

2017-2018 REGIONAL TRAVEL SURVEY: IN-DEPTH ANALYSIS

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Overview of Regional Travel Survey (RTS) and In-Depth Analysis of Stakeholder Questions

- The 2017/2018 Regional Travel Survey (RTS) is a once-a-decade household travel survey for the National Capital Region
- The RTS collected detailed information about households and their daily travel obtained from a travel diary
- TPB staff asked regional stakeholders to offer questions that the RTS might help inform; TPB staff conducted an in-depth analysis of these questions for the TPB Planning Region
- This presentation highlights a few of the responses to the questions offered by our stakeholders

Overview of Regional Travel Survey Information

Recruitment Survey

Household

- Household
- Size
 - Income
 - Number of licensed drivers
 - Number of workers
 - Number of students

- Housing
- Type
 - Tenure

- Vehicles and Bicycles
- Number of vehicles
 - Number of bicycles

Person

- Demographics
- Race/Ethnicity
 - Age
 - Gender
 - Number of jobs
 - Work from home

- Typical Commute
- Usual mode
 - Frequency of telework
 - Work location
 - Employer incentives

- All Weekday Travel (including work trips)
- Frequency of travel option
 - Use of other modes
 - Delivery services

Vehicle

- Vehicle Characteristics
- Make and model
 - Year
 - Fuel type
 - Type of toll transponder

Travel Diary

Trip

- Trip Details
- Origin and destination
 - Start and end times
 - Mode of travel
 - Purpose/activities
 - Transit access and egress



RTS In-Depth Analysis Questions

Topic	Question
Travel Patterns for Low-Income Households	How do travel patterns (by travel mode, trip purpose, trip length, and trip duration) differ for very low (less than \$25,000) and low-income (\$25,000 - \$49,999) households?
Work Start and End Times	How have average work start and end times changed over the past ten years?
Growth in Telework Eligibility & Frequency	What are the temporal patterns of teleworking? How are they changing?
Telework and Proximity to High-Capacity Transit (HCT)	How does proximity to high-capacity transit (HCT) correspond with telework eligibility and frequency?
Dimensions and Characteristics of Peak and Off-Peak Travel	How do travel modes differ for peak and off-peak travel? How do trip purpose, trip length, and trip duration differ for peak and off-peak travel? How do they differ for all travel modes versus transit modes? What is the income and race/ethnicity breakdown for persons traveling during off-peak hours? How do they differ for all travel modes vs. transit modes?
Transit Riders: Commute versus All-Purpose Socio-Demographic Characteristics	Do commuters who use transit differ in socio-demographic characteristics from all-purpose transit riders?
Transit Use, Free Parking, and Transit Subsidies	Do free parking and transit subsidies play a role in the choice of taking public transit? Did it change between 2007/2008 and 2017/2018?
Late-Night Travel: Characteristics of Travelers and Trips	What are the characteristics and trip patterns of people who travel during late-night hours?
Trends in Late Night Travel Modes	Have the travel modes of late-night travelers changed over time (from 2007/08 to 2017/18)?
Use of Personal Vehicles for Activities After Using Transit for Work Commute Trips	What is the incidence rate of weekday commuters returning home via public transit and heading out again by using a personal vehicle to shop? When weekday commuters head home via public transit, what reasons do they have for heading out by personal vehicle? What travel activities do weekday commuters engage in after heading home via public transit?
School Trips: Share of Total Trips, Trip Times	<ul style="list-style-type: none"> • What share of drop off/pick up trips in the TPB Planning Region are school and day care trips? • What share of school trips are performed by university students in the TPB Planning Region? • What share of drop off/pick up trips in the TPB Planning Region are performed in the following time periods? (AM peak, midday, PM peak, all other times) • What is the share of school trips out of total trips for the region, subregional area, and county-level jurisdiction?



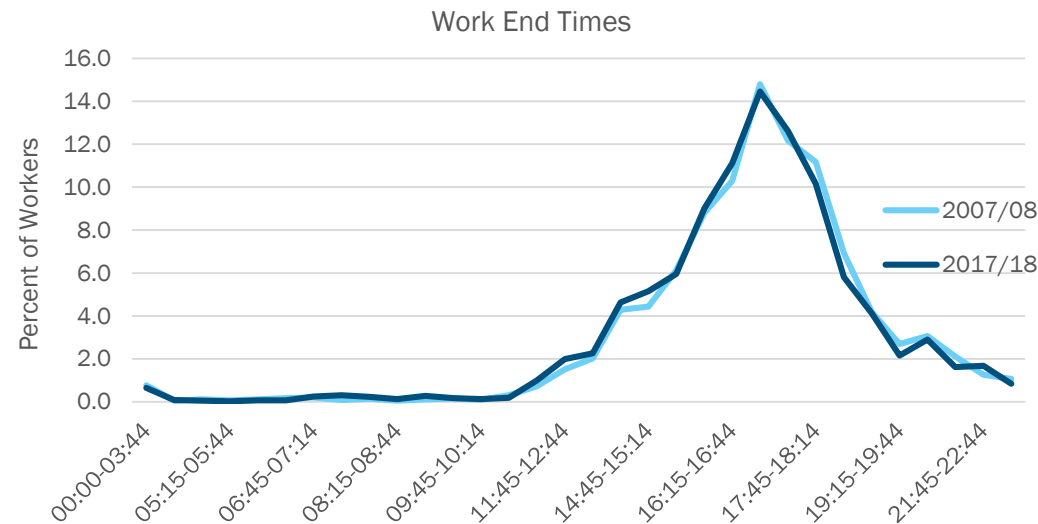
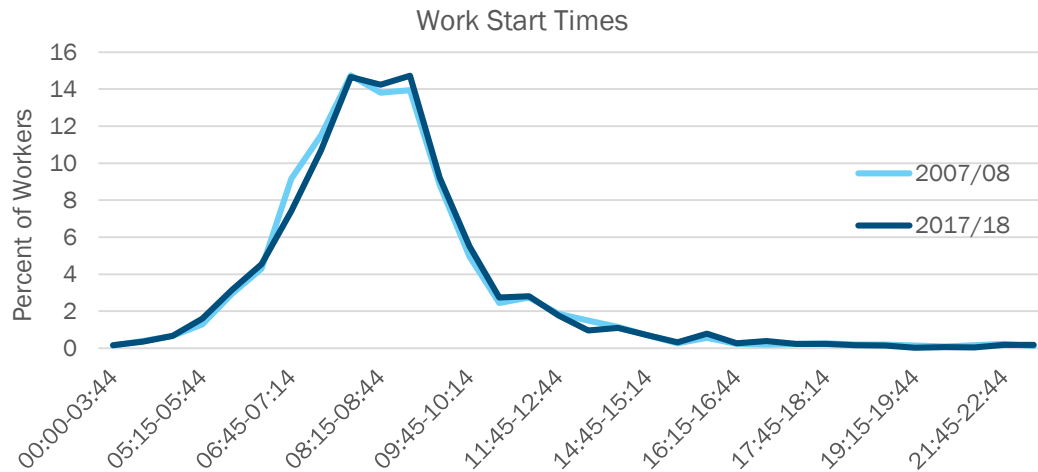
Work Start and End Times

How have average work start and end times changed over the past ten years?

- Data from 2017/2018 RTS compared with 2007/2008 HTS to determine how commuting patterns have changed
- Origin and destination purpose used to determine work trips
- Arrival time for work trips = work start time
- Departure time for work trips = work end time
- Work start and end times were cross tabulated by household income, gender, and employer type



Work Start and End Times



Percent of Workers who started or ended their workday during each time period		
Work Start Time	2007/08	2017/18
Start times before 5:45 am	2.5	2.8
5:45 – 6:14 am	2.9	3.2
6:15 – 6:44 am	4.3	4.5
6:45 – 7:14 am	9.2	7.4
7:15 – 7:44 am	11.5	10.7
7:45 – 8:14 am	14.7	14.7
8:15 – 8:44 am	13.8	14.2
8:45 – 9:14 am	13.9	14.7
9:15 – 9:44 am	8.8	9.2
9:45 – 10:14 am	5.0	5.5
Start times after 10:14 am	13.3	13.1
Median Work Start Time	8:25 am	8:25 am
Work End Time	2007/08	2017/18
End times before 2:45 pm	10.9	12.4
2:45 – 3:14 pm	4.4	5.1
3:15 – 3:44 pm	6.1	6.0
3:45 – 4:14 pm	8.8	9.0
4:15 – 4:44 pm	10.3	11.1
4:45 – 5:14 pm	14.8	14.5
5:15 – 5:44 pm	12.2	12.6
5:45 – 6:14 pm	11.2	10.2
6:15 – 6:44 pm	6.9	5.8
6:45 – 7:14 pm	4.2	4.1
End times after 7:14 pm	10.2	9.2
Median Work End Time	5:00 pm	4:57 pm



Work Start and End Times

Work Start Times by Household Income

Work Start Time	Percent of workers by work start-time period in each household income level									
	<\$50K (%)		\$50-75K (%)		\$75-100K (%)		\$100-150K (%)		>150K (%)	
	07/08	17/18	07/08	17/18	07/08	17/18	07/08	17/18	07/08	17/18
Before 5:15 am	1.7	1.4	1.4	1.7	1.0	1.3	1.1	1.4	1.1	0.8
5:15 – 5:44 am	1.3	1.7	2.0	1.2	1.5	1.8	1.2	1.6	0.9	1.6
5:45 – 6:14 am	4.4	4.6	4.0	3.2	2.4	2.4	3.0	3.9	1.8	2.6
6:15 – 6:44 am	5.7	5.3	4.2	5.2	4.4	3.9	4.5	5.4	3.3	3.9
6:45 – 7:14 am	8.7	8.0	8.6	7.6	10.5	8.7	8.9	7.7	9.2	6.6
7:15 – 7:44 am	8.3	9.7	11.6	8.6	12.0	10.4	11.6	10.5	12.6	11.6
7:45 – 8:14 am	14.5	14.7	13.7	15.2	15.1	14.7	14.6	13.8	15.5	15.1
8:15 – 8:44 am	11.2	9.7	13.3	13.7	13.8	13.4	14.7	14.2	14.2	15.6
8:45 – 9:14 am	13.4	12.5	13.6	14.8	13.4	13.2	14.3	14.0	14.3	16.1
9:15 – 9:44 am	6.5	7.6	8.3	9.3	8.1	9.5	9.0	8.4	10.6	9.9
9:45 – 10:14 am	5.1	5.2	4.3	6.3	4.8	5.2	5.0	5.9	5.3	5.3
After 10:14 am	19.2	19.6	15.0	13.2	13.1	15.5	12.1	13.3	11.2	10.9
Total	100	100	100	100	100	100	100	100	100	100
Median Start Time	8:29	8:25	8:25	8:26	8:23	8:26	8:25	8:23	8:25	8:26



Work Start and End Times

Work Start and End Time by Gender

Work Start Time	Percent of female and male workers who begin their workday during each time period				Work End Time	Percent of female and male workers who end their workday during each time period			
	Female (%)		Male (%)			Female (%)		Male (%)	
	07/08	17/18	07/08	17/18		07/08	17/18	07/08	17/18
Start times before 5:15 am	0.8	0.6	1.5	1.8	End times before 2:45 pm	10.8	12.2	11	12.6
5:15 – 5:44 am	0.4	1	2.1	2.1	2:45 – 3:14 pm	4.7	5.1	4.2	5.2
5:45 – 6:14 am	2.1	2	3.7	4.2	3:15 – 3:44 pm	6.5	5.8	5.8	6.1
6:15 – 6:44 am	3.2	3.6	5.3	5.4	3:45 – 4:14 pm	9.2	9.9	8.4	8.2
6:45 – 7:14 am	8	6.8	10.2	7.9	4:15 – 4:44 pm	11.9	12.3	8.9	10.1
7:15 – 7:44 am	11.1	10.9	11.9	10.5	4:45 – 5:14 pm	16.2	14.7	13.6	14.2
7:45 – 8:14 am	15.6	16	13.9	13.4	5:15 – 5:44 pm	11.8	12.7	12.5	12.6
8:15 – 8:44 am	16	16.9	11.9	11.8	5:45 – 6:14 pm	10.5	9.9	11.8	10.4
8:45 – 9:14 am	15.1	15.3	12.9	14.2	6:15 – 6:44 pm	6.2	5.5	7.6	6.1
9:15 – 9:44 am	8.8	9.4	8.8	9.1	6:45 – 7:14 pm	3.2	4	5	4.3
9:45 – 10:14 am	5.6	5.5	4.3	5.5	End times after 7:14 pm	9	8	11.2	10.3
Start times after 10:14 am	13.2	12	13.4	14.2					



Work Start and End Times

Work Start and End Time for Federal Government Employees

Work Start Time	Percent of Federal Government workers who start their workday during each time period		Work End Time	Percent of Federal Government workers who end their workday during each time period	
	07/08 (%)	17/18 (%)		07/08 (%)	17/18 (%)
Start times before 5:15 am	1.1	1.6	End times before 2:45 pm	7.5	8.9
5:15 – 5:44 am	1.8	1.6	2:45 – 3:14 pm	3.7	5.6
5:45 – 6:14 am	4.1	4.5	3:15 – 3:44 pm	6.8	7.2
6:15 – 6:44 am	6.4	6.9	3:45 – 4:14 pm	10.4	10.2
6:45 – 7:14 am	13	8.9	4:15 – 4:44 pm	13.7	12.7
7:15 – 7:44 am	17	14.3	4:45 – 5:14 pm	15.5	16.9
7:45 – 8:14 am	15.7	16.8	5:15 – 5:44 pm	13.9	14.2
8:15 – 8:44 am	13.5	14.4	5:45 – 6:14 pm	12	9.6
8:45 – 9:14 am	11.4	13.1	6:15 – 6:44 pm	7.6	5.6
9:15 – 9:44 am	5.7	8.1	6:45 – 7:14 pm	3.2	3.9
9:45 – 10:14 am	2.6	3.7	7:15 – 7:44 pm	2.1	1.8
Start times after 10:14 am	7.7	6.2	End times after 7:44 pm	3.6	3.3
Median Start Time	7:55 AM	8:00 AM	Median End Time	4:59 PM	4:55 PM



Work Start and End Times

Summary of Findings

- Work start times were very similar in 2007/08 and 2017/18. A slight shift towards later shift start times was observed in 2017/18, a similar shift in work end times was not observed.
- Work start times for persons from lower income households tend to be more spread out throughout the day while persons from higher income households are more likely to begin work between 8:15 am and 9:44 am; no notable differences for work end times by income
- Work start times for females were highly concentrated in a 90-minute time period while males were more spread out in 2007/08; work start times for males became more concentrated in 2017/18
- Work shifts of federal employers took place during a narrower time frame in 2017/18 than in 2007/08



School Trips: Drop Off/Pick Up, Trip Times

What share of drop off/pick up trips in the TPB Planning Region are school and day care trips?

What share of school trips are performed by university students in the TPB Planning Region?

What share of drop off/pick up trips in the TPB Planning Region are performed in the following time periods?

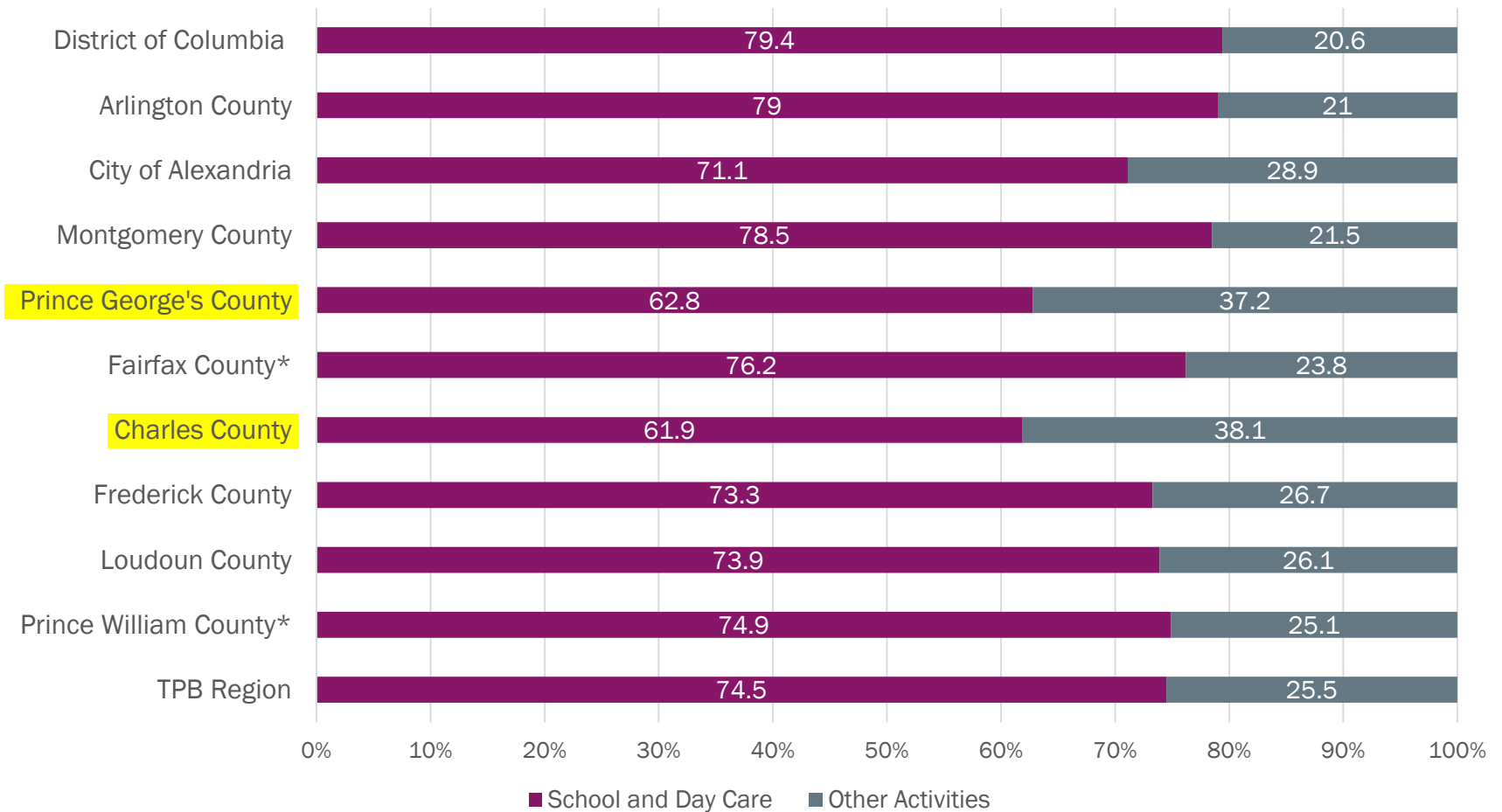
- 6 am to 9 am (AM peak)
- 9 am to 3 pm (midday)
- 3 pm to 7 pm (PM peak)
- All other times

What is the share of school trips out of total trips for the region, subregional area, and county-level jurisdiction?



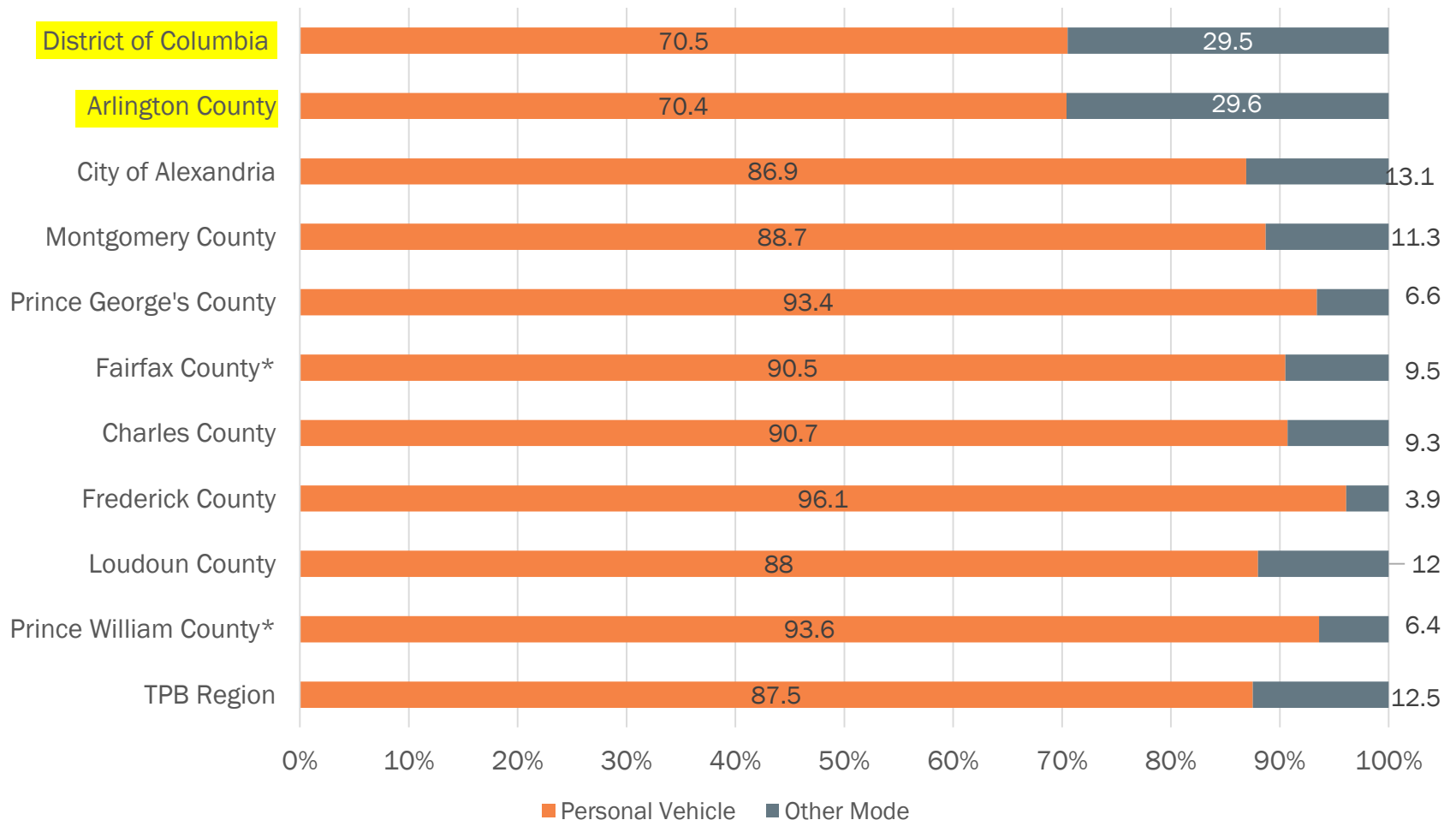
School Trips: Drop Off/Pick Up, Trip Times

School and Day Care Drop Off / Pick Up Trips (%)



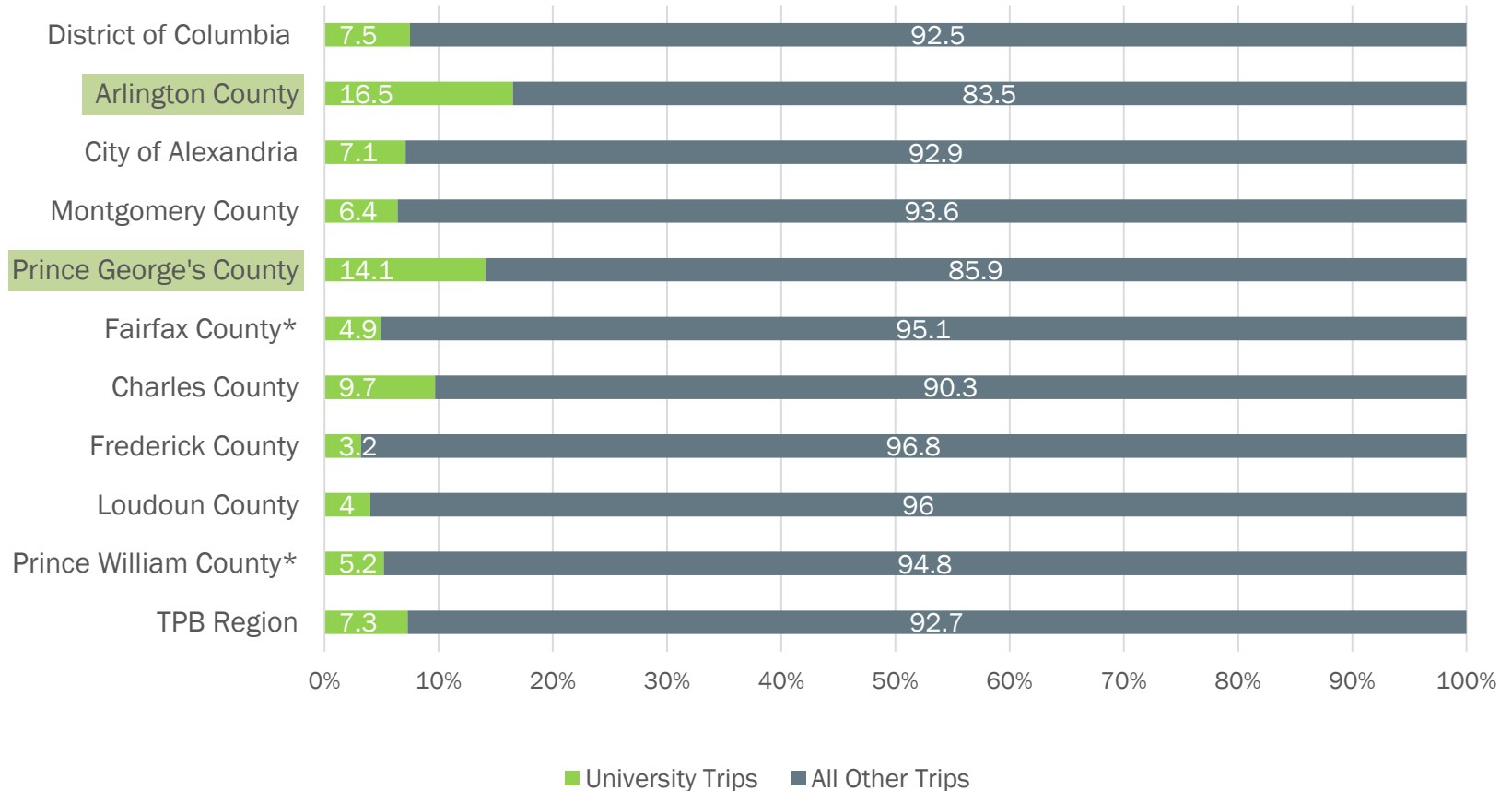
School Trips: Drop Off/Pick Up, Trip Times

Mode of School/Day Care Drop Off and Pick Up Trips



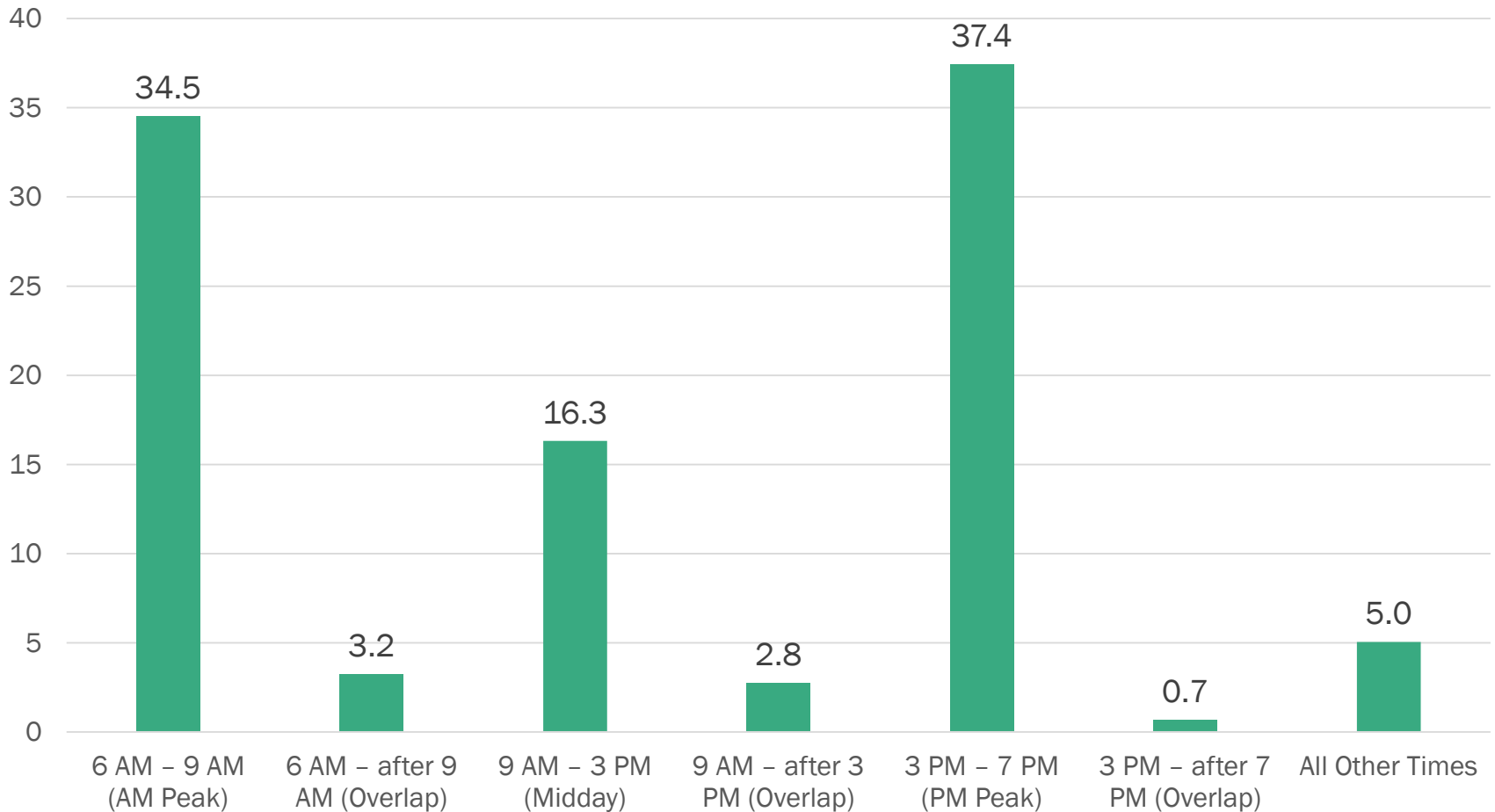
School Trips: Drop Off/Pick Up, Trip Times

Share of School Trips Performed by University Students



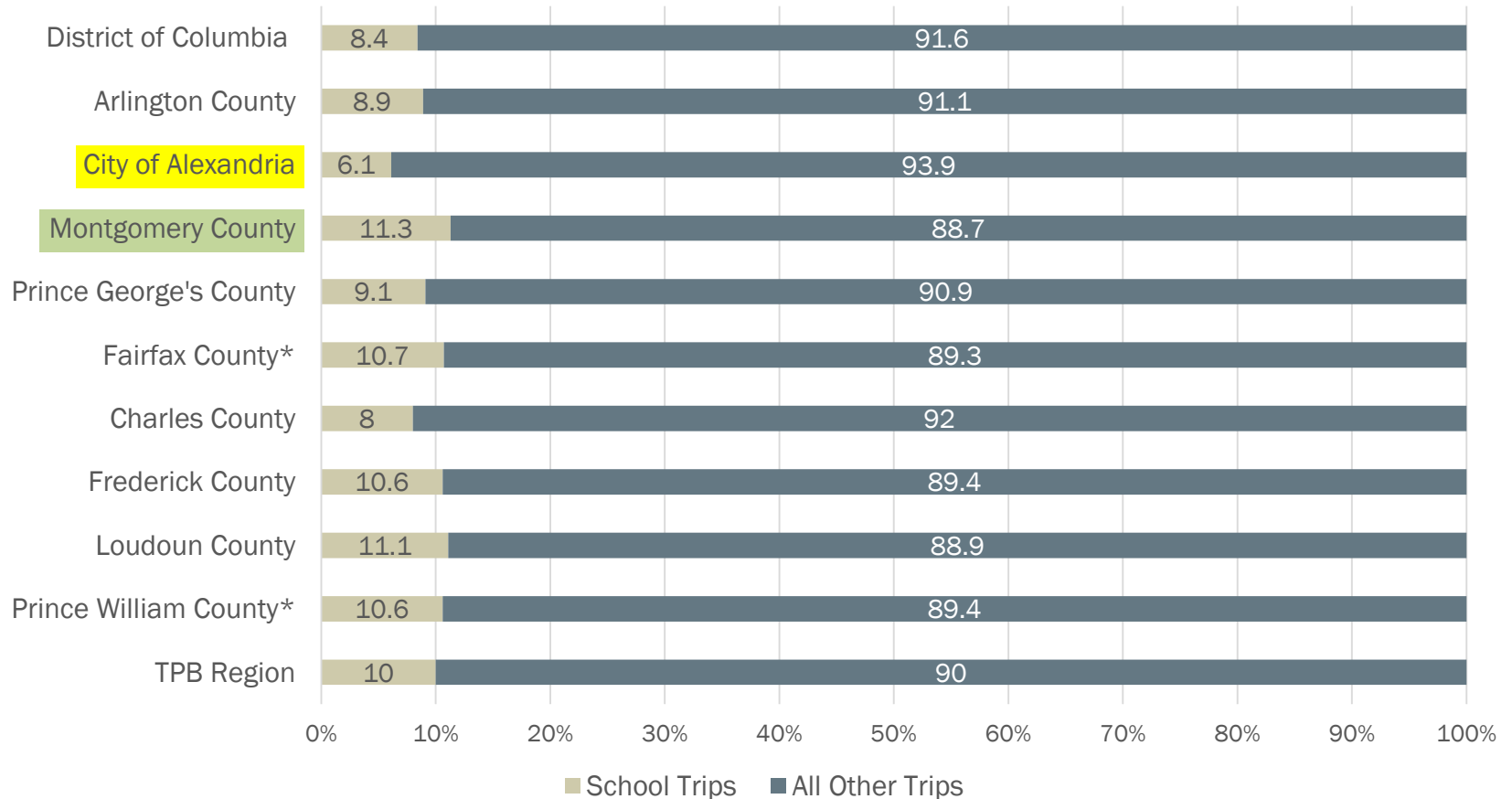
School Trips: Drop Off/Pick Up, Trip Times

Share of Drop Off / Pick Up Trips by Time Period



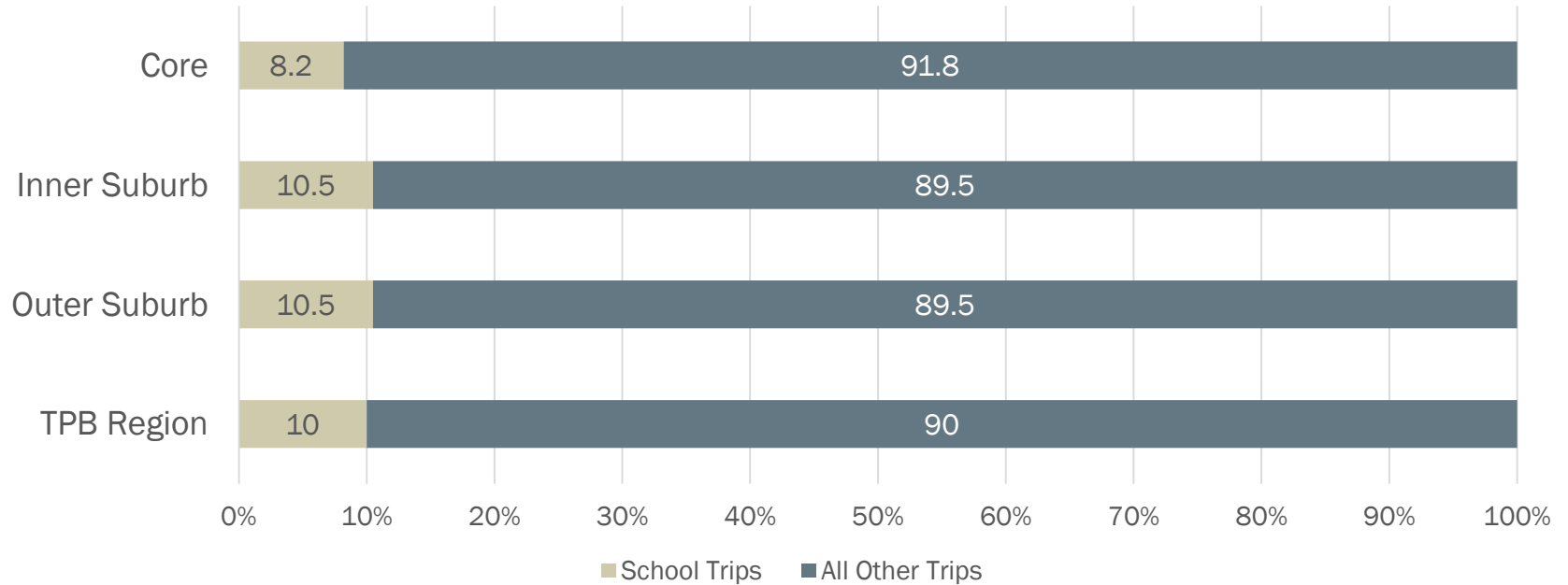
School Trips: Drop Off/Pick Up, Trip Times

Share of School Trips Out of Total Trips for County-Level Jurisdiction



School Trips: Drop Off/Pick Up, Trip Times

Share of School Trips Out of Total Trips for Subregional Area



School Trips: Drop Off/Pick Up, Trip Times

Summary of Findings

- School trips and drop off and pick up trips to and from schools vary across the region.
- A lower share of school/day care drop off/pick up trips in Prince George's County and Charles County.
- A lower share of school/day care drop off and pick up trips in a personal vehicle in DC and Arlington County.
- Highest share of school trips taken by university students is in Arlington County and Prince George's County.
- Largest share of drop off/pick up trips occurs during the PM peak period, followed by the AM peak.
- Ten percent of trips in the region are school trips.



RTS In-Depth Analysis Questions and RTS Resources

- RTS In-Depth Analysis is posted on the RTS website (<https://www.mwcog.org/transportation/data-and-tools/household-travel-survey/>)
- Other RTS Resources available on the RTS website:
 - RTS Technical Documentation
 - RTDC RTS Tabulations
 - RTS Public Files



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