

Completed Land Use Planning Research Contracts

Contract #09-343

- \$125,000 IAA with UC Davis
- Principal Investigator: Dr. Deborah Salon
- 46 month project
- January 6, 2011 Kick-off Date
- Research Goal: Quantify changes in VMT as a result of local government policies and land use context.

Quantifying Local Government Actions to Reduce VMT

Little information was available to quantify how changes in land use and transportation variables might lead to local changes in VMT. Local estimates are important because one strategy may not have the same impact across different types of neighborhoods. The study found large differences in VMT between neighborhood types in California. VMT is three times larger in suburban, single-family home neighborhoods than in central city neighborhoods.

Research Objectives:

- Estimate a statistical model that identifies the elasticities and marginal effects of commute trip VMT, nonwork VMT, and total household VMT with respect to a variety of policy-relevant variables depending on the local land use transportation context.
- Develop a tool for use by local governments that translate findings into a practical approach useful for improving policy choices to reduce local and regional VMT.

A VMT Impact Tool can assist cities, counties, and regions to estimate changes in VMT that are unique to their community and mix of neighborhood types.

Key Tasks/Deliverables:

- a) Literature review of what effects VMT
- b) Clean and compile travel survey datasets
- c) Estimate a statistical model
- d) Develop a series of look up tables

Release Date:
May 1, 2014

Contract #10-323

- \$100,000 IAA with UC Berkeley
- Principal Investigators: Dr. Ed Arens and Professor Louise Mazingo, M.L.A.
- 31 month project
- July 13, 2011 Kick-off Date
- Research Goal: Estimate residential energy use and GHG emission reductions due to providing new housing in different land use types.

Residential Energy Use and GHG Emissions Impact of Compact Land Use Types

A few academic studies completed prior to this study indicated that residents living in high density urban centers emit 20 to 50 percent fewer greenhouse gases (GHG) from heating and electricity usage than residents of low density suburbs. These studies relied upon national data sets, rather than state- or local-scale data. This research study provides quantitative evidence that California homes in higher density developments use less energy and emit fewer GHG emissions than homes in lower density developments.

Research Objectives:

- Investigate the relationship between land use planning factors and residential energy use in California's various climate zones; and
- Develop a spreadsheet modeling tool that analyzes residential energy use as a function of land use planning factors.

The Land Use and Residential Energy (LURE) screening tool can assist cities and counties to calculate energy use and GHG emissions of land use policies and compare three growth scenarios out to 2035.

Key Tasks/Deliverables:

- a) Gather and analyze residential energy use data
- b) Interview planners and private consultants
- c) Design a spreadsheet based modeling tool that analyzes residential energy use as a function of land use planning factors
- d) Conduct field tests
- e) Validate the model

Release Date:
May 30, 2014