

## Percentage of Vehicle Hours of Travel (VHT) under 16 Speed Bins

This is an input in MOVES2010 that the user has the option of using local data or use defaults

### What are the input needs and format?

Percentage of VHT by 13 MOVES vehicle types, by 4 MOVES facility type, by time of day (24 hours) for a weekday and weekend day, and by 16 speed bins (2.5 mph to 75 mph in 5 mph increments)  
(13X4X24X2X16=39,936 records)

### Work Tasks

- Review the default data by isolating the four variables (hour, facility type, vehicle type, weekday/weekend) and examine the variations in the default data.
- Compare local data (available) to default data and develop recommendations as to the use of local data or default data in the MOVES2010 model.

### Observations of Default Data:

Staff plotted the default data under various formats to understand the variations in the data.

#### I. Hourly variations

We plotted for each of the four facility types the hourly percentages by the 16 speed bins. Attached are plots of the four facility type for 3 hours as an example. The goal of this exercise was to identify variations by hour for each facility

- For urban facilities the percentage of VHT varies by hour on both restricted and unrestricted facilities.
- For rural facilities the percentages are fixed for each speed bin and remain constant irrespective of the hour. In other words the percentage of VHT between 2.5 and 7.5 mph (5 mph mean) is 1% whether it is midnight, am peak or pm peak for rural unrestricted facilities.
- For rural restricted facilities irrespective of the hour the lowest possible speed range is 52.5 mph to 57.5 mph (55 mph mean)

#### II. Facility Type Variation

We picked an hour (weekday 7 am) and plotted percentages of VHT by the 16 speed bins for the four facility types with the goal of identifying the variation within the hour.

- Surprisingly urban restricted had a higher percentage at the idling speed instead of the urban unrestricted.

### III. Vehicle Type Variation

We picked an hour (weekday 5pm) and plotted percentages of VHT by the 13 vehicle types for the four facility types with the goal of identifying the variation by vehicle type. Since variation existed only among 6 vehicle types and only for one facility type only one chart is shown as an attachment.

- With the exception of rural unrestricted facility type all the vehicle types have the same VHT percentages for every speed bin.

### IV. Variation between weekday and weekend percentages

We picked an hour (5pm) and compared the percentages of VHT for one vehicle type between the 4 facility types.

- There was no variation between weekday and weekend VHT's for any hour.