

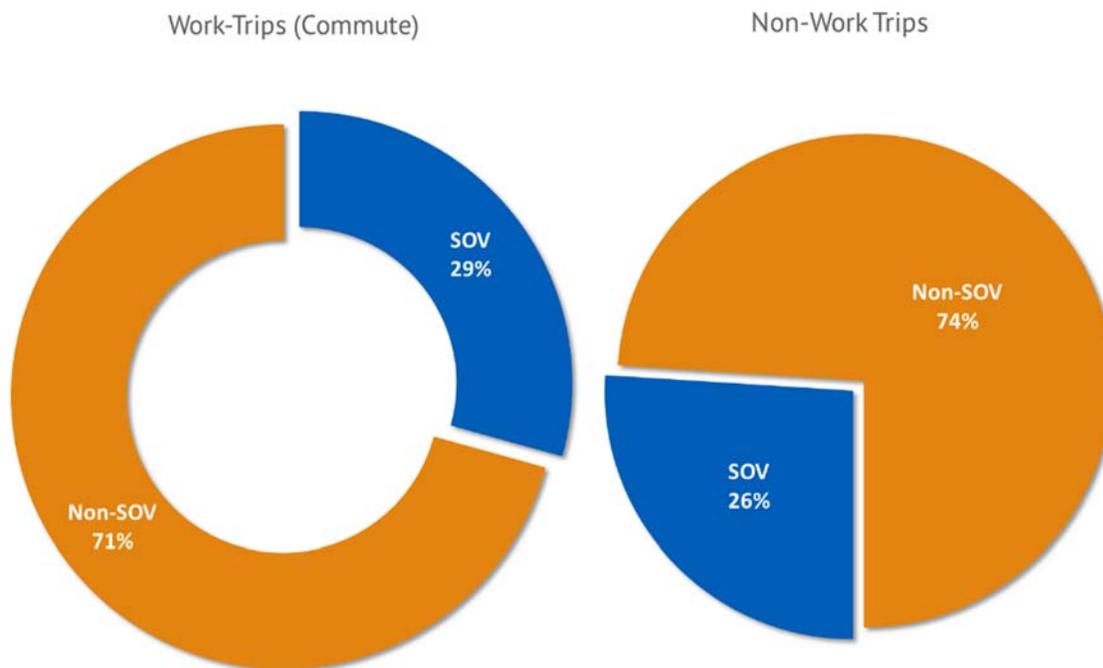
Highlights

Based on data collected by Arlington County, residents of apartment buildings in Pentagon City are biking, walking or using transit for 71 percent of work trips and 74 percent of non-work trips.

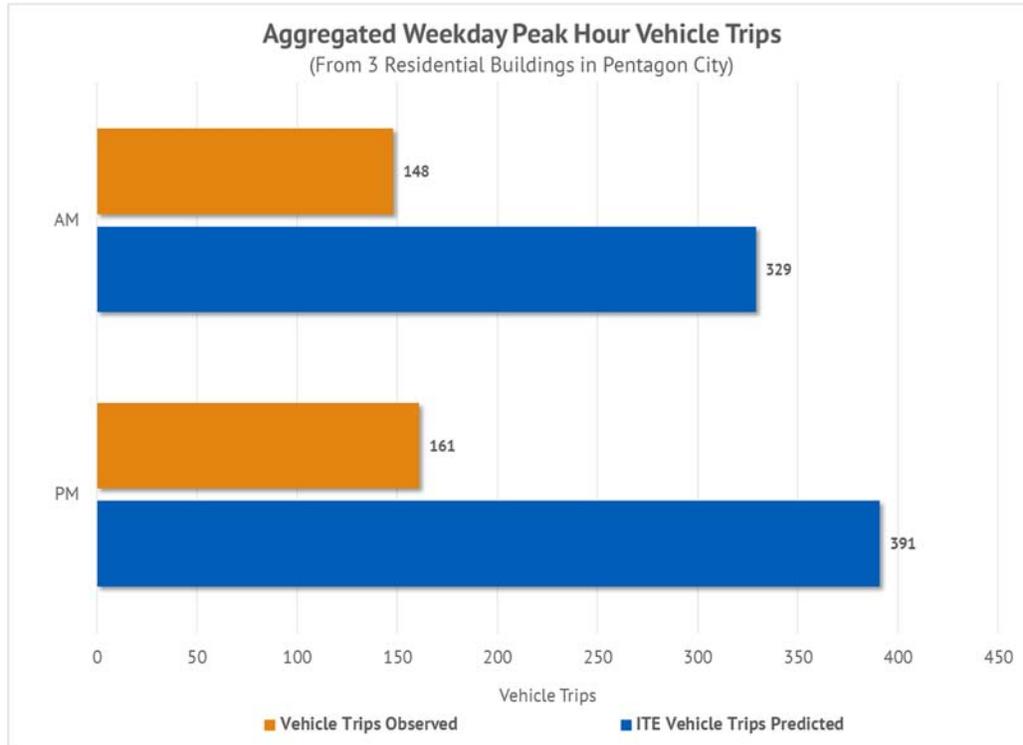
Description

The charts and tables below present key findings from building-level transportation studies conducted at three residential buildings comprising a total of 911 residential units and 1,355 residents within Pentagon City. The data was aggregated across the three buildings to better show trends that may be representative of newer residential buildings within the area. The morning and afternoon/evening peak hour vehicle trips, observed during the week-long study period, were compared against Institute of Traffic Engineers – Trip Generation (ITE) vehicle trips estimates for residential buildings. ITE trip generation rates represent industry standard data that is used by traffic engineers across the country to predict vehicle traffic generated by potential developments. The pie charts compare the share of trips that residents reported making by single occupancy vehicles (SOV) and all other modes (non-SOV). Non-SOV trips include trips made by walking, biking, bus and rail transit, carpool or other modes.

Share of Trips by Mode for Work and Non-Work Trips From Three Residential Buildings in Pentagon City



Observed Vehicle Trip Generation vs. ITE Vehicle Trips Predicted



Context in Planning Spectrum

Where is this data used in the planning spectrum?



Background

The data collection for these three residential buildings is a Transportation Demand Management (TDM) element for each project, negotiated as part of the County’s site plan special exception approval process. The data was collected between 2012 and 2013. Arlington first adopted a TDM policy for development in 1990. TDM-related development conditions have evolved over the years to include new and improved strategies that help to achieve a sustainable, multimodal transportation system for the County. Today, one of the key elements required as part of TDM site plan conditions is performance monitoring. Building owners are required to report on building transportation performance during operation. Through ongoing building-level performance monitoring, the County gets a sense of how transportation impacts play out at specific buildings. Staff can then aggregate data from multiple buildings to better generalize to the neighborhood, corridor and countywide levels. Implementation of building-level performance monitoring has facilitated the collection of transportation data at dozens of buildings since 2010.

The most recently completed multi-building study resulting from this effort is [Arlington’s Residential Building Transportation Performance Monitoring Study of 2013](#), the first of the aggregate analyses to be

based on transportation performance monitoring requirements specifically. These studies explored travel behavior and neighborhood characteristics, as well as awareness and attitudes of residents that could potentially cause or correlate to the transportation performance of residential buildings generally. The data from individual building studies was aggregated to produce generalized findings that could be applied more broadly, as well as to protect the privacy of residents in the studied buildings. Findings from the aggregate study was designed to be used for public dissemination and discourse about the transportation performance of Arlington's residential buildings, and the factors that have a significant correlation with travel behavior.

The data for Pentagon City was collected by Arlington County for three residential buildings and were included in the aggregate study described above. This data was collected between 2010 and 2013, when participating buildings were 93 to 96 percent occupied.

Vehicle trip generation volumes for the buildings were collected by tube counters set up at garage entrances. The tube counters were set up for a seven-day period continuously collecting data that was recorded at 15 minute intervals. The "peak" hours were determined by identifying the largest weekday AM and PM hour volume during the period the tube counters collected data.

The mode split data was collected through a voluntary survey of building occupants. The overall voluntary survey response rate for the Pentagon City sample was 19 percent.

Telework was among the options given in the survey for weekly commute trips as part of the mode choice. Teleworking represented zero to three percent of weekly commute "trips" reported in each building. The charts above include telework as a non-SOV mode.

To collect non-work trip data, residents were asked to think back to the trips they made from home "yesterday" for purposes other than traveling to work, and counted the trip leaving home and the trip returning home as individual trips.

Findings/Conclusions

- Peak hour trip generation at Pentagon City residential sites was less than half that predicted by ITE for similar non-transit-oriented buildings.
- Residents at the three buildings reported that 71 percent of commute trips were taken by modes other than SOV. This compares to the countywide average of 46 percent, measured in the 2013 State of the Commute by the Metropolitan Washington Council of Governments.
- Residents also reported that 74 percent of non-work trips from home were taken by a non-SOV mode.
- These extremely high non-SOV rates indicate that residents at these locations in Pentagon City are walking, biking, or using transit for the majority of their trips on a daily basis.

Data Source

Arlington County Transportation Performance Monitoring Studies

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