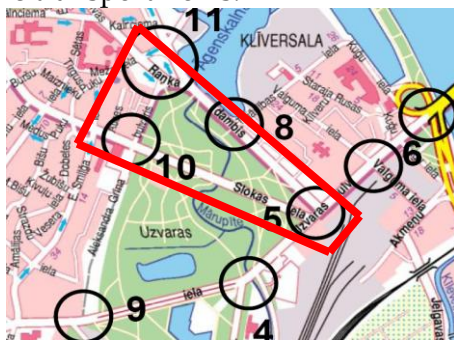


## THE INVESTIGATION OF RIGA TRANSPORT NODE CAPACITY ON BASIS OF MICROSCOPIC SIMULATION

### Problem definition

Nowadays the star-shaped structures of the Riga's transport network become a drag to develop sustainable urban transport system. According to the plan of Riga development program, administrative center will be moved from right side of Daugava River (Old Riga) to the area on the left side. One of the reasons of such action is to redistribute transport flows and weakening of star-shaped topology influence. But preliminary estimation shows that new area for administrative centre has much disadvantages and one of them is weak maturity of infrastructure. The main goal of project is to estimate nowadays capacity of transport node and possibility to pass through transport flows.



The main tasks of projects are:

- \* Development of transport node simulation model
- \* Analysis of a current state of the transport node with simulation model design

### Proceeding

As a realization instrument a specialized simulation package VISSIM 4.2 family PTV Vision has been selected.

Two variants of transport node model were created:

- \* for peak hour
- \* for evening peak hour

The designed model contains 5 crossroads of both types (regulated and not regulated). For the regulated crossroads signal controllers were implemented.

Also signal controllers for pedestrians and trams were taken into account.

As the traffic input data were used 8 traffic flow sources. The structure of traffic flows were complex and contained 3 types of vehicles: car, lorry, bus.

The share for each transport type were defined. Also 6 tram's routes were implemented in models using real schedule.

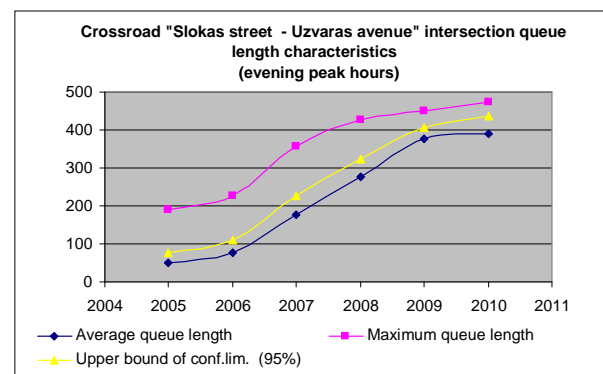


To carry out loading and capacity analysing of the crossroads the special measures was taken into the account:

- \* Vehicle average time of some section crossing up (sec.)
- \* Average total delay time per vehicle (sec.)
- \* Average standstill time per vehicle (sec.)
- \* etc

### Results

As the result of project simulation model was designed and the current state of crossroads was estimated using metrics described above.



According to the statistics collected from model, infrastructure of analyzed transport node should be replanted and redesign to get satisfactory result.