# Executive Summary

Predicting the amount of time that it will take to evacuate an area is essential to emergency preparedness planning. Transportation evacuation models, which are commonly used to estimate evacuation times, are generally developed through the use of engineering techniques and principles. These models include factors such as the number of people requiring evacuation and their departure time, but they do not include social considerations such as the need in many households to gather family members from a variety of locations. As a result, current transportation evacuation models are overly optimistic in their forecasts of the amount of time that it will take to evacuate an area. This shortcoming leads to inadequate planning for no-notice evacuations because models fail to account for the decisions that individuals in a typical household make when faced with a no-notice evacuation situation.

The Center for Neighborhood Technology (CNT) in association with Virginia Polytechnic Institute and the University of Southern California is conducting an interdisciplinary study that integrates the social science and the engineering approaches to develop a new transportation evacuation model. The study seeks to develop a model that more accurately predicts evacuation times. Specific research objectives include:

- Gathering original data on household decision-making through in-depth personal interviews
- Determining the extent to which households have planned for post-impact evacuations, their decision-making process, the degree to which they optimize their plans, their reliance on cellular phones and other communication technology, their transportation needs, and their dependence on schools and other institutions to remove children from harm
- Modeling household member interactions and decision-making in a no-notice (post-impact) evacuation
- Estimating the resulting effects on traffic and evacuation times

The study is based upon the idea that social considerations are essential to understanding the conditions that arise in emergency situations and therefore should be included in the development of simulation models and in emergency preparedness planning. More representative evacuation times will lead to better evacuation planning and increase the ability of emergency management and transportation agencies to anticipate residents' transportation needs.