

# Common study of road traffic in cities Český Těšín and Cieszyn



## APPLICATION:

The analysis of road traffic and the evaluation of proposed variants of traffic system change

## BRANCH:

Transport

## BENEFIT:

The dynamic simulation of the current state and the three proposed variants of changes in the transport showed where are critical places of road traffic in Český Těšín and Cieszyn and it helped to choose the most appropriate variant of the solution.

## Český Těšín, Cieszyn

these two cities are located on two opposite shores of the Olše river and they are connected by the two bridges. There go many cars and other vehicles between these two cities which create very long queues at some very overloaded crossroads. Every change but would influence a big number of people and therefore it was appropriate to verificate proposed changes at first and find out if the changes wouldn't cause a traffic collapse.

## Project targets

The project target was to propose an optimal system of transport on main communications in both of the cities with regard to the fluency and uniformed loading of these communications.



## Solution

At first it has been performed a measurement of transport intensity (cars, trucks and buses) in chosen transport intersections (crossroads). On the bases of the analysis of these results there have been proposed three variants of solution os the traffic system. The tested variants included especially different changes of traffic intensity at particular crossroads which has beed gained due to changes of organisation of vehicle flows among individual intersections. It have been assessed possibilities of putting into

operation of one or both of two bridges for the traffic in both of directs.

The impacts of these variants to the transport situation in the difinated part of both cities have been verifacated using the dynamic simulation model in Witness. As the criterions for the comparison of the proposed variants were used these indicators:

- the vehicle number which rode through the crossroad for the monitored period in individual directions,
- the maximal queue in front of the crossroads in individual directions
- the average waiting tim in front of the crossroad in individual directions.

## Conclusion

The dynamic simulation results show that the proposed changes don't have important influence to the average waiting time in front of crossroads or to the maximal queue in front of them.

The currently using of both bridges does not bring a big benefit because there is not the required easement. As the most appropriate solution was showed the fully closing the one of the bridges and the introducing of two-way traffic which will redirect the important part of flows and will easy the most overloaded crossroad in the center of the city Český Těšín.

The simulation proved that in case of the application of proposed changes won't come up to a transport collapse at any intersection.

### The Dynamic simulation model

