

**Langenkämper, Bernd 2002:**

## **Gestaltung eines nicht signalisierten Knotenpunktes im Innenstadtbereich der Stadt Gütersloh**

### ***Abstract***

Contents of elaboration are the argumentation and planning recommendation for the transformation of a three-armed traffic junction on the city centre ring of the city Gütersloh.

The junction consists of a bending right of way and is a component of the city centre ring. The subordinated junction approach road opens the city centre from the ranges of the major road B61 and surrounding localities.

Changes in the city centre ring and a risen traffic volume from direction major road B61 give a special meaning to this junction. The inlet is on a route for the evasion of the traffic problems of the major road B61. Creeping traffic along the city centre ring of the major road B61 to the country road L757 leads to increased traffic volume. The blockage of a section of the city centre ring forces the transit traffic of the city centre over an u-shaped evasion. Waiting periods up to three minutes in the rush hour can develop and increase the prepared to take risks shank with contriving procedures. From this a high danger of accidents results. However the risen load by vehicles leads to unsatisfactory traffic conditions. In addition there is a strong use of the junction by children and pupils in the school times. Conflicts between the not motorized individual traffic and the motorized individual traffic are pre-programmed.

An exact existence analysis proves that the efficiency of the junction is exceeded and affects the road safety negatively.

For the argumentation of the change decision an analysis on accidents of the last three years is accomplished. For the comparison a three years old roundabout serves. The two development variants are in the city area with comparable volume of traffic (in average 18,000 vehicles / 24h). The result certifies the roundabout its superiority in security. The accident costs fail around approximately 30 % smaller, and so a decrease of the economical damage can be achieved by a change of the bending right of way. Also the avoidance of the personal embarrassment is important, particularly those by accidents with child participation is released.

The geometrical and condition-technical collection supplements the analysis on accidents. An investigation of the causes of accident justifies first the suspicion that the geometrical characteristics of the development condition do not ensure the ranges of vision. This suspicion is not confirmed. Supplementing the condition characteristics of the knot are examined. This contains an examination of the road

surface and the lighting. The safety-relevant evaluations do not point out the necessity to change the range of the knot.

An evaluation of the surrounding field and general lack is discussed with reference to concerning town construction, ecological and environmentalreferred aspects.

The general behavior in traffic, the development desired of the city and the needs of humans exert influence on the factors from the town planning. These factors are the carpark guiding system along the bending right of way, the separation of the city centre ring and the traffic management of the major road, which have again direct influence on the loads of the junction. They are the main facts of the change variants for the adjustment of the development condition to the changed situation.

The evaluation concerning town construction is also for the organization of the area and for the adjoining owners of importance. An increase of attractiveness can be favourable for the business next to the junction.

Ecological data are reduced of importance. Balance measures or sealing degrees do not play a role with a change of the knot.

For the direct environment the human needs are important. They are considered by an evaluation of the noise. Diseases can be the result of traffic noise.

A prognosis of the volume of traffic in the year 2015 is basis for possible development variants. The increase of the loads reflects the general trend. The development condition is not to be received with the existing traffic relations and a prognosis 2015.

Result of the existence analysis is the necessity to increase the road safety and efficiency by a change to a roundabout.

The production of the concept for the junction range is the basis for further planning. The increase of the efficiency, security and the limited area are the main facts of the concept. Three variants are designed in principle: A mini roundabout, a small roundabout (D=26 m) and a small roundabout (D=28 m). The roundabout unites all conditions of the concept and is thus a good alternative to the existence.

A comparison of the three variants puts the pro and cons out.

Concluding the variant „small roundabout D=28 m” is raised to the planning recommendation. The examination of the development variant with a micro simulation confirms the suitability of the "small roundabout".