

#### TRAVEL MODEL BLIND SPOTS

#### THE IMPORTANCE OF UNDERSTANDING SPECIAL MARKETS RELATED TO VISITORS

Leta F. Huntsinger, PhD, PE D. Kyle Ward, EI

#### **OVERVIEW**

- Background
- Survey Design and Data Collection
  - Survey basics
  - Sample
  - Survey instrument
- Survey Data Analysis
- Model Development
- Summary and Results

## BACKGROUND

### TOURISM IN THE FBRMPO REGION

#### • FBRMPO

- Western, NC
- Blue Ridge Mountains
- Asheville
  - Culinary cool
  - Beer scene
  - Artist community
  - Biltmore Estates
  - Blue Ridge Parkway
  - And the list goes on...



www.benrsmith.com



www.ashevillenc.com

#### 2012 TOURISM STATISTICS BUNCOMBE COUNTY

- 9.1 million visitors
- 3.1 million overnight guests
- Impact:
  - Spent 1.5 billion
  - Generated \$2.3 billion in economic impact
  - Supported ~23,000
- Tourism generates \$58.6 million in state and local taxes
- Without tourism, the unemployment rate in Buncombe County would be 18%

http://www.ashevillecvb.com/economic-impact/



www.romanticasheville.com

#### VISITOR TRAVEL SPECIAL GENERATOR OR SPECIAL MARKET

#### **Special Generator**

- Specialized land use like regional shopping or hospital
- Trip attraction characteristics not reflected by standard rates

#### **Special Market**

- Specialized land use like university or airport
- Trip generation, distribution, time-of-day and or mode choice not reflected by other trip purposes
- Best captured through a separate trip purpose or separate submodel

#### **RV PARKS IN ASHEVILLE REGION**

- 32 parks
- 3,000 sites
- Over 6,000
  additional people

MPO wanted to better understand the impacts of RV park visitors on the transportation system in the region



# SURVEY DESIGN AND DATA COLLECTION

#### SURVEY BASICS

- Retrospective small sample survey
- Mix of long- and short-term visitors
- Simple paper questionnaire
- Administered to one member of the party
- Face to face interviews

Key Question: Is travel from RV households different from retired households

#### SAMPLE

- Non-probability sample
- Drawn from RV Parks provided by MPO
- Sample/Results:
  - 7 RV parks
  - 200 sampled RV households
  - 70 interviews completed
    - 43 long-term
    - 25 short-term
    - 2 undetermined

## SURVEY INSTRUMENT

- Primary trip characteristics
  - Date of arrival
  - Length of stay
  - Frequency and purpose of travel to region
  - Number of people in travel party
- Household characteristics:
  - Age
  - Income

- Employment
- Home state
- Reason for visit
- Length of stay
- Trip characteristics:
  - Start location
  - End location
  - Start time
  - End time
  - Trip purpose
  - Mode
  - Party size

## DATA ANALYSIS

#### PURPOSE OF TRAVEL



#### **RESPONDENT STATS**

- 69 percent long-term visitors
- 90 percent retired
- 83 percent 65 years or older
- 54 percent had income greater than \$60,000
  - 15 percent non-response rate

#### TRIP STATS

- 22 percent did not travel on travel day
- 5.05 average daily trips
  - Shopping: 1.71
  - Non-home based: 1.82
- Vacationers vs. Other:
  - 5.63 trips/day for vacationers
  - 4.26 trips/day for others
- Long- vs. Short-term
  - 5.60 trips/day for long-term
  - 4.26 trips/day for short-term

#### TRIP RATES BY HH TYPE

Household	HBW	HBSHOP	HBO	NHB	Total
Туре					
RV					
	-	1.71	1.52	1.82	5.05
Retired					
	0.25	0.95	3.23	2.49	6.93
Part-Time					
Residents	0.49	0.96	2.93	2.86	7.23

#### TRIP LENGTH BY HH TYPE

Household Type	HBW	HBSHOP	HBO	NHB	Total
RV (n=67)					
	NA	10.90	11.18	4.71	8.70
Retired (n=707)					
	7.33	6.67	7.00	6.79	6.89
Part-Time Residents					
	8.12	8.91	10.89	6.72	8.79

## MODEL DEVELOPMENT

### MODEL FORM

- Estimated/Calibrated/Validated
- 4-step model
  - Generation
    - Trip rates by purpose
  - Distribution
    - Intervening opportunities model
  - Convert Person to Vehicle Trips by Time of Day
    - Diurnal Factors
  - Combine with resident population for assignment



#### PRODUCTIONS AND ATTRACTIONS

Trip Purpose	Productions (per RV HH)	Attractions (per employee)
HB Shop	1.7	0.318 Retail
HB Other	1.5	0.264 Office, Service
Non-Home Based	1.8	0.157 Office, Service, and Retail

 $HBOP_{i} = RVHH_{i} * (HBOP_{rate})$  $HBOA_{i} = EMP_{xi} * (HBOA_{rate_{x}})$ 

#### TRIP DISTRIBUTION

$$T_{ij} = T_i * (e^{L * R_{j-1}} - e^{L * R_j})$$

where:

T <sub>ij</sub>	=	number of trips from zone i to zone j
T <sub>i</sub>	=	number of trips produced in zone i
R <sub>j</sub>	=	rank of destination zone j
$\mathbf{R}_{j-1}$	=	rank minus 1 of destination zone j
L	=	probability of accepting a destination if it is considered

## TIME OF DAY

Purpose	Direction	AM	MD	PM	NT	Daily
HBSHOP	From					
	Home	0	0.423	0.058	0.019	0.50
	To Home	0	0.206	0.237	0.057	0.50
НВО	From					
	Home	0.097	0.323	0.048	0.032	0.50
	To Home	0.022	0.304	0.087	0.087	0.50
NHB	From					
		0	0.39	0.095	0.015	0.50
	То	0	0.39	0.095	0.015	0.50

## SUMMARY AND RESULTS

#### BENEFITS

- 8,200 Daily Person Trips
- 6,000 Daily Vehicle Trips
- Ability to Adjust Seasonal Factors
- 0.4% of daily trips (peak season > 1%)

#### Not much?

- Transit share in Asheville 0.3%
- Transit share in Triangle Region
  1.2%
- In localized areas, impossible to "get it right" without these models.
- Provides improved scenario testing

#### ACKNOWLEDGEMENTS

- Leta Huntsinger, co-author
- French Broad River MPO staff
- Pam Cook, NCDOT
- Westat, Inc.