

# LETA HUNTSINGER, PHD, PE | DIRECTOR OF SYSTEMS PLANNING AND ANALYSIS



Dr. Leta Huntsinger is a 30-year transportation professional with extensive experience in transportation planning, travel modeling, and management including experience in the public sector, private sector, and academia. She is an outside the box thinker that promotes the evolution of standard trip-based travel models to advanced models scalable to community needs and transportation challenges. Her modeling experience includes the development of traditional trip models, advanced trip models, and microsimulation trip and activity-based models. She has managed close to 20 major data collection activities including household travel surveys, cordon surveys, on-board transit surveys, a visitor survey, an establishment survey, a freight survey, and the collection of mobile phone location data. As a technically oriented transportation planner and engineer, she is passionate about integrated transportation solutions that prioritize people and communities. Dr. Huntsinger has successfully led and accelerated project teams for over 20 years, and has advanced the state of the practice in travel modeling for North Carolina. She is a professor of the practice in the Department of City and Regional Planning at the University of North Carolina Chapel Hill where she engages in her passion for teaching and mentoring

## EDUCATION

- PhD, Civil Engineering, North Carolina State University
- MS, Civil Engineering, North Carolina State University (27 hours in Public Administration)
- BA, Physics, UNC-Wilmington

## YEARS OF EXPERIENCE

32

## REGISTRATIONS

- Professional Engineer North Carolina and Texas
- Certified Public Manager
- ToPs Facilitation Methods

## AREAS OF PRACTICE

- Travel Modeling and Data Analytics
- Transportation Planning
- Multimodal Analysis
- Interdisciplinary Studies
- Teaching and Training

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## Related Project Experience

### *Transportation Planning*

**North Carolina Statewide Multimodal Transportation Plan:** Project Manager for NC Moves 2050, North Carolina's multimodal transportation plan. Responsible for day to day activities associated with plan development, stakeholder engagement, and public outreach. Unique plan components include the consideration of drivers and opportunities related to climate change, demographics, economics, technology, tourism, and resiliency, along with the use of scenario planning to identify the most likely future for North Carolina upon which the plan will be based. This planning effort included extensive public engagement that relied completely on non-traditional outreach methods.

**US 15-501 Corridor Study, Durham, NC:** Project Manager for plan development including the integration of public engagement, corridor vision, performance measures and scenario planning into short- and long-term multimodal mobility and accessibility solutions. Project initiation was informed by a half day bus tour of the corridor with targeted conversations at specific locations.

### **Wilmington Metropolitan Planning Organization (WMPO) Metropolitan**

**Transportation Plan (MTP) Development Support On-Call:** Project Manager providing technical support for MTP development activities including development of a public engagement campaign, a project website, and a comprehensive financial forecast covering highways, transit, bicycle and pedestrian, aviation, ferry, and rail, including both traditional and non-tradition funding sources. Preparation of cost estimates for all modal projects in the MTP.

**Contract and Project Manager for on-call contract to the City of Durham and the DCHC MPO.** Provided project management and technical leadership on a peer-review of the Triangle Regional Model and the development of a work program to support future model enhancements; development of an interactive website for the DCHC MPO Congestion Management Plan; development of an interactive website supporting transportation performance measures; environmental justice community assessment.

### *Travel Modeling*

**Capital Area Metropolitan Planning Organization, Triangle Strategic Tolling Study:**

Task Manager responsible for applying the Triangle Regional Model to support the development of a strategic tolling and managed lanes plan for the Triangle region. Work included the development of appropriate performance measures to evaluate future tolling decisions, and analysis on the impacts of the recommendations on the regional multi-modal transportation network. Work also included an assessment of tolling strategies on Environmental Justice communities.

**NW 27th Avenue Corridor Study, Miami-Dade County, FL:** Task Manager responsible for technical oversight of the Transit Market Analysis for the NW 27th Avenue Corridor for Miami-Dade County in south Florida. The market analysis provided a regional and focused summary of existing and forecast population and employment densities, key socio-economic indicators and markers of transit dependency, current traffic conditions and ridership patterns, and current travel patterns and mode shares.

**North Carolina Department of Transportation, Greater Hickory MPO Model**

**Development, NC:** Project Manager responsible for overseeing the development of an advanced trip-based model developed to national best practice standards. Work included oversight of a 1,300-household travel survey and the collection and processing of mobile phone location data. The mobile phone data was used to estimate an external trip model and as a secondary validation for trip distribution and highway assignment.

**North Carolina Department of Transportation, Modeling Standards, Guidelines and Course Development:**

Project Manager responsible for the development of standard modeling guidelines and a companion set of modeling procedures for large non-MPO and small MPO regions in North Carolina. A case study was conducted upon which a training course was developed and administered. The procedures include standard rates and parameters estimated using a combined travel survey database created from household travel surveys administered across North Carolina over a 10-year period. Following initial development several enhancements were investigated and implemented. Training was conducted periodically over a span of 10 plus years.

**Durham-Chapel Hill-Carrboro Metropolitan Planning Organization, Triangle Regional Freight Plan:**

Task Manager responsible for freight modeling and data analysis to support truck freight forecasts for the regional freight plan. Work included a review of the state of the practice of freight modeling in the Triangle region and the development of an advanced freight model design and work plan. Work also included the development of a freight node decision support system that can be used to inform transportation planning and project prioritization activities.

**Texas Department of Transportation, DFW Core Express Service:**

Task Lead responsible for the development of an intra-regional high-speed rail (HSR) ridership forecasting model for the Dallas-Fort Worth (DFW) region. The HSR ridership forecasting model significantly enhanced the capabilities of the NCTCOG's DFX regional travel model to include the capability to forecast intra-regional HSR trips and their effect on destination choice, treatment of special markets unique to HSR, the effects of inter-regional HSR trips on the transportation system within the DFW region.

**Piedmont Authority for Regional Transportation, Triad Freight Study:**

Project Manager for a comprehensive model design and data collection effort to support freight and logistics modeling and analysis in the Piedmont Triad region of North Carolina. The project included the collection of survey data for 150 freight nodes in the Triad region stratified by type, size, and geography. The final data was processed to develop a freight profile for the region.

**Ohio Department of Transportation, Research Project on Estimating External Travel Using Purchased Third-Party Data:** Task Lead responsible for providing applied model expertise to the research team and for developing recommendations to ODOT on the future inclusion of archived travel data, such as AirSage and Streetlight, into their standard model development practice.

**Regional Transportation Commission, Reno Nevada:** Project Manager responsible for the recalibration of a hybrid activity-based model, including a visitor model, using updated household survey, transit on-board survey, visitor survey, and mobile phone location data. The mobile phone data will be used to estimate an external trip model and as a secondary validation for trip distribution and highway assignment.

**North Carolina Department of Transportation, French Broad River MPO Model Development:** Project Manager responsible for development of an advanced trip-based model developed to national best practice standards. Work included oversight of a 1300 household travel survey, a transit on-board survey, and supplemental recreational vehicle (RV) park survey. The RV survey data will be used to develop a special market model for RV parks which represent a significant seasonal population for the region. A separate visitor model was also developed to better capture the role and impact tourism related travel. Passively collected mobile phone data was used to support the validations of the resident trip models and the development an external trip model.

**Kentucky Transportation Cabinet:** Travel Modeling Task Lead on the development of a trip-based travel demand model for the Radcliff-Elizabethtown Metropolitan Planning Organization. Model development and calibration relied on the collection and processing of mobile phone location data to develop a profile of observed travel patterns and model validation target values. Model development also included the development of a special market model to address travel for Fort Knox located within the modeled region.

**US Virgin Islands Transportation Master Plan:** Travel Modeling Task Manager responsible for the development of a hybrid microsimulation trip-based model for both resident and visitor travel with aggregate and disaggregate model components. Development work included the review and analysis of a household survey, transit survey, and short-term visitor survey. Project included hands-on training for agency staff.

### *Teaching and Training*

**Department of City and Regional Planning, University of North Carolina- Chapel Hill:** Professor of Practice. Semester long course on Urban Transportation Models that includes lectures, in class workshops, and computer lab instruction on the development and application of travel demand models.

**National Highway Institute (NHI) Course, Introduction to Urban Travel Demand Forecasting, Nationwide:** Instructor. Week-long course taught on an as-needed basis across the country. The course covers the basics of the four-step modeling process, and describes the inputs and outputs of the model, as well as the most important aspects of travel demand forecasting. Course includes workshop exercises to support key points.

**Adjunct Professor, Duke University, Department of Civil and Environmental Engineering:** Responsible for setting course goals and objectives, and for developing and presenting lectures on topics ranging from vehicle kinematics, roadway design, traffic operations, travel modeling, and transportation planning. Over the course of the semester she developed and directed three class projects, two exams, and out of class homework assignments.

## SELECTED PUBLICATIONS

- Huntsinger, L.F and K. Ward. (2016) Travel Model Blind Spots: Importance of Understanding Special Markets Related to Visitors. Transportation Research Record 2568: 41-47.
- Huntsinger, L.F and K. Ward. (2014) Using Mobile Phone Location Data to Develop External Trip Models. Transportation Research Record 2499: 25-32.
- Huntsinger, L.F. and R. Donnelly. Reconciliation of Regional Travel Model and Passive Device Tracking Data. 14th TRB Transportation Planning Applications Conference, Columbus, Ohio, May 2013. (Selected as one of the Conference Best Papers, and presented at the 2014 Transportation Research Board Annual Meeting)
- Huntsinger, L.F. and N.M. Rouphail. Temporal Stability of Generation Choice Models. Transportation Research Record: Journal of the Transportation Research Board 2344: 79-87 (2013).
- Huntsinger, L.F. Cumulative Logistic Regression Models: A New Approach to Trip Generation for Small and Medium-Sized Communities. TRB 13th National Tools of the Trade Conference, Big Sky, Montana, September 2012. (Selected as one of the Conference Best Papers, presented at the 2013 Transportation Research Board Annual Meeting)
- Huntsinger, L. F., Rouphail, N. M., & Bloomfield, P. (2013). Trip generation models using cumulative logistic regression. Journal of Urban Planning and Development, 139(3), 176-184.
- Shumaker, M., J. Hummer & L. Huntsinger (2013) Barriers to Implementation of Unconventional Intersection Designs: A Survey of Transportation Professionals. Public Works Management & Policy. 18(3): 244-262.
- Huntsinger, L.F. and N.M. Rouphail. Value of Life Cycle in Explaining Trip-Making Behavior and Improving Temporal Stability of Trip Generation Models. Transportation Research Record 2322: 60-69.
- Huntsinger, L.F. and N.M. Rouphail. Bottleneck and Queuing Analysis: Calibrating Volume-Delay Functions of Travel Demand Models. Transportation Research Record 2255: 117-124.
- Horner, J.W, J.R. Stone, and L.F. Huntsinger. Data Reuse Methods for Transportation Planning in Small- and Medium-Sized Towns. Journal of Urban Planning and Development, Vol 134, No. 4, December 2008, pp. 149-152.
- Han, Y, J.R. Stone, & L. Huntsinger (2007). Manual Traffic Allocation for Small-Town Networks. Transportation Research Record Journal of the Transportation Research Board. 1997(1): 24-34.

## PROFESSIONAL AND COMMUNITY AFFILIATIONS

TRB Committee on Urban Transportation Data and Information Systems	2014-present
Institute for Transportation Engineers (UNC Student Chapter Advisor)	1989-present
TRB Planning Applications Committee Member	2004-2013
TRB Transportation Planning for Small and Medium Sized Communities	2005-2014
ONE Wake	2018-present
Town of Cary, Imagine Cary Advisory Board	2013-2016
Town of Cary, Transportation Advisory Group member	2013-2016