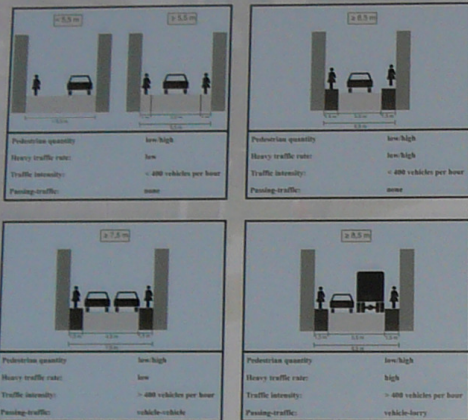




Bottlenecks in Urban Main Roads



Recommendations - Cross-Section



Recommended cross sections for bottlenecks

- at-grade carriageways are designed for a traffic volume under 400 vehicles per hour. These constructions with or without separating elements can be used if the lorry load is low. The side space can be reduced to minimally 1,00 m - but also just for a short length.
- otherwise high-level kerbs should be constructed without passing-chance vehicle-vehicle (width of space > 6,50 m). The lane width for the solution without passing-traffic is determined with 3,50 m. Single lane solutions should be preferred at small traffic loads (< 400 vehicles per hour).
- bottlenecks with passing-traffic should be constructed with low kerbs and can be realised at a lane width of 7,50 m with low lorry-density and at a lane width of 8,50 m in case of a high lorry-volume.
- a design with kerbs requires a minimum width of 1,50 m for the pavement. Residual space should be used for the pavement.

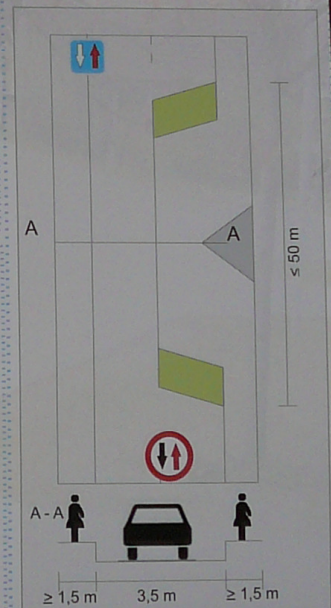
Recommendations - Transition areas of bottlenecks

- need to be designed clearly visible.
- the traffic which has right of way should be guided.
- for the opposite traffic without priority a clear structural displacement has to be arranged to show the waiting obligation.
- the entrance area has to be designed clearly to improve the recognize ability.

Recommendations - Breaking sight distance and longitudinal design

- because the breaking sight distance has to be adhered bottlenecks can only be designed up to 50 m.
- regarding to the longitudinal design it is important to create sufficient breaking sights distance so that both the preferential and the waiting-obligated are able to stop before entering the bottleneck.
- at both sides of the bottleneck the lane width has to be 6,50 m to allow a passing of lorries inside the breaking sight distance.

Recommendations - Example for a bottleneck design



Longitudinal and lateral design of a bottleneck without passing-traffic

