

# Model Users Group Meeting

## TMIP Peer Review

NCSITE

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Rhett Fussell, PE

Model Research & Development Team

# TMIP Peer Review, How Were You?



# The Mystery of TPB's Modeling Efforts!



Purpose of the Review



Discussion Points of Interest



Recommendations from the Panel



Where we are headed

# Purpose of the Panel: We Need Some Help From You Now!

We took a Look at the modeling world around us  
& realized:

We lost a lot of knowledge

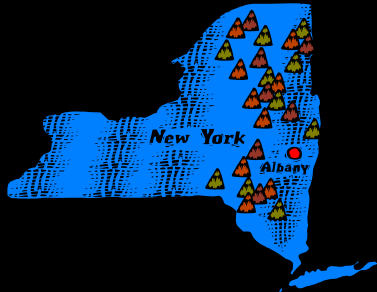
The modeling world was changing

Concerned about not being state of the practice

Wanted some idea of what is accepted



**Guy Rousseau, (ARC)**



**Kuo-Ann Chiao, (NYMTC)**



**Ken Cervenka, (NCTCOG)**



**Danny Lamb, (FDOT)**

**Berry Ives, (Middle Rio Grande COG)**



# Who Rode in our Mystery machine?

Leta Huntsinger

Lydia McIntyre

Dan Thomas

Rhett Fussell

Tim Padgett

Beverly Williams

Mike Bruff

# What ?s Need to be Answered to Solve the Mystery?



Information on travel modeling best practices  
at all stages of TDM development



Prioritized recommendations for travel demand  
modeling improvements



Recommendations on organizational questions,  
such as the role of MPOs and staffing capacities



Guidance and recommendations on types or levels  
of travel demand modeling

# Discussion Points of Interest



Organizational Type Issues

Data Sources

Four Step Process



# Organizational Type Issues



NCDOT's responsibilities across the state

Does the Department need specialists or generalists

Partnerships with Others

Model Types Developed across the State

# Data Issues

Field Surveys-Does this make sense?

Non-standard data collection methods

Use/collection of Data

Travel Surveys- performing them, transferability,  
commercial vehicles

Data Forecasting



# Four Step Process

Gravity Model

Friction Factors/gamma function

Borrowing of equations, factors

Destination Choice

Transit modeling

Assignment Techniques

Validation/Calibration Issues





# Panel Recommendations

# Mystery Fact 1: Strengths of TPB Modeling Staff & Approach

Young pool of modeling talent-  
seem to be forward thinking  
open to criticism, ?'s

Good understanding of the validation/calibration criteria

Good modeling training documentation (Modeling 101)

Good survey base for regional areas



# Mystery Fact 2: Data/Survey Recommendations

Create Data collection strategy-

- 10 yrs update major surveys

- or schedule off years to spread out cost

- do more speed studies

- Sample broader areas in state & use to apply

- Creative funding-CMAQ

Take advantage of other data-NPTS, census, etc

- look at new ways of using data

Regional control totals are a must-

- use other tools, delphi panels, specialists

Develop consistent data standards-

- data formats, use of data, etc



# Mystery Fact 3: 4 Step Process Recommendations



Stay Away from subjective variables(classification)

Keep special generators to a minimum-  
stratify into another trip purpose

Gravity model still the standard

Invest heavily in surveys before doing destination choice

Friction factors still accepted-use gamma too

# Mystery Fact 3: 4 Step Process Recommendations



Transit-identify a menu of varying techniques,  
nested logit, pivot pt, binomial,etc

No more AON assignment-except to run logic checks

Perform User equilibrium

Speed studies to develop new vol/delay curves  
and measures for free flow speed

Use aerial photos to verify centroids for loading



# Mystery Fact 4: General Opportunities & Challenges



Create a Statewide Model users group

Statewide Model

Make better use of consultant services-specialized tasks

Create a consortium of technical partners

Specialists are a necessity in your branch-pay for it

Develop a toolbox for analysis

Open mind in emerging processes

# Where are We headed?

Modeling Unit- specialists

Control totals- have been using them in areas,  
looking at covering the whole state

Surveys- involved in some, looking at using together  
perhaps a survey RFP

Looking at new modeling processes-using census,  
modeling process development

Model users group-helping to create/develop



# Where are We headed?

Use of consultants more-  
on call contract, consortium of expertise

Toolbox for use in modeling analysis - ITRE/universities

Best practices Committee



# Mystery Solved!!!!

