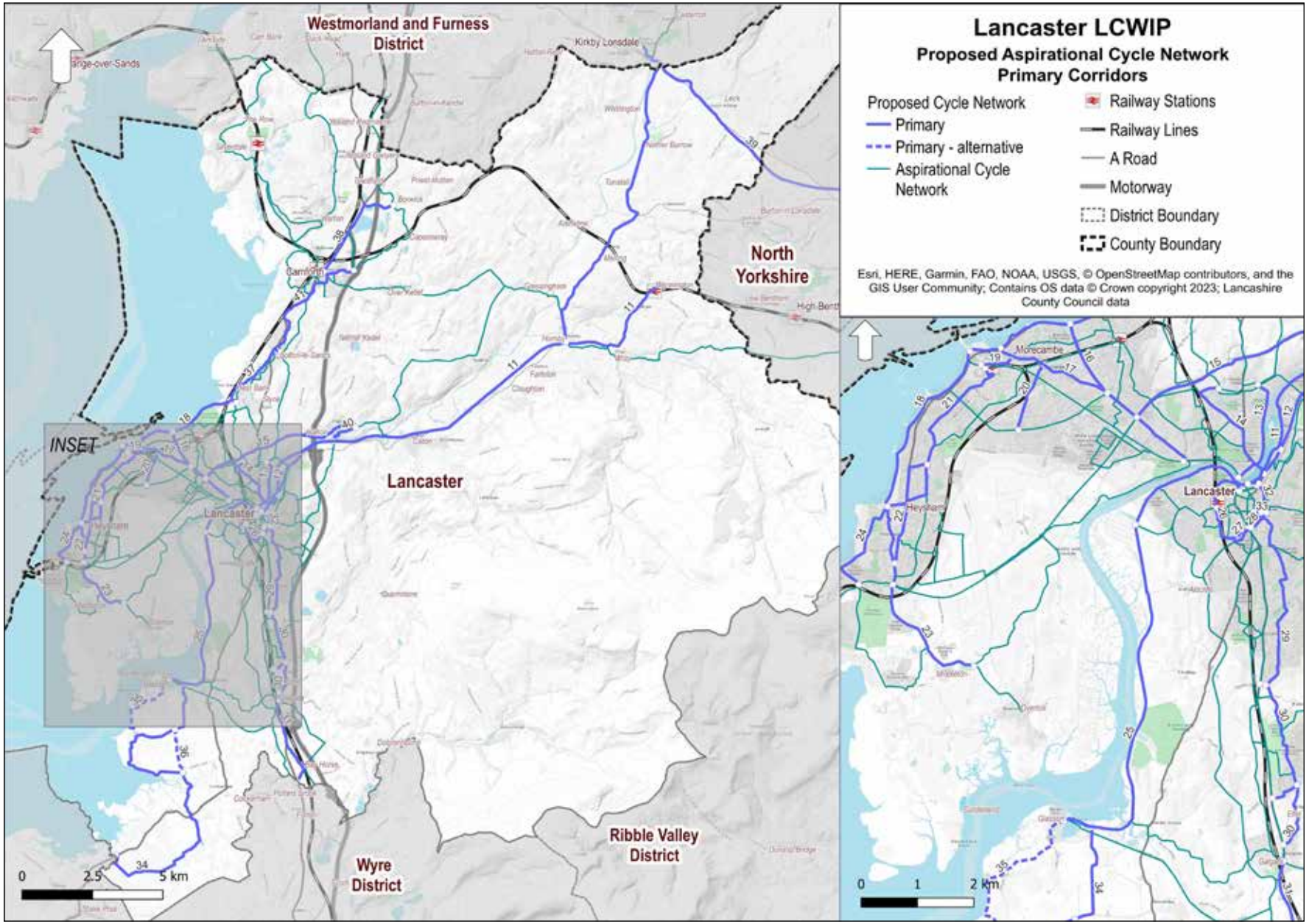


Figure 77. Summary of primary cycle corridors

Table 23. Summary of primary cycle corridors

Primary		
ID	Cycle Corridor	Length (m)
11	Lune Valley Greenway (Lancaster to Kirkby Lonsdale)**	29633
12	Caton Road	2373
13	North Lancaster	2002
14	Lancaster to Skerton	2510
15	White Lund to Halton	6062
16	Morecambe Road to Broadway	3298
17	Lancaster Road	2146
18	Marine Road	8053
19	Central Drive	616
20	Out Moss Lane	1278
21	Morecambe to Heysham via Westminster Road	3789
22	Heysham Road	2083
23	Heysham to Middleton	3896
24	Heysham Port Link - Barrows Lane	1956
25	West Lancaster to Glasson Dock	9296
26	Lancaster City Centre Outer Loop	2651
27	Aldcliffe Road*	328
28	Lancaster Canal (Nelson Street to A6)	417
29	Lancaster to Scotforth	3681
30	Bailrigg to Galgate	3894
31	Galgate to Garstang	3248
32	Canal Quarter	577
33	Nelson Street	363
34	Glasson Dock to Fylde	13871
35	Marsh Lane to Slack Lane*	3035
36	Moss Lane to Hillam Lane*	1645
37	Hest Bank to Bolton-le-Sands	2840
38	Carnforth to Borwick	3929
39	Lune Valley Greenway (Kirkby Lonsdale to Ingleton)**	10695
40	Lune Valley to Halton	1134
41	Lancaster Canal (Bolton-le-Sands to Carnforth)	4898

* Routes with the asterisk (*) indicate an alternative alignment to the main corridor

** Routes currently being developed by Sustrans

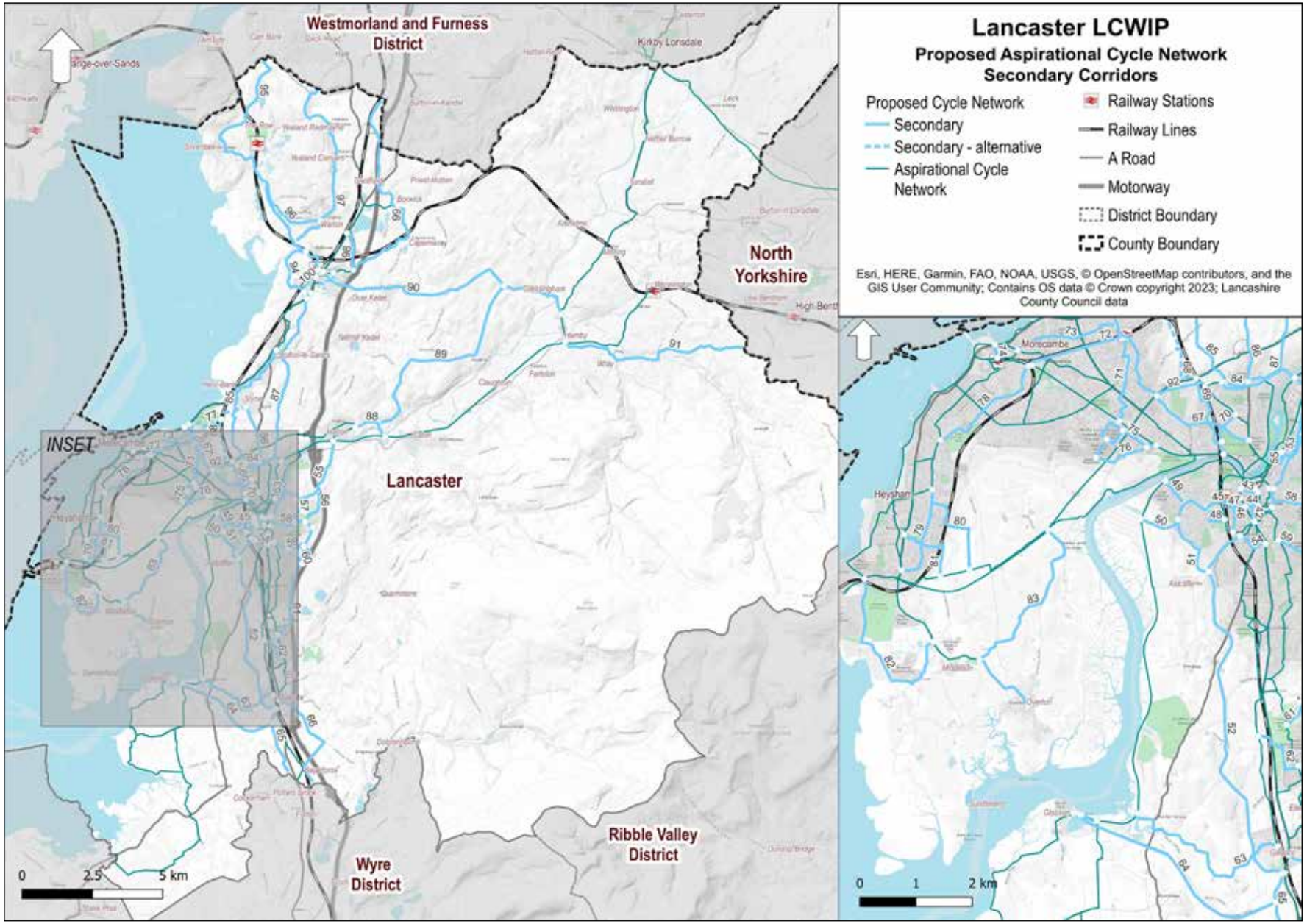


Figure 78. Summary of secondary cycle corridors

Table 24. Summary of secondary cycle corridors

Secondary		
ID	Cycle Corridor	Length (m)
42	Penny Street	608
43	Church Street	327
44	Common Garden Street	247
45	Lancaster to Abraham Heights	1409
46	Dallas Road	573
47	Middle Street to Meeting House Lane	425
48	Willow Lane to Aldcliffe Road	564
49	Europa Way to New Quay Road	577
50	Abraham Heights to New Quay Road	767
51	Abraham Heights to Aldcliffe	1306
52	Lancaster to Galgate via Lancaster Canal	7059
53	Lancaster Canal (Lancaster to Hare Runs)	4276
54	Royal Lancaster Infirmary	625
55	Lancaster East to Halton via Ridge Lane	4453
56	Moor Lane	1372
57	Ridge Lane to Quernmore Road*	962
58	Park Road to Quernmore Lane	1367
59	Planned Development Routes 1	1366
60	Planned Development Routes 2*	1256
61	East Lancaster to Bailrigg	5036
62	Lancaster University	1241
63	Galgate to Conder Green	3606
64	Lancaster Canal to Glasson Dock	4780

Secondary		
ID	Cycle Corridor	Length (m)
65	Galgate to Fylde via Canal	2594
66	Stoney Lane	4227
67	Ryelands Park to Bare	4106
68	Bay Gateway to Hest Bank*	3017
69	Ryelands Park to Bay Gateway	1536
70	Ryelands Park to Barley Cop Lane	896
71	White Lund Industrial Estate to Bare	1875
72	Bare to Morecambe	1762
73	Arndale Shopping Centre to Bare Lane	2045
74	Northumberland Street	245
75	White Lund Industrial Estate Loop	1985
76	Ovangle Road	1211
77	Happy Mount Drive*	1474
78	Osbourne Road	2318
79	Kingsway	1755
80	Lancaster-Heysham Greenway Connection 1	1829
81	Lancaster-Heysham Greenway Connection 2	1420
82	Heysham Business Park	3475
83	A683 to Overton	4539
84	Hammerton Hall lane	472
85	Lancaster to Bolton-le-Sands via Canal	5301
86	North Lancaster to Slyne	2157
87	Mount Pleasant Lane	6899

Secondary		
ID	Cycle Corridor	Length (m)
88	Halton to Lune Valley	1554
89	Halton to Gressingham Beck	8098
90	Carnforth to Hornby	11031
91	Hornby to North Yorkshire	17036
92	Barley Cop Lane	940
93	Carnforth Lower Loop	716
94	Crag Bank Lane to Shore Road	2517
95	Carnforth to Silverdale and Arnside	10968
96	Crag Road	2822
97	Warton to Beetham	7464
98	A6070	1417
99	Lancaster Canal North	8825
100	Lancaster Canal to Market Street Carnforth	1573
101	Kellet Road to Lancaster Canal	340
102*	Former Lundsfield Quarry Route	475

* Routes with the asterisk (*) indicate an aspirational/alternative alignment

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