Customer: Riga City Council Traffic Department
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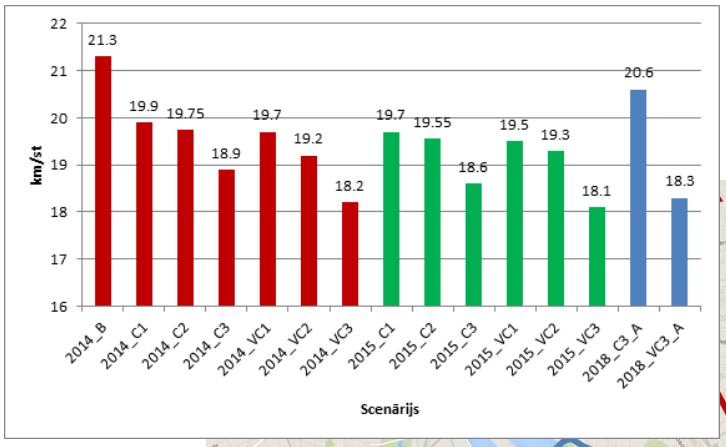
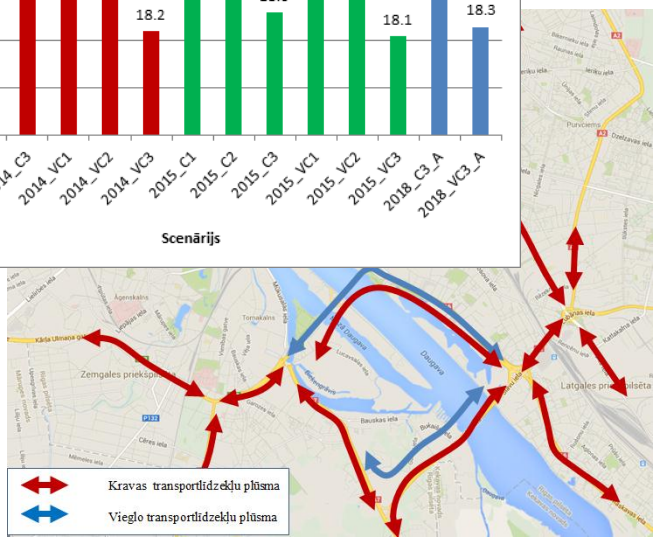
FREIGHT TRAFFIC FLOW RESEARCH AND REROUTING FROM RIGA CITY CENTER

Problem definition

Riga City is an important element of East-West transport corridor. Special place in Riga economics is occupied by Free Port of Riga, which is one of most efficient in Baltic Region. It means that Riga is an attraction point for freight traffic flow. At same time, Riga is considered as a city, which is friendly for tourists and citizens. Both aspects are important for sustainable urban development, but both contradict. Freight traffic flow, which goes throw the city center, increases pollution level, significantly influences on public and private transport flows and finally creates not tourists friendly and esthetic environment. Riga Development Department introduced some infrastructure projects, which will be able to reroute freight traffic flow from city center. Unfortunately still not all projects are implemented, but implemented one gives opportunity to reroute the freight traffic now.





The main tasks of this project could be formulated as follows:

- to make freight and private vehicle traffic counts survey;
- to formulate freight and private traffic rerouting scenarios from city centre for 2014, 2015, 2018 years;
- to develop, calibrate and validate the model for scenarios analysis;
- to analyse different development scenarios and estimate level of service (LOS) according to Highway Capacity Manual.

Proceeding

According to the formulated tasks a traffic counts survey was performed in 19 points across Riga transport network. More than 40 volunteers took part in this survey.

The survey was hold during two working days (from 10:00-12:00 and from 14:00-16:00). During the survey different types of freight transport vehicles were taken into account. Collected data allows to do general statistical analysis and to use the data for transport model calibration and validation.

In total, 15 scenarios were formulated for analysis (7 with reference year 2014, 5 with reference year 2015 and 2 with reference year 2018). The difference between scenarios is in changes in transport infrastructure and in traffic flow intensities. Traffic flow forecast was estimated on the basis of external sources, like Free Port of Riga development strategy etc.

The model for scenario testing was developed in VISUM 13.0 modelling software. The model includes 27 zones, more than 170 nodes and 470 links. The demand side presented by 2 OD matrices calibrated (using TFlowFuzzy procedure) by the data obtained from traffic counts. Finally model was validated using statistical approach.

Results

Main results are numerical analysis of proposed scenarios. As global indicator of influence, average speed in networks was used. Also for some elements of transport infrastructure LOS level was estimated.

Final results allows to conclude that in general for effective rerouting of traffic flows from city center all city development projects must be implemented. Currently changes in transport infrastructure will lead to increases of main roads loading level. From formulated scenarios most attainable relates to traffic flow limitation in 11 Novembra Krastmala fragment between Vant and Stone bridges for summer time. But this action should be synchronized with end and beginning of academic year in schools and universities. Also it is recommended to conduct annual informative campaign concerning traffic restriction in mentioned above area.

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