5.4.1 **Assessing how integration of a traffic router and microsimulator into a land use model affects urban growth simulations**

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This paper describes a novel attempt at integrating a dynamic and disaggregated land use model with a traffic router and microsimulator and compares its predictions of land use to those from an integration of the same land use model with a more traditional four-step travel demand model. For our study area of Chittenden County, Vermont, we used a 40-year simulation beginning in 1990. Predicted differences in residential units between models for 2030 broken down by town correlated significantly with predicted differences in accessibility. The two towns with the greatest predicted differences in land use and accessibility are also the towns that currently have the most severe traffic bottlenecks and poorest route redundancy. Our results suggest that our particular integration of a microsimulator with a disaggregated land use model is technically feasible but may not be worth the effort, particularly in a small metropolitan area with limited traffic congestion.

Bio(s):
Jim Sullivan began his career as a Research Analyst at the UVM Transportation Research Center after completing the Master's Degree program in Civil and Environmental Engineering at UVM in May 2009. Prior to his degree program at UVM, Jim worked in the private sector in consulting for 13 years and he currently holds a professional engineering license. Since joining the TRC, Jim has contributed to projects in the research areas of land-use / transportation modeling and transportation energy / system efficiency. His modeling research has included application of integrated-modeling platforms to Chittenden County, Vermont for testing and validation and implementation of the Network Robustness Index (NRI) in applications to passenger transport in Chittenden County and bulk-milk-transport in northwestern Vermont. His transportation efficiency research has included development of idealized transit networks for the state of Vermont based on the conflicting interests of energy-efficiency and social equity. Jim currently works on projects related to the statewide travel-demand model for Vermont, a new model of non-motorized travel, a new tool for measuring carbon sequestration from land-use change, the first attempt to measure idling behavior of private motor-vehicle owners in Vermont, and a new tool to spatially measure community-livability for seniors. His previous consulting experience includes project management and engineering related to RCRA and CERCLA compliance, groundwater and surface water pollution assessments, remediation design, and construction management.