NHTS
Georgia Statewide Model

Presented to:

TRB National Household Travel Survey Conference

June, 2011

GDOT Keeping Georgia on the Move

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Introduction

- Background Leading GDOT to NHTS ‘Add-On’ Program
- GDOT Model Responsibilities
- Statewide Model
- NHTS ‘Add-On’ Sample
- Trip Production Model Design
- Trip Distribution Model Design
- Look Ahead

Background

- 15 Metropolitan Area Models
- ARC & Chattanooga Develop their Own Models
- 1997 Augusta-Aiken HH Travel Survey
- Address Current Issues (Metropolitan & Statewide)
- Update Metropolitan Area Travel Demand Models
- Build Statewide Model(s)
- Advocate to Management and Start Sampling Plan for 2009 NHTS 'Add-On' Program
- Bi-lateral Effort with South Carolina to Design our Samples of 'Add-On' Households
- Multi-State Collaboration in Applying 'Add-On' Data

Statewide Model(s)

- Passenger (NHTS Add-On)
  - National in Scope
  - Emphasis on Long Distance Travel
  - Multi-Modal

- Freight (Transearch Commodity Flow Data)
  - National in Scope
  - Commodity Flow Based (16 Grouped Commodities)
  - Mode Choice on Truck – Rail – Water – Air

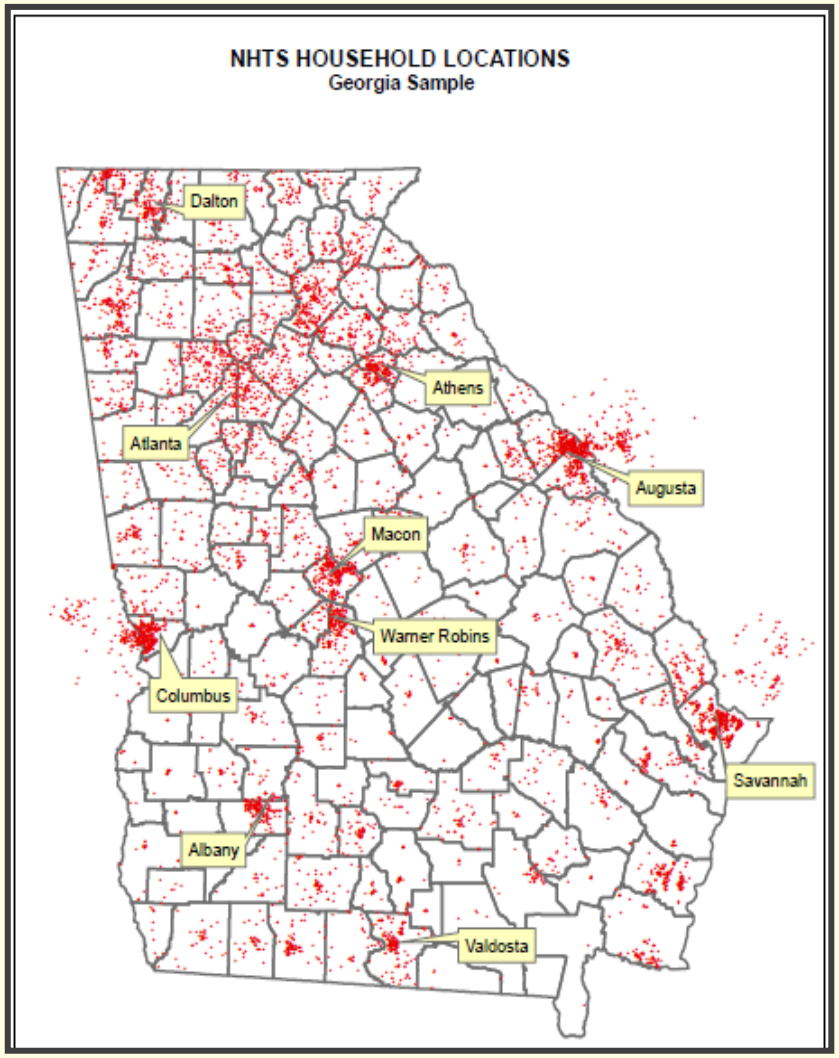
Statewide Model(s)

- Statewide Model(s)
  - Freight (Transearch Commodity Flow)
  - Passenger (NHTS ‘Add-On’)
- Passenger Sub-Model Interacts With Freight
  - Passenger Model Assigns Passenger Cars + Trucks to Road Network
  - ‘Time’ and ‘Cost’ Tables Skimmed from Loaded Road Network Used in Passenger and Freight Model

NHTS ‘Add-On’ Sample

- Georgia Sample
  - Data from 7,929 Households
  - Georgia, Alabama and South Carolina
  - 57,900 survey trip records
- NHTS ‘Add-On’ Database Refinements
  - Trip Generation
  - Trip Distribution

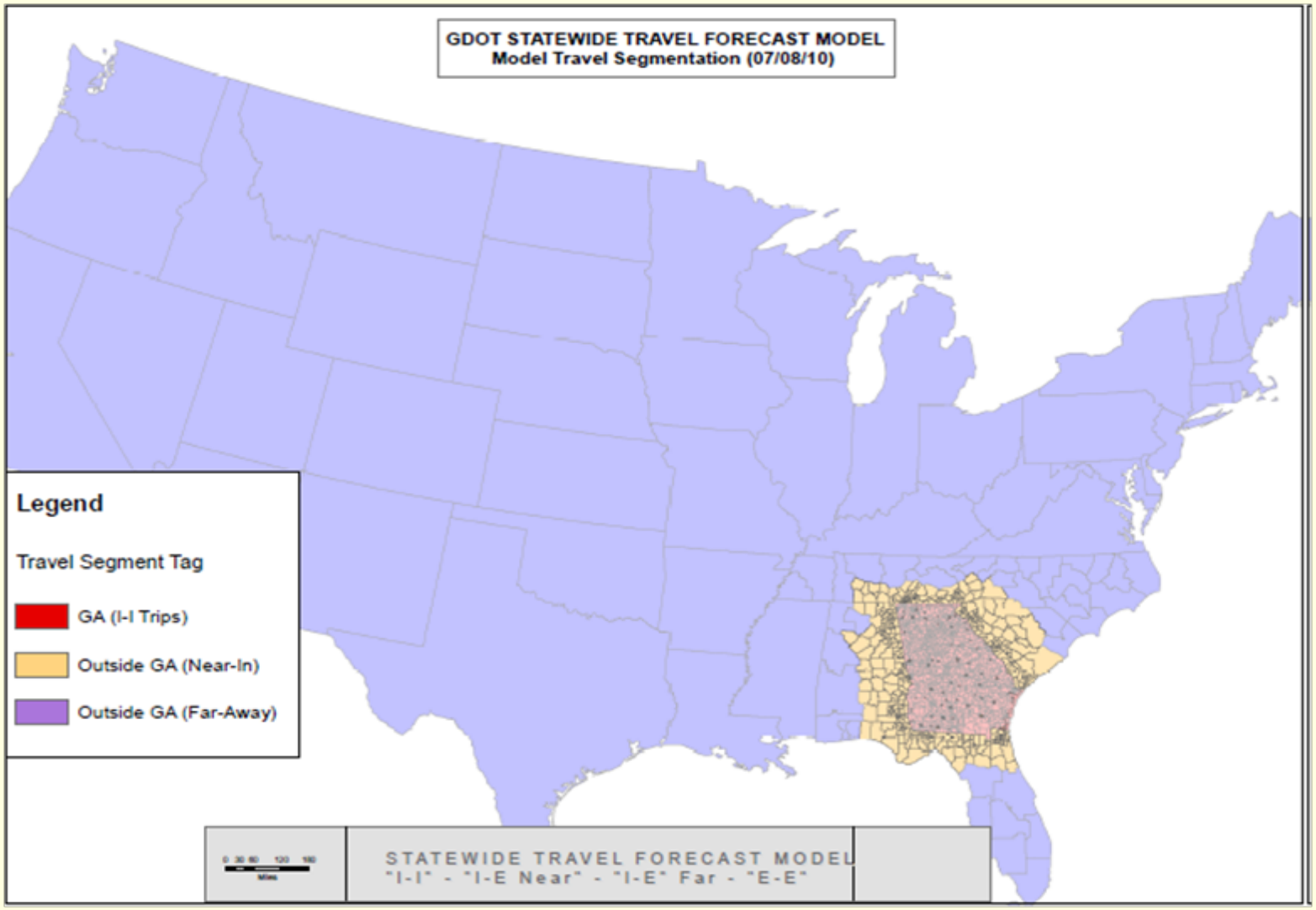
Spatial Distribution of HH's



New Variables

- Fifty (50) total variables into model development db
  - 42 Direct NHTS
  - 8 Newly Created
- New Variables:
  - HHSIZE2
  - HHFAMINC2
  - FROM_TAZ
  - TO_TAZ
  - HOME_TAZ
  - MOD_DIST
  - MOD_TIME
  - MKTSEG

'*MKTSEG*' Visual



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Trip Generation

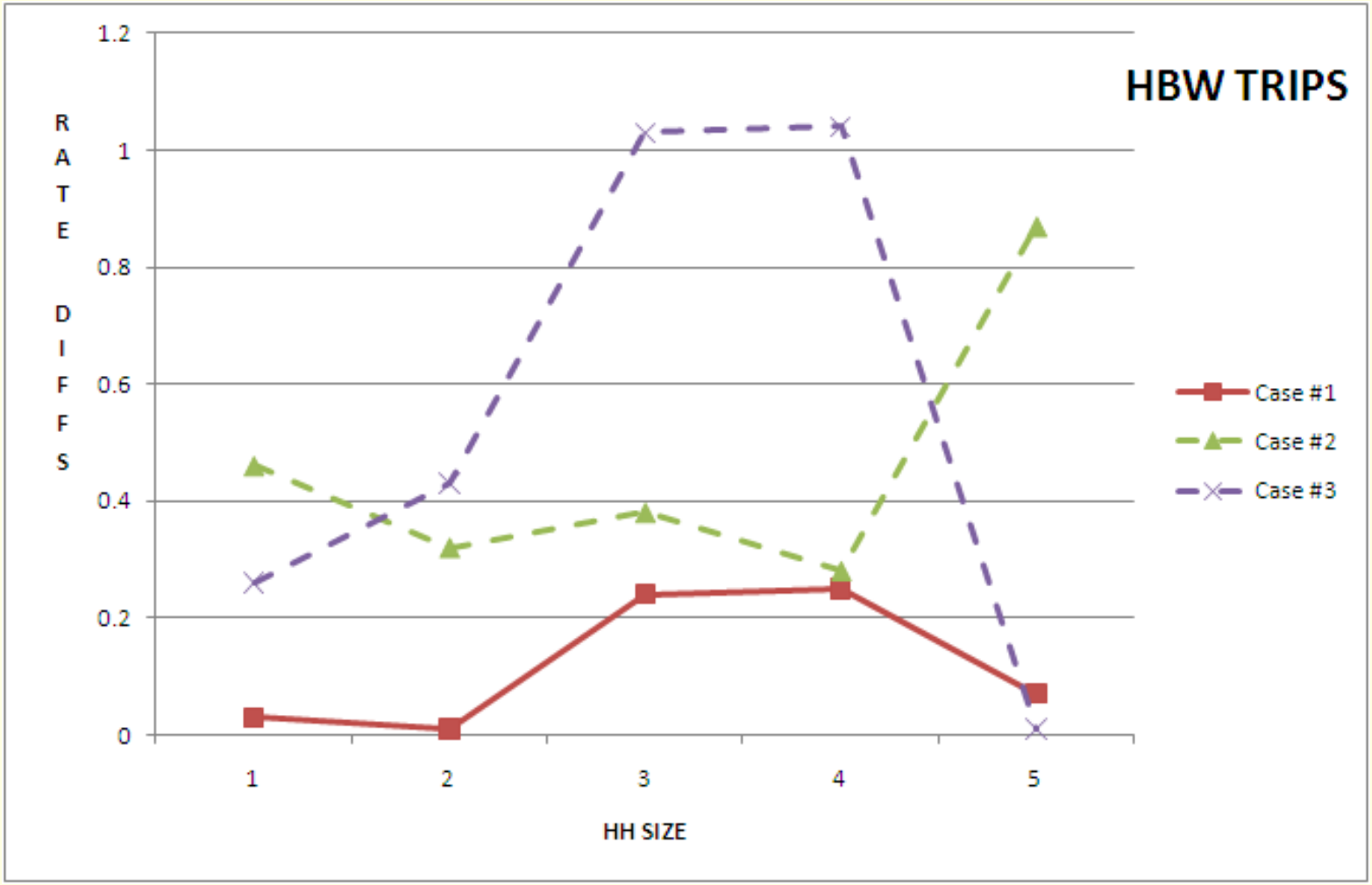
- Two Trip Production Models Tested
  - HH Size X Simple Area Type
  - HH Size X Simple Income Group X Simple Area Type
- Production Model With Income Group Selected
  - Better Spread of Trip Rates Across Variables
  - HH Size X Income X Area Type
  - Income Group May Have Utility in Trip Distribution and Mode Choice

Trip Generation – Test Data

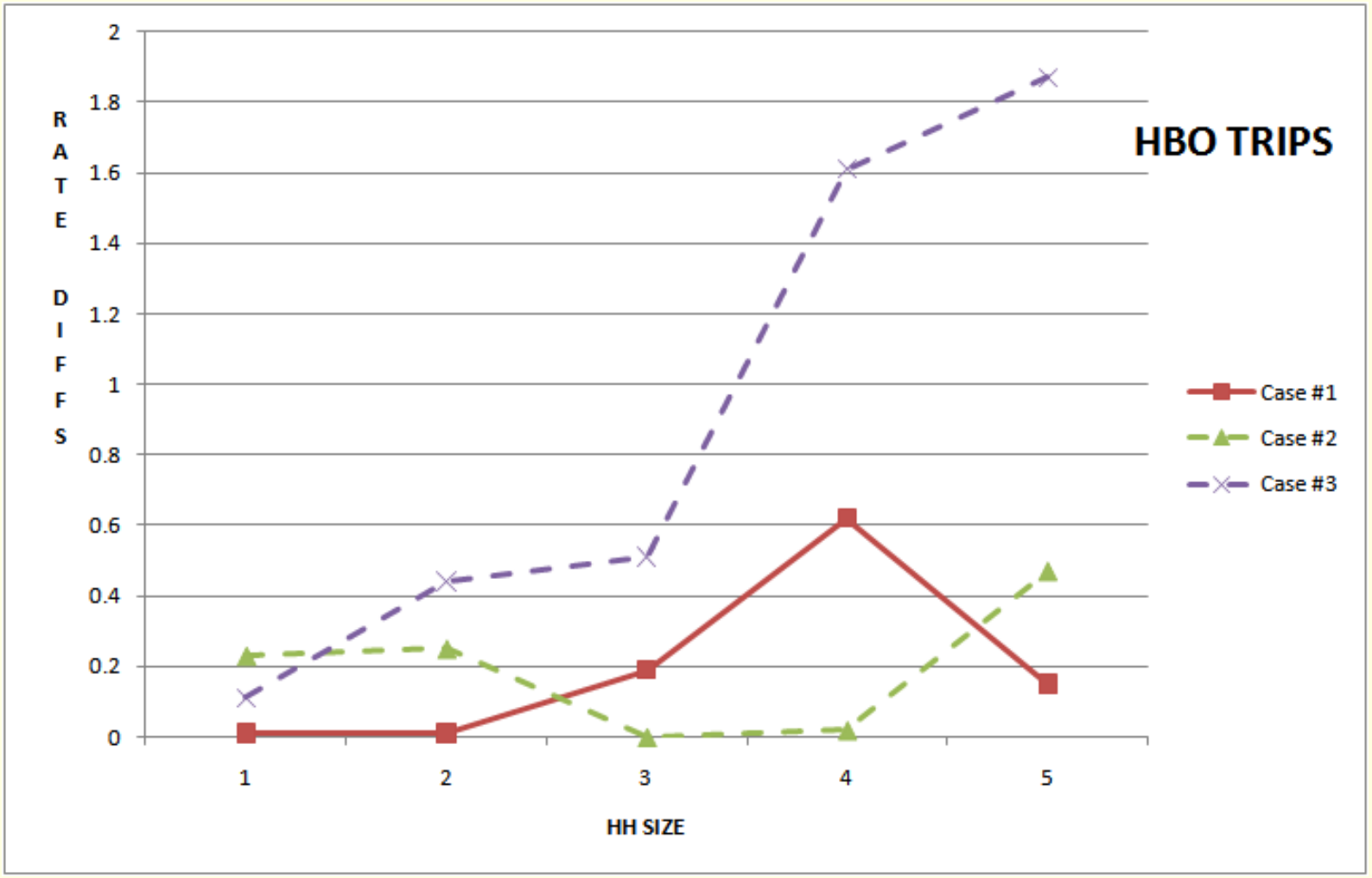
HBW TRIP PURPOSE

Case #1				Case #2				Case #3		
					URBAN				RURAL	
			RATE		Income Group		RATE	Income Group		RATE
HHSIZE	URBAN	RURAL	DIFF.'S	HHSIZE	LO	MED-HI	DIFF.'S	LO	MED-HI	DIFF.'S
1	0.33	0.30	0.03	1	0.18	0.64	0.46	0.22	0.48	0.26
2	0.74	0.75	0.01	2	0.54	0.86	0.32	0.48	0.91	0.43
3	0.90	1.14	0.24	3	0.60	0.98	0.38	0.41	1.44	1.03
4	0.95	1.20	0.25	4	0.74	1.02	0.28	0.43	1.47	1.04
5+	1.19	1.12	0.07	5+	1.78	0.91	0.87	1.12	1.11	0.01
Spread	0.86	0.82			1.60	0.27		0.90	0.63	
Avg. Rate Diff			0.12				0.46			0.55

HBW Test Summary



HBO Test Summary



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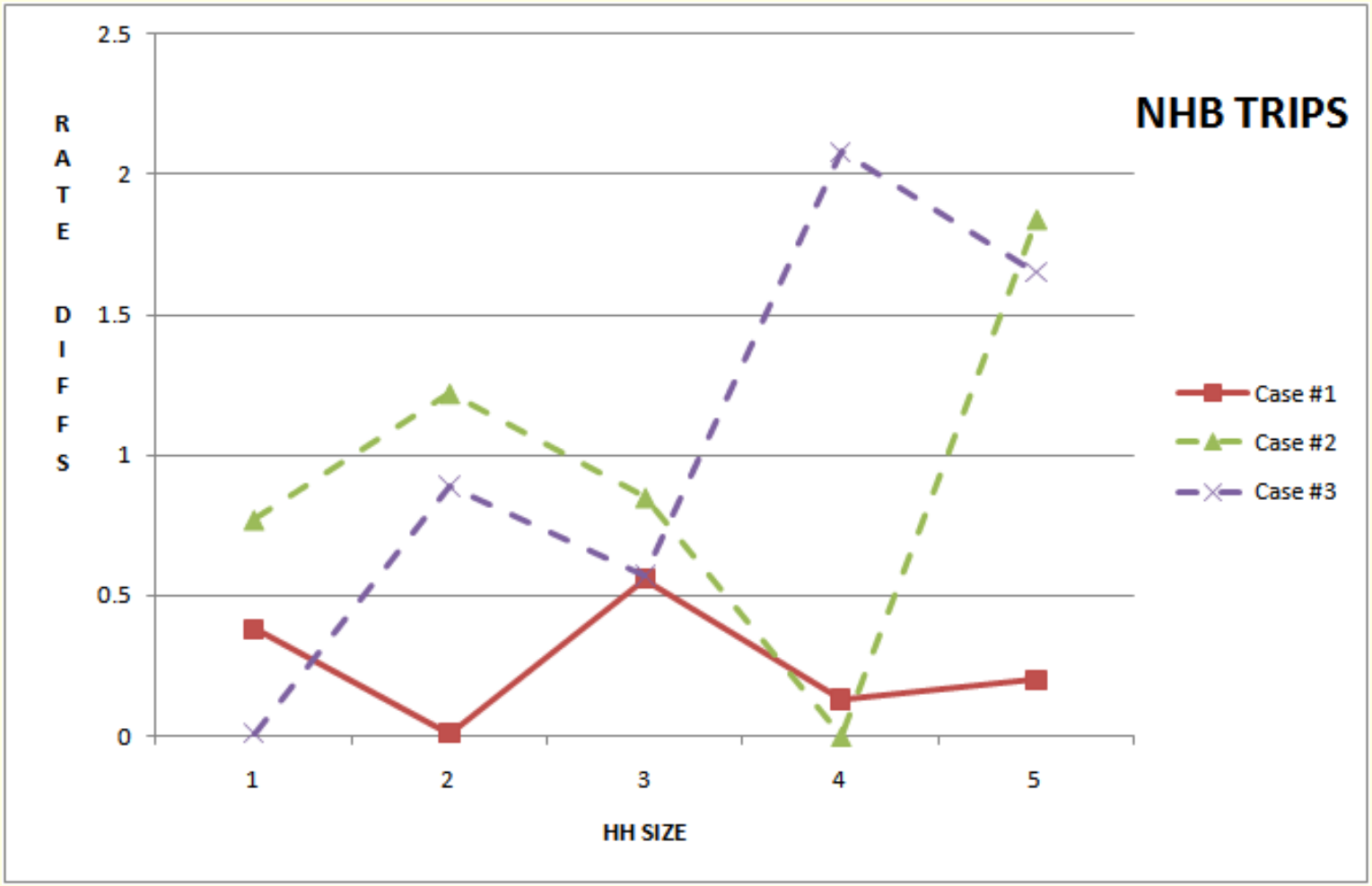
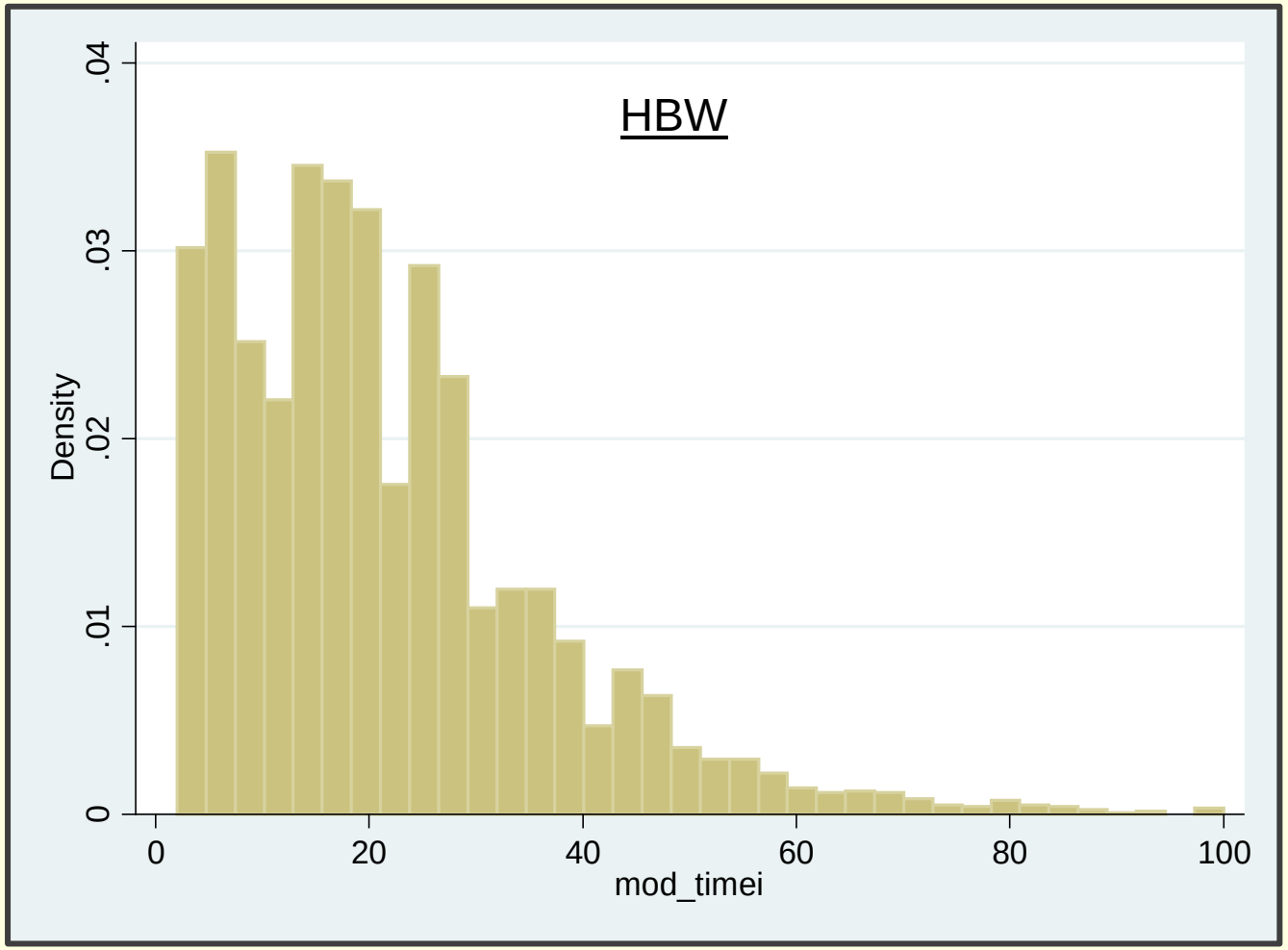
NHB Test Summary



Trip Distribution (0 – 100 Min)



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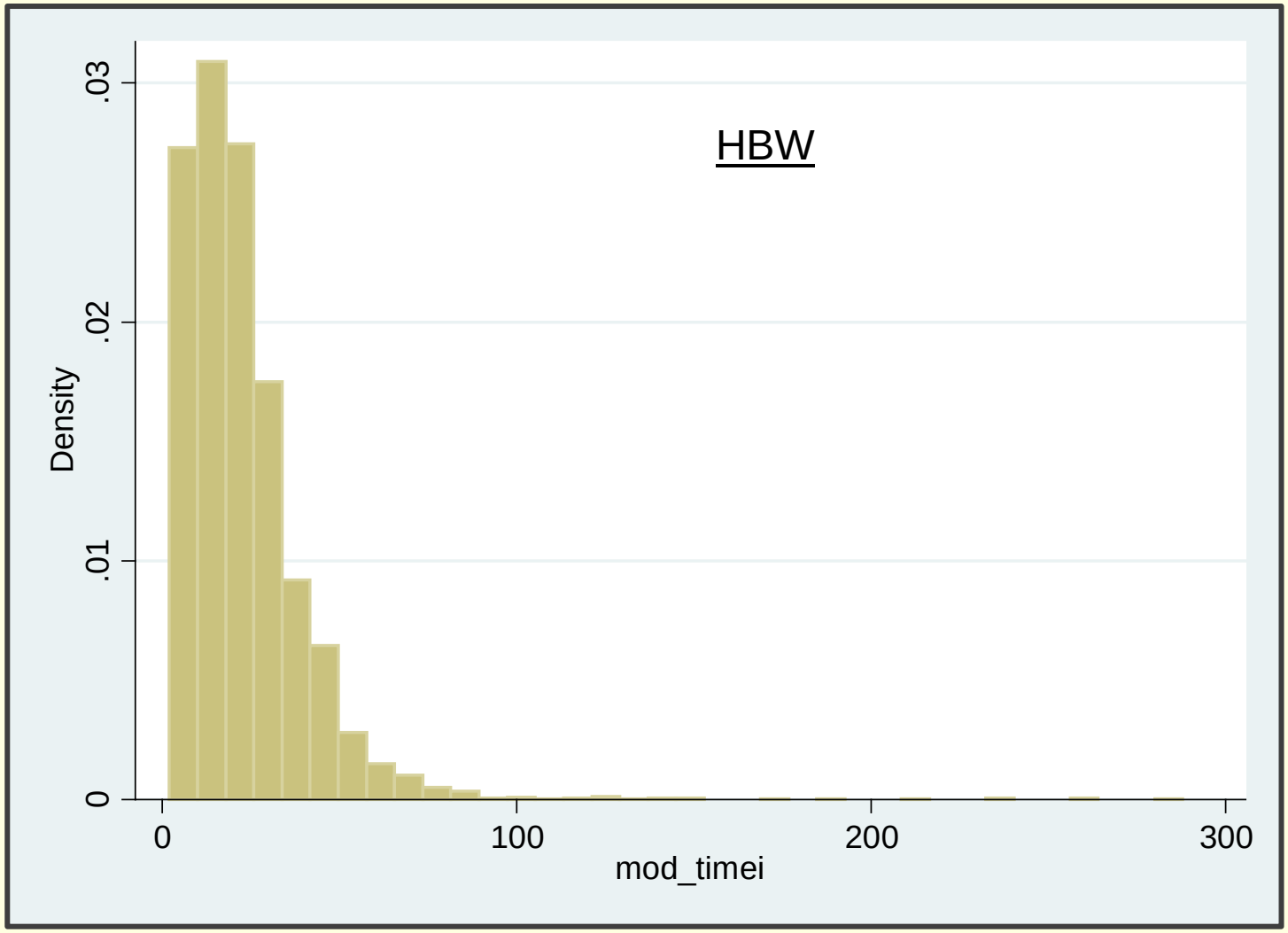
TRIP DISTRIBUTION (0–300 MIN)



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Look Ahead

- Encourage ‘Add-On’ Participation from All Neighboring States
- Next Statewide Model Update Incorporate ‘Add-On’ Data from Adjacent States (Esp. to better understand long distance travel)
- Possible Greater Emphasis on Long Distance Travel Using Data from Adjacent States
- Other Sources of Long Distance Travel Data:
  - 1995 ATS
  - ACS County-County Work Flows
  - FAA & AMTRAK
  - ARC Household and On-Board Transit Surveys