

## Summary

# BYTRANS: How do the models explain changes in road capacity in urban transport?

## A review of data sources. Case: the Brynstunnel

*TOI Report 1797/2020*

*Authors: Trude Torset, Chi Kwan Kwong, Chaoru Lu & Arvid Aakre*

*Oslo 2020 70 pages Norwegian language*

---

## Summary

The purpose of the BYTRANS project was to utilize temporary measures in the road network in Oslo to study the impact on the travel behaviour in the population. This report focuses on how this data can be applied to develop transport models.

The data used are mainly traffic counts and travel time measurements, but we have also benefited from results from a survey conducted among employees who would be affected by temporary capacity reductions in tunnels. We have compared model results against data and described problem areas, but not solutions to these.

Modelling of rush hours and especially queueing is a challenging but important topic when analysing measures in urban areas. This is also becoming increasingly relevant since the overall political objectives are that the increase in private car traffic in the biggest Norwegian cities should be curbed in favour of other transport solutions.

Modelling of traffic demand during rush hours and traffic flow is complex and the modelling tool has been reviewed to describe the assumptions on which the calculations are based. The temporary capacity reduction in the Brynstunnel has been run in RTM23+ to evaluate how well the model manages to represent this situation.

The model runs and comparisons against traffic counts showed that the maximum rush hour occurs at different times in different places, while it is predefined in the model. Changing travel time is also dynamic in reality, while this is static in the model. The VDF curves work well in moderate traffic situations, but do not explain the reality of breakdowns in traffic flow. In reality, queues will build upstream of a bottleneck and affect upstream links, while RTM models the delays only on the link where the bottleneck is located.

Data on travel patterns and traffic conditions are necessary to evaluate model results and to further develop the models so that they represent the traffic in a realistic way. Some data types that had been useful were not available to us during the project period, but we have reflected on how they could have contributed to better model tools.