

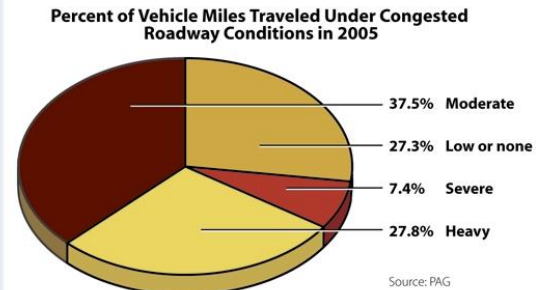
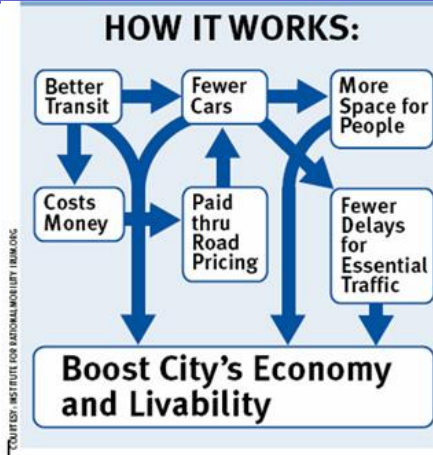
Peak Travel in America: *Where Are We Going?*

12th Conference on
Transportation Planning Applications
Nancy McGuckin, Travel Behavior Analyst

Background and Purpose

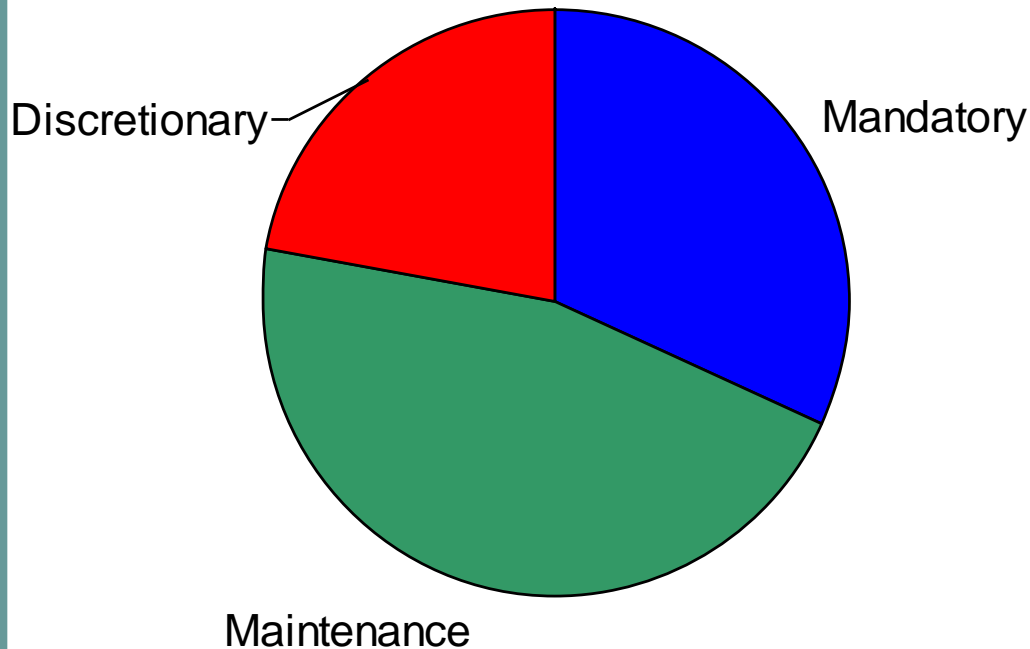
- ✓ Historic changes in travel include more growth in non-work purposes, including during peak (re: Peter Gordon, et.al. 1987)
- ✓ Looking at the mix of purpose during peak helps determine how many trips might be shifted from peak period
- ✓ Interest in who is traveling during peak: e.g. income, worker status, age to determine who would be affected by pricing options
- ✓ Using consistent definitions of purpose allows trend analysis and helps illuminate this complex issue

How much of weekday peak vehicle travel is really necessary?



Concept of Activity Type

Proportion of Daily Trips by Activity Type

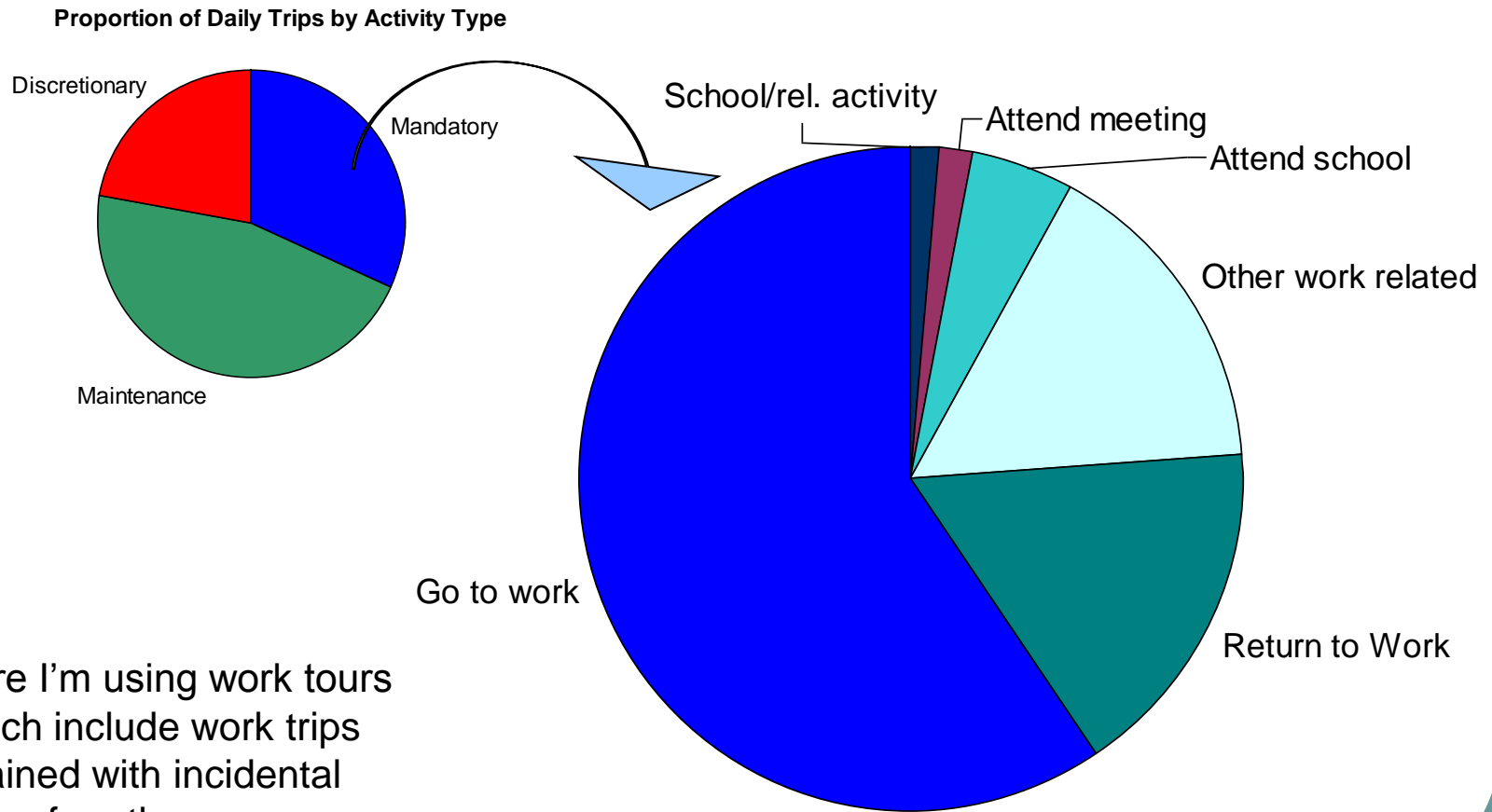


Mandatory travel (work, school) have little flexibility in schedule or location

Maintenance travel (shopping, errands) have more flexibility in time and/or location

Discretionary activities (social visit, recreation) have the most flexibility in time and location

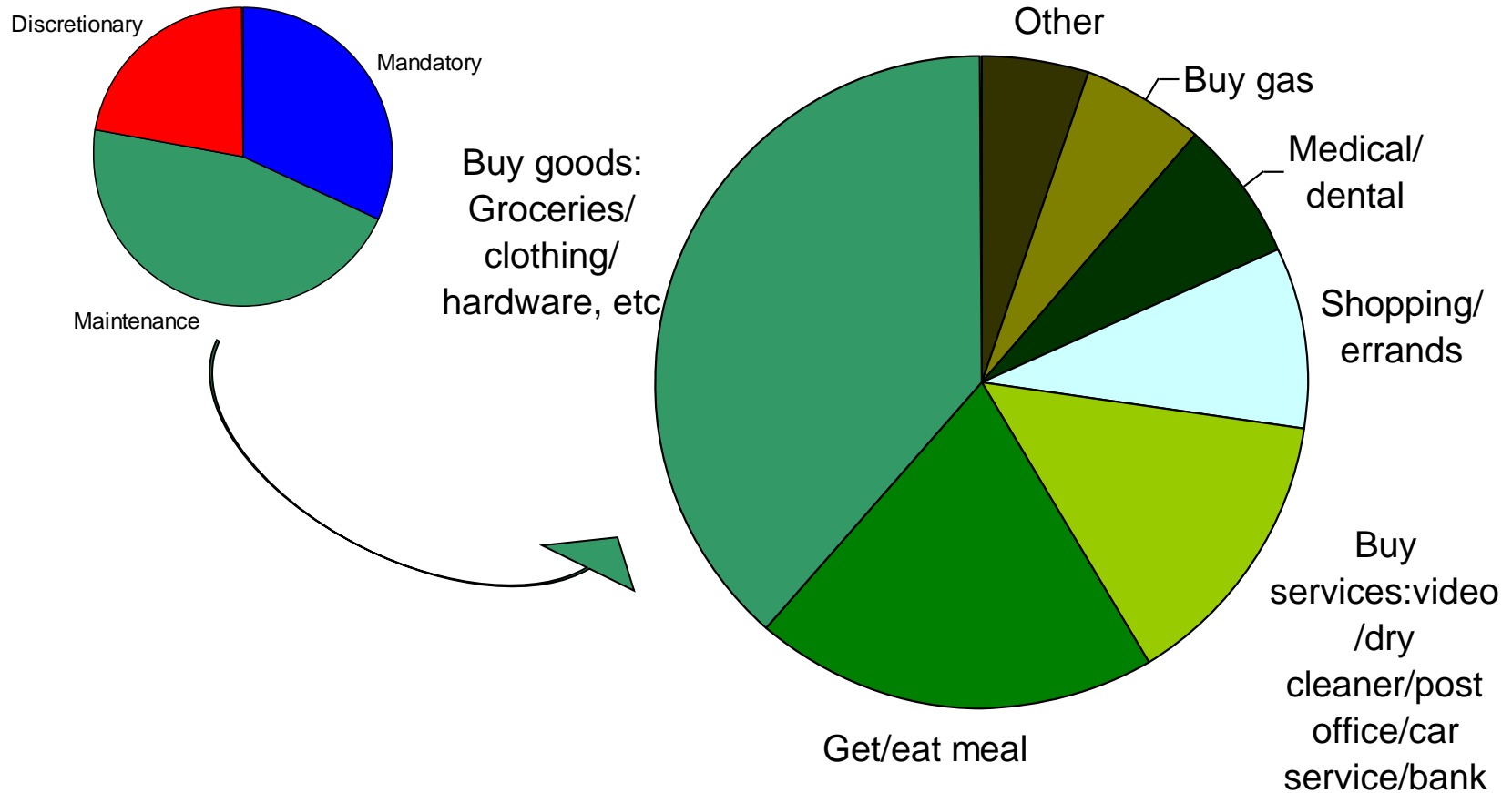
Mandatory vehicle trips (driver trips) are dominated by work...



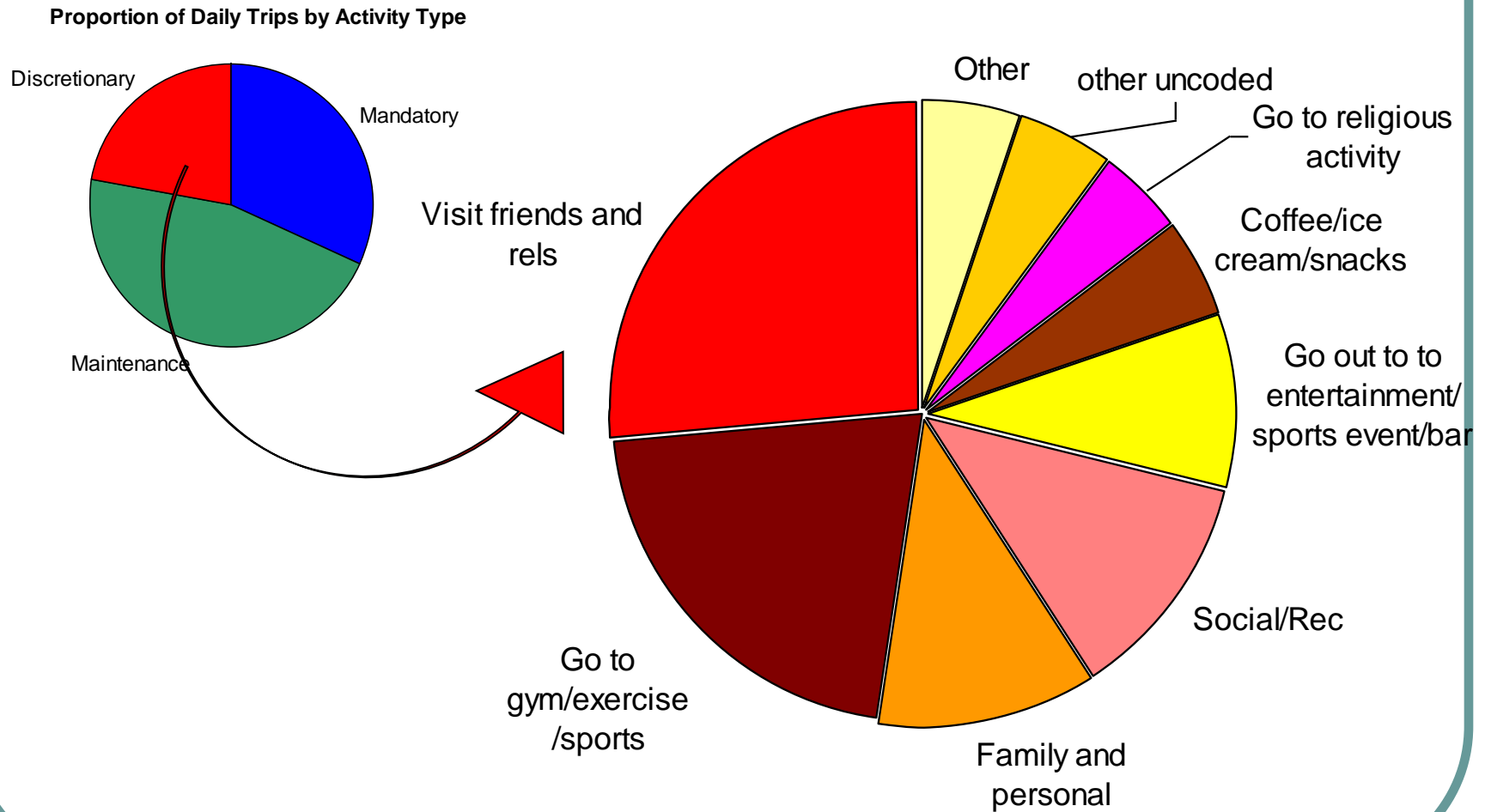
Here I'm using work tours which include work trips chained with incidental stops for other purposes.

Three-quarters of maintenance is shopping, errands, and meals...

Proportion of Daily Trips by Activity Type



Discretionary is the most diverse...

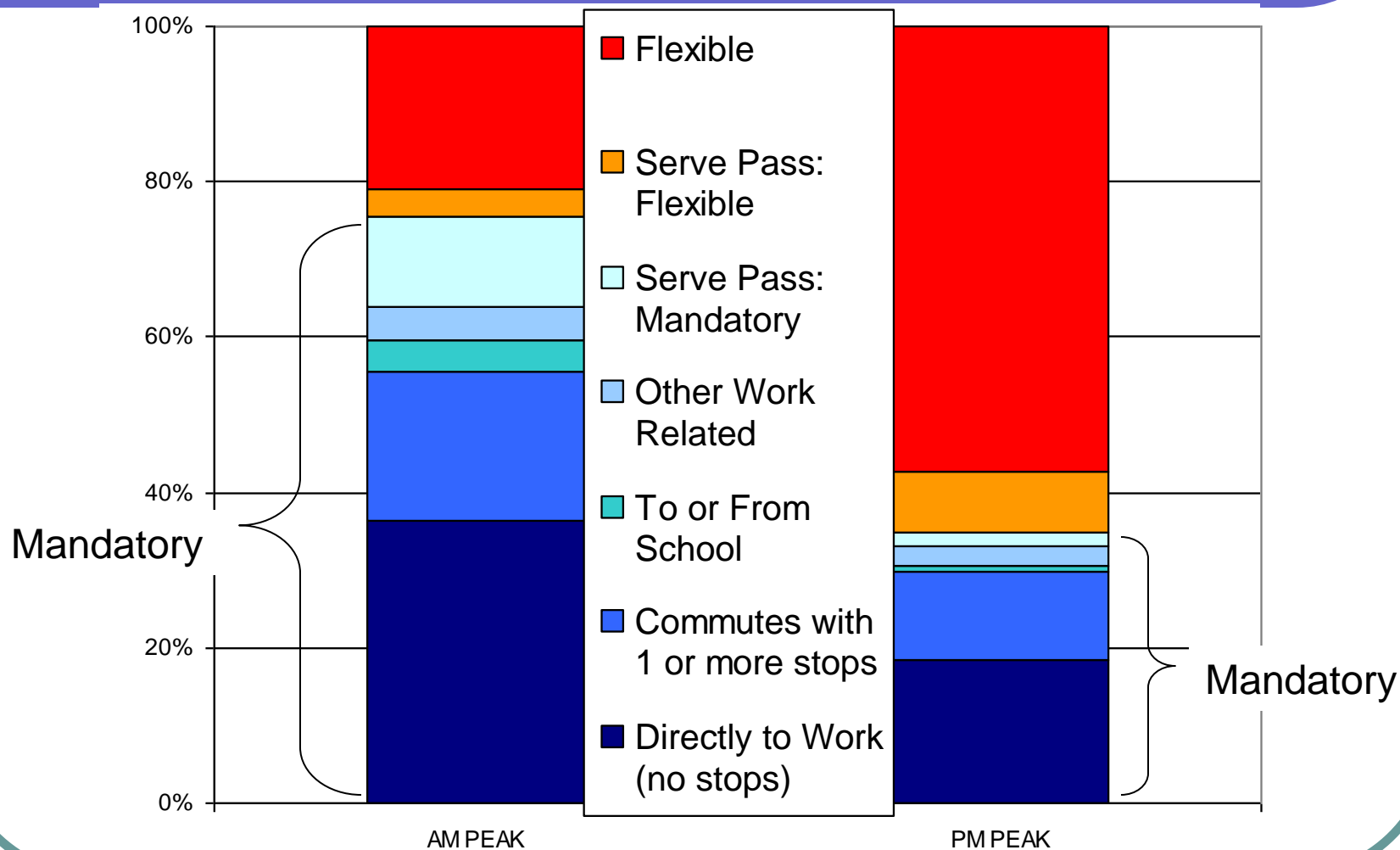


Let's use these concepts to try to untangle weekday peak travel...

Divide peak period vehicle travel into:

- 'Mandatory' (work, work-related, and school),
- 'Flexible' (maintenance and discretionary, like shopping/errands, medical, soc/rec), and
- 'Serve Passenger' (may be either, depending on passenger's purpose)

Nearly 80 percent of AM peak and over a third of PM peak is Mandatory vehicle travel...

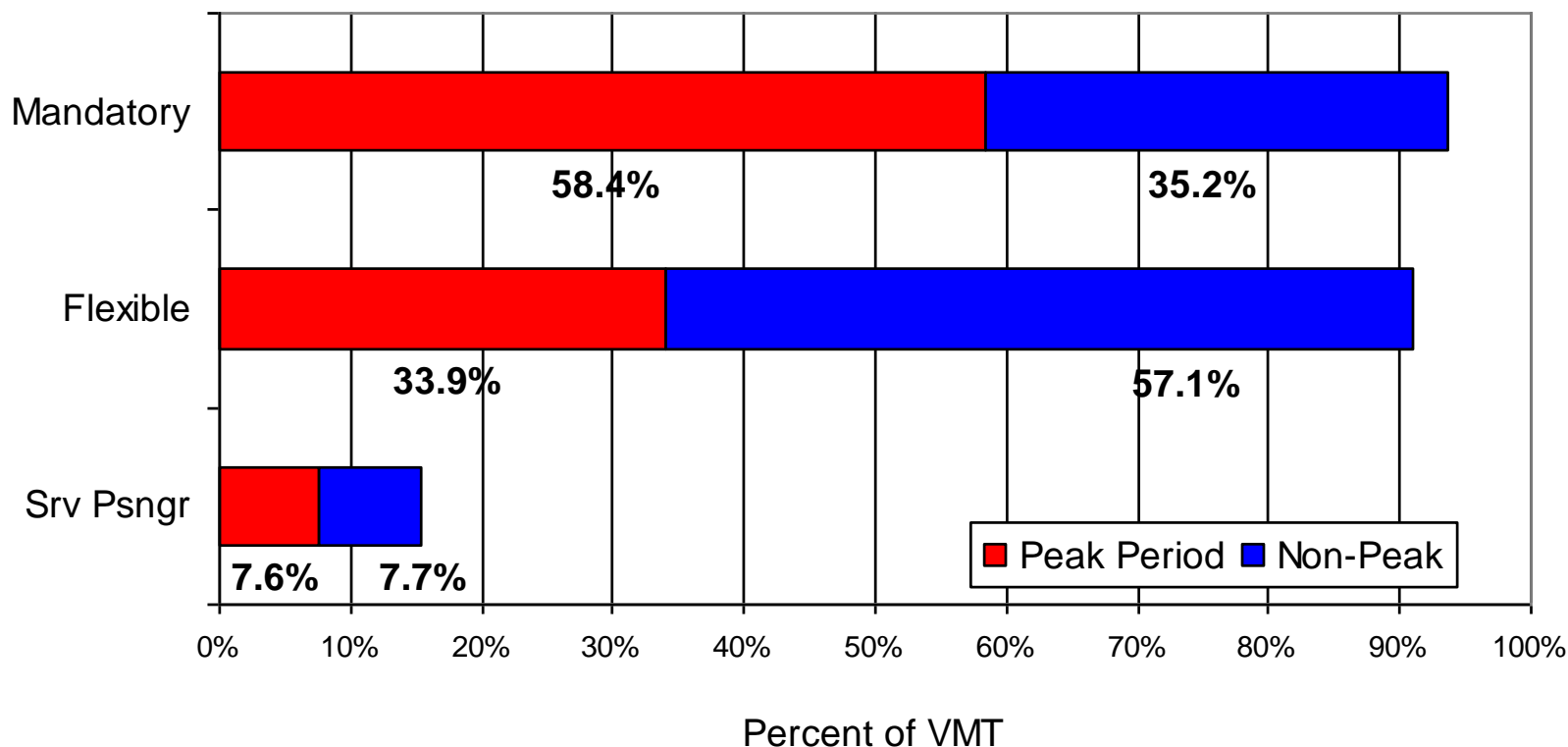


Source: NHTS Trip Chain Files

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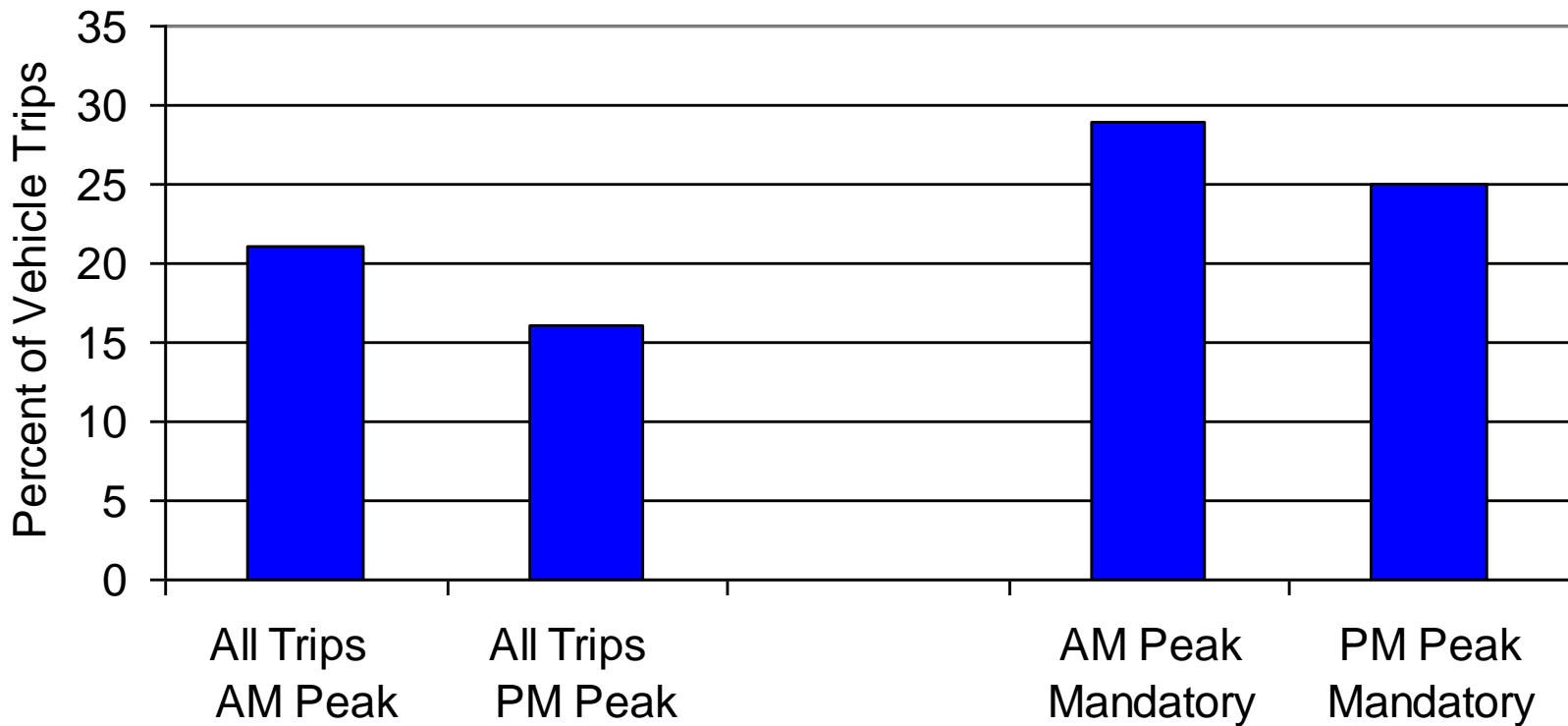
Altogether, nearly 60 percent of peak vehicle miles are 'Mandatory' (AM and PM Combined)

Percent of Daily Vehicle Miles by Type and Time of Day

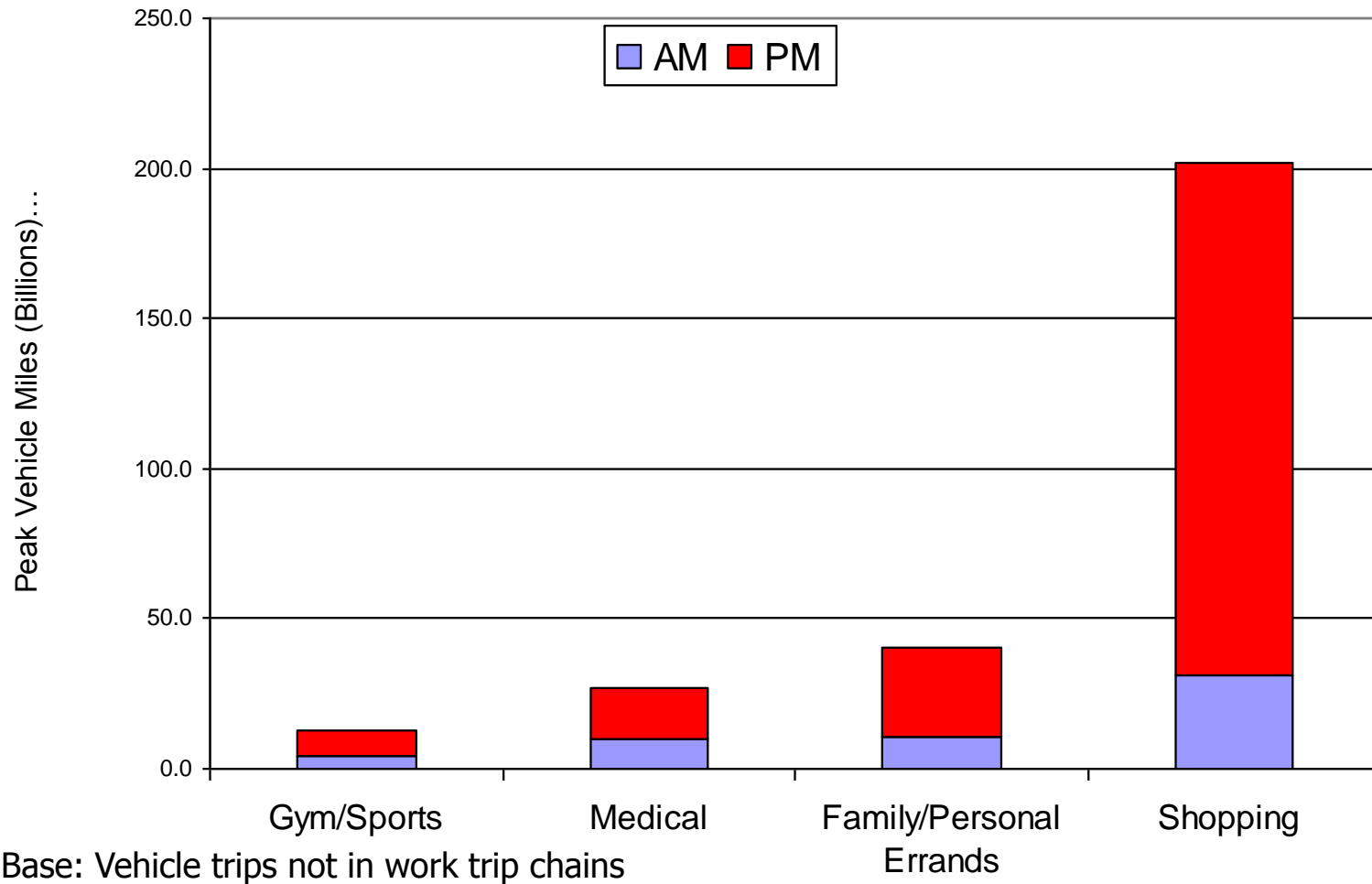


Nearly 30% AM Mandatory and 25% PM Mandatory use an interstate...

Use Interstate/Toll road on Trip

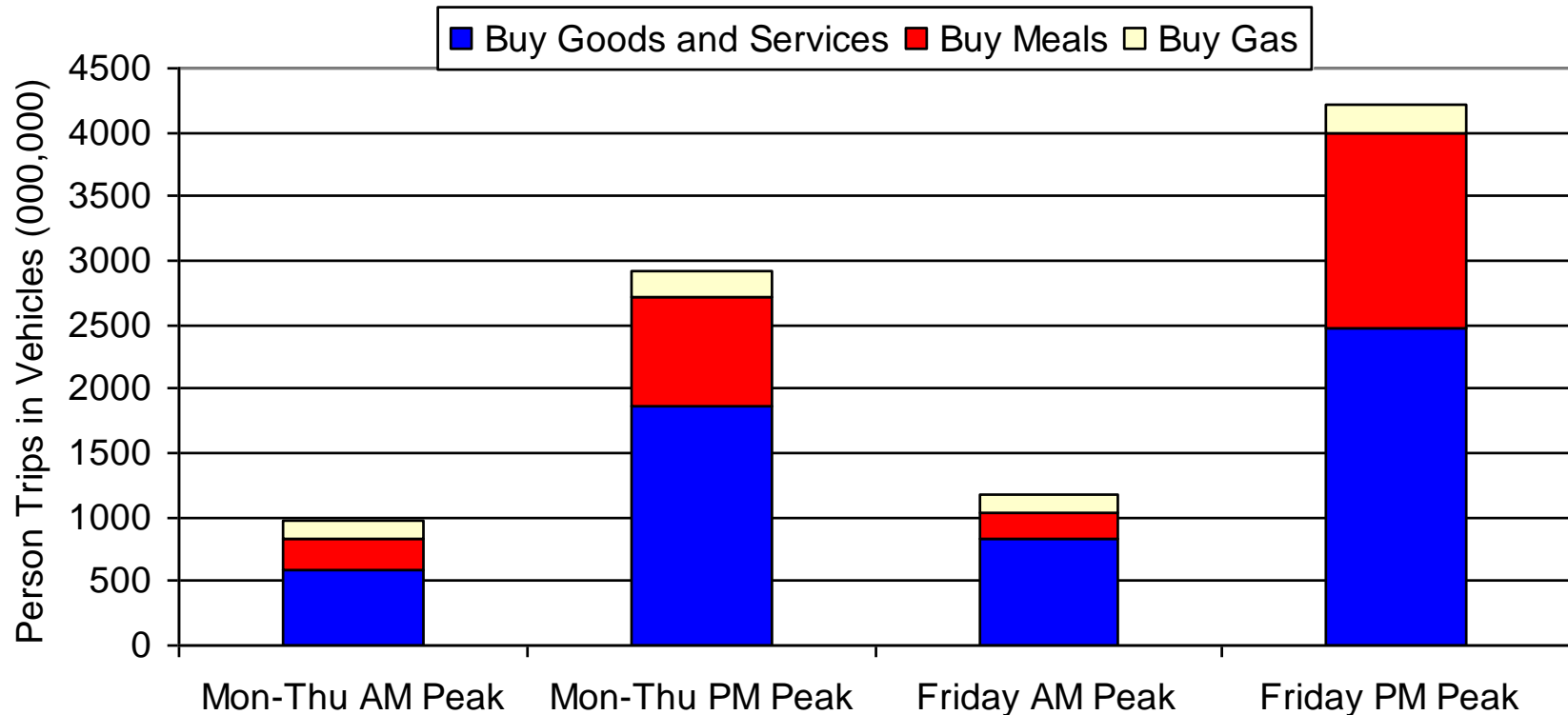


Shopping (inc. meals) dwarfs other 'Flexible' purposes in terms of miles added...



Buying goods/services and buying meals is much higher in the PM Peak

What is Included in Peak Period Shopping?

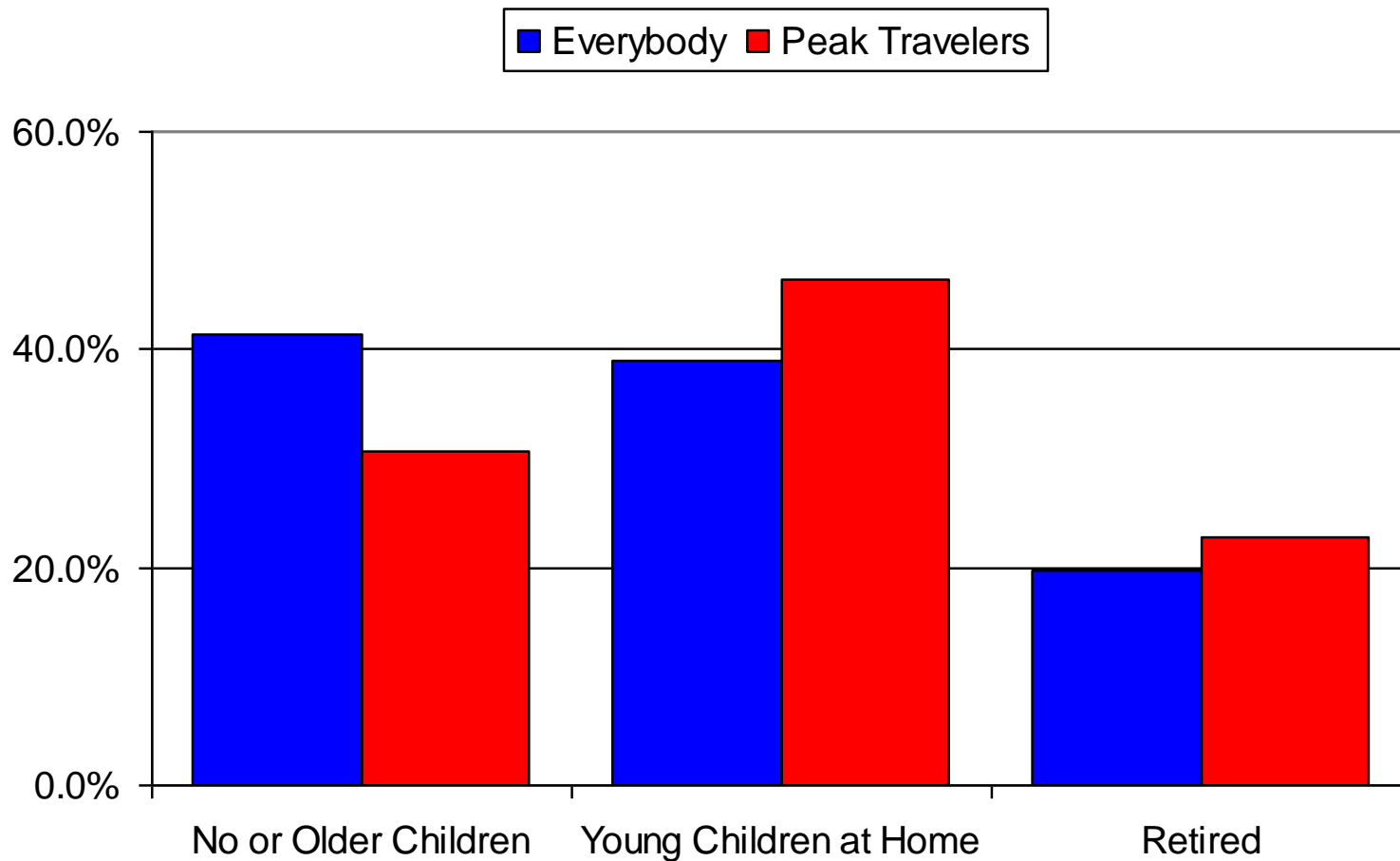


Base: Vehicle trips not in work trip chains

Who is traveling for mandatory and flexible purposes during peak?



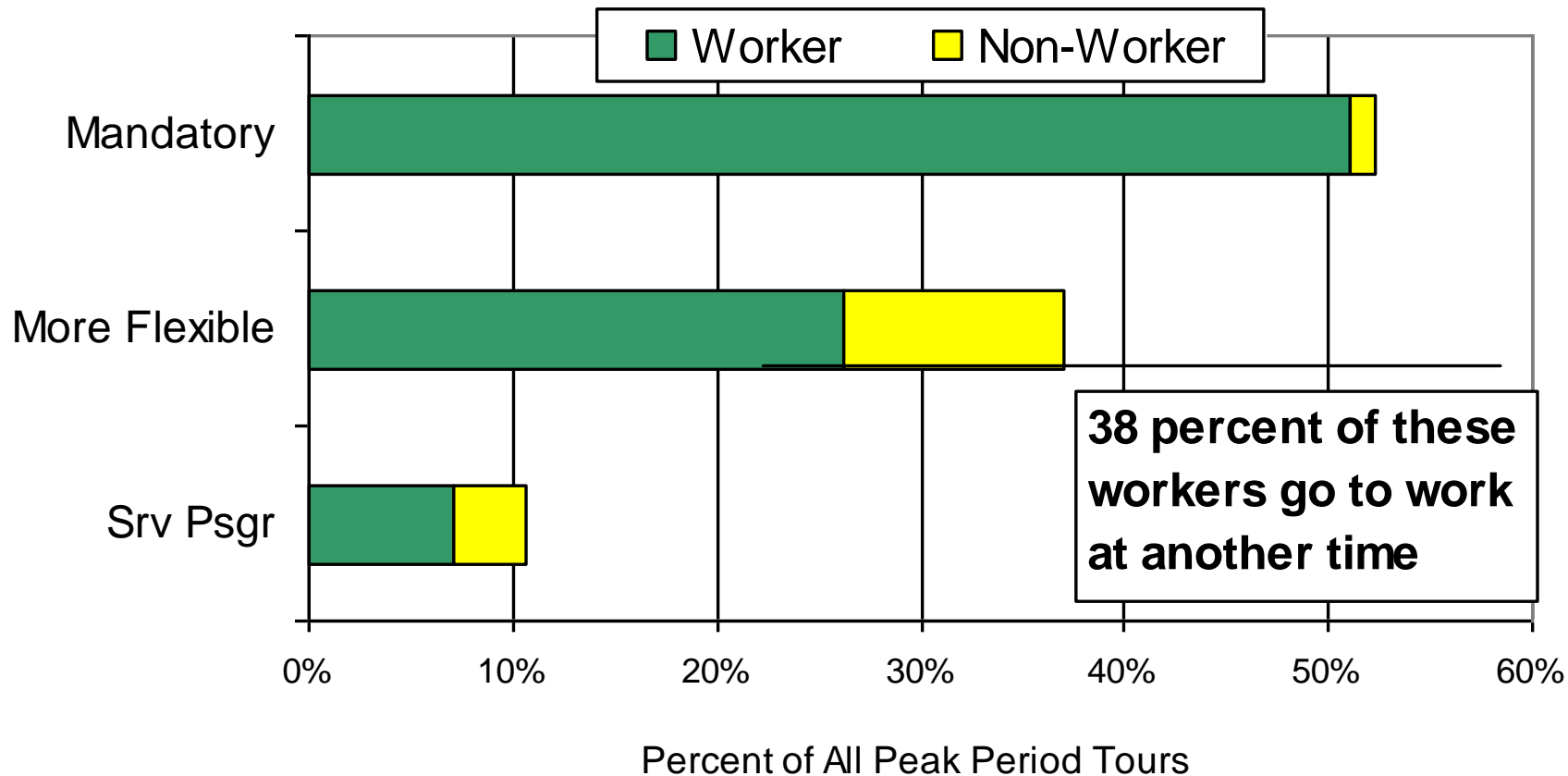
Drivers with young children and retired people are over-represented in peak travelers...



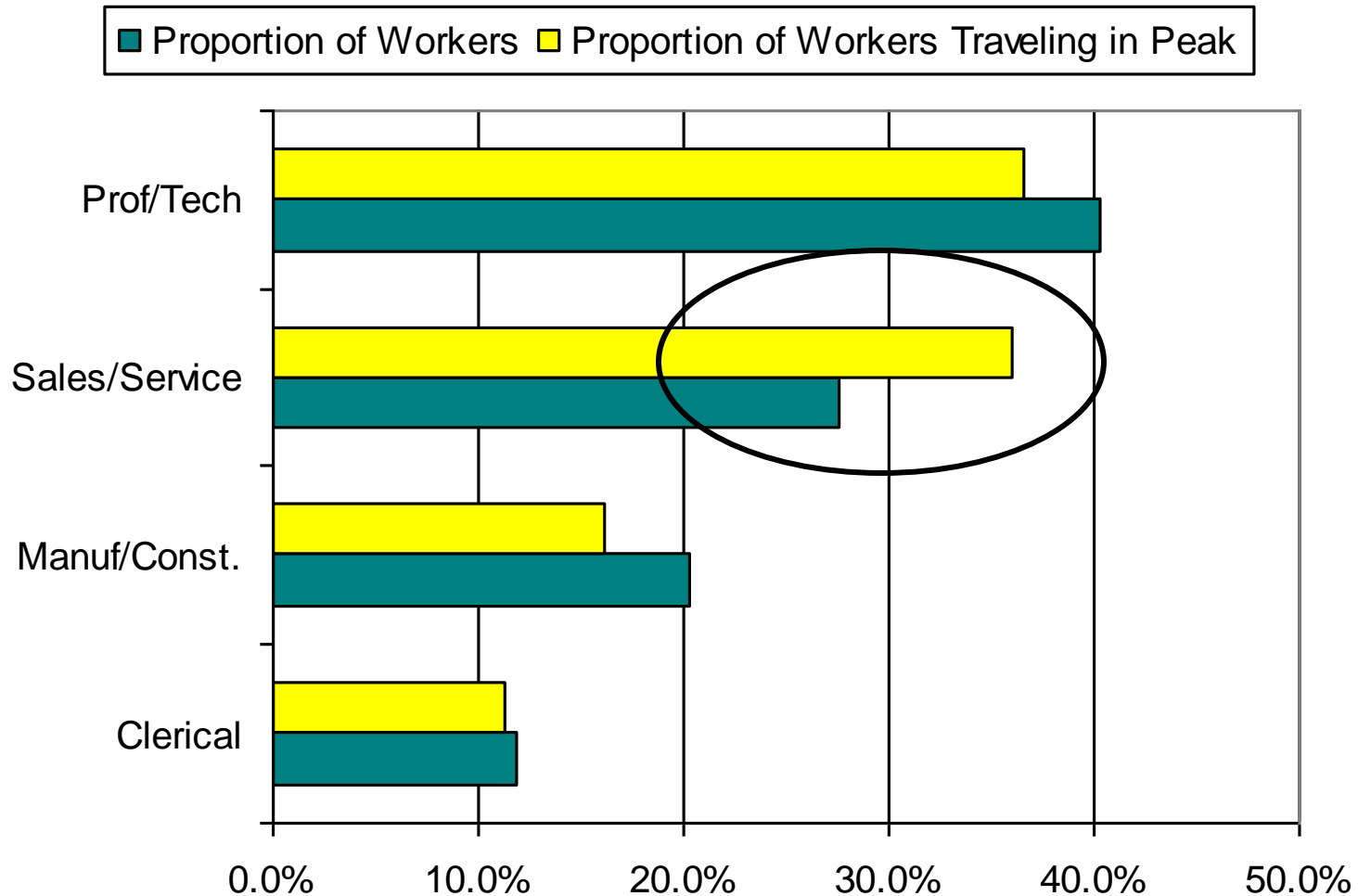
Source: NHTS Trip Chain Files

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The majority of peak vehicle trips are made by workers, whether 'mandatory' or 'flexible'



Workers in Sales and Service are more likely to be peak travelers...

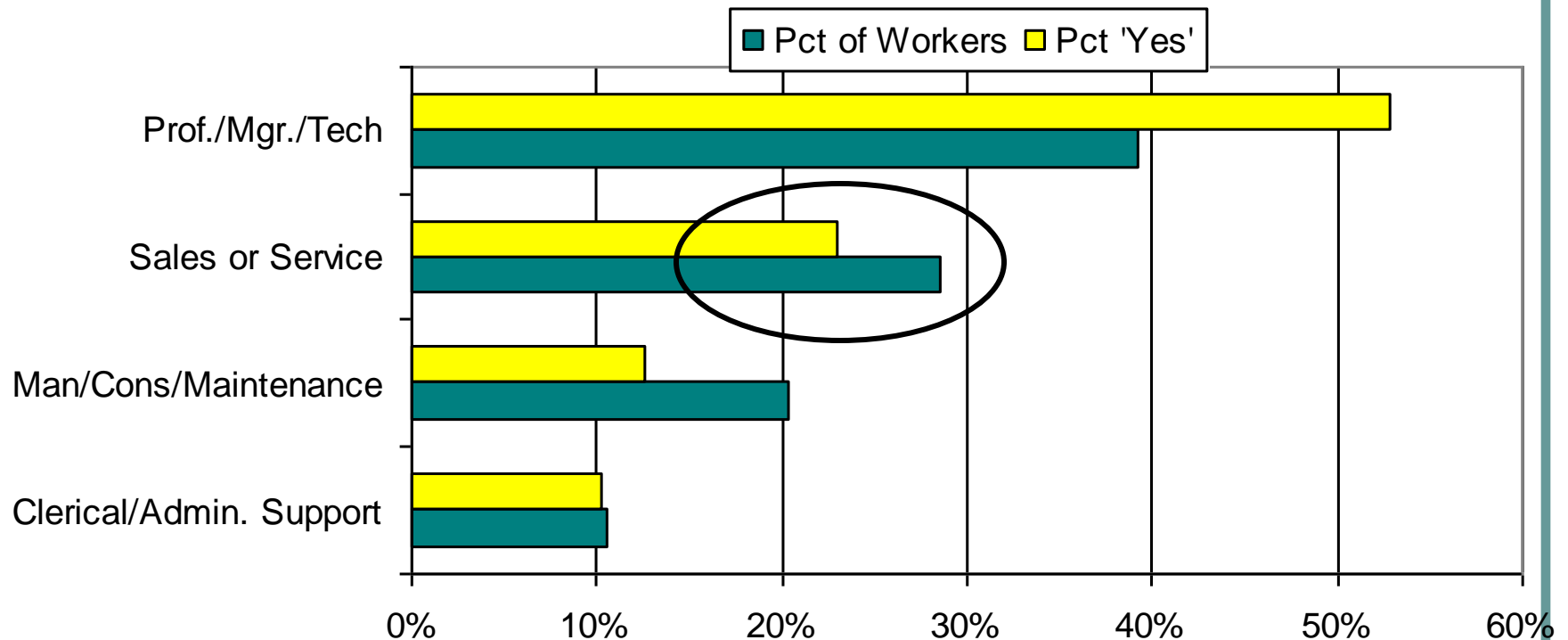


Source: NHTS Trip Chain Files

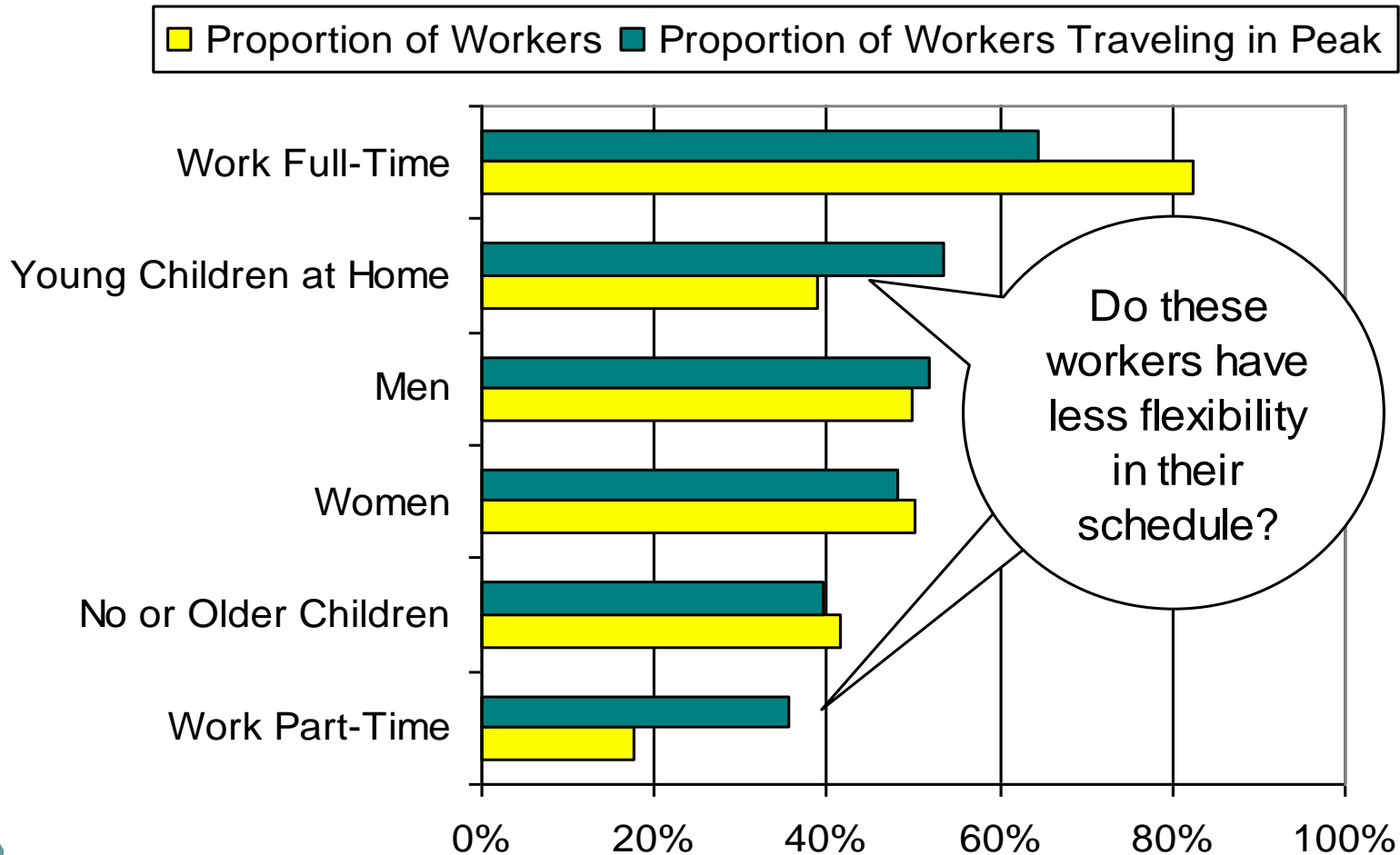
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And less likely to have flexible work start times...

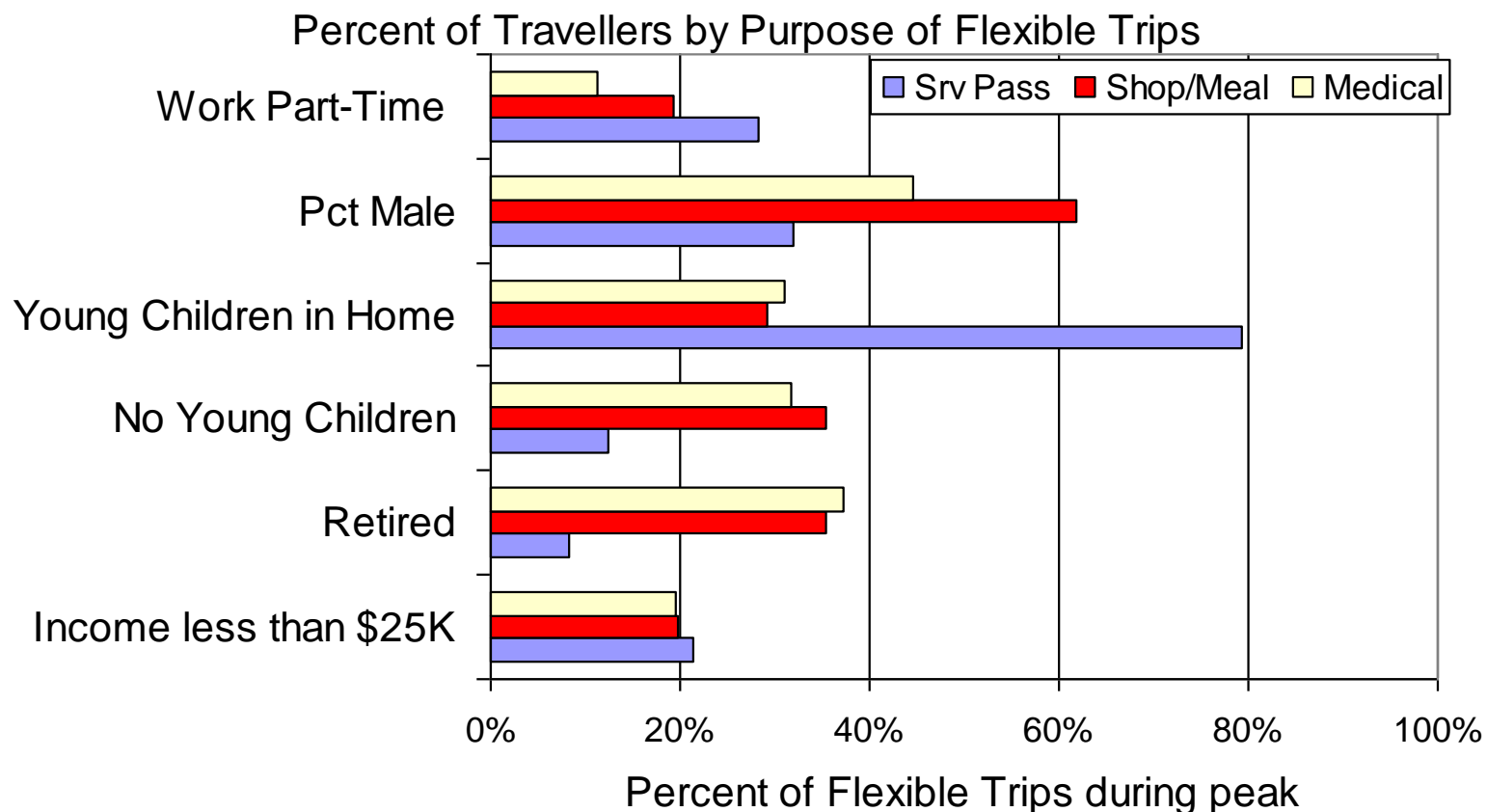
Do you have the ability to set or change your start-work time?



Part-time workers and workers with young children may also have less flexibility in their schedules...



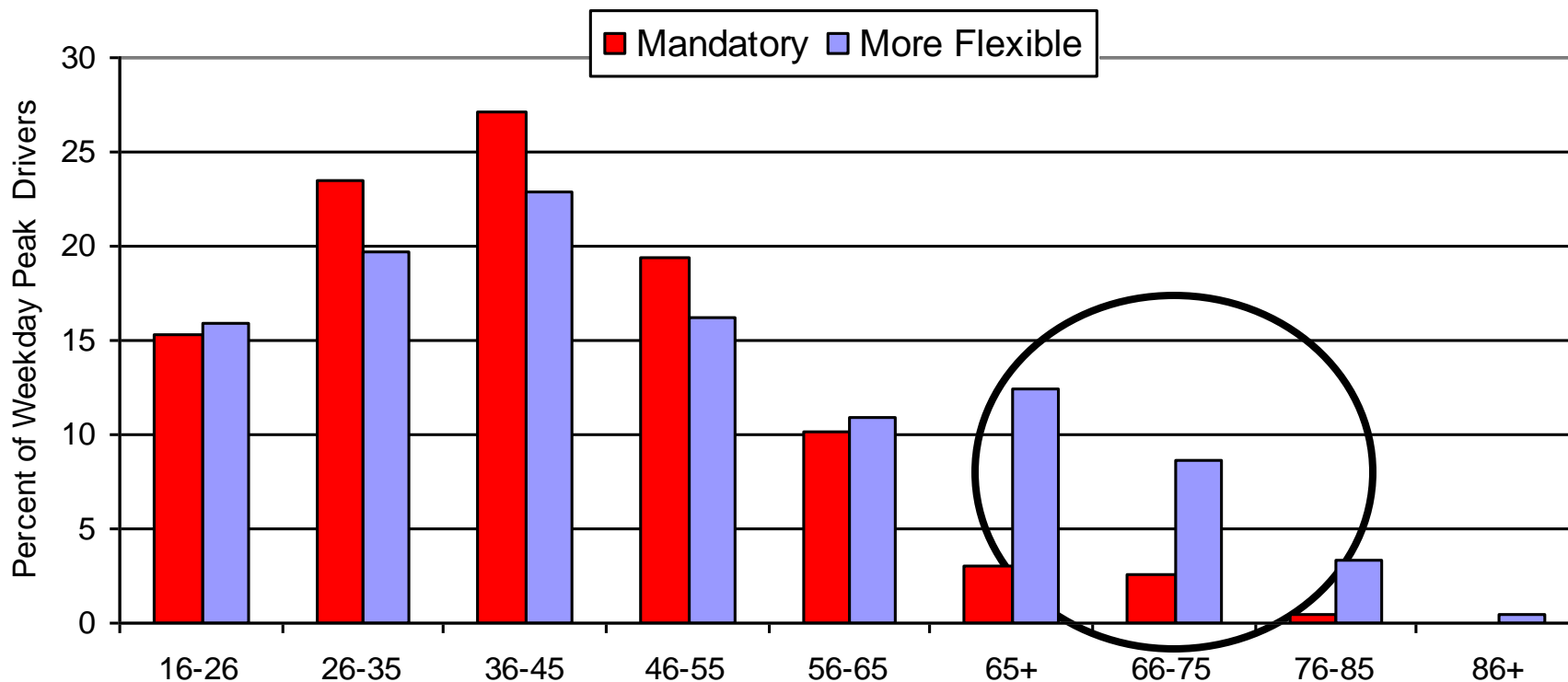
Over 60 percent of men making flexible trips in the peak are shopping/getting a meal...



Remember, these trips are not connected to a commute, although workers may go to work at another time.
Half of serve passenger trips are 'Mandatory'—80% in am and 20% in pm peak

Overall, older age groups are more likely to make flexible vehicle trips during peak...

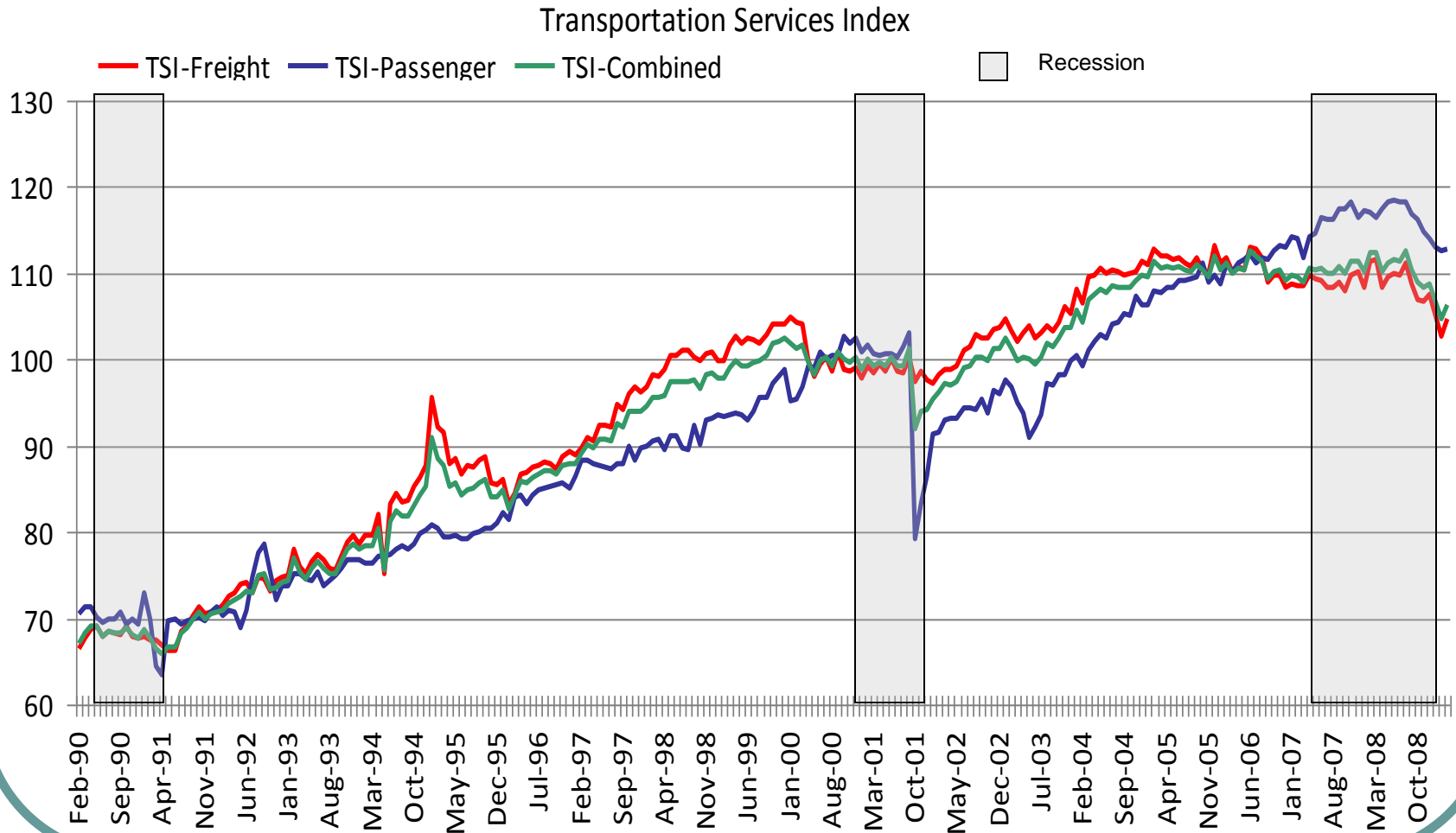
Percent of Peak Drivers by Age and Purpose



What does the future look like for weekday peak vehicle travel?



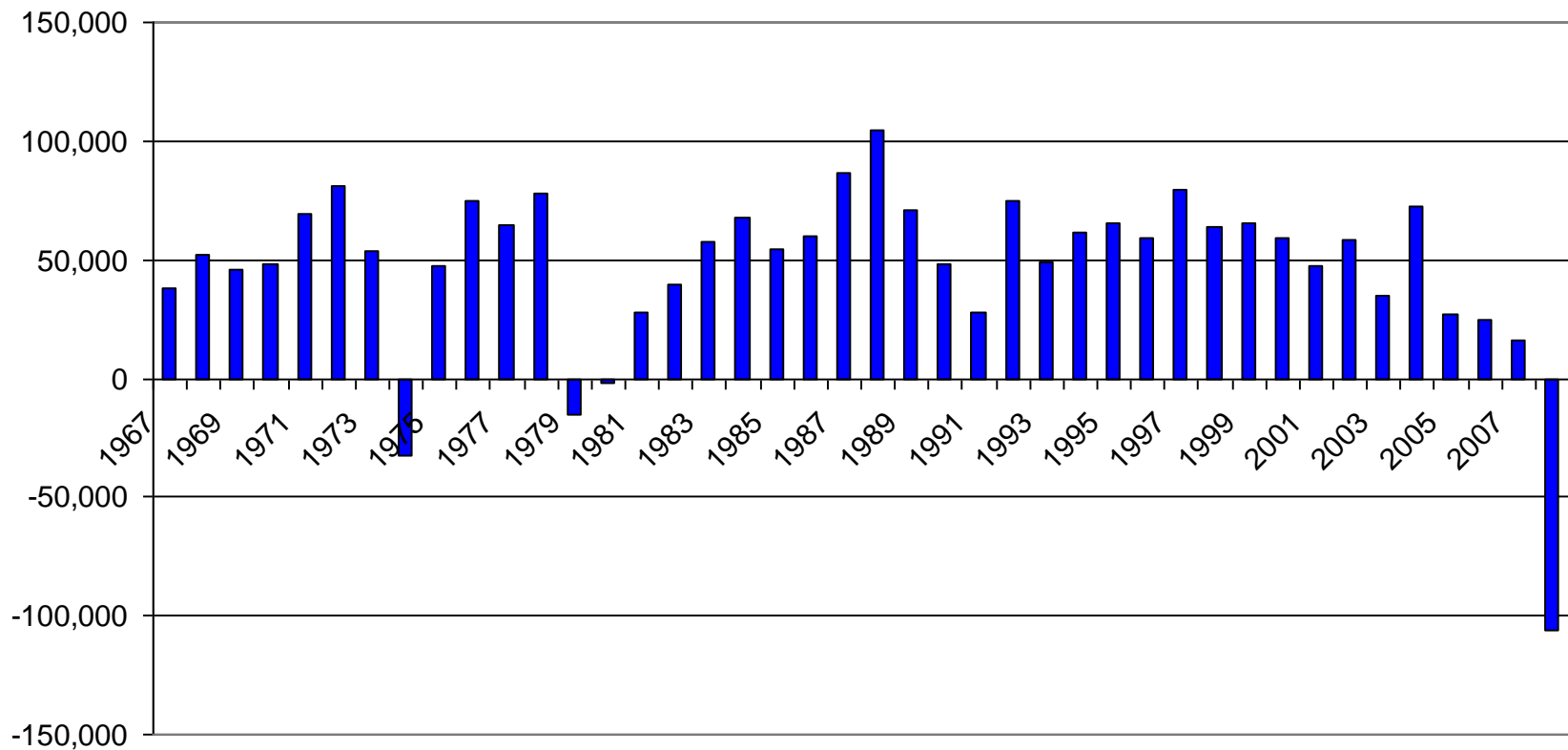
Travel is an economic activity...



Note: TSI is compiled by BTS and includes only transit, rail, and air in the passenger sector.

Unprecedented declines in vehicle travel...

Year over year numeric change - HPMS VMT

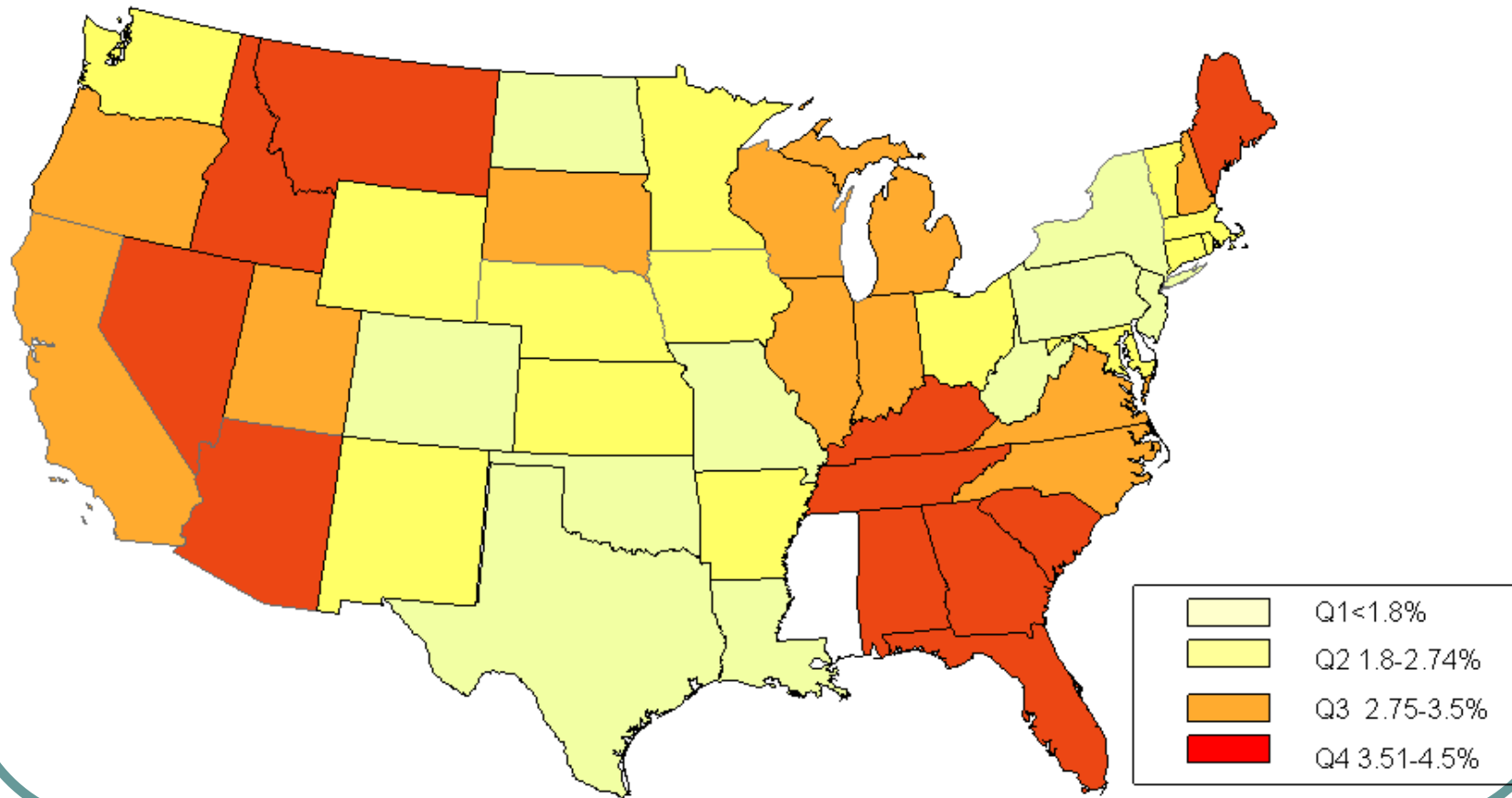


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Source: HPMS

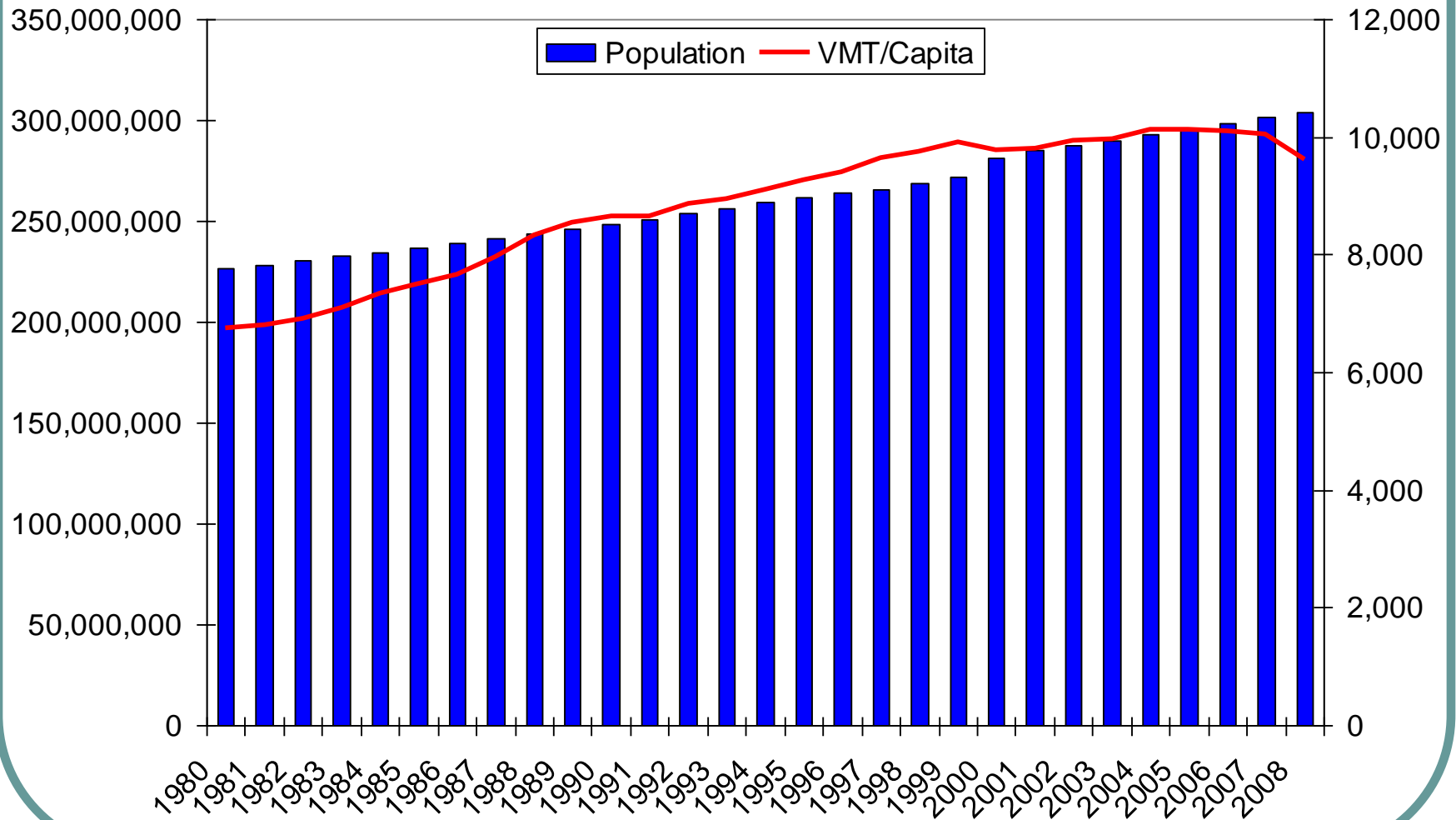
The economic downturn is changing travel patterns unevenly...

Change in VMT Growth Rate by State: HPMS 2007-2008



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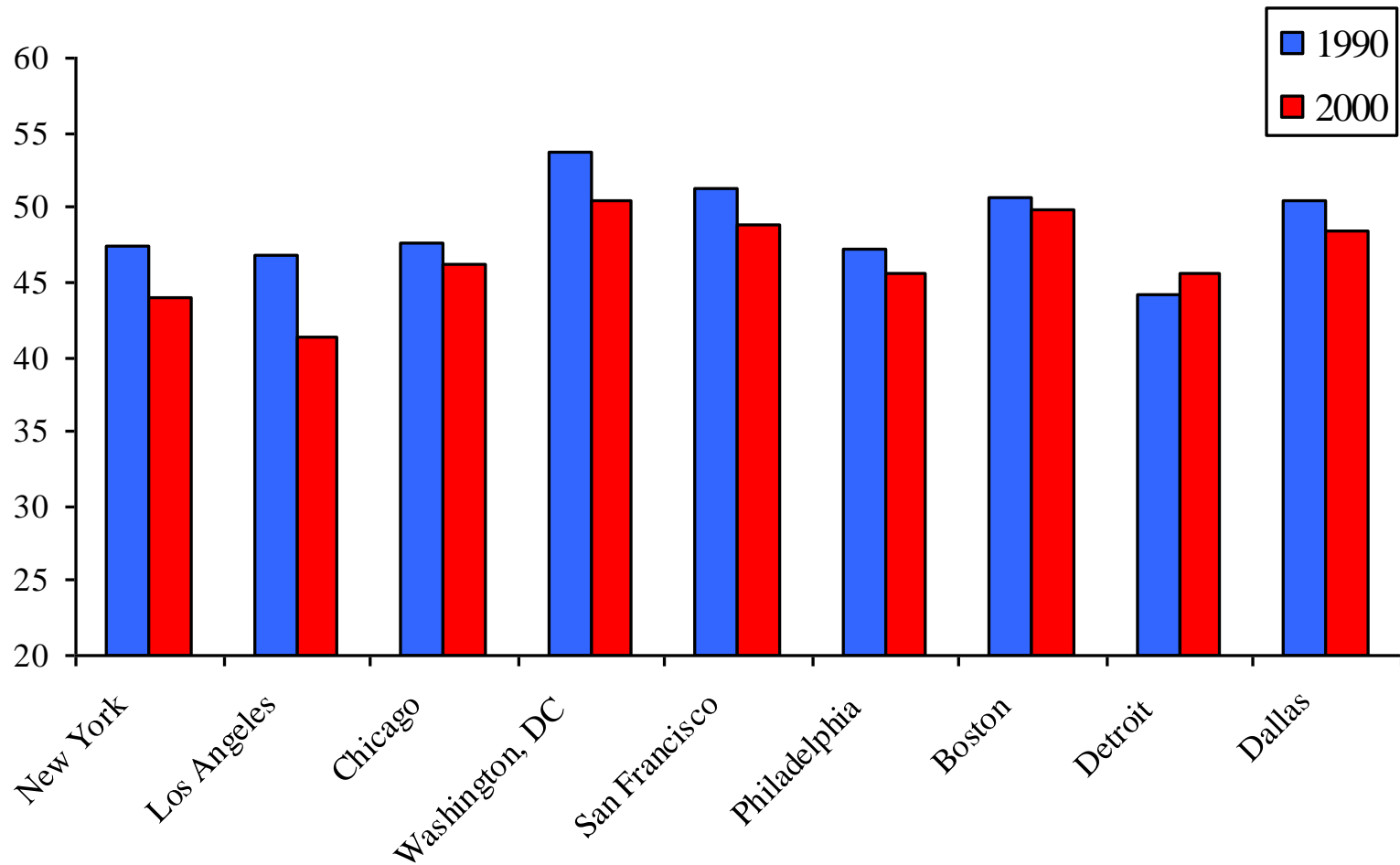
There's evidence that VMT growth was slowing before the recession...



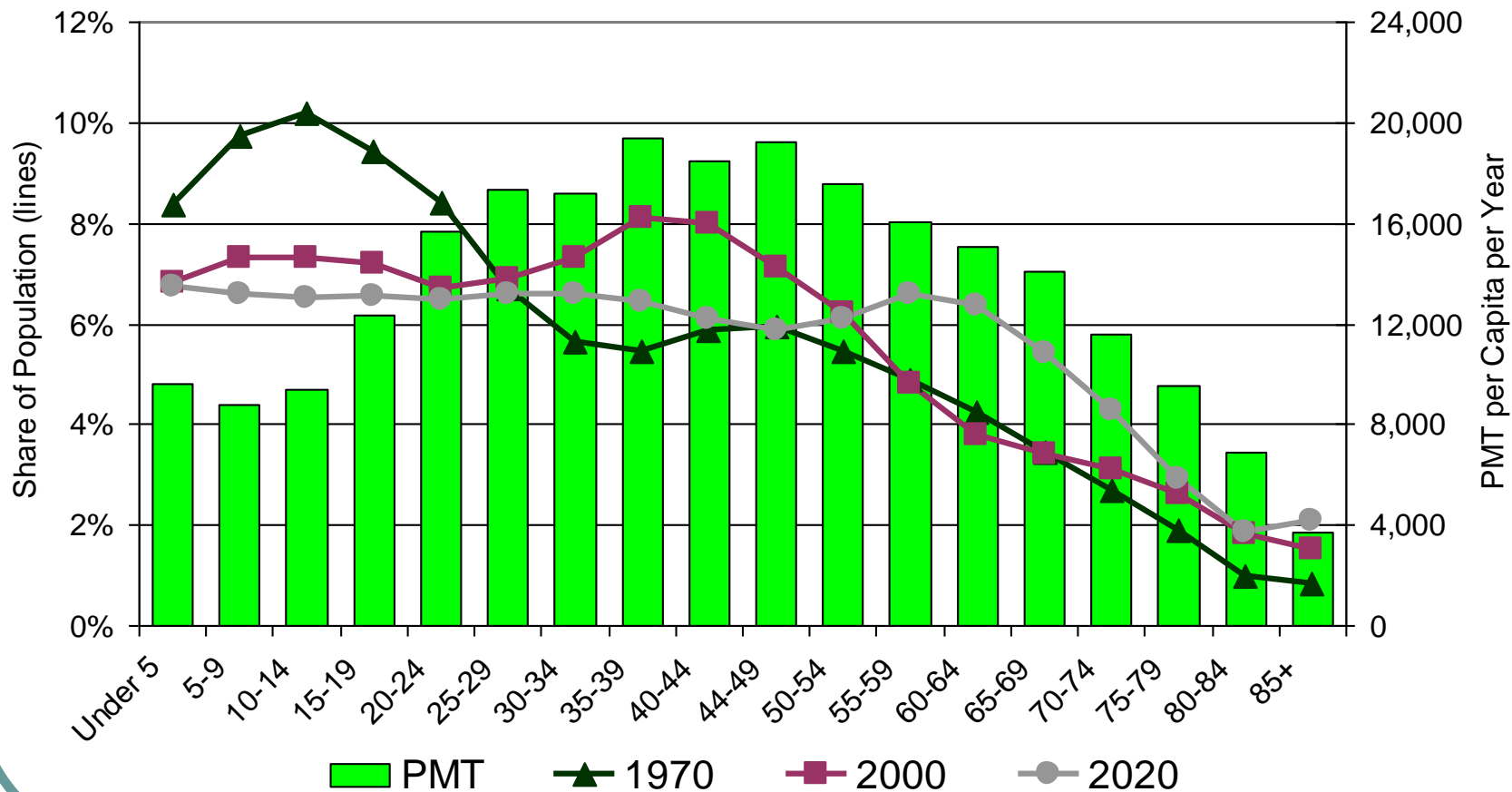
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Source: Census Population Estimates and HPMS

Workers as a percent of population is declining in many Metro areas...

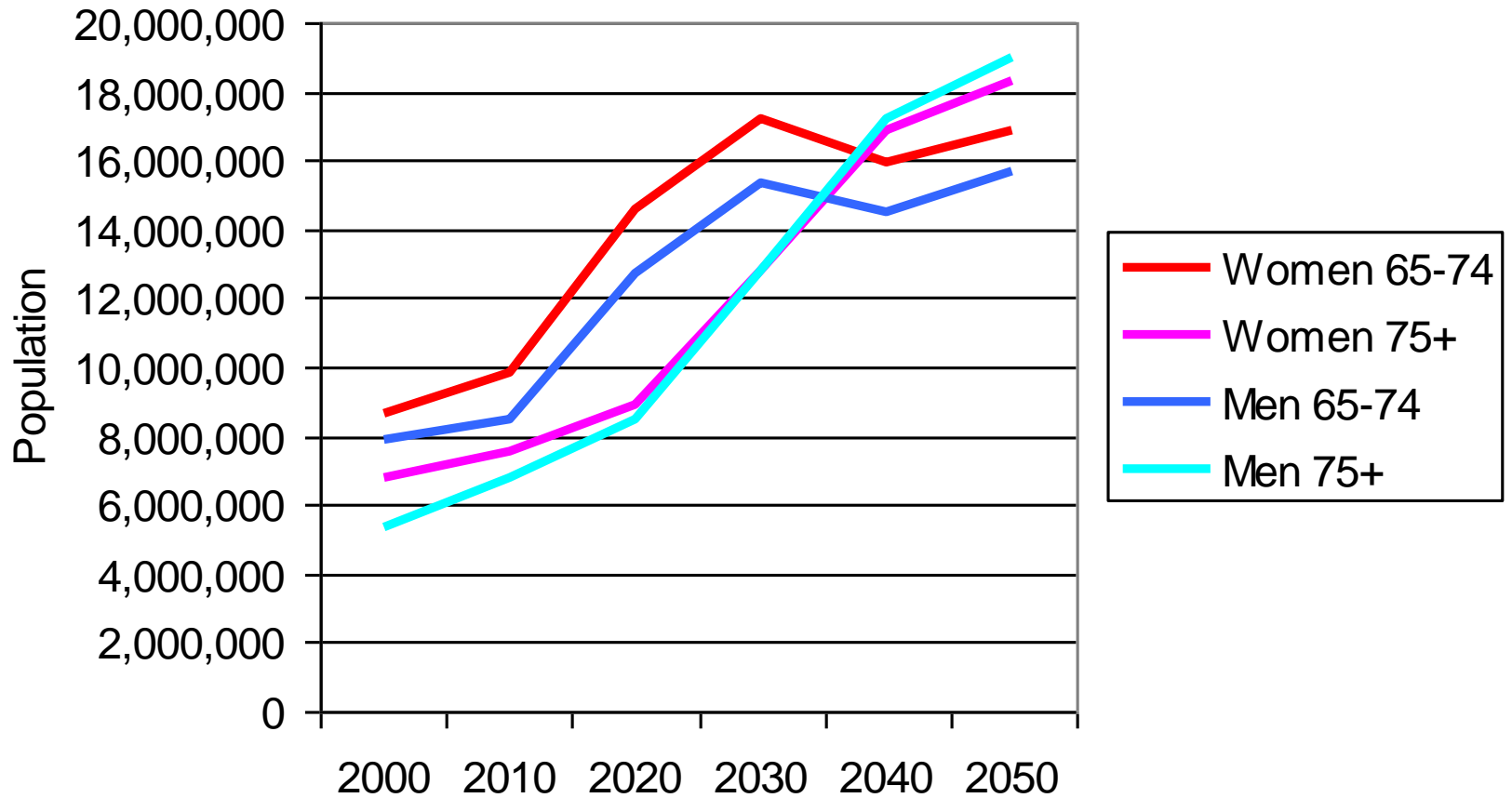


Currently the population is concentrated in peak travel age cohorts...



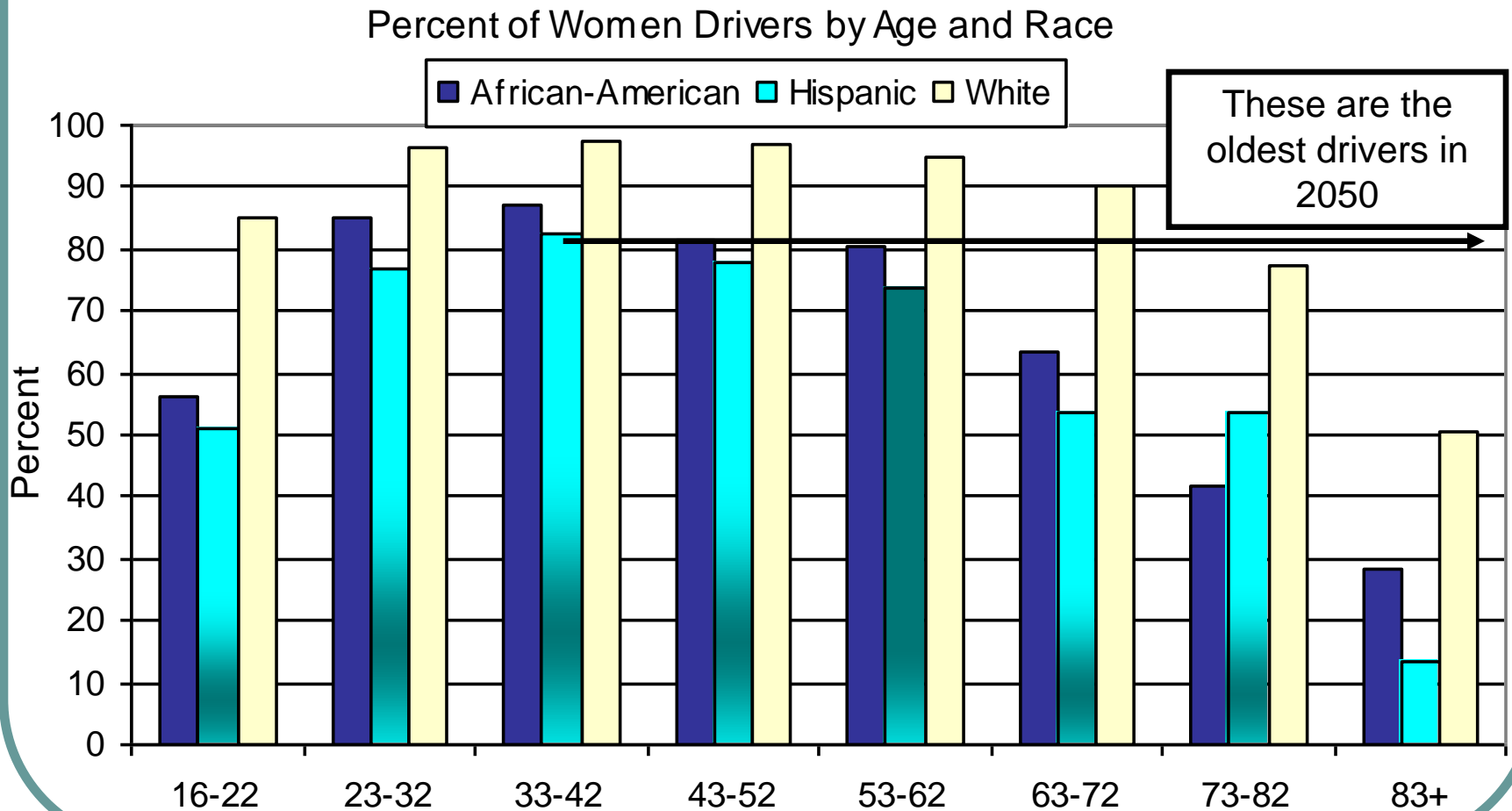
Source: CUTR analysis of NHTS and NPTS and U.S. Census Bureau

But, the population (and driving pool) is aging...



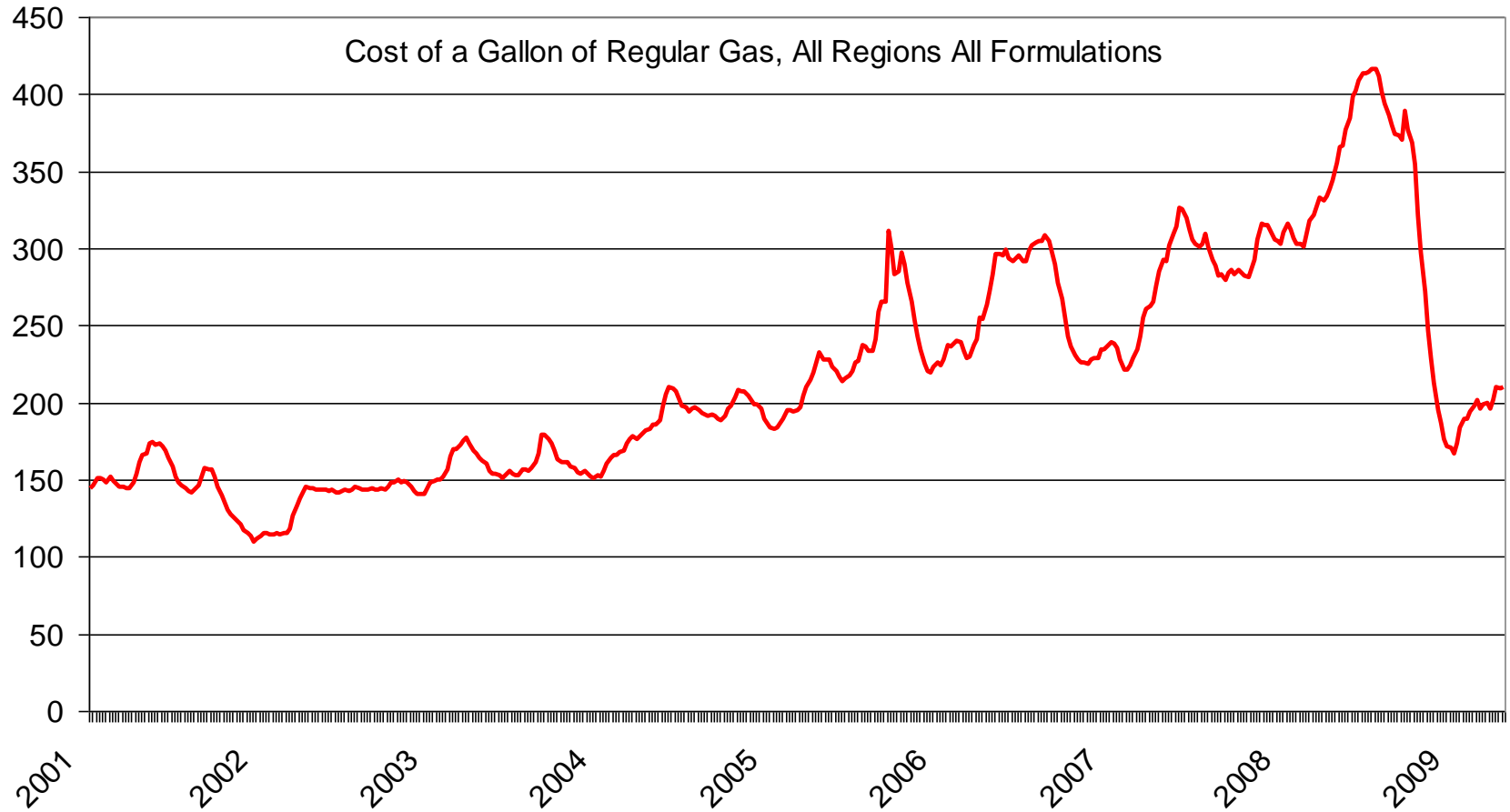
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And future cohorts of drivers have very different travel behavior...



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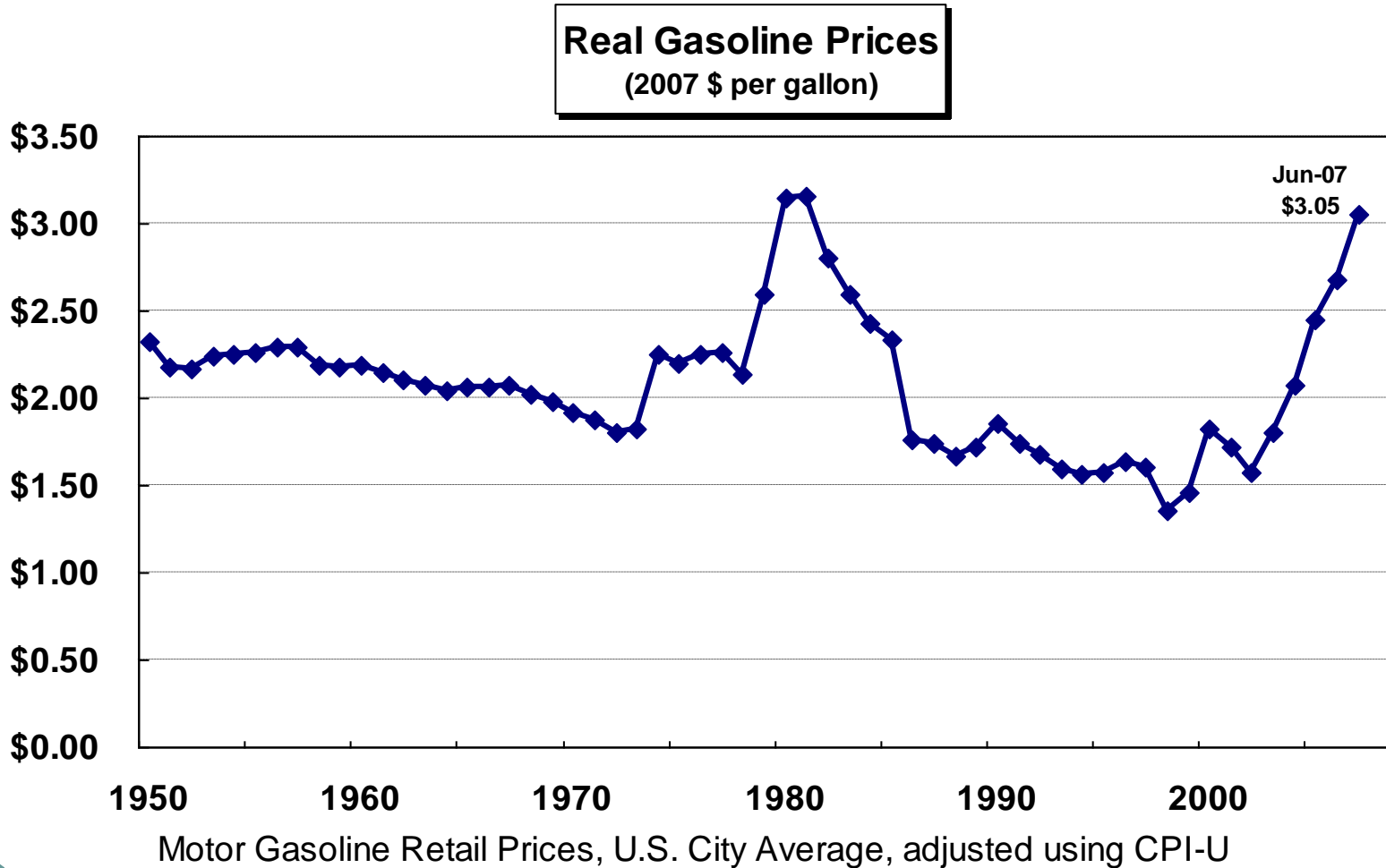
And then there are the gas prices...



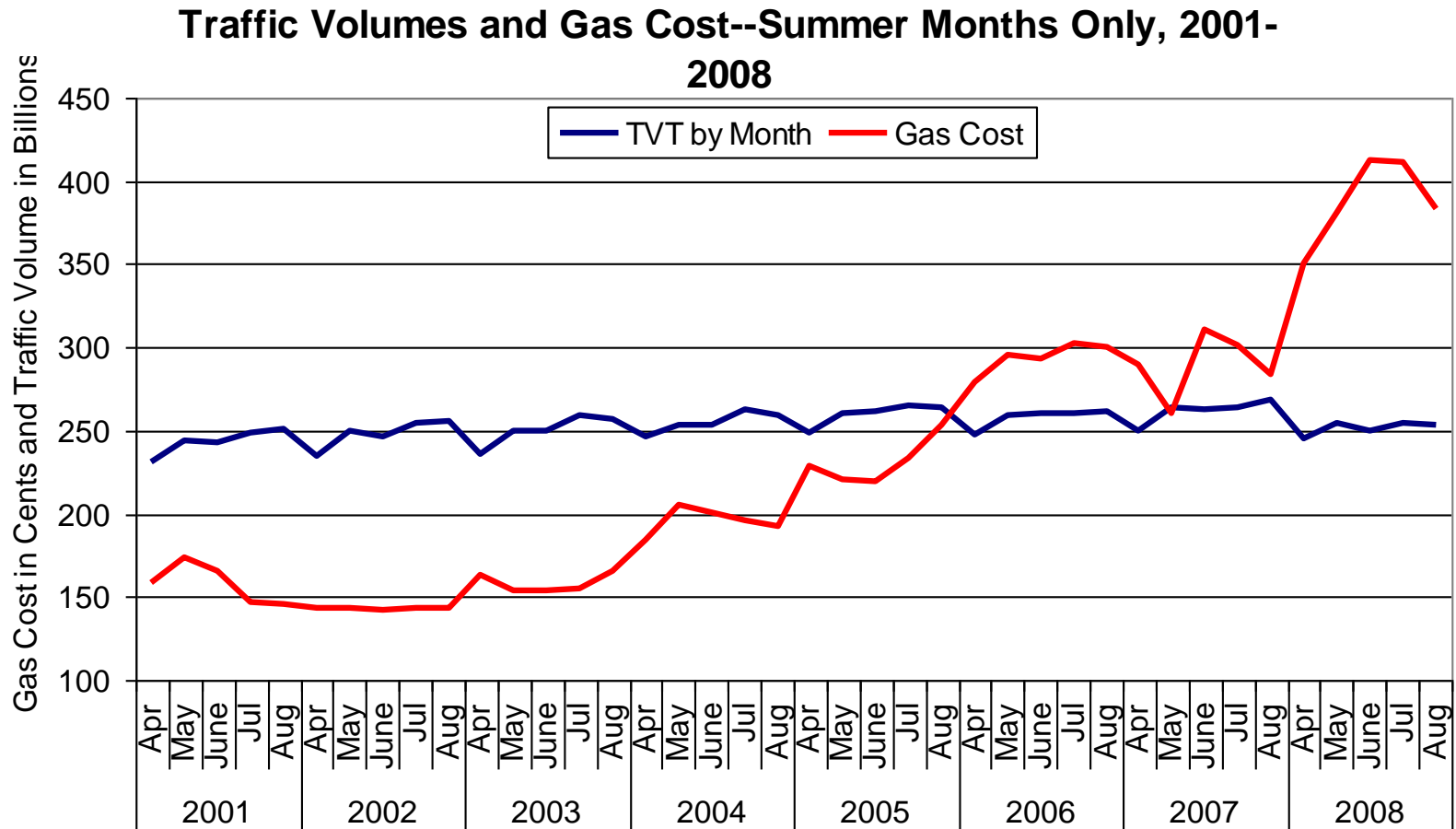
Source: EIA.GOV

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Real fuel costs are pretty stable over long time periods...



Perhaps that is why VMT seems inelastic in relation to gas costs...



Understanding peak period travel...

- Is vital as we start the discussion on mechanisms to finance the system
- Whether 'Maintenance' and 'Discretionary' trips are considered 'mandatory' by the traveler is unknown (e.g. medical, get a meal)
- Many more workers than expected have flexibility in their arrival time at work
- Workers who make 'flexible' trips in the peak often go to work at another time, i.e. the trip may be inflexible in terms of time
- Retired people make one-third of their trips during peak, and men are especially likely to get a meal during the peak
- And both higher-income workers and lower-income non-workers are over represented in peak non-work travel

Thank You!

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