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# III. King County Travel Demand Forecasting Model

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The King County travel demand model with 1300 travel analysis zones (TAZ) was developed in 2001 with assistance of consultants. The land use and network data of King County travel model are consistent with the Puget Sound Regional Council (PSRC) travel model. The model was updated in 2003 based on new 2000 Census data and adopted GMPC land use data for King County Comprehensive Planning use.

King County travel demand forecasting model, like most travel models in the U.S., involves four submodels: trip generation, trip distribution, mode choice, and traffic assignment.

- **Trip Generation:**  
In the cross-classification trip generation process, the land use quantities and household demographics in each TAZ are translated into person trip ends by trip purpose using trip generation rates for each land use variable.
- **Trip Distribution**  
Trip distribution is used to forecast the number of trips from a particular zone to every other zone by trip purpose. The distribution is based on the number of person trip ends generated for each of the two zones and on factors that relate the likelihood of travel between any two zones to the travel time (or cost) between two zones.
- **Mode Choice**  
Mode choice estimates the proportions of the total person trips using transit, ridesharing, and single occupant vehicles for travel between each pair of zones. Vehicle driver splits for the entire King County travel model area are taken directly from PSRC forecasting.
- **Traffic Assignment**  
In the traffic assignment submodel, an origin/destination trip table is developed to reflect vehicle trips from one zone to another for the analysis period. These trips are then assigned to travel routes available between the zones with separate assignments for single occupant and multi-occupant vehicles. The King County travel demand model uses three time periods (AM peak period, PM peak period, and off-peak period). PM peak hour assignments are factored from the PM peak period.