CMbike
Central MeetBike

Fact Sheet H-05 – Situations of Special Interest

One-way streets

As a result of safety research, cyclists should, in general, be allowed to use one-way streets in both directions. This provides shortcuts and avoids detours. Regulations within a city should be consistent in similar situations in order to improve recognition.

In speed 30 zones, two-way cycle traffic should preferably ride in mixed traffic on one-way streets. Carriageway widths should be ≥ 3,00 m with sufficient passing opportunities (e.g. gaps in parking lane). For higher car volumes and carriageway widths, advisory lanes against the flow of motor vehicles can increase drivers' awareness of two-way bicycle traffic. Curves can be problematic, since motorists often drive on the inside of the curve and thus into the path of oncoming cyclists. Sight-lines should be facilitated by keeping curves free of parking. In exceptional cases (e.g. large numbers of cyclists or along bus routes), a cycle lane or path may be provided.

At intersections, good visibility needs to be maintained by prohibiting parking in the area adjacent to the junction. At right-of-way intersections, the presence of two-way cycle traffic should be made clear through the use of signage and road markings.

For one-way streets in the main road network with speeds ≥ 50 km/h, cyclists should be provided a physically separated cycle path (with the same intersection safety issues as two-way bike paths, see Fact Sheet H-03) or a bicycle lane clearly separated from car travel lanes. Bicycle lanes should not be located between parked cars and the kerb for reasons of safety (visibility).

One-way street with two-way cycle traffic permitted (source: Kevin Vincent)

Gradients

Cyclists riding uphill require more space because they tend to sway at slower speeds. In addition, due to a greater speed differential between cyclists and cars on inclines it is recommended in this case that cyclists be separated from car traffic (e.g. shared bicycle and pedestrian path). On declines, cyclists can reach higher speeds and therefore need more space in curves as well as greater separation from pedestrians (e.g. cycle lane on carriageway).

Street section with narrowed width

For short street segments up to 50 m long, where road width is narrowed due to space restrictions (e.g. at railway bridges), cycling provision may need to change. Transitions between forms of cycling provision should generally not exceed one step downward on the following list:

Cycle track/cycle lane → advisory lane → mixed traffic with cars or pedestrians.

For example, if a cycle lane is available either side of the narrowed segment, it is recommended that the cycle lane transition into an advisory lane. This ensures as much continuity for the chosen type of cycling facility as possible. The transition from one type of cycle provision to another should begin 20 m to 30 m before the narrowed segment.

Tram tracks

For streets with embedded tram tracks, there is a risk of cyclists getting caught in the tracks and falling. Therefore cycling provision on the tracks should be avoided or limited to short distances, which requires that sufficient space for cyclists be provided on the carriageway next to the clearance zone of the tram (equal to the tram width). If tracks have to be crossed by cyclists, angles should not be less than 45°.

Public transport stops

At public transport stops, the type of cycling provision depends on the type and position of the transit stop.

The three main forms of **bus stops** are bus capes (boarders), bus stops at the kerb and bus bays (lay-bys). Mixed traffic, advisory and cycle lanes avoid

conflicts between cyclists and passengers and are therefore well suited for all three bus stop forms. At bus bays, cycle lanes should be suspended to allow cyclists to overtake stationary buses.

Tram stops on the carriageway can also be divided into three forms: stops in the centre of the carriageway with no special infrastructure, raised carriageway (for barrier-free boarding) and tram cape. Mixed traffic, advisory and cycle lanes are well suited for stops without additional infrastructure and for raised carriageways, since cyclists can continue along their desired line without having to cross tracks. Sufficient space for cyclists should be available between the tram and kerb, however cyclists must be aware of and give priority to transit passengers.

At public transit capes, an advisory or cycle lane on the carriageway can transition into an elevated cycle lane (see Best Practice) between the waiting area and the kerb. Pictograms and surface material should clearly indentify the cycle lane. A safety buffer with a width of 0,50 m to 1,00 m should separate the cycle lane from the kerb.

The design of off-carriageway cycle facilities at transit stops depends on the amount of available space. If there is enough space (≥ 7,00 m), a cycle track can maintain its width while being led behind the passenger waiting areas. This is often the case at bus and tram capes, where the available space adjacent to the carriageway is increased by building out the kerb. Visibility between cyclists and waiting passengers must be ensured, e.g. by making any fixed objects, like bus shelters, transparent.

Where space is limited, there are generally four possibilities: combination of boarding area with waiting area, reduction of cycle track width to 1,00 m (for max. 50 m), transition of cycle track into a shared-use path and combination of boarding and waiting area with a shared-use path. In all cases there should be a clear change in materials used so that cyclists are alerted to waiting passengers.

For widths ≤ 4,60 m, the only possible type of cycle provision is a shared-use path adjacent to a combined boarding and waiting area. Because of the high potential for conflict between cyclists, pedestrians and passengers, this should only be implemented in exceptional cases where there are low passenger numbers.

Best Practice: Leipzig tram capes

A study of two tram capes with elevated cycle lanes in Leipzig found that the cycle lanes were easy to recognize due to the use of bicycle pictograms as well as differences in material and the presence of cyclists. Over 90 % of waiting passengers had never had a physical conflict with cyclists (n=234). [Ahrens et al. (2009)] In general, the costs of crashes have been found to be lower when cyclists are directed in front of the waiting area as opposed to behind, since cyclists are forced to ride more cautiously in the conflict area [Baier et al. (2007)].

Cycling at construction sites

Cyclists should have continuous provision around construction sites and not be forced to dismount. In general, provision for cyclists at construction sites depends on provision leading up to the site.

In mixed traffic, no special provision is necessary. If the carriageway is wide enough, advisory and cycle lanes can continue around the construction site (min. width 1,25 m and 1,50 m respectively). If space is limited, cyclists can be directed to mix with traffic. Temporary warning bollards should always be used to narrow the car travel lane and protect cyclists.

For off-carriageway facilities, cyclists may need to be directed onto the carriageway for a short distance. Transitions between kerb and carriageway should be smoothed with an asphalt ramp and minimum dimensions need to be considered: Cyclists should always have a minimum width of at least 1,00 m (cycle track). Where cyclists and pedestrians are to share space, a minimum width of at least 1,50 m is recommended.

Elevated cycle lane at tram stop in Leipzig (source: Radka Žaková)

Lessons learned: Special situations concerning cycle provision arise through one-way streets, narrowed road segments, streets with gradients, the presence of tram tracks (falling hazard), and at public transport stops (conflict between cyclists and passengers) and construction sites. Each situation may require a change in cycle provision, additional space for cyclists (inclines) or narrowed facilities (min. width ≥ 1,00 m). Solutions should be consistant and easy to recognize and comprehend.

For further resources, links and best practice examples visit the Sustainable Urban Transport Project website: http://www.sutp.org/

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