Improving Mobility of Non-Drivers Age 18-64
Using the NHTS

Presented to MPO
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NHTS

- The National Household Travel Survey (NHTS) is conducted approximately every 5 years by the federal government.
  - The 2001 NHTS covered 66,000 households across the U.S., including 4,945 non-drivers age 18-64.
Multi-Year Non-Drive Study

• Previous report:
  – “Improving Elderly Transportation Using the NHTS”, June 2005
• This report:
  – “Improving the Mobility of Non-Drivers Age 18-64 Using the NHTS”
• Future reports:
  – “Snapshot of Non-Drivers in Hampton Roads”
  – “Improving the Mobility of Non-Drivers Using HRPDC Phone Survey”

• Note: Since September of 2005, non-driver work has been conducted using a State Transportation Planning Grant from VDOT.
Today’s Presentation

A. Mobility Needs of Non-Drivers Age 18-64 in Hampton Road

B. Factors Related to Mobility of Age 18-64 Non-Drivers

C. Improving the Mobility of Non-Drivers Age 18-64 in Hampton Roads
A. Mobility Needs of Non-Drivers 18-64 in Hampton Roads
Trip-Making of Persons 18-64, by Driver Status, NHTS, National Sample, 2001

The mobility of non-drivers is significantly lower than that of drivers.
Currently, there is a large group of non-drivers age 18-64 in Hampton Roads.

In 2030, slightly more 18-64 non-drivers are expected.
Summary of Part A: Mobility Needs

In light of

• the lower mobility of 18-64 non-drivers,
• the forecast that there will be approximately 55,000 non-drivers age 18-64 living in Hampton Roads in any given year through the year 2030,

there exists a significant need to improve the mobility of 18-64 non-drivers in Hampton Roads.
B. Factors Related to Mobility of Age 18-64 Non-Drivers
Factors Related to Mobility of 18-64 Non-Drivers

- Of the 186 candidate variables, regression indicates that 20 factors are significantly related to the mobility of non-drivers age 18-64, including:
  
  - Education
    - On average, the odds of getting out of the home increases by 6% with each additional level of education.
  
  - Duration of Medical Condition
    - Not surprisingly, persons are less mobile who have a medical condition “making travel difficult”; but those who had the condition from birth are less impacted.
  
  - Land Use
    - Persons living in “central areas” have 40% higher odds of getting out of the home on a given day.

Note: Education and medical condition are beyond the scope of this study.
Details Concerning Land-use Variable
Five Area Types

The NHTS divided the U.S. into the following five Area Types based on density and centrality:

1) Low Density Area
2) Medium/Low Density Area
3) “Surrounding Area” with Medium-to-High Density
4) “Central Area” with Medium Density
5) “Central Area” with High Density

A “Central Area” is defined as an area having density higher than the areas which surround it. Central areas have a great range of densities- e.g. Williamsburg and Manhattan are both central areas.

A “Surrounding Area” is an area lying outside of a central area. Surrounding areas have a great range of densities- e.g. James City County and Brooklyn are both surrounding areas.
Density, by Area-Type

Block Group Density (HBHUR), housing units / sqmi

Area-type

Low Density Area
Med/Low Density Area
Surrounding Area w/ Med-to-High Density
Central Area w/ Med Density
Central Area w/ High Density

149
884
2,447
3,179
16,634

0
2,000
4,000
6,000
8,000
10,000
12,000
14,000
16,000
18,000
Even though they have similar densities, the centrality of the fourth area type gives it higher mobility than the surrounding areas represented by the third area type.
The fact that non-drivers tend to be located in Central Areas is an indication that living in Central Areas actually provides higher mobility.
Mobility vs. Density and Area-type

- Based on previous charts, mobility is a function of both density and centrality.

- Which aspects of central areas give them higher non-driver mobility?
Significance of Alternative Modes

• Alternative modes—walking, local train riding, bus riding—are the primary modes which account for the additional trips made by 18-64 non-drivers in central areas.

• The factors which provide higher mobility in central areas must, therefore, be associated with alternative modes.
  – Factors associated with walking and use of public transit (local train and bus riding) are examined on the following slide.
Factors Conducive to Using Alternative Modes

• Factors Conducive to Walking
  – Due to the speed of traveling by foot or wheelchair, it is expected that persons living near destinations walk more frequently than similar persons who do not live near destinations.
  – It is expected that persons are more likely to walk if their environment is pedestrian-friendly.
    • Pedestrian-friendly environments have pedestrian infrastructure, low crime, and low traffic speeds.

• Factors Conducive to Use of Transit
  – Intuitively, one is more likely to use public transit if:
    • routes are nearby,
    • service on those routes runs at higher frequencies, and
    • destinations are closer.
In light of:

- “central areas” having higher mobility,
- this higher mobility being obtained via alternative modes,
- closer destinations, adequate transit service, and pedestrian-friendliness being conducive to travel by alternative mode, and
- “central areas” tending to have public transit service and destinations close to residences,

it appears that:

- **closer destinations**
- **transit service**
- **pedestrian-friendly environment**

are the actual factors which increase the mobility of 18-64 non-drivers.
C. Improving the Mobility of Non-Drivers Age 18-64 in Hampton Roads
Possible Actions - Local Government

• Localities can invest in improvements to pedestrian and transit infrastructure in those areas where destinations are near residences.

• Localities can use zoning to encourage development of more residences in areas where business, shopping, and government facility destinations already exist.
Possible Actions- Local Government

- Localities can use zoning to encourage the location of business and shopping destinations in areas where many residences already exist.

- Localities can use their capital improvement budgets to locate government facilities (rec. centers, libraries, etc) in areas where many residences already exist.

- Localities can use zoning to encourage mixed-use developments which simultaneously add residences and destinations to the same area.
Next Steps

- The next portion of this study will investigate the factors behind the higher mobility found in central areas by gathering data on bus service, sidewalks, and closer destinations via a phone survey of non-drivers in Hampton Roads.