2 SYSTEM-WIDE MARKET TRENDS

This chapter examines characteristics and trends of ferry travel system-wide. Using the 2013 WSF Travel Survey data, various market segments are analyzed by trip purpose, boarding method, frequency of use, and others which characterize or subdivide system-wide ferry use. Differences between weekday travel and Saturday travel are highlighted. The 2013 survey was executed with a similar methodology and questions of previous surveys in order to allow for a cross section comparison over time when possible.

Survey period responses have been expanded to survey period ridership. More information regarding expansion methods can be found in Chapter 8.

2.1 Washington State Ferries Market Summary

General characteristics of the Washington State Ferries (WSF) system between 2006 and 2013 are provided in Table 2-1.

Table 2-1. General comparisons between 2006 and 2013

Characteristic	2006 Survey	2013 Survey
Ridership	65,300 / day	61,700 / day (22 .5 million / yr)
Average revenue per rider (one-way)	$10.40 vehicles/drivers $ 2.52 passengers	$12.31 vehicles/drivers $ 3.04 passengers
Perceived Wait Time	24 minutes overall	15 minutes weekday 20 minutes Saturday
Percent weekday work trips	58%	54%
Average age	48	49
Percent weekday telecommuters	20%	25%
Weekday trip frequency	66% took more than 2 trips	61% took more than 2 trips
Saturday trip frequency	45% only 1 trip	52% only 1 trip
Percentage of ferry round trips spanning more than one day	25%	20%
Boarding Method - Weekday	72% drive, 27% walk, 1% bike	69% drive, 29% walk, 2% bike
Boarding Method - Saturday	82% drive, 17% walk, 1% bike	79% drive, 20% walk, 1% bike

The WSF system carries 22.5 million riders per year, or an average of about 61,700 riders per day. This is down 6 percent from the ridership in 2006 (65,300 riders per day). The average one-way revenue per rider collected in 2013 system-wide was $12.31 for vehicles/drivers and $3.04 for passengers. Fares have increased since 2006 from an average revenue per rider of $10.40 for vehicle/drivers and $2.52 for passengers. These fares are calculated by dividing the total fares collected by the number of one-way trips, and reflect not only changes in fares, but also shifts in the distribution of riders between different fare categories and routes. The average system-wide

perceived wait time for ferry riders is 15 minutes for weekday trips and 20 minutes for Saturday trips, a decrease from an overall 24 minutes in perceived wait time in 2006.

Weekday travel is dominated by work trips (more than 54 percent). Even though work trips are the most common trip purpose, they have been declining as a percentage of total trips since 1999 (from 60 percent in 1999 and 58 percent in 2006). This is likely due to a combination of factors, including an aging rider population base (the average age was 49 years old in 2013 compared with 48 in 2006); more people telecommuting (25 percent of weekday travelers reported that they telecommute at least one day per week compared to 20 percent in 2006); more job opportunities on the west side of Puget Sound; higher fares may discourage more frequent travel; and more people can work at home full-time. Weekday travelers are most likely to travel four days per week (more than 61 percent use ferries four days per week), but Saturday travelers are most likely to travel only one day per week (52 percent), indicating that the Saturday market is made up of different people traveling for different purposes than the weekday market.

"Even though work trips are the most dominant trip purpose, they have been declining as a percentage of total trips since 1993."

The vast majority of travelers complete a round-trip on the same day and use the same ferry route, as expected (see Section 2.3.3), but the number of round-trips spanning more than one has decreased in recent years (from 25 percent in 2006 to 20 percent in 2013) for weekdays. In 2013, a larger percentage of Saturday riders return on the same day than in 2006.

There is a decreasing trend in ferry riders boarding in a vehicle (72 percent in 2006 to 69 percent in 2013) and a slight increase in ferry riders who walk on-board (27 percent in 2006 to 28 percent in 2013) for weekday trips. Similarly, there is a decrease in vehicle boardings for Saturday trips (82 percent in 2006 to 79 percent in 2013). The percentage of riders boarding by bike has increased for weekday trips since 2006, though the percentage of total boardings remains small (1 percent in 2006 to over 2 percent in 2013). Even with increased parking costs, a significant number of people park a vehicle before boarding the ferry.

In addition to the summary above, there were many other questions asked on the survey that describe ferry rider characteristics. These are summarized in Table 2-2.

Table 2-2. General findings summary

Characteristic	Summary	New Item
Sailing Preference: Time/Route	8.2% want a different time 0.2% want a different route	
Median Wait Time (Perceived)	15 minutes weekday 20 minutes Saturday	
Wait Location	In passenger terminal 22% In vehicle holding area 70% On street 3%, Other 4%	
One-Way Trips per Week Statistics	Weekday median: 4 trips per week Saturday median: 1 trip per week	
When will you return? Or When did you travel on the first half of your trip?	20% weekday riders some other day 30% Saturday riders some other day	

Table 2-2. General findings summary (continued)

Characteristic	Summary	New Item
How will you return? Or how did you travel on the first half of your trip?	4 percent drive around 5 percent take a different ferry route	
Mode of Access	8% walked, 1.3% biked, 4.5% transit, 0.4% taxi, 50.2% car driver, 32.2% car passenger, 0.1% other ferry, 0.1% carshare, 3.1% dropped off, 0.2% vanpool	
Trip Purpose - Weekday	54% work/school, 21% personal business/other, 25% shopping/recreation	
Trip Purpose - Saturday	10% work/school, 23% personal business/other, 67% shopping/recreation	
Boarding Method - Weekday	69% drive, 29% walk, 2% bike	
Boarding Method - Saturday	79% drive, 20% walk, 1% bike	
Vehicle Type	Auto/SUV/Van/Pickup 94.4% Vanpool program vehicle 1.3% Oversize commercial vehicle 0.7% Motorcycle 1.8% School bus 0.6% Public transit bus 0.1% Camper/RV 0.3% Other 0.6%	
Reasons for Vehicle Boarding	Need vehicle at destination 69% Vehicle is necessary for business 8% Too far to walk 34% No safe nearby parking 1% Carrying baggage or load 11% Traveling with children or seniors 7% Transit is not convenient 13% Transit does not go to destination 9% Mobility impaired 4% Other answer 3%	
Parked a Vehicle	42% weekday, 54% Saturday	
Parking Location	On street 14% Nearby parking lot/garage 75% Other 11%	
Subsidized Parking	7% of weekday parking is subsidized 3% of Saturday parking is subsidized	
Mode of Egress	7.6% walked, 1.2% biked, 5.6% transit, 0.6% taxi, 48.5% car driver, 32.5% car passenger, 0% other ferry, 0% carshare, 3.8% dropped off, 0.1% vanpool	
Travel Party Size	Average: 1.8 weekday, 2.4 Saturday	

Table 2-2. General findings summary (continued)

Characteristic	Summary	New Item
Fare Type	Free (no fare collected or fare collected in other direction) 18.6% Passenger full fare 18.7% Passenger with bicycle 0.7% Passenger discounted multi-ride 3.7% Passenger with monthly pass 5.3% Passenger youth fare 1% Passenger senior/disabled 8.1% Vehicle 14-22 ft full fare 20.5% Vehicle 14-22 ft discounted multi-ride 9.2% Vehicle under 14 ft full fare 7.5% Vehicle under 14 ft discounted multi-ride 2.9% Motorcycle/rider 1.2% Recreation vehicle longer than 22 ft 0.2% Truck longer than 22 ft 0.4% Other ticket type 2.1%	
Household Size	Average 2.6 persons per household (median: 2)	
Workers in Household	Average 1.4 workers per household (median: 1)	
Vehicles in Household	Average 2.3 vehicles per household (median: 2)	
Average Age (Year born)	49 years old (1964)	
Occupation Status	68% workers, 6% students, 1% military, 18% retired, 5% unemployed, 4% other	
Planning to Retire in the Next 5 Years	14% of survey respondents	✓
Telecommute	25% weekday, 24% Saturday	
Days per Week Telecommute	Average: 2.8 days per week among telecommuters	
Median Household Income (Self-reported)	$75,000 - $100,000 per year	
Race/Ethnicity	African American/Black 0.9% Asian/Pacific Islander 3.5% Native American/Alaskan Native 1% Hispanic 2.1% White 80.9% Other/Multiple Response 3.5% Not Indicated 8%	✓
Primary Language	English 90%, Spanish 3%, Other 7%	✓

2.2 Washington State Ferries Market Area

WSF serves a geographic market that includes 12 counties in Washington State plus British Columbia. The WSF geographic market is defined by the home location of each ferry rider. WSF also serves visitors from out-of-state, but these locations are not included in the evaluation of the geographic market since they may come from all over the United States or from around the world.

Table 2-3 provides a comparison of ferry ridership by county as a percentage of county population. The table shows that, for San Juan County in particular, as well as Island, Kitsap, and Jefferson Counties, residents are more dependent on the ferry system than in other counties (e.g., 27 percent

of San Juan County residents rode the ferry during the survey period). Figure 2-1 shows the distribution of ferry rider home locations by county for weekday and Saturday trips. The highest percentage of weekday riders live in Kitsap County, while the highest percentage of Saturday riders live in King County.

Figure 2-2 and Figure 2-3 present the density of weekday and Saturday ferry rider home locations for all routes. As shown in the maps, the overall geographic distribution of home locations is similar between weekday and Saturday riders. However, compared with weekday trips, the percentage share of riders who reside on the east side of Puget Sound is generally higher for Saturday. Of respondents with a valid home location provided, 92 percent live within the 12-county region.

Table 2-4 provides the share of survey respondent home locations that are located outside of Washington State (excluding British Columbia), in British Columbia, and in Washington State. As shown in the table, the routes with the highest percentage of out-of-state riders include Anacortes/San Juan Islands – San Sidney, B.C., Anacortes – San Juan Islands, and Port Townsend – Coupeville. Also, the percentage of out-of-state riders is higher overall on Saturdays compared with weekdays.

Table 2-3. System-wide survey period ferry rider home locations as a share of county population (2013)

Clallam	Island	Jefferson	King	Kitsap	Mason	Pierce	San Juan	Skagit	Snohomish	Thurston
2.3%	9.2%	6.5%	1.0%	8.0%	0.9%	0.2%	27.4%	0.7%	0.7%	0.1%

Figure 2-1. System-wide distribution of ferry rider home locations by county, weekday and Saturday survey periods (2013)

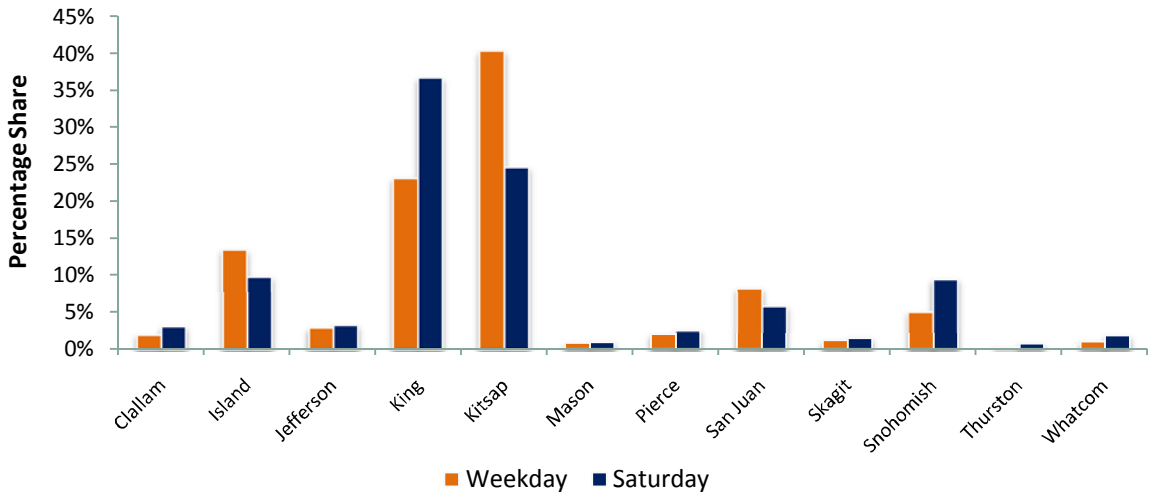


Figure 2-2. System-wide rider home locations, weekday survey period

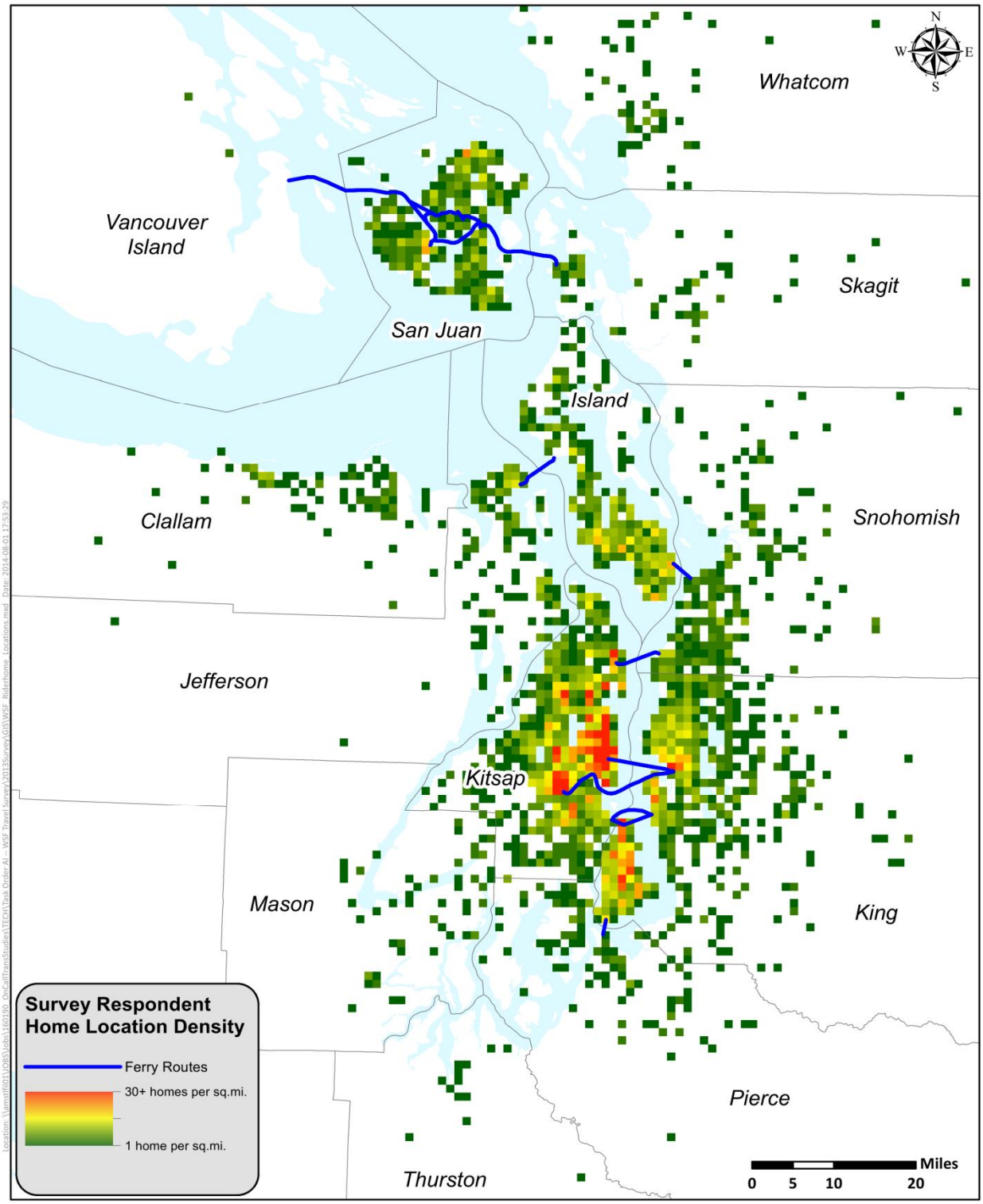


Figure 2-3. System-wide rider home locations, Saturday survey period

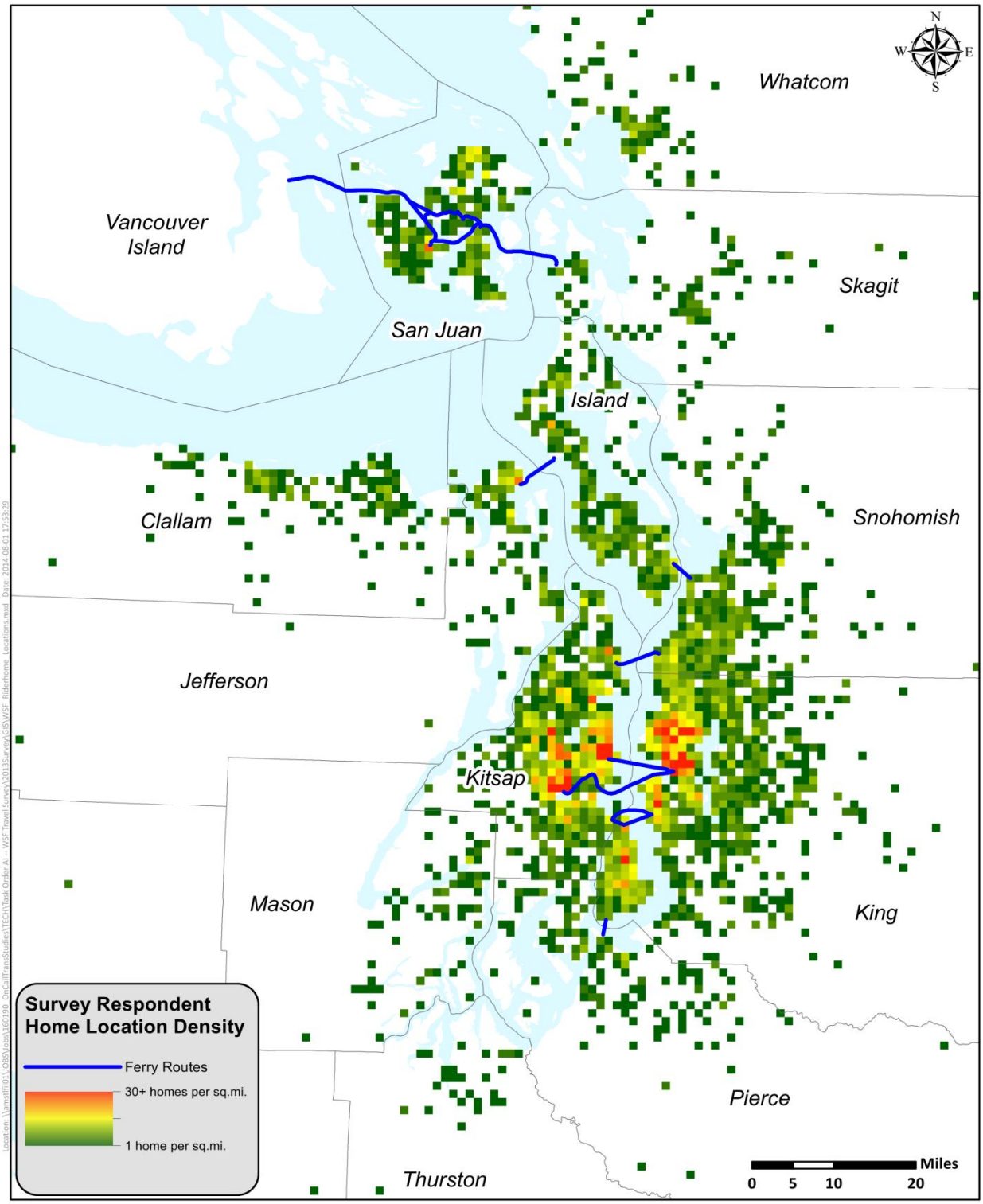


Table 2-4. Share of survey respondents residing out of state, weekday and Saturday survey periods (2013)

	Out-of-State*	British Columbia	Washington State
Weekday			
San Juan Islands Corridor	15.1%	1.9%	83.1%
Anacortes/San Juan Islands – Sidney, B.C.	38.3%	25.0%	36.7%
Anacortes – San Juan Islands	13.7%	0.5%	85.8%
North Sound Corridor	5.5%	1.1%	93.4%
Mukilteo – Clinton	3.8%	0.0%	96.2%
Port Townsend – Coupeville	13.2%	6.1%	80.7%
Central Sound Corridor	5.6%	0.2%	94.1%
Seattle – Bainbridge Island	6.2%	0.3%	93.5%
Seattle – Bremerton	4.6%	0.0%	95.4%
Edmonds – Kingston	5.4%	0.3%	94.3%
South Sound Corridor	1.3%	0.0%	98.7%
Fauntleroy – Vashon	1.7%	0.0%	98.3%
Fauntleroy – Southworth	0.7%	0.0%	99.3%
Southworth – Vashon	2.1%	0.0%	97.9%
Pt. Defiance – Tahlequah	1.0%	0.0%	99.0%
System-wide	6.2%	0.5%	93.3%
Saturday			
San Juan Islands Corridor	11.9%	3.9%	84.2%
Anacortes/San Juan Islands – Sidney, B.C.	7.5%	30.2%	62.3%
Anacortes – San Juan Islands	12.1%	2.6%	85.3%
North Sound Corridor	5.2%	1.5%	93.3%
Mukilteo – Clinton	4.4%	0.2%	95.4%
Port Townsend – Coupeville	6.9%	4.2%	88.9%
Central Sound Corridor	7.7%	0.3%	92.0%
Seattle – Bainbridge Island	11.3%	0.1%	88.5%
Seattle – Bremerton	6.0%	0.4%	93.6%
Edmonds – Kingston	3.9%	0.4%	95.7%
South Sound Corridor	3.2%	0.1%	96.8%
Fauntleroy – Vashon	3.3%	0.2%	96.5%
Fauntleroy – Southworth	2.6%	0.0%	97.4%
Southworth – Vashon	0.0%	0.0%	100.0%
Pt. Defiance – Tahlequah	4.9%	0.0%	95.1%
System-wide	7.2%	0.9%	91.8%

** Excluding British Columbia*

2.3 Ferry Travel Characteristics

2.3.1 Trip Purpose and Frequency

Work commute trips comprise a majority of ferry system use, with 54 percent of the total travel for work, school, or business purposes, as shown in Table 2-5. These trips also are the most frequent, with more than a quarter of the trips using ferries five days a week, as evidenced by nine or more one-way trips per respondent. Even though work trips are the most dominant trip purpose, they have been declining as a share of total trips since 1993 (68 percent weekday work trips in 1993, 60 percent in 1999, 58 percent in 2006, and 54 percent in 2013). This may be due to a variety of factors: an aging population of ferry users (i.e., retiring out of the work force), more telecommuting, more job opportunities on both sides of Puget Sound, and more people who can work at home full-time. Recreational and shopping trips dominate Saturday trips, comprising more than two-thirds of the total number of Saturday trips. Recreation and shopping trips increased marginally for system-wide weekday trips, and increased by over 8 percentage points for Saturday trips since 2006. There is roughly the same percentage of personal business or other trips during the week as there are on Saturday.

2.3.2 Direction and Time of Day

Table 2-6 presents system-wide trips by direction and time of day. Overall, nearly two-thirds of trips in the PM peak period are travelling westbound (63 percent). This compares to 76 percent traveling westbound in the PM peak period from the 2006 survey. System-wide, 31 percent of total trips surveyed occurred in the PM peak period in 2013, versus 41 percent of total trips for 2006.

Table 2-5. System-wide one-way trips by purpose and frequency, weekday and Saturday survey periods (2006 and 2013)

One-Way Trips	Work/ School	Personal Business/ Other	Recreation/ Shopping	Total	All Purposes		Work/School	
					2013	2006	2013	2006
Weekday								
1	1,512	1,826	3,194	6,532	24.0%	12.5%	10.2%	4.3%
2	1,088	1,435	1,612	4,135	15.2%	21.3%	7.4%	11.1%
3 to 4	1,834	1,475	1,295	4,604	16.9%	16.0%	12.4%	10.1%
5 to 6	2,279	557	369	3,205	11.8%	9.2%	15.4%	10.5%
7 to 8	2,386	248	95	2,729	10.0%	9.1%	16.2%	13.0%
9 to 10	3,835	74	121	4,031	14.8%	21.9%	26.0%	35.9%
11+	1,839	88	73	2,000	7.3%	9.9%	12.4%	15.1%
Total	14,773	5,704	6,759	27,236	100%	100%	100%	100%
2013 Distribution	54.2%	20.9%	24.8%	100%				
2006 Distribution	58.4%	18.5%	23.1%	100%				
Saturday								
1	900	3,628	12,622	17,150	52.4%	45.3%		
2	482	1,645	4,030	6,158	18.8%	21.5%		
3 to 4	516	1,282	3,068	4,865	14.9%	15.3%		
5 to 6	395	409	1,046	1,850	5.7%	4.2%		
7 to 8	228	151	434	813	2.5%	3.1%		
9 to 10	290	136	321	747	2.3%	3.7%		
11+	406	228	497	1,132	3.5%	7.0%		
Total	3,217	7,479	22,018	32,714	100%	100%		
2013 Distribution	9.8%	22.9%	67.3%	100%				
2006 Distribution	15.0%	26.0%	59.0%	100%				

Table 2-6. System-wide trips by direction and time of day, weekday and Saturday survey periods (2013)

	Weekday PM Peak	Weekday PM Off-peak	Weekday Total	Saturday	Total	Percent of Total	Percent of PM Peak
Weekday							
Eastbound	8,200	3,490	11,690	20,649	32,339	46%	37%
Westbound	13,962	5,574	19,536	19,065	38,601	54%	63%
Total	22,162	9,064	31,226	39,714	70,940	100%	100%
	31.2%	12.8%	44.0%	56.0%	100.0%		

Note: Saturday trip expansion factors were based only on midday surveys, so no nighttime period survey was available for expansion. In addition, for many routes there were limited surveys for the morning and evening time periods. As a result, Saturday trips by time period are not reported, as the expansion results are unreliable.

2.3.3 Round-Trip Patterns

The vast majority of ferry travelers surveyed in 2013 made a round-trip on the same day, as shown in Figure 2-4. This was also true in 1999 and 2006. The percentage of travelers making round-trips on the same day has increased since 2006 for weekday travelers (76 percent in 2006, 80 percent in 2013). Conversely, rounds trips on the same day have decreased for Saturday travelers (24 percent in 2006 compared to 20 percent in 2013).

The percentage of people taking the same ferry route on the return trip was essentially unchanged in 2013 compared with 2006 for weekday travelers. There was a slight decrease in the percentage of trips returning on the same route for Saturday travelers from 2006. Riders taking a different route may be more likely to be travelling for recreational purposes who are visiting more than one location across the Puget Sound. These round-trip patterns are presented in Figure 2-5.

Figure 2-4. System-wide round-trip patterns by day, weekday and Saturday survey periods (2006 and 2013)

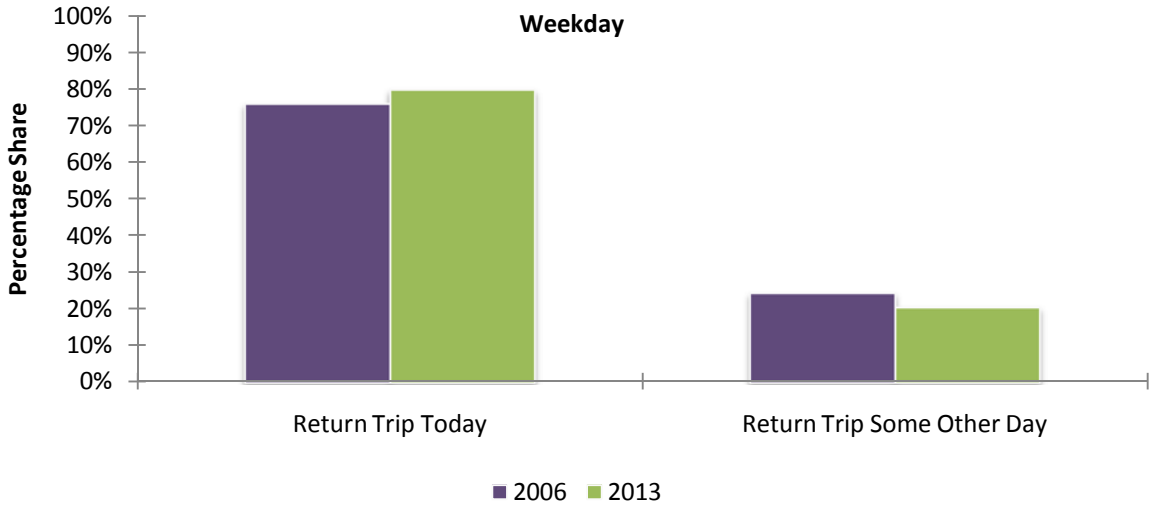
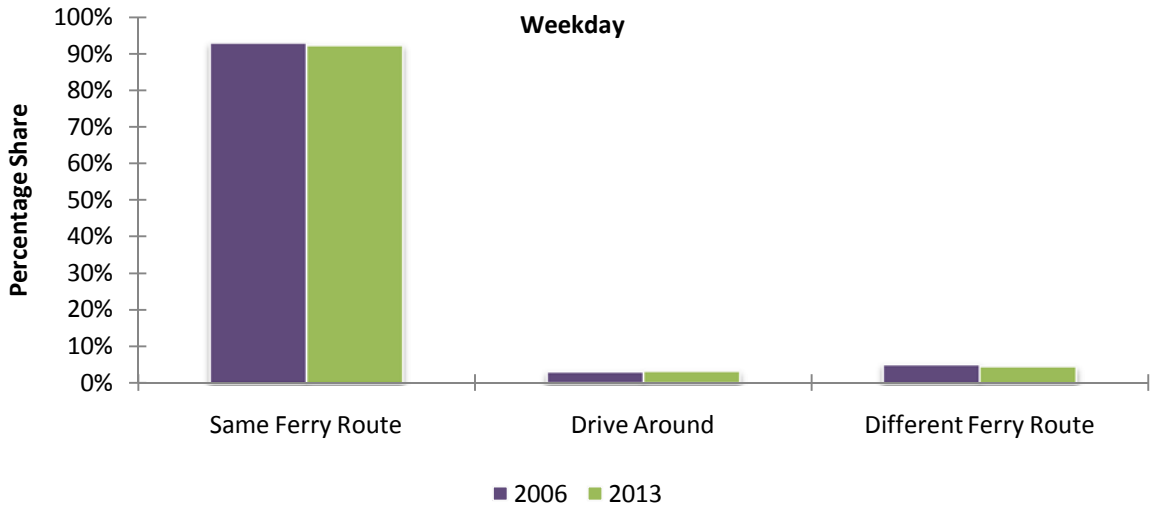


Figure 2-5. System-wide round-trip patterns by route, weekday and Saturday survey periods (2006 and 2013)



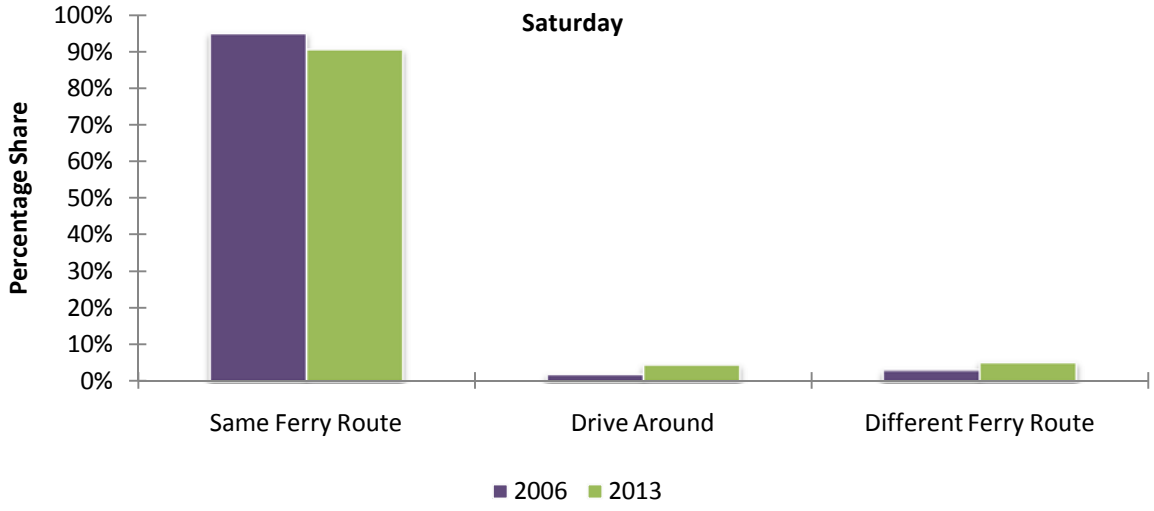
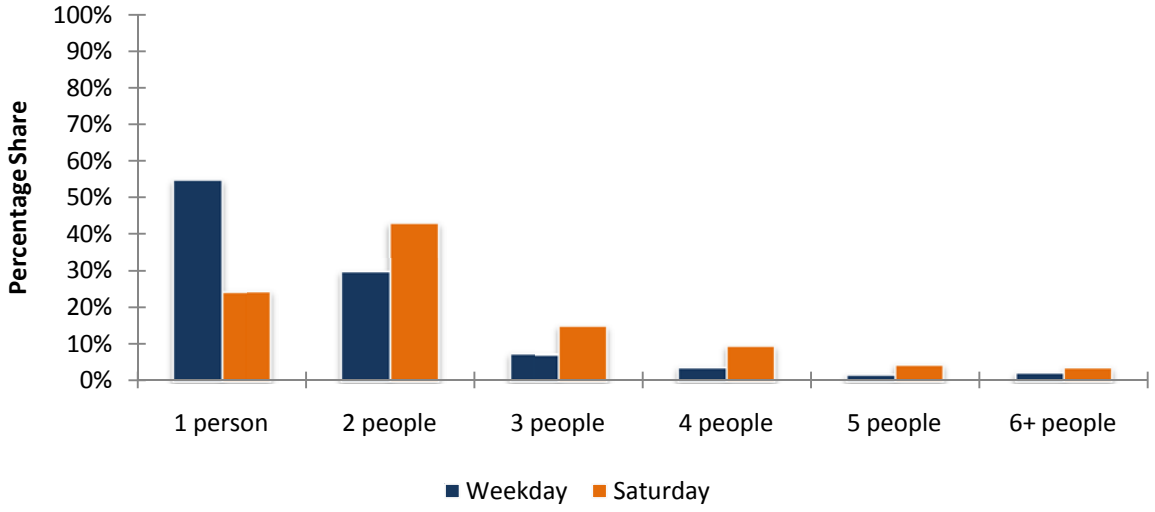


Figure 2-6 presents the size of the travel party for weekday and Saturday travelers. As expected, the majority of people traveling on Saturdays were traveling with one or more other persons (76 percent, two or more people), while the majority of people traveling on weekdays were traveling alone (55 percent). This is consistent with the trip purpose for work and non-work trips.

Figure 2-6. System-wide travel party size, weekday and Saturday survey periods (2013)



2.4 Access and Egress Travel Characteristics

2.4.1 Access, Egress, and Boarding Modes

Figure 2-7 and Figure 2-8 present system-wide access and egress modes for weekday and Saturday survey days by direction. As shown in the figures, there is generally a higher percentage of walk and transit access and egress trips on weekdays than on Saturday. This is possibly due to daily ferry riders being more likely to learn and use transit connections rather than day-trippers, who may not be comfortable using transit or find it convenient for their Saturday trip. It may also be that weekday trips are more likely to occur in a transit-friendly area than weekend trips, among other reasons.

Figure 2-7. System-wide westbound trips by access and egress modes, weekday and Saturday survey periods (2013)

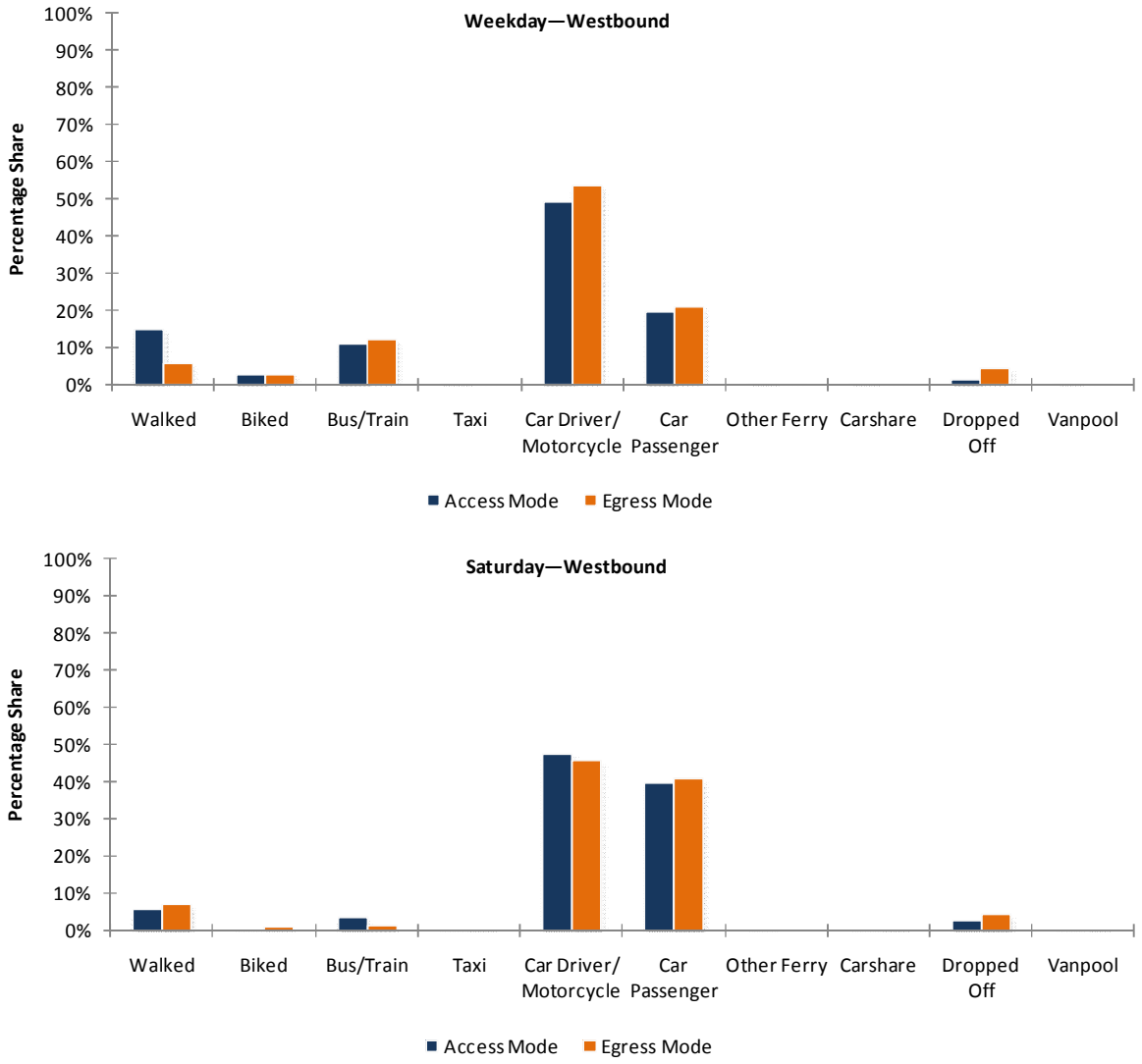


Figure 2-8. System-wide eastbound trips by access and egress modes, weekday and Saturday survey periods (2013)

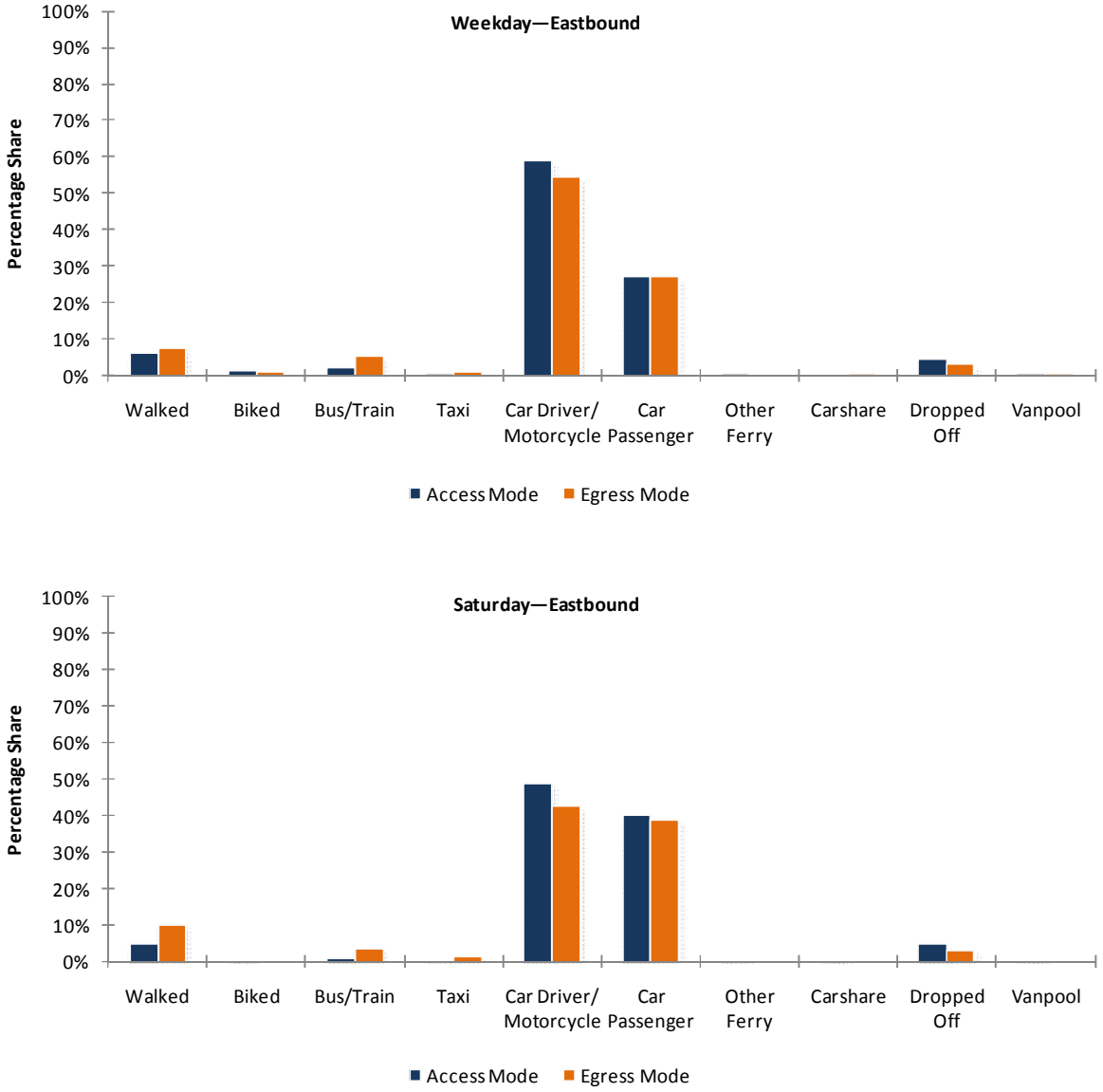


Table 2-7 and Table 2-8, provide a more detailed view of access and egress trips by boarding mode. Table 2-9, Table 2-10, and Table 2-11 present the access mode to the ferry, boarding mode, and egress mode from the ferry for weekday PM peak-period trips, weekday non-PM peak-period trips, and Saturday trips.

"The majority of ferry riders board the ferry system in a car, although this number has decreased from 2006."

The majority of ferry riders board the ferry system in a car, although this number has decreased from 2006, even with the modified survey expansion techniques introduced for 2013 to do a better job of capturing vehicle passenger patterns. There has been a 4 percent decrease in weekday car drivers for 2013 access and egress trips compared with 2006, with

an even greater reduction in car drivers on Saturdays. Likewise, there has been an increase in car passengers, suggesting more riders are choosing to carpool. There has been more than a 2 percent increase in weekday transit trips for both access and egress trips in 2013 compared with 2006. Bicycle trips doubled for weekday boardings but account for less than 1 percent of boarding mode share on Saturday. Conversely, there are 60 percent more car passengers on Saturday than on the weekday because these trips are more likely to be for shopping or recreation purposes, leading to a higher likelihood of traveling with others for these purposes.

Based on the survey respondents, there has been a slight decrease in vehicle boardings on both weekdays (72 percent in 2006, 69 percent in 2013) and Saturdays (82 percent in 2006, 79 percent in 2013). Compared to system-wide annual ridership trends, in 2006, 45 percent of annual boardings were by vehicle (10,850,232 of 23,937,546 total boardings), which was similar to 45 percent of annual boardings in 2013 (10,082,448 of 22,537,029 total boardings).

Table 2-7. System-wide access and boarding methods, weekday and Saturday survey periods (2006 and 2013)

					All Boardings	
Access Mode	Drive	Walk	Bicycle	Total	2013	2006
Weekday						
Walked	21	3,596	7	3,624	11.6%	13.6%
Biked	4	57	620	681	2.2%	1.4%
Bus/Train	55	2,282	50	2,387	7.6%	5.4%
Taxi	0	139	2	141	0.5%	0.7%
Car Driver/Motorcycle	15,014	1,482	7	16,503	52.9%	56.9%
Car Passenger	6,435	558	0	6,993	22.4%	22.0%
Other Ferry	0	11	0	11	0.0%	
Carshare	0	40	4	43	0.1%	
Dropped Off	5	745	4	753	2.4%	
Vanpool	0	83	7	90	0.3%	
Total	21,534	8,992	700	31,226	100%	100%
2013 Distribution	69.0%	28.8%	2.2%	100%		
2006 Distribution	72.0%	26.9%	1.1%	100%		
Saturday						
Walked	18	2,030	12	2,060	5.2%	4.9%
Biked	0	22	185	206	0.5%	1.9%
Bus/Train	7	778	6	791	2.0%	2.1%
Taxi	0	164	1	165	0.4%	0.2%
Car Driver/Motorcycle	16,788	2,295	44	19,127	48.2%	56.6%
Car Passenger	14,517	1,293	17	15,827	39.9%	34.4%
Other Ferry	0	31	0	31	0.1%	
Carshare	9	18	0	27	0.1%	
Dropped Off	7	1,423	3	1,433	3.6%	
Vanpool	0	46	0	46	0.1%	
Total	31,346	8,100	268	39,714	100%	100%
2013 Distribution	78.9%	20.4%	0.7%	100%		
2006 Distribution	82.2%	17.2%	0.6%	100%		

Table 2-8. System-wide egress and boarding methods, weekday and Saturday survey periods (2006 and 2013)

					All Boardings	
Egress Mode	Drive	Walk	Bicycle	Total	2013	2006
Weekday						
Walked	31	1,962	6	1,999	6.4%	11.0%
Biked	14	107	513	634	2.0%	1.4%
Bus/Train	39	2,870	102	3,011	9.6%	7.2%
Taxi	0	170	0	170	0.5%	0.8%
Car Driver/Motorcycle	14,817	1,971	59	16,847	54.0%	58.3%
Car Passenger	6,601	630	10	7,241	23.2%	21.3%
Other Ferry	0	2	0	2	0.0%	
Carshare	3	9	0	12	0.0%	
Dropped Off	16	1,216	9	1,241	4.0%	
Vanpool	13	56	0	69	0.2%	
Total	21,534	8,992	700	31,226	100%	100%
2013 Distribution	69.0%	28.8%	2.2%	100%		
2006 Distribution	71.9%	27.0%	1.1%	100%		
Saturday						
Walked	16	3,383	3	3,402	8.6%	7.7%
Biked	6	12	221	239	0.6%	0.7%
Bus/Train	8	924	13	945	2.4%	1.5%
Taxi	0	268	4	271	0.7%	0.4%
Car Driver/Motorcycle	16,468	1,059	13	17,541	44.2%	56.1%
Car Passenger	14,819	967	9	15,796	39.8%	33.5%
Other Ferry	0	0	0	0	0.0%	
Carshare	14	7	0	20	0.1%	
Dropped Off	14	1,445	6	1,464	3.7%	
Vanpool	0	36	0	36	0.1%	
Total	31,346	8,100	268	39,714	100%	100%
2013 Distribution	78.9%	20.4%	0.7%	100%		
2006 Distribution	81.9%	17.4%	0.7%	100%		

Table 2-9. System-wide access mode to ferry-boarding method—egress mode from ferry, weekday PM peak period (2013)

Access Mode to Ferry Terminal	Percentage Distribution	Boarding Method	Percentage Distribution	Egress Mode to Ferry Terminal	Percentage Distribution
Walk-On Boardings (33.1% of total boardings)					
Pedestrian	37.4%	Pedestrian	92.0%	Pedestrian	18.1%
Bicycle	7.8%	Pedestrian w/ Bicycle	8.0%	Bicycle	7.0%
By Bus/Transit	24.5%			By Bus/Transit	34.1%
By Vehicle	28.7%			By Vehicle	40.3%
Vanpool	1.1%			Vanpool	0.5%
Carshare	0.4%			Carshare	0.0%
Other Ferry	0.0%			Other Ferry	0.0%
In-Vehicle Boardings (66.9% of total boardings)					
In-Vehicle	100.0%	Vehicle Drivers	70.0%	In-Vehicle	100.0%
		Vehicle Passengers	30.0%		

Note: Average vehicle occupancy (AVO) was 1.43 for the weekday PM peak period.

Table 2-10. System-wide access mode to ferry-boarding method—egress mode from ferry, weekday non-PM peak period (2013)

Access Mode to Ferry Terminal	Percentage Distribution	Boarding Method	Percentage Distribution	Egress Mode to Ferry Terminal	Percentage Distribution
Walk-On Boardings (33.1% of total boardings)					
Pedestrian	36.5%	Pedestrian	95.3%	Pedestrian	27.1%
Bicycle	4.5%	Pedestrian w/ Bicycle	4.7%	Bicycle	4.7%
By Bus/Transit	22.6%			By Bus/Transit	20.0%
By Vehicle	35.2%			By Vehicle	47.1%
Vanpool	0.3%			Vanpool	0.7%
Carshare	0.6%			Carshare	0.3%
Other Ferry	0.3%			Other Ferry	0.1%
In-Vehicle Boardings (66.9% of total boardings)					
In-Vehicle	100.0%	Vehicle Drivers	69.7%	In-Vehicle	100.0%
		Vehicle Passengers	30.3%		

Note: Average vehicle occupancy (AVO) was 1.43 for the weekday non-PM peak period.

Table 2-11. System-wide access mode to ferry-boarding method—egress mode from ferry, Saturday survey period (2013)

Access Mode to Ferry Terminal	Percentage Distribution	Boarding Method	Percentage Distribution	Egress Mode to Ferry Terminal	Percentage Distribution
Walk-On Boardings (33.1% of total boardings)					
Pedestrian	24.4%	Pedestrian	96.8%	Pedestrian	40.5%
Bicycle	2.5%	Pedestrian w/ Bicycle	3.2%	Bicycle	2.8%
By Bus/Transit	9.4%			By Bus/Transit	11.2%
By Vehicle	62.6%			By Vehicle	45.1%
Vanpool	0.6%			Vanpool	0.4%
Carshare	0.2%			Carshare	0.1%
Other Ferry	0.4%			Other Ferry	0.0%
In-Vehicle Boardings (66.9% of total boardings)					
In-Vehicle	100.0%	Vehicle Drivers	53.7%	In-Vehicle	100.0%
		Vehicle Passengers	46.3%		

Note: Average vehicle occupancy (AVO) was 1.86 for the Saturday survey period.

Figure 2-9 presents the results of the travelers' reasons for taking a vehicle on-board the ferry. The biggest reason for taking a vehicle on the ferry was that the vehicle was needed at the destination (about 63 percent of weekday travelers taking their vehicle on-board the ferry gave this reason, as did 73 percent of Saturday travelers). The second-most prominent reason for both weekday and Saturday travelers taking a vehicle on the ferry was that it is too far to walk to the destination. Other common reasons were that transit is not convenient, transit does not go to the destination, or that travelers were carrying baggage.

Figure 2-9. System-wide reasons for taking a vehicle on-board the ferry, weekday and Saturday survey periods (2013)

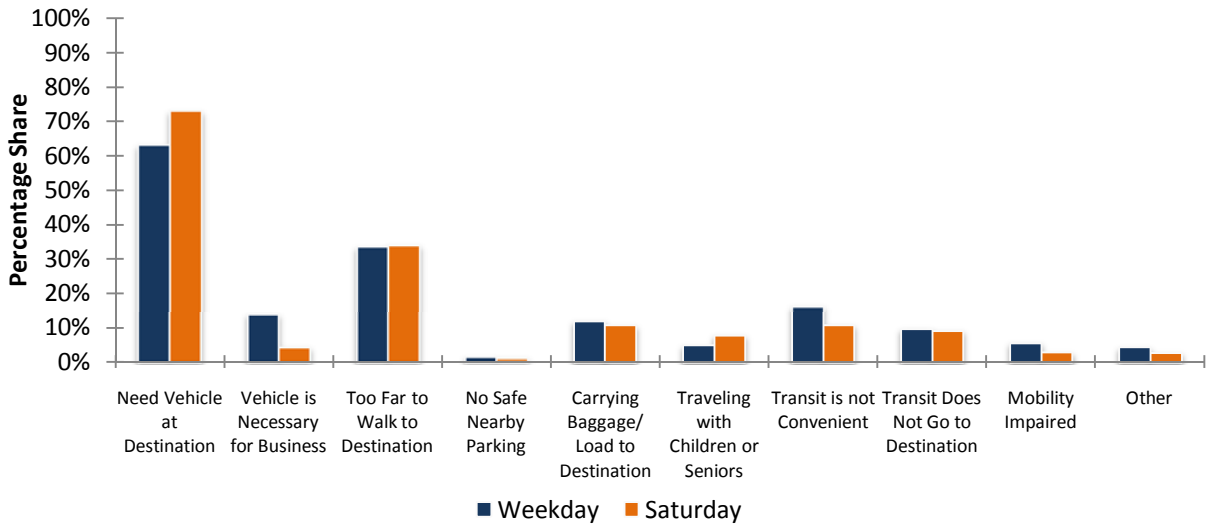
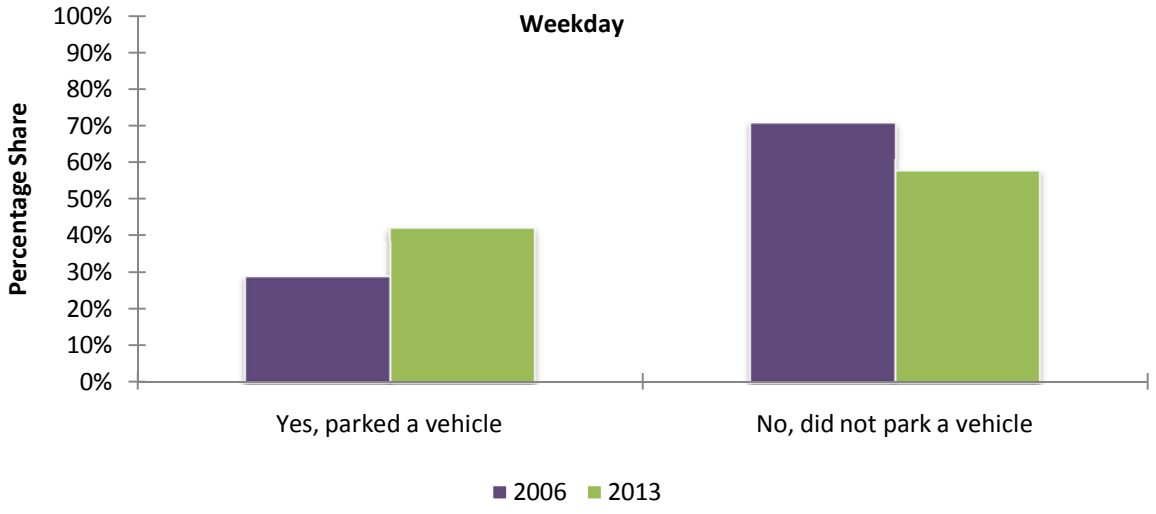
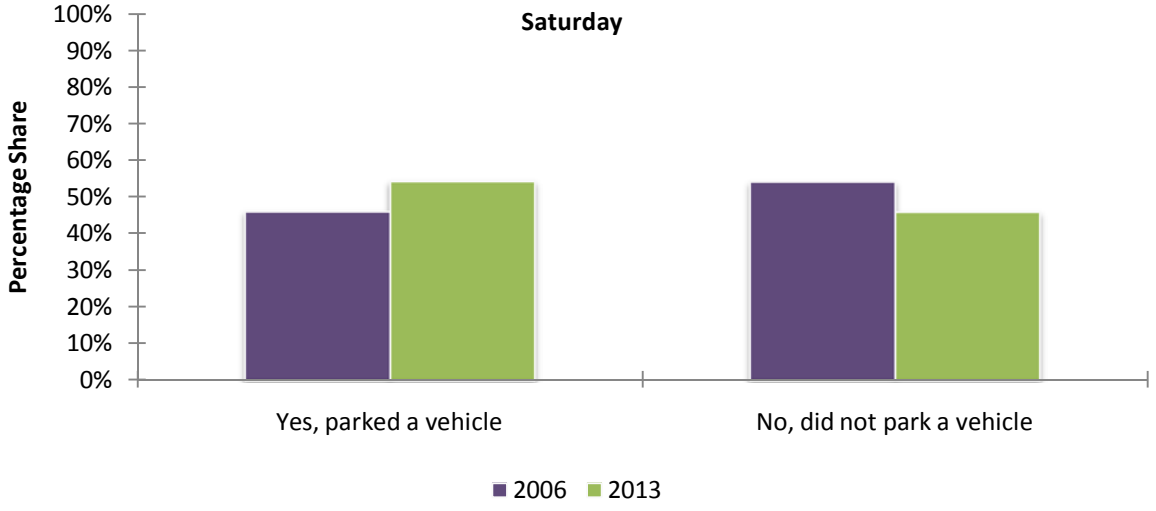


Figure 2-10 shows whether riders parked a vehicle at one end of their ferry trip. For travelers who travel to the ferry terminal and do not take a car on the ferry (non-motorized boardings), a majority of them do not park their car at or near the terminal (58 percent). Conversely, the majority of Saturday riders park their car at the terminal, possibly due to more parking availability and in some cases reduced Saturday pricing. A comparison with 2006 shows an overall increase in the number of riders parking a vehicle before boarding the ferry for both weekday and Saturday boardings.

Figure 2-10. System-wide non-motorized boardings that parked a vehicle at terminal, weekday and Saturday survey periods (2006 and 2013)





2.4.2 Opportunities for Increasing Non-Vehicle Board Access and Egress

This section presents characteristics of current users of non-vehicle modes for accessing and/or egressing the ferry, and discusses potential opportunities to shift the mode of access and egress from vehicles to transit, walking, and bicycling.

Characteristics of Non-Vehicle Mode Users

This section discusses non-vehicle mode users of the ferry system and compares them with users of all modes. Understanding the needs of these users can help to shift more ferry riders to non-vehicle modes, where there is more available capacity. This section includes system-wide results; refer to Appendix D for corridor-level results for transit and walk access.

Weekday and Saturday ferry riders who used transit to access or egress the ferry terminal system-wide account for 13 percent and 4 percent of survey period ridership, respectively. Weekday and Saturday ferry riders who walked to access or egress the ferry terminal system-wide account for 15 percent and 11 percent of survey period ridership, respectively. Weekday and Saturday ferry riders who biked to access or egress the ferry terminal system-wide account for 3 percent and 1 percent of survey period ridership, respectively.

Figure 2-11 shows the distribution of transit riders by age compared to all modes. Transit, walk, and bike access ferry riders tend to be younger than the overall ferry rider population. Weekday rider age distributions are somewhat similar across modes, except that transit ridership is more pronounced among younger riders, while bike riders are most likely to be working age (25-64 years of age). Saturday rider age distributions show a disproportionately large share of transit riders in the 15-24-year age group.

Figure 2-11. System-wide distribution of transit, walk, and bike access by age compared to all survey period respondents, weekday and Saturday survey periods (2013)

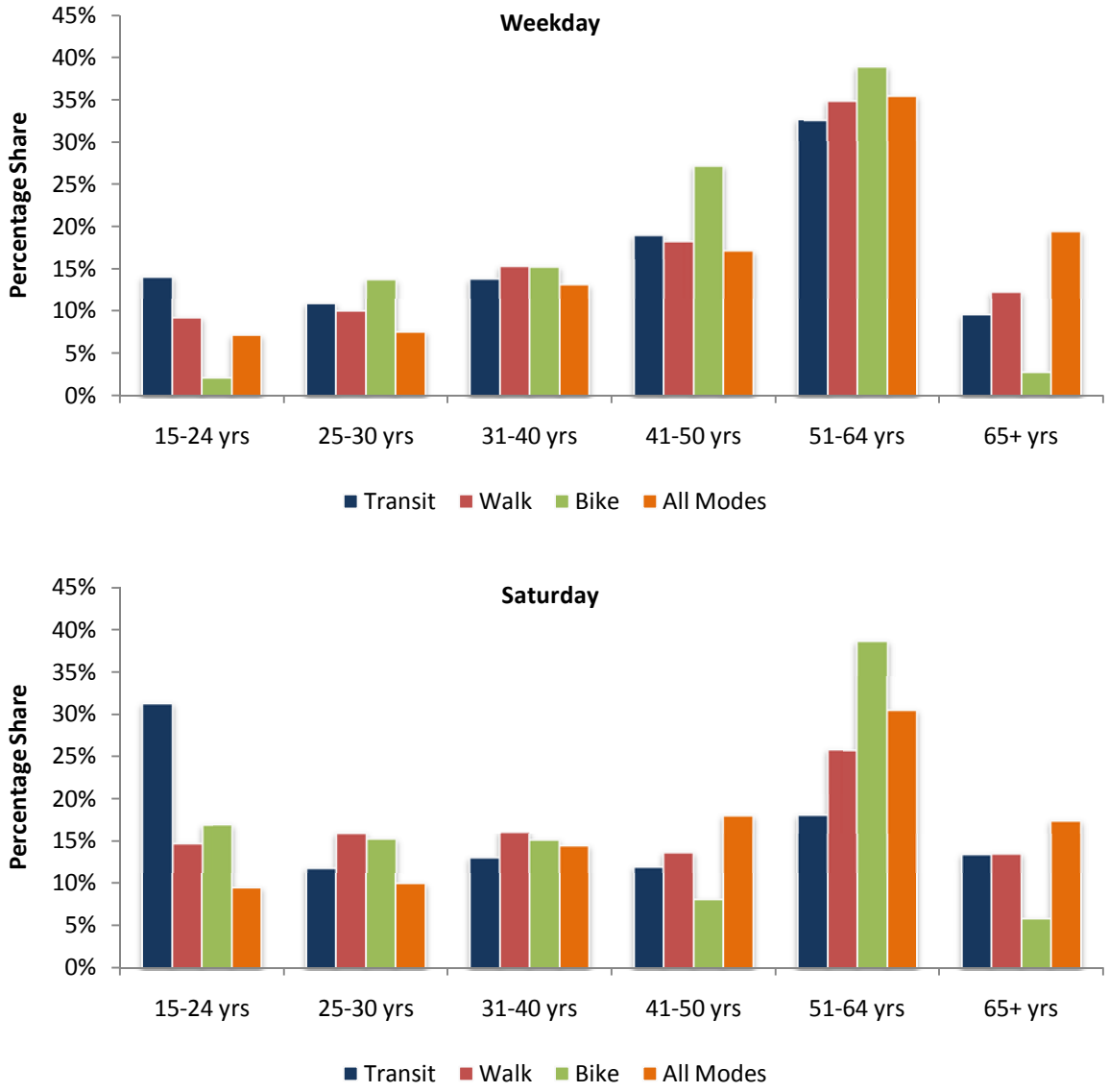
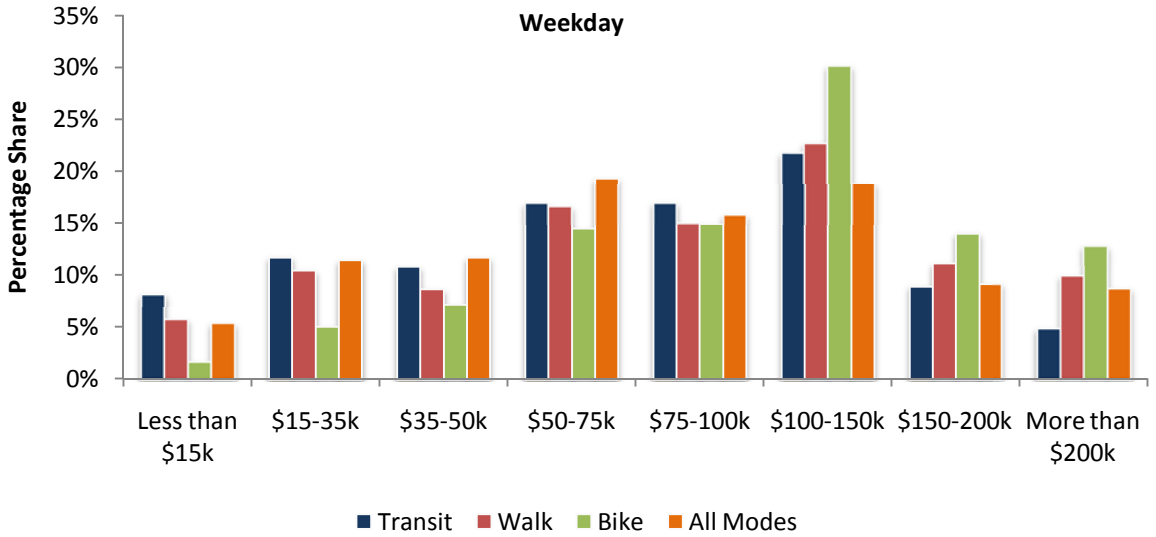


Figure 2-12 presents income distributions for transit, walk, and bike access ferry riders by survey day. The general trend for weekday riders is relatively similar across modes, though there are slight differences. Walk and bike access riders tend to be wealthier than the average rider (larger shares in the higher income ranges). Transit riders have a slightly lower average income for weekday riders, but this difference comes mostly from a greater percentage of users in the lowest income range, and a smaller percentage of users in the highest income ranges, while all other income ranges show only slight difference comparing transit to all modes. Saturday trends show a larger share of transit and bike access in the lowest two income ranges, while walk access more closely follows the overall trend of all ferry riders. The high number of Saturday lower income transit users may be expected given that many of those riders are likely also in the 15-24-year age group from the previous figure.

Figure 2-12. System-wide distribution of transit, walk, and bike access by income compared to all survey period respondents, weekday and Saturday survey periods (2013)



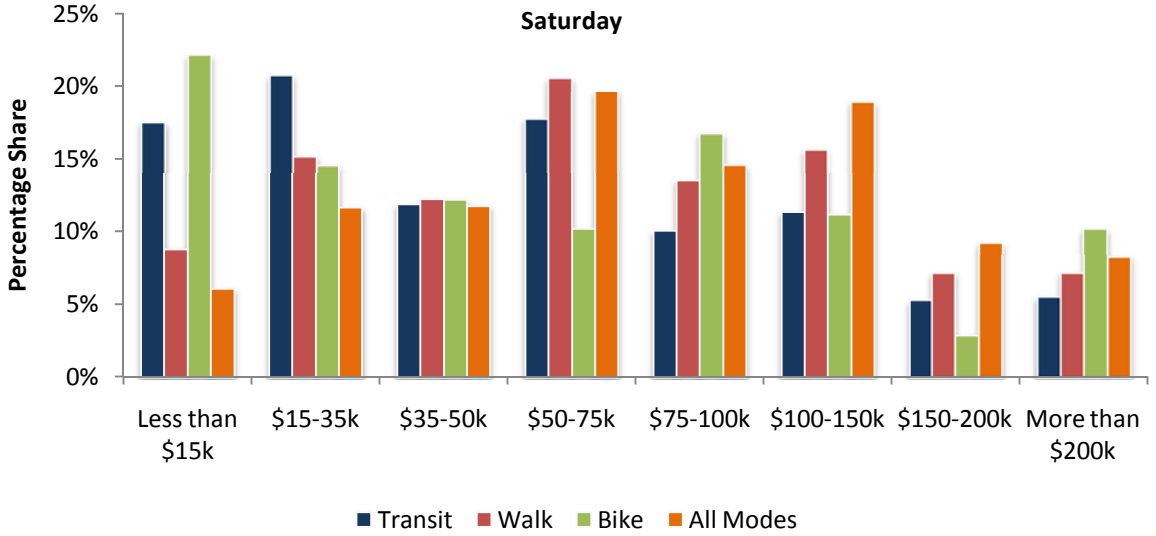
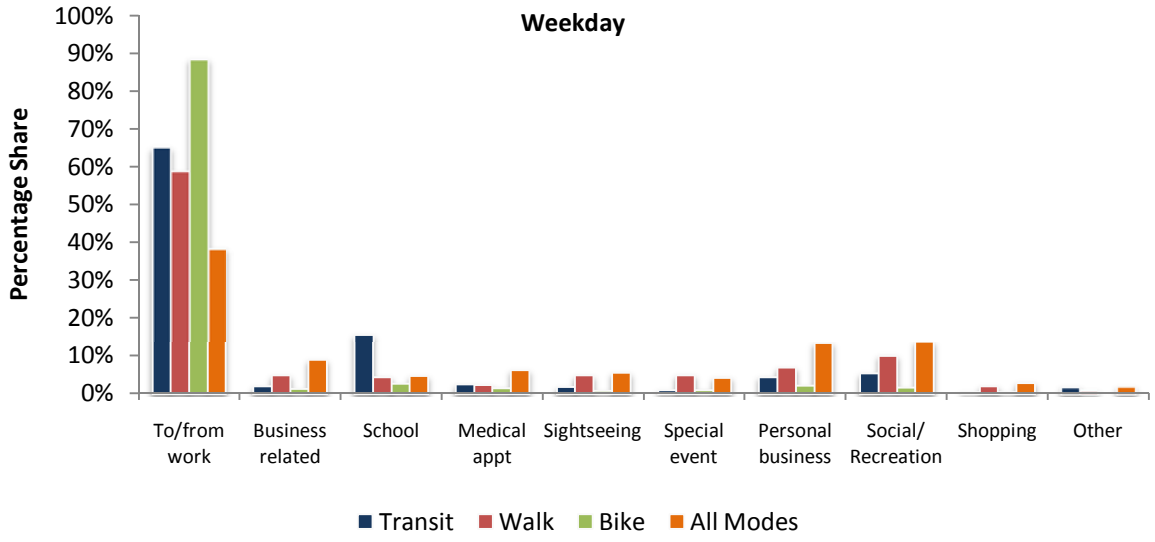
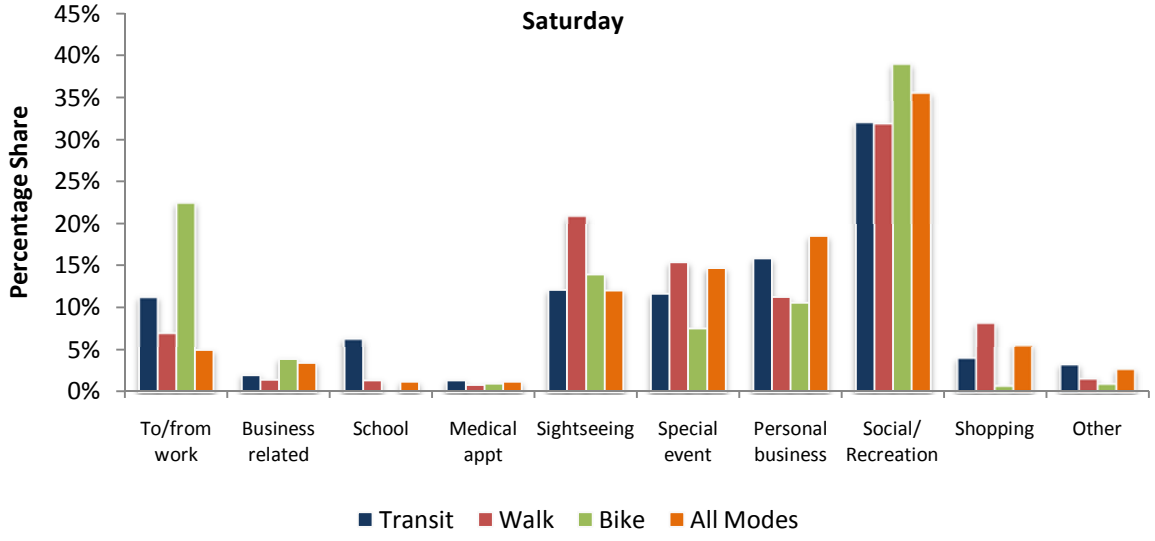


Figure 2-13 illustrates the distribution of trip purpose by access mode for weekday and Saturday riders. As expected, the weekday distribution shows the majority of trips are for a commute purpose, to or from work or school. Transit, walk, and bike access shares for work commute trips are higher than the overall ferry rider population. For workplaces, this may be a reflection of the fact that transit service is heavily focused on serving large employment centers, and it may also reflect efforts by employers to promote alternatives to driving alone. However, bike riders are less likely to commute to school, while school transit access is the second highest transit share. For Saturday trips, the highly recreational nature of trips is evident across all modes. For riders who work on Saturday, transit and bike access had higher shares than the overall population, while the transit share was also higher for those going to school on Saturday.

Figure 2-13. System-wide distribution of transit, walk, and bike access by trip purpose compared to all survey period respondents, weekday and Saturday survey periods (2013)





Transit

Table 2-12 shows the number of bus routes directly serving ferry terminals. While there are a great number of transit routes within close proximity to Colman Dock in downtown Seattle, only three routes directly serve the terminal on Alaskan Way. The Edmonds and Mukilteo ferry terminals are also served by Sounder commuter rail service. The Bainbridge Island and Bremerton ferry terminals show the highest number of routes serving the terminal, which is a reflection of the priority Kitsap Transit has placed on serving these locations.

Table 2-12. Transit routes interfaced with WSF ferry terminals

Terminal	Transit Routes*
Anacortes	1
Bainbridge Island	12
Bremerton	15
Clinton	3
Coupeville	1
Edmonds	8**
Fauntleroy	4
Kingston	6
Mukilteo	7**
Point Defiance	2
Port Townsend	4
Sidney, B.C.	1
Seattle	3
Southworth	2
Tahlequah	1
Vashon	3

** Routes within one block of ferry terminal*
*** Includes ST Sounder Service*

Survey respondents who boarded by vehicle were asked to indicate reasons why they chose to do so. Several of these reasons related to transit use and are presented in Table 2-13. In particular, the "transit is not convenient" and "transit does not go to destination" options imply that the respondent may have considered taking transit had it been available. All of the options below indicate an opportunity to shift vehicle boarders to transit while also attracting new ridership with improvements such as increased service, more geographic coverage, and better pedestrian and bicycle connections. This theme of improving transit service and access also agrees with feedback from public meetings hosted by WSF in June 2014.

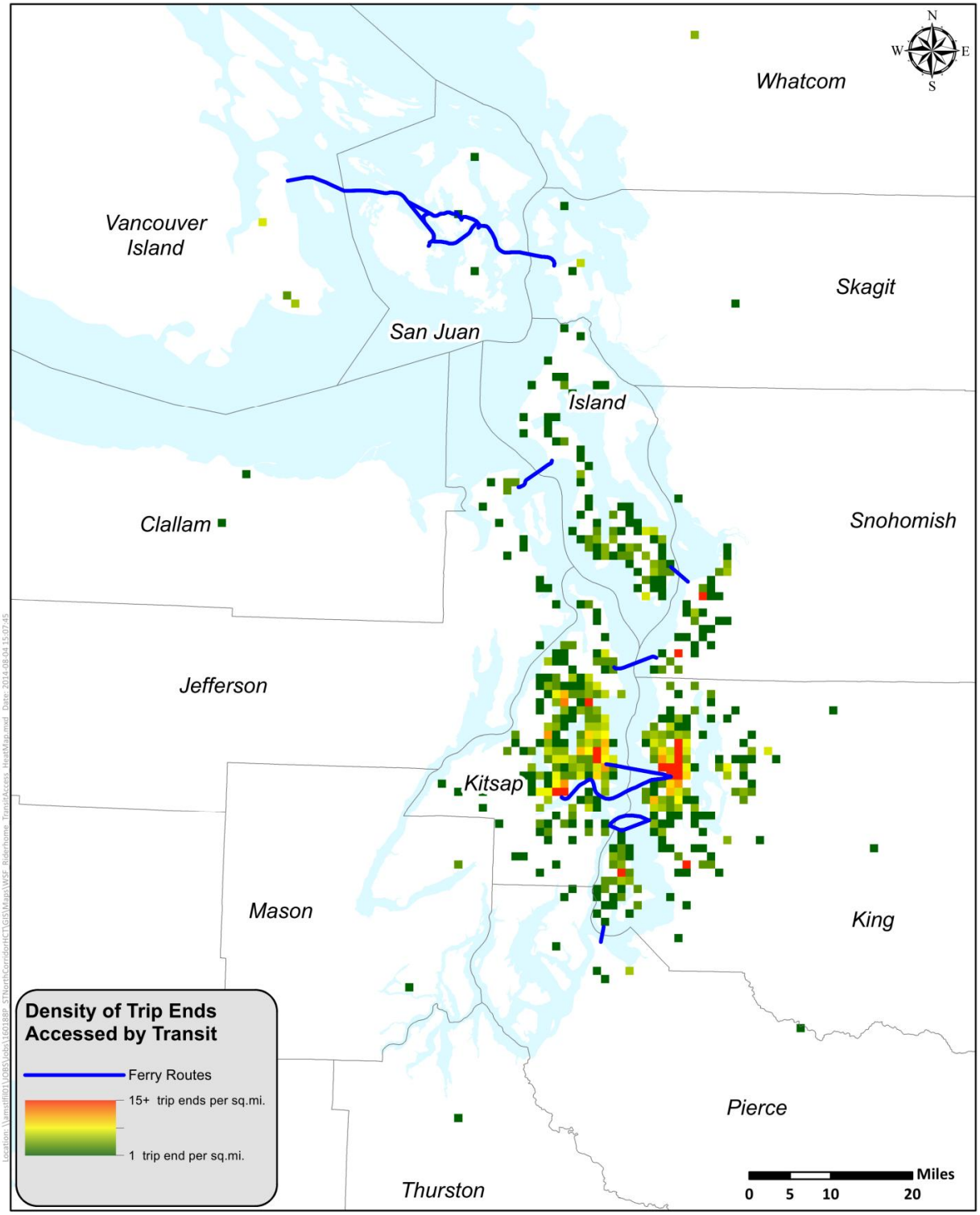
Figure 2-14 presents the origin and destination locations (trip ends) accessed by transit for weekday survey respondents. As shown in the map, transit trip ends are less geographically dispersed than the home locations shown in Figure 2-2. Locations like central Seattle, downtown Bremerton and downtown Bainbridge Island show high levels of transit access. Additional concentrated transit

access locations include the Everett Boeing plant, Lynnwood Transit Center, SeaTac Airport, and downtown Vashon.

Table 2-13. Reasons for taking a vehicle on-board the ferry (transit-related responses) as a percentage of all responses, weekday and Saturday survey periods (2013)

	Transit is not convenient	Transit does not go to destination	Too far to walk to destination
Weekday			
San Juan Islands Corridor	7%	7%	25%
Anacortes/San Juan Islands – Sidney, B.C.	2%	0%	17%
Anacortes – San Juan Islands	6%	6%	20%
North Sound Corridor	13%	9%	26%
Mukilteo – Clinton	15%	10%	27%
Port Townsend – Coupeville	3%	3%	22%
Central Sound Corridor	10%	4%	20%
Seattle – Bainbridge Island	9%	3%	18%
Seattle – Bremerton	6%	2%	15%
Edmonds – Kingston	12%	8%	27%
South Sound Corridor	19%	11%	30%
Fauntleroy – Vashon	20%	9%	25%
Fauntleroy – Southworth	20%	8%	31%
Southworth – Vashon	16%	9%	37%
Pt. Defiance – Tahlequah	15%	18%	36%
System-wide	11%	7%	23%
Saturday			
San Juan Islands Corridor	7%	7%	23%
Anacortes/San Juan Islands – Sidney, B.C.	2%	0%	16%
Anacortes – San Juan Islands	7%	8%	24%
North Sound Corridor	11%	8%	29%
Mukilteo – Clinton	11%	9%	31%
Port Townsend – Coupeville	6%	4%	24%
Central Sound Corridor	6%	6%	25%
Seattle – Bainbridge Island	6%	6%	22%
Seattle – Bremerton	4%	2%	16%
Edmonds – Kingston	7%	8%	33%
South Sound Corridor	14%	10%	31%
Fauntleroy – Vashon	18%	9%	29%
Fauntleroy – Southworth	11%	8%	31%
Southworth – Vashon	6%	10%	14%
Pt. Defiance – Tahlequah	13%	13%	38%
System-wide	9%	7%	27%

Figure 2-14. System-wide origin and destination locations accessed by transit, weekday survey period (2013)



Pedestrian and Bicycle

The home locations, origins, and destinations of travelers who boarded by vehicle were examined for proximity to ferry terminals. Vehicle boardings were analyzed at a distance of 2 miles because this represents relatively short trips where there is a higher potential for a trip to shift to a non-motorized mode (walk or bike). Results are shown in Table 2-14.

Roughly 12 percent of the system-wide weekday survey respondents that boarded by vehicle live within 2 miles of the ferry terminal. Additionally, close to 15 percent of vehicle boarders have an origin or destination within 2 miles of a terminus, and 3 percent of trips have both an origin and destination located within 2 miles of a terminus. These trips present an opportunity to encourage riders to shift to non-motorized modes of transport; however, investment in infrastructure such as improved sidewalks and bicycle facilities may be needed to support these alternative modes.

At the route level, the routes serving Seattle show a significant percentage of riders who boarded by vehicle with origins and destinations within two miles of the ferry terminal because of the high density of land uses in downtown Seattle. Investment in improved pedestrian and bicycle infrastructure near terminals with these higher concentrations of home, origin, and destination locations could provide the greatest potential for a shift to non-motorized modes. In contrast, the Mukilteo–Clinton route has among the lowest percentage of riders who boarded by vehicle with origins and destinations within two miles of the ferry terminal due to the much lower density of employment and residential land uses on either end of the route.

Table 2-14. Percentage of home locations, origins, and destinations of vehicle boarders within two miles of ferry terminals, weekday survey periods (2013)

	Home Location	Origin	Destination	Origin and Destination
Weekday				
San Juan Islands Corridor	11.0%	13.3%	17.9%	1.9%
Anacortes/San Juan Islands – Sidney, B.C.	0.0%	15.0%	0.0%	0.0%
Anacortes – San Juan Islands	11.3%	13.3%	18.4%	2.0%
North Sound Corridor	8.4%	6.1%	6.6%	0.3%
Mukilteo – Clinton	8.5%	4.3%	6.6%	0.1%
Port Townsend – Coupeville	7.6%	19.2%	6.6%	1.7%
Central Sound Corridor	15.2%	22.9%	20.5%	5.4%
Seattle – Bainbridge Island	21.9%	31.7%	26.6%	8.0%
Seattle – Bremerton	19.0%	41.2%	37.7%	11.7%
Edmonds – Kingston	6.5%	6.9%	8.1%	0.3%
South Sound Corridor	12.0%	6.1%	10.0%	0.5%
Fauntleroy – Vashon	15.0%	7.1%	11.0%	0.5%
Fauntleroy – Southworth	8.8%	5.7%	10.7%	1.1%
Southworth – Vashon	24.2%	8.5%	18.1%	0.0%
Pt. Defiance – Tahlequah	5.2%	3.8%	4.6%	0.0%
System-wide	12.4%	14.4%	14.9%	2.7%

2.5 Demographic Characteristics

A number of household and individual demographic questions were posed to survey respondents to help assess the characteristics of ferry riders and to support other future planning and research. Results from several of these demographic market segments are tabulated and presented in this section.

2.5.1 Income Findings

Ferry travelers were asked to estimate their 2012 before-tax income. Roughly 17 percent did not respond to the question, but the distribution of survey respondents who did answer the question is presented in Figure 2-15. The median self-reported income for ferry travelers is about $75,000. The distribution of ferry riders by income group demonstrates that approximately 37 percent of ferry riders make over $100,000 annually, and less than one-third of system-wide riders make under $50,000. A comparison of traveler income ranges by year is shown in Figure 2-16 (in nominal dollars).

Figure 2-15. System-wide traveler income ranges, all survey periods (2013)

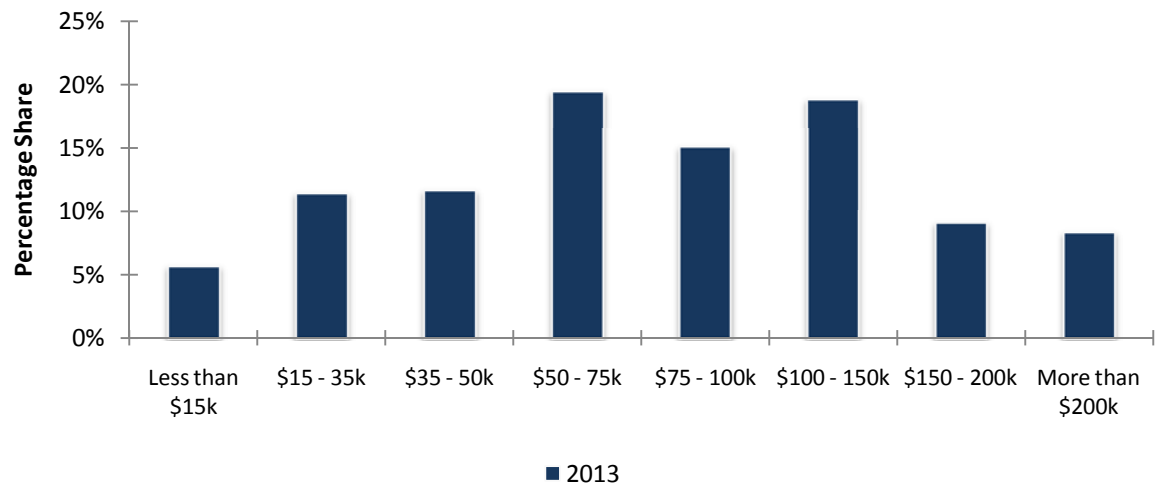
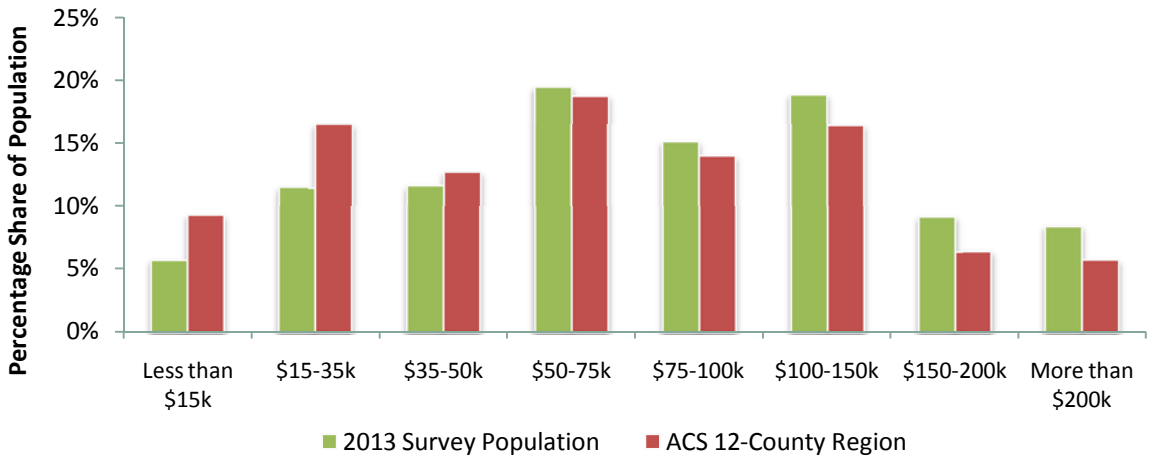


Figure 2-16. System-wide grouped income distribution, not adjusted for inflation (2006 and 2013)

Figure 2-17 shows the household income distributions for the surveyed ferry ridership population and the 12-county region. It is evident that lower incomes are underrepresented in the ferry ridership population, while higher incomes are over-represented. This implies that ferry riders have a higher household income compared to the general population. The median income range for ferry riders is between $75,000 and $100,000, while the median household income for the 12-county region lies between $60,000 and $75,000.

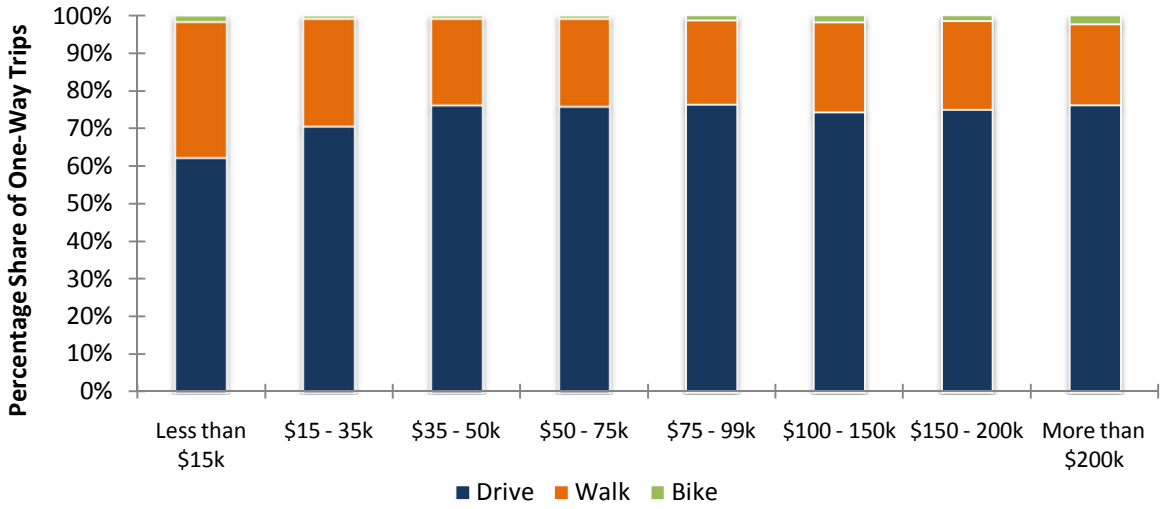
Figure 2-17. System-wide traveler income comparison of survey respondents to 12-county region



Data Source: American Community Survey 2008-2012 Washington State 5-Year Dataset

Average income is compared to boarding mode in Figure 2-18. This shows a trend for lower-income travelers to board as walk-ons more often than higher income travelers; however, the decrease in walk-ons and increase in drivers is not steep. No distinctive trend is observed in bicycle boardings distributed by income range. The distribution of boarding mode by income is fairly consistent across the income groups.

Figure 2-18. System-wide traveler income distribution by boarding mode, all survey periods (2013)



2.5.2 Traveler Age

Figure 2-19 shows the age distribution of system-wide travelers for 2006 and 2013. Roughly half of system-wide ferry travelers are under the age of 50. The average age is 49, which has increased from an average age of 48 in the 2006 survey. At the same time, the percentage of travelers at each end of the age spectrum has increased. Compared to 2006, there are an increasing number of younger travelers between the ages of 15 and 30 years old, as well as an increase in the number of travelers over the age of 65. This overall trend reflects the shift of members of the Baby Boom generation into retirement age, along with the emergence of the "Millennial" generation as an even larger cohort than "Generation X."

"18 percent of riders are retired, and another 14 percent of WSF survey respondents not already retired are planning on retiring in the next five years."

With the aging population of riders system-wide, 18 percent of riders are retired, and another 14 percent of WSF survey respondents not already retired indicated that they are planning on retiring in the next five years. Furthermore, among just those respondents with a "commuter" trip purpose, the share of those indicating retirement in the next five years is higher, at 16 percent.

Figure 2-19. System-wide traveler age, all survey periods (2013)

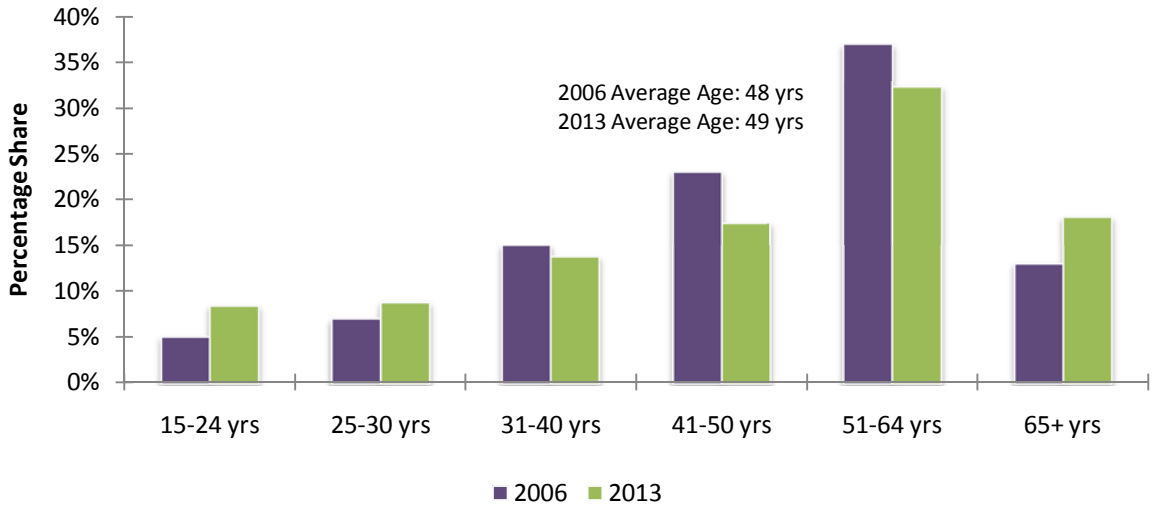


Figure 2-20 illustrates a comparison between the age distribution for 2013 ferry riders on weekday and Saturday trips. Saturday travelers are generally younger with an average age of 48 compared to an average age of 50 for weekday travelers.

Figure 2-20. System-wide traveler age, weekday and Saturday survey periods (2013)

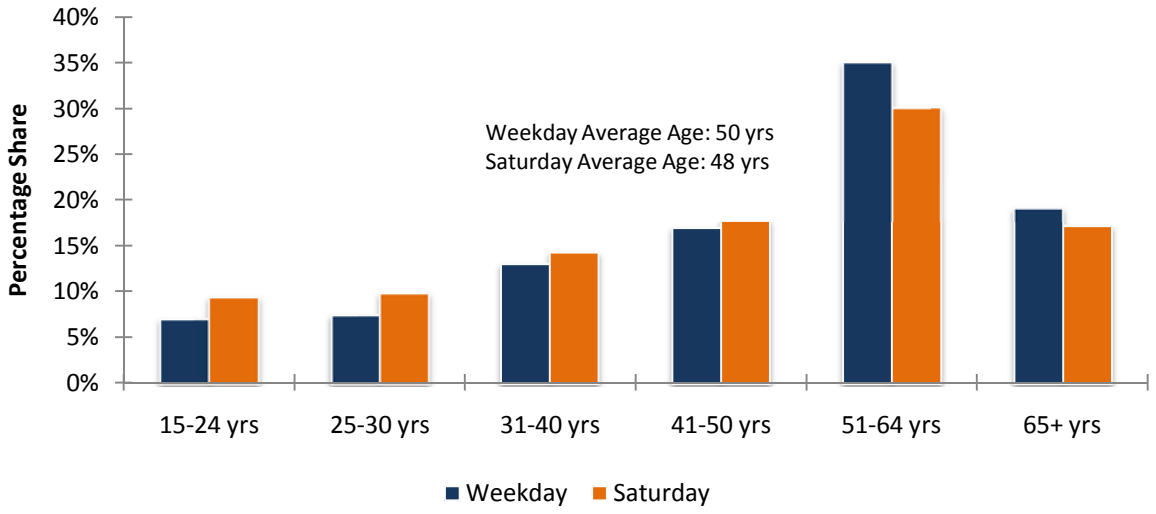
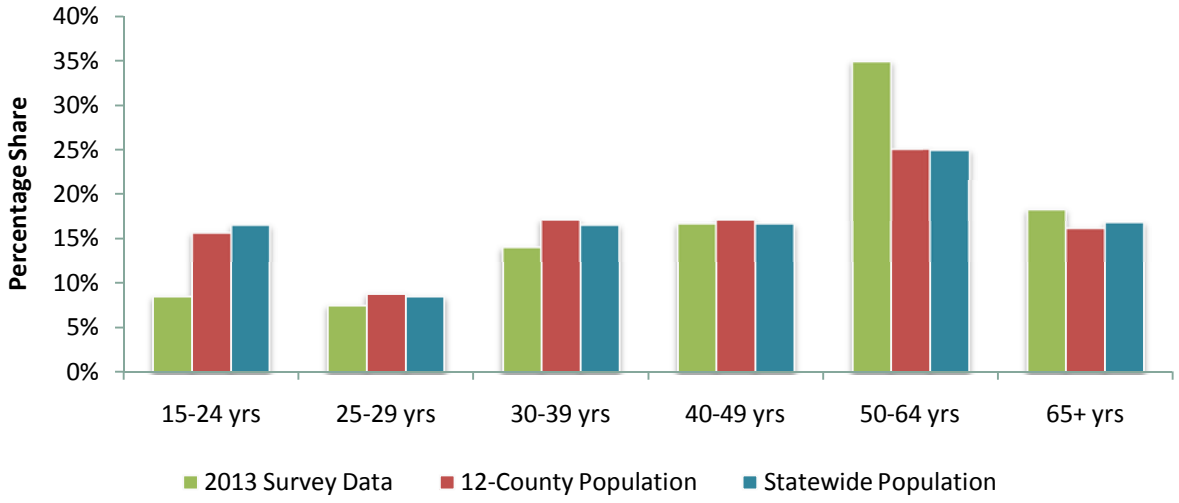


Figure 2-21 compares the distribution of the age of survey respondents to the overall 12-county and statewide population. Between the 12-county area and statewide, the age distribution is very similar, but the 12-county area has a higher representation of the working age population (25-65) than statewide. This makes sense, as the share of jobs is likely higher in the 12-county area as well. There is also an overrepresentation of survey respondents in the 50 to 64-year age range compared to the 12-county and statewide populations.

Figure 2-21. System-wide traveler age comparison to 12-county and statewide population (2013)



Data Source: Washington State Office of Financial Management (OFM)

2.5.3 Traveler Race/Ethnicity

Respondents were asked to identify their race and ethnicity based upon the following options: African American/Black; Asian/Pacific Islander; Native American/Alaskan Native; Hispanic; White; and Other. Respondents were allowed to mark all that apply, so responses indicating more than one option were included in the "other" category for purposes of summarizing these data. Figure 2-22 illustrates the race/ethnicity breakdown for system-wide travelers.

System-wide, more than four out of every five riders indicated they are white. Over 11 percent indicated minority or multiple responses, with the largest single minority group identifying as Asian or Pacific Islander. The next largest minority group was "other" or multiple responses, and the next distinct minority group was Hispanic with a 2 percent share of overall responses. A total of 8 percent of riders did not indicate a race or ethnicity.

Figure 2-22. System-wide traveler race/ethnicity, all survey periods (2013)

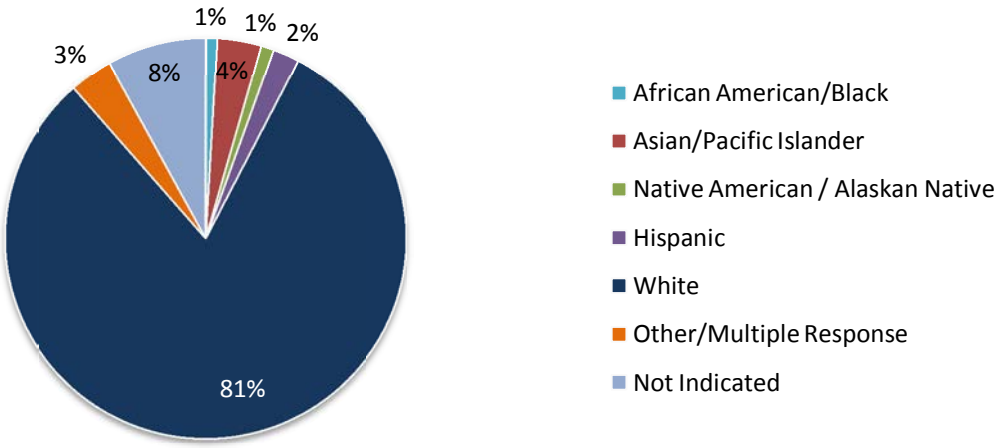


Table 2-15 and Figure 2-23 summarize and illustrate race/ethnicity share by route and system-wide. At the individual route level, a significant majority of survey respondents are white; all routes are over 80 percent white except Edmonds–Kingston and Seattle–Bremerton. The Seattle–Bremerton route exhibits the highest overall diversity with over 15 percent of respondents identifying as non-white and another 5 percent identifying as "other" or multiple response. The Seattle–Bremerton route also shows the highest share for African American/Black respondents and Asian/Pacific Islander respondents, both of which are significantly higher than the next highest route. The share of Native American/Alaskan Native respondents was highest on the Southworth–Vashon and Edmonds–Kingston routes. Hispanic respondents were highest on the Anacortes/San Juan Islands/Sidney B.C. route, although the Hispanic share for the Seattle–Bremerton route was only slightly lower. Overall, minority respondent shares were lowest for the Point Defiance–Tahlequah route. The largest share of riders not indicating race or ethnicity was on the Fauntleroy–Vashon route.

Table 2-15. System-wide race/ethnicity count and share by route, all survey periods (2013)

Route	African American/ Black	Asian/ Pacific Islander	Native American/ Alaskan Native	Hispanic	Other / Multiple Response	White	Not Indicated	Total
Pt. Defiance–Tahlequah	1 (0.2%)	5 (1.2%)	4 (1.0%)	6 (1.5%)	15 (3.6%)	356 (86.4%)	25 (6.1%)	412
Southworth–Vashon	1 (0.9%)	0 (0.0%)	2 (1.7%)	3 (2.6%)	5 (4.3%)	99 (84.6%)	7 (6.0%)	117
Fauntleroy–Southworth	12 (1.5%)	30 (3.7%)	6 (0.7%)	18 (2.2%)	36 (4.4%)	655 (80.7%)	55 (6.8%)	812
Fauntleroy–Vashon	9 (0.7%)	29 (2.3%)	5 (0.4%)	23 (1.9%)	38 (3.1%)	1,004 (81.3%)	127 (10.3%)	1,235
Seattle–Bremerton	67 (3.0%)	171 (7.7%)	33 (1.5%)	73 (3.3%)	114 (5.1%)	1,641 (74.0%)	120 (5.4%)	2,219
Seattle–Bainbridge Island	37 (0.9%)	186 (4.4%)	40 (0.9%)	78 (1.8%)	128 (3.0%)	3,533 (82.8%)	264 (6.2%)	4,266
Edmonds–Kingston	19 (0.8%)	81 (3.5%)	38 (1.7%)	40 (1.7%)	84 (3.7%)	1,828 (79.6%)	206 (9.0%)	2,296
Mukilteo–Clinton	17 (0.9%)	46 (2.5%)	12 (0.7%)	30 (1.6%)	57 (3.1%)	1,512 (82.8%)	151 (8.3%)	1,825
Port Townsend–Coupeville	4 (0.6%)	14 (2.2%)	9 (1.4%)	12 (1.9%)	21 (3.3%)	520 (82.4%)	51 (8.1%)	631
Anacortes–San Juan Islands	10 (0.5%)	44 (2.1%)	11 (0.5%)	52 (2.5%)	55 (2.6%)	1,747 (83.2%)	182 (8.7%)	2,101
Anacortes/ San Juan–Sidney, BC	2 (1.8%)	5 (4.4%)	0 (0.0%)	4 (3.5%)	1 (0.9%)	95 (83.3%)	7 (6.1%)	114
Total	179 (1.1%)	611 (3.8%)	160 (1.0%)	339 (2.1%)	554 (3.5%)	12,990 (81.0%)	1,195 (7.5%)	16,028

Figure 2-23. System-wide race/ethnicity share by route, all survey periods (2013)

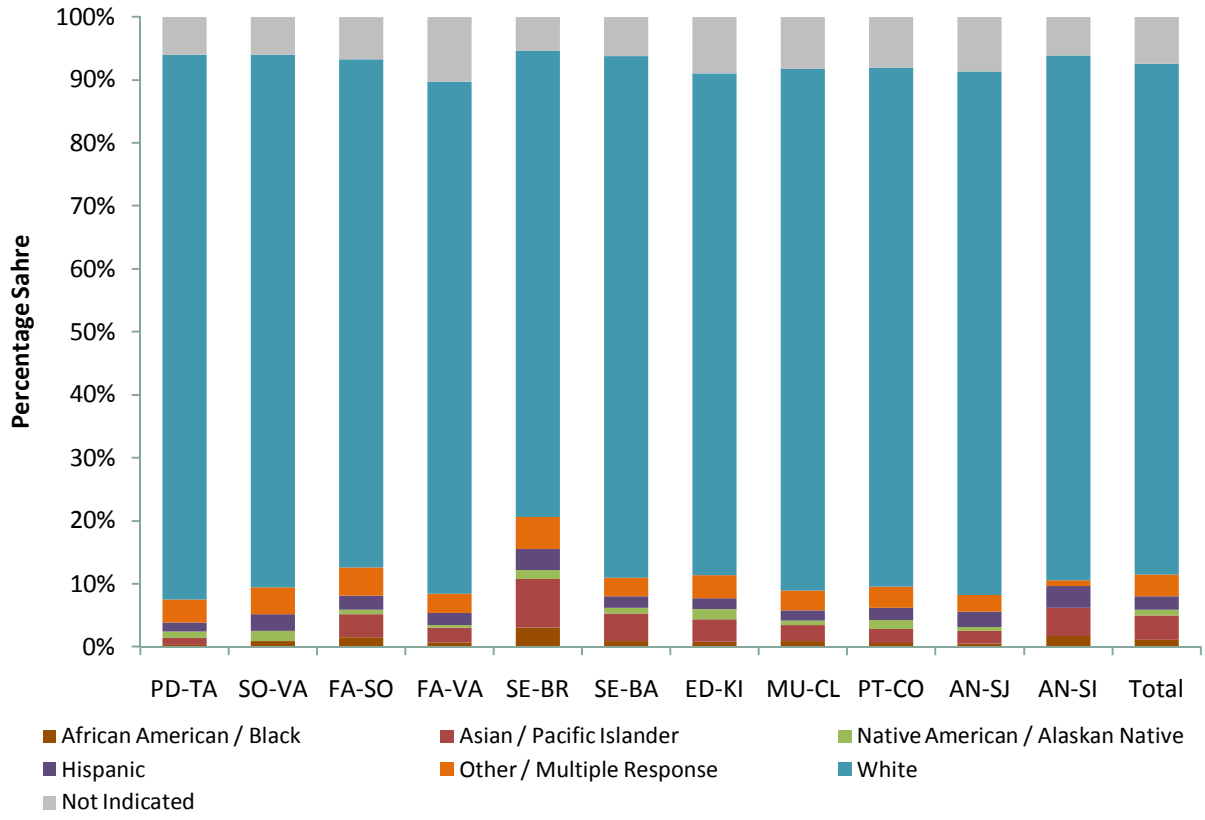
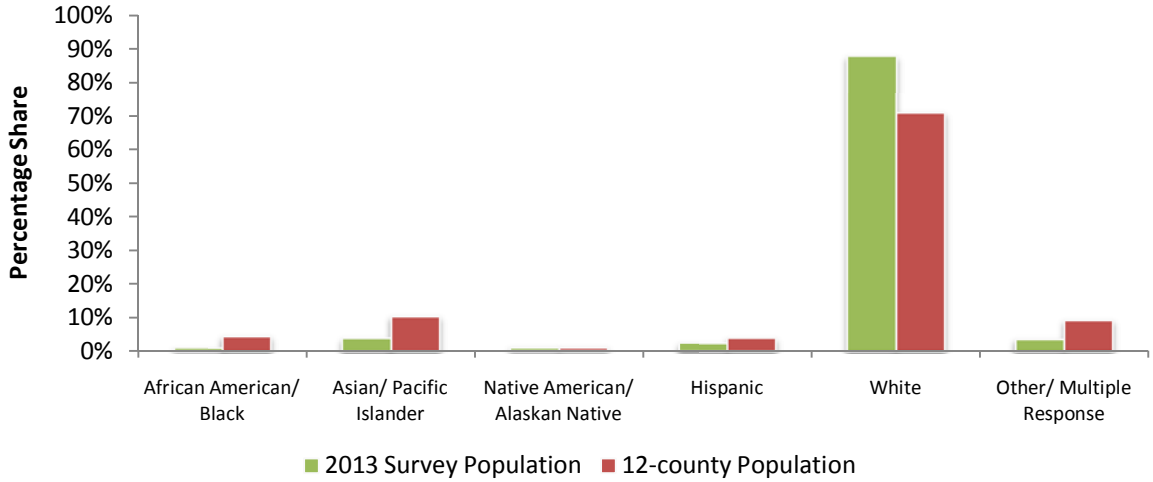


Figure 2-24 illustrates race and ethnicity for the ferry ridership population and the 12-county region. Survey respondents who did not indicate a race or ethnicity are excluded from this chart. Compared to the 12-county region, ferry riders tend to be less diverse, with all minorities except Native Americans/Alaskan Natives having a lower percent representation.

Figure 2-24. System-wide race/ethnicity comparison to 12-county population



Data Source: 2010 US Census

Table 2-16 presents the primary languages spoken by surveyed travelers system-wide. The majority of respondents speak English as their primary language (90 percent). Close to 3 percent of respondents speak Spanish as their primary language. Several other languages each account for 1 percent or less of riders system-wide.

Table 2-16. System-wide traveler primary language, all survey periods (2013)

Primary Language	Percent of Total
English	90%
Spanish	3%
French	1%
German	1%
Tagalog	Less than 0.5%
Japanese	Less than 0.5%
Chinese (including Mandarin)	Less than 0.5%
American Sign Language	Less than 0.5%
Russian	Less than 0.5%
Norwegian	Less than 0.5%
Korean	Less than 0.5%
Italian	Less than 0.5%
Vietnamese	Less than 0.5%
Hindi	Less than 0.5%
Other	4%