

Dr. Qiang Li, P.E. Senior Transportation Engineer

AFFILIATION: 

PROJECT ASSIGNMENT: SIMULATION MODELER

EDUCATION:

Ph.D./1997/Transportation Engineering
M.S./1996/Civil Engineering
B.A./1985/Electrical Engineering

REGISTRATION:

Registered Professional Engineer

EXPERIENCE:

Dr. Qiang Li has over 12 years of experience in traffic engineering, transportation planning traffic safety, and GIS applications disciplines. They include traffic modeling and simulation, transportation asset management, traffic safety analysis, GIS applications for transportation, software development and database designs, ITS technology applications, and operations research and statistics. Representative projects include:

- Led the travel time study for O-D Study analysis for Brentwood Road Transportation Study in Washington, DC.
- Developed the simulation model for Military Road Evaluation study and analyzed a number of scenarios for DDOT.
- Led the 2005 crash data entry for the District of Columbia. Task also included modification and set up of the input module, quality control the data and conversion of data from an Access-based system to an Oracle-based system.
- Developed VB programs for analysis of traffic accidents at 37 intersections with red-light running cameras and safety evaluation of the performance of red-light cameras to determine the effectiveness of red-light cameras in Washington DC.
- Developed Washington DC citywide Streetlight database and related management tools for dDOT. The system includes Oracle Streetlight Database, management tools provided in Dynamic Link Library using Visual Basic
- Developed OREMS traffic simulation model for evaluating Maryland/Washington D.C Regional Evacuation Routes for Maryland/Washington D.C Regional Transportation Emergency Management Planning
- Conducted Maryland freeway traffic incident analysis and developed performance measurements for evaluating CHART traffic incident management system
- Conducted the evaluation of Delaware ITS Integrated Transportation Management System (DelTrac), and assisted in fact finding, analysis, and documentation of the issues and challenges in the development of the DelTrac system
- Build Maryland MDTA Fiber Plant Network in ArcMap and related management tools using Visual Basic.

- Developed Maryland Evacuation Routes Database, built in ArcGIS Personal Geodatabase, to evaluate the Washington DC/Maryland regional evacuation planning network
- Developed ITS device maintenance tracking system for SHA Communication Division. This system is used for tracking and reporting the maintenance activities of ITS devices and electrical utilities.
- Developed CORSIM traffic simulation model for evaluating proposed I-270 Toll Express Way in Maryland

PUBLICATIONS

- [1] Qiang Li, "*Integration of Dynamic Vehicle Routing and Microscopic Traffic Simulation*," Proceedings of IEEE 7th Annual Conference on Intelligent Transportation Systems (ITSC 2004), Washington D.C.
- [2] Qiang Li and Wang Yunpeng, "*GIS-based Emergency Evacuation Computer Simulation System*," The Proceedings of ITS American Annual Meeting, San Antonio, TX, (2004)
- [3] Qiang Li and Hongmiao Zhao, "*Decision Making Modeling for Rural and Small Urban Transit Asset Management*," Transportation Research Board's 83th Annual Meeting, Washington, D.C., (2004)
- [4] Qiang Li, Wang Yunpeng, and Yan Xinping, "*Trip Itinerary Planning of Advanced Traveler Information System*", Proceedings of ITS American Annual Meeting, Minneapolis, Minnesota, (2003).
- [5] Qiang Li and Lixin Miao, "*Route-based Dynamic Traffic Simulation Model*," Journal of Highway and Transportation Research and Development, Vol. 6 (2001) in Chinese.
- [6] Qiang Li and Carl E. Kurt, "*A New Itinerary Planning Model for Multi-modal and Fixed-Route Transit Network*," Transportation Research Board's 79th Annual Meeting, Washington, D.C., (2000).
- [7] Heng Wei, Joe Lee, and Qiang Li, "*Observation-Based Lane-Vehicle-Assignment Hierarchy for Microscopic Simulation on an Urban Street Network*," Transportation Research Board's 79th Annual Meeting, Washington, D.C., (2000).
- [8] Qiang Li and Carl E. Kurt, "*GIS-based Itinerary Planning System for Multi-modal and Fixed-Route Transit Network*," Mid-Continent Transportation Symposium, Ames, Iowa, (2000).
- [9] Qiang Li, Carl E. Kurt, and Heng Wei, "*Integration of Time-dependent Vehicle Routing with Time Windows and Dynamic Traffic Simulation*," The 6th ITS World Congress, (1999).
- [10] Heng Wei, Qiang Li, and Carl E. Kurt, "*Heuristic-Optimization Models for Service-Request Vehicle Routing with Time Windows in a GIS Environment*," Transportation Research Board's 78th Annual Meeting, Washington, D.C., (1999).
- [11] Qiang Li, Carl E. Kurt, and Heng Wei, "*Simulation-based Dynamic Traffic Assignment: A GIS Approach*," International Computing Congress, ASCE, (1998).