

Bicycle streets and raised intersections

- a literature review

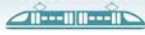
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- Bicycle-prioritized streets give cyclists priority while limiting motorized traffic. Experiences from countries like the Netherlands, Germany, and Belgium show that such streets improve traffic safety, especially when speed limits are set at 30 km/h and car traffic is low.
- Raised intersections and continuous sidewalks reduce vehicle speeds at intersections and improve safety for pedestrians and cyclists by increasing their visibility and forcing drivers to slow down.
- Many drivers do not adhere to speed limits in bicycle-prioritized streets, particularly on wider roads, which can create a sense of insecurity for cyclists, even though there are fewer accidents objectively.
- Narrow lanes, red asphalt, and physical barriers like modal filters are essential for ensuring low speeds and making bicycle-prioritized streets safer and more comfortable for cyclists.

Bicycle-prioritized streets and raised intersections are traffic management measures aimed at improving conditions for cyclists and pedestrians by prioritizing their safety in interactions with motor vehicles. This study examines the effects of these measures on traffic safety and road user behavior, both nationally and internationally. It also reviews how such solutions have been implemented in other countries, and discusses lessons learned that could be applied in Norway.

The literature review is based on searches in several databases, including Google Scholar and TØI's report portal, as well as an analysis of guidelines from different countries. Bicycle-prioritized streets with limited motor traffic were compared to regular streets. Keywords such as "bicycle street," "safety," "behavior," and "accident" were used to find relevant studies. The study also builds on previous literature reviews from TØI.

Bicycle-prioritized streets are designed to give cyclists priority, although motor vehicles are still allowed. The speed limit is typically set at 30 km/h, and in many cases cars are prohibited from overtaking cyclists. Countries like the Netherlands, Germany, Belgium, and France have implemented such streets with different technical requirements for width, speed limits, and traffic volumes. In Norway, the concept is relatively new, but proposals exist for how these streets can be established. In most cases, motor traffic is limited to access to properties, and through traffic is not allowed.



Raised intersections and continuous sidewalks are used to reduce vehicle speeds, improving safety for both pedestrians and cyclists. Intersections are raised to sidewalk level, making pedestrians and cyclists more visible. In addition to slowing down cars, these crossing points are made safer and more comfortable, particularly for pedestrians and cyclists.

The study shows that bicycle-prioritized streets and raised intersections have positive effects on traffic safety, though challenges remain regarding driver behavior. While objective safety, measured in the number of accidents, improves, there are still issues in achieving a high level of subjective safety. Many cyclists feel unsafe, especially in streets with higher speed limits or where cars overtake them in narrow spaces.

One key issue is the width of bicycle-prioritized streets. Research shows that wider streets tend to encourage faster driving, which reduces cyclists' sense of safety. Narrower streets with physical barriers, like cobblestones or red pavement, help to slow down vehicles and make the streets safer for cyclists. However, the width must still allow for safe passage in both directions, to avoid conflicts between cyclists traveling at different speeds or in opposite directions.

There is a need for more research, particularly in Norwegian contexts, to understand how bicycle-prioritized streets can be optimized. Few studies explore both objective and subjective safety, and even fewer have tested these streets over long periods in Norway. Further research should focus on how these measures affect traffic safety, cyclist behavior, and the perception of safety. More comprehensive empirical studies can help tailor solutions for Norwegian cities and towns.