

Appendix 1

Planning the strategic cycle network

a) Identify journey origins and destinations

Origins

To understand where people in the West of England start and end their journeys, regardless of travel mode, a network of points was plotted on maps to represent journey origins from: established residential neighbourhoods at the time of 2011 census; major housing developments since 2011; and proposed major housing growth areas.

Destinations

The LCWIP aims to enable cycle journeys which can reach a wide range of destinations.

The DfT's technical guidance suggested that for large geographical areas (such as the West of England) it may be appropriate to only use the most significant trip generators. Destination categories and specific destinations were selected based on their likely trip generation potential. Since the LCWIP is strategic in nature, some types of destination were omitted for the larger urban areas (Bath, Bristol and Weston-super-Mare). The destination categories used to plan the cycle network are listed below.

Destination categories	Large urban areas (Bath, Bristol. Weston-super-Mare)	Other Plan areas
City centre/town centres/district centres	City and town centres (Bristol and Bath); Town and district centres (Weston-super-Mare)	Town centres District/local centres (North Somerset only)
Key employment areas – current and future (additional to above destination)s	Selected strategic employment locations only	✓
Major out-of-centre retail	Selected major out-of-centre retail parks only	Supermarkets and out-of-centre retail parks only
Major education facilities	Colleges and universities	Colleges and secondary schools
Hospitals	Major hospitals	All hospitals
Selected major visitor attractions	✓	✗
Transport interchanges) additional to the above destinations	Rail stations and bus stations	Rail stations
Strategic greenspace	✓	✗

✓ Included in methodology ✗ Not included in methodology

b) Connect origins to destinations

Three methods were used to identify strategic cycle corridors which would connect origins with destinations.

- analysis of corridors with the highest forecast future cycle commuting flows using the DfT's web-based analysis tool, the Propensity to Cycle Tool ;
- analysis of corridors likely to have significant travel demand for short-distance trips to a range of destinations. Each origin point was connected to strategic destinations referred to above within 5km and trends identified from the resultant maps; and
- a review to ensure a coherent strategic network for the full plan area. Additional strategic corridors may be identified in subsequent iterations of the LCWIP.

As directness is an important factor in the suitability of cycle routes, the origin-destination connections were shown as straight-line corridors.

c) Run prioritisation process to choose corridors for initial development

An early sifting exercise was developed to produce more manageable number of routes to be progressed to the route selection and route audit stage. A range of criteria were used to determine priority routes and included data on deprivation, student numbers at education sites, future jobs and dwellings, recorded road collisions, existing cycle trips using the corridor, the potential growth in cycling trips in the corridor and likely sub-regional benefits.

Top-scoring corridors from each area were chosen to ensure balanced coverage across the West of England. The intention is for the other corridors to be progressed as funding allows.

d) Map strategic cycle corridors to most direct existing routes (route selection)

The LCWIP technical guidance highlights that the clear preference will usually be the most direct route between the origin and destination. Local knowledge and online cycle route planning tools were used to map desire lines to existing routes. In some locations a significant deviation was required to reach the nearest road, railway or river crossing; the potential for new crossings was also noted.

e) Undertake cycle route audits

Route audits were undertaken to assess the broad suitability of each prioritised strategic cycle routes and considered how suitable routes currently are for cycling, and to consider possible improvements. The auditing process followed the process outlined in the technical guidance and used the tools developed by the DfT for the purpose. Routes were divided into sections with similar characteristics and scored against five design criteria (directness, gradient, safety, connectivity and comfort). These were given a score out of 5 (where 0 represented least suitable routes and 5 represented most suitable). Junctions which were considered to have characteristics hazardous to cycling were also identified (described as 'critical junctions').

f) Define cycle routes for development and identify key improvements required

The LCWIP technical guidance outlines that the aim is to identify cycle routes which score 3 or above against each design criteria (or could be improved to score 3 or above), ideally with no critical junctions. Improvements were identified for poor scoring sections, or in some cases alternative routes recommended which would achieve higher scores.

Road space is shared between different transport modes and uses. Catering for these different demands can be particularly challenging in dense urban environments. In some locations achieving a

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cycle route audit score of 3 or above would only be possible if protected cycle tracks were constructed using road space currently given to other uses (e.g. bus lanes). In certain instances it was considered that such a reallocation of space may not be deliverable. However, determining an appropriate balance between space for different transport modes is a decision for elected members taking into account stakeholder views.

Planning the strategic walking network

a) Define Core Walking Zones and Identify Key Walking Routes

The DfT's technical guidance states that, in planning for walking, local authorities should identify Core Walking Zones and Key Walking Routes. In the West of England, the Core Walking Zones were largely based on town and district centres to give balanced coverage across each urban area. Key Walking Routes were identified within a 1km radius of each Core Walking Zone.

The West of England's two city centres (Bath and Bristol) have received significant investment to upgrade pedestrian infrastructure, and strategies are either in place or being developed to continue this delivery. As a result, these areas are designated as Core Walking Zones but have not been audited.

b) Choose Key Walking Routes for initial development

A selected number of routes serving each Core Walking Zone were chosen to ensure a manageable audit workload. The intention is for the remaining corridors will be progressed as funding allows.

c) Undertake walking route audits

Audits were undertaken to assess the broad suitability of each prioritised Key Walking Route. The audits ascertained whether routes are currently suitable for cycling, and if not, what needs

to be improved. The auditing process followed the process outlined in the technical guidance and used the DfT's Route Selection. Routes were divided into sections with similar characteristics and scored against the twenty criteria grouped into five themes (attractiveness, comfort, directness, safety and coherence). These were given a score on a 3-point scale (where 0 represented poor provision and 2 represented good quality provision).

d) Identify key improvements required

The LCWIP technical guidance outlines that a score of 70% (28 out of 40 points) should normally be regarded as minimum provision. For every prioritised Key Walking Route, the audit results were used as a prompt to consider interventions which would improve the quality of pedestrian infrastructure.

Activities common to cycle and walking network planning

After planning the strategic walking and cycling networks, cost estimations for the proposed improvements, and prioritising these improvements took place.

Estimate the cost of improvements

High-level construction costs were estimated for each improvement to understand the broad scale of funding required to deliver all of the priority routes. Pricing estimates were derived from local case studies and recognised UK sources (including publications by Transport for Greater Manchester and Transport for London). The construction cost estimates allowed for whole route costs to be estimated. The estimates relate to construction costs only and do not include allowances for the cost of design, utilities, inflation, risk/contingency, optimism bias and any third-party land purchase (if required). All potential improvements are subject to further study, feasibility and consultation.

Prioritise the improvements

It is anticipated that a range of funds of will be used to deliver the LCWIP improvements. The scope and objective of the funding stream will determine which improvements are prioritised and delivered in the short, medium and long term.