Modeling Effort Part 1:

Data Issues

SE Data

Travel Survey Data

Special Generator Data

Highway Data

Transit Data

SE Data

1) Smaller Models- 100% Field Survey

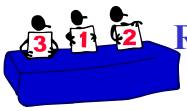
2) Current MPO Models-Single Class

3) Regional Models - Cross Class

3 basic data collection methods we currently use

SE Data - 100% Field Survey

Windshield Survey-Drive Around & Count Every House & Business



Rate Every House on its potential ability to make trips

Rating Descriptions

Category	Rating	Lot Size	Approx House Size(ft^2)	Trips/day*	Special Features
Excellent	5	> 1 acre	2500 +	10-12	Well maintained, nice landscaping Located in Nice neighborhood unique design to area (stone/brick) couple of nice cars
Above Ave	4	>.5 acre	1600+	8-10	same as above, could also include condos/ apartments with exceptional amenities-golf course, pool, etc.
Average	3	~.5 acre	~1000	7-8	more standard design, clean but not expert looking typical apartment complexes fall here
Below Ave	2	<.5 acre	<1000	6-7	smaller, older wooden frame, nice trailer/mobile home small apartments
Poor	1	<.5 acre	<1000	4-6	run down, poorly maintained, cinder block, public housing

* these are typical vehicle trip values but can change based on the study area

Rate every house on a relative scale. Relative to the area!

SE Data - 100% Field Survey

Businesses- collect type (SIC code), phone #, # of employees & commercial vehicle info

Classification Group	Examples	SIC Code #'s included
Industry	Factories, Farms	1-49
Retail Employment	Target, Walmart, grocery store	50-54, 56,57,59
Highway Retail	Gas Station, Fast Food	55,58
Office	Lawyers, Real Estate, Insurance	60-67,91-97
Service	Doctors,Hotels, Automotive Repair	70-76,78-89,99

Sooooo the final collected data is:

# of houses by category
# of employees by category

Thoughts about 100% Field Survey

+ Easy for people to understand

+ Acts as surrogate for other variables-like income,children

+ 100 % data captured

- All area rankings different-subjective

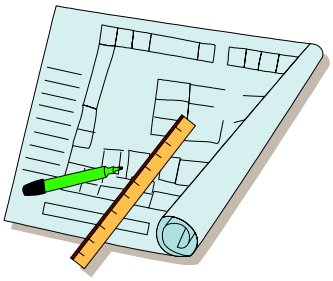
- Can’t duplicate

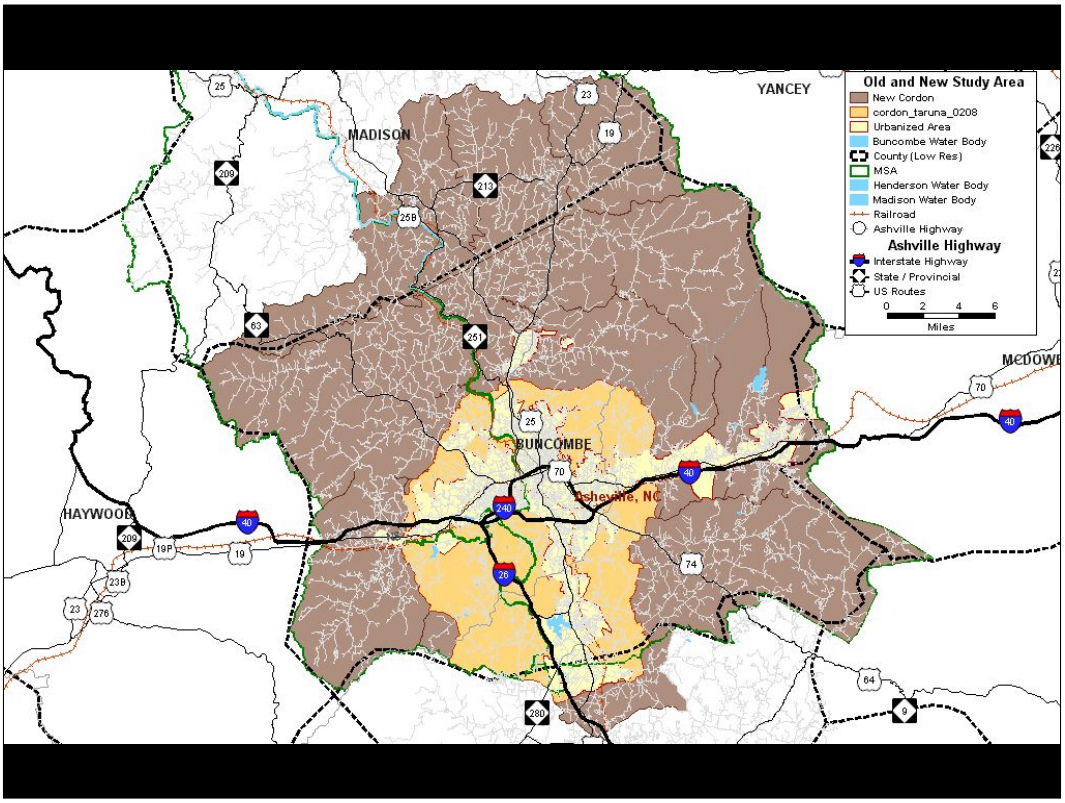
- No maintaining of the data since its not geo-referenced

- Time consuming

SE Data

Current MPO Models-Single Class





This map gives the basis for why we chose to do things differently

- Old model boundary needed expansion to a much larger area
- This area was too large for our traditional approach to be feasible
- We had time available to do this differently

Challenge

Satisfy the community's demand for better transportation planning

Action

Evaluate modeling process while developing the model

- Use of consultant for "state of the practice"
- Transfer knowledge to other areas
- Fold into "best practices"

This is pretty much more setting the stage. It brings in the use of a consultant and what we hoped to gain from the effort in addition to a new model. If you think this is too much background, I can abbreviate/eliminate. The talking will take about 5 min. max.

Population and Employment Data

Differences

Zonal structure by census geography

Data sources with GIS basis

- 2000 Census
- InfoUSA, supplemented

Top Down - Bottom Up Approach

- Use of economist for control totals
- Local knowledge to place in zones

All of this approach is different than the house rating system.

- In the past our system for zones had not been census based
- GIS capability was an additional advantage in this approach
- Data from census could be directly transferred to zones. Although the census staggers the release of data, we waited to get the breakdown needed for Trip Generation.
- InfoUSA does not capture everything: self-employed, agriculture& farming, etc. Tommy Hammer gave this to us in the SIC code breakdown

TOP DOWN - BOTTOM UP APPROACH BIG DIFFERENCE

- National to regional to county to sub-county breakdown in his model
- Local planners used sub-county area control totals (household and employment by SIC) to place in specific zones
- Benefits: Highly defendable forecasting with local by-in in the process

Population and Employment Data

Impacts

Trip Generation

- Single classification system for HBW, HBE, HBS

Transfer to other areas

- Five counties included in economic analysis
- Data available for other areas

Trip Generation

• Used workers per household, children per household, and persons per household for trip categories

• Only shopping had a secondary influence (area designation of urban, non-urban) and it was not of great significance.

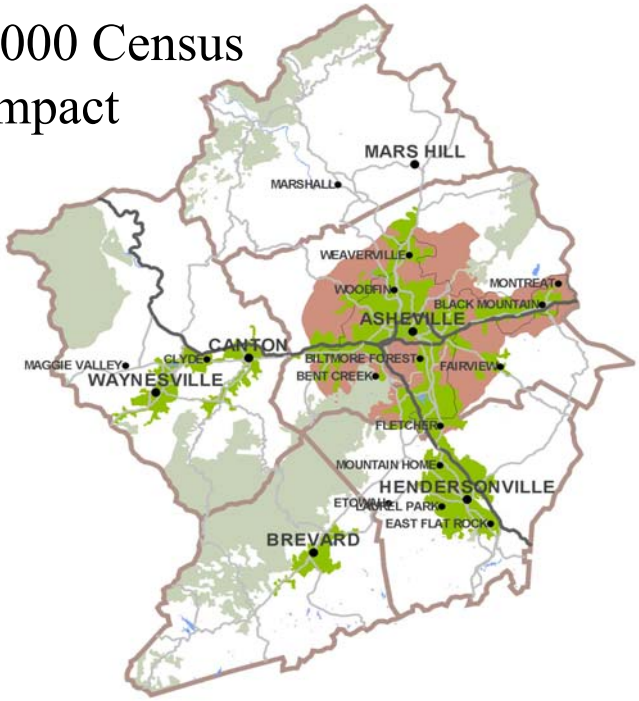
• Other parameters such as income and auto ownership were not statistically significant.

Transfer to Other Areas

• Data is now available for five counties in a consistent format.

• This immediately proved valuable with the new designation of the census urbanized area….SEE NEXT SLIDE

2000 Census Impact



SE Data

Regional Models - Cross Class

Travel Survey Data

LUNCH TIME

LUNCH TIM

Special Generator Data

Generally class

# of employees by type

traffic counts

# of students

# of housing (military)

Highway Data

Link Attributes

Posted Speed
Capacity (24 hr/Hourly)
Traffic Counts

Functional Class
# of Lanes (by directio

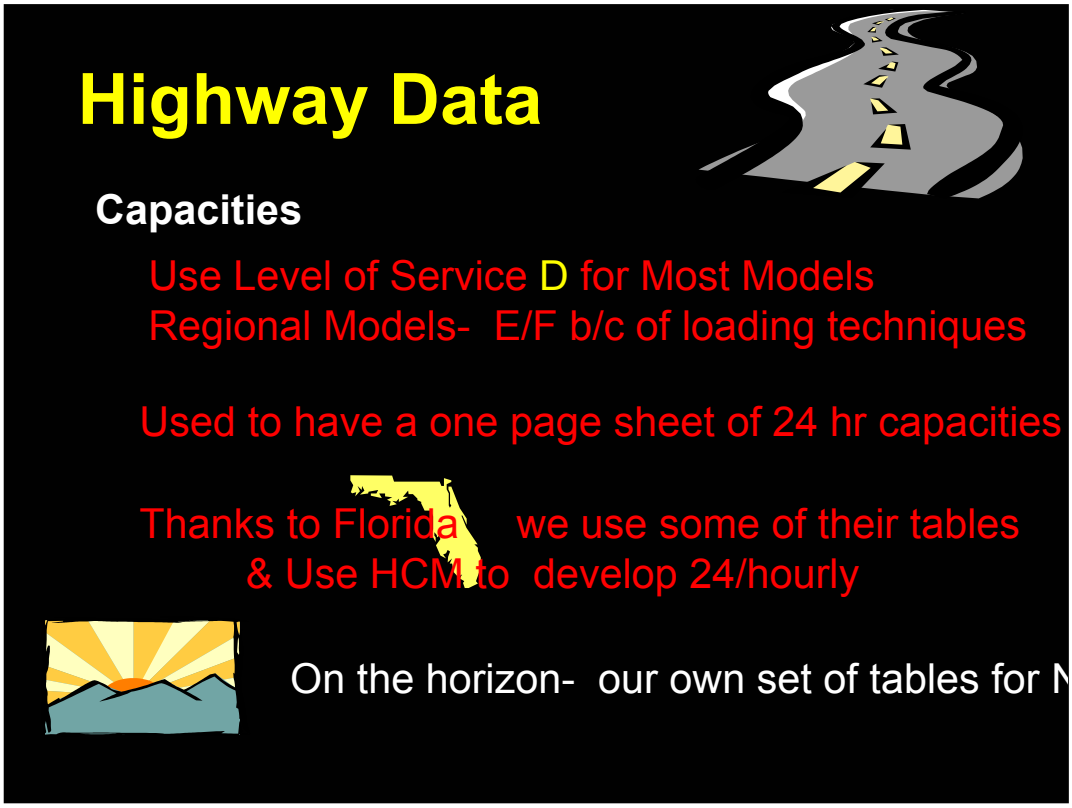
Facility Type
Signal Density
Median/Left Turn Access

We get our line/link data from various sources but primarily from our own GIS department.

However, most of the link attribute data we want is not part of the database currently.

For all of our models we collect the first set of data

More complex models collect the second set



LOS D -=b/c this has typically been the DOT LOS for design, the policy LOS so to speak

Sheet established in the 80's early 90's -about 14 different capacities=had no basis behind it

Switched to our Friends in Florida sheets/ Use the base sheets as a starting point for our small areas. Medium size/MPO's use the programs to adjust with the HCM

Since we aren't completely the same driving characteristics, terrain,etc like florida we have decided to setup something similar for NC capacities. We will have the same generic sheets but programs as well by regions of the State.

Highway Data

Speed **Posted Speed Limit**

-5 MPH

Some Measure of Free Flow

What Roads are on the Network?

All Federally Functionally Classified

Local Judgement-connectivity or volume category

Transit On It

Speed has not been set in stone either for every study. Kind of varies based on the person/area

Highway Data Questions

Free Flow vs Posted

How do you collect road data?

Maintenance of data?

Capacities--24 to hourly????

What is acceptable or better yet more widely used. If you can't collect speed data then what?

Is it MPO's? The DOT? GIS based tracking?

Capacities- we typically for 70% of our models use a daily capacity and never use the hourly. Should we be using hourly and making a daily out of it?

Transit Data