

# ESTIMATING LIGHT-DUTY VEHICLE EMISSIONS IN THE GREATER TORONTO AND SURROUNDING AREA

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## **Abstract**

As air pollution harms our communities and greenhouse gas emissions threaten our global environment, the ability to model vehicle emissions has become increasingly important. Such models allow planners and policy makers to quantify the change in vehicle emissions associated with a particular transportation or land use policy. Currently, the majority of vehicle emissions modelling exercises are performed at the provincial or national level and then disaggregated based on population or vehicle registration data. Given the magnitude of vehicle emissions generated in Southern Ontario, and in particular the Greater Toronto Area, an effort to quantify these emissions using an alternative approach would prove a valuable endeavor.

As part of this research study, input data specific to the greater Toronto and surrounding areas was assembled including estimates of vehicle kilometer travelled by passenger vehicles, gas consumption, passenger vehicle type distribution and vehicle efficiency. Two separate models were developed for the years 1996 and 2000 using these parameters – a transportation activity model based on emission factors from the MOBILE 5C emission factor model, and a fuel-based model utilizing gasoline consumption as the prime measure of vehicle use and associated emissions.

The results suggest that this secondary data gathered from commonly available sources can be used to develop accurate inventories of greenhouse gases and criteria pollutants generated by passenger vehicles.