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CALL FOR PAPERS

Development of A Traffic Monitoring Program Using Emme 3 Based on A San Joaquin COG Travel Demand Model

Title of the paper

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BIOGRAPHICAL SUMMARY FOR MAIN AUTHOR (100 words mini-CV)

AUDIOVISUAL SUPPORT NEEDED

(A PC with Office XP, a projector, and a microphone will be provided. Please mention any other needs.)

Dr. Jia Hao Wu has been with TJKM in USA for more than six years as a senior associates and was with INRO for eight years. He is the chair of the San Francisco Bay Area ITE technical program. His projects include developments and applications of regional travel demand forecasting models and traffic impact studies for some very large developments with more than 40,000 populations, freeway traffic management plans, traffic monitoring programs and traffic circulation studies. In addition to projects in USA, he was responsible for several international projects such as China projects supported by the Canadian International Development Agency.

ABSTRACT (500 words)

A traffic monitoring program is one of the important projects that every city needs to establish, especially for new development areas in California. Its purpose is to monitor the LOS (Level of Service) defined based on the HCM (US Highway Capacity Manual) at some key intersections for every two years. The LOS is calculated based on peak hour turning volumes, lane geometries and intersection controls (signalized or non-signalized intersections). Turning volumes are estimated based on the land use data and the road networks for these years. If the LOS is found to be unacceptable, some mitigations are required to reach a reasonable LOS level. This traffic monitoring process requires the full cooperation among the city administration, planners, developers, and the project team. In this presentation, we will present a technical procedure for this program with an example of a real project for the City of Lathrop in California conducted in 2006. It started with a CUBE travel demand forecasting model and its network with detailed networks for these years and this traffic model was calibrated within Emme 3, since Emme 3 has some more advanced computational and data structures to deal with the turning movement data at intersections. Also the OD adjustment (estimation) technique was performed by using both turn and link counts (even with different classes of vehicles). Traffic counts were entered into Emme 3 and the model calibration was conducted with considerations of traffic counts and the network conditions. After extensive volume comparisons and reviews, satisfactory (reasonable) turn volumes were exported into a traffic operation system (Synchro) for an operation analysis with an automatic procedure. By using this procedure, the City was able to manage the land and road development process and the traffic impact fees in an effective way and communicated with different stakeholders clearly.

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