Introduction
The topic at which this thesis is based on is the effect of traffic measures at the vehicle delay time, VDT. The research focused towards the capacity effect of traffic measures. The effectiveness of traffic management measures is determined by their effect on the VDT. However, the development of the VDT is not singular influenced by the installation of measures. The challenge within the main topic is to unravel the total change of VDT into the contributions of all influencing factors. Within this thesis, the vertical queuing model is used to estimate the realised capacity, i.e. the actual achieved throughput during a congestion period under the prevailing conditions. Regression analysis estimates the contribution of the different individual influencing factors, such as traffic management measures, on the realised capacity.

Method
The vertical queuing model uses the principle of first-in-first-out. Road sections are individually examined. The model is based on the count of the number of arriving and departing vehicles during the day. It is assumed that the total daily demand is served, i.e. eventually all traffic will pass the road section. All vehicles can pass without any delay as long as the demand does not exceed the capacity. A queue will build up in the model as soon as the demand does exceed the capacity. The arrivals are determined by the demand and can be deduced from the traffic flow. The departures are restricted by the number of arrivals or by the capacity. While the VDT is measured, the queue length and therefore the difference between the cumulative arrivals and departures can be calculated. The total number of departures and arrivals before the beginning of a congestion period as well as directly after the congestion period are based on the measured traffic flows. The estimated realised capacity is the average traffic flow during the congestion period. The estimated realised capacity should be explained by the prevailing conditions. Regression analysis based on many records can estimate the effects of all the influencing factors.

So in essence, the capacity is the variable in the model that is estimated based on the measured VDT and the measured cumulative traffic volumes. The regression analysis estimates effects and these effects can be transferred to effects on the VDT.

Conclusions
The main conclusion is that it is possible to implement the vertical queuing model and to estimate effects of influencing factors on the capacity. The calculation of the effect on VDT is also possible, only there is need for further research to improve the estimation of the effect of prevented congestion periods. There now is a direct relation between measured traffic data and the effect of traffic management measures. It is also possible to unravel the effects of other factors such as adverse weather conditions.