

Active Travel Infrastructure Guide

At the appointment of the Active Travel Programme Director and Commissioner, it was decided not to issue a technical design guide as it would go out of date quite rapidly and take a lot of time and resources to create. The commissioner and programme director therefore have set out design principles based on the commissioner's pledges and some of the commonly recognised short falls of cycling and walking infrastructure. These have been circulated to partner authorities and commented on, this version is presented in preparation for an MCA decision in summer 2020.

This guide notes the following: -

Active Travel Commissioner's Pledges

1. We will be led by our communities
2. We will enable walking and cycling not encourage it
3. All our infrastructure will meet or exceed our minimum requirements
4. All our infrastructure will be accessible to all

Infrastructure we fund must meet minimum criteria, it will not:

- Mix active travellers with high speed or large amounts of traffic
- Disappear at junctions
- Narrow at pinch points
- Be illegible or have confusing signage and wayfinding
- Delay or disadvantage active travellers at crossings
- Have vehicles parked on it
- Be poorly maintained or feel unsafe

The SCR Transport Board also agreed to creating a set of minimum standards for active travel infrastructure at their July 2019 meeting. These were proposed to include:

1. Continuous minimum widths for cycle tracks to include 3 and 4-wheel cycles and for footways to include wheelchairs.
2. Separation of footways and cycle tracks from high volumes of traffic, high vehicle speeds (above 30mph) or significant amounts of large vehicles.
3. Separation of highway footways from cycle tracks for significant distances. Shared use only to be used for placemaking and some off-road routes.
4. Clear priority for active travel routes at junctions, continuing cycle tracks and footways straight across side roads and reducing crossing times.

These basic standards are proposed primarily to reduce the actual and perceived danger that deters active travellers, but also to reduce the everyday delays and disadvantage that they suffer. The standards are also aimed at ensuring that the network is fully accessible.

This document only contains a basic set of principles for the design processes. There are wider technical details that we expect by national guidance in Local Transport Note 1/20 (LTN 1/20 which will replace LTN 2/08 in summer 2020).

Allowable exceptions are included in this note, and beyond this, exceptions will be referred to the Active Travel Programme Board. Where new precedents are being set the process should include the Active Travel Advisory Board, if consensus cannot be reached, decisions will be passed up to the SCR Transport Board, and the Active Travel Commissioner's view will be included.

Location

The first and most important part of designing for active travel starts with a recognition of the location that is being designed for. There are neither a set of clear street archetypes in the region, nor a vehicle speed and volume matrix, which are often the start point for these considerations. London’s street types are shown in Figure 1 (<https://tfl.gov.uk/info-for/boroughs/street-types>) and an example of a speed and distance matrix in **Error! Reference source not found.**

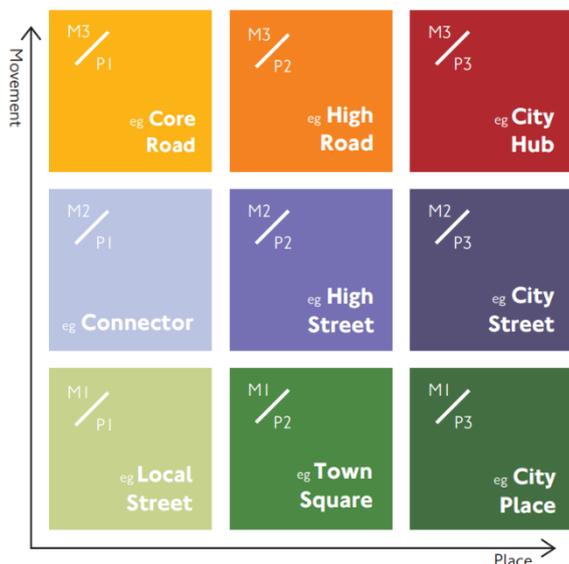


Figure 1 [London Street Types](#)

An added complication is measuring speed and volume. For traffic volumes, Passenger Car Units (PCU) can be used for vehicle flows as they measure the space taken by vehicles, although vehicles per hour (VPH) or per day (VPD) is often used. For instance, a VPD above 3000 would suggest segregating cyclists ([Greater Manchester Cycle Design Standards](#) GMCDS). However hourly flows are often important because some streets have high peak flows with very little other traffic. A peak value above 300 VPH would suggest segregating cyclists (GMCDS – as above).

Traffic speed is often equated to the speed limit, although the 85% percentile speed is also used – which is the measured speed below which 85% of the vehicles are travelling. Setting speed limits has to be performed hand in hand with other measures to reduce speeds, as in themselves, speed limit signage and TROs will not necessarily reduce measured speeds.

Vehicle Type	PCU Value
Pedal Cycle	0.2
Motor Cycle	0.4
Passenger Car	1.0
Light Goods Vehicle (LGV)	1.0
Medium Goods Vehicle (MGV)	1.5
Buses & Coaches	2.0
Heavy Goods Vehicle (HGV)	2.3
Articulated Buses	3.2*

* Recent research conducted for TfL has suggested this to be an appropriate PCU value for articulated buses³⁶.

Collecting data during the planning of schemes both serves the purpose of creating an accurate picture of existing use and setting baseline monitoring. In SCR often, the baseline numbers of active travellers are very low, and the uplift in active travellers is hard to forecast. One of the key issues is to understand the suppressed demand - those who would travel actively if the infrastructure is changed. We suggest that the current state of cycling in Sheffield City Region is suppressed because of the fear of road danger and poor behaviour for vehicle users and that our standards are therefore higher than some of those

quoted.

Figure 3 [PCU values](#)

Table 3: Flow/Speed Lookup Table

Flow	85 th percentile speed			
	Very Low (<20 mph)	Low (20 to 30 mph)	Medium (30 to 40 mph)	High (>40 mph)
Very Low (<1,500 vpd, or 150 vph)	Quiet Street	Quiet Street	Cycle lanes	Cycle lanes or tracks
Low (1,500-3,000 vpd, or 150-300 vph)	Quiet Street	Quiet Street or Shared Use	Cycle tracks or lanes	Cycle lane or tracks
Medium (3,000-8,000 vpd, or 300-800 vph)	Cycle tracks or lanes	Cycle tracks or lanes	Cycle tracks or lanes	Cycle tracks
High (8,000-10,000 vpd, or 800-1,000 vph)	Cycle tracks or lanes	Cycle tracks or lanes	Cycle tracks or lanes	Cycle tracks
Very High (> 10,000 vpd)	Cycle tracks or lanes	Cycle tracks or lanes	Cycle tracks or lanes	Cycle tracks

Figure 2 Vehicle Flow and Speed matrix GMCDs

Standard 1 – When to segregate

We require that place and movement functions are considered as part of active travel solutions. This should be evidenced with movement data and a narrative on the place function or street type.

We require all active travel provision to be segregated where the speed limit is above 30 mph or vehicle flows are above 250 VPH (300 PCU per hour). We also require segregation on bus routes or where a significant number of large vehicles are present (>6 HGV per hour). Marked cycle facilities may be not needed where the vehicle flow is below 1000 vehicles per day (LTN 2/08).

We require that pedestrians are separated from cycle traffic on urban routes.

Exceptions –

There may be some exceptions to separating pedestrians and cyclists for off highway routes and others (for instance some rural settings) – these will be looked at on a case by case basis.

Short sections (<200m) of shared use footway (over 3 m wide) will be allowed, although a narrative should be available as to why this is being used.

Lane widths

There are two important considerations for active travel lane minimum widths, the pledge that all infrastructure will be accessible, and that we want to allow active travellers and pedestrians to overtake or continue a journey together. The reason for continuous widths to be specified is that if one section is inaccessible to 3 or 4 wheeled cycles, disabled vehicles (including wheelchairs) and accompanied walkers, the whole route is likely to disadvantage them. There are a very large variety of vehicles to be considered, and there needs to be some additional space to allow the user to manoeuvre. Lane widths can also be effectively narrowed by the proximity of walls or boundary fences, vegetation and street furniture.

One additional consideration is if the active travel facilities are away from the highway, or off-road routes. It has been customary practice to upgrade canal towpaths, riverbanks and some other

facilities for a variety of users. In many cases this is designated as shared use, although there are also several classifications, including footpaths, bridleways and cycle tracks.

Although the values are minimum widths, where there are large numbers of active travellers, wider facilities will be required.

Standard 2 – Lane widths and constrictions

We require continuous widths for on highway active travel facilities of:

2m for uni-directional cycle tracks (widely accepted including LTN 2/08)

3m for bi-directional cycle tracks (widely accepted)

2m for footways (clear of street furniture – advice from Living Streets)

Barriers that make the route inaccessible for legitimate users will not be used

Exceptions

Short sections (<50m) of footway and active travel lanes will be allowed at 90% minimum width

Case by case exceptions will be considered where for instance facilities are off highway or the total available highway width is constrained.

Route Continuity & Directness

In many cases active travel routes divert users around junctions to avoid conflict with, or delays for, vehicular traffic. Currently shared use footways and many cycle tracks stop at each junction give way to vehicular traffic. Most major junctions are engineered to optimise vehicle flow and to offer infrastructure protection for vulnerable road users, and this often results in large deflections for active travellers and waiting to cross in multiple stages. Optimising vehicle flows often means giving turning traffic a separate lane and this results in the roads flaring out at the junction head so the distance (and therefore time) to cross increases dramatically.

Standard 3 - Surface & Route continuity

We require our cycle provision to continue directly across junctions. If traffic volume is so high to make this impossible, signals or grade separation should be considered.

In urban situations that are part of the highway we would expect surfaces to be paved or of a machine laid sealed surface. The surface should also be skid resistant, drain freely and have a polished stove value (PSV) of 55 or above ([London](#) and [Birmingham](#) cycle design guidance).

We require active travel routes to continue across side roads without give way markings or for footways without implicit give way (enforcing Highway code rule 170). We would expect some physical continuation of the footway and active travel lane through surface treatment.

We will not routinely use guard railing for active travellers.

We will not use 'Cyclist Dismount' signs even at road works. Where route implementation comes to an end, we expect some consideration to be given as to how active travellers will continue their journey.

We advise that automated counters should be routinely provided for all active travel lanes that are 500m or longer, and regular pedestrian surveys or counting should be undertaken on walking routes.

Exceptions

Where a route is awaiting a development or major junction change, temporary routes will be considered although written assurance that the route will be made good will be expected.

For routes that are not part of the highway or in rural situations we would prefer a sealed surface (preferably tarmac) as this has greater longevity and protects the investment longer. We would expect exceptions to this to be dealt with on a case by case basis.

If guard railing is planned, a clear narrative should be provided as to why.

Crossings

The flows and signal timings at junctions are a key consideration, and to do this effectively accurate data should be available for all modes. Although signal timings are routinely set with all users in mind, often active travellers cross in multiple stages collecting significant delays to their journeys. We would expect planning to include catering for the release of suppressed demand for active travel, and high numbers of children, elderly or disabled users. Signal timings should give sufficient time for any expected user to complete their crossing.

Standard 4 - Crossings

Active travellers on will not have to wait more than 30" (maximum time from stage demand to green signal - 30" is based on living streets research). For more complex junctions see exceptions.

We require walking routes to cross a road in a single movement or signal phase, ideally continuing along the 'desire line'. All crossings will have minimal upstands for active travellers (50mm or less), contain tactile paving and be accessible for all.

We would like some crossings to be implemented with instant response to active traveller demand (at least in some circumstances).

Junctions must ensure sufficient green time for all active travellers to complete their crossing.

Exceptions

These standards will be difficult to achieve on more complex junctions but for active traveller wait times of more than 60 seconds a detailed commentary of the reasoning should be submitted with options.

If junctions are carrying a volume of traffic that makes crossing times, or crossing in a single movement difficult, grade separation should be presented as an option.

Exceptions will be dealt with on a case by case basis.

Guidance

We are still awaiting government guidance, and this is of high importance as it was made a condition of accepting TCF funding.

We also accept that local authorities will have their own guidance that they follow and provided it doesn't conflict with, or lower the above standards or national guidance, authorities are encouraged to develop guidance and innovative solutions. We anticipate that the ATPB and ATAB will be involved in these processes, as it is an integral part of developing solutions to infrastructure issues.