North Yorkshire County Council

Business and Environmental Services

Executive Members

27 May 2022

NYCC Cycle Design Guide

Report of the Assistant Director – Highways and Transportation

1.0	**Purpose Of Report**
1.1	To seek approval from the Corporate Director, Business Environmental Services in consultation with the BES Executive Member for Access for the use of the NYCC Cycle Design Guide as a local guide to support the use of LTN 1/20 in North Yorkshire.

2.0 Background

2.1 In July 2020 the Government published Local Transport Note 1/20 (LTN 1/20), comprising national guidance and good practice to highway authorities and designers on cycle infrastructure design. It is aimed to apply to highway improvements, new highway construction and new or improvements to cycle facilities. This was published alongside Gear Change, a policy document which sets out the Government's ambitions for a travel revolution for walking and cycling.

2.2 LTN 1/20 provides guidance and good practice for the design of cycle infrastructure and it is an expectation that local authorities will demonstrate that they have given due consideration to this guidance when designing new cycling schemes and, in particular, when applying for Government funding for schemes that include cycle infrastructure.

2.3 Gear Change announced a new commissioning body and inspectorate, Active Travel England, led by a Cycling and Walking Commissioner. Once established, this body will examine applications for funding and 'refuse any that are not compliant with the new national LTN 1/20 standards'.

3.0 NYCC Cycle Design Guide

3.1 North Yorkshire County Council (NYCC) commissioned WSP to produce a Cycle Design Guide to support the use of LTN 1/20 in the context of North Yorkshire. The design guide supports this by:

- Describing the needs of cyclists and ensuring they can be catered for in a rural county;
- Signposting to LTN 1/20 and other specific guidance and standards where applicable; and
- Providing examples of good practice in a variety of scenarios.

3.2 Planners, designers and builders of any new streets, houses, large developments and any new transport infrastructure can use this guide for inspiration and quick reference; it does not replace LTN 1/20 nor remove any statutory responsibility, but will help to simplify the guidance for the reader in a manner appropriate for the varying environments of North Yorkshire.

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3.3 As the design guide developed, WSP consulted NYCC officers to inform the work, ensuring the final product would be informative, usable and tailored to local conditions. NYCC involvement included officers from Transport Planning, Area Teams and Development Management.

3.4 The guide itself (see Appendix A) is divided into eight sections. Sections 1 and 2 introduce the purpose of the guide, who the guidance is for and the policy background for LTN 1/20. Section 3 examines Place & Movement, understanding the different functions of streets and roads based on different characteristics. Section 4 explores the needs of cyclists, of all ages and abilities, to allow the reader to identify and understand who they are providing for. Sections 5 to 7 provides more specific guidance for particular situations, based on the types of street that are of interest. These are broken down into three key areas: 'Within Towns', 'Between and Around Towns', and 'New Developments'. Finally, Section 8 provides links to a list of further guidance, including national guidance, NYCC publications and new developments.

3.5 Once prepared, a draft version of the Cycle Design Guide was shared internally to teams within NYCC where the design guide is of relevance for consultation and comment, as well with Harrogate District Cycle Action (HDCA). Comments were used to help finalise the draft design guide.

4.0 Next Steps

4.1 Should this guide be approved it can be used by NYCC officers and developers to support the use and interpretation of LTN 1/20 within North Yorkshire.

5.0 Financial Implications

5.1 There are no financial implications arising directly from this report. As LTN 1/20 guidance is expected to be a consideration when applying for Government funding for cycle infrastructure, it is intended that the use of the NYCC Cycle Design Guide as a local guide for supporting the use of LTN 1/20 in North Yorkshire will assist NYCC to interpret and deliver to this standard. This, in return should be beneficial in securing external funding in the future.

6.0 Equalities Implications

6.1 An Initial Equalities Impact Assessment is included with this report (see Appendix B). The Assessment finds that the proposals will have no negative impact on people with protected or a combination of protected characteristics.

7.0 Climate Change Impact Assessment

7.1 A Climate Change Impact Assessment is included with this report (see Appendix C) and the approval and use of the Cycle Design Guide will not have a negative impact on the environment. By supporting the use of LTN 1/20 guidance in the design of cycle infrastructure, it can deliver attractive and accessible infrastructure to enable a wider range of users to cycle. As a result, the use of LTN 1/20 can support more journeys to be taken by bicycle and therefore have a positive impact on the environment by reducing transport-related emissions.

8.0 Legal Implications

8.1 Introducing the NYCC guide and the related LTN 1/20 guidance does not alter the requirements of and powers contained in highways and planning legislation that relate to the improvement/creation of cycle infrastructure. However it will have implications on the requirements of designing works and schemes to comply with those legislative requirements.

9.0 Recommendations

9.1 It is recommended that the Corporate Director, Business and Environmental Services, in consultation with the BES Executive Member for access:

i) Approve the use of the NYCC Cycle Design Guide as a local guide for supporting the use of LTN 1/20 in North Yorkshire.

BARRIE MASON
Assistant Director – Business and Environmental Services

Authors of Report: Will Britton

Background Documents: None

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Initial equality impact assessment screening form
(As of October 2015 this form replaces 'Record of decision not to carry out an EIA')

This form records an equality screening process to determine the relevance of equality to a proposal, and a decision whether or not a full EIA would be appropriate or proportionate.

Directorate	Business and Environmental Services
Service area	Highways and Transportation
Proposal being screened	Seek approval to use the NYCC Cycle Design Guide as a local guide for supporting the use of LTN 1/20 in North Yorkshire.
Officer(s) carrying out screening	William Britton
What are you proposing to do?	Provide a guide for supporting the use of LTN 1/20 cycle design standards within North Yorkshire
Why are you proposing this? What are the desired outcomes?	Approval of the use of this guide will support NYCC officers and developers to interpret, understand and use LTN 1/20 cycle design standards, as set out by the Department for Transport.
Does the proposal involve a significant commitment or removal of resources? Please give details.	No

Is there likely to be an adverse impact on people with any of the following protected characteristics as defined by the Equality Act 2010, or NYCC's additional agreed characteristics?
As part of this assessment, please consider the following questions:

- To what extent is this service used by particular groups of people with protected characteristics?
- Does the proposal relate to functions that previous consultation has identified as important?
- Do different groups have different needs or experiences in the area the proposal relates to?

If for any characteristic it is considered that there is likely to be a significant adverse impact or you have ticked 'Don't know/no info available', then a full EIA should be carried out where this is proportionate. You are advised to speak to your Equality rep for advice if you are in any doubt.

Protected characteristic	**Yes**	**No**	**Don't know/No info available**
Age		✓	
Disability		✓	
Sex (Gender)		✓	
Race		✓	
Sexual orientation		✓	
Gender reassignment		✓	
Religion or belief		✓	
Pregnancy or maternity		✓	
Marriage or civil partnership		✓	
NYCC additional characteristic			
People in rural areas		✓	
People on a low income		✓	

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Carer (unpaid family or friend)		✓		
Does the proposal relate to an area where there are known inequalities/probable impacts (e.g. disabled people's access to public transport)? Please give details.	The updated LTN 1/20 cycle design standards have been designed to overcome inequalities by promoting inclusive design and accessibility within its core design principles			
Will the proposal have a significant effect on how other organisations operate? (e.g. partners, funding criteria, etc.). Do any of these organisations support people with protected characteristics? Please explain why you have reached this conclusion.	No			
Decision (Please tick one option)	EIA not relevant or proportionate:	✓	Continue to full EIA:	
Reason for decision	This report outlines the use of the NYCC Cycle Design Guide which supports the use of the DfT LTN 1/20 cycle design standards. The LTN 1/20 standards document makes significant reference to ensuring that designs consider the needs of disabled users. Ultimately, the document should result in a more convenient and safer experience for people with mobility issues.			
Signed (Assistant Director or equivalent)	Barrie Mason			
Date	15/03/22			

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Climate change impact assessment

The purpose of this assessment is to help us understand the likely impacts of our decisions on the environment of North Yorkshire and on our aspiration to achieve net carbon neutrality by 2030, or as close to that date as possible. The intention is to mitigate negative effects and identify projects which will have positive effects.

This document should be completed in consultation with the supporting guidance. The final document will be published as part of the decision making process and should be written in Plain English.

If you have any additional queries which are not covered by the guidance please email climatechange@northyorks.gov.uk

Please note: You may not need to undertake this assessment if your proposal will be subject to any of the following:
Planning Permission
Environmental Impact Assessment
Strategic Environmental Assessment

However, you will still need to summarise your findings in in the summary section of the form below.

Please contact climatechange@northyorks.gov.uk for advice.

Title of proposal	**NYCC Cycle Design Guide**
Brief description of proposal	**Seek approval to use the NYCC Cycle Design Guide as a local guide for supporting the use of LTN 1/20 in North Yorkshire**
Directorate	**BES**
Service area	**Highways and Transportation**
Lead officer	**William Britton**
Names and roles of other people involved in carrying out the impact assessment	
Date impact assessment started	**17/01/2022**

Options appraisal
Were any other options considered in trying to achieve the aim of this project? If so, please give brief details and explain why alternative options were not progressed.

This project was commissioned to produce a Cycle Design Guide to support the use of LTN 1/20 in the context of North Yorkshire. No other alternative options were considered.

What impact will this proposal have on council budgets? Will it be cost neutral, have increased cost or reduce costs?

Please explain briefly why this will be the result, detailing estimated savings or costs where this is possible.

The approval of this Cycle Design Guide will not directly impact council budgets, it is designed to be used to help interpret, understand and use the Department for Transport's LTN 1/20 cycle design guidance.

LTN 1/20 provides guidance and good practice for the design of cycle infrastructure and it is an expectation that local authorities will demonstrate that they have given due consideration for the guidance when designing new cycling schemes and, in particular, when applying for Government funding that includes cycling infrastructure. This means that LTN 1/20 will be an important consideration when seeking future government funding for cycling infrastructure.

As LTN 1/20 seeks to deliver higher-quality provision of cycling infrastructure compared with previous guidance, it is possible that compliant infrastructure may have a higher cost than more basic infrastructure designed to standards of pre-LTN 1/20 guidance.

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How will this proposal impact on the environment? **N.B. There may be short term negative impact and longer term positive impact. Please include all potential impacts over the lifetime of a project and provide an explanation.**		**Positive impact** (Place a X in the box below where	**No impact** (Place a X in the box below where	**Negative impact** (Place a X in the box below where	**Explain why will it have this effect and over what timescale?** **Where possible/relevant please include:** • **Changes over and above business as usual** • **Evidence or measurement of effect** • **Figures for CO_2e** • **Links to relevant documents**	**Explain how you plan to mitigate any negative impacts.**	**Explain how you plan to improve any positive outcomes as far as possible.**
Minimise **greenhouse gas emissions** e.g. reducing emissions from travel, increasing energy efficiencies etc.	Emissions from travel	*			Delivering improved cycle infrastructure can support modal shift away from cars to cycling, particularly for short journeys. This has a positive impact by reducing transport-related greenhouse gas emissions.		
	Emissions from construction		*				
	Emissions from running of buildings		*				
	Other		*				
Minimise **waste:** Reduce, reuse, recycle and compost e.g. reducing use of single use plastic			*				
Reduce **water** consumption			*				

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How will this proposal impact on the environment? **N.B. There may be short term negative impact and longer term positive impact. Please include all potential impacts over the lifetime of a project and provide an explanation.**	**Positive impact** (Place a X in the box below where	**No impact** (Place a X in the box below where	**Negative impact** (Place a X in the box below where	**Explain why will it have this effect and over what timescale?** **Where possible/relevant please include:** • **Changes over and above business as usual** • **Evidence or measurement of effect** • **Figures for CO_2e** • **Links to relevant documents**	**Explain how you plan to mitigate any negative impacts.**	**Explain how you plan to improve any positive outcomes as far as possible.**
Minimise **pollution** (including air, land, water, light and noise)	*			Delivering improved cycle infrastructure can support modal shift away from cars to cycling, particularly for short journeys. This has a positive impact by reducing air pollution.		
Ensure **resilience** to the effects of climate change e.g. reducing flood risk, mitigating effects of drier, hotter summers		*				
Enhance **conservation** and wildlife		*				
Safeguard the distinctive characteristics, features and special qualities of **North Yorkshire's landscape**		*				
Other (please state below)		*				

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Are there any recognised good practice environmental standards in relation to this proposal? If so, please detail how this proposal meets those standards.
N/A

Summary Summarise the findings of your impact assessment, including impacts, the recommendation in relation to addressing impacts, including any legal advice, and next steps. This summary should be used as part of the report to the decision maker.

The approval of this Cycle Design Guide will enable its use as a tool to help interpret and use LTN 1/20 in North Yorkshire. The approval and use of the guide itself will not have an impact on the environment.

By supporting the use of LTN 1/20 guidance in the design of cycle infrastructure, it can deliver attractive and accessible infrastructure to enable a wider range of users to cycle. As a result, the use of LTN 1/20 can support more journeys to be taken by bicycle and therefore have a positive impact on the environment by reducing transport-related emissions.

Sign off section

This climate change impact assessment was completed by:

Name	**William Britton**
Job title	**Transport Planning Officer**
Service area	**Highways and Transport**
Directorate	**BES**
Signature	**W Britton**
Completion date	**17/01/2022**

Authorised by relevant Assistant Director (signature): Barrie Mason

Date: 15/03/22

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Cycle Design Guide

Applying Best Practice Cycle Infrastructure Design Across North Yorkshire

North Yorkshire County Council

March 2022

North Yorkshire County Council

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1 INTRODUCTION

As cycling increases in North Yorkshire, it is essential to create spaces that are attractive, appropriate for the landscape and townscape, and predictable for users across the county. The benefits of more people choosing to cycle for short journeys cannot be understated, and extend to cyclists and non-cyclists alike: better health, less air pollution, more social interaction as towns focus on people rather than cars, and ultimately room for public transport and for people and goods that have to travel by car, van, lorry or other motorised mode.

The publication of Local Transport Note 1/20 offers clear expectations for roads and public spaces designed for use by all. This Cycle Design Guide gives practical examples of its application in North Yorkshire.

LTN 1/20 was published alongside Gear Change, which 'sets out a vision for a travel revolution in England's streets, towns and communities.'

Gear Change announced a new commissioning body and inspectorate, Active Travel England, led by a Cycling and Walking Commissioner. This body will 'examine all applications for funding and refuse any that are not compliant with the new national LTN 1/20 standards'.

In addition it will be a statutory consultee on major planning applications. The recent Gear Change One Year On publication strengthened this approach to funding, promising additional funds but reminding applicants that active travel must have a focus in all transport funding, not just those schemes designed primarily for the purpose of active travel.

In Summer 2021, the Department for Transport announced that Dame Sarah Storey, the most successful female British Paralympian thus far, had been appointed as a Non-Executive Director, helping to ensure that walking and cycling considerations are integral to the Department's wider policies, and reminding all Authorities of their duties under the Equality Act.

North Yorkshire's commitment to healthy people and communities in its Local Transport Plan, and commitment to active travel infrastructure through Local Cycling and Walking Infrastructure Plans aligns with this new national approach to planning and funding cycling schemes, and moves us to an exciting chapter in making streets and towns useable for all, helping everybody choose the right mode of travel for the journey length and purpose.

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2 WHAT IS THIS GUIDANCE AND WHO IS IT FOR?

Purpose of this document

The aim of this guide is to support the use of Local Transport Note 1/20 (LTN 1/20) in the context of North Yorkshire by:

- Supporting the goals of North Yorkshire's Transport Plan and policies;
- Describing the needs of cyclists and ensuring they can be catered for in a rural county;
- Signposting to LTN 1/20 and other specific guidance and standards where applicable; and
- Providing examples of good practice in a variety of scenarios.

Planners, designers, and builders of new streets, houses, large developments, and any new transport infrastructure can use this guide for inspiration and quick reference. This document will not replace LTN 1/20 nor remove any statutory responsibilities, but will instead help simplify the guidance for the reader in a manner appropriate for the varying environments across North Yorkshire.

Key national guidance and policy

Gear Change was published in July 2020 and is England's policy and strategy statement on cycling in particular and active travel more broadly. The document presents 'a vision for a travel revolution in England's streets, towns and communities' and describes the requirements for Local Authorities and Highway Authorities. Its four main themes are:

- Theme 1: Better streets for cycling and people;
- Theme 2: Cycling at the heart of decision-making;
- Theme 3: Empowering and encouraging Local Authorities; and
- Theme 4: Enabling people to cycle and protecting them when they do.

The advantages of increased active travel are described as:

- Increased health;
- Increased wellbeing;
- Decreased congestion;
- Improved conditions for local businesses;
- Improvements to the environment and air quality;
- Negating climate change; and
- Economic benefits

Part of the changes described includes a new inspectorate, Active Travel England, which will be led by a Cycling and Walking Commissioner. This body will be accountable for:

- Overseeing an active travel budget;
- Approving and inspecting schemes;
- Training;
- Publishing and supporting good practice;
- Knowledge sharing;
- Inspecting highway authorities; and
- Reviewing major planning applications to ensure walking and cycling is embedded within the proposals.

Gear Change promises funding for aspirational schemes, and suggests funding may be withheld from highways or active travel schemes where the design means the likelihood of increased active travel is low. This commitment was confirmed in the Gear Change One Year On Review, published in August 2021. It reminds readers: "As Gear Change said, an authority's performance on active travel will help determine the wider funding allocations it receives, not just on active travel. We will require more from all local authorities, urban or rural, but we will not take a one-size-fts-all approach."

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LTN 1/20 also reemphasises this commitment, stating that any transport scheme where there is demand for cycling and walking that fails to meet the design standards will be unlikely to obtain central funding.

A recent update to the Highway Code for 2021 supports the policy position in Gear Change, formalising a hierarchy of responsibility amongst road-users, with those in charge of larger and heavier vehicles having greater responsibility to recognise vulnerability of other road-users. A significant change is that pedestrians waiting to cross a road will have priority over cyclists or drivers in the road, putting them at the top of the street user hierarchy.

Using this document

Section 3 of this guidance introduces the importance of **Place & Movement** within the context of North Yorkshire, giving examples and definitions of the different functions streets fulfil, from town centres where people congregate, to busy high streets carrying both through and local traffic, and inter-urban arterials. The Street Typology Grid can be used to identify the type of street of interest, and then direct the reader to the relevant report section, including case studies illustrating example approaches to different situations.

Section 4 discusses the **needs of cyclists**, of all ages and abilities, allowing the reader to identify and understand who they're providing for. The chapter briefly summarises the initial sections of LTN 1/20 and Gear Change, establishing basic principles and requirements and provides a glossary of the type of suitable cycle infrastructure that should be considered for implementation across North Yorkshire

Sections 5 to 7 give more specific guidance for particular situations. Having determined which types of street are of interest, the reader will find chapters that focus on the following three key areas:

Within towns

This guidance concentrates on journeys that are often undertaken by car but could be done by bicycle. These are generally **trips of under 30 minutes / 5 miles, within towns:** These might be trips to shops and to see friends, trips to rail or bus stations to make longer journeys, or trips to work or school. The streets within towns that enable these trips often have the greatest usage and competing demands, and will more often be the focus of funding opportunities.

Between and around towns

Longer distance routes, between and around towns, are an important element in connecting a rural county. People do currently cycle between towns in North Yorkshire, but often in fewer numbers and for leisure purposes; this is expected to grow in the future with an uptake in e-bikes, and the guidance presented here can help influence the forecast increase.

Given its rural nature, North Yorkshire has both 'blue' and 'green' infrastructure – routes alongside water, like canal paths, and rural routes, or 'greenways' following PROWs or disused railway lines - that are often used by pedestrians and cyclists (and horse riders) and form a key part of the inter-urban network.

New developments

New developments offer significant opportunities to establish or integrate active travel networks, connecting to existing infrastructure and designing within developments to make active travel the natural choice when considering journey distance and purpose.

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3 THE FUNCTIONS OF STREETS AND ROADS

Street Typology Grid

It is easy to consider streets the domain of motorised traffic, when in fact we all use streets differently, depending on the design of the streetscape and our respective needs. At different times, streets may be used for:

- Commuting to the nearest town or city;
- Commuting to the nearest bus stop;
- Chatting with neighbours;
- Moving goods and freight;
- Walking children to school;
- Window shopping; and
- Play and exercise.

There are many more uses of this essentially public space. The **Street Typology Grid** gives descriptions of streets, defining typical characteristics of streets that serve more of a 'place' function (increasing left to right across the grid) or more of a 'movement' function (increasing from the bottom to the top of the grid). Streets that are more 'connectors' than 'centres' will tend to be faster, wider, and carry a larger volume of traffic, often at speed. As historic market towns developing around arterial trade routes, North Yorkshire has a number of town centre streets trying to maintain a connector as well as a significant place function, resulting in mixed purposes with neither fully met.

The grid can be used to identify what type of street is under consideration, or what function it ought to hold in its setting. The subsequent chapters then offer key design consideration and case studies associated with some of the grid squares and adaptable to many others. Gear Change and LTN 1/20 both indicate that the forthcoming Manual for Streets (MfS) refresh will include similar guidance on the needs of all transport users and build upon the principles of 'Place & Movement' presented in its first iteration. It is also noted that LTN 1/20 supersedes MfS guidance relating to cycling within urban streets.

LTN 1/20 is emphatic in its guidance regarding the level of protection required within the highway in order to ensure cycling is a viable option for travel; Chapter 3 of LTN 1/20 considers the needs of cyclists and discusses ways to provide the appropriate level of protection. Figure 3.1 (p.33) illustrates one of the most critical considerations when designing for cyclists within the highway, presenting the requirements from LTN 1/20 regarding the level of protection considered suitable depending on the speed and volume of motorised traffic present.

Concerns about safety related to motor vehicle traffic is the main reason why many people do not cycle with 62% of adults feeling that roads are unsafe for them to cycle on . The need to address actual and perceived safety concerns is particularly important when seeking to create environments where most people of all ages will feel safe to cycle. As such, providing the appropriate level of separation from motor vehicle traffic is important when planning cycle infrastructure.

Knowing when and how to separate cycle traffic from general traffic depends on the speed and volume of motor vehicle traffic on the street. For example, on busier and faster streets, such as connector and distributor roads, many people will not feel safe to cycle without separate and protected infrastructure. However, on quieter and slower streets, such as in residential areas, many people will feel comfortable mixing with motor vehicle traffic on the carriageway.

A key point to note is that protected space for cycling will enable most people to cycle, regardless of the volume and speed of motor vehicle traffic. Additionally, streets that carry less than 2,500 PCU per day with a speed limit of 20 mph can be appropriate for mixing bicycle traffic with motor vehicle traffic so

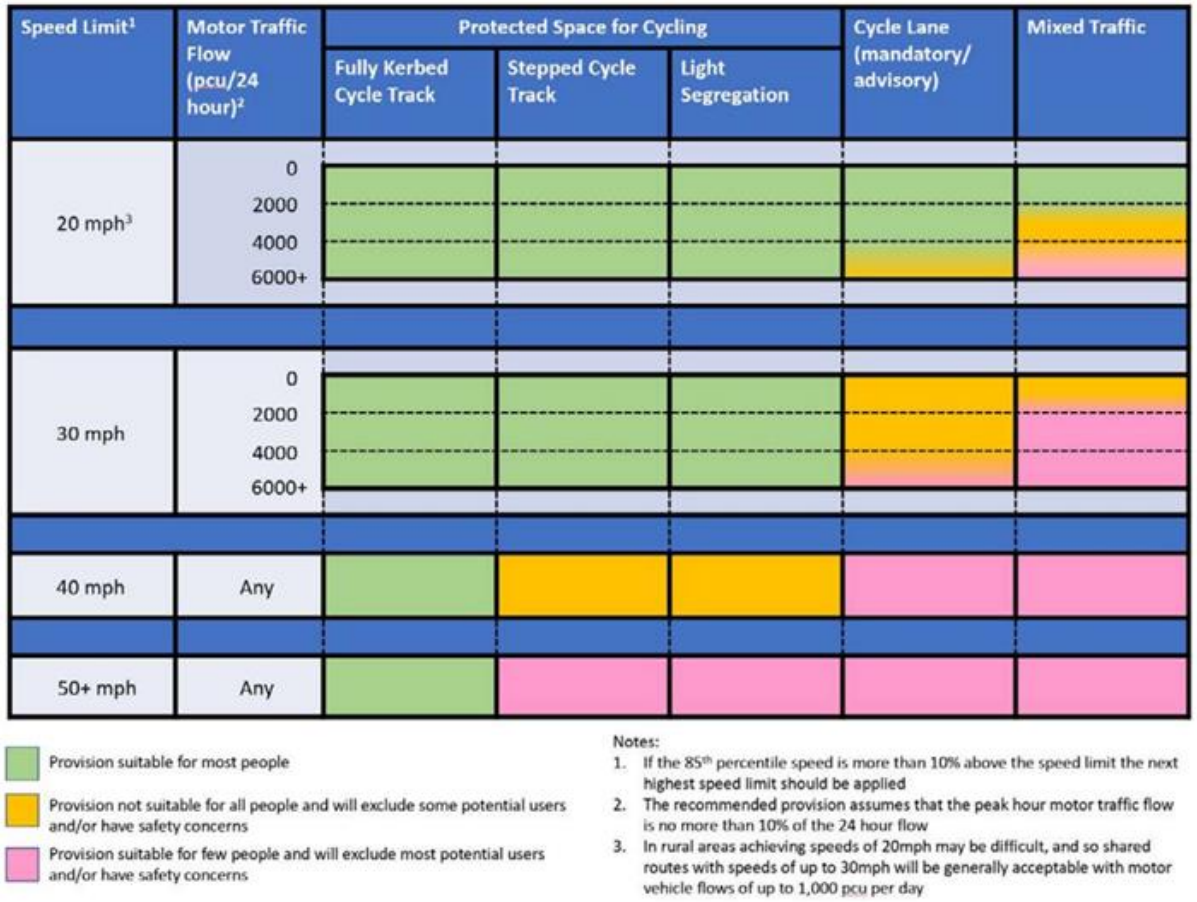
that most people will feel safe to cycle.

Once traffic speeds exceed 20 mph then a level of separation from motor traffic is required to make the street feel safe for most people to cycle on regardless of the traffic flows. For streets with speeds of over 30mph then the highest level of separation in the form of a protected cycle track is required regardless of the traffic flows. Where a high number of HGVs are present, greater levels of segregation and careful design of junctions is required.

It is important to note that this table provides a framework for the minimum level of provision required for most people to cycle based on motor traffic volume and speed. If there is an opportunity to provide a type of infrastructure that gives a higher level of service for cycle users, then this should be considered. For example, on a 20-mph link with flows of less than 4,000 PCU per day while a cycle lane may be appropriate, protected space for cycling would provide a higher level of service and contribute towards a more consistent network of protected space for cycling.

NYCC has a 20mph speed limit and zone policy which can be used to support the implementation of 20mph zones where appropriate.

Figure 3-1 – Guidance on suitable provision for conditions (LTN1/20 Ch4, p33)



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Movement

Strategic significance

Local significance

Rural connector

- Low significance for people
- High significance for vehicles
- Routes carrying high traffic volumes
- Low/very low density land use or fields
- Typical speed: >40mph; Volume: >4000pcu/day

A65, edge of Gargrave

Urban connector

- Medium to low significance for people
- High significance for vehicles
- Routes carrying high traffic volumes
- Medium to low density residential land use with some commercial and local retail
- Developments are set back from the street line
- Street trees and green infrastructure improve desirability of residential, employment and facility areas
- Typical speed: 30-40mph; Volume: >4000pcu/day

A59 Harrogate

Town centre connector

- High significance for people and place
- Medium to high significance for vehicles
- Civic centre with links to local identity
- Townscape mixed use, commercial, civic, retail and tourism
- High levels of pedestrian activity
- Place, culture and pedestrian activity important
- Area plays an important role in the life of the town
- Typical speed: 30mph; Volume: >4000pcu/day

Station Parade or Parliament Street, Harrogate

Rural street

- Low density land use or fields
- Low significance for people
- Low/medium significance for motor vehicles
- Typical speed: 30mph; Volume: <2000pcu/day

Church St, Gargrave

Urban street

- Medium to high density land use with some residential along with commercial and local retail
- Streets serve a medium significance for people
- Streets serve a medium significance for vehicles. Does parking affect it?
- Should its significance change?
- Typical speed: 20-30mph; Volume: <4000pcu/day

Wykeham Street, Scarborough

Town centre street

- High significance for people and place
- Medium to low significance for vehicles. Does parking affect it?
- Civic centre with links to local identity
- Townscape mixed use, commercial, civic and retail
- High levels of pedestrian activity
- Place, culture and pedestrian activity important
- Area plays an important role in the life of the town
- Typical speed: 20-30mph; Volume: <4000pcu/day

Foreshore Road, Scarborough

Access side road

- Low significance for people and place
- Low significance for vehicles
- Narrow road widths
- Local pride and neighbourhood character
- Typical speed: 20-30mph; Volume: <2000pcu/day

Spa Lane, Harrogate

Residential street

- Medium density residential land use with some commercial and local retail
- Streets serve a medium significance for people
- Streets serve a medium significance for vehicles. Does parking affect it?
- Street trees and green infrastructure (improve desirability of neighbourhoods)
- Local pride and neighbourhood character; should its significance change?
- Typical speed: 20-30mph; Volume: <4000pcu/day

The Avenue, Harrogate

Town centre squares and spaces

- High significance for people and place
- Low significance for traffic – areas of motor vehicle traffic free space
- Civic centre embodying identity of area
- Townscape mixed use, commercial, civic and retail
- Building frontages set at edge of street line
- High levels of pedestrian activity
- Place, culture and pedestrian activity important
- Area plays an important role in the life of the town; Important gateways

Westborough, Scarborough; Knaresborough Market Place

Local significance

Place

Strategic significance

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4 THE NEEDS OF CYCLISTS

There are five design principles which represent the core requirements for people wishing to travel by cycling.. Providing for all five should provide the infrastructure required to support significant modal shift:

- **Coherence**: Cycle networks should be planned and designed to allow people to reach their day to day destinations easily, along routes that connect, are simple to navigate and are of a consistently high quality.
- **Directness**: measured in time or distance, cycle routes should not be less direct than routes for motorised traffic.
- **Safety and sense of safety**: traffic speeds and volumes affect safety and the feel of cycling; however, off-road routes and greenways may raise other concerns about safety which should be addressed.
- **Attractiveness**: cycling is often chosen as an activity because it is (or can be) pleasurable, considering journey ambience, tranquillity, and materials / maintenance.
- **Comfort**: providing adequate width (considering cyclists movement or a wider bike); smooth surfaces; and well-signed routes contribute to all user's comfort.

LTN 1/20 provides two key tools to assess each principle for links and junctions respectively: the Cycling Level of Service tool (for links) and Junction Assessment Tool (for junctions and crossings).

LTN 1/20 references and further detail

- Appendices A and B, pp172-184

Cycling for all

Cycling is a relatively inexpensive mode of transport that has a wider demographic reach than driving, making it an important and relevant mode of transport. Cycling can provide leisure and utility opportunities for vulnerable road users who may find walking inaccessible. Designers and planners are therefore reminded that cycles come in a wide variety of shapes and sizes, and an envelope of safety is required beyond the width of a typical bicycle's handlebars. LTN 1/20 further reminds local authorities that:

"Cycling should be accessible to people of all ages and abilities. The Equality Act 2010 places a duty on public sector authorities to comply with the Public Sector Equality Duty in carrying out their functions. This includes making reasonable adjustments to the existing built environment to ensure the design of new infrastructure is accessible to all."

LTN 1/20 references and further detail

- Section 2.3, p18
- Section 5 describes a range of bicycles and need

Coherence: routes and networks that connect

The links and junctions of any given route sit within a network, and provision of a network that allows a user to comfortably cycle to any destination is the overall aim of cycling policy in general; all routes should be designed to contribute towards the creation of this network.

The Local Cycling and Walking Infrastructure Plans' (LCWIP) route planning stage is a vital stage in identifying potential routes and creating a cohesive network.

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Safety and sense of safety

The single most important factor in providing safe routes is segregation from larger and faster forms of road traffic. Substandard infrastructure that feel unsafe is recognised as being unconducive to creating modal shift, and unlocking associated benefits in air quality, health, and reduced congestion. Consideration of this need to segregate can be the critical factor in deciding whether to consider alternative routes for cyclists; however, where it is determined that streets should have a greater 'place' function in a network, it may be more appropriate to divert vehicular traffic - often increasing the footfall for local businesses and bringing wider benefits for the streetscape.

LTN 1/20 references and further detail

- Sections 4 describes Design Principles
- Section 5.5, p 42-43 gives required widths

Comfort and attractiveness

The modal share for cycling, both nationally and locally, is significantly lower than almost any other recognised form of transport. While perceptions of safety, often caused by the lack of segregation, is the main barrier to uptake in cycling, ensuring that routes are both comfortable and attractive to all users is still an essential consideration when creating a high quality cycle network. This is of particular importance when considering new or returning cyclists, who may have lower confidence and are more likely to cycle on pleasant routes and for purposes other than commuting.

Comfort and attractiveness covers key factors such as

- Routes should be signposted and predictable;
- People should expect a surface and standard of design that makes cycling smooth and minimises conflict; and
- Careful landscaping, design and lighting should make the experience of cycling feel pleasant and secure.

Cycling: the need in North Yorkshire

Despite the challenges in encouraging cycle use in a rural county, and in attracting investment to provide the right infrastructure in the right places, North Yorkshire's policies and strategies (such as LTP4 and the suite of LCWIPs), recognise that increased cycle use can contribute toward specific policy themes such as:

- Improving safety and health;
- Reducing congestion;
- Decarbonising transport; and
- Ensuring access for all.

North Yorkshire also has a strong tourism and leisure economy in towns and in more rural areas. Cycling is recognised as an asset to attract visitors from outside the county and enable residents to enjoy their surroundings.

Scarborough and Ryedale Community Cycling

North Yorkshire County Council

Glossary of Cycle Infrastructure

This glossary presents examples of commonly found cycle infrastructure that could provide a high level of service for cyclists under the right conditions.

Contraflow cycle route

Allows people cycling to travel in the opposite direction to one-way motor traffic and create additional permeability. Can be implemented with or without lane markings depending on traffic flows.

Traffic calming/reduction and 20mph

Traffic calming includes features that physically or psychologically slow traffic. 20mph zones should be self-enforcing, and will often require physical measures in addition to signage.

Modal filter / Low Traffic Neighbourhood

A modal filter typically consists of a bollard, planter, or other barrier that allows pedestrians, cyclists, and occasionally public transport to pass, but not other motor traffic. Low Traffic Neighbourhoods often deploy modal filters to reduce the volume of motor traffic through an area.

Segregated Cycle Path

A cycle facility physically separated from the areas used by motorists and pedestrians. It may be next to, or completely away from the carriageway.

Light Segregation

Vertical infrastructure that can be placed within existing traffic lanes (including cycle lanes) to convert them to protected space. They are easy to install and comparatively cheap, and can be used to trial a new cycle path. Cyclists can leave the path easily but vehicles are prevented from entering.

Parallel / Tiger Crossing

A crossing similar to a zebra crossing, which provides legal priority for people cycling as well as walking.

Wayfinding

Encompasses all of the ways in which people orient themselves and navigate from place to place.

Continuous footway / cycleway crossing

A method of reinforcing pedestrian and cyclist priority over motor vehicle movements at side junctions.

Cycle parking

Secure cycle parking facilities that are convenient, clearly marked, overlooked and well-maintained. These could be in the form of stands, storage lockers or hubs. Parking should be provided in residential areas, at transport interchanges and at key destinations.

Public realm improvements

Measures that enhance the 'place' characteristics of a street, including tree planting, street art, paving, seating, and other features to make public spaces more attractive.

Shared use path

A footway converted to legally permit cycling. Can also refer to other places where cyclists and pedestrians are unsegregated, such as a bridleway or Vehicle Restricted Area.

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5 WITHIN TOWNS

Introduction

Within towns there are many trip origins and destinations in close proximity and the potential for the occurrence of short trips is high. This in many cases presents an increased propensity for such trips to be made by cycle, as opposed to the car.

To facilitate cycle use in towns and urban areas, cycling (and walking) permeability should be maximised with direct and well-connected routes that avoid constraints to movement, such as indirect or no-through routes (e.g. cul-de-sacs).

The context of the environment is important to understand when planning the type of cycle infrastructure required. There are two key factors that should be used to determine the appropriate intervention for a given street:

- The need to separate or mix with motor vehicle traffic based on the speed and volume of motor vehicle traffic using the street; and
- The function of the street in terms of movement and place.

Redesigning space to be shared and safe

In many cases there is not the space within the existing highway to Accommodate safe and separate cycle provision in addition to existing footway and carriageway allocation. The latest guidance recognises that cycles should be treated as vehicles in their own right, albeit with very different characteristics and needs. In most circumstances, pedestrians should not share with cyclists.

Where motor traffic flows are light and speeds are limited to an average of 20mph (or can be limited to 20mph as a small-scale intervention), most people are likely to feel comfortable cycling on-carriageway mixed in with motor traffic.

In these cases, separate cycle provision is not warranted. However, most people will not feel comfortable where motor traffic flows are higher than 2,500 vehicles per day and speeds are greater than 20mph.

LTN 1/20 references and further detail

- Section 7.1.1, page 74
- Figure 4.1, page 33

The street types within towns where these conditions may be found, or could potentially be created are:

- Access side road;
- Residential street;
- Town centre squares and spaces;
- Urban street; and
- Town centre street.

Where the motor traffic flow and speed criteria are commensurate with the current cycle provision, or this can be achieved to make the part of the network suitable for most people, there are several design approaches that can be applied; these are discussed in the subsequent sections.

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Traffic management & reducing use by motor vehicles

Where motor vehicle traffic flows are too high to enable cycling in mixed traffic environments, there are several ways to reduce flows to a suitable level. These include:

- Modal filters;
- Bus gates;
- Turning bans (with cycle exemptions); and
- One-way streets.

LTN 1/20 references and further detail

– Sections 7.3–7.7, pages 77–82

Traffic management interventions will not just impact on the link being considered, but could also potentially have wider impacts on the highway network. Appropriate impact assessments should therefore be undertaken.

However, when utilised effectively they can transform individual links or areas of towns into cycle friendly zones that can facilitate cycling for all types of people and for a range of purposes.

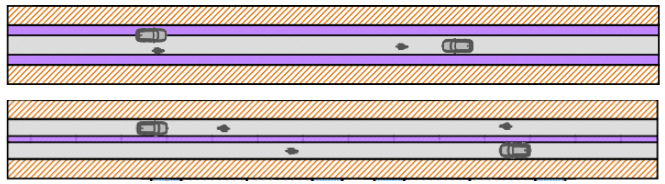
Design

To ensure that town centre streets are safe for cycling among motor vehicle traffic, design techniques are required can be used to prevent higher speeds by motor vehicle traffic.

Single carriageway widths of 7.3m are often the standard approach to designing carriageways in line with DMRB. However, for streets designed for mixed bicycle and motor vehicle traffic, this width can create poor conditions for cycling due to the potential for dangerously close overtaking of bicycles while facilitating car users to travel faster than a desirable 20mph speed limit.

Narrower carriageways have been shown to have the effect of reducing speed and if the narrowing involves the use of surfaces that appear unsuitable for driving on, the speed reducing effect can be greater. The use of median or edge strips can be used for this purpose, helping to provide a slower environment for mixed traffic conditions while still allowing overtaking width for motor vehicles if it is safe to do so.

Figure 5-1 – Examples of visual narrowing



Providing separate space to cycle

Where the appropriate conditions that facilitate most people to cycle in mixed traffic conditions are not present or cannot be achieved, separate cycle facilities are required.

The types of cycle facility that can be created within the highway corridor are:

- **Fully kerbed cycle tracks**: These provide the highest level of provision with separation from both the carriageway and footway. Separation from the carriageway can be provided by a kerb or with softer interventions, such as verges, tree planting or sustainable drainage systems (SUDS). Provided they are well constructed and maintained, segregated tracks offer a high degree of comfort for cycle users.

- **Stepped cycle tracks**: These are vertically separated from the carriageway and footway; this provides less separation and protection than a fully segregated cycle track, however, they provide easier and more flexible access to the kerbside.
- **Light segregated cycle lanes**: These feature intermittent physical separation features that provide additional protection from motor traffic.
- **Cycle lanes**: These are defined by either a solid or intermittent white line and are not protected from motor vehicle traffic by physical separation.

LTN 1/20 references and further detail

– Sections 6.2–6.4, page 51–66

The level of protection required for on-highway cycle facilities is dependent on the speed and flow of motor vehicle traffic as highlighted in Section 3.

LTN 1/20 references and further detail

– Figure 4.1, page 33

Junctions and crossings

Junctions are critical points on the network for cycles and pedestrians, and appropriate infrastructure will improve safety and comfort for users. The design of junctions should consider the volume and speeds of motor traffic, as well as the type, e.g. Urban Street to Residential Access Street in exactly the same manner as for a link (e.g. segregation is required where flows exceed 2,500 vehicles per day and average speeds are above 20mph). At quieter junctions it will likely be appropriate to mix cycles with motor traffic.

LTN 1/20 identifies how there are two alternative design approaches for junctions:

- Separating cycle and motor traffic in time or space; and
- Integrating cycle and motor traffic.

LTN 1/20 references and further detail

– Sections 10.3.5–10.3.11, pages 97–98

Signalised junctions

At signalised junctions there are several design approaches that can be utilised to ensure that people can navigate the junctions while cycling; each approach must be considered against the current and forecast future conditions present at the junction. The JAT contained in Appendix B of LTN 1/20 can assist the designer in determining which intervention is likely to be the most appropriate.

- Cycle bypasses;
- Separate cycle phases;
- Cycle and pedestrian-only stage;
- Hold the left
- Two stage right turn;
- Cycle gate;
- Early release; and
- Advanced stop lines.

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LTN 1/20 references and further detail

– Sections 10.6, pages 111–120

Priority Junctions

Priority junctions can cause potential issues for cycle users when traversing or turning in and out of side roads.

Where cycles are mixed with other traffic, for example, on an Access Side Road or Residential Street, there are a range of features that LTN 1/20 identifies can be used to create safer junctions for cycle users:

- Reducing all movements through a junction to a single lane;
- Adopting lane widths that allow cycle users to take the secondary position or (when traffic flows and speeds or allow) the primary position;
- Tight corner radii and raise entry treatments or wider junction tables that slow vehicles;
- Banning one or more turning movements that conflict with major cycling flows;
- Providing refuges to allow cycles to give priority to a heavy cycle flow; and
- Providing road markings to highlight the presence of cycle traffic to other road users.

LTN 1/20 references and further detail

– Sections 10.5.2–10.5.6, pages 105–106

Where cycle tracks or lanes cross priority junctions, it is important that cycle traffic can cross the junction safely and without losing priority. To achieve this, LTN 1/20 presents a range of priority junction design options that are either:

- Fully set back – at least a car length (5m) from the kerb line;
- Partially set back – less than a car length from the kerb line; or
- Not set back – at the kerb line.

The arrangements are also classified according to whether they provide full legal priority over traffic leaving and entering the side road or whether effective priority is achieved through design.

LTN 1/20 references and further detail

– Sections 10.5.7–10.5.30, pages 106–110

– Figure 10.13, page 106

Roundabouts

Roundabouts can be particularly hazardous for cycle users and account for a significant proportion of cycle user casualties. Roundabouts are generally designed for the smooth movement of motor vehicles, often at the expense of pedestrian and cycle traffic.

Key factors that make them hazardous are:

- Flared entries and exits;
- Multiple lane entries and exits;
- Wide circulatory carriageways; and
- High differences in speeds.

Making roundabouts safer for cycle users can be achieved through the following measures:

- Remodel the junction as a Compact Roundabout with or without protected space for cycling;
- Provide protected space for cycling around the junction and cross each arm;
- Provide grade separated cycle tracks and and/or across the junction (mostly applicable for large junctions on the Strategic Road Network);

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- Add signal control to the roundabout with protected space for cycling; and
- Replace the roundabout with a signal controlled or other form of junction with appropriate cycle facilities.

Roundabouts with protected space for cycling

Roundabouts that have high traffic flows and speeds should have protected space for cycling, in the same way that links with these characteristics require protected provision.

The protected space should be included both around the junction and on all entries and exits so that cycle traffic is not required to mix in time and space with motor vehicle traffic.

LTN 1/20 presents several illustrations as to how this can be achieved at both unsignalised and signalised junctions.

LTN 1/20 references and further detail

– Sections 10.7.8–10.7.27, pages 121–125

Roundabout with cycling in mixed traffic

Compact and mini roundabouts offer opportunities to reduce motor vehicle traffic speed and make it safe and attractive for most people to cycle through the junction mixed with motor vehicle traffic.

However, as with links where cycle traffic mixes with motor vehicle traffic, this approach is only appropriate with low motor vehicle traffic speeds and volume.

LTN 1/20 specifies that mixed traffic compact or mini roundabouts are appropriate up to around 8,000 PCUs per day with a maximum speed of 20mph.

LTN 1/20 references and further detail

– Sections 10.7.28–10.7.37, pages 125-126

Crossings

Cycle crossings are mid-link, stand-alone facilities that enable cycle users to cross a carriageway that would otherwise be a barrier to movement. They can also form part of junctions where cycle traffic is taken off the carriageway and can also link off-highway routes either side of a major road.

LTN 1/20 divides crossing into the following two types:

- Uncontrolled crossings; and
- Controlled crossings.

A key consideration in the choice of crossing type and the design of the facility is the conditions on the link it traverses. Motor traffic speed and volume are key factors in determining the suitability of each type of crossing. This is similar to considering the appropriate form of cycle infrastructure on links as highlighted within Section 3.

LTN 1/20 presents a table that helps to identify the appropriate crossing type for the speeds and flows or motor vehicle traffic.

LTN 1/20 references and further detail

– Sections 10.4, pages 99–104

– Table 10-2, page 100

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Case Study - Within towns

Localised speed limit reductions

As per Figure 3-1 from LTN 1/20, an on-road cycle route where cyclists are mixed with motor vehicles can be suitable for most users provided traffic speeds and volumes are low. The guidance suggests that these 'mixed traffic' streets should have a 20mph speed limit and traffic volumes less than 3,000 pcu/24 hour.

It is acknowledged that there can be initial opposition to the introduction of speed limit reduction. Whilst the geography of Bristol is predominantly urban compared to North Yorkshire, an evaluation of a 20mph scheme in Bristol demonstrated a number of benefits, including:

- 94% of roads saw a reduction in speed, with largest reductions on A and B roads that previously had the highest speeds.
- Reduction in fatal, serious, and slight injuries, with estimated annual savings of over £15m based on the DfT formula for the cost of road traffic casualties.
- An estimated 2 child lives and 4 child serious injuries will be prevented every 3 years.
- Walking and cycling across Bristol has increased, both among cycling travelling to school and adults travelling to work. Across the city, people walking to work increased from 17.5% to 18.9%, and people cycling to work increased from 11% to 15% between 2010 and 2015. People driving to work decreased from 53% to 44% over the same period.
- Despite some initial opposition a clear majority now support 20mph limits, with 62% supporting limits on residential roads and 72% on busy streets.

Localised speed limit reductions could in many places be a suitable solution for improving cycling provision where a lack of road width and other constraints may limit the ability to deliver dedicated cycling infrastructure. As noted previously, these zones are likely to require interventions to ensure the speed limit is self-enforcing.

20mph zone in Ripon city centre

NYCC 20mph policy - NYCC has a 20mph speed limit and zone policy which can be used to support the implementation of 20mph zones where appropriate.

There are multiple examples of 20mph speed limits in North Yorkshire including School Zones and the Ripon city centre 20mph zone which covers the Market Place and several surrounding streets. These are areas of high footfall and have been introduced principally to protect pedestrians; however they also provide an improved on-road environment for cyclists.

Segregated cycle routes and liveable neighbourhoods

Towns and cities across the UK are adopting Dutch style design principles including delivery of segregated cycle routes and Liveable or Low-Traffic Neighbourhoods. These approaches were recently endorsed by central government in its new cycle infrastructure design guidance.

Segregated cycle routes have been delivered across town and city centres in recent years, leading to significant increases in the number of people cycling. The schemes provide direct and comfortable routes, with high levels of priority for people walking and cycling. This includes continuous footways and cycleways over side roads, and enhanced priority at junctions and parallel "tiger" crossings

Local authorities across the country are also developing liveable neighbourhoods and Healthy Streets to deliver safer, quieter, less polluted and more pleasant streets. They provide the opportunity to create space for social activity, play and greening. Introducing liveable neighbourhoods leads to:

- more active travel;
- improvements in physical health & wellbeing; and
- greater social cohesion.

The term "modal filter" refers to infrastructure that allows people walking, cycling, and sometimes public transport, but prevents through movements of motor traffic. Modal filters can be the single most effective intervention installed along a street to reduce through traffic and create safer streets for cycling and walking.

The best-known liveable neighbourhood in the UK is in Waltham Forest. The £2.3 million scheme included cycle streets, continuous footways, pedestrian crossings, school streets, pocket parks and trees, and "Bikehangars", which provide secure cycle parking for residents in the same footprint as half a car parking space.

Potential in North Yorkshire

Although the specific terminology changes depending on the initiative, 'Liveable Streets', 'Healthy Streets', and so on all build upon similar principles and objectives to create better streets that align with the 'place' values ascribed to the area. North Yorkshire has many streets that could benefit from these types of interventions. However, it must be recognised that in constrained market towns that serve rural hinterlands, the car is still likely to remain an important mode of travel. A wider strategy is likely to be required in many towns which considers which streets are designed for movement, and which for place.

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6 IN AND AROUND TOWNS

Cycling around the hinterlands of towns can often mean cycling on or adjacent to roads that have been traditionally dedicated to moving motorised traffic at faster speeds and higher volumes. On-highway routes may also be supplemented by quiet greenways or canal-side routes.

Cycling between towns can often be along similar routes, but volumes and speeds on roads may be even higher, with some highways prohibiting cyclists outright, while off-highway routes may be circuitous, suffer from poor maintenance, or lack surveillance, making poor choices in hours of darkness and inclement weather.

With the rise in popularity of electric bikes (or E-bikes), distances between towns are becoming easier for cyclists, while hills are less of a barrier. E-bikes create an opportunity for 15 or 20-mile journeys to become realistic distances for travelling by bike, compared to the circa 5 mile journey for commuting or utility purposes that a traditional bike offers.

While all route and network design requires equality and access assessment for all road users, it may be appropriate for out of town routes to make use of the DMRB's Walking, Cycling and Horse-riding Assessment and Review.*

* *DMRB GG142 Walking, Cycling and Horse-Riding Assessment and Review*

This is particularly important when dealing with Public Rights of Way, which may permit equestrian access, and is a requirement when considering routes on the Strategic Road Network.

On and off road routes

Faster & busier roads

It is more than likely that most roads considered as part of a coherent cycle network between and around towns will require segregation from motor traffic. LTN 1/20 is emphatic that traffic flows above 10,000 vehicles a day (two-way) absolutely must include segregation for cycle users, and schemes which cannot meet this requirement are unlikely to gain centralised funding.

Cycling routes alongside faster roads, above 40mph, will need fully kerbed segregation, rather than lighter forms. Consideration should also be given to the distance that can be given between cyclists and moving traffic; close proximity to fast moving vehicles can create negative perceptions of safety, expose cyclists to spray and debris, and fails to provide an attractive route – one of the five core principles.

This buffer zone can be quite onerous in terms of space, with an absolute minimum width of 3.0m provided between a 70mph road and an adjacent cycle route.

Routes between and around towns are often the most appropriate locations for bi-directional tracks, where trip origin and destination points are fewer and further between and the need to access the route from the opposite side of the carriageway (often across busy and fast moving roads) is minimised.

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Routes between and around towns can offer opportunities for conversion of footways to shared use routes, as pedestrian flows are likely to be very low or non-existent, minimising potential conflict. However, minimum width requirements should still be adhered to, allowing to cyclists to pass easily, as well maintaining a safe distance from a live carriageway.

Generally speaking, these considerations will be applicable to the following road types:

- Rural Connector; and
- Urban Connector.

Although it should be noted that not all streets will fit neatly into this matrix, and every street should be considered in regards to its specific characteristic.

LTN 1/20 references and further detail

- Section 4.4.4, Table 4-1, page 33;
- Table 6-1, page 54
- Section 6.2.15, page 55
- Section 6.5.6, page 67

Greenways and off road routes

While the existing highway network can offer significant opportunities to create a coherent cycle network, particularly in regards to lighting and natural surveillance, this network may be sparse in comparison to that within towns, and may not be as direct as is desirable.

A system of off-road routes can complement and enhance on-highway routes, and are often particularly appropriate in order to connect rural areas, such as outlying villages to market towns, where constrained rural roads may not offer much potential for the necessary segregated infrastructure.

Greenways and off-road routes can encompass various designations and types, such as:

- PROWs, particularly bridleways and restricted byways;
- Disused railway lines;
- Canal and riverside routes; and
- The National Cycle Network.

Greenways and off-road routes must enable inclusivity in order to be funded nationally as cycling infrastructure. This will mean paying close attention to:

- Width, including pinch points such as under bridges for towpaths;
- Access and egress points, particularly considering controls that can create a physical barrier for some users;
- Level differences, including stairs but also steeper gradients;
- Lighting and wayfinding, especially when considering use all year round; and
- Increased speeds of electric bikes and perceptions of safety, particularly for more vulnerable users.

Width remains just as crucial in regards to greenways and off-road routes as it does on-road. The dynamic kinetic envelope of a cyclist does not change, while desired speeds may be even faster than within towns. There must also be a consideration of the type of user, the purpose of their trip, and a recognition that the route may need to perform multiple functions , offering a fast and direct commute in the weeks with few local pedestrians, while weekends may attract multiple longer distance leisure users on foot, bike, and horse where permitted.

For these reasons, segregation remains preferable. Where a robust assessment evidences that this is not possible (for instance, where a landowner will not dedicate sufficient width to a PROW, or alongside a canal), shared use may be appropriate if all other options have been discounted.

Access and egress points should include bollards where controls are necessary to dissuade antisocial behaviour. Careful spacing is required in order to not exclude certain user types, particularly those reliant on hand cycles, or pedestrians with wheelchairs, push chairs, and other mobility aids.

Ideally, anti-social behaviour should be dissuaded though usage and good natural surveillance. Usage may be encouraged through good signage and clearly identifiable access points, as well as promotion and other activities. The route should be overlooked where possible, with new development integrating greenways and maintenance programmes preventing trees and vegetation obscuring sightlines.

Where access or even the route itself requires level changes, these should be as shallow as possible, ideally at a 1:20 gradient.

Lighting can create a vastly more attractive route and promotes all-year round usage, particularly in winter months and inclement weather. While highway lighting solutions can be appropriate, low-level lighting is often preferred, minimising light pollution and being less visually obtrusive. Lighting may also be subject to time restrictions - perhaps being switched off between midnight and 05:00 for example – which can reduce the impact on wildlife.

Finally, surfacing should also be closely considered. A sealed surface, while vastly more expensive in capital costs, offers a much greater level of service for cyclists and inclusivity for those with mobility impairments. They are also much less likely to require long term maintenance when compared to a material such as crushed gravel. Where asphalt is not considered attractive and appropriate for an off-road route, resin bound gravel could offer a more attractive alternative, although this is always somewhat subjective.

LTN 1/20 references and further detail

- Section 8.3.5, page 86;
- Section 8.5.5, page 87
- Section 8.7.1, page 88

Junctions and crossings

Faster and busier roads

Generally speaking, these routes are often designed in similar ways to those within towns at junctions and crossings. However, segregation in time or space from motor vehicles is likely to be even more important where flows and speeds are high and junctions are likely to be large.

Although detrimental to cyclists, achieving priority at junctions and side streets may be less practicable due to high speeds and flows, and crossings may require controls or even structures such as bridges.

Junctions

Junctions should be dealt with in much the same way as those within towns – readers should refer back to that section in their considerations. However, it should be reiterated that junctions require segregation in exactly the same conditions as links, and that where speeds exceed 20mph or vehicle flows are above 2,500 AADT, segregated provision is likely to be necessary for most users. In particular, where flows are above 10,000 AADT, segregation is absolutely essential.

Given that junctions between and around towns are likely to be larger and perhaps feature multiple lanes, segregation in time becomes less likely to be the preferred option, necessitating longer green time and adversely affecting junction capacity. Instead, segregation in space, i.e. off-carriageway, will likely be preferred.

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Given pedestrian flows are likely to be lower towards the edges of urban areas, shared use provision and toucans may become more acceptable than within towns.

LTN 1/20 references and further detail

– Figure 4.1, page 33.

Crossing points

Where 85th percentile speeds exceed 40mph, only signalised or grade separated crossing points are likely to offer a good level of provision for all types of users. If speeds exceed 60mph, such as on main arterial routes and the SRN, then grade separated provision is likely to be the only acceptable option.

Grade separated crossing points, such as over and under bridges, can provide strong levels of service in comparison to signalised crossings, as they do not require cyclists to stop and give way. Equally, signalised crossings require motorised traffic to stop where they may not otherwise need to, which can have implications on capacity.

The design of such crossing points are often dictated by the topography and specific characteristics of each location. However, generally comments can be made on design, such as:

- A preference to over bridges rather than underpasses, which can become a target for anti-social behaviour due to reduced surveillance;
- A need to consider gradients and the implications on effort required and accessibility for all users; and
- The need for segregation, in the same way as for all links regardless of location.

Note that as a vertical obstruction, bridges require additional clearance from the parapets; providing a minimum 0.5m either side in addition to the general width requirements – this means that a shared use route should be at least 4.0m minimum.

LTN 1/20 references and further detail

– Table 10-2, page 100;

– Section 10.8, page 127

Side road junctions

On rural roads, or those with average speeds above 40mph, providing priority for cycle tracks through the side arms of priority junctions in the same way as those within towns is not recommended.

Instead, cyclists should be directed to cross away from the junction, with a minimum set back distance of 10m from the major arm. Where traffic flows are high and cyclists may have to wait a considerable amount of time to cross safely, a signalised crossing should be considered, or even signalisation of the junction if cycle flows warrant it. A grade separated crossing could also be considered.

Greenways and Off Road Routes

Greenways and off-road routes will typically not feature junctions, as these are intrinsically away from the highway and therefore motorised traffic. Where these return to the highway, the appropriate guidance should be consulted.

Greenways and off-road routes may, however, cross one another; at these locations, it may be necessary to denote priority, for which markings are prescribed in the TSRGD.

LTN 1/20 references and further detail

– Section 10.5.31, page 110

Pickering Breeze (women's) ride

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Case Study – Between and around towns

Exe Estuary Trail

The Exe Estuary Trail is a cycle and walking link extending for over 16 miles from Dawlish to Exmouth, and Exeter Quay. The 10-year scheme cost around £17 million to develop, and has resulted in a high quality, largely off-road, cycling and walking route. The route connects towns and villages, railway stations and ferries; providing easier active access around the Exe Estuary, one of Devon's most highly designated and protected environments. The trail forms part of the National Cycle Network Route 2, as well as the East Devon Way and Exe Valley Way walking trails.

The trail enables safe commuter cycling between the settlements around the Exe estuary. It also contributes to health and well-being by providing an easily accessible green infrastructure to residents along the Estuary.

It enables the public to experience the wildlife of the Estuary with opportunities for education and community engagement, and provides opportunities for business growth and tourism.

The trail connects 80,000 residents in the area to Exeter and helped bring about a significant increase in walking and cycling. Around 30% of trips made on the trail occurring during commuter periods. The trail also has a high proportion of leisure use and acts as a tourist attraction in its own right.

The scheme has also led to increased footfall in businesses along the route, as well as enabling more cycle hire locations and leading to an increase in cyclists using the cycle ferry at Starcross.

Evaluation of expenditure for trail users across the Exe Estuary Trail, Drake's Trail and the Tarka Trail, suggests the trails result in £13.4 million in annual business turnover, 200 full time jobs, and health benefits of over £3.5m per year.

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Wayfinding, Littlehampton

Littlehampton in West Sussex has deployed high quality mapping and signage to highlight pedestrian areas of the seaside town and reconnect the town centre to the seafront. Themed on a day out by the seaside, the graphic style is bright and lively. The mapping highlights landmarks and attractions and key pedestrian routes to connect the public realm. The project builds on the approach of Legible Bristol, Bath, and similar wayfinding schemes in London, which use high quality on-street signage, paper mapping, public art, and associated projects

Potential in North Yorkshire

North Yorkshire has a strong rural economy and many tourist attractions outside the urban environment. The county also relies on good connections between the hinterlands and the town centres to provide jobs and opportunities. Greenways and off-road routes can help serve all these purposes, providing attractive off-road routes away from busy arterial roads. Despite the potential, it should be noted that greenways are rarely segregated, usually reliant on shared use provision, and can struggle to provide adequate security through surveillance / lighting or comfort through a sealed and maintained surface. Greenways and off-road routes have plenty of potential in the county, but the purpose of the route and expected user types should be considered carefully, with design standards applied commensurate to these considerations.

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7 NEW DEVELOPMENTS

New developments offer a significant opportunity to embed the right active travel infrastructure within a development while also creating a network for motorised vehicles that encourages the choice of the right mode of transport for the journey length and purpose. Key areas to consider are movement *within* new sites and connections *to* the new site. New housing developments will be different from mixed or commercial developments in the volume and type of motorised traffic expected, and in the provision required for active travel.

Residential developments

Streets within housing developments are likely to have some of the strongest place functions outside of town and local centres. LTN 1/20 notes early in its discussion of Design Principles that people travelling by foot or bicycle should be able to take the shortest routes and make connections where motorised traffic is routed around living areas:

"*Permitting cyclists to make movements prohibited to motor traffic, allowing contraflow cycling, and creating links between cul-de-sacs to enable cyclists to take the shortest route,* ***should be the default approach in traffic management***." [our emphasis] Para 4.2.8, p.30.

Building for a Healthy Life (BHL), published for developers and planners by Homes England , refers to this as 'edge to edge connectivity'. BHL updates the principles of Building for Life 12, taking account of the Environment Bill as well as input from NHS England and the Healthy New Towns Programme. A companion document, Streets for a Healthy Life is in preparation at the time of writing. Both are valuable resources with illustrations and a Red/Amber/Green approach to design principles, including those that encourage active travel.

Making Space for Cycling (Cyclenation and Cambridge Cycle Campaign, 2014) presents the visualisation opposite and accompanying checklist illustrating an indicative street layout within a new development, noting that traditional, interconnected streets can help provide easy connectivity for those walking and cycling, whereas cul-de-sacs favoured over the past few decades often result in circuitous routes for active modes and discourage travel on foot or by bike. It also notes that a main spine through a housing development can allow the site to be served by public transport.

Connecting new developments

BHL reminds designers and planners about the importance of connectivity to the newly developed site in its section on

References and further detail: See Cycling Infrastructure section of NYCC Design Guide for Developers

Integrated Neighbourhoods. This includes connecting to existing infrastructure, but also taking the opportunity to start new routes if a connection is not obvious. Ch 14 of LTN 1/20 describes ways to improve cycling connectivity using highway improvements generally and new developments specifically. It notes that Local Authorities may wish to use the Community Infrastructure Levy to pool funds from different developments when planning for connecting routes those developments may require. Authorities may also find this useful in upgrading junctions to make cycling into and out of developments safe and comfortable.

Connections may take the form of:

- Cycle lanes alongside existing, often faster A-roads, and
- New paths away from roads: these can be more direct than existing roads.

In choosing roads around and through new developments, the Scottish National Roads Development Guide notes:

"A designer who uses minimum road standards is likely to swing the balance towards movement rather than place and this approach is not acceptable for streets with a higher place function."

NYCC issued guidance for developers showing when design from DMRB or MfS should take precedence. Note that LTN 1/20 had not been incorporated at the time of writing this Cycle Design Guide – designers should consider and agree the appropriate design guidance from a project's outset.

Junctions

Where new developments are on the outskirts of built up areas and connections are along roads with higher speeds and volumes, cyclists crossing major roads or joining infrastructure alongside it must be catered for, allowing for all movements. The Junction Assessment Tool in Appendix B of LTN 1/20 should be used when considering any new junction where cyclists may be present, and provides guidance on the types of infrastructure that may be acceptable depending on vehicle speed, volume, and junction type.

LTN 1/20 references and further detail

– Appendix B, the Junction Assessment Tool

Cycle Parking

Transport Issues and Development was produced by NYCC in 2003 as guidance to developers and planners, describing concerns that over-allocation of car parking in developments encourages driving and car dominance.

Equally, a lack of parking and storage facilities for bicycles can supress demand.

LTN 1/20 Ch 11.3, sets out minimum recommended cycle parking guidance for both residential and retail / employment / leisure / education sites for use if no local guidance exists. This includes 5% of spaces co-located with disabled car parking for disabled people. This should account for wider bicycles or tricycles.

Residents will need storage within their properties, often for multiple bikes, and will often need wheel-through access to the back of properties.

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The Bicycle Association has published a guide for cycle parking which covers choosing products and installations for public space, which it describes as:

- Safe (for users and their cycles);
- Secure (enabling secure locking);
- Long lasting (corrosion resistant etc.);
- Easy to use (including statutory duties under the Equality Act); and
- Fully in compliance with UK legal requirements.

Commercial or mixed developments

Commercial, retail and mixed-use developments have different advantages and disadvantages for cycling.

The health benefits for employees (and employers) of active travel to work are significant, with studies reduced absenteeism and increased productivity.

However, the mix of traffic is usually different and some safety concerns are more frequent in comparison with residential developments. Key issues to note include:

- A higher number of HGVs and other large vehicles;
- Large volumes of mixed traffic at peak times; and
- Secure cycle parking. In retail and mixed areas, parking for staff and public parking may be different, reflecting long term vs short term use.

Junctions & crossings

At junctions joining the development, higher levels of protection should be given where the volume of motorised traffic overall and/or the percentage of large vehicles is high. Consideration should especially be given to:

- Separate signalisation for cyclists and pedestrians; this could fully segregated facilities, toucans, separate staging or early release depending on existing / forecast conditions .
- Two-stage turns, especially where multiple lanes of traffic are crossed (presuming segregation is not required).

Within developments, wider turning radii to accommodate larger vehicles can increase ‘left-hook’ collisions. A cycle route with signalised crossings may be advisable in order to alleviate safety concerns associated with visibility, even if flows and speeds would not necessarily require segregation

LTN 1/20 references and further detail

- Section 10.6, Signalised Turns Two-stage turns, p.115.

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8 WHERE TO LOOK FOR FURTHER GUIDANCE

National guidance

- CIHT guidance on shared streets and accessibility https://www.ciht.org.uk/media/4463/ciht_shared_streets_a4_v6_all_combined_1.pdf
- CIHT Manual for Streets 2 https://tsrgd.co.uk/pdf/mfs/mfs2.pdf
- DMRB CD195 – Designing for cycle traffic (2021) https://www.standardsforhighways.co.uk/dmrb/search/4b59ebc3-065b-467f-8b43-09d2802f91c8
- DMRB GG 142 Walking, Cycling and Horse-Riding Assessment and Review (2019) https://www.standardsforhighways.co.uk/dmrb/search/5f33456d-32f9-4822-abf6-e12510f5c8dc
- Gear Change, England's national policy that 'Sets out a vision for a travel revolution in England's streets, towns and communities.' (2020) https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england
- Gear Change One Year On Review (2021) https://www.gov.uk/government/publications/gear-change-one-year-on-review
- Healthy Streets, including checklists for designing desirable streets and places https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets
- LTN 1/20, England's national guidance (2020) https://www.gov.uk/government/publications/cycle-infrastructure-design-ltn-120
- Standards for public cycle parking (2021) https://www.bicycleassociation.org.uk/parkingstandard/
- Sustrans traffic-free routes and greenways design guide (2019) https://www.sustrans.org.uk/for-professionals/infrastructure/sustrans-traffic-free-routes-and-greenways-design-guide/
- Sustrans Low Traffic Neighbourhood design guide (2020) https://www.sustrans.org.uk/for-professionals/infrastructure/an-introductory-guide-to-low-traffic-neighbourhood-design/

New developments

- Building For a Healthy Life (2020) https://www.designforhomes.org/project/building-for-life/
- Making Space for Cycling: A guide for new developments and street renewals (2014) https://www.makingspaceforcycling.org/
- Sustrans and CycleNation/Cambridge Cycle Campaign for guides to design in new developments. https://www.gmcc.org.uk/wp-content/uploads/2014/05/MakingSpaceForCycling.pdf

NYCC publications

- LCWIP plans https://www.northyorks.gov.uk/local-cycling-and-walking-infrastructure-plans-lcwips
- NYCC Transport Plan 4, 2016-2021 https://www.northyorks.gov.uk/local-transport-plan
- Emerging NYCC Design Guide for Developers (publication expected 2022)

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