



Best practice bicycle safety – improvement fact sheet

Types of facilities: mixed with motorised traffic and / or pedestrians

Overview

Mixed traffic of cyclists and **motor vehicles** can only be recommended on roads with **low volumes of traffic** operating at **low speeds**. To avoid collisions with opening car doors and discouraging dangerous overtaking manoeuvres by motor vehicles, **bicycle or sharrow pictograms** to indicate the shared use of a street and imply a safe trajectory choice for cyclists can be used (see also Factsheet “Signs and Markings”) [1]. Likewise, mixing cyclists and **pedestrians** on a shared facility can only be recommended in case of low volumes of pedestrians and cyclists, when road space does not allow for separated facilities, and cycling in mixed traffic on the carriageway is not an option.





Cycle streets

Cycle streets are a fairly recent type of cycling infrastructure where **priority is given to cyclists**. The implementation of a cycle street is recommendable along major cycling routes if a **high volume of cyclist traffic** (i.e., more than 50% cycling share, at least in summer) and **relatively low motor traffic loads and speeds** are to be expected. The concept implies that **entry restrictions, one-way regulations and speed limits for motor vehicles** may apply, and cars must **give way** to cyclists, whereas cycling is usually **allowed in both directions**, using the full width of the road. For homogenous cycling speeds and safety, it is advisable to give priority to cycle streets. They are usually marked with road signs and large bicycle road pictograms on the carriageway [2].

Cycle lanes

Cycle lanes are facilities **marked on main carriageways, without level changes**, usually adjacent to the first driving lane for motor vehicles, and next to a pedestrian sidewalk or a parking lane. They are usually marked with **solid edge lines** and can be reinforced e.g., by painted cycling pictograms and directional arrows. The regular minimum width of cycle lanes should be around 1.5 metres [5]. Higher widths are required for main bicycle routes, or if permitted speed for motor vehicles is higher than 50 km/h, or for cycling lanes alongside kerbside, perpendicular or angle parking lanes [4]. As for cycle tracks, collision rates are usually **higher at junctions than on stretches**. Cycle lanes will only unfold their positive impact on **safety and comfort** if they are always kept free **of flowing and parked motor vehicles**. It is advisable to **paint**, e.g., in red, the surfaces of cycle lanes **on potential conflict points**, such as with turning or joining motor vehicles or pedestrians.

Characteristics

Measure	Costs	Treatment life	Effectiveness
Cycle Street	€€€	⌚⌚⌚	
Cycle Lane	€€€	⌚⌚⌚	
Edge-Lane / Advisory Lane	€€€	⌚⌚⌚	
Shared space	€€€	⌚⌚⌚	



Edge lanes / advisory lanes

Edge lane roads (also depicted as “2 minus 1 roads”) are road configurations which usually allow **two-way traffic, for both motor vehicles and bicycles**. They are typically applied on **low volume roads**, and where the provision of other cycling facilities (cycle paths or cycle lanes) is not affordable or unfeasible for other reasons. They are used in **urban areas** in several countries, but have successfully been applied also in **rural settings**, e.g., in Denmark and the Netherlands. The **core lane for motor vehicles** can be **narrower** than normal driving lanes. **Passing motor vehicles are allowed to use (parts of) the edge lane** in case no cyclists are endangered. When applied in rural areas, typical speed limits for motor vehicles are 60 or 70 km/h, and the 2 minus 1 configuration itself can be seen as a measure of speed management for motor vehicles. Edge lanes should have a minimum width of 1 metre. For more information see e.g., <https://cyclingsolutions.info/edge-lane-roads/> [23.01.2021]




Shared space with pedestrians, E-Scooters etc

Shared (cycle and pedestrian) paths should only be foreseen for facilities where **low volumes of pedestrians and cyclists** can be expected, when **road space does not allow for separated facilities**, and **cycling in mixed traffic on the carriageway is not an option**. They are **not recommended in densely populated urban areas** [3]. On shared paths, it is advisable to assign separate space for the two modes, however, not only by classical edge lane markings but by a tactile separation which can be sensed by people with handicaps, e.g., a level change of ~3 cm, or a strip of cobblestone.

Implementation benefits

	<p>Increase in the overall cyclist safety</p>
	<p>Decrease in vehicle conflict points</p>

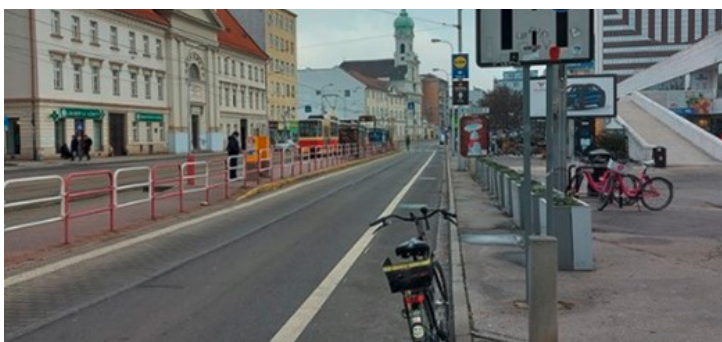
Implementation issues

	<p>High cost of certain countermeasures</p>
	<p>Possible issues with additional space availability for certain countermeasures</p>
	<p>Possible increase in motorised traffic congestions</p>

Examples:



Cycle Street in Austria [7]



Cycle Lane in Slovakia [8]



Advisory lane in Hungary [6]



Pedestrian and bicycle lane along the roadway in Ruse, Bulgaria: The lanes are wide enough and do not cross with pedestrians.[9]

Related fact sheets

RISKS

- » Narrow infrastructure
- » Speed differences in mixed spaces with pedestrians, E-Scooters etc.
- » Speed differences in mixed spaces with motorised traffic

References and links

1. KfV (2020). Dooring-Unfälle: <https://www.kfv.at/download/20-dooring-unfaelle>
2. DiGiola, J., Watkins, K.E., Xu, Y., Rodgers, M., Guensler, R. (2017). Safety impacts of bicycle infrastructure: A critical review. *Journal of Safety Research*, Vol. 61, pp. 105-119
3. PRESTO (2012). *Cyclists and Pedestrians*. http://www.rupprecht-consult.eu/uploads/tx_rupprecht/07_PRESTO_Infrastructure_Fact_Sheet_on_Cyclists_and_Pedestrians.pdf
4. BIKESAFE (2014). *Bike Lanes*. In: <http://www.pedbikesafe.org/BIKESAFE>
5. FHWA, Office of Safety (2009). *Transportation Planning Handbook*, Chapter 16: *Bicycle and Pedestrian Facilities*
6. *Danube Cycle Plans*. Picture by jozsanet.hu
7. *Picture repository of KfV (Austrian Road Safety Board)*
8. *Danube Cycle Plans*. Picture by Peter Klučka
9. *SABRINA*. Picture by FPZ

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Contact: Mrs. Olivera Rozi, Project Director, European Institute of Road Assessment – EuroRAP | olivera.rozi@eurorap.org | www.eira-si.eu

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