

I-90 Bridge Travel Patterns

Mercer Island Residential Survey Report

Prepared for:

Washington State Department of Transportation

1/24/14

PRR



Washington State
Department of Transportation

What was the purpose of this study?

- The Washington State Department of Transportation is facing two key challenges with the Cross-Lake Washington Corridor:
 1. Completing the SR 520 bridge program
 2. Balancing traffic between I-90 and SR 520 and around Lake Washington to increase the mobility of people and goods
- The State Legislature is now considering tolling the I-90 Bridge between I-5 and I-405 to help meet these challenges.



- The Legislature directed the Washington State Department of Transportation (WSDOT) to study the potential environmental and social effects of tolling on I-90 across Lake Washington. This survey will help WSDOT and the City of Mercer Island learn more about how residents of Mercer Island use the I-90 bridges.
- The data received from this survey, along with traffic counts from Mercer Island ramps, will also help identify potential effects that different proposed I-90 tolling alternatives would have on Mercer Island residents.

How was this study conducted?

- We purchased a list of all household addresses on Mercer Island. The list had been updated in the last thirty days was purchased through Compact Information Systems, a nationally recognized address list vendor.
- A paper survey was mailed (with first-class postage) to all 10,073 households on November 11, 2013. A total of 436 surveys (4%) were returned as undeliverable by the post office. We were also contacted by forty households that said they lost, recycled, damaged, or never received a survey. We mailed a survey to all forty. Therefore, a total of 9,637 households received the survey.
- The survey asked several general questions regarding the number of vehicles and licensed drivers, trips made by service workers to their homes, and the number of work-commute trips made during the week of November 17th through the 23th. In addition, the survey asked each household to record the number of and direction of their trips off of and on to Mercer Island during specific time periods during this same week.
- Respondents were asked to return the postage-paid completed surveys by November 26, 2013.
- The survey was completed and returned in time for analysis by 3,595 households, for a response rate of 38%.
- The margin of error is +/- 1.3%
- Both the mean number of trips and the median number of trips are reported. The median takes into account distributions that may be skewed by a few cases with large numbers relative to the rest of the distribution.
- Percentages in charts may add up to slightly less or slightly more due to rounding.

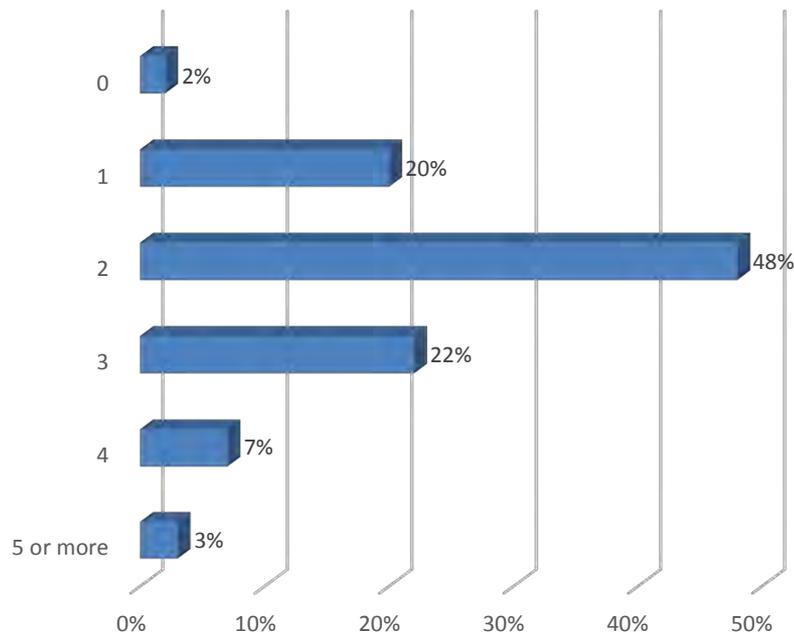
How many working vehicles and licensed drivers do Mercer Island households have?

- All but 2% of households own a personal vehicle, with almost half (48%) having two vehicles, a third (32%) having three or more, and another fifth (20%) having just one.
- More than half (57%) reported two licensed drivers in their household, while another quarter (24%) reported three or more.

Number of working vehicles

q1 - How many working vehicles does your household have?

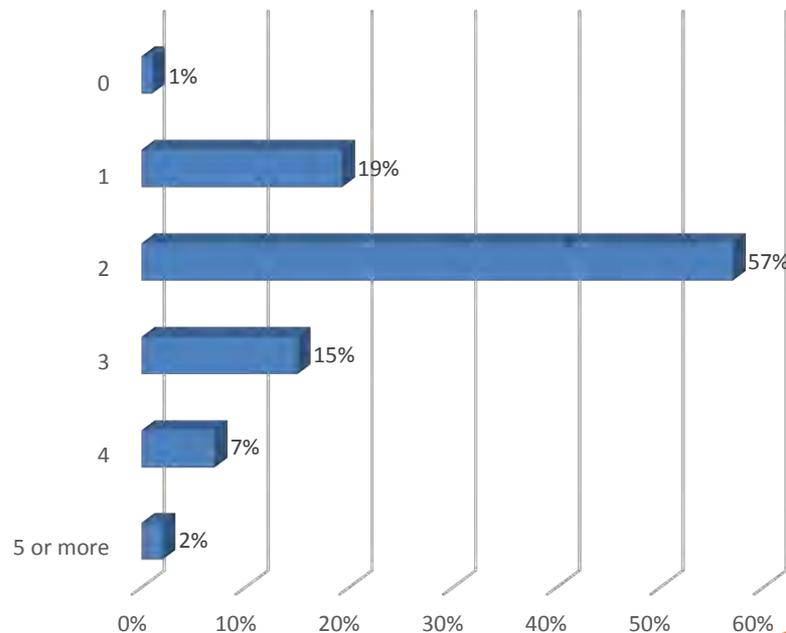
Base = all survey respondents (n=3,546)



Number of licensed drivers

q2 - How many licensed drivers are in your household?

Base = all survey respondents (n=3,548)



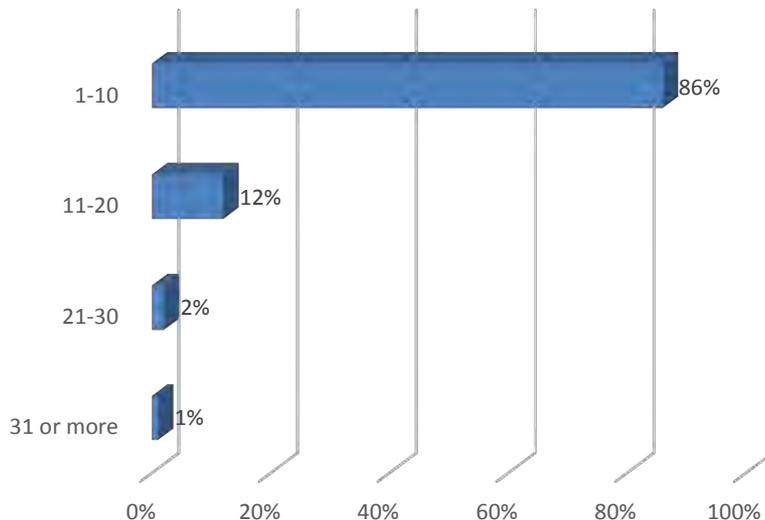
What are the number of *work-commute trips* using the I-90 bridge?

Round-trips per week between Mercer Island and Bellevue

- Total trips = 12,847
- Minimum = 1, maximum = 80
- 75% reported 9 or fewer round-trips per week
- Mean number of round-trips per week = 7
- Median number of round-trips per week = 5
- Percent of round-trips during peak hours = 78%

q5a - What is the total number of vehicle round-trips your household (excluding service workers) typically make per week using the EAST CHANNEL BRIDGE (between Mercer Island and Bellevue) for the purpose of commuting to and from work?

Base = all survey respondents (n=1,751)

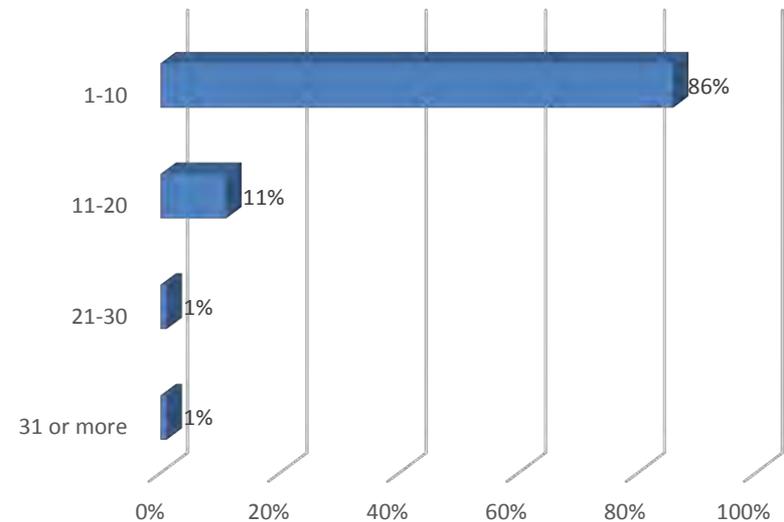


Round-trips per week between Mercer Island and Seattle

- Total trips = 15,485
- Minimum = 1, maximum = 90
- 75% reported 9 or fewer round-trips per week
- Mean number of round-trips per week = 7
- Median number of round-trips per week = 5
- Percent of round-trips during peak hours = 84%

q6a - What is the total number of vehicle round-trips your household (excluding service workers) typically make per week using the FLOATING BRIDGE (between Mercer Island and Seattle) for the purpose of commuting to and from work?

Base = all survey respondents (n=2,143)

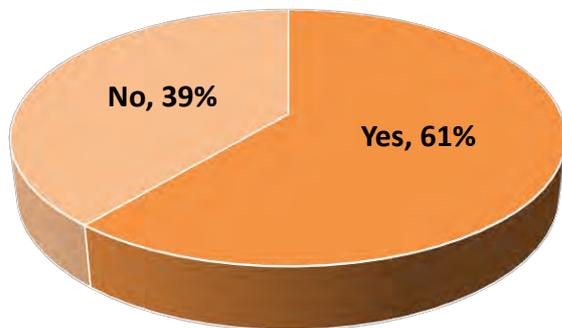


What are the number of *service workers* using the I-90 bridge?

- Sixty-one percent of the households reported service workers (such as yard care workers, housekeepers, nannies, etc.) traveling to their homes during the week of November 17 through November 23, 2013.
- A total of 10,176 one-way trips of service workers were reported:
 - Minimum = 1, maximum = 70
 - 75% reported 5 or fewer one-way trips
 - Mean number of one-way trips = 5
 - Median number of one-way trips = 3

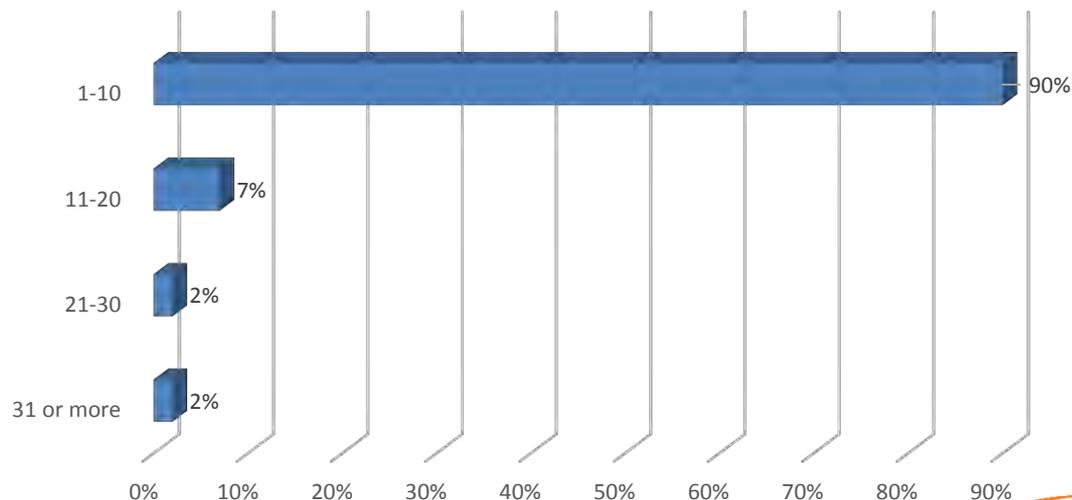
q3 - Did you have any service workers (such as yard care workers, housekeepers, nannies, etc.) travel from off of Mercer Island to your home during the week of November 17 through November 23?

Base = all survey respondents (n=3,433)



q4 - How many total one-way trips from off the island did service workers make to your home during the week of November 17 through November 23?

Base = all respondents who reported having service workers (n=1,999)

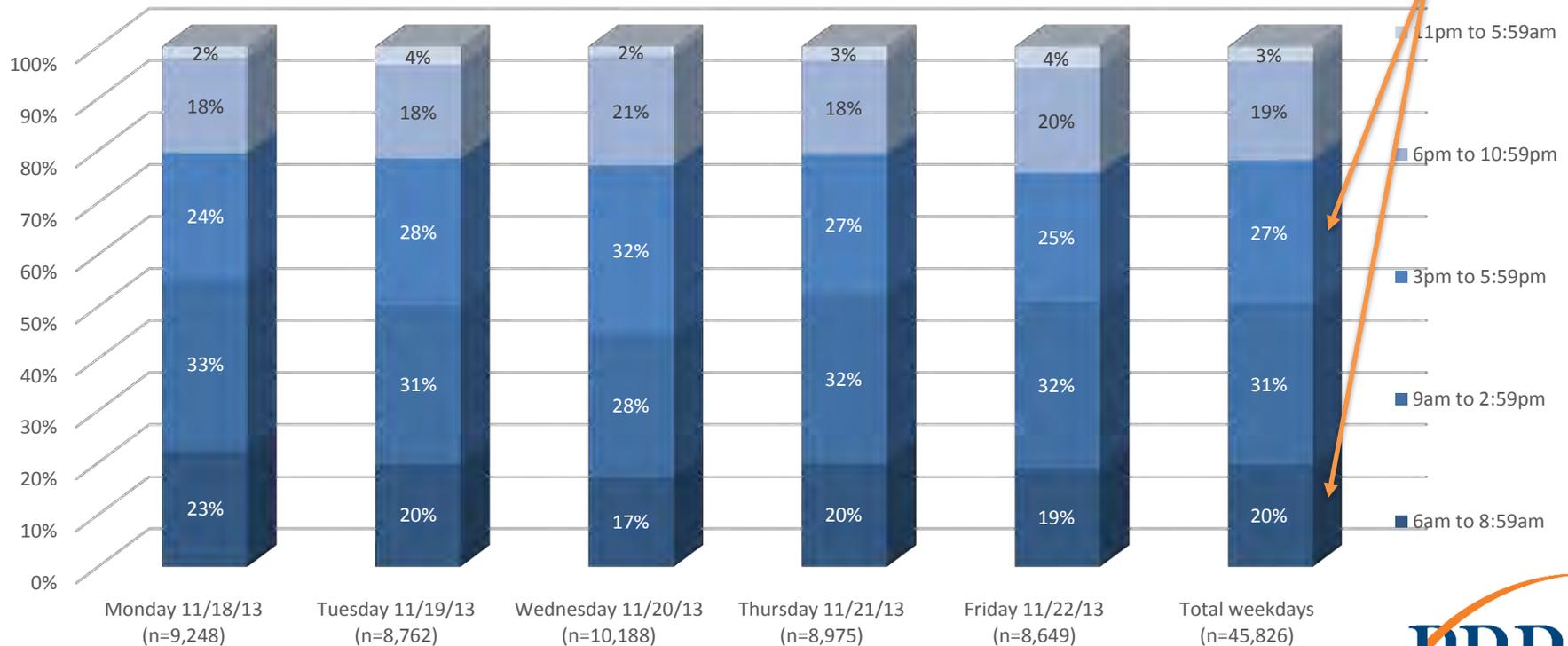


What are the number of weekday trips *between Mercer Island and Bellevue* by time of day?

- Total trips Monday through Friday = 45,826
- 90% report 25 or fewer trips Monday through Friday
- Mean number of trips Monday through Friday = 14
- Median number of trips Monday through Friday = 12
- Percent of trips by time period were very similar across all five weekdays
- Percent of trips during peak hours = 47%

Percent of Weekday Trips by Time of Day - Between Mercer Island and Bellevue

Base = all survey respondents



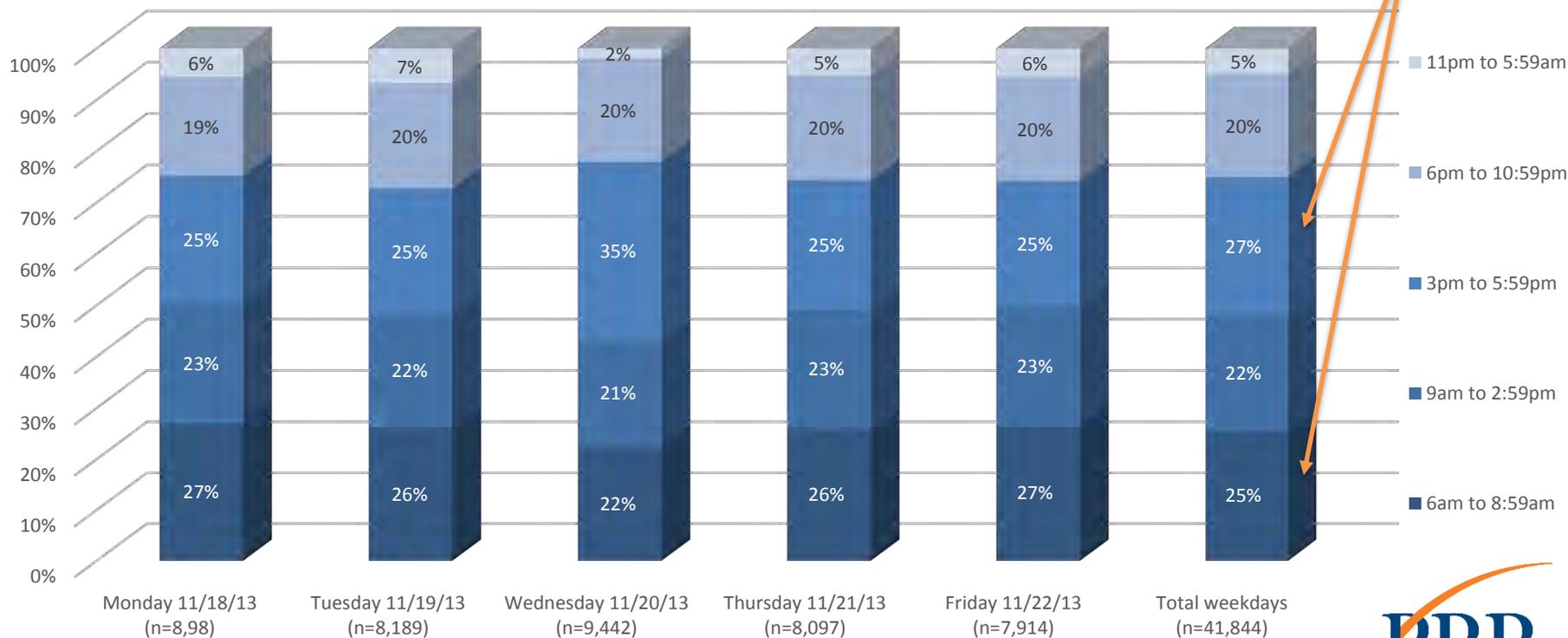
47% of all trips were during the peak commute periods.

What are the number of weekday trips *between Mercer Island and Seattle* by time of day?

- Total trips Monday through Friday = 41,844
- 90% reported 22 or fewer trips Monday through Friday
- Mean number of trips Monday through Friday = 13
- Median number of trips Monday through Friday = 10
- Percent of trips by time period were very similar across all five weekdays
- Percent of trips during peak hours = 52%

Percent of Weekday Trips by Time of Day - Between Mercer Island and Seattle

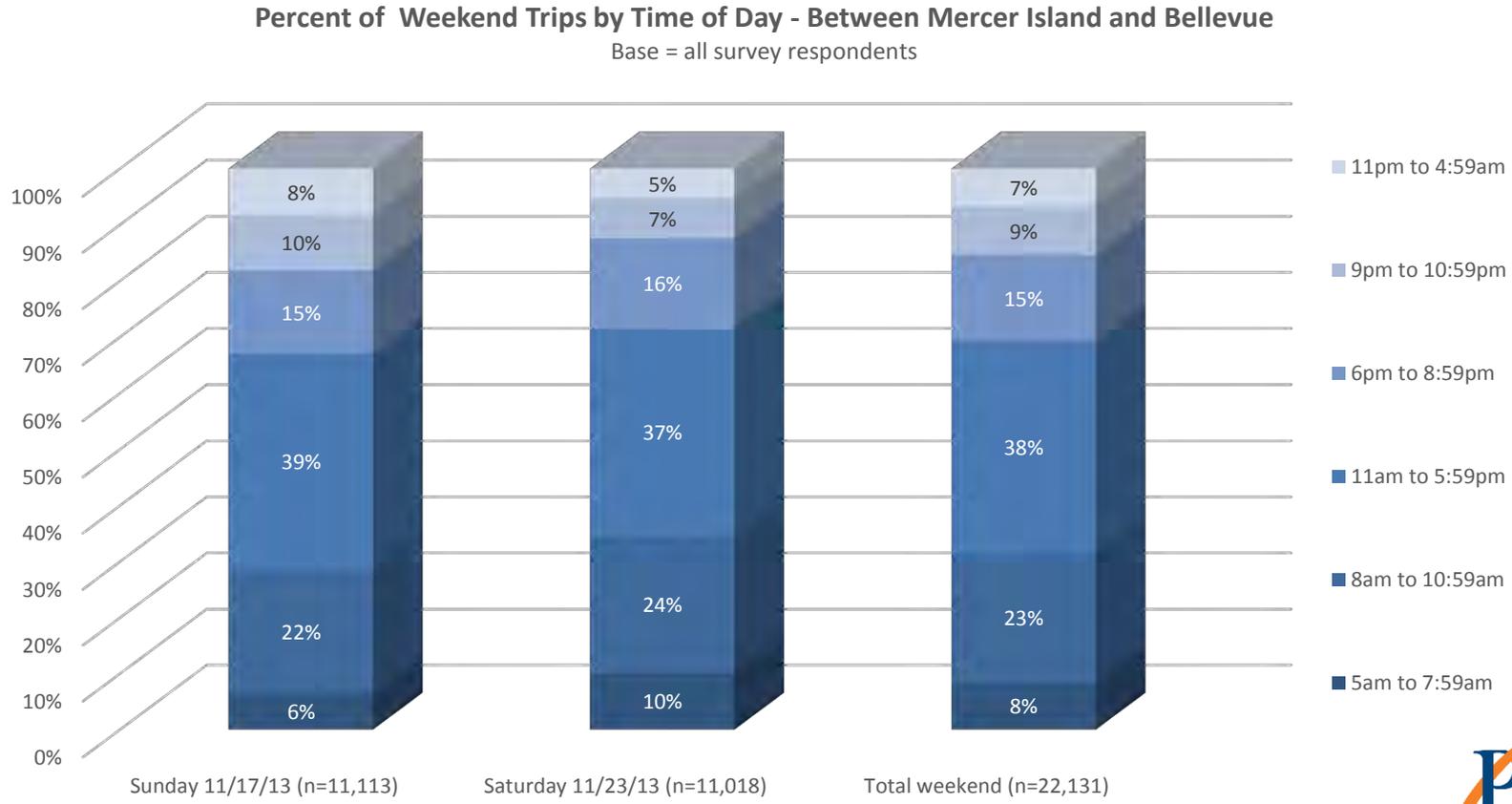
Base = all survey respondents



52% of all trips were during the peak commute periods.

What are the number of weekend trips *between Mercer Island and Bellevue* by time of day?

- Total trips Saturday and Sunday = 22,131
- 90% reported 13 or fewer trips on the weekend
- Mean number of trips on the weekend = 7
- Median number of trips on the weekend = 6
- Percent of trips by time period were very similar across both weekend days

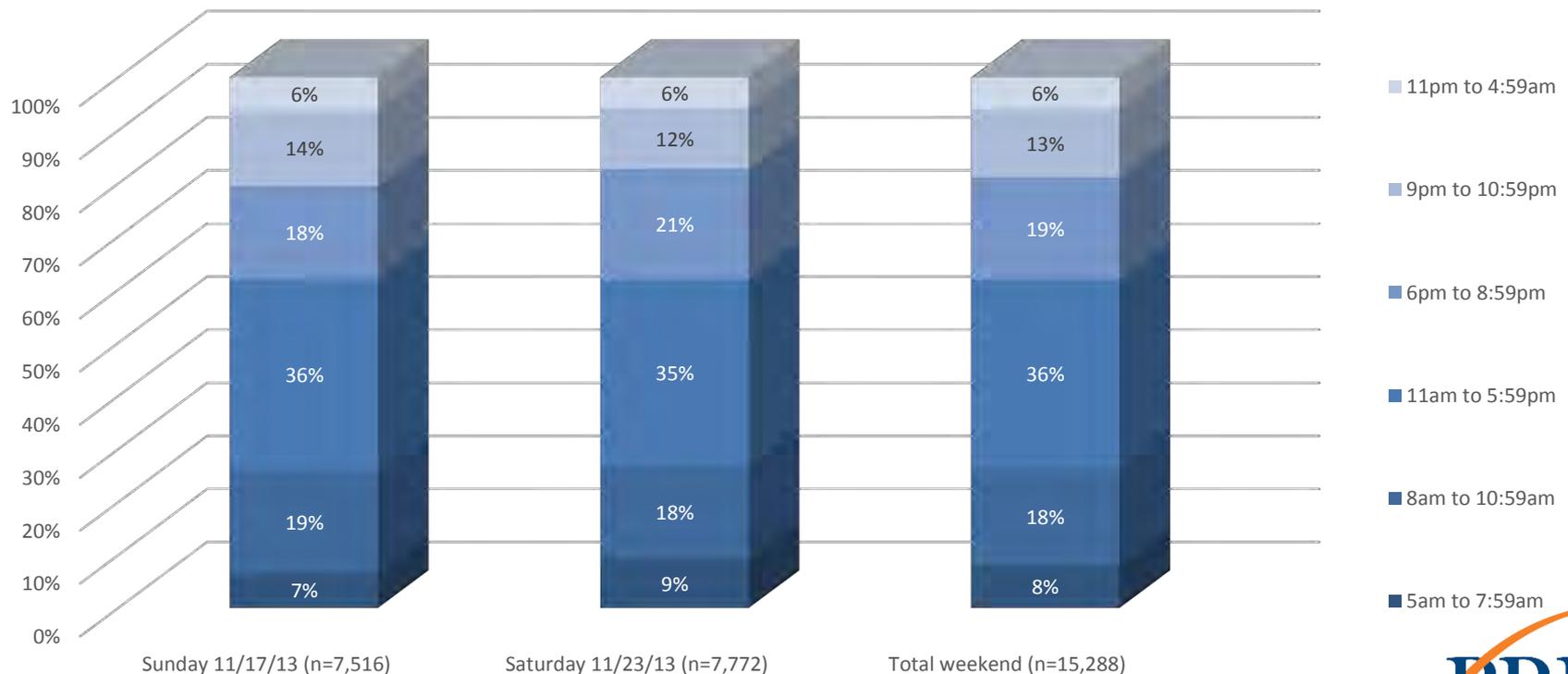


What are the number of weekend trips *between Mercer Island and Seattle* by time of day?

- Total trips Saturday and Sunday = 15,288
- 90% reported 11 or fewer trips on the weekend
- Mean number of trips on the weekend = 6
- Median number of trips on the weekend = 4
- Percent of trips by time period were very similar across both weekend days

Percent of Weekend Trips by Time of Day - Between Mercer Island and Seattle

Base = all survey respondents



Key findings

- The vast majority of Mercer Island households (98%) have personal vehicles and 98% reported making trips onto or off of the island during the week of November 17 through November 23, 2013.
- Work-commute trips:
 - There were more work-commute round-trips that typically occur between Mercer Island and Seattle (55%) than between Mercer Island and Bellevue (45%).
 - When looking at the two trip directions separately, 84% of the work-commute round-trips between Mercer Island and Seattle occur during the peak periods compared to 78% between Mercer Island and Bellevue.
- Total *weekday* trips – based on the travel diaries:
 - There were more weekday trips between Mercer Island and Bellevue (52%) than between Mercer Island and Seattle (48%).
 - When looking at the two trip directions separately, 52% of the weekday trips between Mercer Island and Seattle occur during the peak periods compared to 47% between Mercer Island and Bellevue.
- Total *weekend* trips – based on the travel diaries:
 - There were more weekend trips between Mercer Island and Bellevue (59%) than between Mercer Island and Seattle (41%).
- Service worker trips:
 - Many households (61%) reported having service workers traveling to their homes from off of the island during the week of November 17 through November 23, 2013.
- Overall, more trips by household members were between Mercer Island and Bellevue (54%) compared to trips between Mercer Island and Seattle (46%).