



North Yorkshire County Council

NORTHALLERTON LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN

Phase 1 – Final Report





North Yorkshire County Council

NORTHALLERTON LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN

Phase 1 – Final Report

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70063328

OUR REF. NO. 70063328/PH1

DATE: SEPTEMBER 2020



North Yorkshire County Council

NORTHALLERTON LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN

Phase 1 – Final Report

WSP

Amber Court
William Armstrong Drive
Newcastle upon Tyne
NE4 7YQ

Phone: +44 191 226 2000

Fax: +44 191 226 2104

WSP.com



QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	First Draft	Second Draft	Third Draft	Final
Date	04/05/2020	12/06/2020	04/09/2020	07/09/2020
Prepared by	Nathan Flaherty Kalina Petrova	Nathan Flaherty Kalina Petrova	Helen Stimpfig Nathan Flaherty	Helen Stimpfig Nathan Flaherty
Checked by	Helen Stimpfig	Helen Stimpfig	Helen Stimpfig	Helen Stimpfig
Authorised by	Phil Freestone	Phil Freestone	Phil Freestone	Phil Freestone
Project number	70063328	70063328	70063328	70063328
Report number	v001	v005	v010	v1.0
File reference	\\uk.wspgroup.com\central data\Projects\700633xx\70063328 - NYCC - Northallerton LCWIP\03 WIP\TP Transport Planning\05 Reports			

CONTENTS

1	INTRODUCTION	1
1.1	BACKGROUND	1
1.2	LCWIP PROCESS	1
1.3	DEFINING THE STUDY AREA	2
1.4	REPORT STRUCTURE	3
2	EVIDENCE BASE	4
2.1	INTRODUCTION	4
2.2	POLICY CONTEXT	5
2.3	LOCAL GEOGRAPHY	11
2.4	DEMOGRAPHICS	24
2.5	TRAVEL PATTERNS – JOURNEY TO WORK	31
2.6	EXISTING TRANSPORT NETWORKS: CYCLING AND WALKING	34
2.7	EXISTING TRANSPORT NETWORKS: ROAD, RAIL AND PUBLIC TRANSPORT	41
2.8	EXISTING ORIGINS AND DESTINATIONS	48
2.9	FUTURE SITUATION	51
3	CYCLE NETWORK DEVELOPMENT	65
3.1	OVERVIEW	65
3.2	METHODOLOGY	65
3.3	STEP 1 – DEFINING THE STUDY AREA	65
3.4	STEP 2 – IDENTIFY KEY ORIGINS AND DESTINATIONS	65
3.5	STEP 3 – IDENTIFY KEY FUTURE DEVELOPMENTS AND INFRASTRUCTURE	66
3.6	STEP 4 – CLUSTERING OF ORIGINS AND DESTINATIONS	66
3.7	STEP 5 – DESIRE LINES BETWEEN ORIGINS AND DESTINATIONS	67
3.8	STEP 6 – IDENTIFY ROUTES SERVING THE DESIRE LINES	68
3.9	STEP 7 – IDENTIFY A ROUTE HIERARCHY	68

3.10	STEP 8 – PRODUCE CYCLE NETWORK	69
3.11	STEP 9 – NETWORK VALIDATION	70
4	WALKING NETWORK DEVELOPMENT	72
<hr/>		
4.1	OVERVIEW	72
4.2	METHODOLOGY	72
4.3	STEP 1 – DEFINING THE STUDY AREA	72
4.4	STEP 2 – MAPPING WALKING TRIP GENERATORS	72
4.5	STEP 3 – IDENTIFYING CORE WALKING ZONES	73
4.6	STEP 4 – IDENTIFYING KEY WALKING ROUTES	73
4.7	STEP 5 – CONSIDER A ROUTE HIERARCHY	76
4.8	STEP 6 – PRODUCE A DRAFT WALKING NETWORK	76
4.9	STEP 7 – VALIDATION AND REVIEW	80
5	STAKEHOLDER ENGAGEMENT	81
<hr/>		
5.1	OVERVIEW	81
5.2	INTERNAL STAKEHOLDER WORKSHOP – KEY INPUTS	81
5.3	EXTERNAL STAKEHOLDER WORKSHOP – KEY INPUTS	81
6	FINAL NETWORK PLANS AND PRIORITIES	89
<hr/>		
6.1	OVERVIEW	89
6.2	CYCLING AND WALKING NETWORK MAPS	89
6.3	IDENTIFYING PRIORITY CORRIDORS FOR DEVELOPMENT	89
6.4	PRIORITIES AND NEXT STEPS	95

TABLES

Table 1-1 - The LCWIP Process	1
Table 2-1 - Local Plan Policies	10
Table 2-2 - Low Gates Level Crossing Barrier Closure Times	15
Table 2-3 - Age Groups	24

Table 2-4 - Commuting destinations from Northallerton	31
Table 2-5 - Workplace Destinations	31
Table 2-6 - Northallerton Internal Journeys to Work: Modal Split	32
Table 2-7 - Distance travelled to work	32
Table 2-8 - Types of Cyclist	34
Table 2-9 - Pedestrian and Cyclist User Collision Statistics	36
Table 2-10 - Walking and Cycling Isochrone Criteria	38
Table 2-11 - Northallerton NYCC Count point - AADT and 85th Percentile Speeds	46
Table 2-12 - Origin and Destination Description and Source	48
Table 2-13 - Hambleton Local Development Framework Site Allocations in Northallerton	51
Table 3-1 - Network Hierarchy	69
Table 4-1 - Core Walking Zones	73
Table 4-2 - Footway Hierarchy in 'Well-Maintained Highways'	76
Table 5-1 - Skipton LCWIP External Workshop Attendees	81
Table 5-2 - Mapping the cycle network: Comments	84
Table 5-3 - Mapping the walking network: Comments	87
Table 6-1 - Scoring Framework	90
Table 6-2 - Assessment of Desire Lines and CWZs	91
Table 6-3 - Assessment Scores	94
Table 6-4 - Final Priorities	95

FIGURES

Figure 1-1 - Northallerton LCWIP study area	3
Figure 2-1 - Northallerton Topography	12
Figure 2-2 - Proportion of Trips Cycled in England (According to 'Hilliness' of Local Area)	13
Figure 2-3 - Barriers and Funnels of Movement within Northallerton	14
Figure 2-4 - Low Gates Level Crossing - (Queuing - North)	16
Figure 2-5 - Low Gates Level Crossing (Queuing - South)	16
Figure 2-6 - Heritage Assets (Study Area)	18
Figure 2-7 - Heritage Assets (Northallerton Conservation Area)	19

Figure 2-8 - Noise Action Important Areas	21
Figure 2-9 - Flood Risk Map	22
Figure 2-10 - Indices of Multiple Deprivation (IMD): Hambleton District	25
Figure 2-11 - Indices of Multiple Deprivation (IMD) – Northallerton	26
Figure 2-12 - Health Deprivation: Northallerton	27
Figure 2-13 - Barriers to Housing and Services: Northallerton	28
Figure 2-14 - Living Environments: Northallerton	29
Figure 2-15 - Cycle Network & PROW within the LCWIP Study Area: Northallerton	35
Figure 2-16 - Pedestrian and Cyclist Road Traffic Collisions – Northallerton	37
Figure 2-17 - LCWIP Study Area Active Travel Isochrone	39
Figure 2-18 - Highway Network	42
Figure 2-19 - Location of Rail Line, Stations and Bus Stopping Points	44
Figure 2-20 - Traffic Counter Locations	45
Figure 2-21 - Origin-Destination Plots: Northallerton	50
Figure 2-22 - Committed Development	53
Figure 2-23 - Northallerton Green Connections	56
Figure 2-24 - PCT Output: % of Population Cycling to Work, by LSOA (2011 Census)	59
Figure 2-25 - PCT Output: Top 30 Cycle Flows between OD Pairs (2011 Census)	60
Figure 2-26 - PCT Output: Top 30 Cycle Flows between OD Pairs, mapped to Fast and Quiet Routes (2011 Census)	61
Figure 2-27 - PCT Output: Total Cyclists on Route Network (2011 Census)	62
Figure 2-28 - PCT Output: Forecast Cycle Flows mapped to Route Network, based on Government Target Scenario	63
Figure 2-29 - PCT Output: Forecast Cycle Flows mapped to Route Network, based on Go Dutch Scenario	64
Figure 3-1 - Clusters and Desire Lines	67
Figure 3-2 - Top 20% Desire Lines	68
Figure 3-3 - Cycle Network Map	71
Figure 4-1 - Core Walking Zones/Routes	75
Figure 4-2 - Walking Network Map	79



APPENDICES

APPENDIX A

CYCLING AND WALKING NETWORK MAPS

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 Local Cycling and Walking Infrastructure Plans (LCWIPs), as set out in the Government’s Cycling and Walking Investment Strategy (CWIS), are a new, strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, typically over a 10-year period, and form a vital part of the Government’s strategy to increase the number of trips made on foot or by cycle.

1.1.2 The key outputs of LCWIPs are:

- i a network plan for walking and cycling which identifies preferred routes and core zones for further development;
- i a prioritised programme of infrastructure improvements for future investment; and
- i a report which sets out the underlying analysis carried out and provides a narrative which supports the identified improvements and network.

1.1.3 By taking a strategic approach to improving conditions for cycling and walking, LCWIPs will assist Local Authorities (LAs) to:

- i identify cycling and walking infrastructure improvements for future investment in the short, medium and long term;
- i ensure that consideration is given to cycling and walking within both local planning and transport policies and strategies; and
- i make the case for future funding for walking and cycling infrastructure.

1.2 LCWIP PROCESS

1.2.1 The Department for Transport (DfT) has produced guidance to develop a LCWIP, this sets out the LCWIP process as taking six stages as outlined below:

Table 1-1 - The LCWIP Process

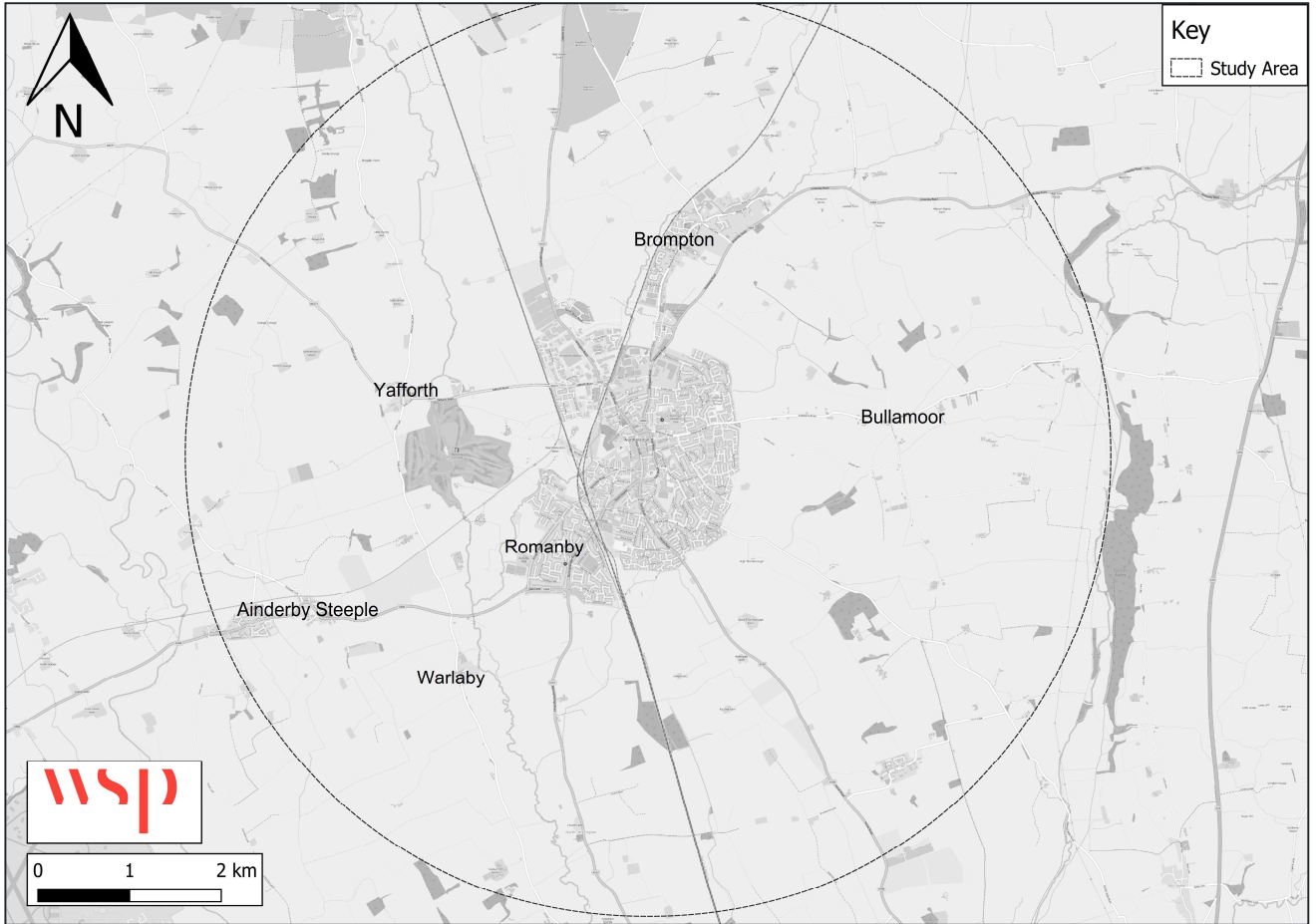
Stage	Name	Description
1	Determining Scope	Establish the geographical extent of the LCWIP, and arrangements for governing and preparing the plan.
2	Gathering Information	Identify existing patterns of walking and cycling and potential new journeys. Review existing conditions and identify barriers to cycling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

- 1.2.2 The Northallerton LCWIP will be split into two distinct phases.
- i The Phase 1 project report details the evidence review and network development process, reflecting Stages 1 to 4 of the LCWIP guidance.
 - i The Phase 2 project report details the development of network priorities into 'bid-ready' schemes, commensurate with Stage 5 of the LCWIP guidance.
- 1.2.3 The two project reports will be taken forward for integration and application (Stage 6 of the LCWIP guidance) by NYCC as appropriate.

1.3 DEFINING THE STUDY AREA

- 1.3.1 The focus of the LCWIP process is to create a cohesive network for walking and cycling that will encourage those who do not currently walk or cycle for everyday purposes to do so, generally aligning with travel for commuting and utility purposes over shorter distances. Links between urban areas are often less likely to promote the desired modal shift, with greater benefits obtained through the provision of a denser urban network, connecting residential areas with a range of employment opportunities, schools, shops and facilities within a desirable walking or cycling distance.
- 1.3.2 The study area for this LCWIP is an approximate 5km radius from the town centre and includes the villages of Romanby, Brompton, Yafforth and Ainderby Steeple. Five kilometres is considered a realistic distance for people to cycle, with the 2016 National Travel Survey reporting that the average bicycle trip length was 3.5 miles (5.6km). The study area is shown in Figure 1-1.

Figure 1-1 - Northallerton LCWIP study area



1.4 REPORT STRUCTURE

1.4.1 This project report details Phase 1 of the Northallerton LCWIP and is structured as follows:

- ¡ Section 2 – Evidence Base;
- ¡ Section 3 – Cycle Network Development;
- ¡ Section 4 – Walking Network Development;
- ¡ Section 5 – Stakeholder Engagement; and
- ¡ Section 6 – Network Priorities and Recommended Next Steps.

2 EVIDENCE BASE

2.1 INTRODUCTION

- 2.1.1 This section places the LCWIP within the national, regional and local policy framework and establishes the existing geographic, demographic and active travel situation in the study area. Forecast trends in growth are also presented to understand the future situation, considering changing travel patterns and future development in the district.
- 2.1.2 The culmination of this work is an evidence base that supports and informs development of the Northallerton LCWIP, helping to define network connections and emerging priorities.
- 2.1.3 A detailed desktop research exercise has been undertaken to help establish the baseline situation and understand future trends, considering available datasets, policies and strategies. However, to ensure that we are using a robust evidence base on which to develop network plans, we have supplemented this exercise with a stakeholder consultation exercise.
- 2.1.4 An internal stakeholder workshop took place with officers of North Yorkshire County Council and Hambleton District Council to gain their input on the challenges and opportunities related to cycling and walking in the study area.
- 2.1.5 The structure of this section is as follows:
- ┆ Policy Context;
 - ┆ Local Geography;
 - ┆ Demographics;
 - ┆ Existing Transport Networks: Cycling and Walking;
 - ┆ Existing Transport Networks: Road, Rail and Public Transport;
 - ┆ Existing Origins and Destinations; and
 - ┆ Future Situation (Developments, Infrastructure and Forecasting Growth).

2.2 POLICY CONTEXT

2.2.1 DfT guidance highlights the need to understand the local, regional and national policy framework with which the LCWIP document will align and be integrated. Several key policy documents, which make the case for walking and cycling, have been identified and summarised below, highlighting synergies with the aims of LCWIPs and how LCWIPs can support the delivery of these policy objectives:

- ┆ Cycling and Walking Investment Strategy (Department for Transport, 2017);
- ┆ Clean Air Strategy (Department for Environment, Food & Rural Affairs, 2019);
- ┆ The Inclusive Transport Strategy (Department for Transport, 2018);
- ┆ Future of Mobility: Urban Strategy (Department for Transport, 2019);
- ┆ NYCC Local Transport Plan 4 (LTP4), 2016-2045;
- ┆ Hambleton District Council Draft Local Plan (July 2019); and
- ┆ Hambleton District Council’s new Local Plan (March 2020).

NATIONAL POLICY

Cycling and Walking Investment Strategy (Department for Transport, 2017)

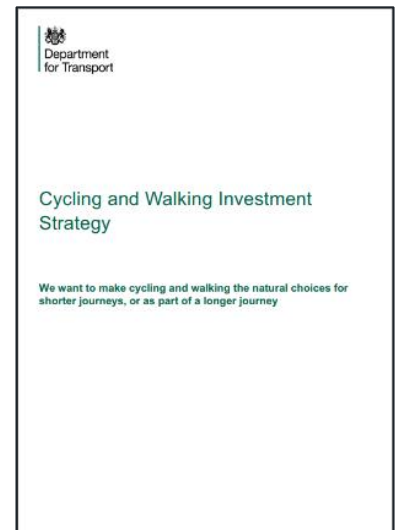
2.2.2 The Government published its first Cycling and Walking Investment Strategy (CWIS) in 2017, setting out an ambition to make walking and cycling the natural choices for shorter journeys or as part of a longer journey. The CWIS states that the benefits to doing this would be substantial, potentially leading to cheaper travel and better health, increased productivity for business and increased footfall in shops, and lower congestion, better air quality, and vibrant, attractive places and communities for society as a whole.

2.2.3 The CWIS outlines a £300 million investment in cycle training and infrastructure during the current Parliament and sets out ambitious targets for the period up to 2025, including a doubling of cycling trip stages each year (from 0.8 billion in 2013 to 1.6 billion by 2025), whilst also reversing the current year-over-year decline in walking trip stages. The CWIS also identifies a need to decrease the number of cycle user fatalities and serious injuries each year.

2.2.4 North Yorkshire County Council (NYCC) shares this ambition for promoting cycling and walking as the natural choice for shorter journeys or as part of a longer journey. Within the county there are clear opportunities to better connect people and places with targeted investment in active travel infrastructure, providing direct, safe and attractive options for local journeys and reducing the perceived or actual need to travel by car.

Future of Mobility: Urban Strategy (Department for Transport, 2019)

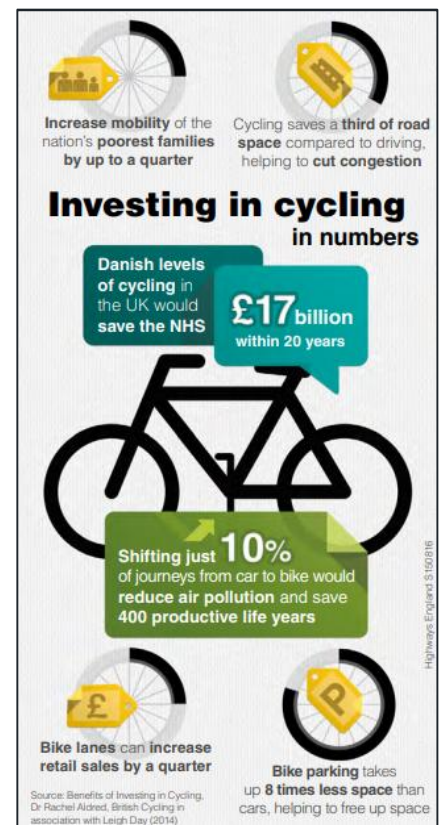
2.2.5 The ‘Future of Mobility: Urban Strategy’ recognises the challenges associated with the rise in motor transport including safety, pollution and space. As the number of people living in urban areas in England is forecast to rise by 4.7 million between 2016 and 2041, towns and cities will become increasingly crowded. This provides us with an opportunity to transform the way we travel and the infrastructure within our towns and cities.



- 2.2.6 The document sets out principles to guide Government and local authorities decision making, and has recognised active travel as a key area to help shape the future of urban mobility. The principle ‘Walking, cycling and active travel must remain the best option for short urban journeys’ states, in England, 45% of all journeys taken by urban residents are under 2 miles. Many such journeys could be undertaken by sustainable, active modes of transport contributing to better air quality, health outcomes and lower congestion. This can be supported by new technologies including intelligent use of real-time data and connectivity making public transport more convenient and responsive. With these improvements active travel can become a more desirable option for multi-stage journeys. The increase in available journey planning tools, the provision of real-time travel information by all modes, including walking and cycling, can help people make smarter, greener and healthier travel choices.
- 2.2.7 An additional principle identified; ‘Mobility as a Service’, suggests introducing well-managed bike-sharing schemes and e-bikes which would encourage people who wouldn’t normally chose cycling as a travel option to switch. This may be especially important given the trend towards an aging population, noting 62% of e-bikes in the UK are sold to people over the age of 55. This represents a complementary investment opportunity, which combined with improving active travel infrastructure, could help facilitate a step-change towards cycling and walking becoming much more commonplace across Northallerton.

Clean Air Strategy (Department for Environment, Food & Rural Affairs, 2019)

- 2.2.8 The Clean Air Strategy sets out a comprehensive action required to tackle all sources of air pollution.
- 2.2.9 A key action in achieving this is reducing emissions from transport by facilitating modal shift towards low and zero emission options. The report suggests encouraging an increase in cycling and walking for short journeys delivers a reduction in congestion and emissions in addition to the associated health benefits from a more active lifestyle.
- 2.2.10 Drivers and passengers inside vehicles are often exposed to significantly higher levels of air pollution in comparison to those walking and cycling on the same route. People could be persuaded to walk or cycle in Northallerton, as even when there is a build-up of traffic within the town centre, the strategy suggested that those travelling actively, experience lower exposure. Pedestrians and cyclists could be encouraged to use quieter routes away from vehicle traffic to reduce exposure even further.
- 2.2.11 This method of travel also creates less pollution, with associated health benefits such as improved fitness, mental health and lower risk of obesity and heart diseases.
- 2.2.12 In addition to the funding identified through the Cycling and Walking Investment Strategy, local authorities and mayors have been allocated an additional £700 million to safe infrastructure and other active travel projects since the CWIS was published. There has also been £34 million spent to improve cycle facilities at rail stations, making it easier and more accessible to get to and from the station by bike, including 22,000 new cycle parking spaces which as a result increased cycle trips to stations by 40%.



The Inclusive Transport Strategy (Department for Transport, 2018)

- 2.2.13 The Inclusive Transport Strategy plans to create more inclusive transport system for everyone. The report itself focusses on transport inclusivity, providing inclusive infrastructure, with vehicles, stations and streetscapes designed to allow for people with a form of disability to use.
- 2.2.14 The LCWIP process aims to create a network to support this ambition and allow for users of all abilities to travel safely and comfortably via active travel in and around Northallerton. As part of this LCWIP we have identified improvements to support a transport system fit for all users, identifying infrastructure interventions to make key cycling and walking routes more accessible and inclusive.

Gear Change: A Bold Vision for Cycling and Walking (Department for Transport, 2020)

- 2.2.15 In response to the Covid-19 global pandemic, the DfT released the Gear Change document in summer 2020 to support a new direction in local transport strategy. The recent COVID-19 restrictions have profoundly impacted the way people live, work and travel as evidenced by the public's desire to be more active, and the rise in popularity of cycling and walking (Sport England, 2020). The document states the need to embed those changes in people's travel behaviour, increase active travel, and transform permanently how many people move around, particularly in towns and cities.



- 2.2.16 Increasing cycling and walking can help tackle some of the most challenging issues we face as a society – improving air quality, combatting climate change, improving health and wellbeing, addressing inequalities and tackling congestion on our roads.
- 2.2.17 The document details the four key themes that the DfT will follow to create a step change in active travel uptake, with the aim of making cycling and walking the natural first choice, and ensuring that half of all journeys in towns and cities being cycle or walked by 2030. These are:

- i Theme 1: Better streets for cycling and people;
- i Theme 2: Putting cycling and walking at the heart of transport, place-making and health policy;
- i Theme 3: Empowering and encouraging local authorities; and
- i Theme 4: Enable people to cycle and protect them when they do.

These themes will underpin the DfT's commitment to increasing investment in active travel infrastructure, with the aim of delivering thousands of miles of safe, continuous, direct routes for cycling in towns and cities, physically separated from pedestrians and volume motor traffic, serving the places that people want to go. Higher design standards have been set, as reflected in the publication of Local Transport Note (LTN) 1/20 Cycle Infrastructure Design as has a commitment to ensuring that all new developments are built around making sustainable travel the first choice for journeys.

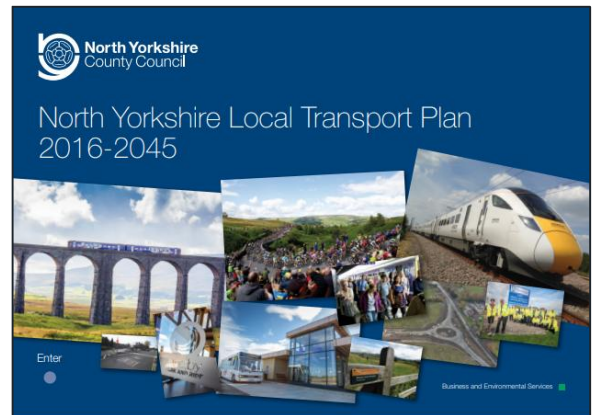
SUB-REGIONAL POLICY

North Yorkshire Local Transport Plan (LTP4) (2016-2045)

2.2.18 NYCC's LTP4 is a four-tier document which covers the local transport strategy, objectives, transport improvements by modes/theme, and policies adopted by the County Council, between 2016 and 2045.

2.2.19 NYCC, through consultation with stakeholders, has identified five key objectives regarding transport in the county:

- | Economic Growth – Contributing to economic growth by delivering reliable and efficient transport networks;
- | Road Safety – Improving road and transport safety;
- | Access to Services – Improving equality of opportunity by facilitating access to services;
- | Environment and Climate Change – Managing the adverse impact of transport on the environment; and
- | Healthier Travel – Promoting healthier travel opportunities.



2.2.20 The LTP4 states that the County Council will promote sustainable travel and encourage travel to work by walking, cycling, bus, rail and car sharing. It also highlights that, where possible, NYCC will provide additional infrastructure to support sustainable travel, with improvements provided through transport grants such as the LSTF fund. The County Council will also seek to ensure that provision of suitable facilities to encourage healthier travel choices is made within any new development.

2.2.21 The LTP identifies Northallerton as a North Yorkshire 'growth town', playing a significant role in the economy of the county. NYCC state that the council will work to investigate and develop proposals to reduce urban congestion in these towns, including identifying schemes to enable future growth. Walking and cycling schemes can play a large part in reducing congestion, engendering modal shift.

2.2.22 The LTP is also supportive of a new rail link from Leeds to Harrogate (potentially pre 2030) and then to Ripon and Northallerton (post 2030). This would open up additional capacity on the East Coast Mainline and also release capacity at Leeds Station. This would support the need to enhance connections to Northallerton Station for residents.

2.2.23 The LTP identifies that over 40% of the population of North Yorkshire live in communities with a population of over 10,000 people. As a result, many trips in these areas are relatively short, making walking and cycling a viable form of transport for these trips.

2.2.24 While the LTP recognises a recent growth in cycling for leisure purposes, the document sets out the Council's commitment to providing for and promoting walking and cycling as a mode of travel for 'utility' purposes.

2.2.25 However, the LTP also acknowledges the lack of funding available for significant additional infrastructure. This commitment to walking and cycling therefore primarily revolves around the continued maintenance of the highway network, which is considered "eminently suitable for most cycle users". Despite this, the LTP states that NYCC will continue to seek additional funding where

available, and proactively plan and develop cycling infrastructure where there is a realistic chance of funding being available to deliver the improvements.

LOCAL POLICY

Hambleton District Council Core Strategy (April, 2007)

- 2.2.26 The Hambleton District Adopted Core Strategy recognises that, despite the high levels of car ownership and usage within the rural district, there is still a need to cater for those that do not have access to car travel. Within the document the district seeks to become more sustainable to help address climate change. To do this the document sets out two key objectives:
- i To work in conjunction with the Local Transport Plan to promote better forms of public and community transport accessible to the whole community with improved links between settlements (and to support other alternatives to the use of the car such as cycling or walking).
 - i To direct future developments as far as possible to the most accessible locations

Hambleton District Council Draft Local Plan (July 2019)

- 2.2.27 The Hambleton District Local Plan Draft was submitted to the Secretary of State for Examination on 31st March 2020. The Local Plan is a key milestone in planning Hambleton's future up to 2035.
- 2.2.28 The Plan addresses the need for new homes and jobs to ensure young people have the opportunity to stay in the area and new businesses and current businesses grow. In order to meet the Council's aspiration for growth in the Hambleton district approximately 77.6 hectares of employment land and at least 6,615 new homes are required. Within Northallerton, the Local Plan allocates 640 new homes and 8.7ha of employment land. As new development comes forward in Northallerton it will be essential that active travel connections to key destinations, via high quality infrastructure, are in place to support sustainable development and minimise the potential for car-dominated travel patterns to form.
- 2.2.29 This LCWIP therefore considers where strategic development locations identified in the Local Plan are situated, and this forms one criteria in how the network plans and route selection process has been determined.
- 2.2.30 The Local Plan also includes a range of the policies, included in Table 2-1, which support walking and cycling:

Table 2-1 - Local Plan Policies

Reference	Policy summary
S1 Sustainable Development Principles	This policy seeks to ensure new developments make a positive contribution towards the sustainability of community. One aspect of this policy is minimising the need to travel and promoting sustainable modes.
CI 2 Transport and Accessibility	This policy highlights the need for developments to: <ul style="list-style-type: none"> ▪ Be well integrated with footpath and cycling networks and public transport; ▪ Minimise the need to travel and maximise active and sustainable modes ▪ Reduce the demand for travel by private car ▪ Provide safe physical access to the proposed development from the footpath and highway networks
EG5 Vibrant Market Town	This policy focuses on the enhancement of town centres. Town centres should have an attractive public realm and should seek to improve access by sustainable and active modes.
E1 Design	This policy highlights the need for continuous and interconnected walking and cycling networks. Safe and attractive walking and cycling routes are required to increase active travel in the district and the health and wellbeing of the population.

SUMMARY

- 2.2.31 The policy review presented above demonstrates how the Northallerton LCWIP will contribute to a range of policy objectives at local, regional and national scale.
- 2.2.32 The principles of the LCWIP are to contribute towards the Government’s national level objectives of supporting sustainable development by contributing to economic growth in a sustainable manner. The Government recently released the Cycling and Walking Investment Strategy (CWIS) and Local Cycling and Walking Infrastructure Plan (LCWIP) guidance. The LCWIP represents part of North Yorkshire’s contribution to support the CWIS objectives.
- 2.2.33 The LCWIP will support and contribute toward all five objectives of the North Yorkshire Local Transport Plan due to the wide-ranging way that walking and cycling, as a mode of transport, can deliver benefits to individuals and wider society.
- 2.2.34 At a local level, the LCWIP will complement HDC’s vision, contributing towards the District’s aims and objectives for sustainable development, provide opportunities for walking and cycling, and potentially enhance community infrastructure and spaces, while also promoting environmental, health, and social equality agendas. The LCWIP can also help tackle climate change through modal shift. If adopted as a Supplementary Planning Document (SPD), as per the DfT’s LCWIP guidance, the Northallerton LCWIP will provide a policy basis for development to contribute towards a cohesive walking and cycling network and helps ensure both NYCC and HDC’s significant growth aspirations come forward in a sustainable manner.

2.3 LOCAL GEOGRAPHY

AREA PROFILES

- 2.3.1 Northallerton is North Yorkshire's county town and Hambleton District's largest settlement, the Built-up Urban Area¹ (BUA) of Northallerton has a population of 16,832, which accounts for 18% of Hambleton District's total population.
- 2.3.2 Historically the town has been built up around the medieval layout with long narrow burgage plots extending back from the broad high street. In more recent times the East Coast Mainline and the railway line to Stockton on Tees have had a significant bearing on the form the town has taken with residential areas to the south and east and industrial development to the north. The town has grown to merge with Romanby, originally a freestanding village to the west of the East Coast Mainline.
- 2.3.3 Northallerton's high street, which is Hambleton District's main shopping centre, routes north – south through the town and is host to a range of retail, food and drink outlets. Twice a week the high street hosts a market.
- 2.3.4 In addition to shopping, Northallerton plays a key role in the provision of local facilities serving the rural population of North Yorkshire. To the northwest of the town lies the Northallerton Business Park, an industrial and retail outlet and key employment site. The town is also home to North Yorkshire County Council, Hambleton District Council, North Yorkshire Police and the Friarage Hospital.

LCWIP Implications

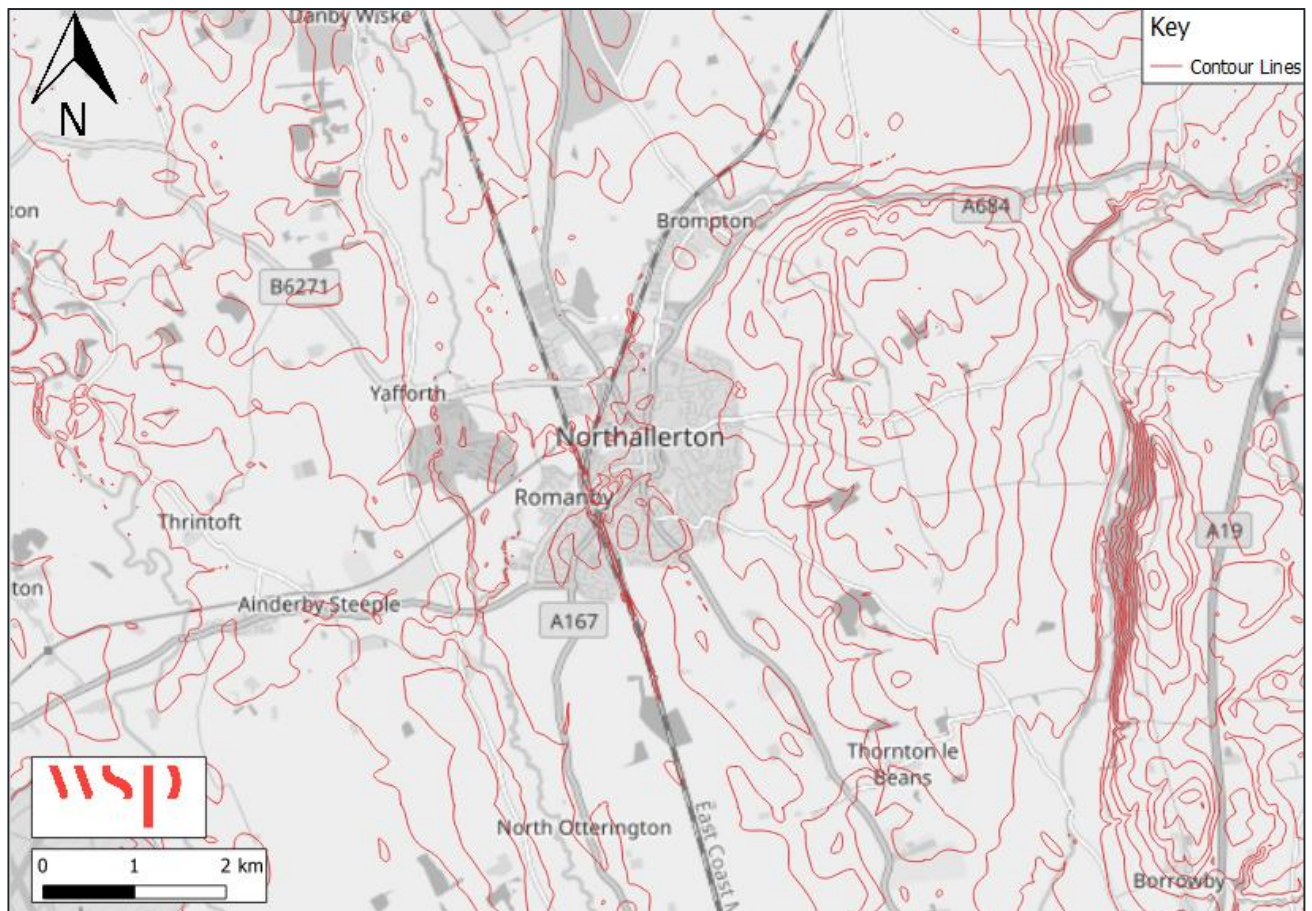
- Northallerton town centre attracts a large number of visitors from further afield within the county and the wider district. This suggests that good pedestrian links are required from the train station, bus stops and car parks.
- Northallerton is home to a number of the district's key employment sites, those making shorter journeys to work will be the target of this LCWIP.
- Northallerton town centre's narrow side streets may provide a barrier to the provision of good quality walking and cycling infrastructure.
- The significant parking provision on the high street can also be perceived as a barrier to pedestrian movements.

¹ Built-up Urban Areas (BUA) are as defined in the Census 2011 and comprise the urban areas in and around the main towns.

TOPOGRAPHY

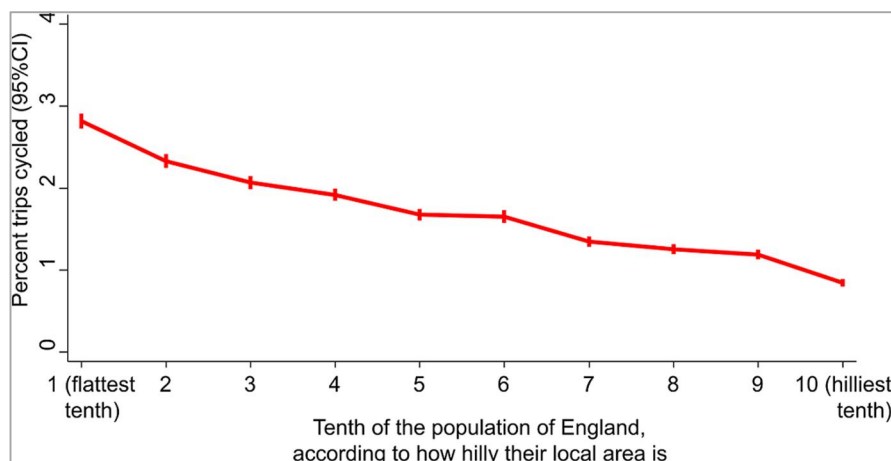
- 2.3.5 Figure 2-1 illustrates the topography within the LCWIP study area. Topography is integral in the consideration of desire lines and potential routes, as routes which are deemed too hilly may deter some users from using them, due to a number of factors such as levels of health and fitness.
- 2.3.6 As shown by the figure below, Northallerton and the wider LCWIP study area is relatively flat, characterised by large areas of agricultural land outside of the town itself. To the east of Northallerton, there are some hills around the Brompton area and Bullamoor, as well as the area to the west of the A19, however, these are unlikely to impact upon active mode travel within the study area.

Figure 2-1 - Northallerton Topography



- 2.3.7 Hilliness is essential in predicting the levels of cycling in England, and it is the case that, as hilliness increases, the probability of cycling reduces. Research undertaken at the University of Leeds elicited hilliness was the most significant factor in determining the proportion of people who cycle to work within a district.
- 2.3.8 This idea that hilliness has a direct impact on uptake of active modes is illustrated by Figure 2-2, which shows the proportion of trips made by cycling in relation to the hilliness of an area. This shows that as the level of hilliness increases, the proportion of trips made by cycling decreases from just below 3% to around 1%. This highlights the importance of topography in developing a cycle network that will encourage all users to utilise cycling as a means of active travel.

Figure 2-2 - Proportion of Trips Cycled in England (According to ‘Hilliness’ of Local Area)



- 2.3.9 Gradient also plays a major role in the perceived ‘comfort’ or ‘attractiveness’ of pedestrian routes (footpaths and footways), and thus, the propensity to walk a route. As highlighted in DfT’s 2005 ‘Inclusive Mobility’ guidance², and replicated more recently in the 2014 Welsh Active Travel Guidance³, steep gradients can have a particular impact on older people, those with physical difficulties and parents with pushchairs. The guidance recommends that as a general rule, a gradient of 5% (1 in 20) should be the desirable maximum in most situations and 8% (1 in 12.5) should be used as the absolute maximum unless justifiable. Research by Meeder et al (2017)⁴ concluded that slope (and by inference ‘hilliness’) has a significant influence on walking attractiveness primarily due to the effort (or energy) required to scale the slope, suggesting that for every 1% increase in incline there is a 10% reduction in walking attractiveness.
- 2.3.10 The levels of hilliness within the Northallerton study area is generally conducive of cycling, however, should be taken into consideration through the development of the cycling network throughout the remainder of this study.

LCWIP Implications

- In the development of cycle networks, consideration should be given to hilliness in implementing infrastructure in areas which are characterised by hills and inclines.
- The Northallerton study area is generally flat, which encourages active travel, inclusive of all within a population.

² Inclusive Mobility, Department for Transport, 2005

³ Active Travel Design Guidance, Welsh Government, 2014

⁴ ‘The influence of slope on walking activity and the pedestrian modal share’, Meeder M. *et al.*, 2017

BARRIERS TO MOVEMENT

- 2.3.11 Although the topography of the area has been identified as generally conducive to walking and cycling, there are a number of physical barriers which can significantly impede active travel movements within the study area. Where there are barriers to movement, such as a river, railway or busy road, routes are created where people are funnelled towards the available crossing points. If there are limited number of crossings over a barrier, motorists, pedestrian and cyclists are funnelled to the same point, creating a crossing that is likely to be dominated by high traffic volumes.
- 2.3.12 Figure 2-3 displays the various key features that can cause high levels of severance, creating barriers to movement and potentially requiring significant engineering interventions to mitigate this impact.

Figure 2-3 - Barriers and Funnels of Movement within Northallerton



- 2.3.13 The main source of severance within Northallerton is the railway line which runs north to south along the eastern side of the town. There are three main level crossings within the town, operating as mitigation by offering crossing points over the railway line; these are located at Boroughbridge Road, Ainderby Road and Low Gates. There is also an additional crossing point on Springwell Lane. These intersections on the road network operate as funnels for motor, pedestrian and cycle movements between the town centre and the business and industrial areas to the north west.
- 2.3.14 This severance, caused by the railway line, worsens during level crossing down times, allowing for safe passing of railway services through the town. Traffic accumulation, as a result of level crossing

down time, is a significant issue around the Low Gates level crossing and has been highlighted as a pinch point in connecting the north and south sides of the railway line.

2.3.15 Surveys at Low Gates level crossing, undertaken as part of the Low Gates Level Crossing Study in November 2017, showed that there is a barrier down time of approximately 2.5 minutes, an average of three times per hour between 7am and 7pm, equalling a total of 40 closures. The resulting 'dead time' and limited allocation of road space for active modes results in not only accumulation of traffic on the road network but creates an uncomfortable and unattractive environment for pedestrians and cyclists waiting to cross the railway line.

2.3.16 Table 2-2 details the times and duration of the level crossing closures throughout the surveyed period.

Table 2-2 - Low Gates Level Crossing Barrier Closure Times

North Side: Barrier Closure Times/Duration							
Serial	Barrier Down	Barrier Up	Duration	Serial	Barrier Down	Barrier Up	Duration
1	07:37:36	07:40:19	00:02:43	21	13:27:34	13:30:33	00:02:59
2	07:43:56	07:47:58	00:04:02	22	13:31:54	13:34:29	00:02:35
3	07:56:27	07:59:03	00:02:36	23	13:46:27	13:48:26	00:01:59
4	08:55:45	08:58:24	00:02:39	24	13:51:01	13:52:35	00:01:34
5	09:08:45	09:10:22	00:01:37	25	14:08:54	14:11:43	00:02:49
6	09:12:47	09:15:49	00:03:02	26	14:41:45	14:43:21	00:01:36
7	09:48:12	09:50:53	00:02:41	27	14:49:07	14:51:52	00:02:45
8	09:59:07	10:01:47	00:02:40	28	15:04:56	15:08:12	00:03:16
9	10:10:57	10:14:51	00:03:54	29	15:50:20	15:52:55	00:02:35
10	10:27:58	10:29:57	00:01:59	30	16:10:44	16:12:36	00:01:52
11	10:51:59	10:53:31	00:01:32	31	16:23:47	16:25:26	00:01:39
12	10:55:36	10:58:09	00:02:33	32	16:41:51	16:44:33	00:02:42
13	11:05:09	11:07:56	00:02:47	33	16:58:47	17:00:25	00:01:38
14	11:13:04	11:15:45	00:02:41	34	17:02:43	17:05:51	00:03:08
15	11:57:17	11:58:48	00:01:31	35	17:08:42	17:12:50	00:04:08
16	12:11:08	12:13:44	00:02:36	36	17:45:47	17:47:25	00:01:38
17	12:16:33	12:19:48	00:03:15	37	17:54:44	17:57:13	00:02:29
18	12:22:51	12:24:05	00:01:14	38	18:17:00	18:20:53	00:03:53
19	13:00:45	13:02:28	00:01:43	39	18:40:50	18:43:37	00:02:47
20	13:06:08	13:09:03	00:02:55	40	18:52:46	18:55:40	00:02:54

2.3.17 As can be seen from the table above, whilst there is some variation in the duration of the level crossing closure time, throughout the peak periods, this increases to over three and four minutes in some cases.

2.3.18 The closure of the level crossing throughout the day results in increased queuing along an arterial section into Northallerton. As part of the Low Gates Level Crossing Study, an assessment of queue lengths was also undertaken to determine the impact of the closure of the level crossing on the existing network.

2.3.19 The figures below illustrate the queuing which results from the closing of the Low Gates Level Crossing.

Figure 2-4 - Low Gates Level Crossing - (Queuing - North)

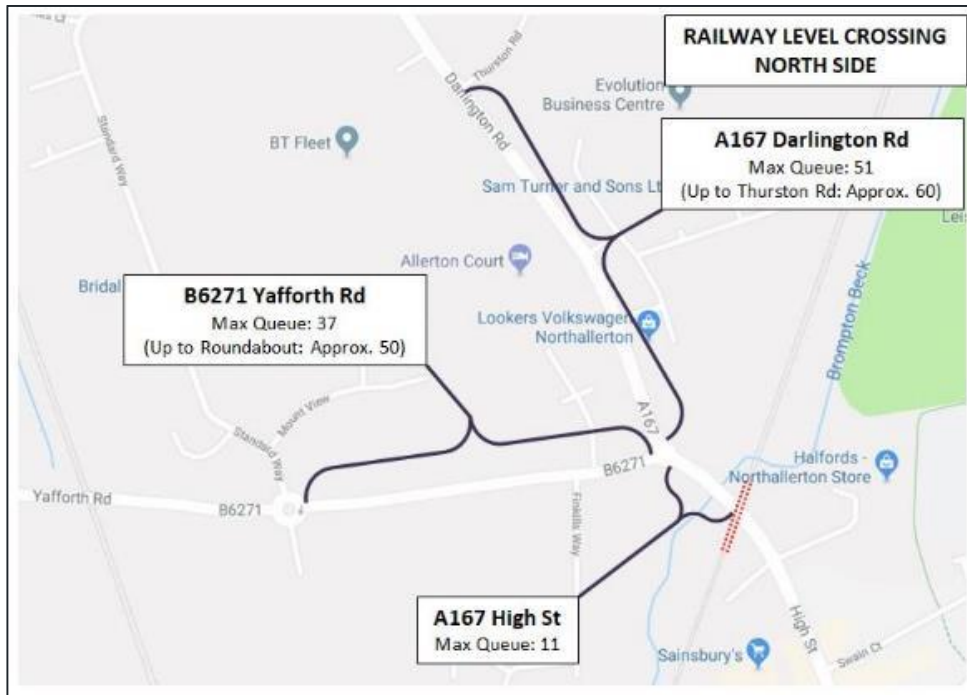
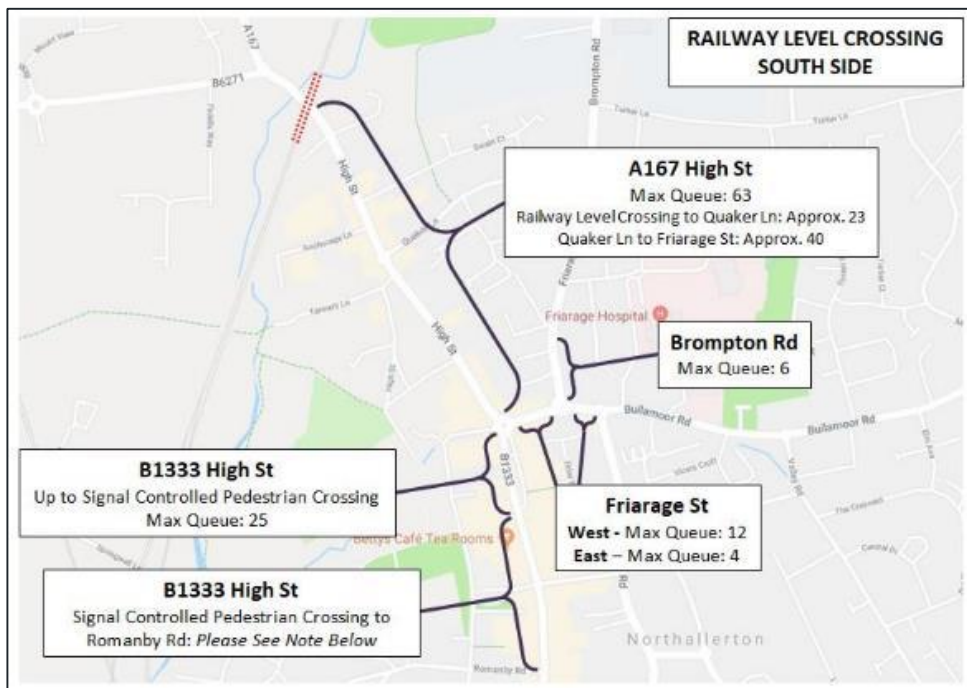


Figure 2-5 - Low Gates Level Crossing (Queuing - South)



- 2.3.20 This indicates the queues can stretch south past the Friarage Street roundabouts, resulting in large volumes of stagnant traffic during the peak traffic periods in the morning and afternoon
- 2.3.21 Analysis of these crossing points on the network shows that there is little space to accommodate significant volumes of motorists, pedestrians and cyclists. This means that, whilst it is possible to cross barriers and areas of severance, limited available width means that these areas of the network are not efficient to allow pedestrian and cyclist movements, potentially acting as a deterrent.
- 2.3.22 A study looking into the provision of a pedestrian footbridge was explored by NYCC. The outcome of the study was that a new footbridge at this location would not be good value for money and should not be taken forward further.

LCWIP Implications

- The railway line operates as a physical barrier between the north west, south west and the town centre, leading to severance for all modes of transport.
- The barrier down time results in significant congestion along the highway network when trains are passing.
- Whilst level crossings provide an opportunity for crossing for active modes, there are some safety implications associated with this type of crossing point, potentially deterring people from travelling sustainably.

ENVIRONMENTAL CONSIDERATIONS

- 2.3.23 Environmental considerations have the potential to form a key part of the LCWIP process. Protected areas of land can restrict the type of infrastructure that can be implemented, or even prevent a route from being adopted at all. Given the history of Northallerton, the town is characterised by many heritage assets as well as environmental designations, with some areas of the town having a record of flooding.
- 2.3.24 This section of the report presents a brief overview of environmental constraints that could impact on the overall LCWIP proposals.

Heritage Assets

- 2.3.25 There are a large number of heritage assets within the study area, including listed buildings and scheduled monuments, as illustrated on Figure 2-6.
- 2.3.26 A significant proportion of these are located within Northallerton, with a concentration of listed buildings located along the High Street, as shown in Figure 2-6.

Figure 2-6 - Heritage Assets (Study Area)

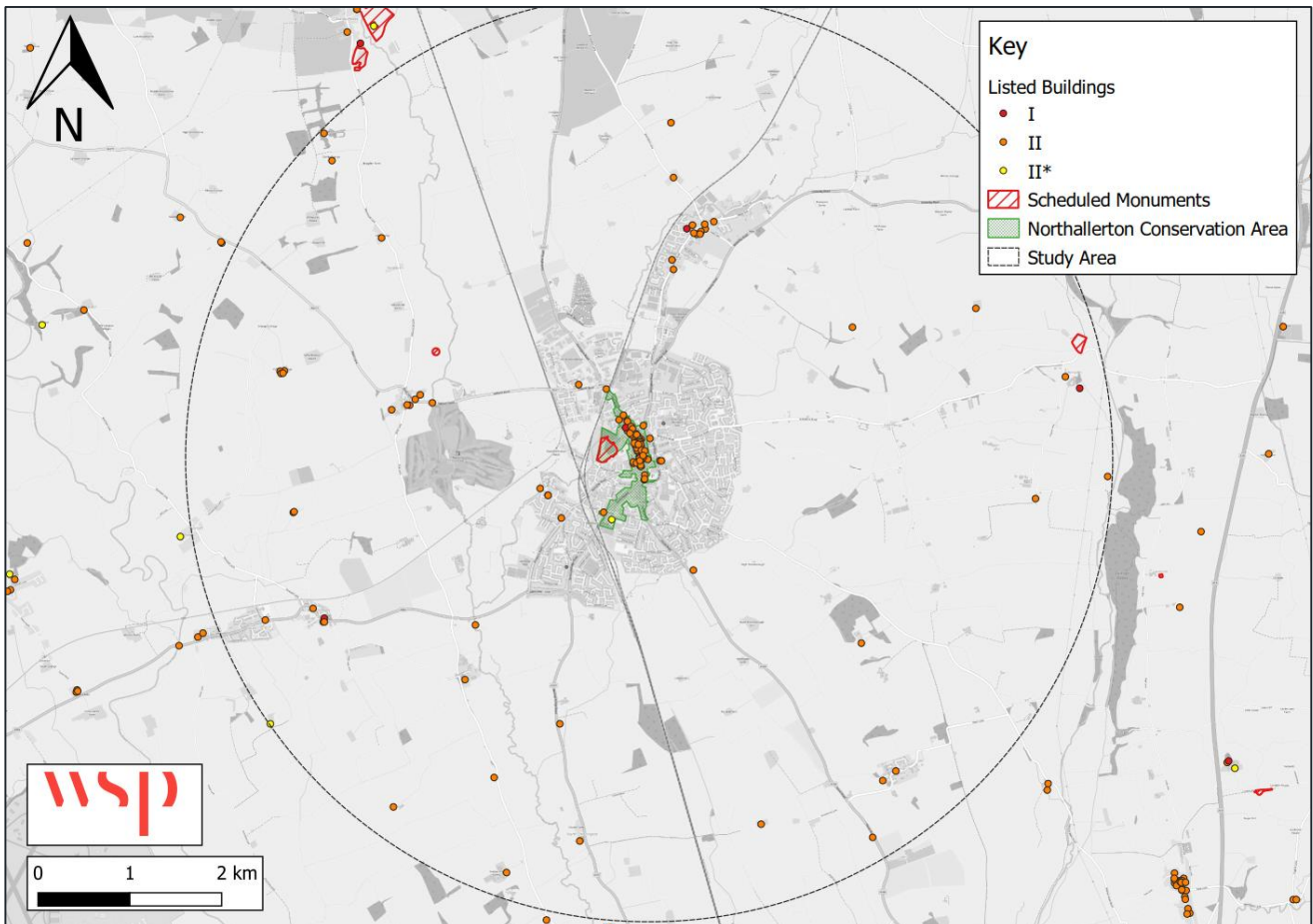
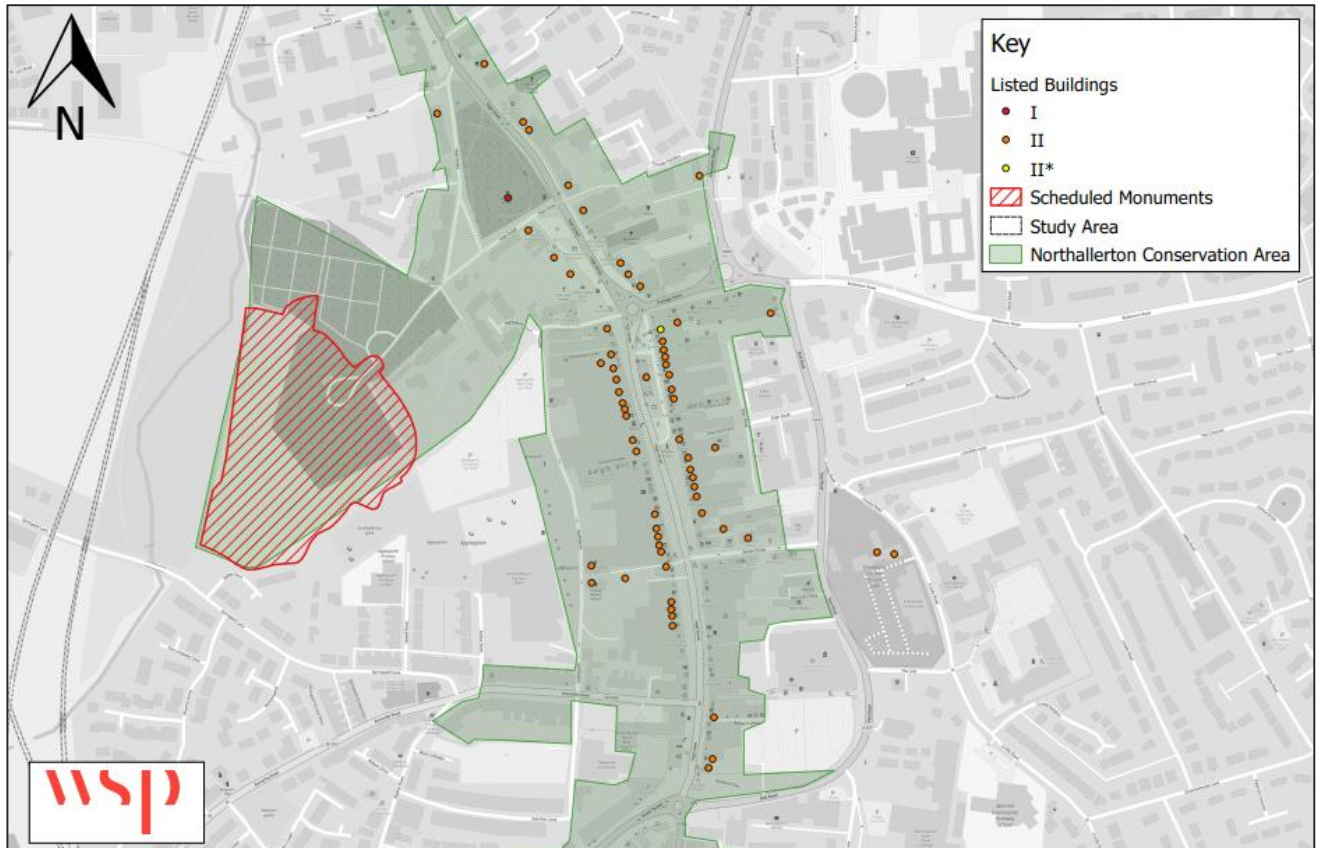


Figure 2-7 - Heritage Assets (Northallerton Conservation Area)

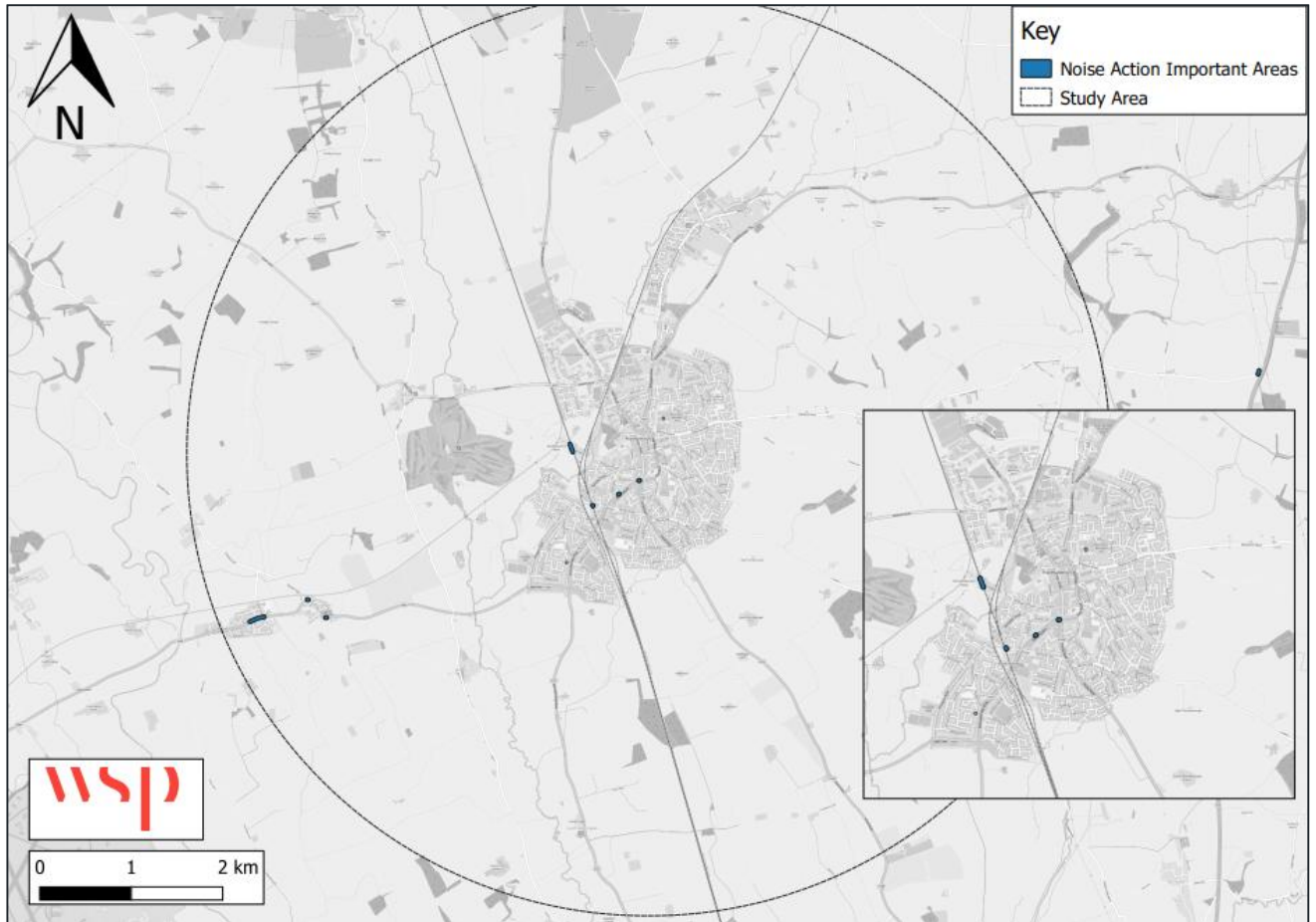


2.3.27 Proposals for cycling and walking interventions should be cognisant of these heritage assets, and where possible opportunities to improve or, at minimum, maintain preservation of key assets should be sought. Infrastructure to support a modal shift to walking and cycling could prove effective in preserving original features and reducing degradation from motorised vehicle pollution.

Noise and air quality

- 2.3.28 Local authorities have statutory duties for managing air quality, under Part IV of the Environment Act 1995. In line with this, Hambleton District Council is required to carry out regular reviews and assessments of air quality, against standards and objectives prescribed in the Air Quality (England) Regulations 2000 and the Air Quality (England) (Amendment) Regulations 2002. If one or more of the air quality objectives, for each of the seven pollutants, specified in the regulations are exceeded, an Air Quality Management Area (AQMA) must be declared.
- 2.3.29 As part of ongoing efforts to improve air quality across the district, Hambleton District council developed an Air Quality Action Plan, with the aim of reducing NO₂ concentrations by tackling emissions as a result of vehicular traffic.
- 2.3.30 There are no designated AQMAs in Northallerton, however Friarage Street suffers from poor air quality. There are a number of developments coming forward which are likely to generate greater volumes of traffic around the town and will contribute to further pollutants; these developments include North Northallerton and the former HM Prison site in the town. As a result, this highlights the need to ensure that infrastructure exists which enables people to walk and cycle, therefore reducing the volume of vehicular emissions as a result of additional trips.
- 2.3.31 Although there are no AQMAs to consider, there are a number of Noise Action Planning Important Areas (NIA), as shown in Figure 2-8. NIAs are areas in which the population, living within a given area, are affected by noise levels as a result of strategic noise mapping, as outlined by Department for Environment, Food and Rural Affairs.

Figure 2-8 - Noise Action Important Areas

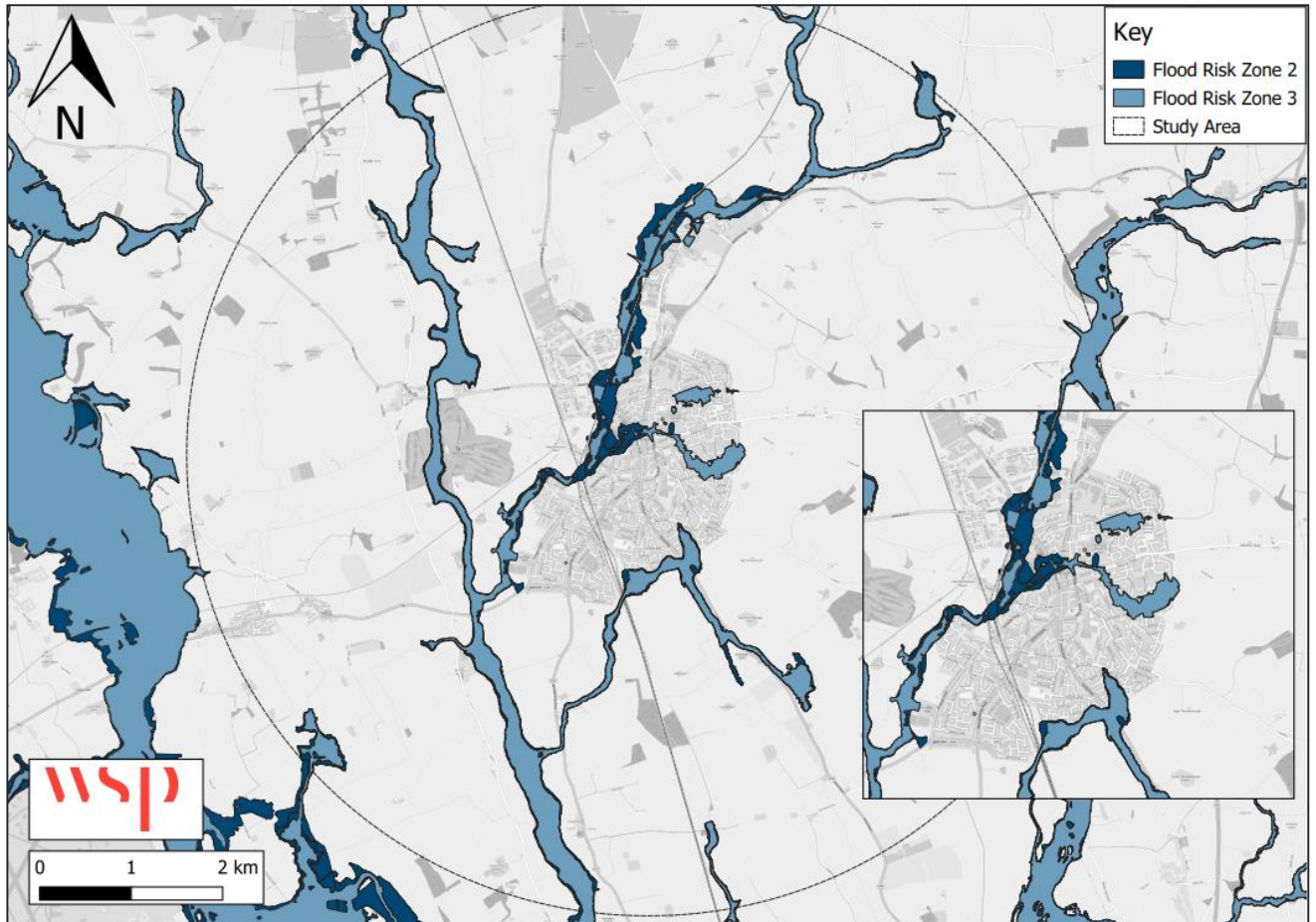


2.3.32 It can be seen that there are a number of NIAs in Northallerton, as well as around Ainderby Steeple. These areas are likely attributable to levels of traffic travelling along arterial routes, therefore resulting in noise pollution during peak periods. It would be expected that measures which help reduce the level of traffic around these areas would also improve noise pollution.

Flood risk

2.3.33 There are a number of areas with the study area, and within Northallerton town centre itself, which are considered to be at risk of flooding; largely a result of the River Wiske and the Willow Beck. Figure 2-9 illustrates the areas within the study area which are in flood risk zones 2 and 3.

Figure 2-9 - Flood Risk Map



- 2.3.34 It can be seen that the areas immediately to the north of the town, and around Brompton, are at varying levels of risk of flooding. It is also clear that there are a number of sections of the railway lines that are at medium-high risk of flooding, which has the potential to disrupt services.
- 2.3.35 Northallerton, and the surrounding villages, have experienced several major flooding incidents in the past 20 years, highlighting the need to consider areas that are at risk through the development of interventions; major flooding events occurred in 2000, 2008, and most recently in 2012.
- 2.3.36 As well as presenting risk to life, these areas (highlighted by blue in Figure 2-9), also illustrate areas of severance across the study area. As can be seen, much of the northern extent of Northallerton is characterised by flood risk zones, meaning that, if flood events do take place, there would be a clear divide between certain areas of the town. Additionally, this is also the case when analysing connectivity between Northallerton town centre, and Morton-on-Swale to the west of the town.

LCWIP Implications

- Attention should be given to the areas which are at risk of flooding when considering interventions, particularly to the north of the town, and to the west of the main town centre of Northallerton. Therefore, all options which enter flood risk zones should consider sufficient resilience measures against flood damage, to ensure severance issues are mitigated in future flood events.
- Routes that could potentially impact on a scheduled monument (such as any alterations) will need to consider Scheduled Monument Consent.
- There is a large proportion of listed buildings in the northern extent of Northallerton. Whilst walking and cycling interventions would work to reduce environmental degradation of listed buildings, where interventions encroach onto the boundary of listed building sites, listed building consent would be required.

2.4 DEMOGRAPHICS

POPULATION, AGE AND EMPLOYMENT

2.4.1 The study area, which sits within the mid layer Super Output Areas of Hambleton 003, 004, 005 and 007, has a population of 34,439, of which, 50% are male and 50% are female. In England, in 2018, males (of all ages) made 2.5 times as many cycle trips as females, according to Cycling UK.

2.4.2 Age can also indicate the likelihood of a person cycling as part of a trip, Table 2-3 indicates that 49% of the population within the study area are over the age of 45. Cycling UK have reported that in England, the age group most likely to report that they cycle at least once a week were 16-24-year-olds (9.4%). This was followed by the age categories, 25-34 and 35-44-year-olds, both at 8%. This suggests that a substantial proportion of the Northallerton study area population may not be inclined to travel by bicycle based on national trends of age and cycling.

Table 2-3 - Age Groups

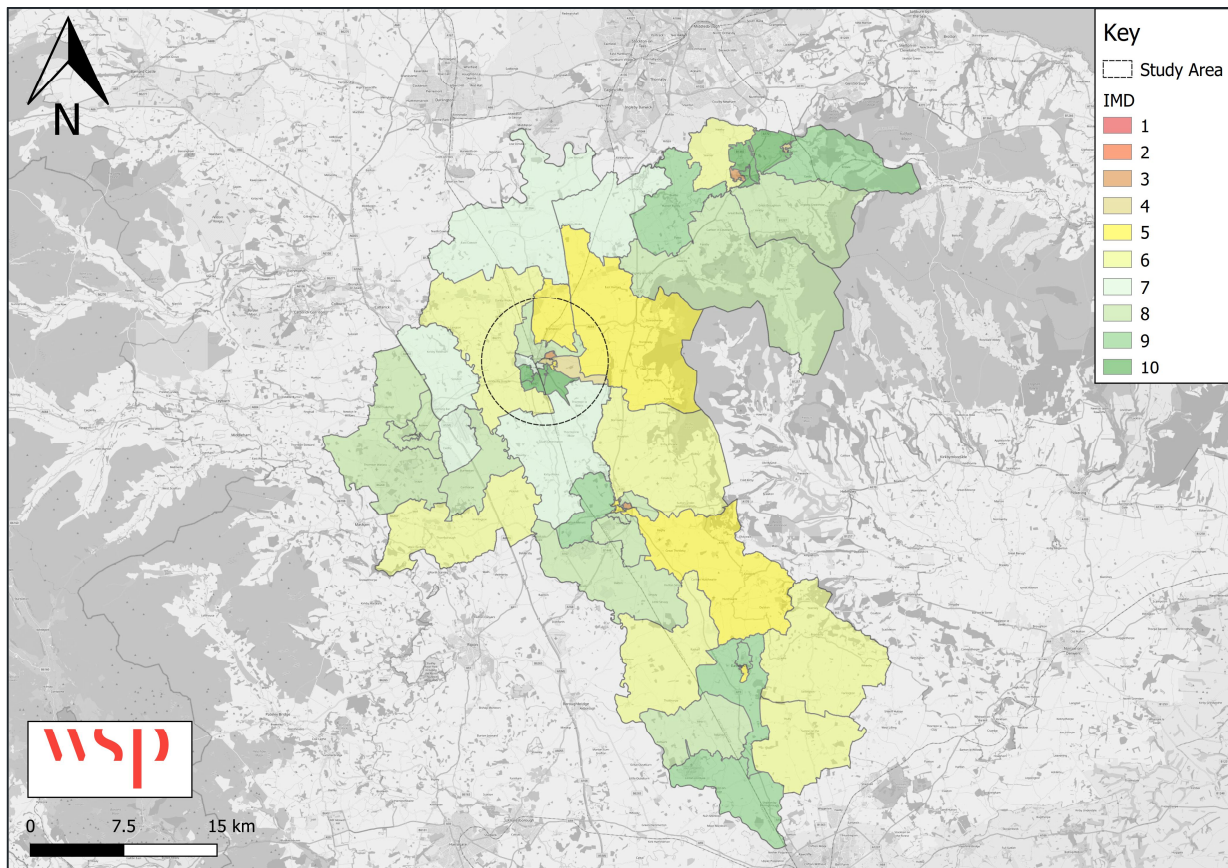
Age group	Residents	Proportion
Age 0 to 4	1,822	5%
Age 5 to 7	1,091	3%
Age 8 to 9	684	2%
Age 10 to 14	1,895	6%
Age 15	398	1%
Age 16 to 17	773	2%
Age 18 to 19	766	2%
Age 20 to 24	1,988	6%
Age 25 to 29	1,907	6%
Age 30 to 44	6,156	18%
Age 45 to 59	7,530	22%
Age 60 to 64	2,596	8%
Age 65 to 74	3,707	11%
Age 75 to 84	2,279	7%
Age 85 to 89	551	2%
Age 90 and over	296	1%

2.4.3 The census data indicates that the economically active age range (16-64) comprises 63% of the study areas population, which is greater than the North Yorkshire average (59%) and the same as the regional and national averages (both 63%).

INDICES OF MULTIPLE DEPRIVATION

- 2.4.4 A key set of demographic indicators when promoting walking and cycling are those related to deprivation. This section of the report compares the 52 Lower-level Super Output Areas (LSOAs) within the District to the 32,482 LSOAs nationwide, paying particular regard to those within the Northallerton LCWIP Study Area.
- 2.4.5 The English Indices of Multiple Deprivation (IMD) are usually released on a three-yearly basis by the Department for Communities and Local Government. However, there were five years between the most recent release in 2015 and the previous release in 2010. Their purpose is to assess the concentration and degree of deprivation and poverty within all local authorities in England. The index ranks, at a highly localised scale, the degree to which the different locations could be in relative deprivation.
- 2.4.6 The following figures classify the various indices presented as deciles based on data across the whole of England. Number one is considered the most deprived, while ten is the least deprived; therefore one is presented as within the most deprived ten percent, whereas ten is in the least deprived ten percent nationwide. Indices of Multiple Deprivation (IMD) is a composite of many types of deprivation, including income, employment, education skills and training, health and disability, crime, barriers to housing and services, and living environment. Figure 2-10 illustrates the IMD data for the district of Hambleton.

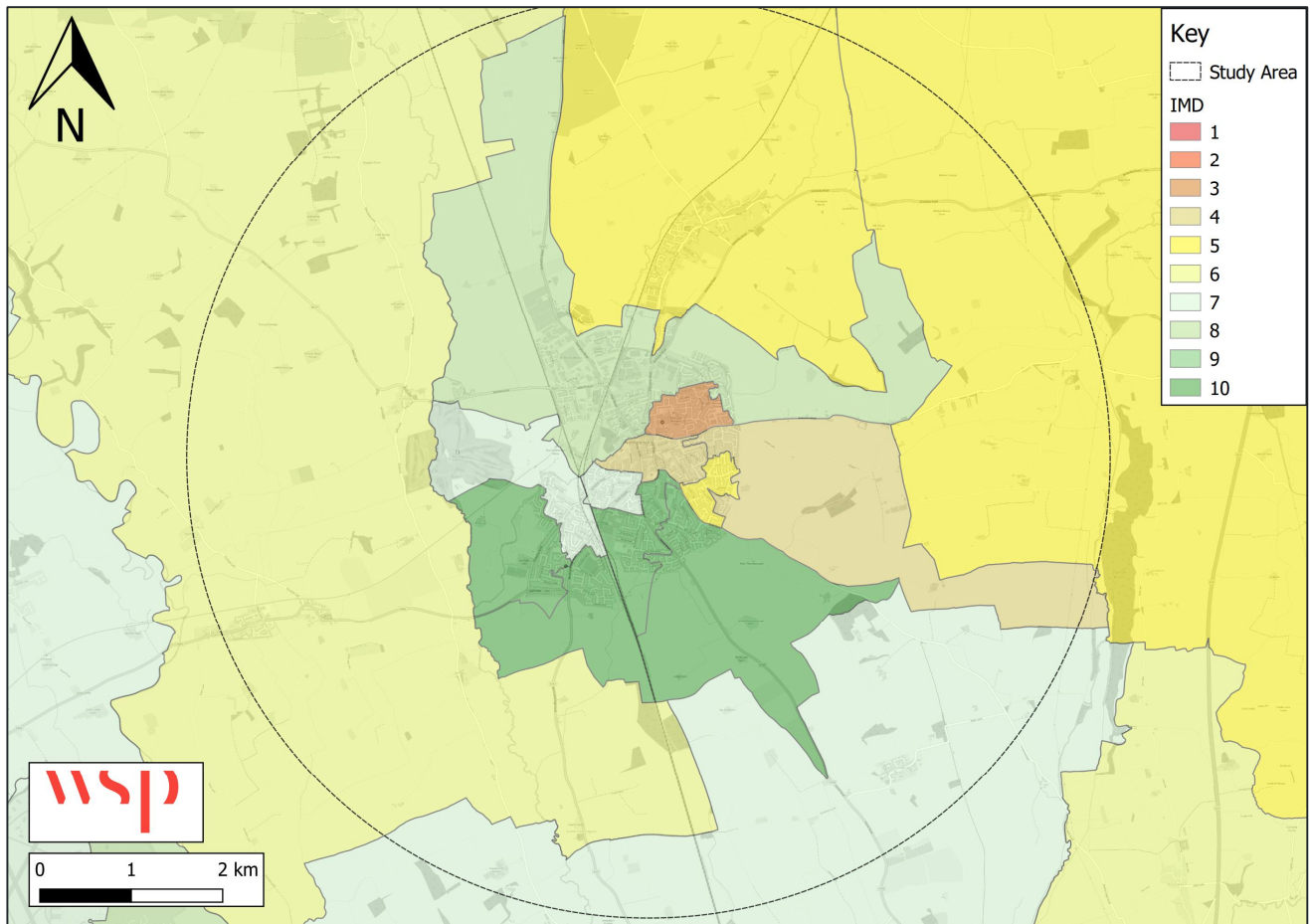
Figure 2-10 - Indices of Multiple Deprivation (IMD): Hambleton District



2.4.7 Across the district, there are no LSOAs which rank within the bottom ten percent of the most deprived areas with the UK. Additionally, there are only six LSOAs which are classified as being in the lowest 50% of the most deprived areas of the UK; this suggests that a large proportion of the district experiences relatively low levels of deprivation. Of these six LSOAs, three are located within the Northallerton study area utilised as part of this LCWIP. It can be suggested that, areas where deprivation is highest within the study area may mean that owning a car is more difficult, due to a lack of disposable income. This means that there is a reliance on public transport service, and more likely walking and cycling as a means of travelling.

2.4.8 Figure 2-11 illustrates a detailed illustration of IMD within Northallerton.

Figure 2-11 - Indices of Multiple Deprivation (IMD) – Northallerton

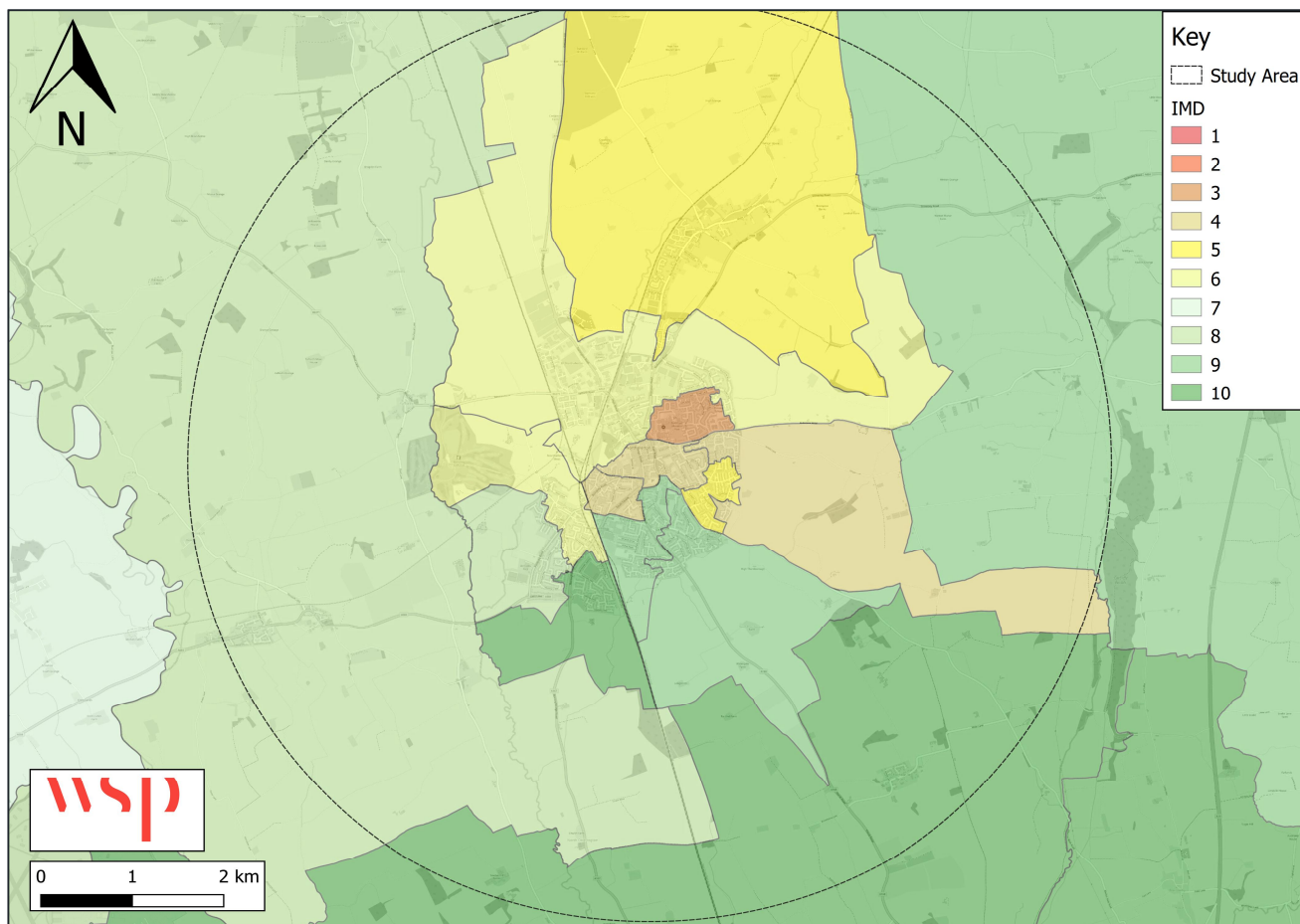


2.4.9 The IMD is designed to pull together different facets of deprivation, however, when carrying out small area analysis, it is often worth looking closely at what the domains, and even their subdomains, tell in order to understand the various aspects of ‘deprivation’.

Health Deprivation and Disability

2.4.10 An important indicator when promoting active transport modes is that related to the level of health deprivation and disability in the area. Health Deprivation and Disability, with regards to the IMD, analyses those living in poor physical and mental health. Figure 2-12 shows that isolating this IMD factor from the other indicators allows us to see that the levels of Health Deprivation correlate very closely with the overall IMD, with the urban areas being characterised by a lower value.

Figure 2-12 - Health Deprivation: Northallerton



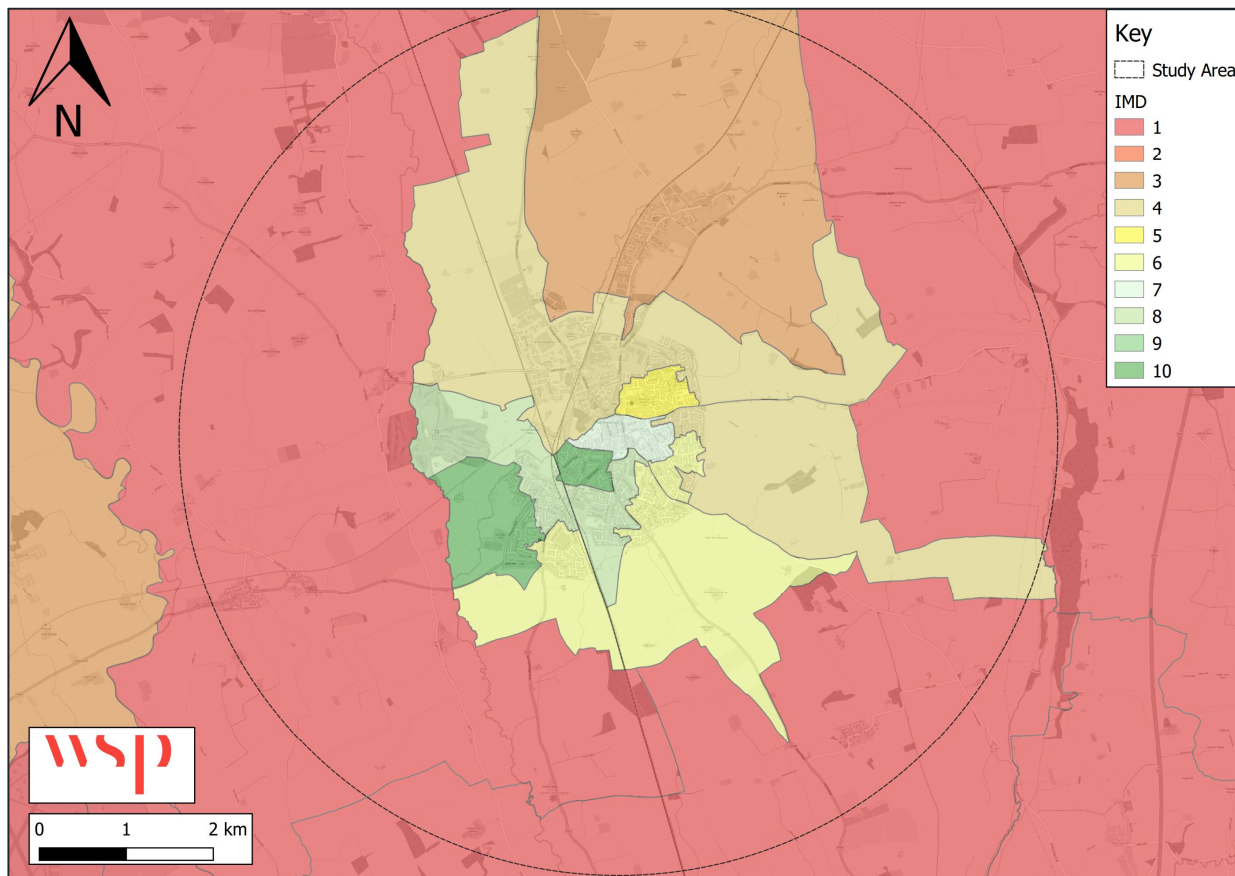
- 2.4.11 It is noted that none of the LSOAs within the study area are within the bottom 10% of the most deprived areas when considering health deprivation. There are four LSOAs, located around Northallerton town centre, and to the east, which are considered to be in the bottom 50% most deprived in the UK regards to health; this shows that the most deprived LSOAs within the study area are located around the centre of the town, in more urban areas.
- 2.4.12 The above figure highlights that much of the LSOAs within the study area experience relatively low levels of health deprivation, however, there are a number of areas within the central areas of Northallerton which are within 40% of the most deprived in the UK. Increased levels of walking and cycling may have a positive impact on both physical and mental health, improving the areas health deprivation statistic. It should however, be noted that physical activity is just one aspect of health deprivation, and there are many external factors which will impact upon deprivation.

Barriers to Housing and Services

- 2.4.13 Barriers to housing and services looks at the affordability and availability of housing, and closeness of such housing to key services. The indicators fall in to two sub-domains: 'geographical barriers' and 'wider barriers'. Geographical barriers relate to the physical proximity of local services measured by road distance to a post office, primary school, supermarket and GP surgery. Wider barriers include issues relating to the access to housing including household overcrowding, homelessness and housing affordability.

2.4.14 Figure 2-13 illustrates the levels of deprivation in regard to barriers to housing and services across the study area.

Figure 2-13 - Barriers to Housing and Services: Northallerton



2.4.15 The indicators used in generating this domain invariably favour urban areas, which are usually characterised by improved access to a wider range of services. As is illustrated from Figure 2-13 areas closest to the town centre experience less deprivation than those that are more rural in nature. Nine of the LSOAs within the study area are in the top 50% of the least deprived areas in the UK, suggesting that much of the town centre has good access to housing and services.

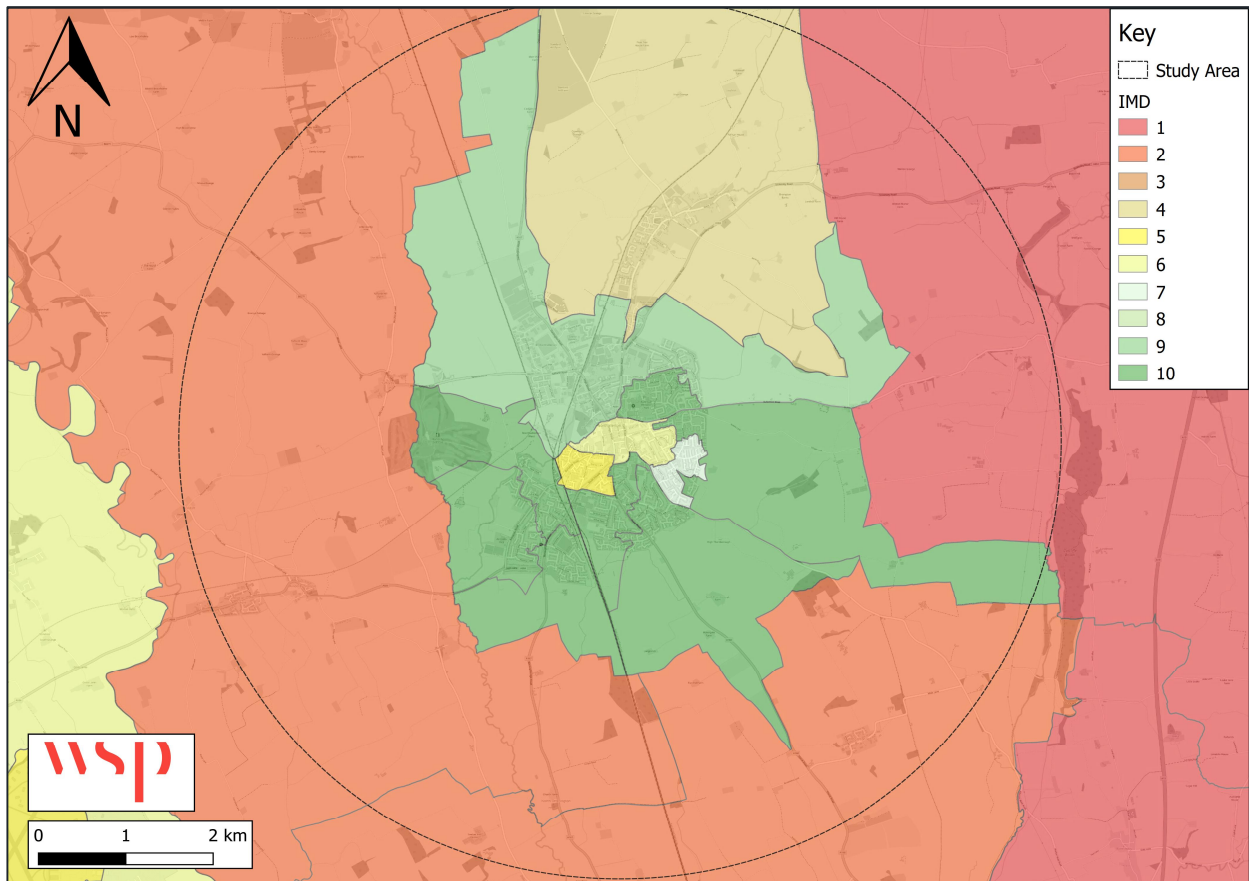
2.4.16 As a number of LSOAs outside of central region of the study area are characterised by barriers to housing and services, this may suggest that there is a reliance on car travel for peripheral areas – this is likely a result of distance and infrastructure currently in place. Similarly, analysis of more central areas shows that areas to the north of the town experience greater deprivation, when considering access to housing and services. This may be linked to severance experienced as a result of the railway line, meaning those without access to car do not feel comfortable crossing barriers via funnel points on the network.

Living Environments

2.4.17 Living environments deprivation analyses the standards of people’s indoor and outdoor living environment. The specific measures which contribute to this index are the quality of housing, the local air quality and number/severity of road traffic collisions in the area. The indicators fall into two sub-domains: The ‘indoors’ and ‘outdoors’ living environment. The ‘indoors’ sub-domain measures

the quality of housing based on whether a house has central heating and if it fails to meet the decent homes standard. The 'outdoors' sub-domain contains measures of air quality and road traffic incidents involving injury to pedestrians and cycle users.

Figure 2-14 - Living Environments: Northallerton



2.4.18 Figure 2-14 indicates significant disparity in the rankings across the study area, and notably between the urban core of Northallerton and the wider, more rural areas. While the centre of the Northallerton LCWIP study area includes some of the least deprived areas, the LSOAs on the outer areas are much more deprived – much of the LSOAs in and around Northallerton are within the top 10% of least deprived in the UK.

LCWIP Implications

- Northallerton, and the wider study area is characterised by relatively low levels of deprivation when considering health, particularly on peripheral areas around the town. However, there are areas around the town centre which have higher levels of deprivation in terms of health, and therefore should be addressed.
- The LCWIP presents an opportunity to introduce physical measures that could contribute towards overcoming these issues, likely in conjunction with a wider package of interventions.
- Some of the wider, more rural areas within the LCWIP study area are within the top 10% of deprived places in the UK, meaning access to housing and services is poor. It is essential that interventions brought forward support access to businesses and services in Northallerton, along key pedestrian and cyclist desire lines.
- IMD data will be utilised in the development of options, to ensure that the most essential routes are prioritised to reduce levels of deprivation across the study area.

2.5 TRAVEL PATTERNS – JOURNEY TO WORK

2.5.1 The journey to work patterns of Northallerton are based upon data collected as part of the 2011 Census. Table 2-4 summarises the journey to work patterns for those residing in the MSOA of Northallerton, presenting the areas to which residents travel for work purposes.

Table 2-4 - Commuting destinations from Northallerton

Location	No. in Employment	% of Total
Northallerton	3,395	60.2%
Hambleton District (excluding Northallerton)	1,076	19.1%
Harrogate	216	3.8%
Darlington	127	2.3%
Other	827	14.7%
Total	5,641	100.0%

2.5.2 Data shown illustrates that 79% of the residents of Northallerton work within the district of Hambleton, with 60% working and living within the town of Northallerton itself. Additionally, the table shows that only 21% of residents travel to areas outside of the district for work purposes.

2.5.3 Table 2-5 shows the origins of people who commute to Northallerton for work.

Table 2-5 - Workplace Destinations

Location	No. in Employment	% of Total
Northallerton	3,395	28.2%
Hambleton District (excluding Northallerton)	4,099	34.1%
Richmondshire	1,033	8.6%
Darlington	672	5.6%
Stockton-on-Tees	541	4.5%
Other	2,283	19.0%
Total	12,023	100.0%

2.5.4 The data shows that over 34% of the workplace population in Northallerton commute from the wider district area. This can be attributed to the fact that much of the district is rural, meaning that Northallerton acts as a key service for the district population.

2.5.5 As highlighted above, approximately 3,400 residents also work within Northallerton, meaning that these are internal commuter trips. In addition to this, there are approximately 8,600 trips made into Northallerton from the wider district and areas outside of Hambleton. Table 2-4 summarises that there are just under 2,250 commuter trips out of the town. This means that there is a net gain of around 6,380 trips into Northallerton, based on the 2011 Census Journey to Work data.

2.5.6 Whilst the location of travel is important in understanding patterns of commuter trips, due to the fact there is a high percentage of internal trips the modal choice of these trips is important in understanding the existing network. Table 2-6 summarises the modal split of internal commuter trips within Northallerton.

Table 2-6 - Northallerton Internal Journeys to Work: Modal Split

Mode	% of travellers
Car (Driver or Passenger)	41.9%
Train	0.2%
Bus	0.5%
Walk	49.3%
Cycle	7.0%
Other	1.2%

- 2.5.7 This data shows that, although there is a relatively high car (driver or passenger) modal share, just under half of the internal trips are made on foot (49%). This is likely a result of the fact that Northallerton is a very walkable town, with relatively accommodating topography making internal commuter trips made by foot a feasible option. However, whilst walking as a mode is around half, only 7% of the internal trips are made by bicycle, suggesting that barriers exist, which deter people from travelling around the town by bicycle for commuter trips.
- 2.5.8 Despite having a high percentage of commuter trips being made on foot, 42% of the trips are made by car, this suggests there is scope to encourage long term behaviour change to encourage commuters to travel using active modes such as walking and cycling. The implementation of interventions which support the safety and efficiency of these active mode trips may lead to a spike in the percentage of the modal split made by walking and cycling.
- 2.5.9 Census data was also used to determine the distance travelled to work. Table 2-7 indicates that 37% of people travel less than 5km to work and 47% are less than 10km. This suggests there is an opportunity to encourage cycling and walking as a viable and more natural choice for many more journeys, or as part of an onward longer distance journey using public transport.

Table 2-7 - Distance travelled to work

Distance travelled to work	Percentage
Less than 2km	29%
2km to less than 5km	8%
5km to less than 10km	10%
10km to less than 20km	12%
20km to less than 30km	8%
30km to less than 40km	4%
40km to less than 60km	4%
60km and over	4%
Work mainly at or from home	15%
Other	7%

LCWIP Implications

- Whilst Northallerton has a large net gain in commuters travelling to the town, a large proportion of the residential population within Northallerton also work within the town, meaning there is potential to encourage modal shift due to the relatively small geographic area of Northallerton.
- Currently, 42% of the internal trips are made by car, suggesting that there is scope to encourage a further shift towards active modes for those working and living in the town.
- A large proportion of residents within the study area travel less than 5km to work, this is a realistic distance to travel actively.
- The implementation of infrastructure that encourages safe and efficient walking routes around the town would likely improve the overall modal split of active mode use.

2.6 EXISTING TRANSPORT NETWORKS: CYCLING AND WALKING

- 2.6.1 This section of the report provides additional context about the existing walking and cycling facilities in the LCWIP study area, allowing identification of areas and features with high-quality infrastructure and those areas with a deficit.
- 2.6.2 Note that this section focuses more strongly on cycling and cycle users, as walking for any purpose is considerably more prevalent than cycling nationally. The needs of pedestrians have long been catered for through the provision of footways; while sometimes inadequate or substandard, the presence of a footway nevertheless facilitates some movement on foot. The needs of cycle users have been poorly understood until recently, and the lack of cycle-specific infrastructure has been identified as one of the key factors in suppressing demand.

DEFINING CYCLE USERS

- 2.6.3 From the outset, it is important to recognise that the term ‘cycle users’ encompasses as a wide range of individuals who use their bikes for a variety of different reasons. These users have varying needs and expectations, not only regarding the infrastructure and facilities required, but also in terms of ‘soft’ measures such as information, publicity, safety and security.
- 2.6.4 Table 2-8 displays the range of cycle users that are expected to benefit from the measures proposed in the Northallerton LCWIP; identification of user types helps to inform the development of the strategy in the consideration of all user types and recognises that users can change type during the course of their lives.
- 2.6.5 It is also important to note that non-users are specifically included in this list, as this group represents an important target audience in terms of the potential for a modal shift toward cycling. Furthermore, non-users are considered to require particular attention in terms of overcoming many of the traditional barriers to taking up cycling.

Table 2-8 - Types of Cyclist

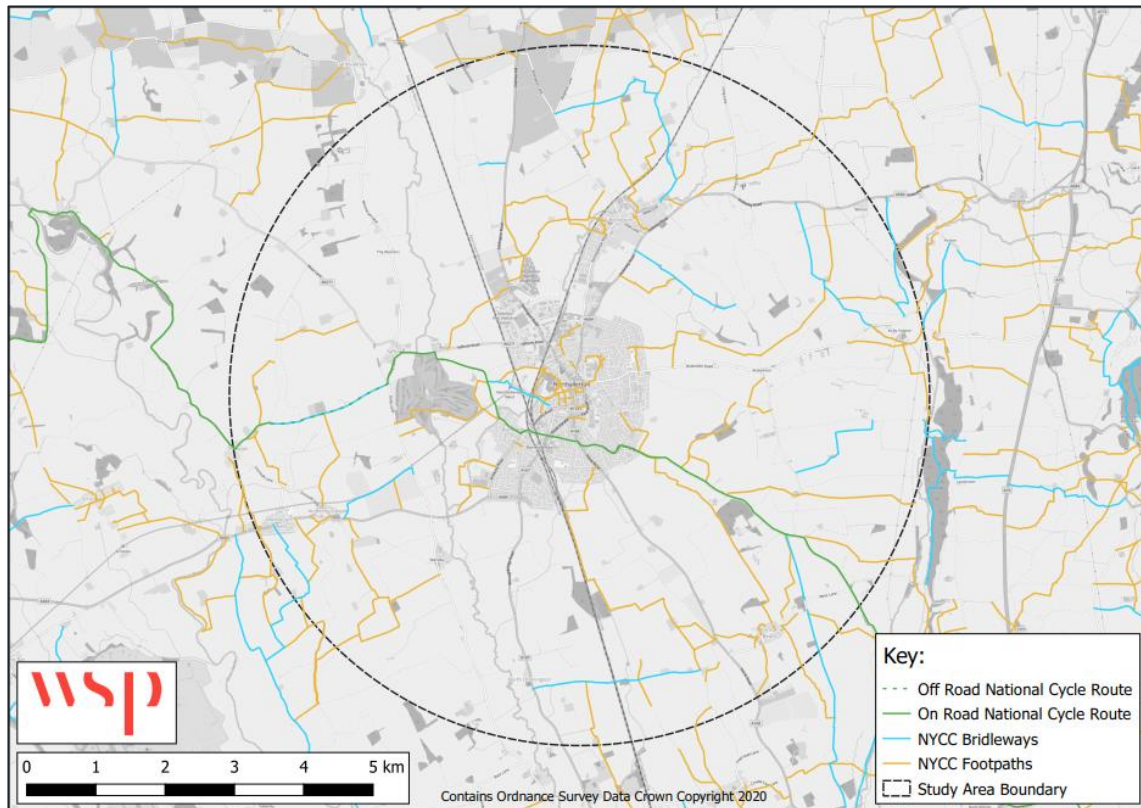
Type	Description
Non-User	Existing walkers / drivers / public transport users including the young, elderly, infirm and disabled – those who do not cycle at present
Utility	Education / healthcare / shopping trips – using bikes as means to an end
Commuter	Fixed locations workers / hub workers / multi-modal workers – using bikes as an alternative to walking, the car or public transport for all or part of a trip – using bikes to travel to work
Leisure	Active individuals / active couples / active families / active groups – using bikes for leisure pursuits – using bikes to travel for fun
Sporty	Off-road enthusiasts / off-road informal / off-road groups & clubs / off-road commercial ventures / road enthusiasts / road groups & clubs – using bikes for sporting and/or health reasons, generally enthusiasts, participate in ‘challenges’ and ‘sportives’ – using bikes for sport / health
Competitive	Individuals / formal clubs – using bikes as part of a training regime for formal competition on and off-road (‘pinning a number on’) – using bikes for competition

EXISTING CYCLING AND WALKING NETWORKS

- 2.6.6 Figure 2-15 shows the existing cycling and walking network in the study area (excluding highway infrastructure). Note that this figure only shows Public Rights of Way (PROW) and designated

Sustrans routes. HDC / NYCC do not hold any detailed GIS data relating to cycling infrastructure provision, although there is some limited existing infrastructure throughout the study area, mainly consisting of shared use footpaths and footways.

Figure 2-15 - Cycle Network & PROW within the LCWIP Study Area: Northallerton



2.6.7 While Northallerton features many footpaths with the potential to contribute towards enhanced pedestrian connectivity as part of the LCWIP Walking Network Map, there are very few bridleways or cycle tracks. The LCWIP will seek, where necessary, to create more permeable walking and cycling networks away from vehicular routes, which can also enhance access to longer distance recreational routes. The study area provides access to the North York Moors National Park from Northallerton via a national cycle route, presenting additional potential for active recreation and leisure.

LCWIP Implications

- The Study Area benefits from an extensive PROW network. This presents various opportunities to create more permeable walking and cycling networks away from vehicular routes, which can also enhance access to longer distance recreational routes.
- The existing bridleways and footpaths could potentially form key links in the LCWIP network, with opportunities to expand access and routes for wider benefit.

PEDESTRIAN AND CYCLIST COLLISION DATA

2.6.8 Collisions involving pedestrians and cycle users can be deemed to be a significant barrier to people taking up or continuing to utilise active modes due to the negative impact it has on both perceived and actual safety. Whilst collision data provides some insight into the overall safety of a route or a road, there are limitations in the data. For example, the data presented below shows collisions in which there is a record of injury, and does not provide insight into near misses, which could also be representative of issues along a route or corridor.

2.6.9 Table 2-9 summarises the collision record for pedestrians and cyclists within the study area for the most recent full 5-year period, which in the case of the Northallerton LCWIP is 2015 to 2019. In addition to pedestrian and cyclist collisions, the table below also presents the overall total of road user collisions, and pedestrian/cycle collisions as a percentage of total collisions.

Table 2-9 - Pedestrian and Cyclist User Collision Statistics

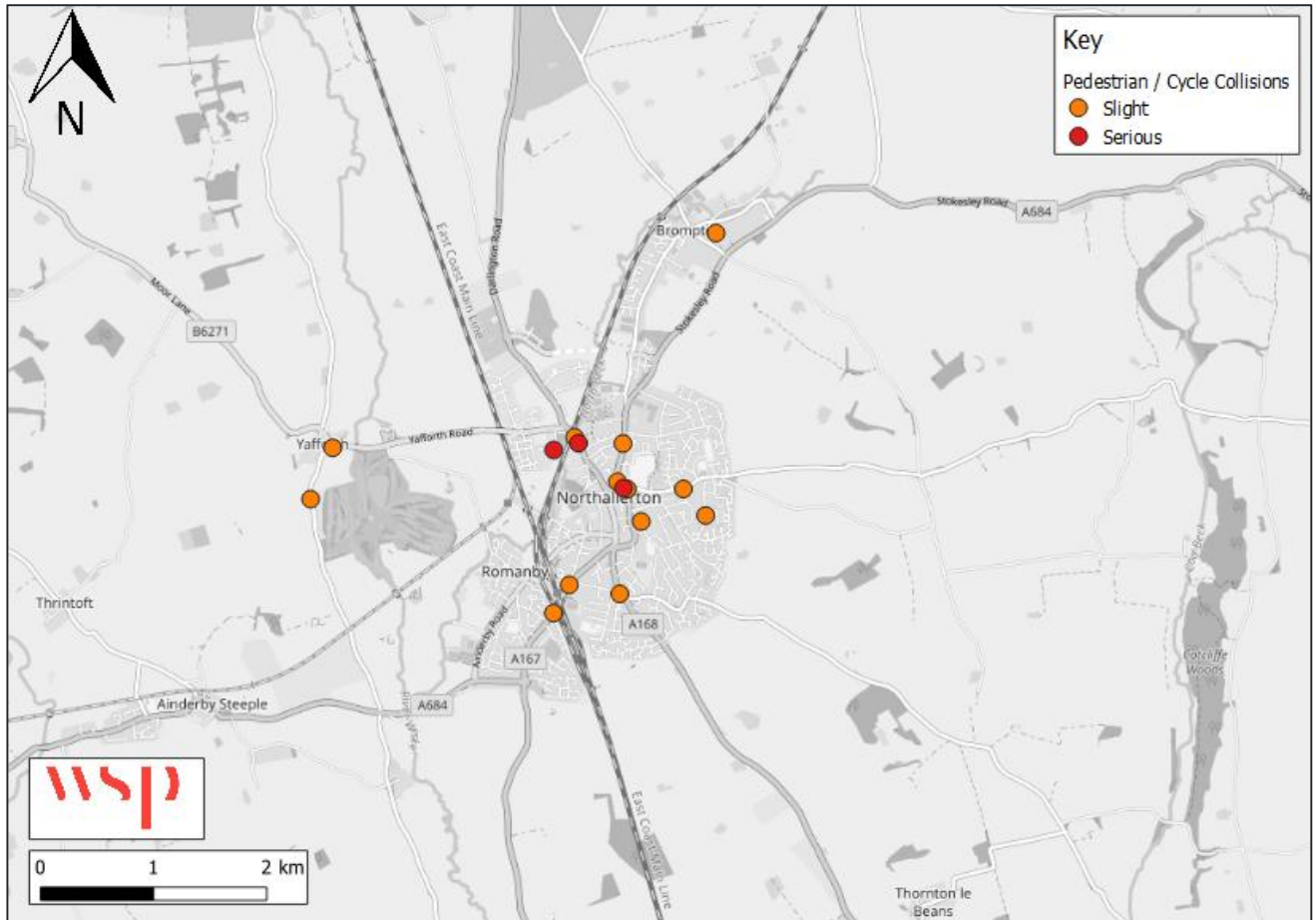
Ped/Cycle	Severity	2015	2016	2017	2018	2019
		Ped/Cycle	Ped/Cycle	Ped/Cycle	Ped/Cycle	Ped/Cycle
	Slight	4	3	3	0	3
	Serious	1	1	0	0	1
	Fatal	0	0	0	0	0
Total Road Collisions		44	28	32	20	18
Ped/Cycle % of Road User Collisions		11%	14%	9%	0%	22%

2.6.10 The data presented in Table 2-9 shows that over the five-year period, there were not any fatal collisions, and only three serious collisions, occurring in 2015, 2016 and 2019. In addition to this there was on average three pedestrian/cycle collisions in each year of the five-year period, excluding 2018, in which no collisions were recorded.

2.6.11 Additionally, the table above shows that between 2015 and 2017, pedestrian and cyclist collisions accounted for between 9-14% of the overall total of road traffic collisions per year within the study area – this then dropped to 0% in 2018, and increased significantly to 22% in 2019. This suggests that improvements to infrastructure could potentially alleviate the number of collisions experienced by pedestrians and cyclists through better safeguarding by reducing the levels of conflict between motorised and non-motorised road users.

2.6.12 Figure 2-16 illustrates the spatial distribution of the pedestrian and cyclist road traffic collisions summarised in Table 2-9. This plan illustrates all of the collisions over the course of the five-year period.

Figure 2-16 - Pedestrian and Cyclist Road Traffic Collisions – Northallerton



2.6.13 As shown in the plan, the collisions which have taken place are spread out around the study area, with very small clusters around the Low Gates level crossing and the Friarage Street roundabouts to the north of the town centre. However, it is clear that the majority of collisions that take place in the town, and the wider study area, occur on arterial routes into Northallerton such as the A167 and the A168. These collisions will be taken into consideration throughout the development of potential interventions, and any infrastructure developed should aim to address collision hotspots within the study.

WALKING AND CYCLING ISOCHRONES

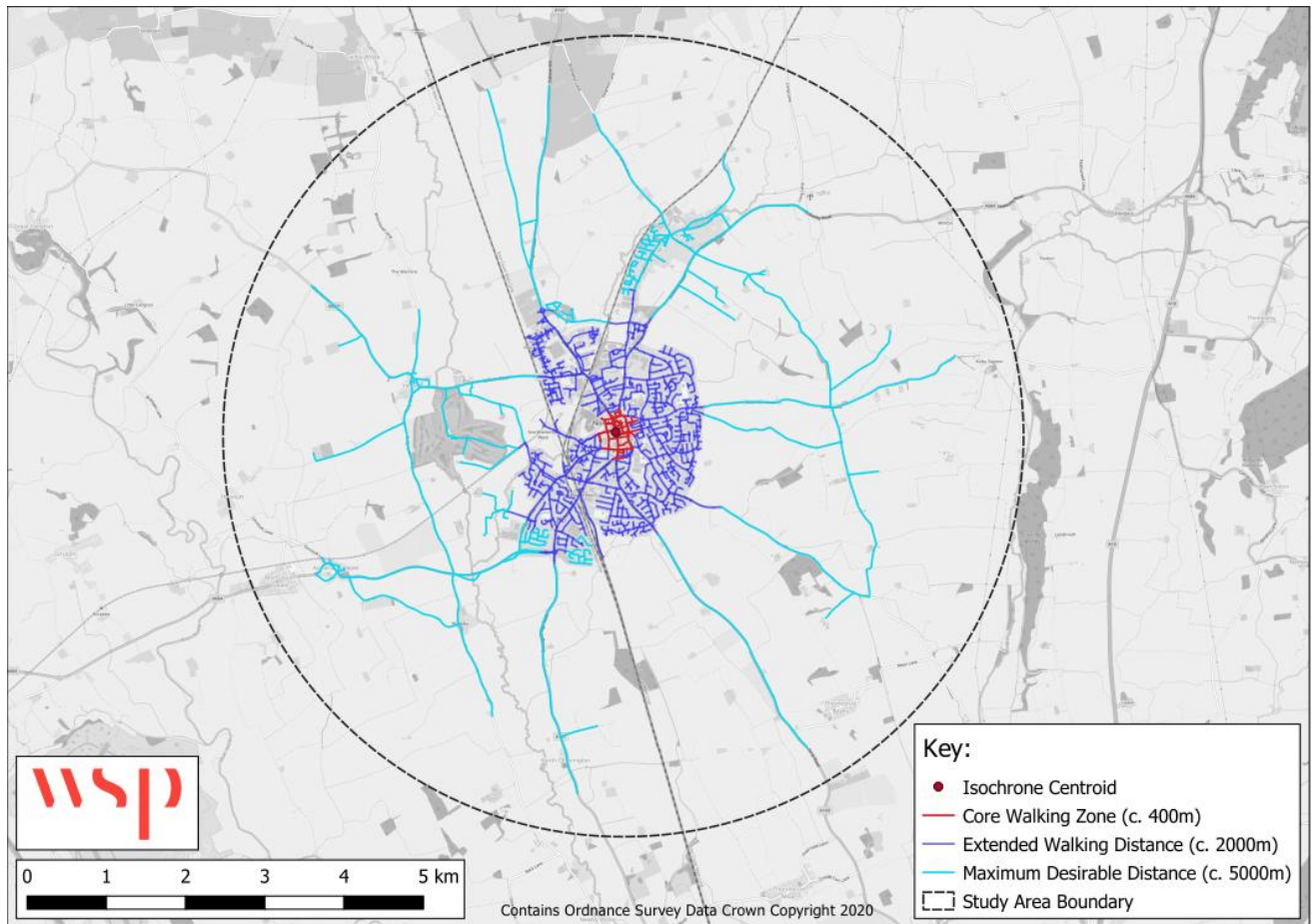
- 2.6.14 Active travel isochrones have been produced encompassing the LCWIP study area, identifying what extent of the study area could reasonably be accessed by walking or cycling from a central point of interest. The isochrone uses the Northallerton Post Office as an origin point.
- 2.6.15 This focal point is in the urban centre of the study area, highlighting the maximum desirable active travel distances to some of the main commercial centres. While more comprehensive isochrone mapping from various strategic locations will form a key part of developing the Walking Network Map, this isochrone is used to help determine the extent of the study area for each location.
- 2.6.16 The National Planning Policy Framework and other established guidance documents on access to services and facilities (for example, *Guidelines for Providing for Journeys on Foot*, CIHT 2000) recognise that, beyond a certain distance, it becomes increasingly unlikely that people will walk or cycle to access services and facilities, instead using public transport or private motor vehicles. The following criteria are used in generating walking and cycling isochrones, representing the maximum desirable walking and cycling distances as identified in these documents.

Table 2-10 - Walking and Cycling Isochrone Criteria

Mode	Maximum Desirable Distance
Walk	2km
Cycle	5km

- 2.6.17 The figures also show a distance of 400m; this relates to the Core Walking Zones as specified in the DfT LCWIP guidance.
- 2.6.18 Note that the isochrones show what extent of each LCWIP study area *could* be considered accessible by cycle or on foot based solely on distance (rather than the provision of infrastructure or hilliness, for example).
- 2.6.19 Figure 2-17 presents the isochrone for the LCWIP study area.

Figure 2-17 - LCWIP Study Area Active Travel Isochrone



2.6.20 The following points are noted in relation to Northallerton:

- i The entire Northallerton urban area (including most of the outlying villages: Romanby, Brompton, Bullamoor, North Otterington, Ainderby Steeple, Yafforth, Warlaby) is within the maximum desirable cycling distance (approximately 5km) from the town centre, covering almost the entire Study Area.
- i The town of Northallerton is entirely within the extended walking distance from the town centre, highlighting the importance of walking across the area for all purposes.
- i Romanby, which is an outlying village in close proximity to Northallerton, is at extended walking distance from Northallerton town centre, highlighting the walking accessibility between Northallerton and Romanby.
- i While Morton-on-Swale is outside the extended maximum distance, it contains potentially major key origin and destination (ODs) points. While the distance of such areas lessens the propensity to cycle as they are at a maximum desirable distance from the town centre, it has been considered prudent to include such outlying areas within the LCWIP study area.

LCWIP Implications

- The isochrone analysis shows that Northallerton LCWIP study area includes most of the major key ODs within the extended walking distance, providing high propensity to walk. The isochrone analysis covers almost entirely the study area within the maximum cycling distance with very few ODs beyond.
- The potential benefit of the more strategic longer distance routes will need to be considered during the development of the emerging walking and cycling network maps and prioritised as such.
- The isochrone suggests a more isolated approach to analysis should be undertaken for the Northallerton urban area, with most of the area being within the maximum desirable walking distance, necessitating a more granular study of key ODs.

2.7 EXISTING TRANSPORT NETWORKS: ROAD, RAIL AND PUBLIC TRANSPORT

SYNERGY WITH OTHER TRANSPORT MODES

- 2.7.1 The focus of the Northallerton LCWIP is first and foremost on providing the necessary infrastructure to create a high-quality active travel environment. Such a network should engender modal shift, enabling journeys that were previously unattractive by walking and cycling. It is therefore important to understand and appreciate the current transport situation in Northallerton, considering the synergies between the LCWIP and the various issues associated with other modes of travel.
- 2.7.2 HDC's Infrastructure Delivery Plan (IDP) was last published in 2019 (note that an IDP is a 'living' document, and can be updated as necessary), and contains the most recent profile of the existing infrastructure in the District.
- 2.7.3 Information from these documents, as well as that obtained through various other policy documents, studies, and stakeholder engagement, have been used to consider how the LCWIP could contribute to improving the wider transport issues in the District.

HIGHWAYS

- 2.7.4 The District is considered to benefit from good transportation links with the wider area, specifically to York, Middlesbrough and Darlington. The main vehicular links in the district are:
- i The A684, which provides a link to the A1(M) to the west and connects London to Edinburgh;
 - i The A684 connects to the east to the A19, which as major arterial route provides links to Middlesbrough to the north and Thirsk to the south;
 - i The A167 connects to the north with Darlington and intersects the A1(M), while to the south the A167 links to Topcliffe, where it combines with the A168; and
 - i The A168 to the south of Northallerton, which provides link to Thirsk and connects to the A1(M) afterwards.
- 2.7.5 Northallerton has direct access to the A19 and A1(M) as major arterial routes, which form part of the Strategic Road Network (SRN) under Highways England's jurisdiction.
- 2.7.6 The main traffic routes in the District also include the A61 from Thirsk to Leeds, A170 from Thirsk to Scarborough and A172 from an intersection with the A19 to Middlesbrough.
- 2.7.7 Figure 2-18 shows Northallerton's highway network.

Figure 2-18 - Highway Network



PUBLIC TRANSPORT

Rail

- 2.7.8 Hambleton district benefits from a number of strategic railway links including the electrified East Coast Mainline, as well as a direct service to London from Northallerton.
- 2.7.9 Northallerton railway station is on the East Coast Mainline. The station is on one of the fastest parts of the East Coast Mainline, where trains can pass through the station at speeds of up to 200 km/h. There are level crossings located at A167 Boroughbridge Road, B1333 Romanby Road, A167 Low Gates and on Springwell Lane.
- 2.7.10 The station is operated by TransPennine Express (TPE) and is served by TPE, Grand Central (GC) and London North Eastern Railway (LNER) services.
- 2.7.11 In the southbound direction, on weekdays and Saturday TPE operates three services per hour through Northallerton from Newcastle to Manchester Victoria via York, Leeds and Huddersfield, two of which continue to Manchester Airport and one runs further to Liverpool Lime Street. TPE also runs three services per hour in the northbound direction on the same line.
- 2.7.12 LNER serves the station with trains between London King's Cross and Edinburgh Waverley, which operates on an approximately two-hourly basis for most of the day.

- 2.7.13 Entrances / exits at Northallerton train station have steadily increased from 0.6 million in 2013/14 to 0.7m in 2017/18⁵. Network Rail's Northern Route Utilisation Strategy (RUS) also forecasts significantly more growth in rail usage over the next ten to twenty years.
- 2.7.14 In 2018, TPE in partnership with NYCC, secure cycle parking facilities installed at Northallerton train station. The new cycle parking shelter offers 72 spaces in a secure area covered by CCTV and is positioned by the main ticket office at the station with easy step free access provided.
- 2.7.15 In 2014, Wensleydale Railway, a heritage railway, opened a temporary station at Northallerton West as part of plans to take commuters and visitors between the town and the Yorkshire Dales National Park.
- 2.7.16 To accommodate the commuters and visitors to Northallerton, good sustainable connections are required between the train station and the high street and key employment sites.

Bus

- 2.7.17 The majority of the local bus services in Hambleton district are operated by Hodgsons Buses and Dales and District, although services with lower frequencies and / or coverage are operated by various companies, including North Yorkshire County Council, Abbots of Leeming, and The Little White Bus.
- 2.7.18 There are a number of bus services in Northallerton providing links to other regional centres, including Thirsk, Ripon, Darlington and Stokesley. There are daytime services to other local centres such as Bedale, Leyburn, Hawes, Catterick, Richmond, Easingwold. However, many of the surrounding villages have no bus services or have services only during weekend times.
- 2.7.19 Local routes include services to Brompton and to Romanby, which typically operate hourly as there are multiple services running between Northallerton and the adjacent villages.
- 2.7.20 The Northallerton IDP states that the LTP4 includes a set of priorities for maintaining bus services across North Yorkshire, which are primarily focused upon maintaining core bus services and working with commercial operators to grow marginal routes.
- 2.7.21 Northallerton does not have a formal bus station, with the primary point of access to bus services being four bus stands at The Buck Inn (northwest-bound) and the bus laybys on the High Street, near East Road.
- 2.7.22 Bus/cycle integration is less common than the rail equivalent, with bus services typically accessible from more locations and bicycles generally prohibited from buses themselves. Nevertheless, it should be recognised that cycle usage has the potential to substitute bus travel where services are infrequent or non-existent, particularly given the uncertainty regarding future services and subsidies.

⁵ ORR estimates of station usage

Public Transport Infrastructure

2.7.23 Figure 2-19 illustrates the location of the railway lines through the LCWIP Study Area, as well as the locations bus stops and Northallerton train station. The train station (and bus stops to a lesser degree) represent key O/D points in the network.

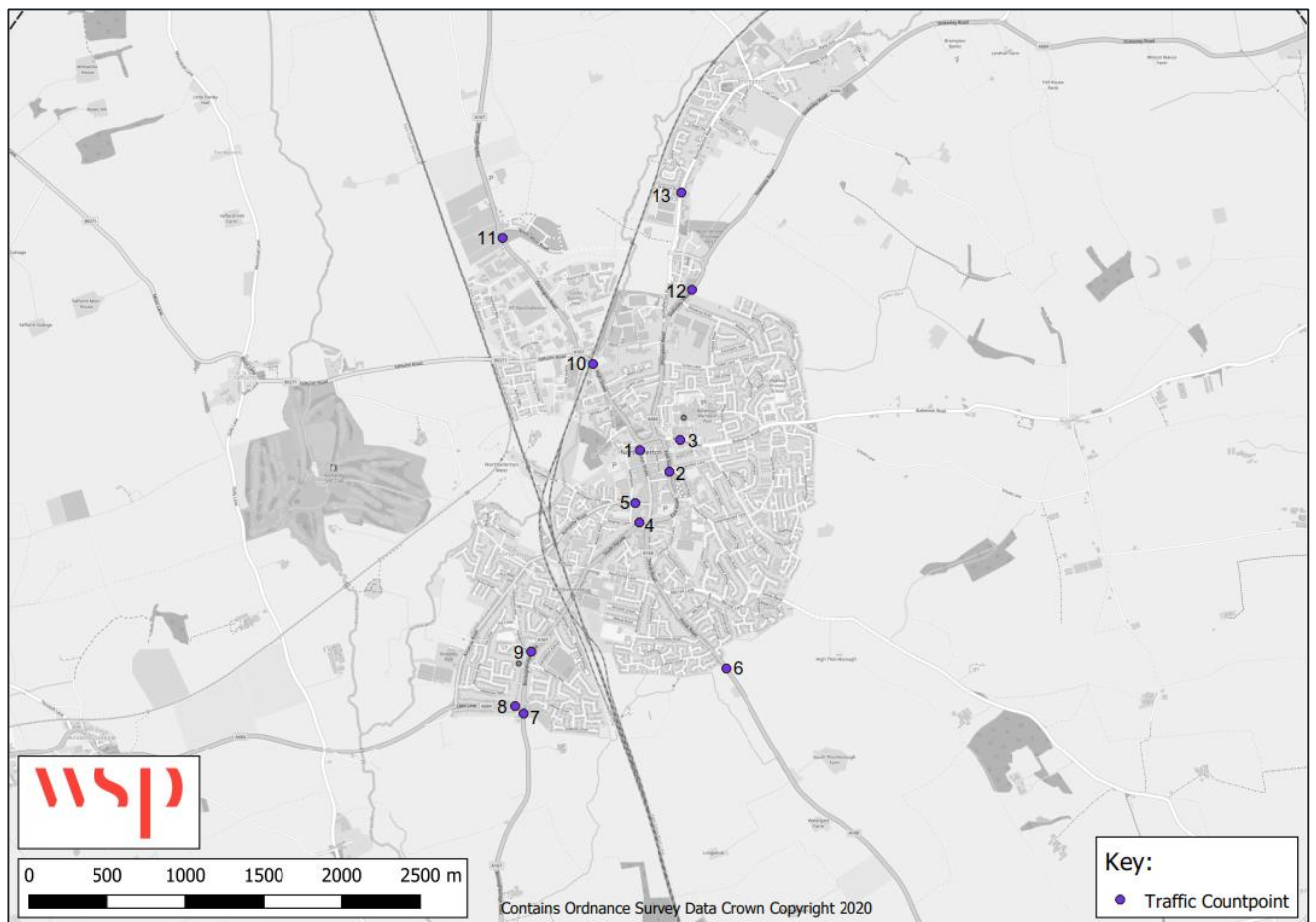
Figure 2-19 - Location of Rail Line, Stations and Bus Stopping Points



TRAFFIC FLOWS

- 2.7.24 The type of infrastructure recommended in current best practice guidance is directly impacted by the levels of traffic on a route and also the speed of the traffic. Routes which have Average Annual Daily Traffic flows (AADT) of over 5,000 vehicles will require a much higher degree of segregation to achieve modal shift. A higher degree of segregation is also required to induce mode change along routes which have a speed limit of 30 or above.
- 2.7.25 NYCC's online database has been used to obtain data on vehicle numbers and speeds along key arterial routes. For the purpose of this analysis it was decided that only permanent count points would be used as these would provide the most robust data which could be compared over a number of years; these count points can be seen in Figure 2-20.

Figure 2-20 - Traffic Counter Locations



- 2.7.26 Directness of routes is also a major contributor to the design of a successful cycle network; the selected count points are along key arterial routes into the centre of the study area, which will likely form a core element of a comprehensive cycle network.
- 2.7.27 AADT flows and 85th percentile speeds are presented in Table 2-11 below.

Table 2-11 - Northallerton NYCC Count point - AADT and 85th Percentile Speeds

Road Name	AADT	85th Percentile Speed (Mph)	Plan Reference
B1333 High Street	12,716	22.1	1
A167 East Road	12,812	27.7	2
Bullamoor Road	7,178	30.1	3
A167 South Parade	11,877	25.2	4
Romanby Road	4,430	22.6	5
A168 Thirsk Road	8,423	43.7	6
A167 South of A684 roundabout	8,338	-	7
A684 West of A167 roundabout	10,589	-	8
A167 Boroughbridge Road	11,943	31.8	9
A167 South of Low Gates level crossing	15,749	24.7	10
A167 Darlington Road	7,865	47.4	11
A684 Stokesley Road	10,036	38.3	12
Northallerton Road	4,165	34.8	13

- 2.7.28 Current best practice indicates that only roads with an AADT below 2,500 and an average speed below 20mph are likely to offer a high-quality environment for cycling in the carriageway with other vehicles (although it should be noted that fully segregated infrastructure would still provide a higher level of service in most situations).
- 2.7.29 Within Northallerton study area, all the roads surveyed have AADTs far in excess of these values, indicating that potential cycle users are likely to either require segregated infrastructure or an alternative route of a similarly direct nature in order to realise the potential for cycling in the district. The routes within the town centre around the B1333 High Street and A167 East Road are likely to pose particular challenges, with Northallerton town centre being one of the most important destinations in the District, yet also major through routes in the town.
- 2.7.30 While traffic flows are comparatively lower in the Brompton area, the high speeds associated with rural roads are equally uncondusive to cycling for everyday purposes, such as those on Northallerton Road. The higher AADTs on major roads such as the A684 Stokesley Road between Northallerton and Brompton also create severance between the areas, limiting the propensity to travel by active modes.

2.7.31 The local roads surveyed within Northallerton are representative of typical local streets and provide an indication that many local residential streets offer conditions that are more conducive to mixed-use cycling and to minor segregation interventions.

LCWIP Implications

- The anticipated new services through Northallerton will likely increase patronage, presenting an opportunity to influence multimodal travel, particularly by active modes of transport to and from the stations.
- Access to bus stops could also be enhanced through the LCWIP process, likely focussing on improvements to the walking network.
- Despite potential deliverability challenges, the need for such infrastructure presents an opportunity to provide high-quality pedestrian and cycling infrastructure that can be an exemplar for best practice across North Yorkshire and the wider country.
- Relatedly, given the constrained nature of Northallerton, it may be necessary to also consider traffic movements and wider highways schemes in conjunction with walking and cycling interventions.

2.8 EXISTING ORIGINS AND DESTINATIONS

2.8.1 The development of an LCWIP relies on a detailed understanding of the key ODs in each study area, identifying where individuals currently move to and from. A desktop study of key origins and destinations was therefore carried out in order to identify the existing locations within the three LCWIP study areas that are most likely to benefit from additional pedestrian and cycle access and connectivity.

ORIGINS

2.8.2 To identify significant residential (origin) areas, proxy nodes were plotted using a GIS, based on 2011 Census data available from the Office for National Statistics (ONS). Population weighted centroids for Census Output Areas (OA) were mapped, showing where the population is greatest within the OA boundaries, and thereby indicating the urban areas with the greatest potential for trips. These nodes were reviewed, using an Ordnance Survey (OS) basemap as a reference, and manually adjusted where necessary to ensure that they were located over urban areas to represent realistic trip origins. Additional points were added where required in order to ensure all urban residential areas were adequately represented.

DESTINATIONS

2.8.3 Key destinations were identified across each of the LCWIP study areas in order to determine where people are travelling to on a regular basis. These sites were identified through analysis of available spatial data, desktop and site surveys, and stakeholder engagement. Key destinations include the following location types:

- i Employment Sites;
- i Parks. Open Spaces;
- i Sport and Leisure Facilities;
- i Healthcare Facilities;
- i Grocery / Shopping Facilities;
- i Tourist Attractions and Points of Interest; and
- i Schools and Further Education Establishments.

2.8.4 A summary of origins and destinations and their source is summarised in Table 2-12.

Table 2-12 - Origin and Destination Description and Source

Origin/Destination	Description
Employment	Workplace Zones taken from the 2011 Census
Parks and Open Spaces	Hambleton District Council interactive map of parks and outdoor spaces
Sport and Fitness	NHS Choices of sports and fitness establishments
Healthcare	NHS Choices list of health care facilities
Residential	LSOA population weighted centroid
Grocery	List of supermarkets within the town of Northallerton
Tourist attractions	Points of interest, where tourists are likely to visit when coming to Northallerton
Education	Primary, Secondary and Over 16 educational establishments – taken from Department for Education



2.8.5 As the largest urban area in the district, there are many ODs within the Northallerton LCWIP study area. Figure 2-21 illustrates the origins and destinations within the study area Northallerton.

Figure 2-21 - Origin-Destination Plots: Northallerton



2.9 FUTURE SITUATION

PLANNED AND ASPIRATIONAL DEVELOPMENT GROWTH

2.9.1 Planned and aspirational growth is an important consideration when implementing new cycling and walking infrastructure. New developments may become significant origins and destinations due to size, capacity or influence and therefore links to the cycle and walking networks would be necessary.

2.9.2 This section of the report summarises the growth aspirations of the district, including the proposed site allocations currently considered as part Hambleton Local Development Framework. Consideration is also given toward recent and committed development schemes in the LCWIP study areas.

Site Allocations

2.9.3 The Hambleton Allocations Development Plan Document provides the site allocations and details that will help to deliver the Local Development Framework’s Core Strategy, which sets out the long-term spatial vision, and the spatial objectives and strategic policies to deliver that vision.

2.9.4 The following site allocations lie within the LCWIP study area:

Table 2-13 - Hambleton Local Development Framework Site Allocations in Northallerton

Reference	Location	Proposed Land Use	Description	Comment
NH1	York trailers, Yafforth Road, Northallerton	Housing	300 dwellings with associated public open space provision. The site is directly accessed from Yafforth Road.	Construction complete
NH2	Jewsons builders’ yard, Swain Court, Northallerton	Housing	Capacity of around 20 dwellings (of which a target of 40% should be affordable)	Construction complete
NM1	Auction Mart, Northallerton	Mixed Use	This site will be developed for offices (B1 use) and housing, with the housing located above the offices. The access will be taken from Ashlea Road.	This site will not be delivered or be an allocated site in the new Local Plan.
NM2	Auction Mart car park, Northallerton	Mixed Use	This site will be developed for offices (B1 use) and housing. Access will be taken from Rose Cottages.	This site will not be delivered or be an allocated site in the new Local Plan.

NM3	Friarage Street / East Road, Northallerton	Mixed Use	This site will be developed for a range of town centre uses, such as retail, leisure and employment, with access from Elder Road.	
NM4	Fire station headquarters, Crosby Road, Northallerton	Mixed Use	This site will be developed for housing but it could also include an extension of the Crosby Road car park at the rear of the site. capacity of around 22 dwellings (of which a target of 40% should be affordable);	
NM5A-G	North Northallerton Area	Mixed Use	The North Northallerton Area will be developed as a comprehensive mixed-use scheme, including approximately 950 dwellings, employment, and recreation uses.	Planning permission granted and under construction
NE1	East of York Trailers, Yafforth Road, Northallerton	Employment	This site is allocated for office or light industry uses	
NE2	Yafforth Road / Finkills Way, Northallerton	Employment	This site will be developed for high quality business uses (B1) with associated landscaping and parking provision	

Committed Development

2.9.5 The North Northallerton Area and The Treadmills are the two key committed developments in Northallerton. The two developments are shown in

North Northallerton Area

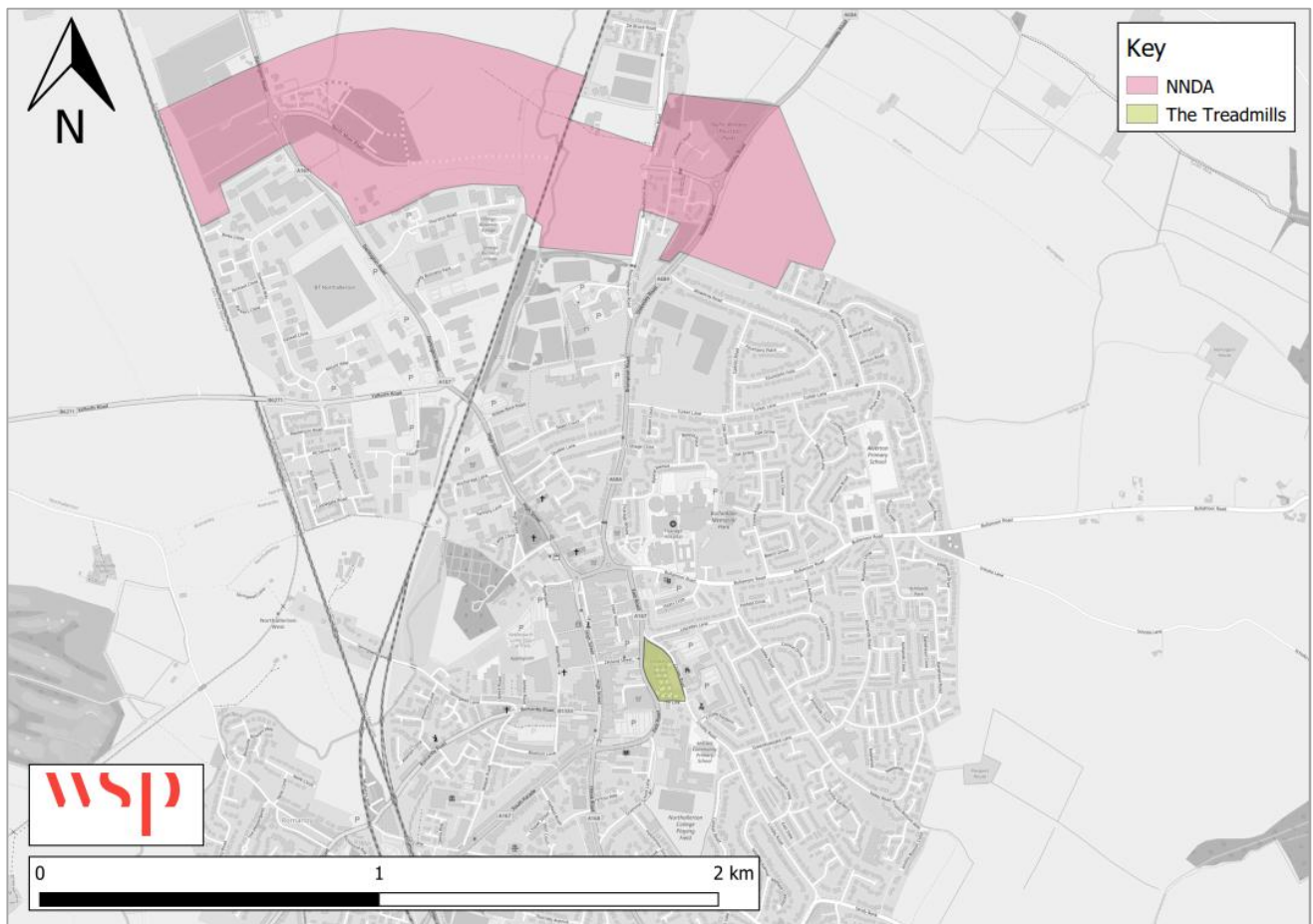
2.9.6 To the north of Northallerton, a sustainable mixed-use extension is proposed, comprising around 900 new homes, employment space and recreation facilities. The extension also includes a new road linking Stokesley Road to Darlington Road. This proposed development was referenced as NM5A-5G in Table 2-13 - Hambleton Local Development Framework Site Allocations in Northallerton

2.9.7 Included within this development is Northallerton Sports Village; the village would incorporate existing leisure facilities at Hambleton Leisure Centre and the Stone Cross recreation area and will include sports pitches, as well as cycling walking and jogging trails.

The Treadmills

2.9.8 The Treadmills is a mixed-use development site, located at the former Northallerton Prison on East Road. The development proposals include retail, restaurants, cinema, cafés, residential and a tech hub. Phase 1 construction began in October 2019.

Figure 2-22 - Committed Development



2.9.9 It should also be noted, despite not being a new development, Northallerton School and Sixth Form college is relocating from Grammer School Lane to the Allertonshire School site on Brompton Road. The new school site will be extended and revamped.

Growth Aspirations

2.9.10 As mentioned within the policy review, the new Local Plan (draft) allocates new homes and employment land in Northallerton. This suggests that Northallerton will continue to grow and as new development comes forward in Northallerton it will be essential that active travel connections to key destination, via high quality infrastructure, are in place to support sustainable development and minimise the potential for car-dominated travel patterns to form.

LCWIP Implications

- While development under construction or recently completed cannot now be influenced by the LCWIP, Section 106 planning obligations could potentially present an opportunity to provide new infrastructure.
- Relatedly, new developments present an opportunity to introduce behaviour change measures, often through Travel Plans, which could complement the proposed LCWIP networks.
- The North Northallerton Area is a site of highly significant size, with the potential to generate a large number of new trips. The LCWIP provides the opportunity to improve links and crossings from the site into the town centre.
- New development sites provide an opportunity to incorporate high-quality active travel networks within the development, promoting travel by active modes for new employees / residents.

TRANSPORT SCHEMES AND INITIATIVES

- 2.9.11 In addition to documented policy objectives, the Northallerton LCWIP must also consider existing and aspirational transport schemes, particularly those focussed on walking, cycling, and right-of-way proposals.
- 2.9.12 This section of the report presents an overview of a number of relevant proposals within the study area, that could have implications on the development of the LCWIP.

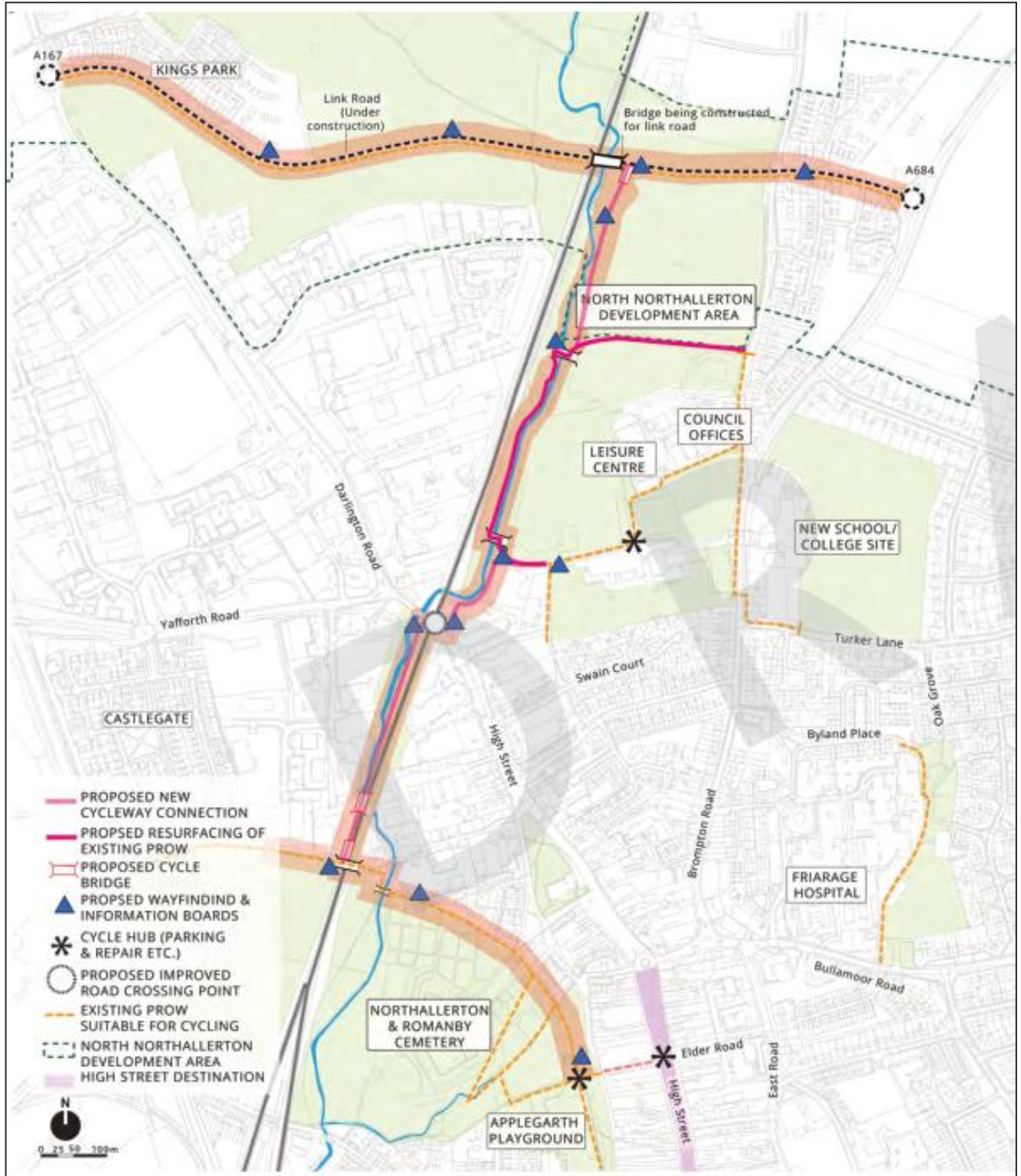
Northallerton Link Road

- 2.9.13 A new link road between Stokesley Road to Darlington Road, through the North Northallerton area, is currently under construction and is due to open in 2020.
- 2.9.14 The link road has been designed to accommodate all traffic and provide a more direct east-west route particularly for HGVs which currently have to travel to the town centre to use Friarage Street to travel between the A167 and A684 east of Northallerton.

Northallerton Green Connections

- 2.9.15 Hambleton District Council have explored potential walking and cycling corridors from the north of Northallerton into the town centre. The indicative route is shown in Figure 2-23.
- 2.9.16 An existing condition assessment has been completed for the potential route and high-level infrastructure improvements have been highlighted, they include:
- ┆ Shared footway;
 - ┆ Resurfacing of footpath along Brompton Beck;
 - ┆ Crossing improvement at Darlington Road/ High Street junction;
 - ┆ Cycle bridge crossing beck; and
 - ┆ Widening of footpath leading to Applegarth Playground.
- 2.9.17 It should be noted that the potential corridor routes through a flood risk zone.

Figure 2-23 - Northallerton Green Connections



Zetland Street Public Realm Enhancements

2.9.18 Zetland Street Public Realm Enhancements is a committed scheme, which provides a link between the High Street and East Road and leads to the proposed Treadmills development. To improve accessibility for pedestrians to The Treadmills from Zetland Street, the following improvements to have been proposed:

- i One-way road;
- i Footway widened to 3m;
- i Cycle parking;
- i Disabled parking bay.

The Ginnels Project

2.9.19 The Ginnels Projects (Black Bull, Tickle Toby Inn, Garthway Arcade, New Row, Chapel Entrance, Flag Yard, Golden Lion, Market Row, Regency Mews) is seeking to improve the east-west linkages between the yards, arcades, ginnels and alleyways of Northallerton town centre. The key objective is to create a safe and inviting environment and to enable pedestrian movement throughout the town centre.

Future High Streets

2.9.20 In 2018 the government released the Future High Streets Fund to rejuvenate town centres and help high streets adapt and evolve to remain vibrant places for their community.

2.9.21 Northallerton is in the second phase of the Future High Streets Fund and can receive up to £150,000 to support the development of detailed project proposals that can be submitted for capital funding. NYCC will use this funding to conduct a study into the impact of closing the High Street. This will include modelling the Library Roundabout and the three roundabouts to the north of the High Street on Friarage Street/ Bullamoor Road.

LCWIP Implications

- All of the studies referenced commenced before the inception of the LCWIP, and do not consider the implications on the emerging walking and cycling networks. However, many of the studies do consider active travel links, and understand the need to connect people to places via the most desirable route. Where appropriate, the findings of these studies and the key routes identified have influenced the development of the LCWIP.
- Conversely, where these studies are ongoing, there is an opportunity to identify how any resulting proposals can contribute towards the creation of the walking and cycling networks. This could be as innocuous as considering access to a specific site from the network, or could be how a significant scheme could reroute traffic and reallocate highway space for cycle users.

FORECASTING GROWTH IN CYCLE TRIPS

Propensity to Cycle Tool (PCT)

- 2.9.22 The Propensity to Cycle Tool (PCT) is a web-based tool that can assist with understanding potential demand for cycling across a study area, under a variety of forecast scenarios. The tool can aid in identifying the most promising routes for potential cycle growth and inform LCWIP network development.
- 2.9.23 The PCT project was primarily funded by the Department for Transport (DfT), with the Welsh government funding an extension to Wales. It was developed by an academic-led team involving the universities of Cambridge, Leeds and Westminster. The PCT helps to provide an evidence base for planning for cycling and can be used to explore cycling potential at different geographical scales – from a county to a potential route corridor.
- 2.9.24 For research into cycling potential (and the resulting models) to be useful for local transport planners, their spatial scale must coincide with those over which the planning process has some control. For this reason, practitioners and researchers focus on scale as the primary way of categorising research into cycling potential.
- 2.9.25 At the route-based scale, the design of measures use origin-destination data which can be used to create ‘desire lines’ and (using route allocation) estimate existing and potential demand at each point on the road network

How the PCT Works

Baseline Data

- 2.9.26 Central to the PCT approach is OD data recording the travel flow between administrative zones. Combined with geographical data identifying the population-weighted centroid of each zones, these O-D pairs can be represented as straight ‘desire lines’ or as routes allocated to the transport network.
- 2.9.27 The O-D pairs are derived from 2011 census data using data obtained from the following questions:
- i ‘What is the address of your main workplace?’ and
 - i ‘How do you usually travel to work?’
- 2.9.28 This is enhanced through gender composition data for each OD pair, data on background mortality at an area level, and OD pair level data on route distance and hilliness.

Forecasting Growth in Cycling

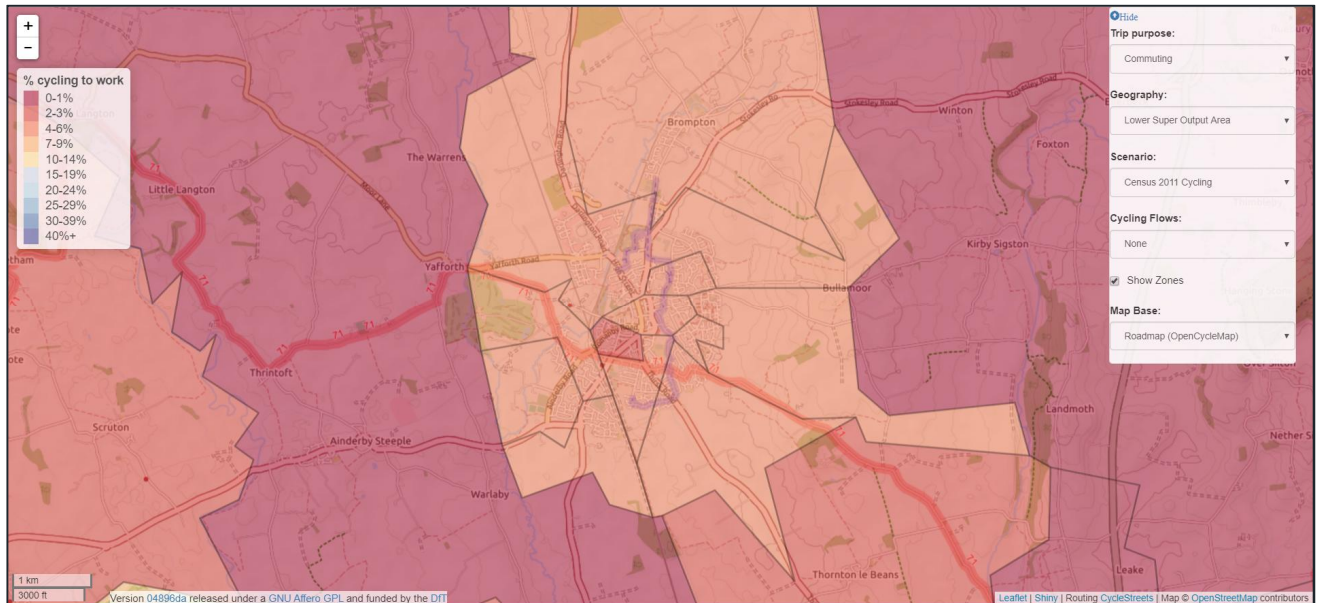
- 2.9.29 Four scenarios were developed to present a range of potential cycling future scenarios. These scenarios consider the removal of different infrastructural, cultural and technological barriers that currently prevent cycling being the natural mode of choice for trips of short to medium distances. The PCT guidance stresses that these are not predictions of the future, but snapshots indicating how the spatial distribution of cycling may shift as cycling grows based on current travel patterns.
- 2.9.30 The four scenarios are:
- i Government Target: a doubling of cycle trip stages by 2025. Note that this is not uniform, with a greater increase in areas with many existing short, flat trips but a low current level of cycling.
 - i Gender Equality: this scenario assumes female cycle user numbers increase to equal levels of male cycle users, with the greatest impact where cycling is most gender unequal.

- i Go Dutch: this scenario considers the increase in cycle users if England had the same infrastructure and cycling culture as the Netherlands, but retained the hilliness and commuter distance patterns. It applies 'Dutch scaling factors' calculated through analysis of British and Dutch National Travel surveys. These include one fixed 'main effect' parameter, plus a distance based factor, as the Dutch effect is greater on shorter trips. Note this does not use current levels of cycling, rather considering the distance and hilliness of existing OD pairs.
- i Ebikes: this scenario is an extension of the Dutch scenario; The Ebike scaling factors were generated through analysis of the English, Dutch and Swiss National Travel Surveys, which estimated how much more likely it was that a given commute trip would be cycled by Ebike owners versus cyclists in general.

PCT Outputs

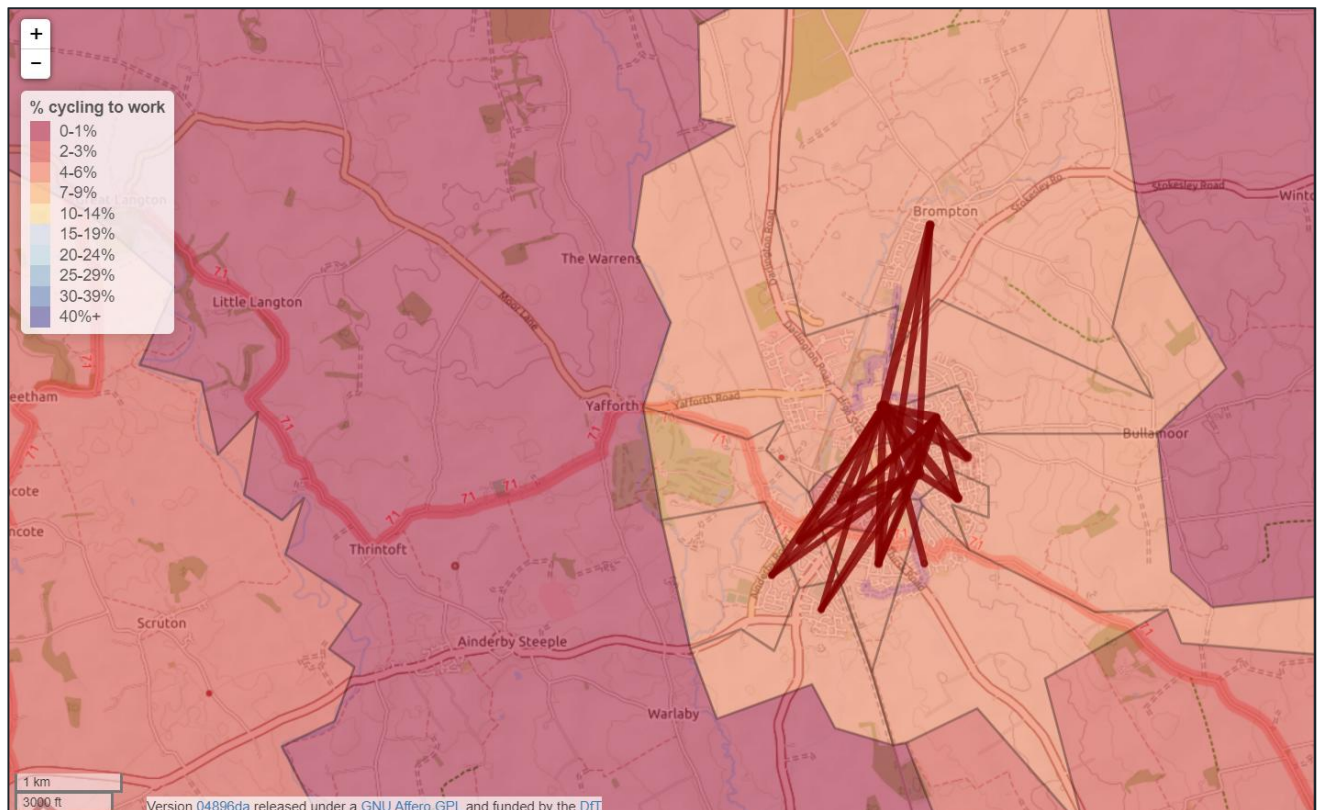
2.9.31 The basic PCT interface displays the existing levels of cycling to work, based on 2011 census data. Figure 2-24 illustrates this scenario at the LSOA level.

Figure 2-24 - PCT Output: % of Population Cycling to Work, by LSOA (2011 Census)



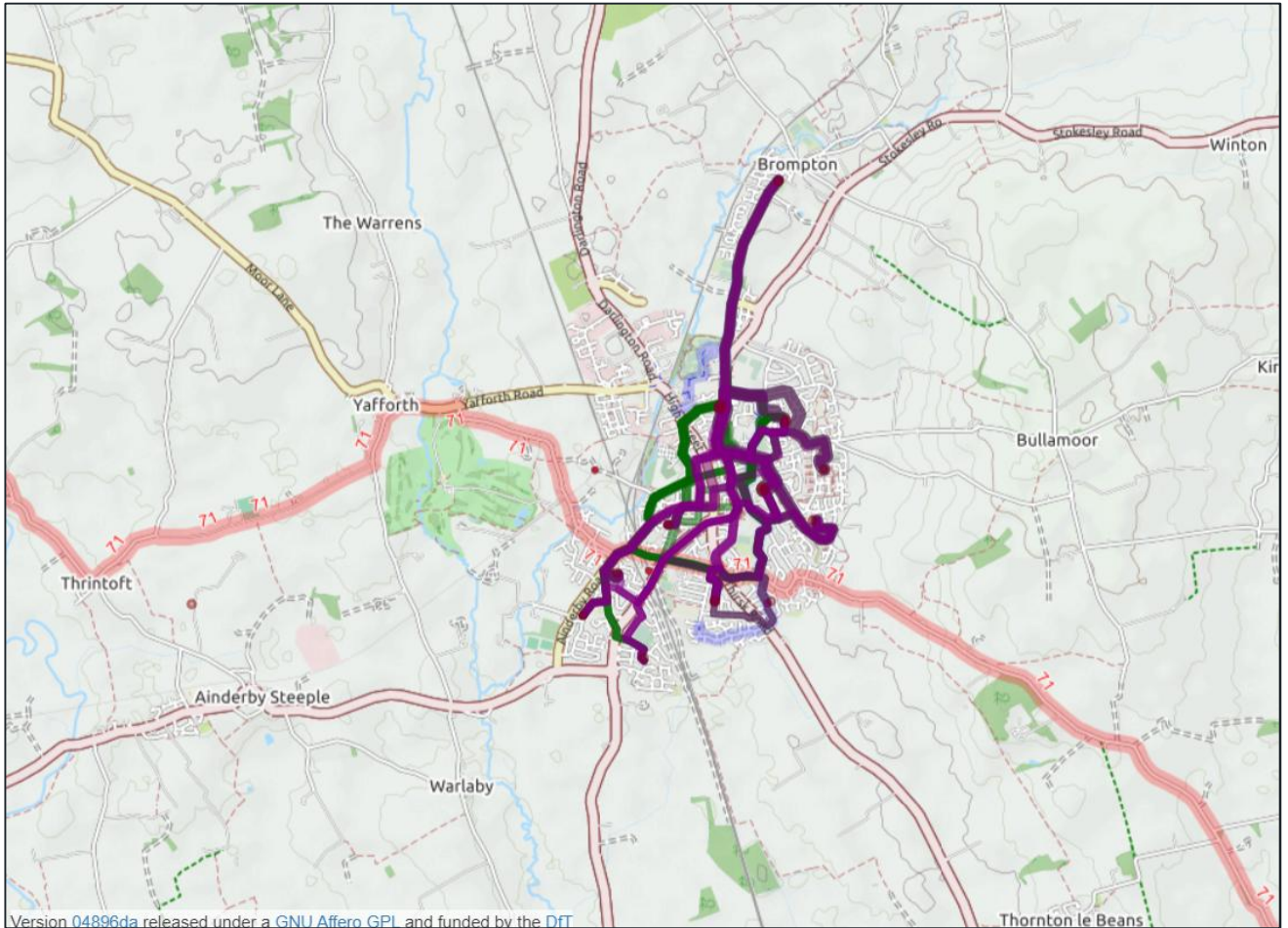
2.9.32 The outputs show that existing levels of cycling between LSOA OD pairs are relatively high in the urban areas of Northallerton, with up to 10% - 14% of journeys to work undertaken by bike in some areas. However, the percentage of people cycling to work from Yafforth and Ainderby Steeple is much lower, with only 0-1% of journeys to work undertaken by bike.

Figure 2-25 - PCT Output: Top 30 Cycle Flows between OD Pairs (2011 Census)



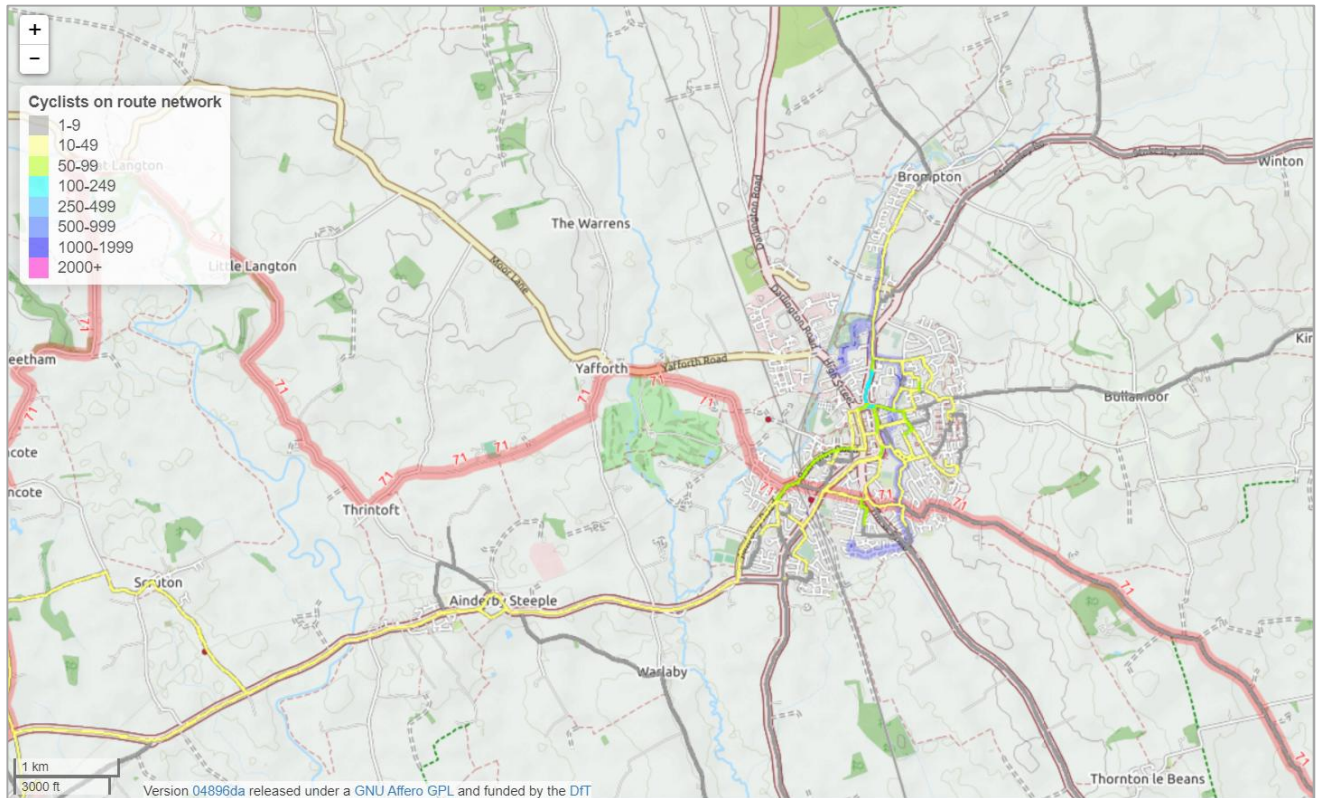
- 2.9.33 However, when considering the top 30 OD pairs, the majority of the existing travel to work by cycle occurs in the urban area of Northallerton itself, with limited existing levels of cycling from the outlying villages and settlements; only three connections from Brompton are in the top 30 OD pairs, and none from Yafforth or Ainderby Steeple.
- 2.9.34 Figure 2-26 demonstrates how OD pair movements are assigned to the most likely routes: the purple lines represent the fastest routes, while those in green show quieter routes with less vehicular traffic. These routes are generated by CycleStreets.net, so do not necessarily represent the paths that cyclists actually take, rather the route choice models are based on GPS data developed specifically for this purpose.

Figure 2-26 - PCT Output: Top 30 Cycle Flows between OD Pairs, mapped to Fast and Quiet Routes (2011 Census)



- 2.9.35 It is also important to note that the tool only considers journey to work data, so excludes all other journey purposes, such as recreational cycling, tourist demand, and movements to school.
- 2.9.36 Figure 2-27 allocates these routes with the Route Network layer, aggregating the 'fastest route' flows together in order to consider the likely most cycled existing routes on the network.

Figure 2-27 - PCT Output: Total Cyclists on Route Network (2011 Census)



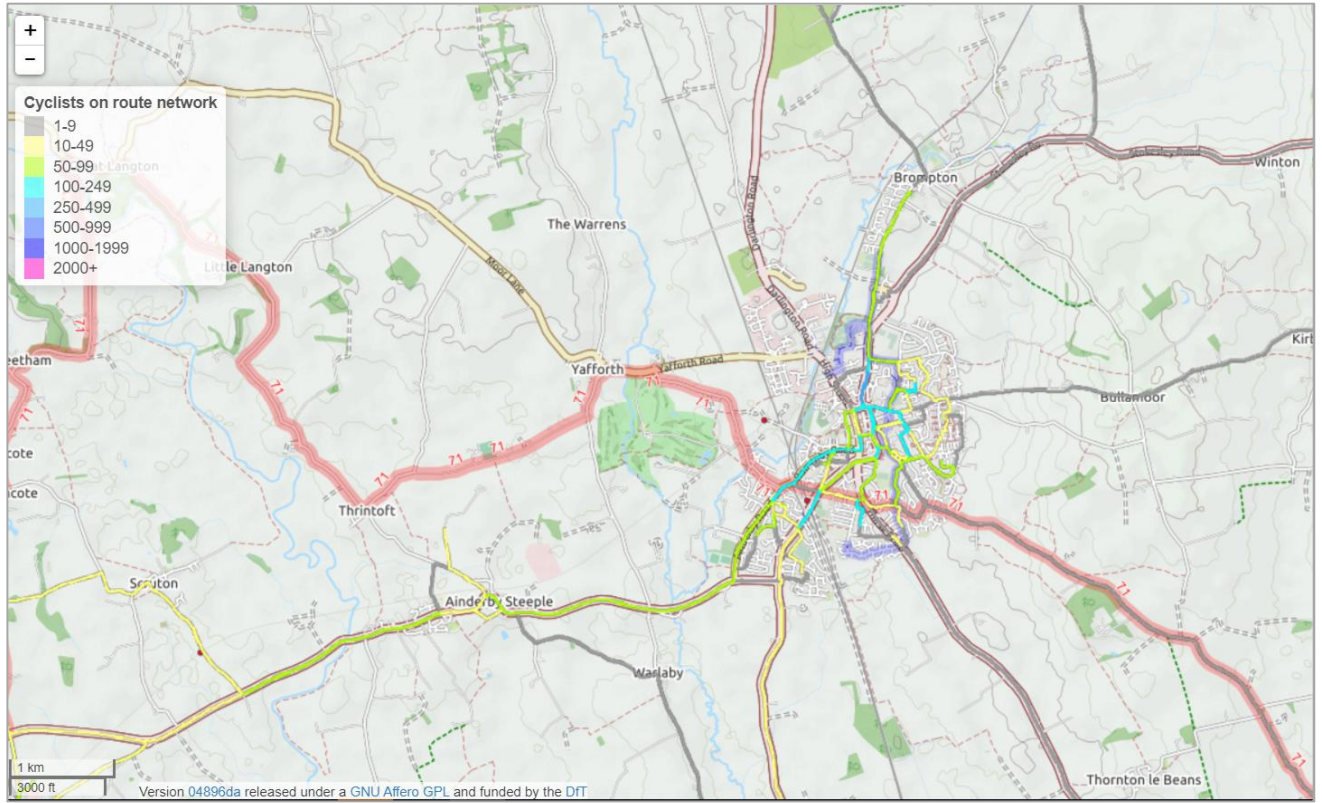
2.9.37 Notwithstanding the limitations of the software, the map of existing conditions shows few cyclists on the network. The links from Ainderby Steeple and Brompton have 10-49 cyclists under existing conditions. The town centre has pockets of higher usage, such as on Romanby Road and on the roads surrounding Friarage Hospital.

Future Scenarios – Government Target

2.9.38 The PCT also allows the identification of key routes under the various future scenarios, as described above. Figure 2-28 shows the potential route network under the government target scenario. These figures show an increase in cycling around the urban centre of Northallerton, as well as higher cycle flows out towards Brompton and Ainderby Steeple.

2.9.39 Under the government target scenario, Romanby Road has the potential to accommodate 100-249 cyclists, serving as a key route into the town centre from the train station and the residential area of Romanby. In the town centre, Friarage Avenue, High Street, Linden Road and East Road also has the potential to accommodate 100-249 cyclists, these links provide key north-south and east-west movements.

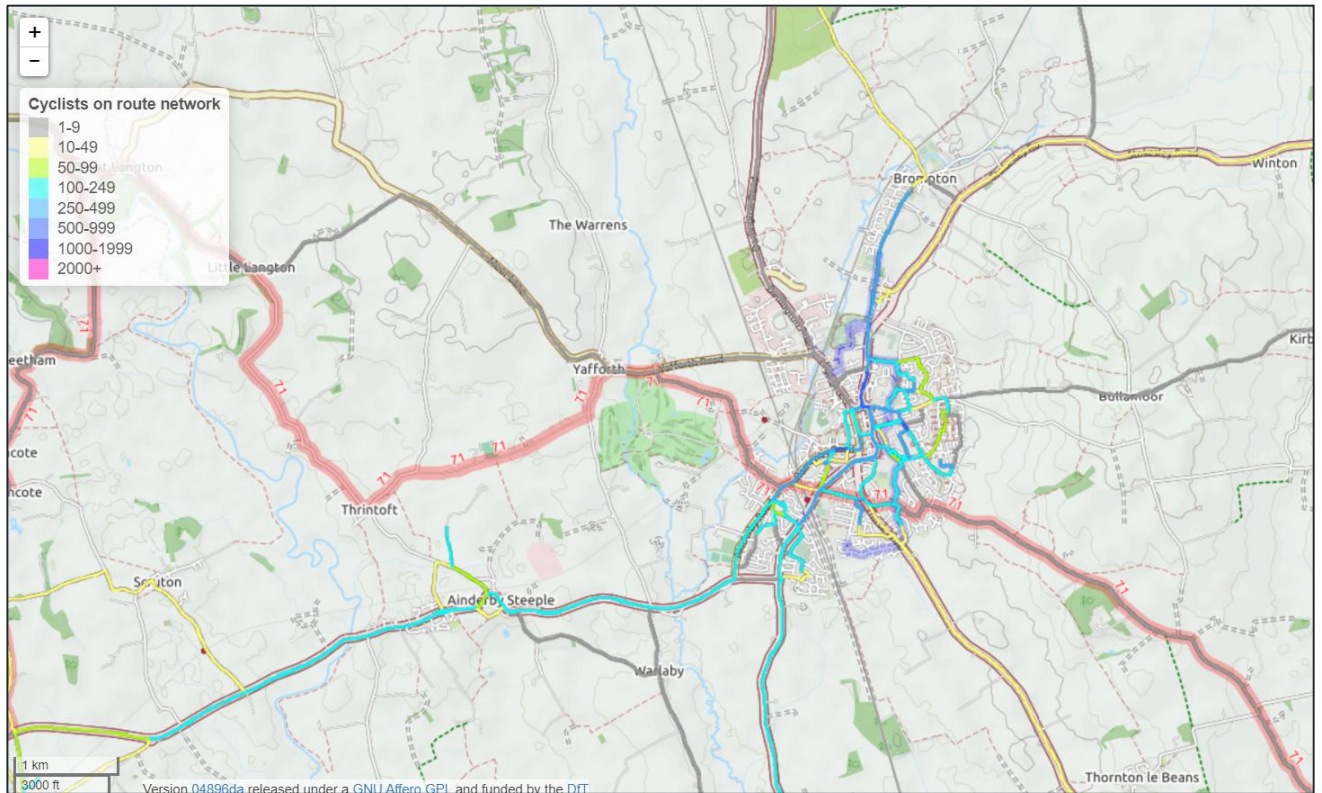
Figure 2-28 - PCT Output: Forecast Cycle Flows mapped to Route Network, based on Government Target Scenario



Future Scenarios – Go Dutch

- 2.9.40 The ‘Go Dutch’ scenario is considered more aspirational than the government target, presenting a potential scenario of cycling demand in the future if ‘Dutch style’ infrastructure was available, as well as a similar attitude toward cycling. Figure 2-29 shows the results of this scenario on the potential cycling network, highlighting areas of significant additional demand.
- 2.9.41 The figure shows increased demand as more people switch modes, as well as the potential for a cycle journeys from further afield, such as North and South Otterington. However, even under the Go Dutch scenario Yafforth and Bullmoor is not expected to have a large demand for cycling.

Figure 2-29 - PCT Output: Forecast Cycle Flows mapped to Route Network, based on Go Dutch Scenario



Applying the PCT

- 2.9.42 It is important to understand the limitations of the PCT. The tool allows for an indicative understanding of the probable key existing cycle routes, as well as those under various future scenarios. However, these routes do not consider journeys for any other purposes than commuting to work, and do not consider future growth in the area.
- 2.9.43 The PCT outputs should therefore only be considered as a starting point, with the network further refined through the subsequent stages in the LCWIP process

LCWIP Implications

- The PCT outputs evidence existing cycle movements are concentrated on the urban area of Northallerton.
- Future scenarios result in increased volume of cyclists cycling from Ainderby Steeple Brompton, and North and South Otterington. However, demand from Yafforth and Bullamoor remains low.

3 CYCLE NETWORK DEVELOPMENT

3.1 OVERVIEW

- 3.1.1 One of the key outputs of Phase 1 of the Northallerton LCWIP process is the determination of the Cycling Network Map (CNM), which sets out a cohesive potential network for cycling. This network is then considered against the baseline evidence in order to identify preferred routes for further development.
- 3.1.2 The development of the Cycling Network follows the LCWIP Technical Guidance for Local Authorities document (DfT, 2017), and is founded on the principle of connecting people to places, ensuring that the proposed networks correspond to both the routes people currently take and those people are likely to want to take, both now and in the future. This method also helps to identify the long-term vision for the networks while ensuring investment is focused on the key routes and the needs of cycle users. The resulting outputs are networks that are evidence-based and facilitate strategic development.

3.2 METHODOLOGY

- 3.2.1 The development of the Cycle Network Map can be divided up into a nine-step process. These are as follows:
- ┆ Step 1 – Define and Understand the Study Area
 - ┆ Step 2 – Identify Key Origins and Destinations
 - ┆ Step 3 – Identify Key Future Developments and Infrastructure
 - ┆ Step 4 – Clustering of Origins and Destinations
 - ┆ Step 5 – Desire Lines Between Origins and Destinations
 - ┆ Step 6 – Identify Routes Serving the Desire Lines
 - ┆ Step 7 – Consider a Route Hierarchy
 - ┆ Step 8 – Produce Cycle Network
 - ┆ Step 9 – Network Validation
- 3.2.2 The following sub-sections describe the process undertaken in developing the CNM for Northallerton LCWIP

3.3 STEP 1 – DEFINING THE STUDY AREA

- 3.3.1 The first step in developing the network map is to define the extents of the study area. The outputs of this step is detailed in the previous section of this report, where travel movements and demographic variations in the study area are outlined, including a review of various data sources in order to understand the existing transport-related issues, physical constraints and topography. Isochrone mapping was undertaken in order to understand the likely extents of active travel distances, while the DfT's Propensity to Cycle Tool (PCT) was used to identify existing and potential future cycle travel patterns.

3.4 STEP 2 – IDENTIFY KEY ORIGINS AND DESTINATIONS

- 3.4.1 Key origins and destinations were plotted using data collected through the baseline exercise, stakeholder engagement and through local knowledge. These ODs include the following key origin points:

- i Residential areas –LSOA population-weighted centroids were used as proxy locations for residential areas;
- i Public transport interchanges – these are both origins in terms of people arriving in the study area and destinations people use to travel to wider locations.

3.4.2 Key destinations included:

- i Public transport interchanges (as above);
- i Principal retail areas;
- i Employment concentrations;
- i Large grocery shops;
- i Hospitals;
- i Tourist attractions; and
- i Educational institutions.

3.4.3 The ODs are shown in Figure 2-21 in the Baseline Review.

3.5 STEP 3 – IDENTIFY KEY FUTURE DEVELOPMENTS AND INFRASTRUCTURE

3.5.1 Identifying potential developments and infrastructure is important in terms of understanding where future origins and destinations may be located, as well as the potential for new desire lines. Understanding the location of and proposals for such development allows the network to be developed in a way that links these sites and makes the most of planned infrastructure.

3.5.2 The future developments are shown in in the Baseline Review section in Figure 2-22.

3.6 STEP 4 – CLUSTERING OF ORIGINS AND DESTINATIONS

3.6.1 To simplify the identification of potential cycling routes, the LCWIP guidance recommends that trip origins and destinations in close proximity to each other are clustered together. This provides an indication of particularly significant origin and destination areas which will be the focus for a large number of trips.

3.6.2 The method was followed to identify clusters using the origins and destinations mapped in the preceding step to act as an independent check.

3.6.3 Given that population-weighted LSOA centroids were used as hypothetical trip origins, the resident population was essentially already clustered.

3.6.4 For the destination points, a buffer with radius of 400m was plotted around every destination, representing a 5-minute walking distance. A distance of 400m was used because it is the recommended mesh density for an urban cycle network and therefore destinations within 400m of each other could theoretically be served by the same cycling route.

3.6.5 To define the clusters, a filtering exercise was undertaken within GIS using the buffers to select locations where there are multiple destinations within 400m of each other.

3.6.6 The clusters were then categorised based on the land-uses within 400m of each other as follows:

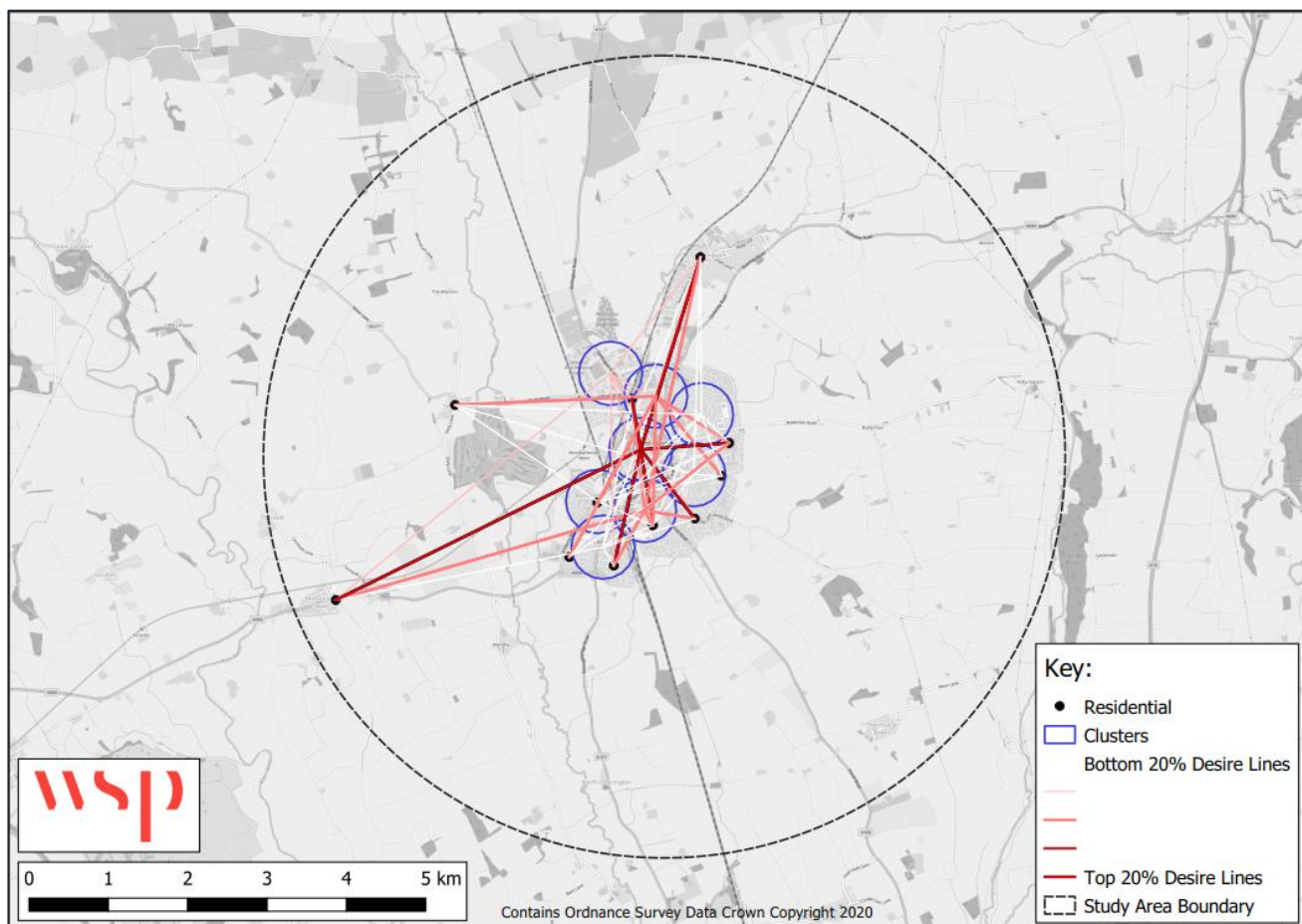
- i Mixed land-uses (local service centres) – clusters include at least one education establishment, one health facility, one food store and one workplace zone centroid;

- i Employment – clusters include more than one workplace zone centroid or at least one workplace zone centroid and one future employment site;
- i Retail – clusters include more than one food store and health facility.

3.6.7 Next, the clusters were rationalised, with those that have a large overlap being replaced and represented by a single point. An Ordnance Survey Map was used to inform the selection so that any destinations which are separated by a physical barrier (e.g. busy road, river, railway) were not clustered because they are likely to be served by different routes. Furthermore, the consolidated clusters were sense-checked to ensure that they are representative of a group of destinations that could be served by the same route.

3.6.8 Figure 3-1 illustrates these clusters, as well as identifying the desire lines discussed in the following sub-section.

Figure 3-1 - Clusters and Desire Lines

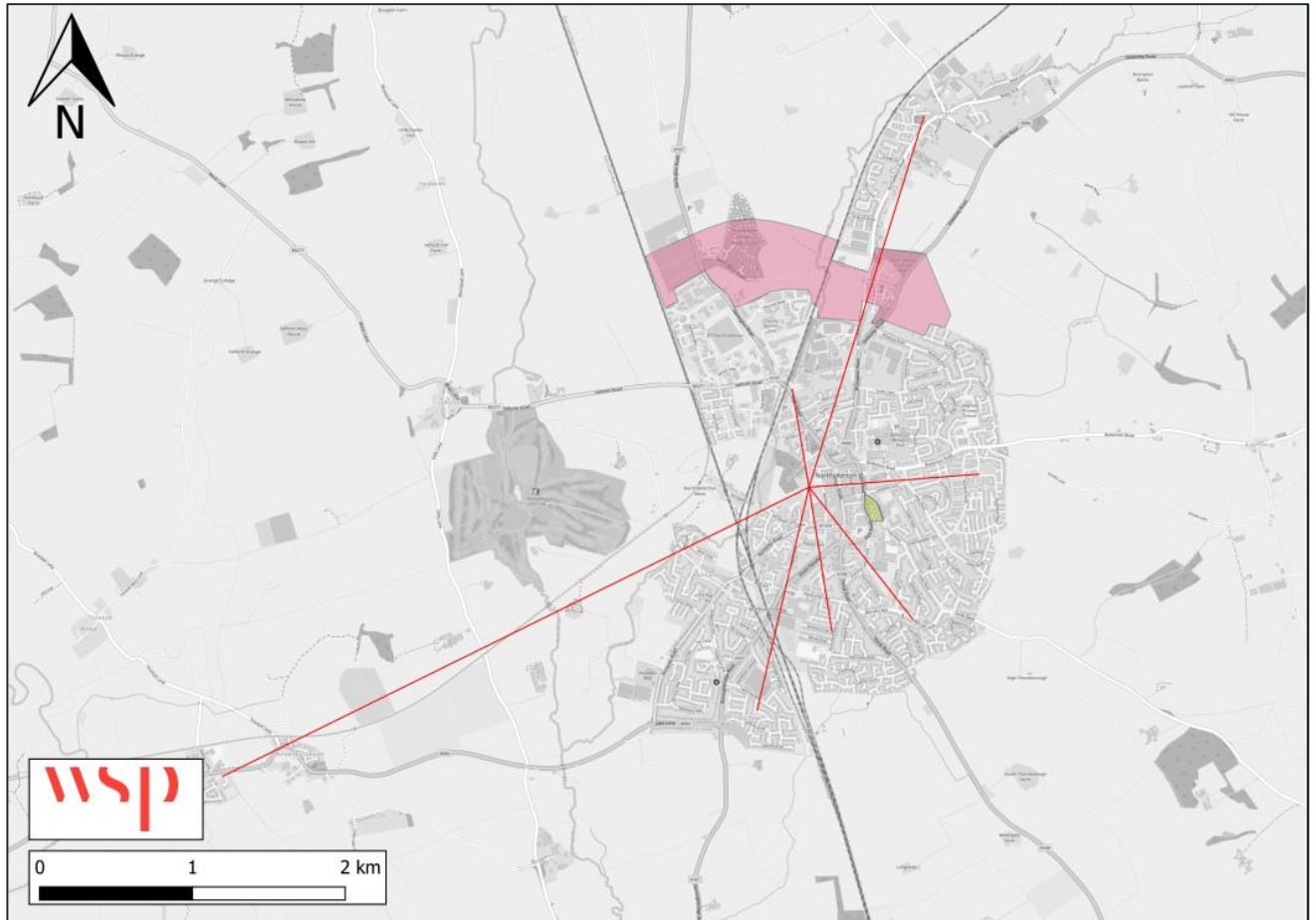


3.7 STEP 5 – DESIRE LINES BETWEEN ORIGINS AND DESTINATIONS

3.7.1 Desire lines between every LSOA or allocated housing site and identified cluster were mapped; the lines represent the most direct most direct route between points, irrespective of the existing network and barriers. These were weighted by the number and type of the destinations within each cluster, with employment sites, transport interchanges, secondary schools and supermarkets being given greater weighting. This provides an indication of the potential travel demand between the origins and destination clusters.

- 3.7.2 Figure 3-1 illustrates these desire lines, as well as the clusters described in the preceding subsection shows the top 20% desire lines.
- 3.7.3 The top 20% desire lines were presented to stakeholders during a workshop held on 7th July 2020. The stakeholders confirmed that the desire lines represented key journeys within the study area.

Figure 3-2 - Top 20% Desire Lines



3.8 STEP 6 – IDENTIFY ROUTES SERVING THE DESIRE LINES

- 3.8.1 During the stakeholder workshop (see section 5) attendees were asked provide suggestions for possible routing options to accommodate the top 20% desire lines and discuss the issues and opportunities of each. The information gathered during the workshop has been used to identify routes serving the desire lines.
- 3.8.2 In addition to the stakeholder feedback outputs from the Propensity to Cycle Tool (PCT) Dutch Scenario were then overlaid as an approximation of the potential demand along the plotted desire lines.

3.9 STEP 7 – IDENTIFY A ROUTE HIERARCHY

- 3.9.1 From reviewing best practice and through knowledge and experience of established cycle networks it was recognised that a cycle network hierarchy would be appropriate. Within this hierarchy the type of infrastructure provided would vary both depending on the links' position in the network hierarchy, and on the type of link, where it connects to, and how it will be used. As a result, the network has

been categorised in accordance with the criteria presented in Table 3-1. This Network Hierarchy has been adopted for all of the NYCC LCWIPs to ensure a consistent approach.

Table 3-1 - Network Hierarchy

Network Element	Characteristics
Primary	<ul style="list-style-type: none"> ⌋ Different cycle users, based on confidence level, experience, age, demographics, trip purpose; ⌋ Different types of bikes, including standard, recumbent, trailers, cargo bikes, disabled user cycles; ⌋ High flow of cycle users; ⌋ Creates arterial routes; ⌋ Links large residential areas to main clusters such as town centre locations; ⌋ Through, internal, and inbound-outbound traffic; ⌋ Cater for existing non-cycle users; ⌋ Cater for people aged '8-80' to be able to cycle safely; ⌋ Direct, following the shortest possible route; ⌋ Low gradients where possible.
Secondary	<ul style="list-style-type: none"> ⌋ Lower volumes of cycle users; ⌋ Further increases density of network; ⌋ Ensure local access to origins and destinations from the primary / secondary network; ⌋ Provide quieter routes for less confident cycle users (while primary network is being developed).
Town Centre Cores	<ul style="list-style-type: none"> ⌋ High levels of permeability and priority for cycle users and pedestrians; ⌋ High levels of cycle parking availability.

3.9.2 This hierarchy has been applied to the identified cycle corridors, respective to their location in the study area and perceived role in the network.

3.9.3 A core network of primary routes underpins the proposed network, taking into account the main destination clusters, origin points, and any isolated major destinations. The primary routes are supported by a network of secondary and local links.

3.10 STEP 8 – PRODUCE CYCLE NETWORK

3.10.1 Step 8 is the culmination of the previous steps, bringing all the data together to formalise a cycle network.

3.10.2 Figure 3-3 presents the Cycle Network Map for Northallerton. The key corridors identified are summarised as:

PRIMARY CYCLING ROUTES

3.10.3 The primary routes are focused on the main strategic routes into the town centre and include:

- ⌋ High Street / East Road. These links cover the Northallerton town centre.
- ⌋ Aiderby Road/ Romanby Road;
- ⌋ Boroughbridge Road (up to the train station);
- ⌋ Thirsk Road;
- ⌋ Bullamoor Road;
- ⌋ Friarage Avenue / Brompton Road; and
- ⌋ High Street / Darlington Road.

SECONDARY CYCLING ROUTES

- 3.10.4 The secondary routes mainly consist of residential links that provide a connection to the primary routes, they include:
- ┆ Alverton Lane.
 - ┆ Ainderby Road (A684). This route provides a connection to Ainderby Steeple.
 - ┆ Yafforth Road. This short route on Yafforth Road connects the housing estate on Ben Hyde Way with the High Street.
 - ┆ Standard Way. This is the road through Standard Way Business Park.
 - ┆ Ben Hyde Way / PROW. This is currently a footpath (cycling is prohibited)
 - ┆ Quaker Lane / Swain Court / PROW. This is an east-west connection between Brompton Road and the High Street
 - ┆ Turker Lane. This provides a connection to Alverton Primary School.
 - ┆ PROW (north-south between Turker Lane.
 - ┆ South Vale / Colstan Road / Crosby Road / Greenhousyke Lane, Ashlands Road. These links provide a north-south connection within the residential area between Bullamoor Road and Thirsk Road.
 - ┆ Crosby Road / PROW. This provides a link to east road and Bullamoor Road.
 - ┆ Broomfield Avenue / St James Drive. This provides a connection towards the train station.

3.11 STEP 9 – NETWORK VALIDATION

- 3.11.1 The validation of the draft networks was informed by the baseline evidence, local knowledge, stakeholder engagement and a review of connectivity between key origins and destinations. The PCT outputs (Go Dutch scenario) were also used to validate the network in terms of existing and future demand.
- 3.11.2 An informal workshop was held with NYCC to discuss the network. NYCC were satisfied with the network and no further changes were made.

Figure 3-3 - Cycle Network Map



4 WALKING NETWORK DEVELOPMENT

4.1 OVERVIEW

- 4.1.1 One of the key outputs of Phase 1 of the Northallerton LCWIP process is the determination of the Walking Network Map (WNM), which sets out a cohesive potential network for walking. This network is then considered against the baseline evidence in order to identify preferred routes for further development.
- 4.1.2 The development of the walking network follows the LCWIP Technical Guidance for Local Authorities document (DfT, 2017), and is founded on the principle of connecting people to places, ensuring that the proposed networks correspond to both the routes people currently take and those people are likely to want to take, both now and in the future. This method also helps to identify the long-term vision for the networks while ensuring investment is focused on the key routes and the needs of pedestrians. The resulting outputs are networks that are evidence-based and facilitate strategic development.

4.2 METHODOLOGY

- 4.2.1 The development of the walking network map can be divided up into a seven-step process. These are as follows:
- i Step 1 – Defining the Study Area;
 - i Step 2 – Mapping Walking Trip Generators;
 - i Step 3 – Identifying Core Walking Zones;
 - i Step 4 – Identifying Key Walking Routes;
 - i Step 5 – Consider a Route Hierarchy;
 - i Step 6 – Produce a Walking Network; and
 - i Step 7 – Network Validation.
- 4.2.2 The following sub-sections describe the process undertaken in developing the WNM for the Northallerton LCWIP study area.

4.3 STEP 1 – DEFINING THE STUDY AREA

- 4.3.1 The first step in developing the network map is to define the extent of the study area. The study area used in the determination of the WNM focuses on the plan presented in Figure 1-1.

4.4 STEP 2 – MAPPING WALKING TRIP GENERATORS

- 4.4.1 The key origin and destination data used in the derivation of cycling origin and destination points in Section 3.4 were again utilised to understand the key ODs in relation to walking. It is considered that, while cycling is likely to enable longer distance journeys and connect OD pairs further afield, the trip generators and attractors remain the same.
- 4.4.2 These ODs included the following key origin points:
- i Residential areas – Lower Super Output Area (LSOA) population-weighted centroids were used as proxy locations for residential areas; and
 - i Public transport interchanges – these are both origins in terms of people arriving in the study area and destinations people use to travel to wider locations.

- 4.4.3 Key ODs in relation to desire lines within the LCWIP study area are shown in Figure 3-1.
- 4.4.4 Future ODs are also considered in the development of the WNM, with the same assumptions applied in the development of both the CNM and the WNM.

4.5 STEP 3 – IDENTIFYING CORE WALKING ZONES

- 4.5.1 Following the identification of walking trip generators Core Walking Zones (CWZs) can be defined. CWZs are areas that consist of a number of walking trip ODs located in close proximity (e.g. town centre, business park, university campus, etc). These CWZs are most likely to attract trips for utility / commuting purposes.
- 4.5.2 Although some CWZs may include Points of Interest (POIs), these locations are considered to be trip attractors for leisure and recreational trips. It is however, acknowledged that these POIs are likely to comprise of employment in some capacity.
- 4.5.3 The CWZs selected for the Northallerton LCWIP study area are listed in Table 4-1.

Table 4-1 - Core Walking Zones

Core Walking Zone	Area	Purpose
Northallerton Town Centre (local centre proxy)	Town Centre	Commuting/Utilities/Retail
Standard Way Business Park	North West of Town Centre	Commuting/Utilities
Northallerton Railway Station	Railway Station	Commuting/Utilities

- 4.5.4 Whilst the Northallerton LCWIP study area extends out beyond areas such as Brompton and Ainderby Steeple, the CWZs are located within Northallerton itself. As Northallerton has employment areas in the centre, as well as to the north, with residential areas in peripheral areas around the town (including the proposed North Northallerton Development), several CWZs have been chosen to highlight the importance of connectivity on foot across the town.
- 4.5.5 As per LCWIP guidance, an approximate five-minute walking distance of 400m can be used as a guide to the minimum extents of CWZs. Each identified CWZ has therefore been plotted using a proxy central point, with a GIS-based isochrone tool and the local highway network used to map the CWZ five-minute extents.

4.6 STEP 4 – IDENTIFYING KEY WALKING ROUTES

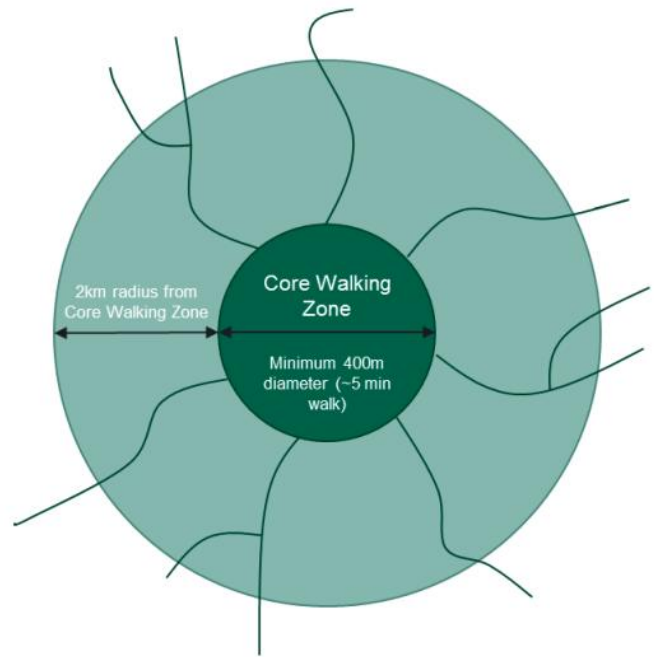
- 4.6.1 Following the identification of the CWZs, key walking routes to each zone should then be identified by mapping a 2km isochrone from the central point, considered to be the maximum desirable walking distance from the CWZs⁶. The proportion of journeys made on foot typically decreases significantly beyond this distance.

⁶ Providing for Journeys on Foot, CIHT, 2000

4.6.2 While each 2km isochrone allows the identification of key walking routes in relation to each individual CWZ, the analysis of overlapping isochrones shows where key walking routes are likely to serve multiple CWZs, and therefore potentially have higher levels of demand.

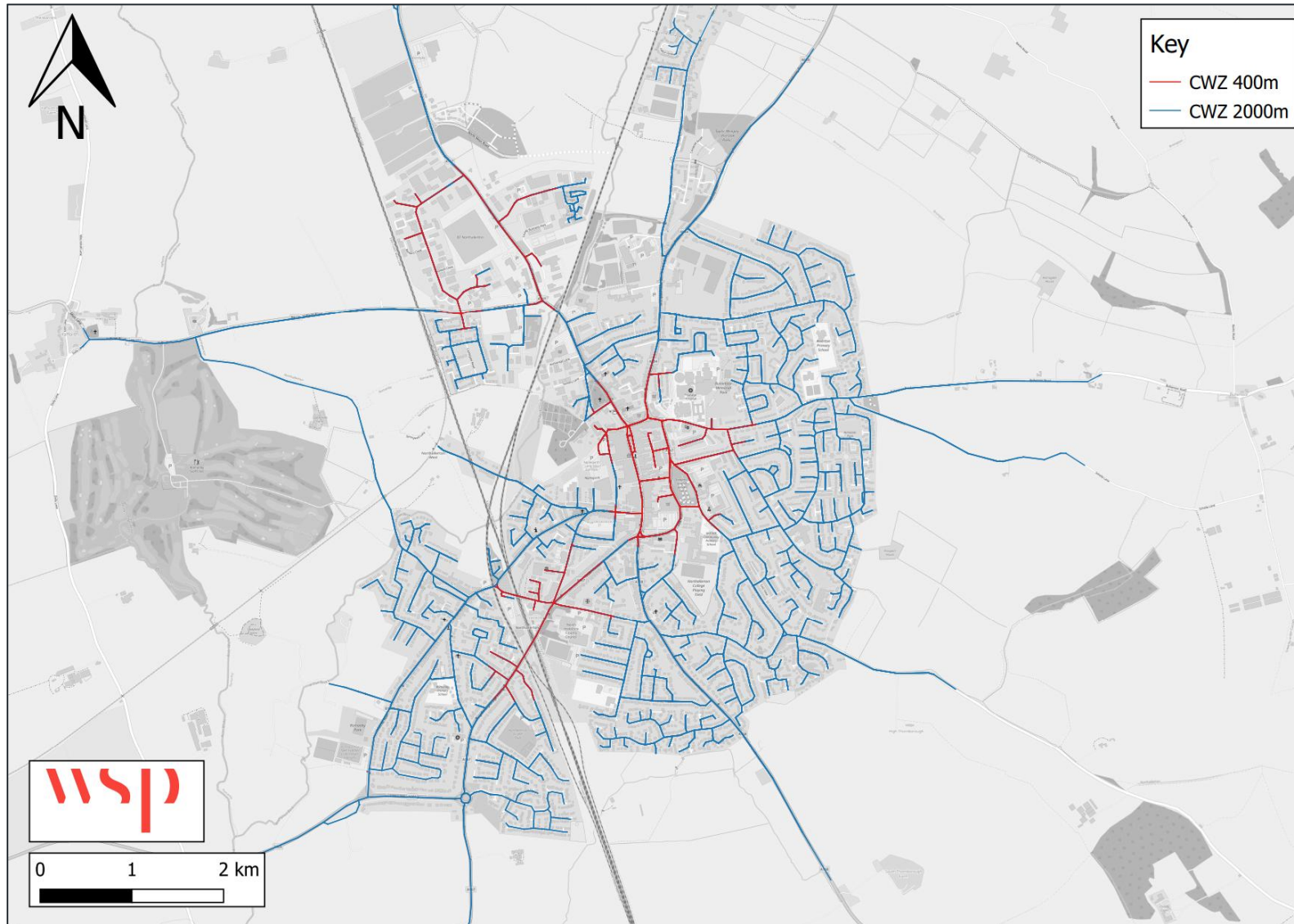
4.6.3 A GIS-based isochrone tool was used to identify potential walking routes of 2km (approximately a 20-minute journey) from each of the CWZs listed in Step 3.

4.6.4 It should be recognised that there are some limitations to this method; centroids are used as proxies for each OD, and pedestrian movement is unconstrained by infrastructure provision in the same way as vehicles (although the propensity to travel on foot can be heavily suppressed by poor quality infrastructure). The isochrone analysis is therefore used to identify movement corridors, within which a combination of stakeholder engagement and site visits are used to identify specific routes for improvement.



4.6.5 Figure 4-1 illustrates the CWZs and respective 2km isochrones across the Northallerton LCWIP study area.

Figure 4-1 - Core Walking Zones/Routes



4.7 STEP 5 – CONSIDER A ROUTE HIERARCHY

- 4.7.1 Following the identification of the key walking routes within Northallerton, the generated network has been prioritised based on definitions provided in the RLF Footway Maintenance Classification⁷, as presented in Table 4-2. Whilst definitions can be tailored to local circumstances, the DfT’s LCWIP technical guidance recommends that a defined classification of footways is used as a basis for establishing where to focus improvements to walking infrastructure.
- 4.7.2 Within the hierarchy, the type of infrastructure provided varies depending on the link position in the network, and the type of link, where it connects and how it is used.

Table 4-2 - Footway Hierarchy in ‘Well-Maintained Highways’

Category	Name	Description
1(a)	Prestige Walking Zones	Very busy areas of towns and cities, with high public space and street scene contribution.
1	Primary Walking Routes	Busy urban shopping and business areas, and main pedestrian routes
2	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres, etc.
3	Link Footways	Linking local access footways through urban areas and busy rural footways.
4	Local Access Footways	Footways associated with low usage, short estate roads to the main roads and cul-de-sacs.

- 4.7.3 Prestige, Primary, Secondary and Link Footways have been identified and mapped as these are expected to have the highest demand for walking trips and are the busiest local routes, based on the definitions above. It is therefore considered that these routes would be the focus for improvements.
- 4.7.4 It should be noted that that these assignments should be considered indicative in the initial stages, and alternative or complementary routes within the corridors may come forward through stakeholder engagement, detailed assessment and design.
- 4.7.5 Further discussion on the identification of routes for each footway hierarchy category are provided below, respective to their location in the study area.

4.8 STEP 6 – PRODUCE A DRAFT WALKING NETWORK

- 4.8.1 In alignment with the methodology outlined within the previous steps 1-5, a Walking Network Map has been developed for the Northallerton LCWIP study area. The links within the network have been categorised based upon the hierarchical structure summarised in Table 4-2.

⁷ Well-maintained Highways: Code of Practice for Highway Management 2005 Edition, updated September 2013, Roads Liaison Group-London: TSO

4.8.2 The walking map has been produced following feedback from the stakeholder workshop. Stakeholders were asked to identify key routes into each of the CWZs. Feedback from the stakeholder workshop is detailed in section 5 of this technical note.

4.8.3 Figure 4-2 illustrates the Walking Network Map for Northallerton. The key corridors identified are summarised as:

Prestige / Primary Walking Routes

- i 'Town Centre Core' – this is the route along the High Street and Friarage Street, as well as the main access roads to the core of the town centre. These routes are classified as prestige routes, and provide connectivity to a large number of services and local amenities within Northallerton.
- i 'Darlington Road / Yafforth Road' – these routes allow access to the town centre from the north, converging just north of the Low Gates Level crossing. Whilst some level of severance exists at the Low Gates Level Crossing, these routes remain essential in facilitating pedestrian connectivity between the town and key businesses to the north.
- i 'Stokesley Road (A684)' – this is the north eastern corridor into the town, allowing for access to the Hambleton District Council offices, as well as the Northallerton Leisure Centre. Additionally, this route provides a link between the north, and the town centre, with the Friarage Hospital, located to the north east of the town centre.
- i 'Bullamoor Road' – the Bullamoor Road link, which connects with the eastern side of the town centre connects with the south side of the Friarage Hospital, Bullamoor Memorial Park and the Alverton Community Primary School, facilitating access to education, employment as well as leisure facilities.
- i 'Thirsk Road (A168)' – the A168 provides a direct access route into the town centre from the south of Northallerton, offering links to Broomfield School and the Northallerton school and Sixth Form College. Additionally, there are a number of leisure amenities that are located along the route, connecting residential areas to the south of the town with key services and amenities.
- i 'Boroughbridge Road (A167)' – As well as connecting southern residential areas with the town centre, the A167 is a direct route to Northallerton Railway Station, allowing those living on the southern extent of the town safe walking access to the main transport hub within Northallerton.
- i 'Romanby Road / Ainderby Road' – Romanby Road / Ainderby Road is the least direct route towards the town centre from the south west of the town.

Secondary Walking Routes

- i To the north of the town centre, there are several key secondary walking routes, which connect with primary routes to offer walking options for pedestrians. Around the County Business Park, Standard Way and Thurston Road connect with the business park. Additionally, Northallerton Road, which connects with Brompton to the north is also considered secondary, given the distance between Brompton and the town centre. As well as existing routes, as part of the North Northallerton Development there is an east-west route being developed to better connect the site.
- i To the east, north of Bullamoor Road, Mowbray Road, Turker Lane and Meadow Lane all provide access to various facilities such as the Alverton Infant and Nursery School, as well as the Friarage Hospital, which is located to the north of Bullamoor Road.
- i To the west, a secondary link using a PROW and through Ben Hyde Way provides a connection to Standard Way. The stakeholder workshop identified this as an important route for employees of the business park.

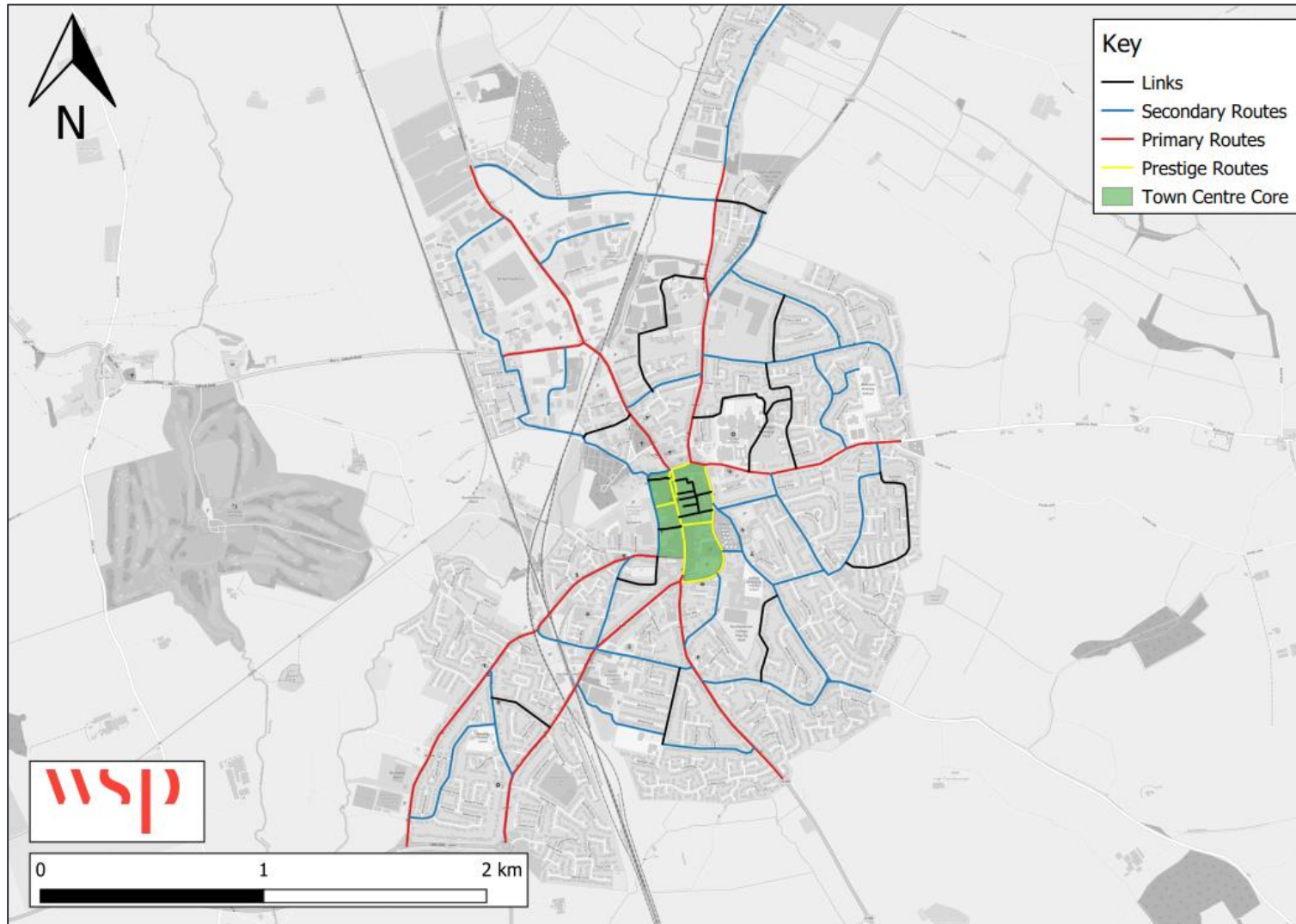
- i Crosby Lane is the main secondary walking route to the south east of the town centre, offering a connection with the residential areas and the school in the area, as well as providing access to Bullamoor Road to the north, via Valley Road, and the A168 to the west.
- i In the Romanby area, which is served by the A167 and Ainderby Road as primary route, there are many secondary links, such as Harewood Lane. These links connect the residential areas to the primary routes, as well as services should as local supermarkets, sports and leisure facilities and the Romanby Primary School.
- i Mill Lane / Racecourse Lane is a secondary route which connects with Romanby Road, the A167 and the A168; all of which are primary routes into the town centre. Additionally, this section of the walking route network provides direct access to the Northallerton Railway Station car park, suggesting it is integral to connectivity to primary routes around the town.

Link Footways

4.8.4 Link footways identified as part of the Walking Route Network Map has been selected based on how they complement the prestige, primary and secondary routes. Link routes include:

- i A number of side roads / access roads within the town centre core;
- i De Lacy Road, Tannery Lane (and associated PRowS);
- i Gattres Road;
- i Meadow Lane;
- i Forster Road / Byland Avenue (as well as routes through Bullamoor Memorial Park);
- i Blankhead Road;
- i Link north of Applegarth Playground;
- i Alverton Lane / Ivy Cottages;
- i Colstan Road;
- i Broomfield Avenue / Normanby Road; and
- i The Fairway.

Figure 4-2 - Walking Network Map



4.9 STEP 7 – VALIDATION AND REVIEW

- 4.9.1 The validation and review of the draft networks was informed by the baseline evidence, site visits, local knowledge, stakeholder engagement and a review of connectivity between key origins and destinations. The emerging WNM should also be reviewed against the existing Northallerton Footway Maintenance log to assess the prioritisation of links, and suggest potential amendments where required.
- 4.9.2 An informal workshop was held with NYCC to discuss the network. NYCC were satisfied with the network and no further changes were made.

5 STAKEHOLDER ENGAGEMENT

5.1 OVERVIEW

- 5.1.1 The DfT's LCWIP guidance highlights the importance of stakeholder engagement throughout the development of the LCWIP.
- 5.1.2 Initial stakeholder engagement for the Northallerton LCWIP took place during the development of the evidence base via an internal workshop held on Friday 5th June 2020, where the project team engaged with key stakeholders (such as NYCC and HDC officers) to gain a detailed insight in terms of challenges and opportunities for developing the respective networks within the study area.
- 5.1.3 External stakeholder engagement took place on Tuesday 7th July 2020.

5.2 INTERNAL STAKEHOLDER WORKSHOP – KEY INPUTS

- 5.2.1 During the workshop the following constraints to active travel were noted:
- ┆ There is a steeper topography to the east of Northallerton. Also, near Thirsk Road and Crosby road there is a minor elevation that impacts on cyclists.
 - ┆ The two tunnels on Romanby Road and on Mill Lane are very narrow for two-lane traffic, they do make it unattractive to cyclists and are thus a constraint.
 - ┆ The level crossing and the bridge over the Northallerton Beck are constraints. Not good for pedestrians in terms of access from the new development at Yafforth Road.
 - ┆ The bridge at Low gates is too narrow, creating an unattractive route for cyclists and pedestrians.
 - ┆ There is a strong desire lines to the hospital but narrow footway widths and poor crossing facilities act as a deterrent for pedestrians.
- 5.2.2 During the workshop the following opportunities for active travel were noted:
- ┆ There is a desire to extend the Green Connections route to Romanby this route is referenced in Section 2.9.
 - ┆ There has been a long term desire for a cycle link to Leeming Bar, but the route is constrained by difficult bridges especially around Morton-on-Swale.

5.3 EXTERNAL STAKEHOLDER WORKSHOP – KEY INPUTS

- 5.3.1 An external workshop was held via Microsoft Teams on Tuesday 7th July 2020 with the following objectives:
- ┆ To gain stakeholder input on the emerging networks; and
 - ┆ To identify short term network priorities.
- 5.3.2 The workshop format provided an opportunity for stakeholders to comment on how the desire lines should be mapped to the network and to list their walking and cycling route priorities.
- 5.3.3 The attendees to the external workshop included staff from NYCC and HDC who were involved during the baseline engagement, and the invitation was opened up to external stakeholders who were identified by NYCC as being important to the development and delivery of the cycle and walking network. A full list of invitees and attendees is presented in Table 5-1.

Table 5-1 - Skipton LCWIP External Workshop Attendees

Name	Role
Phil Freestone	WSP
Helen Stimpfig	WSP
Keisha Moore	NYCC
Andrew Bainbridge	NYCC
Stuart Grimston	NYCC
Louise Neale	NYCC
Clare Lowe	HDC
Kathryn Watts	Hambleton Community Action
Liz Lockey	Hambleton Community Action
Cllr Paul Cornfoot	Northallerton Town Council
Graham Meiklejohn	Transpennine Express
Graham Wright	Northallerton Ramblers
Stephen Cowley	Cowley Cycles
Apologies	
Mark Haynes	Hambleton District Council
Cllr Phil Eames	Northallerton Town Council
Lee Thompson	Sustrans
Rupert Douglas	Sustrans

5.3.4 One of the primary aims of the external workshop was to review the work WSP had already undertaken in terms of network development and identify priorities for further developments. To do this the workshop was broken down into three activities:

- ┆ Activity 1: Validation of the identified desire lines and identifying priorities.
- ┆ Activity 2: Mapping the cycle network.
- ┆ Activity 3: Mapping the walking network.

ACTIVITY 1: VALIDATION OF DESIRE LINES AND CORE WALKING ZONES

5.3.5 The desire lines identified from connecting the clusters at Step 4 of the cycle network development process were presented to stakeholders for their consideration.

5.3.6 It was noted that these desire lines represent the most important connections within the study area and no further desire lines were suggested by the stakeholders.

5.3.7 Stakeholders were also asked which desire lines for cycling they would prioritise, should funding become available in the short-term (i.e. 1-3 years). The outputs from this exercise is shown below:

- ┆ Brompton to Northallerton
- ┆ South East Northallerton to Town Centre

i North Northallerton to Town Centre

- 5.3.8 The three CWZs identified during Step 3 of the walking network development process were also presented to the stakeholders. The stakeholders were satisfied with the CWZ areas and identified the CWZ centred around the train station as a priority to take forward.

ACTIVITY 2: MAPPING THE CYCLE NETWORK

- 5.3.9 Stakeholders were asked to provide suggestions for possible routing options to accommodate each desire line and discuss the issues and opportunities of each. The comments relating to each desire line are presented in Table 5-2.
- 5.3.10 Following on from the workshop, stakeholders were given a two week period to further evaluate the materials presented in the workshop and submit any additional comments.
- 5.3.11 The comments received from stakeholders have been used to inform the development of the draft cycle network plan and determine hierarchies (as detailed in section 3).

ACTIVITY 3: MAPPING THE WALKING NETWORK

- 5.3.12 Each CWZ was presented and stakeholders were asked to identify the key routes that serve each of the three areas. The comments from this exercise are presented in Table 5-3.
- 5.3.13 As per Activity 2, stakeholders were provided a two week period following the workshop to further evaluate the materials presented and submit any additional comments.
- 5.3.14 The comments received from stakeholders have been used in the development of the draft walking network plan (as detailed in section 4).

Table 5-2 - Mapping the cycle network: Comments

Desire Line (DL)	Comment	WSP Response
DL1 Brompton to Northallerton	i Stokesley Road is a 60mph road and is too busy for general cycling. The section of the road between the future school site and roundabout on Friarage Street is narrow.	Stokesley Road will be included within the draft network plan as a primary route. This is the most direct route to the town centre.
	i Infrastructure from Brompton to Northallerton works well, up to the school site and then then it is a busy main road. May be better to go via the back of the leisure centre and utilise quieter roads.	The route to the north of the leisure centre will be included as a secondary route.
	i HDC looking into routes to the Leisure Centre at Stone Cross. Links will be provided to the new access road.	Any potential plans will be reviewed and incorporated into the draft network (if appropriate).
	i Existing infrastructure around the back of Leisure Centre is not cycle friendly. Consideration is needed for how the route connects to Darlington Road.	Noted.
	i On Stokesley Road between the School and roundabout on Friarage Street is narrow, the more people that are diverted onto a quieter route to get to the High Street the better.	Stokesley Road will be included within the draft network plan as a primary route. This is the most direct route to the town centre.
	i If using the less direct route consideration is needed towards lighting and surveillance.	Noted.
DL2 East Northallerton to Town Centre	i Key issue on Bullamoor Road is on-street parking. There is also a lot of parking on the wide grass verges.	Noted, this will be considered in further detail when looking at routing options.
	i Bullamoor Road is the obvious east-west route, but is there any opportunity to come through the car park east of the Treadmills development with a link to the new development? This would be a quieter route which could lead onto Zetland Street. Residents to the south of Bullamoor road would not use Bullamoor Road to access the town centre.	Bullamoor Road will be included as a primary cycle link into the town centre. A secondary cycle route through the residential area to the south of Bullamoor Road will also be included within the draft network plan.

<p>DL3</p> <p>South East Northallerton to Town Centre</p>	<p>i Two obvious routes:</p> <ul style="list-style-type: none"> • Crosby Road, which is relatively quiet, but there are parked vehicles. This would directly link with the Treadmills and then onto Zetland Street. • Thirsk Road is a fast road but there may be an opportunity to provide a cycle facility due to the width. However, the Thirsk Road/South Parade roundabout is not cycle friendly and may be difficult to do anything with. 	<p>Thirsk Road will be included as a primary cycle link into the town centre. A secondary cycle route along Crosby Road, linking to the Treadmill development, will be included in the draft network plan.</p>
	<p>i Within the LCWIP we do need to identify a longer term desire to have a route that goes through the Grammar School site. The school is moving in 2021 and some of the site may become housing. In the next 2-3 years there is the opportunity to make a much better route connecting the site to the Treadmills and the town centre.</p>	<p>A secondary cycle route along Crosby Road will be included in the draft network plan. This route will also provide a connection to the Grammar School site.</p>
<p>DL4</p> <p>South Northallerton to Town Centre</p>	<p>Thirsk Road is the most direct option, but not currently a pleasant route to get to the High Street.</p>	<p>Thirsk Road will be included as a primary cycle link into the town centre in the draft network plan. This route also serves DL3.</p>
	<p>Cyclists can take a route that approaches the western side of the high street, instead of using Thirsk Road. This route crosses South Parade at the pedestrian crossing, goes around the back of the BT site and then up through the Applegarth, through the car park and comes in at the top end of the High Street. There could be an opportunity to upgrade the pedestrian link between Applegarth and the High Street.</p>	<p>This route will be explored as a secondary route in the draft network plan.</p>
<p>DL5</p> <p>Romanby to Town Centre</p>	<p>Main constraint in this area is the level crossings and narrow tunnels/ bridges underneath the railway line.</p>	<p>Noted, this will be considered when exploring routing options.</p>
	<p>Romanby Road is generally ok and a lot quieter than Boroughbridge Road, there is also limited parking and it is generally used by people who cycle. Tunnels make cyclists constrained by traffic.</p>	<p>Romanby Road will be included as a primary cycle link in the draft network plan.</p>
	<p>Boroughbridge Road is very traffic heavy.</p>	<p>Noted, this road will not be included within the draft network plan. Ainderby Road and Romanby Road are considered more desirable routes for cycling.</p>

DL6 Morton on Swale to Town Centre	A684 is the obvious option, but would need an off-road facility as it is a high speed busy road.	Noted.
	Facility along the railway line – this could be a long term option.	Noted.
	The usage is going to be low but the costs of infrastructure will be high. This should be a later priority.	Agreed.
DL7 North Northallerton to Town Centre	There are existing cycle facilities alongside Darlington Road, from the new estate all the way down to the VW garage but stops before the Yafforth Road junction. Would need to extend this cycle facility down to the High Street.	Noted. Darlington Road will be included as a primary link into the town centre in the draft network plan.
	Another, or additional option, could be through the new housing estate south of Yafforth Road and over the beck and railway line, this would avoid the Low Gate level crossing. This path would need to be upgraded to a bridleway and pinch points over the bridges would need to be addressed. There are existing anti-social behaviour problems in this area.	This will be included as a secondary route in the draft network plan.

Table 5-3 - Mapping the walking network: Comments

Core Walking Zone (CWZ)	Comment	WSP Response
CWZ1 Standard Way	The constraint for walking is the Low Gates level crossing and bridge over the beck, footways become very narrow and there is heavy traffic.	Noted.
	WSP should look at links from the western side of the North Northallerton residential development.	Potential links will be explored.
	CWZ should be expanded out up to the new roundabout. As part of the new development there are plans for a pub/hotel/ local shops.	CWZ will be expanded.
	A lot of people access Standard Way Industrial Estate via Yafforth Road and the footpath over the beck. This is a good and quick route which has lighting but could do with some upgrading. Increasing footfall (and potentially cycling) will reduce anti-social behaviour.	Noted.
CWZ2 Town Centre	Pedestrian crossing facilities are reasonably good in this area.	Noted.
	Concerns have been raised about the roundabout at Thirsk Road/ South Parade, particularly on the eastern side. There is an underpass but this is not great and people don't use it so they cross at grade.	Noted. To be considered if route is taken forward for further development.
	Constraints on the Friarage Street roundabout.	Noted. To be considered if route is taken forward for further development.
	There is more a need to target a small number of constraints rather than changes to whole routes.	Noted. This will be a potential priority.
	Public footpath through the car park is missing from the CWZ, this is a key pedestrian route into the town centre.	This will be added as a secondary route.
CWZ3 Train Station	The existing footpath from northside of primary school towards the station is a well-used route for pedestrians but not very attractive at night or in	This will be added as a secondary route.

	the winter. Is an important route that could be upgraded.	
	Boroughbridge Road / Mill Lane roundabout is poor for pedestrians crossing due to speed of traffic and number of arms on the junction.	Noted. To be considered if route is taken forward for further development.
	Another constraint is the bridge on Mill Lane, the footway is reduced to less than 1m.	Noted. To be considered if route is taken forward for further development.

6 FINAL NETWORK PLANS AND PRIORITIES

6.1 OVERVIEW

- 6.1.1 The preceding sections of the report have detailed the development and refinement of the draft cycling and walking networks. This section of the report presents the final recommended Cycle and Walking Network Plans and initial priorities to take forward for further development in Phase 2 of the Northallerton LCWIP.
- 6.1.2 Consideration is also given to the types of intervention appropriate for each for each network in the context of the study area.
- 6.1.3 At this stage of the process these network plans are considered aspirational, and a blueprint for cohesive walking and cycling networks that could occur over the next 10 years (and beyond). In order to bring them forward, the phasing of the networks will require a coordinated approach to identify short, mid, and long-term priorities, and an understanding of complementary opportunities. This prioritisation is likely to need regular revaluation as different funding becomes available.

6.2 CYCLING AND WALKING NETWORK MAPS

- 6.2.1 The final Cycling and Walking Network Maps for the Northallerton LCWIP Study Area are presented in Figure 3-3 and Figure 4-2 while high-resolution versions are presented in Appendix A.

6.3 IDENTIFYING PRIORITY CORRIDORS FOR DEVELOPMENT

- 6.3.1 Whilst the long-term aspiration of NYCC is to deliver the proposed cycling and walking networks that have been identified through this project in their entirety, the authorities recognise that in the short-term this will not be financially viable.
- 6.3.2 Following the development of the network maps and identification of draft priority corridors / areas for cycling and walking interventions, a prioritisation exercise was undertaken to determine a select number of routes to be taken forward for feasibility assessment, with the intention of these being delivered when funding is made available.
- 6.3.3 The choice of the routes has been influenced primarily by five key factors. The first key factor is a consideration of whether the routes address connections where a greater propensity for cycling and walking have been identified. Related to this is a consideration of whether the routes would improve connectivity through the study area and support strategic employment and development sites. The data and evidence presented in Section 2 of this report underpin the identification of routes for prioritisation.
- 6.3.4 The second key factor has considered the alignment of the routes with other schemes and related work streams (whether ongoing, completed, or aspirational) or planned development sites; ensuring that any proposals support the wider aims and agendas of the district and county and will strengthen the case for any intervention and help promote the network through multiple avenues.
- 6.3.5 The third factor has considered engineering constraints and the likelihood of any intervention being able to be delivered in its own right, independent of any significant wider works, such as a major redirection of traffic. While this might mean that the proposed schemes may avoid some of the most constrained existing areas of the network, it is understood that these will be considered through wider transport related studies, and the inclusion of these routes in the cycling and walking network

maps should ensure due cognisance is paid to these routes when determining any associated intervention.

- 6.3.6 The fourth key factor considers the likelihood of the corridor to receive funding (including both government funding and developer funding). Most recent government funding for active travel infrastructure has been for schemes that target modal shift towards cycling and walking in busy urban areas by improving access to employment and education opportunities.
- 6.3.7 The fifth and final key factor considers whether the desire line or CWZ was put forward as a priority by stakeholders that attended the Stakeholder Workshop on the 7th July 2020.
- 6.3.8 The routes selected for further development in Phase 2 of the LCWIP are considered to strongly align to these five factors. Table 6-1 shows the scoring framework for each key factor, Table 6-2 illustrates how each of the desire lines and CWZs meet the criteria and Table 6-3 shows the outputs of the assessment.

Table 6-1 - Scoring Framework

Key Factor	Definition	High (2)	Intermediate (1)	Low (0)
Propensity for cycling / walking	Forecast number of journeys to work using the corridor in the Go Dutch scenario (LSOA)	500> cyclists	100-499 cyclists	<100 cyclists
	Method of travel to work (Datashine) LQ is the Location Quotient and describes how far from the national average (LQ =1) the measure is.	LQ 5 +	LQ 3 / 4	LQ 2 or lower
Scheme overlap	Does the corridor align with other schemes or other planned transport improvement?	Aligns with two or more schemes	Aligns with one other scheme	Does not align with any other scheme
Engineering constraints / deliverability	Based on the primary route, what is the likelihood of the scheme being delivered?	No immediate constraints identified	Minor constraints identified but unlikely to impact the deliverability e.g. on street parking	Scheme unlikely to be deliverable due to engineering constraints e.g. carriageway too narrow
Funding opportunities	Likelihood of the corridor to receive funding (including private sector funding)	More than one potential funding opportunity identified	One potential funding opportunity identified	No funding opportunities identified
Stakeholder Priority (based on stakeholder workshop)	Was the desire line or CWZ listed as a priority during the stakeholder workshop?	Stakeholders listed the desire line or CWZ as a high priority	Stakeholders listed the desire line or CWZ as a medium priority	Stakeholders listed the desire line or CWZ as a low priority, or not a priority at all

Table 6-2 - Assessment of Desire Lines and CWZs

	Propensity for cycling / Existing walking demand	Scheme overlap	Engineering constraints / deliverability	Funding opportunities	Stakeholder Priority (based on workshop)
DL1 Brompton to Northallerton	i PCT, Go Dutch Scenario: 500-999	i North Northallerton Site i Relocation of Northallerton High School i Friarage St roundabout is part of FHSF i	i Carriageway is narrow between Northallerton Road and Bullamoor Road. However, alternative, less direct route (behind the back of the leisure centre), available if necessary.	i Potential S106 funding i FHSF for Friarage roundabout	i High priority
DL2 East Northallerton to Town Centre	i PCT, Go Dutch Scenario: 10-49 and 100-249	i Friarage St roundabout is part of FHSF	i There is a lot of on-street parking on Bullamoor Road. The removal of parking is likely to be unpopular.	i FHSF for Friarage roundabout	i Medium priority
DL3 South East Northallerton to Town Centre	i PCT, Go Dutch Scenario: 100-249	i Possible to provide a connection to the new Treadmills development and Zetland St i Possible to link to any future development at the existing Northallerton School site.	i Few constraints if using quieter residential streets. Local cycle network already routes through this area	i Potential S106 funding	i Medium priority

	Propensity for cycling / Existing walking demand	Scheme overlap	Engineering constraints / deliverability	Funding opportunities	Stakeholder Priority (based on workshop)
DL4 South Northallerton to Town Centre	i PCT, Go Dutch Scenario: 100-249	i Library roundabout is part of the FHSF	i Thirsk Road is a busy road, with access to residential driveways. i A fully segregated route would be required.	i FHSF for Library roundabout	i High priority
DL5 Romanby to Town Centre	i PCT, Go Dutch Scenario: 250-499	i None identified	i Constraints due to narrow underpass and severance caused by railway line	i None identified	i Medium priority
DL6 Morton on Swale to Town Centre	i PCT, Go Dutch Scenario: 100-249	i None identified	i A fully segregated route would be required over a long distance.	i None identified	i Not a priority

	Propensity for cycling / Existing walking demand	Scheme overlap	Engineering constraints / deliverability	Funding opportunities	Stakeholder Priority (based on workshop)
DL7 North Northallerton to Town Centre	<ul style="list-style-type: none"> PCT, Go Dutch Scenario: 1-9 (PCT does not take into account of future development and the score will be altered to reflect this). 	<ul style="list-style-type: none"> North Northallerton Site 	<ul style="list-style-type: none"> A fully segregated route would be required along Darlington Road; however, carriageway appears to be fairly wide and there is a grass verge. 	<ul style="list-style-type: none"> Potential S106 funding 	<ul style="list-style-type: none"> Medium priority
CWZ1 Town Centre	<ul style="list-style-type: none"> LQ 5 	<ul style="list-style-type: none"> Zetland Street public realm enhancements The Ginnels Project Future High Streets Fund 	<ul style="list-style-type: none"> None identified 	<ul style="list-style-type: none"> FHSF 	<ul style="list-style-type: none"> Low priority
CWZ2 Standard Way	<ul style="list-style-type: none"> LQ 4 	<ul style="list-style-type: none"> North Northallerton site 	<ul style="list-style-type: none"> None identified 	<ul style="list-style-type: none"> Potential S106 funding 	<ul style="list-style-type: none"> Medium priority
CWZ3 Train Station	<ul style="list-style-type: none"> LQ 3 	<ul style="list-style-type: none"> None identified 	<ul style="list-style-type: none"> Severance caused by railway line. Pedestrian footway constrained by available width at the railway bridge. 	<ul style="list-style-type: none"> None identified 	<ul style="list-style-type: none"> High priority

Table 6-3 - Assessment Scores

	Propensity for cycling / Existing walking demand	Scheme overlap	Engineering constraints / deliverability	Funding opportunities	Stakeholder Priority (based on workshop)	Total Score
DL1 Brompton to Northallerton	2	2	1	2	2	9
DL2 East Northallerton to Town Centre	1	1	1	1	1	5
DL3 South East Northallerton to Town Centre	1	2	2	1	1	7
DL4 South Northallerton to Town Centre	1	1	1	1	2	6
DL5 Romanby to Town Centre	1	0	1	0	1	3
DL6 Morton on Swale to Town Centre	1	0	1	0	0	2
DL7 North Northallerton to Town Centre	1	1	2	1	1	6
CWZ1 Town Centre	2	2	2	1	0	7
CWZ2 Standard Way	1	1	2	1	1	6
CWZ3 Train Station	1	0	1	0	2	4

6.4 PRIORITIES AND NEXT STEPS

Final Priorities

6.4.1 Four distinct priorities have emerged in relation to the Northallerton LCWIP study area, encompassing one Area and three Route Priorities. These are:

- i Brompton to Northallerton town centre;
- i Standard Way Industrial Estate (area priority);
- i South East Northallerton to Northallerton town centre; and
- i South Northallerton to town centre.

6.4.2 Please note, that the Town Centre CWZ scored highly but due to the number of existing on-going schemes in the town centre it was decided that the LCWIP would have a greater impact or added value focusing on another area. Due to this the Standard Way Industrial Estate CWZ was selected instead of the Town Centre CWZ.

6.4.3 A description of each priority and the rationale behind the selected route/area priorities is provided in the table below.

Table 6-4 - Final Priorities

Priority	Description	Rationale
Brompton to Northallerton town centre	<p>Cycle route between Brompton and Northallerton Town Centre. This cycle route is likely to include the following key features:</p> <ul style="list-style-type: none"> i The route would be dependent on the determination of the most practicable and desirable route between the two areas. i Opportunities for connectivity to various ODs such as Hambleton District Council, the future Northallerton School site and North Northallerton development site. i Ideally consist of segregated facilities. 	<ul style="list-style-type: none"> i Stakeholder input. i Opportunity to encourage active travel from the North Northallerton development site. i It will provide safe infrastructure link for pupils travelling to the new Northallerton School location.
Standard Way Industrial Estate	<p>Enhanced active travel provision for employees / visitors travelling to Standard Way Industrial Estate. This priority includes the following key features:</p> <ul style="list-style-type: none"> i Proposals would be enhanced through stakeholder consultation, including the general public and retail / business; i Should be led by placemaking objectives. 	<ul style="list-style-type: none"> i Stakeholder input. i Standard Way is a key employment site.

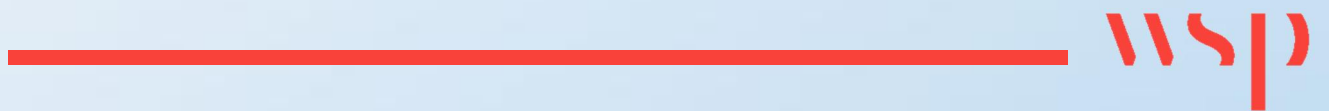
<p>South East Northallerton to Northallerton town centre</p>	<p>Cycle route between south east Northallerton and Northallerton Town Centre. This cycle route is likely to include the following key features:</p> <ul style="list-style-type: none"> i Signed cycle route through a residential area. i Opportunity to provide a connection to various key destination points. 	<ul style="list-style-type: none"> i Stakeholder input i Will provide a connection to the Treadmills development i Potential to enhance active travel provision to any future site on Grammar School Lane.
<p>South Northallerton to town centre</p>	<p>Cycle route between south Northallerton and Northallerton Town Centre. This cycle route is likely to include the following key features:</p> <ul style="list-style-type: none"> i Potentially a fully segregated cycle route (depending on route chosen). i A connection to the train station to encourage active travel to/from the station. 	<ul style="list-style-type: none"> i Stakeholder input. i Links to the train station. i Provides a connection to the town centre from Romanby.

Next Steps

- 6.4.4 Where applicable, a range of route options will be considered as part of the feasibility assessment. As a high-level consideration of engineering constraints has been undertaken when determining these routes, there is not anticipated to be any significant deviation from those routes identified.
- 6.4.5 The DfT Route Selection Tool will be utilised to assist in determining the most suitable cycle route within these corridors and inform the identification of any potential intervention. Following identification of the preferred cycling route corridor, a gap analysis of the pedestrian walking infrastructure within this corridor will be undertaken using the DfT Walking Route Audit Tool to assess the level and quality of walking infrastructure provision. This approach will maximise the opportunities for complementary improvements in order to provide a cohesive active travel corridor. Identifying synergies between cycling and walking improvements will maximise potential scheme benefits.
- 6.4.6 The feasibility assessment will also use the network principles and interventions types presented in this report along with the stakeholder feedback collated during the network development phase.

Appendix A

CYCLING AND WALKING NETWORK
MAPS

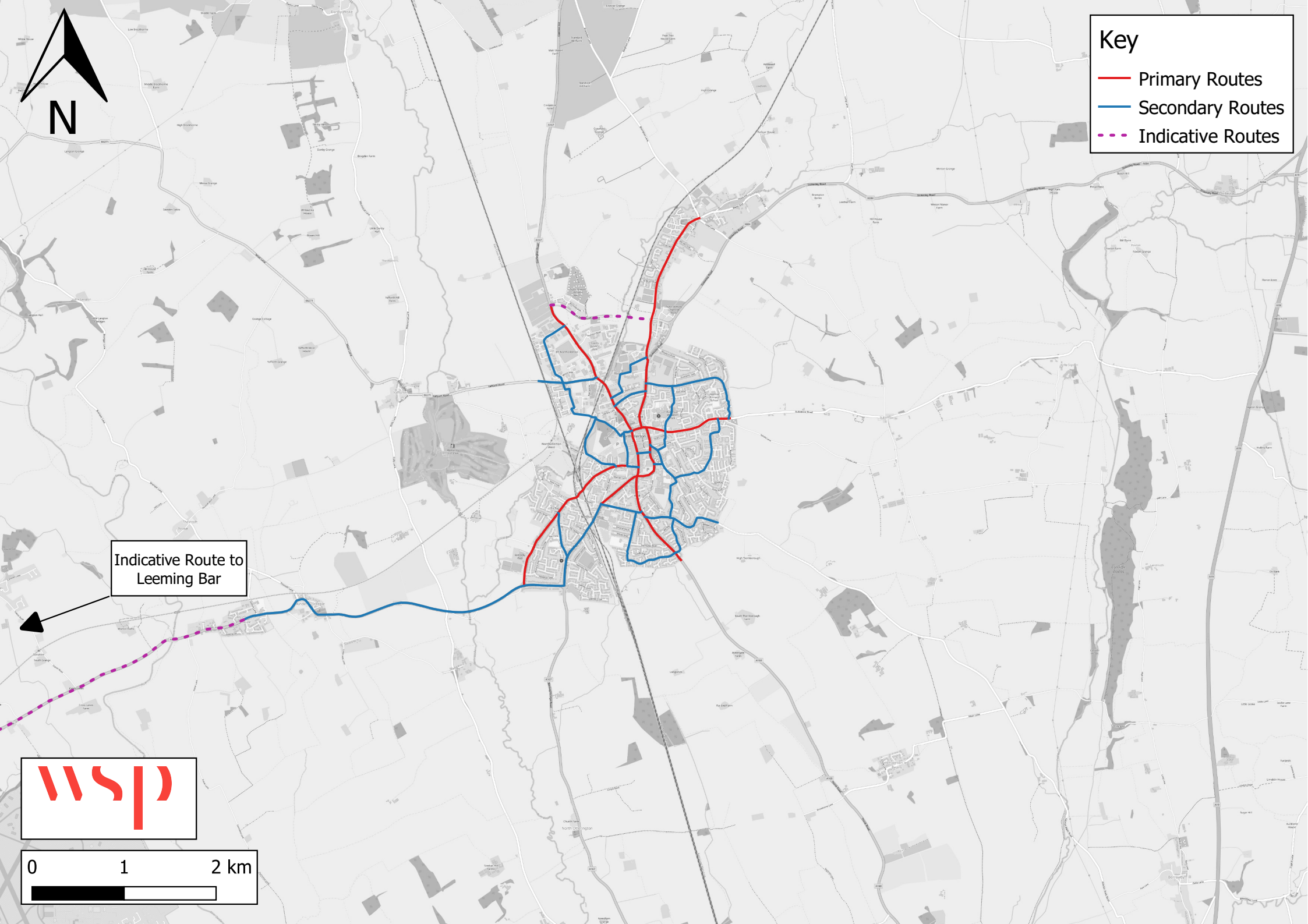
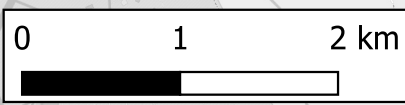




Key

- Primary Routes
- Secondary Routes
- Indicative Routes

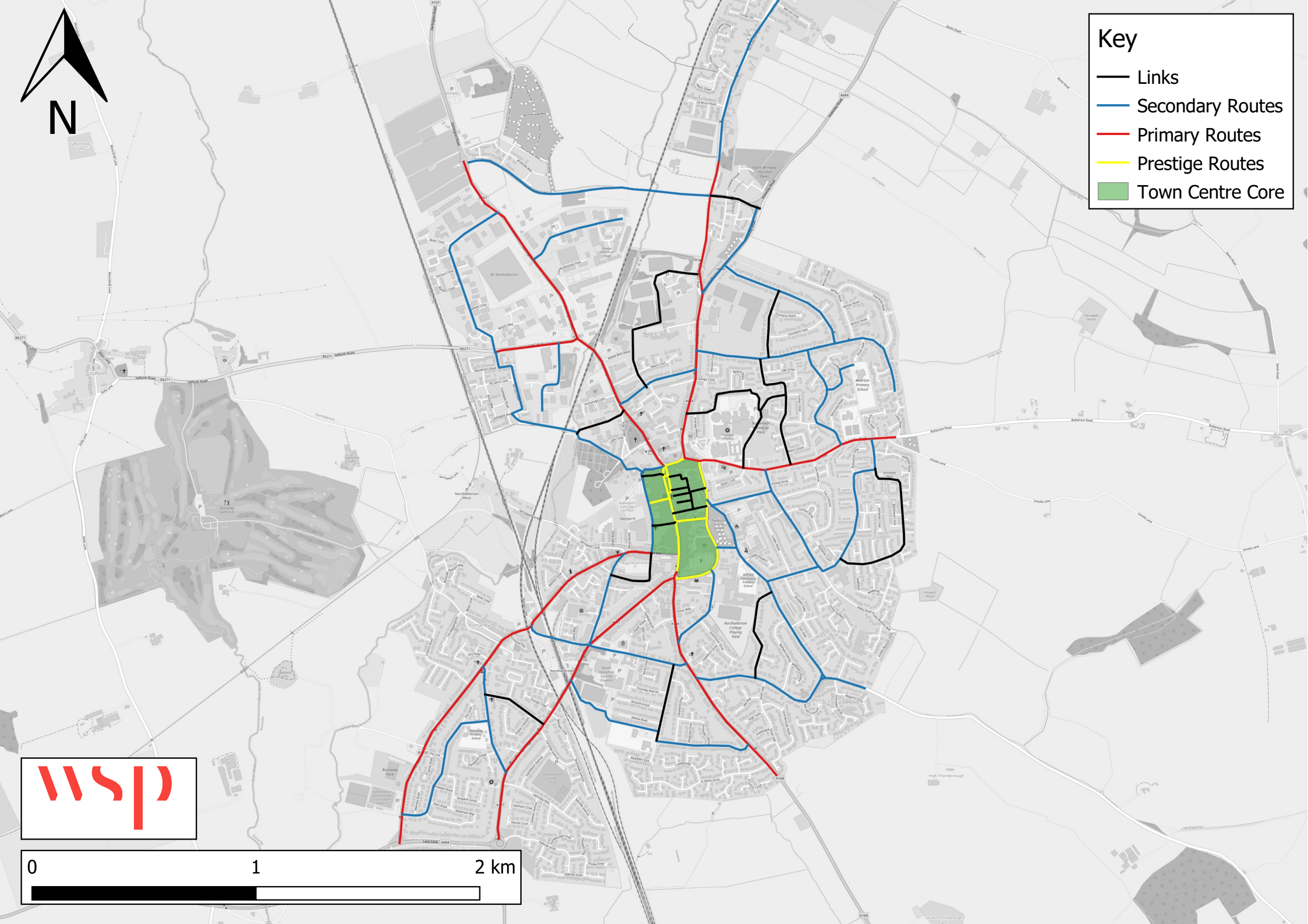
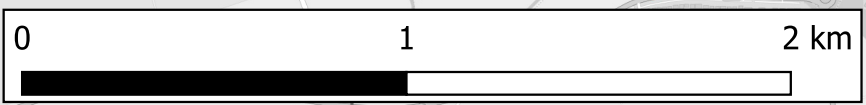
Indicative Route to
Leeming Bar





Key

- Links
- Secondary Routes
- Primary Routes
- Prestige Routes
- Town Centre Core





Amber Court
William Armstrong Drive
Newcastle upon Tyne
NE4 7YQ

wsp.com

PUBLIC