

Application of Transportation Models for Analysing Future Intercity and Intracity Travel Patterns in Kuwait

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Abstract : In order to meet the increasing demand for housing care for Kuwaiti citizens, the government authorities in Kuwait are undertaking a series of projects in the form of new large cities, outside the current urban area. Al Mutlaa City located to the north-west of the Kuwait Metropolitan Area is one such project out of the 15 planned new cities. The city accommodates a wide variety of residential developments, employment opportunities, commercial, recreational, health care and institutional uses. This paper examines the application of comprehensive transportation demand modeling works undertaken in VISUM platform to understand the future intracity and intercity travel distribution patterns in Kuwait. The scope of models developed varied in levels of detail: strategic model update, sub-area models representing future demand of Al Mutlaa City, sub-area models built to estimate the demand in the residential neighborhoods of the city. This paper aims at offering model update framework that facilitates easy integration between sub-area models and strategic national models for unified traffic forecasts. This paper presents the transportation demand modeling results utilized in informing the planning of multi-modal transportation system for Al Mutlaa City. This paper also presents the household survey data collection efforts undertaken using GPS devices (first time in Kuwait) and notebook computer based digital survey forms for interviewing representative sample of citizens and residents. The survey results formed the basis of estimating trip generation rates and trip distribution coefficients used in the strategic base year model calibration and validation process.

Keywords : innovative methods in transportation data collection, integrated public transportation system, traffic forecasts, transportation modeling, travel behavior

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