Summary

We recommend to develop a new model system for predicting car ownership in The Netherlands. The preferred model system consists of:

- Duration models for the time between vehicle transactions (and the type of transaction: disposal, replacement, acquisition, also scrappage) to explain the total number of cars. An alternative option for this would be a Markov-type panel model.

- Vehicle type choice models for the choice of a brand-model-vintage alternative for all vehicle transactions that involve purchasing another car. These choice alternatives can be aggregated to get the composition of the fleet in terms of most of the required distinctions. Some less important distinctions need to be made by a post-processing procedure.

- Regression equations for the use of every car in the household, measured in terms of annual kilometrage, or through a logsum linkage with the national transport model system, LMS.

- A micro-simulator for ‘birth’ and ‘death’ of households and transitions between households types over time; a simpler but less consistent (in terms of dynamics) alternative would be to reweigh a given sample of households in each time period.

- Possibly a model for the number of business cars (company-owned and lease cars), depending on (sectoral) economic development, which need to be allocated to households. Private car ownership could be made conditional on the outcome of this.

- An allocation procedure to the 1308 LMS zones (also post processing).

Such models have been developed before, particularly as components of the Dutch Dynamic Vehicle Transactions Model (DVTM) and/or the model for the likely penetration of electric and hybrid cars for California.