1979, AUTOMOBILE OWNERSHIP AND OCCUPANCY STUDY

Executive Summary:

This report describes the results of a preliminary study of automobile ownership and automobile occupancy factors as they relate to travel demands in the Ottawa-Carleton/Outaouais Regions. The report includes a brief review of the literature, a review of data availability for the regions, a preliminary analysis of those factors which are expected to influence automobile occupancy, and suggested procedures for estimating auto ownership and auto occupancy levels.

Since this study is quite preliminary in nature, the recommendations which are made merely provide guidance for the continued analysis of auto ownership and occupancy factors and for the further development of forecasting procedures. The major recommendations of the report are as follows:

The estimation of automobile ownership levels should be treated in a procedure separate from the consideration of automobile occupancy. While the two characteristics are obviously related, the former is a function of a broader set of variables relating to the total trip set of the individual, while the latter is relevant on a trip-by-trip basis.

The conventional process of developing automobile occupancy factors is unsatisfactory both conceptually and analytically, and is insensitive to policy variables relating to travel price variations or improved transit service.

The market segments relating to the auto passenger and the transit passenger are much more similar in demographic and socio-economic characteristics than are the auto passenger and auto driver market segments. Consequently, a far more effective way of modelling mode choice is to split trips into the three components, rather than first splitting into auto users and transit users and then dividing auto users into drivers and passengers by the use of an occupancy factor.

A conventional automobile occupancy model might also be developed for contingency purposes, utilizing a linear multiple regression form such as that used in the Baltimore region. Independent variables would include residential density, trip length, auto ownership and transit accessibility, with possible stratification into CBD and non-CBD groupings.

A 3-stage procedure is recommended for the forecasting of automobile ownership at the traffic zone level.

1. trend analysis: to estimate control totals for large superzones within the study region,

2. social, demographic and economic stratification: to analyze auto ownership levels for the traffic zones in accordance with six possible classifications,

3. auto availability: to develop estimates at the traffic zone level, expressed in terms of percentage of dwelling units without cars, with one car, and with two or more cars.