Summary

The space available for traffic is usually limited. But the reason infrastructure upgrades for motorised public transport (MPT) as also for public transport fail is more often high costs than not available space. Therefore, optimal management concepts for traffic on the existing infrastructure are becoming ever more important. Electronic bus lanes provide an opportunity to improve the capacity of existing infrastructure.

In other words, electronic bus lanes can help reduce travel time losses in public transport without having to invest high sums and without causing significant losses in travelling time for MPT.

The present studies (literature search and micro-simulations) and the resulting recommendations are intended to provide and locate the meaningful use of electronic bus lanes and simultaneously clarify the conditions for which a common application of this relatively new measure is worthy of public aid.

As a result of the research work and with knowledge gained, it is possible to accomplish a typology of the possible characteristics of electronic bus lanes. A reserved lane system (RSL) is therefore in place if there isn't enough space for two buses in opposing direction, but ample room for a bus lane as such. The buses from opposing directions share this designated bus lane. As an example, mode-operandi could be that in the morning, buses driving into town use the designated bus lane and in the evening, the buses travelling out of town are solely allowed to use the designated lane (normal traffic uses the normal lanes during the whole day).

A with-flow system (WFS) is characterised by the clearance of a lane for buses on roads with two lanes in either direction. LED-signals timely inform other road users about vacating one of the lanes (or simply not entering the lane) so that the bus can pass. After the bus has passed, private transport can use that lane again.

In a contra-flow system (CFS) oncoming traffic is stopped by means of traffic signalling so that buses can overtake a lane of vehicles. The traffic in the direction of the bus is stopped by means of a traffic feed system so that the bus can return to its original lane (from the opposing lane) at the end of the traffic-jam.

In the fact sheets depicted in the Annex, the three system types have been described and listed in detail (examples, pro/con, necessary technical equipment, capabilities, limitations etc.).

It turns out that electronic bus lanes have rarely been implemented, but not ignored completely. It can be said that this form of public transport actually generates quite a bit of interest. Based on the results of the literature review and the work in the case study „Bus Acceleration Lenzerheide – Chur", the micro-simulation is confined to electronic bus lanes with usage of the oncoming lane (CFS) to bypass small traffic-jams prior to junctions or traffic feed systems.

The use of an electronic bus lane concept reaches its limits in areas where the complexity of junctions and sections of the road do not allow a useful (i.e. free of conflict) implementation of such a bus lane operation. The micro-simulation carried out on the basis of a CFS shows conditions that could allow its implementation without causing a disproportional delay to the private transport, but at the same time speeding up the MPT signifi-

cantly. It has to be noted that questions about general limitations remain unanswered. Individual factors should rather undergo a general consideration. Here, results from simulations can be used for advisory purposes. It must be kept in mind that the questions and aspects can be complemented so that there is no purely black or white differentiation.

Recommendations about the eligibility requirements for the implementation of electronic bus lanes (especially in CFS) have been issued, as far as this is possible remaining independent of specific projects. There now exists a matrix for a process which can assist planers, policy makers and stakeholders.