Best practice bicycle safety – improvement fact sheet

Network issues

Overview

Discontinuous bicycle facilities on cycle routes and a **low directness and connectivity** of cycling network routes, i.e., incomplete cycling network, can disfavour bicycling and might lead to conflicts due to **unsafe or uncomfortable** conditions. Sudden endings of bicycle facilities can be dangerous for cyclists, especially at occasions where the cycling facility ends on the left-hand side of the road with a **large distance to crossing intersections and high traffic volume** and cyclists have to cross the road. Another example is when such endings encourage **detours in unsafe conditions or risky manoeuvres** of cyclists when crossing the road. Accurate numbers of accidents in which cycle network issues have led to accidents are scarce, but studies indicate that an incomplete cycle network is one of the main factors that discourage people from cycling.

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What is the problem and where does it occur?

Discontinuous bicycle facilities on cycle routes are problematic for cyclists as they can not only **deter people from cycling** but also might **lead to conflicts** *[2]*. Such discontinuities in bicycle networks can comprise **sudden endings of cycle paths or on-street bicycle lanes** but also **segments that are not accessible by bicycles** and where cyclists must dismount from the bike to get along the route, i.e., stairs at bridges and underpasses or pedestrian zones with cycling bans. Such route inconsistencies **reduce comfort and directness for cyclists** and can easily **discourage them** *[7]*.

Especially sudden endings of bicycle facilities are **negatively perceived by cyclists** and can be **dangerous**, in particular at instances where **on-street bicycle lanes end and cyclists are forced to merge with motor vehicle traffic**, as well as when the cycling facility ends on the **left-hand side** of the road with **a large distance to crossings or intersections and high traffic volume**, and cyclists have to cross the road *[2, 3, 11]*.

What causes the problem?

Many studies emphasise the importance of a continuous bicycle infrastructure and a high connectivity of cycling network routes for safe and comfortable cycling *[e.g., 1, 2, 6, 10]*. Cyclists prefer direct routes with continuous cycling facilities and without segments where they must dismount from their bicycles to ride along the routes *[1, 7, 11]*.

Since cyclists prefer to ride on a continuous cycling facility, **interruptions** such as **frequent changes in the cycling facility type and interruptions in the infrastructure along the cyclist's path**, i.e., a physically separated cycling facility turning into a designated roadway, result in increased mental pressure, changes in stress and safety level *[4]*. In addition, a low **directness and connectivity** of the cycling network routes, i.e., incomplete cycling networks, can also disfavour bicycling, as routes without direct connections or which include road segments that are not or only poorly accessible for bicycles, i.e., **stairs or pedestrian zones**, might result in **detours and longer trips or an increased travel time** *[1, 9]*. This can also lead to **riding in unsafe or uncomfortable conditions**, e.g., detours on roads without bicycle infrastructure to avoid dismounting at pedestrian paths on the route, or to cyclists **doing risky manoeuvres when crossing busy streets**, e.g., to avoid underpasses which are not or only poorly accessible for bicycles due to stairs *[9]*.

What is the size of the problem?

Exact numbers of accidents in which bicycle network issues like discontinuous bicycle facilities or a low connectivity of cycling network routes were a contributory factor, are hardly available. However, these issues have **negative impacts on cycling levels:** For Perth, Australia, based on a survey with 2,828 participants, *[5]* reports that 43% of the participants stated that the sudden end of the bike paths **stopped them from cycling more often** – the second highest share among the aspects mentioned in the survey. In addition, *[8]* conducted a survey on barriers for cycling in Vienna and indicated that an **incomplete cycle network** was mentioned as the **main barrier for cycling** by the survey participants.

Examples

Sudden end of cycle path at EuroVelo 8 in Croatia [12]

Poorly accessible underpass due to stairs at EuroVelo 9 in Austria [13]

Related fact sheets

SOLUTIONS

- Cycling strategies
- Planning principles
- Overpasses and underpasses
- Organisational measures

References and links

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13. *SABRINA. Picture by FPZ*

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SABRINA: No fears about safety on two wheels.

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