2017-2018 REGIONAL TRAVEL SURVEY: IN-DEPTH ANALYSIS

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Travel Forecasting Subcommittee
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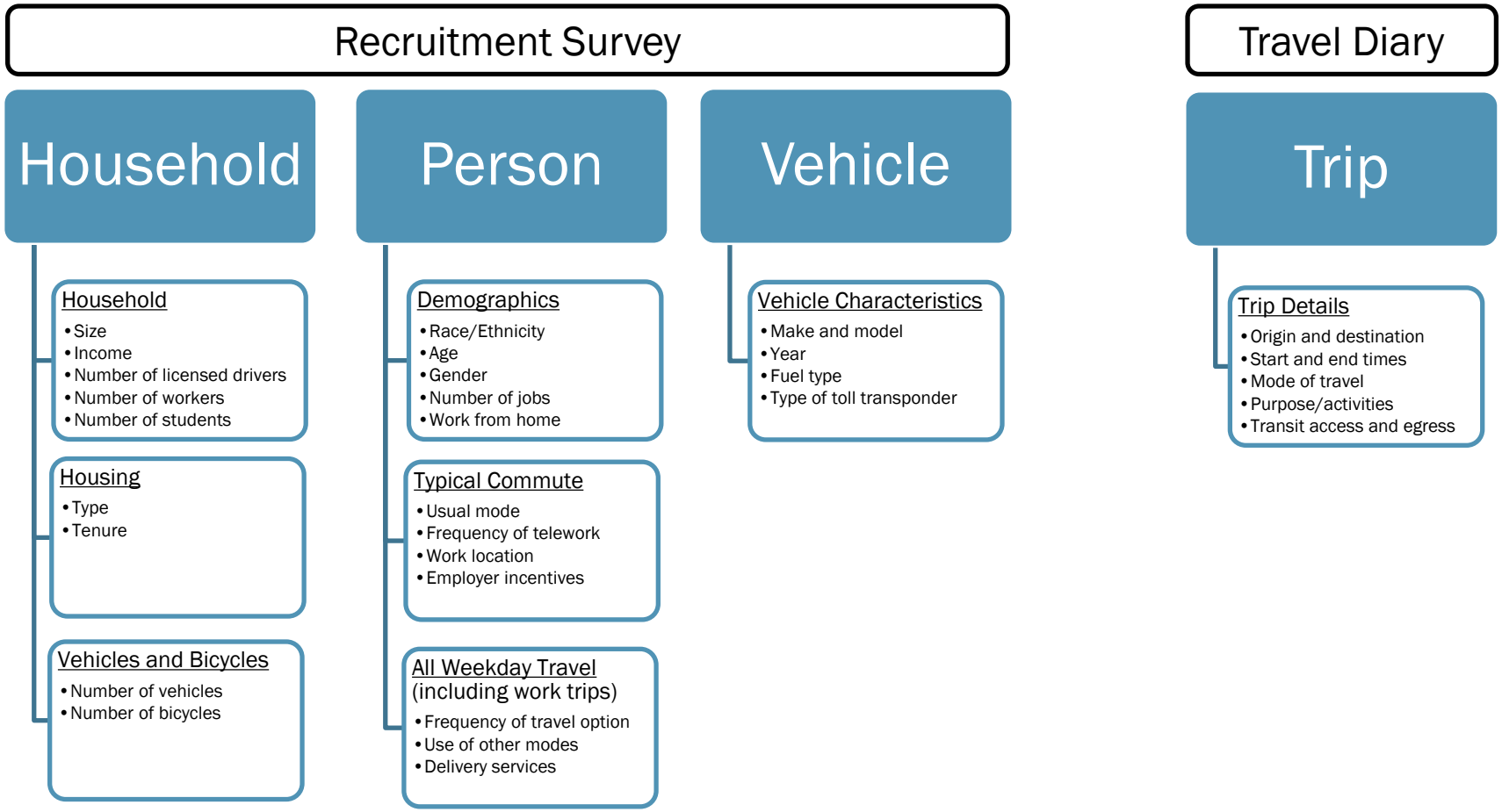
Agenda Item 3

National Capital Region
Transportation Planning Board

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



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 vs. 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-only versus All-Purpose Socio-economic Characteristics	Do commute-only transit riders differ in socio-demographic characteristics from all-purpose transit riders?
Transit ridership, free parking, and transit subsidies	Do free parking and transit subsidies influence 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? What are the characteristics and trip patterns of people who travel using transit 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	• 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?

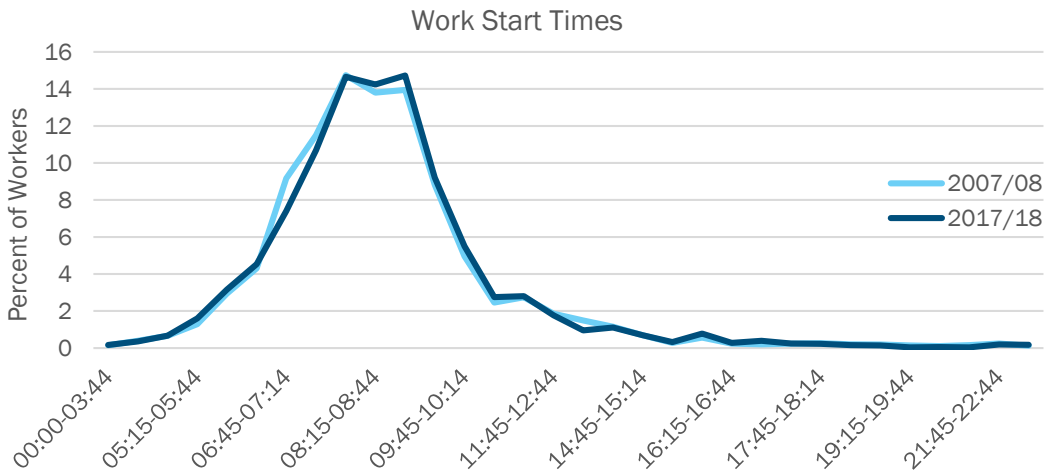
Work Start and End Times

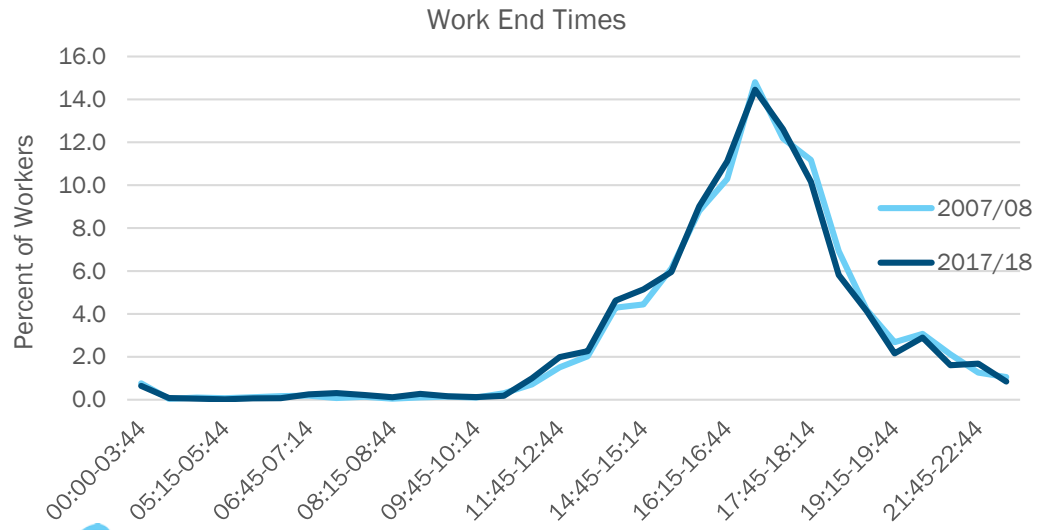
How have average work start and end times changed over the past ten years?

- 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

Work Start Time and End Time – 2007/08 vs 2017/18





	Percent of workers starting work 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	5.5
Start times after 10:14 am	13.3	13.1
Median Start Time	8:25 AM	8:25 AM
	Percent of workers who end their workday during each time period	
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
3:45 – 4:14 pm	8.8	9
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	1.3	1.1	1.4	1.1	0.8
5:15 - 5:44 am	1.3	1.7	2	1.2	1.5	1.8	1.2	1.6	0.9	1.6
5:45 - 6:14 am	4.4	4.6	4	3.2	2.4	2.4	3	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	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	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	14.3	16.1
9:15 - 9:44 am	6.5	7.6	8.3	9.3	8.1	9.5	9	8.4	10.6	9.9
9:45 - 10:14 am	5.1	5.2	4.3	6.3	4.8	5.2	5	5.9	5.3	5.3
After 10:14 am	19.2	19.6	15	13.2	13.1	15.5	12.1	13.3	11.2	10.9
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 lower income households tend to be more spread out throughout the day while 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

Telework Eligibility/Frequency and Proximity to High Capacity Transit (HCT)

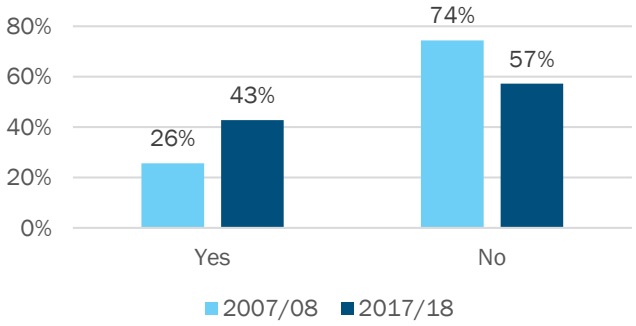
What are the temporal patterns of teleworking and how have they changed?

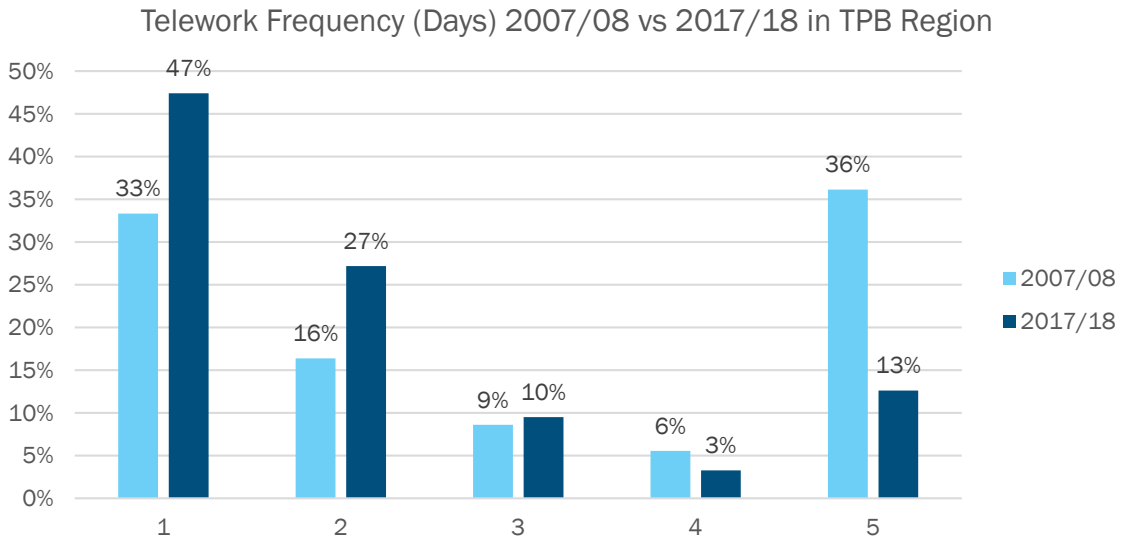
How does proximity to HCT correspond with telework eligibility and frequency?

- Telework eligibility (2007/08 vs. 2017/18): If primary employer offers telework
- Telework frequency (2007/08 vs. 2017/18): Number of weekday telecommutes per week
- Proximity to HCT (2017/18): Living and working locations are within a half-mile or ten minute walk from a HCT station

Telework Eligibility/Frequency and Proximity to High Capacity Transit (HCT)

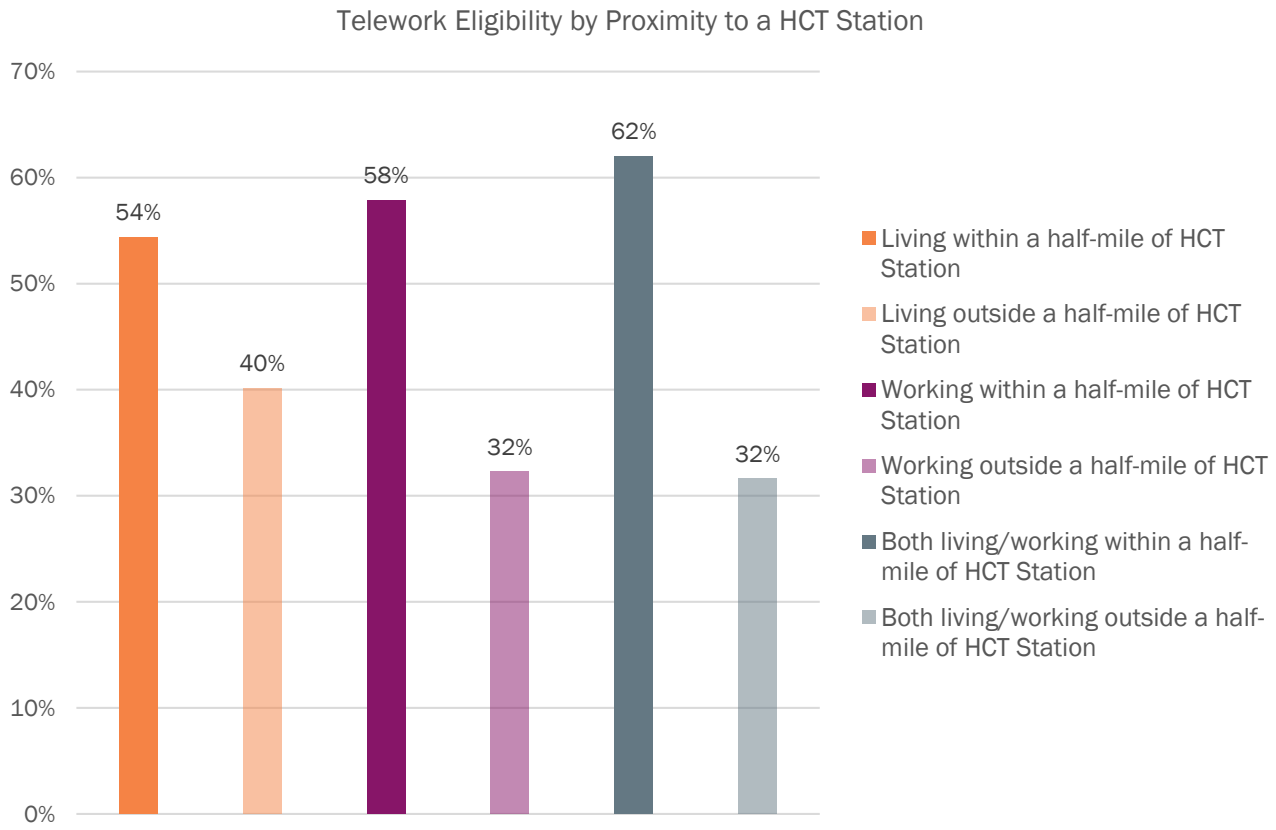
Telework Eligibility and Frequency – 2007/08 vs 2017/18





Telework Eligibility/Frequency and Proximity to High Capacity Transit (HCT)

Telework Eligibility by Proximity to HCT Station



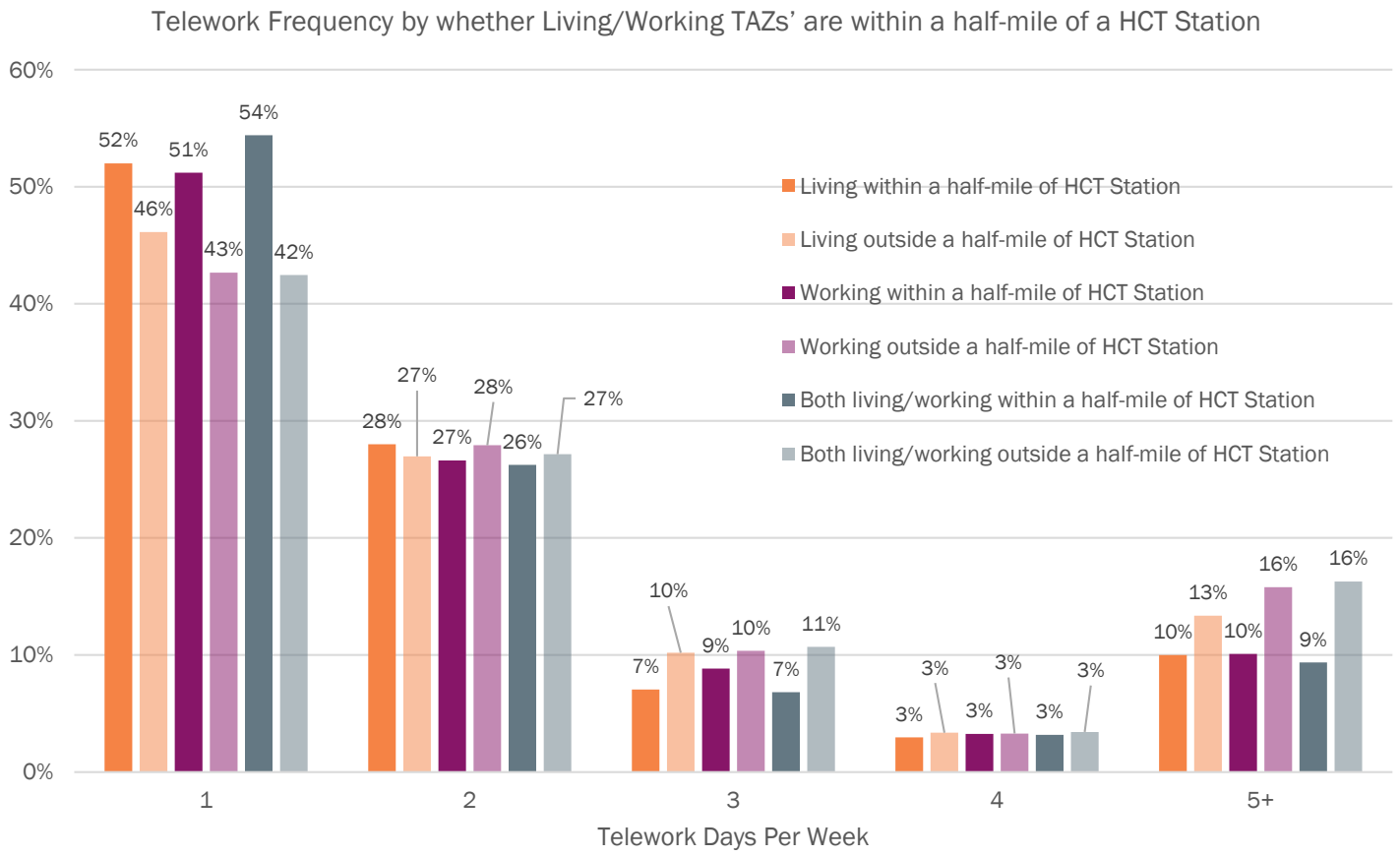
Telework Eligibility/Frequency and Proximity to High Capacity Transit (HCT)

Telework Eligibility by Household Income

Living/Working TAZ	Less Than $50,000 (%)	$50,000 or more (%)
Living within a half-mile of HCT Station	36	56
Living outside a half-mile of HCT Station	29	41
Working within a half-mile of HCT Station	38	60
Working outside a half-mile of HCT Station	26	33
Both living/working within a half-mile of HCT Station	41	64
Both living/working outside a half-mile of HCT Station	26	32
All Areas	**36**	**56**

Telework Eligibility/Frequency and Proximity to High Capacity Transit (HCT)

Telework Frequency by Proximity to HCT Station



Telework Eligibility/Frequency and Proximity to High Capacity Transit (HCT)

Summary of Findings

- Telework eligibility has increased in the TPB region since 2007/08
- More workers are teleworking one or two days per week and fewer workers are teleworking full time in 2017/18
- Workers living or working within a half-mile of HCT stations are more likely to telework than outside of a half-mile of HCT stations
- Workers who either live and/or work within a half-mile of HCT stations are more likely to telework one day per week
- Workers who either live and/or work outside a half-mile of HCT stations are more likely to telework five or more days per week

Dimensions and Characteristics of Peak and Off-Peak Travel

How do travel modes, trip purpose, trip length, and trip duration differ for peak and off-peak travel?

What is the income breakdown for persons traveling during peak and off-peak hours?

- Travel mode, trip purpose, trip length, and trip duration for work and non-work trips
- Peak commute hours (5:30-9:30 am and 3:00-7:00 pm weekdays) vs. non-peak hours
- All travel modes vs. transit modes (rail and bus)

Dimensions and Characteristics of Peak and Off-Peak Travel

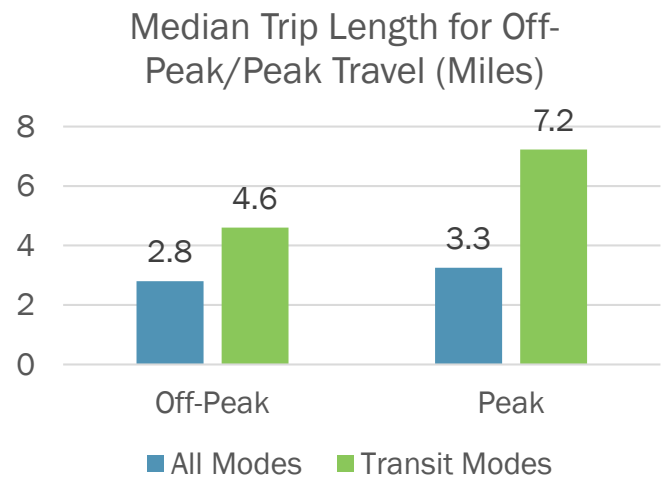
Travel Mode and Trip Purpose for Peak and Off-Peak

Travel Mode (%)	Off-Peak	Peak
Drive Alone	44.3	38.5
Drive Others	16.1	15.9
Auto Passenger	21	22.8
Rail Transit	1.6	5.1
Bus Transit	1.6	2.2
Other	0.4	0.4
Taxi/Ridehail	1.3	0.7
School Bus	1.7	4.7
Walk	10.9	8.1
Bike	1	1.6

Trip Purpose - All Modes (%)	Off-Peak	Peak
Work	15.4	24.6
Work-related	5.7	3.4
Drop off/pick up	8.8	17.3
School	2.4	13.7
Personal Business	13.9	9.5
Shop/Meal	38.5	18.3
Social/Recreation	10.6	9.5
Other	4.7	3.9
Trip Purpose – Transit Modes (%)	**Off-Peak**	**Peak**
Work	32.4	62.6
Work-related	8.3	3.3
Drop off/pick up	2	3.2
School	4.1	4
Personal Business	11.3	4.7
Shop/Meal	25.4	13.8
Social/Recreation	9.6	5.8
Other	6.8	2.5

Dimensions and Characteristics of Peak and Off-Peak Travel

Trip Length and Trip Duration for Off-Peak/Peak Travel



Trip Duration – All Modes (%)	Off-Peak	Peak
Less than 15 min	40.7	33.3
15 - 30 min	36	33.3
30 - 45 min	13.5	17
45 - 60 min	4.2	7.4
60 - 90 min	3.1	6.2
Greater than 90 min	2	2.7
Trip Duration – Transit Modes (%)	**Off-Peak**	**Peak**
Less than 15 min	2.7	0.9
15 - 30 min	17.9	11.3
30 - 45 min	28.1	26
45 - 60 min	15.6	21.9
60 - 90 min	21.5	28.3
Greater than 90 min	13.2	11.7

Dimensions and Characteristics of Peak and Off-Peak Travel

Travel Mode for Off-Peak/Peak Travel by Household Income

Travel Mode – Off-Peak (%)	<$25K	$25-50K	$50-75K	$75-100K	$100-150	>$150K
Drive Alone	35.4	45.6	48	45.3	43.9	43.9
Drive Others	11.3	15.1	15.7	16.5	17.1	16.3
Auto Passenger	24.7	17.3	19.6	20.7	22.3	20.9
Rail Transit	2.1	1.6	1.8	1.8	1.3	1.6
Bus Transit	10.1	4	1.4	0.7	1.2	0.6
Other	0.6	0.4	0.3	0.3	0.4	0.6
Taxi/Ridehail	2.4	2.6	1.2	1.4	0.9	1.2
School Bus	0.9	2	1.6	1.5	1.9	1.7
Walk	11.8	10.5	9.3	11	9.8	12.2
Bike	0.8	0.8	1.1	0.9	1	1.1
Travel Mode – Peak (%)	**<$25K**	**$25-50K**	**$50-75K**	**$75-100K**	**$100-150**	**>$150K**
Drive Alone	30.7	37.1	42.4	39.6	39.2	37.8
Drive Others	10.5	15	14.3	16	16.4	16.5
Auto Passenger	18.6	19.7	19.8	24.2	22.7	24
Rail Transit	4.4	3.6	5.2	6.2	5.4	4.8
Bus Transit	11.4	6.4	2.7	1.9	1.5	1.2
Other	0.9	0.6	0.3	0.3	0.4	0.4
Taxi/Ridehail	1.5	1	0.8	0.7	0.6	0.6
School Bus	5.4	7.6	4.2	3	5	4.6
Walk	15	7.8	8.7	7.1	7.5	8.1
Bike	1.6	1.1	1.5	1	1.3	2

Dimensions and Characteristics of Peak and Off-Peak Travel

Summary of Findings

- Persons are more likely to take rail and bus transit, school bus, and bike trips during peak hours
- More people travel to and from work and school during peak hours
- Trip lengths are generally longer during peak hours, and transit trips are further in distance than other travel modes
- Trips tend to be longer in duration during peak hours compared with off-peak hours
- Lower income households are much more likely to take bus transit and taxi/ridehail trips for both peak and off-peak hours

RTS In-Depth Analysis Questions and RTS Resources

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

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REGIONAL
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