

# **Bradford Local Cycling and Walking Infrastructure Plan – Phase 1**

## **Summary Document**

# Bradford Local Cycling and Walking Infrastructure Plan – Phase 1

## Introduction

In 2017 the Government published its first Cycling and Walking Investment Strategy, which sets out an ambition to make cycling and walking the natural choices for shorter journeys or as part of a longer journey. Local Cycling and Walking Infrastructure Plans (LCWIPs) form part of the Strategy and set out a new, strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing cycling and walking networks so that the Government's objectives can be achieved.

The document provides a summary of the phase one Bradford LCWIP, which for its initial phase has been produced to cover certain geographic areas of focus (south Bradford for cycling; Keighley for walking). The plan has been developed through a process of stakeholder consultation (workshops and street audits), data analysis, and high level engineering assessment of potential improvements. The document provides a summary of the phase one LCWIP including the key outputs:

- **Network maps** for cycling and walking, which identifies preferred routes and core zones for further development;
- A **programme of infrastructure improvements** for future investment

A more detailed report is available on the Combined Authority's website, that sets out the underlying analysis carried out and a narrative to support the identified improvements.

# Bradford Local Cycling and Walking Infrastructure Plan – Phase 1

## Proposed Cycling Network for South Bradford

These network proposals include:

**A Network Map**, showing the main desire lines to provide connections across South Bradford – with two routes prioritised for further assessment in detail

**Route alignments** for the prioritised desire lines.

*Two potential options were assessed for each route and will inform more detailed feasibility work to be carried out at a later stage. Further sections of route which could connect these route options to other communities and linking to other cycle routes will be considered in future stages of LCWIP development*

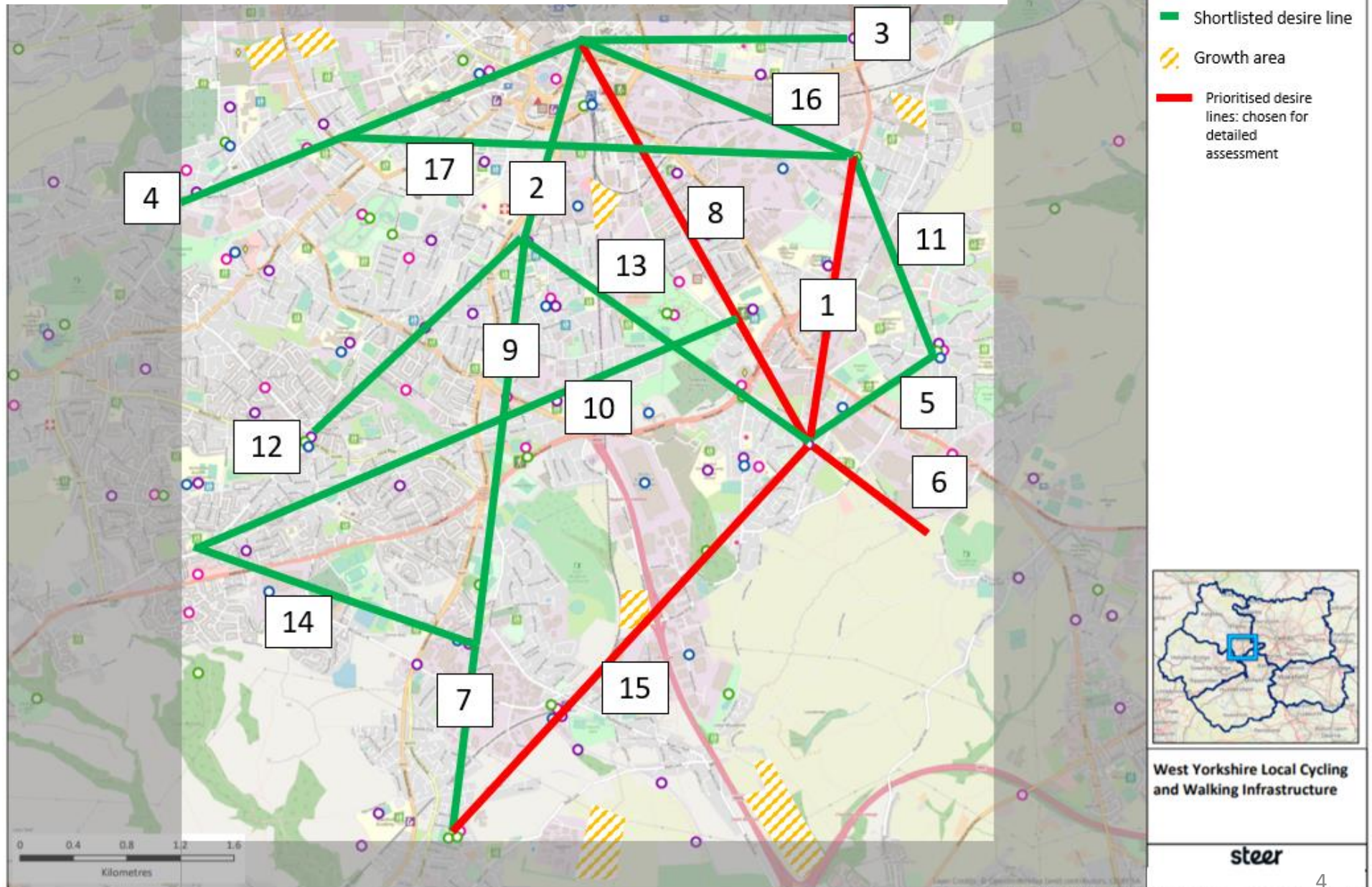
**Programmes of improvements for cycling** on the detailed route alignments

*These improvements have been identified through high level assessment and further feasibility work is required to be carried out. The types of cycling provision proposed are based on route types identified in government guidance, and approximate costs based on typical costs for this type of provision provided in government guidance.*

*The proposed cycling infrastructure may also be accompanied by a range of complementary measures to be defined in further stages of LCWIP development.*

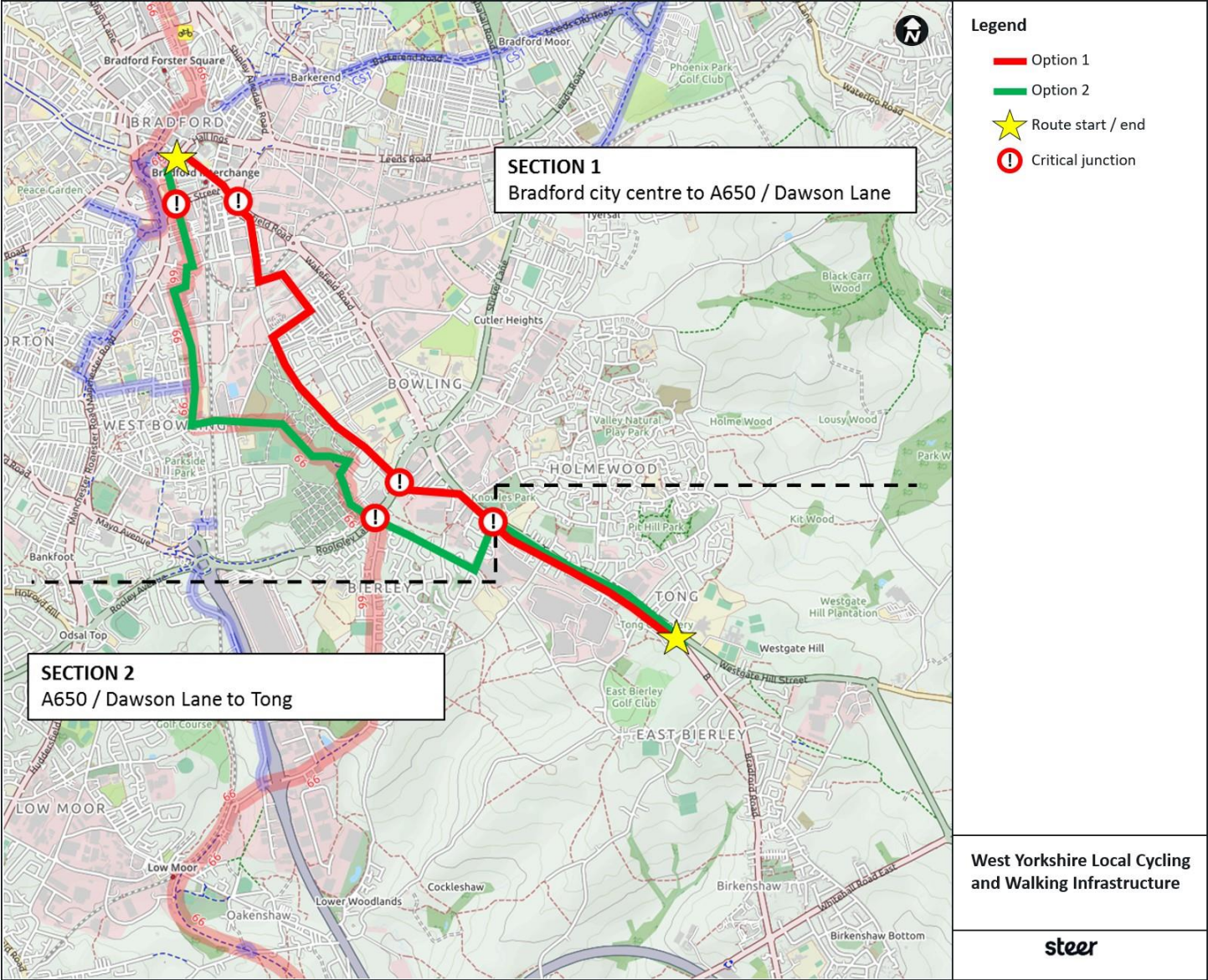
*Complementary measures may include: new waiting/loading restrictions; Improved enforcement of existing waiting/loading restrictions; Behaviour change programmes to raise awareness of infrastructure improvements and encourage walking and cycling; Restrictions to general traffic; Improved landscaping and lighting; New and improved cycle parking*

# Proposed Cycling Network Map



# Proposed Cycling Network: Detailed Route Alignment

## Route 1: Bradford city centre to Tong Street



# Proposed Cycling Network: Programme of improvements

## Route 1: Bradford city centre to Tong Street

### Direct route (option 1)

| Route section                                   | Proposed provision   | Indicative Cost |
|---|--|-----------------|
| <b>1</b><br>City Centre to A650/<br>Dawson Lane | Mixed cycle route<br>Hall Ings to Croft Street (315 m)                   | £0.2m           |
|   | Segregated cycle route, on highway<br>Croft Street to Hall Lane          | £0.3m           |
|   | Mixed cycle route<br>Hall Lane to A650 Tong Street (2.8km)               | £2m             |
|   | New at-grade toucan crossing over Rooley Ln (also part of Route 2)       | £0.2m           |
| <b>2</b><br>A650/<br>Dawson Ln to Tong          | Segregated cycle route, on highway<br>A650 (from A6177 to A651) (1.32km) | £1.5m           |

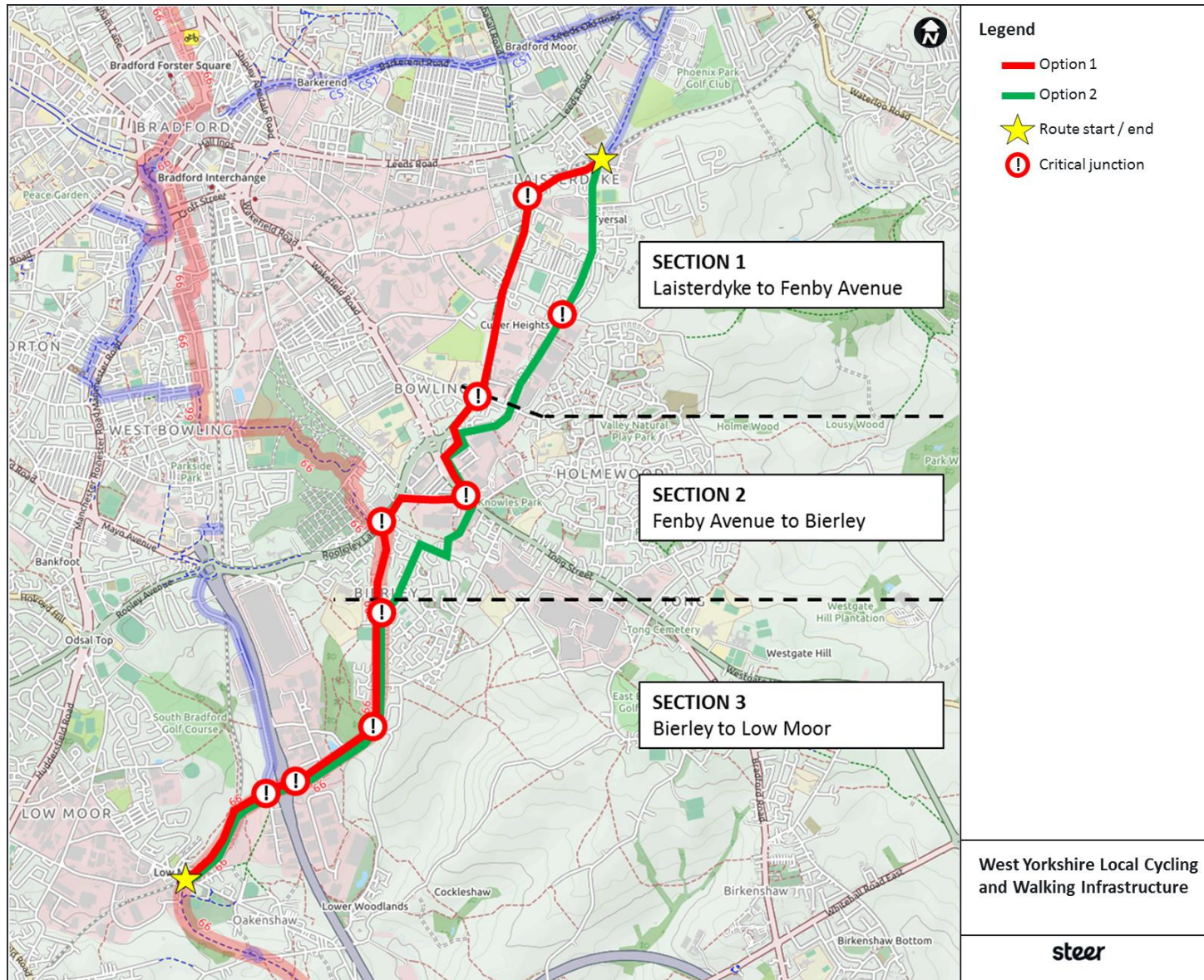
### Alternative route (option 2)

| Route section                                   | Infrastructure   | Indicative Cost |
|---|--|-----------------|
| <b>1</b><br>City Centre to A650/<br>Dawson Lane | Mixed cycle route<br>Hall Ings to A650                                   | £3.2m           |
| <b>2</b> A650/<br>Dawson Ln to Tong             | Segregated cycle route, on highway<br>A650 (from A6177 to A651) (1.32km) | £1.5m           |

More information on the types of provision proposed are provided on page 16

# Cycling Network: Detailed Route Alignment

## Route 2: Laisterdyke to Low Moor



# Cycling Network: Programme of improvements

## Route 2: Laisterdyke to Low Moor

### Option 1

| Route section                                  | Proposed provision  | Indicative Cost |
|--|---|-----------------|
| <b>1</b><br><b>Laisterdyke to Fenby Avenue</b> | Mixed cycle route<br>Dick Lane to A6177 via New Lane (665m)                         | £0.5m           |
|  | Segregated cycle route, on highway<br>New Lane/A6177 to Fenby Avenue (1.32km)       | £1.5m           |
| <b>2</b><br><b>Fenby Avenue to Bierley</b>     | Segregated cycle route, on highway<br>Fenby Avenue to Cutler Heights Lane (245m)    | £0.3m           |
|  | Mixed cycle route<br>Cutler Heights to Bierley Lane roundabout (1.75km)             | £1.2m           |
|  | At grade crossing of A650 at Rook Lane  | £0.4m           |
|  | New at grade toucan crossing over Rooley Lane (also part of Route 1)                | £0.2m           |
| <b>3</b><br><b>Bierley to Low Moor</b>         | Mixed cycle route<br>Bierley Lane roundabout to path off Kingsmark Freeway (2.13km) | £1.5m           |

### Option 2

| Route section                                  | Infrastructure  | Indicative Cost |
|--|---|-----------------|
| <b>1</b><br><b>Laisterdyke to Fenby Avenue</b> | Segregated cycle route, on highway<br>Dick Lane/New Lane to Fenby Avenue (1.93km)   | £2.7m           |
| <b>2</b><br><b>Fenby Avenue to Bierley</b>     | Segregated cycle route, on highway<br>– 393m from Fenby Ave to School St            | £0.5m           |
|  | Mixed cycle route – 1.75km from School Street to Bierley Ln roundabout              | £1.2m           |
|  | At-grade crossing of A650 at Rook Lane  | £0.4m           |
| <b>3</b><br><b>Bierley to Low Moor</b>         | Mixed cycle route<br>Bierley Lane roundabout to path off Kingsmark Freeway (2.13km) | £1.5m           |

More information on the types of provision proposed are provided on page 16

# Bradford Local Cycling and Walking Infrastructure Plan – Phase 1

## Proposed Walking Network: Keighley

These network proposals include:

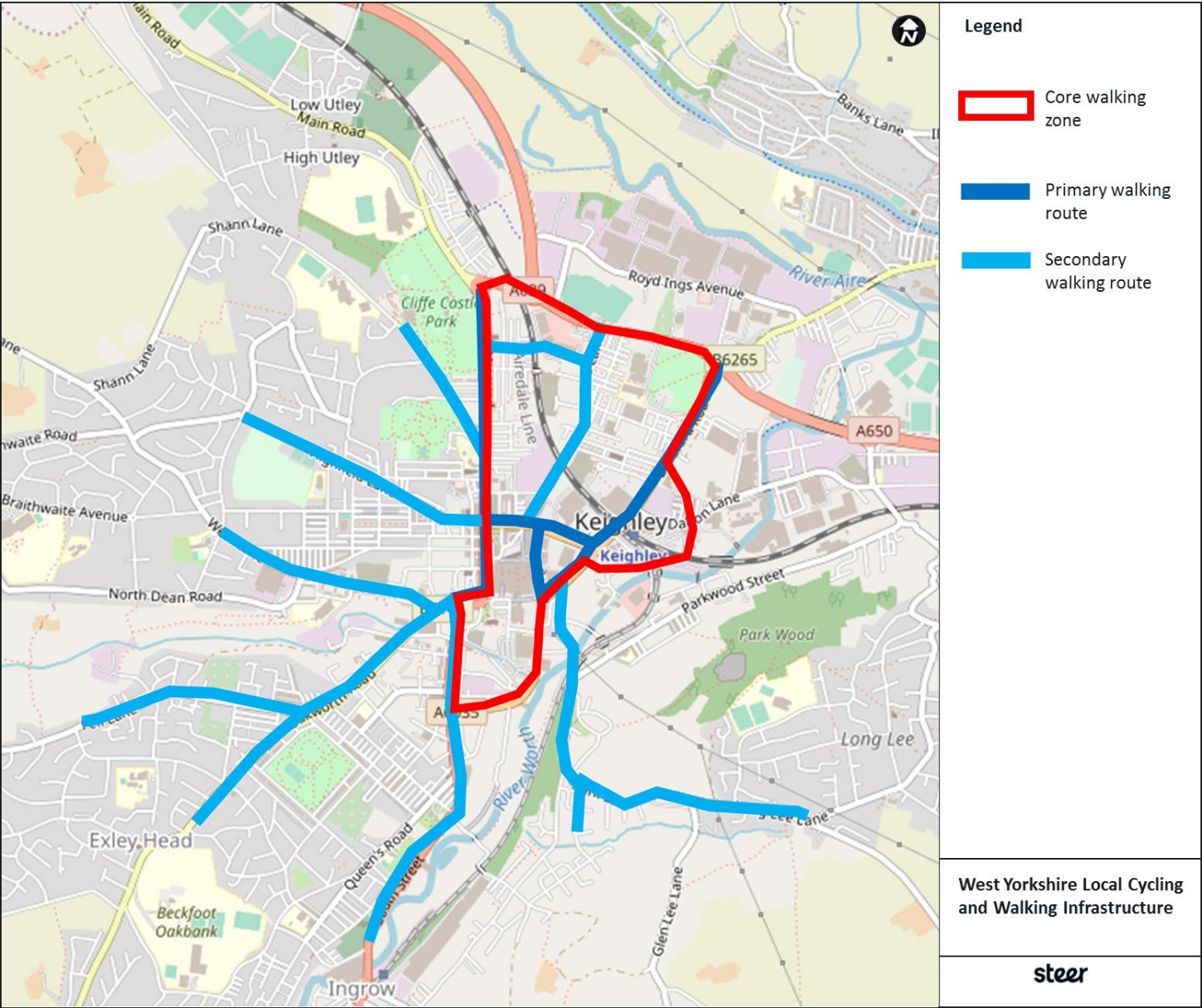
**A Network Map**, showing the main routes for walking (“Primary” routes) and other important pedestrian routes (“secondary”), as well as a central destination area for walking trips (“Core Walking Zone”)

**Programmes of improvements for walking** within the Core Walking Zone

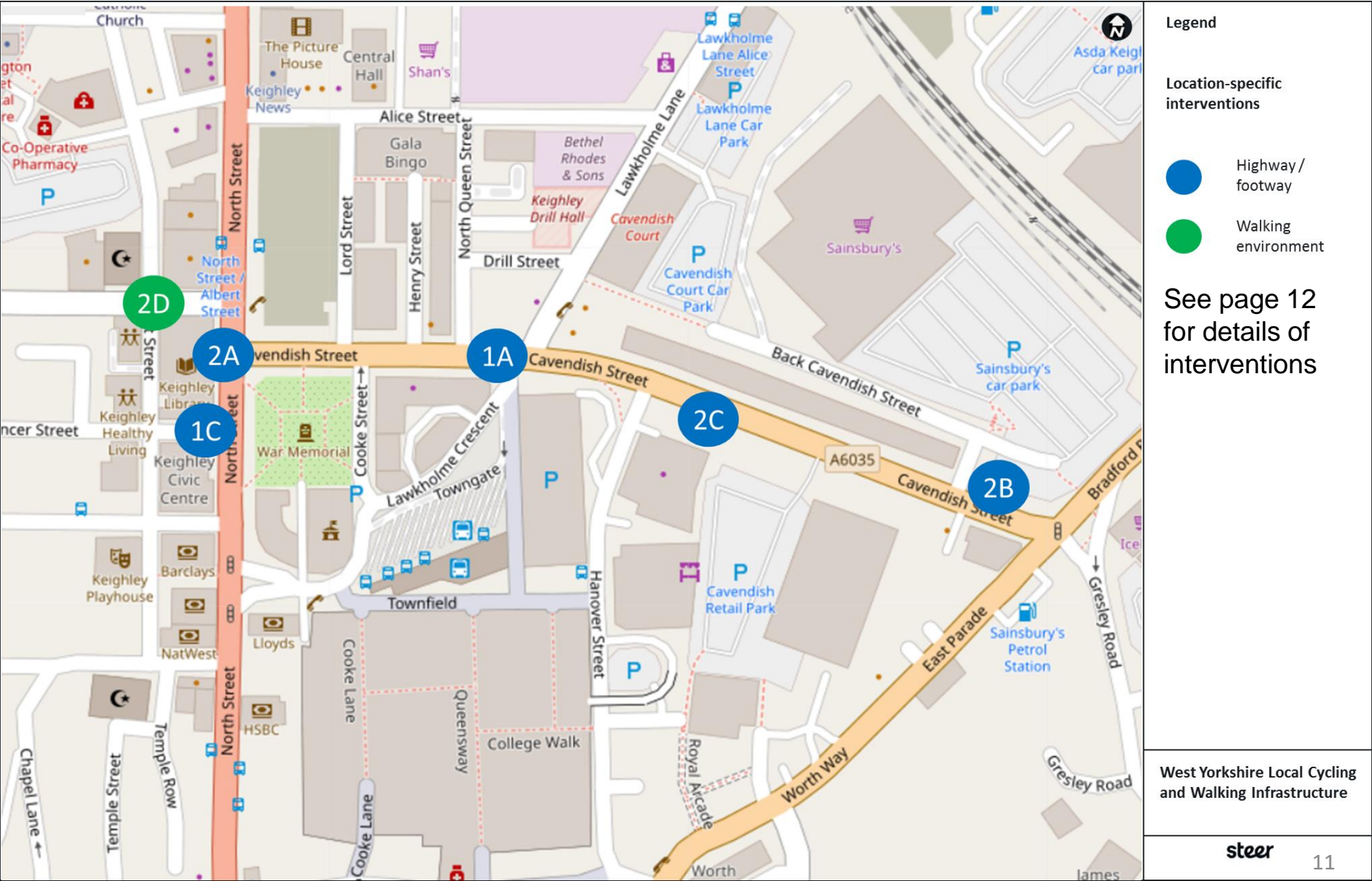
*These improvements have been identified through a community street audit which allowed local stakeholders to provide feedback on the local walking environment, with a follow up workshop.*

*The proposed walking infrastructure could also be accompanied by a range of complementary measures to be defined in further stages of LCWIP development. Complementary measures could include new waiting/loading restrictions; improved enforcement of existing waiting/loading restrictions; behaviour change programmes; restrictions to general traffic; improved landscaping and lighting and accessible seating.*

# Proposed Walking Network Map



# Proposed Walking Network: Programme of improvements



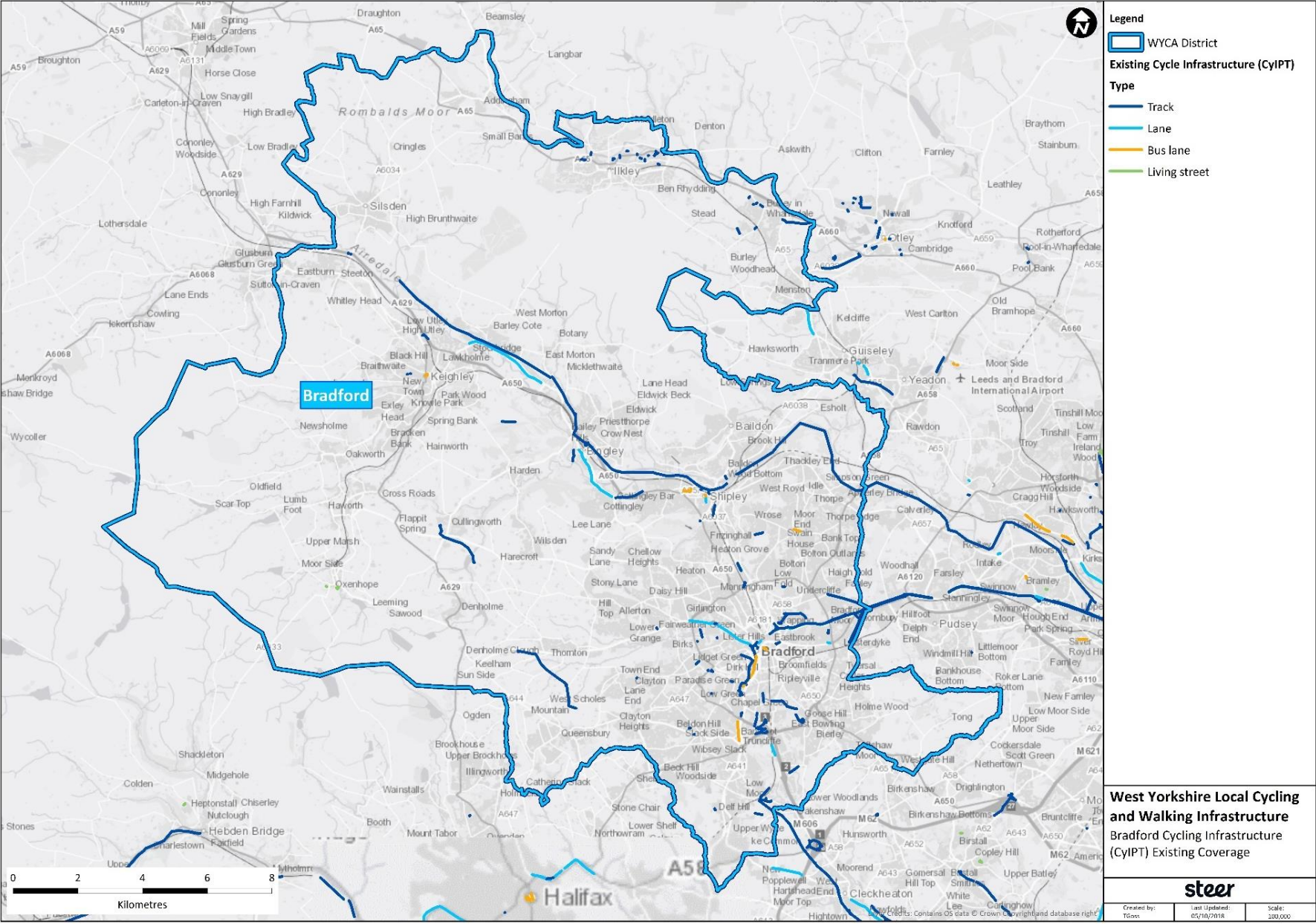
# Proposed Walking Network: Programme of improvements

|    | Intervention  | Intervention   | Indicative Costs   | Time scale     |
|----|---|--|--|----------------|
| 1A | Removal or reduction of vehicular traffic from Cavendish Street                                 | <ul style="list-style-type: none"> <li>Minimal interventions (signage, change to road markings, legal costs)</li> <li>Series of extensive interventions (e.g. new pedestrianised area with cycle lanes, street planting, benches, other public realm interventions)</li> </ul> | Further study required   | M – L<br>M – L |
| 1B | Improved pedestrian crossing facility at Bradford Road / Cavendish Road intersection            | <ul style="list-style-type: none"> <li>Install single stage puffin crossings across Bradford Road</li> <li>Reconfigure junction to reduce number of lanes/slip roads</li> <li>Widen footway (reduction of carriageway width)</li> </ul>  | c. £50 – 60k<br>Further study required<br>Further study required | M<br>M<br>M    |
| 1C | Restrict access to side roads along North Street and install continuous footway / modal filters | <ul style="list-style-type: none"> <li>Modal filters at side roads (bollards)</li> <li>Continuous footway at side-roads</li> </ul>   | £150-£350 per bollard<br>£10k-£20k side road                     | M<br>M         |
| 2A | Improved pedestrian crossing at North Street / Cavendish Street / Highfield Lane intersection   | Install single stage puffin crossings across North Street and Cavendish Street   | c. £50k-£60k per crossing  | M              |
| 2B | Improved Hanover Street and Sainsbury's access side road crossings                              | <ul style="list-style-type: none"> <li>Installation of raised table crossings and altered road markings at two side roads</li> <li>Build outs to reduce junction width / turning radii</li> </ul>  | c. £15k per crossing<br>Further study required                   | S - M<br>S – M |
| 2C | Install zebra crossing on Cavendish Street at site of current courtesy crossing                 | Install zebra crossing   | c. £20k-£35k   | S              |
| 2D | Improve back streets parallel to North Street for walking and cycling                           | <ul style="list-style-type: none"> <li>Various public realm interventions</li> <li>Installation of implied zebras (currently being trialled nationally)</li> </ul>   | Further study required<br>Further study required                 | S<br>S         |
| 3A | Wayfinding  | Install comprehensive wayfinding   | c. £1k per finger post   | S – M          |
| 3B | Installation of raised table pedestrian crossings at side roads                                 | Installation of raised table crossings and altered road markings at side roads   | c. £15k per crossing   | M              |

# Bradford Draft Local Cycling and Walking Infrastructure Plan – Phase 1

## Supporting information

# Existing Cycle Network



# Cycling – principles of design

**Core Design Outcomes** are well established principles for cycling infrastructure set out in Government's LCWIP guidance, which have informed the proposed infrastructure improvements and associated cost estimates, to ensure that proposals meet the appropriate quality of infrastructure provision needed to increase cycling. These Core Design Principles have been used to shape the development the proposals in this summary document.

A set of principles for walking and cycling design is being developed locally by West Yorkshire partners which will inform the basis of further development of the schemes identified through this LCWIP.

|                    |   |
|--------------------|---|
| <b>Coherent</b>    | The network must be coherent: it must link all the places cyclists want to start and finish their journeys with a route quality that is consistent and easy to navigate. Abrupt changes in the level of provision for cyclists will mean that an otherwise serviceable route becomes disjointed and unusable by the majority of potential users   |
| <b>Direct</b>      | <p>Routes for cyclists must provide direct and fast routes from origin to destination. In order to make cycling preferable to driving, routes for cyclists must be at least as direct – and preferably more direct – than that available for private motor vehicles.</p> <p>And indirect route for cyclists may result in some of them choosing the more direct, faster route, even if it is unsuitable for cycling.</p>                        |
| <b>Safe</b>        | Cycle networks must not only improve cyclists' safety, but also their feeling of how safe the environment is. Consideration must be given to reducing the speeds of motor vehicles to acceptable levels, particularly when cyclists are expected to share the carriageway. The needs for cyclists to come into close proximity and conflict with motor traffic must be removed, particularly at junctions, where the majority of crashes occur. |
| <b>Comfortable</b> | Smooth surfaces, with minimal stopping and starting, without the need to ascend or descend steep gradients and which present few conflicts with others users creates comfortable conditions that are more conducive to cycling. The presence of high speed, high volume motor traffic affects both the safety and the comfort of the user.  |
| <b>Attractive</b>  | Cyclists are more aware of the environment they are moving through than people in cars or other motor vehicles. Cycling is a pleasurable activity, in part because it involves such close contact with the surroundings. The attractiveness of the route itself will therefore affect whether users choose to cycle.  |

# Cycling provision - Definitions

The definitions provided below for different types of cycle route provision identified in the Programme of Improvements are taken from Government's LCWIP guidance and research commissioned by the Department for Transport.

## Segregated cycle route, on highway

Referred to as Cycle-Superhighway in guidance. An extended cycle route that enables direct, rapid, safe cycle trips largely segregated from traffic along an arterial route e.g. a 10km route following an A-road from outer suburbs to a city centre.

Typical features:

- Physically protected segregation from traffic and pedestrians for much of the route, using kerbs, paving level differences or other physical means.
- Sufficient width to accommodate large flows of cyclists.
- Cyclist priority at side roads with speed tables to slow cars. • Clearway orders to prevent parking in the cycle lane.
- Cyclist 'bypasses' to the rear of bus stops forming passenger waiting 'islands'.
- Dedicated cycle crossing facilities across major roads, signalised where necessary.
- A feeling of safety so that unconfident cyclists feel comfortable using the route

## Mixed cycle route

Referred to as "Mixed Strategic cycle route" in guidance. An extended cycle route to facilitate cycling along a strategic corridor, comprising a mixture of: signed route without dedicated lanes along quieter roads; on-road lanes without physical segregation; physically segregated cycle lanes along busier roads; marked cycle routes away from roads where such alignments are available.

Typical features:

- Continuous clear signage from one end to the other.
- Routing and provision of segregation and crossings so the whole route can be cycled without encountering major obstacles or having to battle with fast traffic on a busy road.
- Deviations from the fastest most direct route to follow parallel quieter roads or paths through parks and green corridors.
- Speed restrictions such as 20mph zones and traffic calming.

## Toucan Crossing

A Toucan crossing is a shared signal-controlled crossing for pedestrians and cyclists, linking cycle track and pedestrian routes on opposite sides of a carriageway

Sources: LCWIP Technical Guidance, Department for Transport, 2017  
Typical Costs of Cycling Interventions, Transport for Quality of Life (for DfT), 2016  
Local Transport Note 2/95 "The Design of Pedestrian Crossings", Department for Transport 1995

# Walking principles of design

The **Core Design Outcomes** are well established principles for cycling infrastructure set out in Government's LCWIP guidance, which have informed the proposed infrastructure improvements and associated cost estimates, to ensure that proposals meet the appropriate quality of infrastructure provision needed to increase cycling.

|                       |   |
|-----------------------|---|
| <b>Comfort</b>        | Footways level and in good condition, with no trip hazards.   |
|                       | Footway widths generally in excess of 2m effective width  |
|                       | Width on staggered crossings/pedestrian islands/refuges able to accommodate all users without 'give and take' between users or walking on roads. Widths generally in excess of 2m to accommodate wheel-chair users. |
|                       | No instances of vehicles parking on footways.   |
|                       | Clearance widths generally in excess of 2m between permanent obstructions.  |
| <b>Directness</b>     | Footways are provided to cater for pedestrian desire lines (e.g. adjacent to road).   |
|                       | Crossings follow desire lines.  |
|                       | Crossing of road easy, direct, and comfortable and without delay (< 5s average).  |
|                       | Crossings are single phase pelican/puffin or zebra crossings.   |
|                       | Diagonal crossing (pedestrian and all-green phase) available at intersections   |
|                       | Green man time is of sufficient length to cross comfortably (presume 0.8m/s)  |
| <b>Coherence</b>      | Walking network developed to link key trip generators, public transport and residential areas   |
|                       | Adequate dropped kerb and appropriate tactile paving provision.   |
|                       | Comprehensive wayfinding with walking times installed throughout core walking zone and along key routes   |
|                       | Footway and crossing materials consistent throughout core walking zone and along key walking routes   |
| <b>Safety</b>         | Appropriate formal crossing points installed at all major road crossings  |
|                       | Continuous network of footway available throughout core walking zone and along key walking routes   |
|                       | Appropriate street lighting installed along all key routes  |
|                       | Footway network maintained to avoid trip hazards  |
|                       | Traffic calming measures in place in areas of higher pedestrian vulnerability e.g. schools, residential care homes, hospitals etc   |
| <b>Attractiveness</b> | Footway and street furniture maintained to a good standard (clean, safe and accessible)   |
|                       | Regular litter and waste collection to ensure clean street  |
|                       | Planting and greenery installed where possible, also to provide shade   |