University of Washington

Stadium Expansion Parking Plan and Transportation Management Program

2014 Report

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Executive Summary

In 2014 the Husky Stadium Expansion Parking Plan and Transportation Management Program (TMP) continued to meet its primary goal of accommodating peak football crowds while reducing parking impacts in nearby residential areas. Transportation mode targets were met and surpassed in 2014.

This report outlines the findings of the 2014 TMP monitoring efforts. In 2014, data was collected through an intercept survey of game attendees as they entered the gates at Husky Stadium on September 27, 2014. Paid game attendance on September 27 was 66,512; actual game attendance was 56,147.[1] With 1,040 valid survey responses, intercept survey result estimates are within +/- 2.75% at a 95% confidence level. 2013 serves as the most recent comparison year to 2014.

Key findings according to 2014 data:

- Game attendees traveled to the stadium using these modes:
    - 43.4% carpooled (traveled in automobiles with more than one person), compared to 41.9% in 2013. 3.6% drove alone, compared to 2.9% in 2013. A total of 47% of respondents drove to the game. Average automobile occupancy was 2.9 persons per car.
    - 25.4% arrived by transit or charter bus, up from 25.3% in 2013.
    - 18.9% walked to the game, down from 20.6% in 2013.
    - 3.9% arrived by boat, down from 5.2% in 2013.
    - 0.8% arrived by bicycle up from 0.5% in 2013.
- The change in mode split between driving and non-driving options following TMP implementation exceeds projections in the 1986 TMP. Projected mode shares compare to actual 2014 mode shares as follows:

Mode	Projected Share (%)	Actual Share (%)
Automobile	71	47.0
Bus	16.0	25.4
Walk	8.1	18.9
Boat	3.9	3.9

- The average number of vehicles parked in the neighborhood impact areas in 2014 was 1,713, an 18.9% decrease from 2,113 vehicles in 2013.

[1] In 2010 Intercollegiate Athletics began monitoring *actual* game attendance in addition to *paid* game attendance (based on sales). The latter now serves as the baseline for future TMP monitoring, so only actual game attendance numbers are reported in the 2014 Report.

Background

In 1987, Husky Stadium was expanded to accommodate 72,200 spectators. The TMP was first implemented in 1987 to mitigate the additional impacts of traffic on the surrounding community. Due to the nature of football games, large numbers of people travel to and from Husky Stadium over short periods of time. The TMP is in place to monitor and reduce the number and impact of automobiles in the area before and after football games and to reduce parking impacts on surrounding neighborhoods. The University of Washington is responsible for encouraging football attendees to either carpool or use non-automobile transportation options, such as walking, mass transit or bicycling. The City of Seattle is responsible for traffic management and parking enforcement in residential parking zones.

Seattle City Council Resolution 27435 requires the University and the City of Seattle to collect data during each football season, which is then used to monitor the performance of the TMP. Data collected in 1986 serves as a baseline for comparing impacts after the stadium expansion in 1987. This document summarizes the data collected for the 2014 season and compares them to past seasons.

In 2012, the stadium was renovated and now accommodates 70,138 spectators. The renovations included changing sight lines for existing seating, revamping the south side stands, and adding a parking garage to the south side of the stadium. Husky Stadium reopened in 2013.

Introduction

The University of Washington hosted seven football games at Husky Stadium during the 2014 season, listed in Table 1.

Date	Opponent	Actual Game Attendance	Sales Attendance
September 6, 2014	Eastern WA	50,029	62,821
September 13, 2014	Illinois	48,705	62,325
September 20, 2014	Georgia State	49,548	64,608
September 27, 2014	Stanford	56,147	66,512
October 25, 2014	Arizona	42,992	66,512
November 8, 2014	UCLA	52,907	65,547
November 22, 2014	Oregon State	46,469	65,036
AVERAGE		**49,542**	**64,502**

= Survey Date

Table 1: Husky Football Games, 2014

During the 2014 season, the Husky Stadium Expansion Parking Plan and Transportation Management Program (TMP) was executed to provide transportation options to football fans and to discourage single occupant vehicle (SOV) trips to the stadium. Non-SOV modes, including carpooling, transit and charter buses, walking, boating, and bicycling were encouraged.

The purpose of this document is to monitor the effectiveness of the TMP during the 2014 season using the following indicators:

- Mode choice
- Average automobile occupancy
- Parking location choice
- Neighborhood parking impacts

This report explains the TMP efforts in 2014, details the methodology used to collect the data related to performance indicators, and discusses the results. It illustrates mode choice in 2014 and draws comparisons to previous years. Finally, this report describes impacts on neighborhood parking areas and draws conclusions about the TMP's effectiveness in 2014.

TMP Elements

Carpool Incentives

The TMP uses a pricing system to incentivize carpooling. During the 2014 season, game day parking on campus cost $30 for vehicles with three or more persons, $40 for vehicles with less than three persons, $120 for motor homes, a $30 additional fee for trailers, and $100 for charter buses.

Transit

One of the goals of the TMP is to encourage football game attendees to ride public transit to the stadium. In addition to regular bus service, King County Metro operated two kinds of game day service in 2013: Park and Ride routes and two game day special service routes serving Seattle neighborhoods (Metro Route 715 and 725). A charge for all Metro service routes was introduced in 2013 and continued into 2014.

Park & Ride Service

In 2014, King County Metro provided Saturday game day buses from eight regional park & ride lots, shown in Figure 1. Round trip tickets cost $5 per game if purchased individually or $4 per game for a season pass. Parking at the park & ride lots was free. Buses began boarding at the lots two hours prior to kickoff, with 20-minute headways. Following the games, fans boarded the buses at specified locations to return to the designated lots, as shown in Figure 2. Buses departed up to 40 minutes after the game ended. The routes marked as "REVISED" in Figure 2 historically parked on the north side of the Triangle garage. Because of the construction in 2014 on the Triangle garage, these three routes parked on Stevens or Montlake in 2014.

Figure 1: Park & Ride Lot Locations, 2014

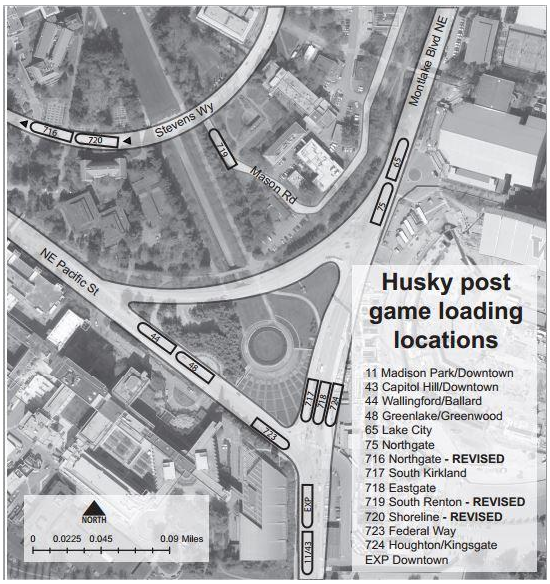


Figure 2: Park & Ride Post-Game Boarding Locations, 2014

Husky Special Service

On game days, King County Metro increased buses along the regular routes 43, 44, 48, 65, 75 and the 271. Additionally, Metro operated two special bus routes, 715 and 725, to Husky Stadium during each Saturday game in 2014. Service was provided along routes stretching to Downtown, Ballard, and Lake City. These special service routes charged regular Metro fare on the inbound trip and were fare free for the post-game trip. Before 2013, these and other Metro buses had been free to ticket holders on game day. For the seven home games, Metro ran an average of 60 trips to the stadium prior to each game and 27 trips away from each game on routes 715 and 725. Due to understaffing, counts for route 725 were not made on the September 6th game.

Boats

Boat Shuttles

In 2014, guests could anchor their private vessels in Union Bay and a boat shuttle service would assist them in getting to Husky Stadium. The shuttle service took fans to the Husky Stadium boat dock for free and returned them to their boats after the game for a fee of $10 per person (children under 12 ride for free). The 2014 fee was increased from the $8 fee in 2013. ICA conducted 3,709 round trips in 2014 and 2,651 round trips in 2013.

Boat Moorage

For private vessels, boat moorage was available on a season or single game basis in 2014. Table 2 outlines the 2014 moorage rates. The deadline for season permit priority applications was June 1, 2014; single game permits were available after June 2nd. There were 931 vessels moored in the 2014 season, up from 903 vessels in 2013.

In 2014 moorage rates were increased by single-game $10 from 2013 for each length level.

Length (ft)	Season Rate ($)	Per Game Rate ($)
0-20	$250	$50
21-30	$440	$80
31-40	$535	$95
41-60	$850	$145
61-100+	$945	$160

Table 2: Boat Moorage Rates, 2014

Charter Boats and Buses

Several Seattle restaurants, hotels, and clubs featured activities that included a chartered bus or chartered boat ride to Husky Stadium during a home football game. In 2014, the average game had 5.9 charter boats carrying a total of 1,279 attendees.

Bicycles

Free bicycle valet parking was provided at the Alaska Airlines Arena during football season. Fans could leave their bike with an attendant who parked and monitored bicycles throughout the game, addressing issues of bicycle parking capacity and security. Signage along popular bicycle routes directed bicyclists to the free secure bike parking in the pavilion.

Bicycling was also promoted on the "Gameday Transportation" website and through tweets from Intercollege Athletics. In addition to the bike valet, bicycle racks were located around the stadium.

Restricted Parking Zone

In some surrounding neighborhoods, Special Event Restricted Parking Zones (RPZ) limited game day parking to neighborhood residents. Seattle's parking enforcement officers issued $53 citations to non-residents who park in the restricted zones.

Marketing

Intercollegiate Athletics (ICA) posted transportation information on the official Husky Football website, www.gohuskies.com/huskygameday. The web site focused on providing information to assist game attendees in using one of the modes encouraged in the TMP. The website provided contact information as well as information about busing, boating, walking, biking, and parking. ICA also used their Twitter account @huskygameday to promote transportation options. To respond to the construction at the Montlake Triangle where Park and Ride buses normally park, ICA also printed and distributed 10,000 maps to attendees during the games in September with new bus locations. Transportation Services also promoted the bike valet service for game days with signage directing attendees who bicycled to the valet and tags placed on bike racks encouraging attendees to use the bike valet service if they were going to the game.

Data Collection

Data collection consisted of a survey of game attendees conducted by UW Transportation Services at one football game in the season, bus ridership data collected by King County Metro, campus parking and charter bus data collected by UW Transportation Services, parking citations data collected by the Seattle Police Department, and boat passenger, stadium lot counts, and game attendance data collected by UW Intercollegiate Athletics.

Survey Methodology

On Saturday, September 27, 2014, UW Transportation Services conducted a survey of football game attendees as they passed through the gates at Husky Stadium. The kickoff time was 1:15 PM and surveys began at 11:15 AM. The weather on the survey day was partly cloudy, turning to sunny and warm with a high of 69°F and a low of 62°F.

Forty-nine surveyors in teams of two and one team of three were distributed to all stadium entrances, proportional to the number of game attendees estimated to enter through each gate.

Surveyors were instructed to ask the following questions, in this order:

Q1. *Did you drive or ride in a car driven to the game today?*
If respondent answered 'yes' to Q1:
Q1a. *How many passengers, including you, came to the game in that vehicle?*
Q1b. *Did you park in an area in this map?*
Q1c. *Please point to your approximate parking location on this map.* [Respondent was shown a map of the area, with campus, retail areas, and the neighborhoods in the Special Event Parking Zone each identified by a different color background (see Figure 3)]
If respondent answered 'no' to Q1:
Q2. *By which type of transportation mode did you come to the game today?*
Regardless of response to Q1:
Q3. *What is your home zip code?*

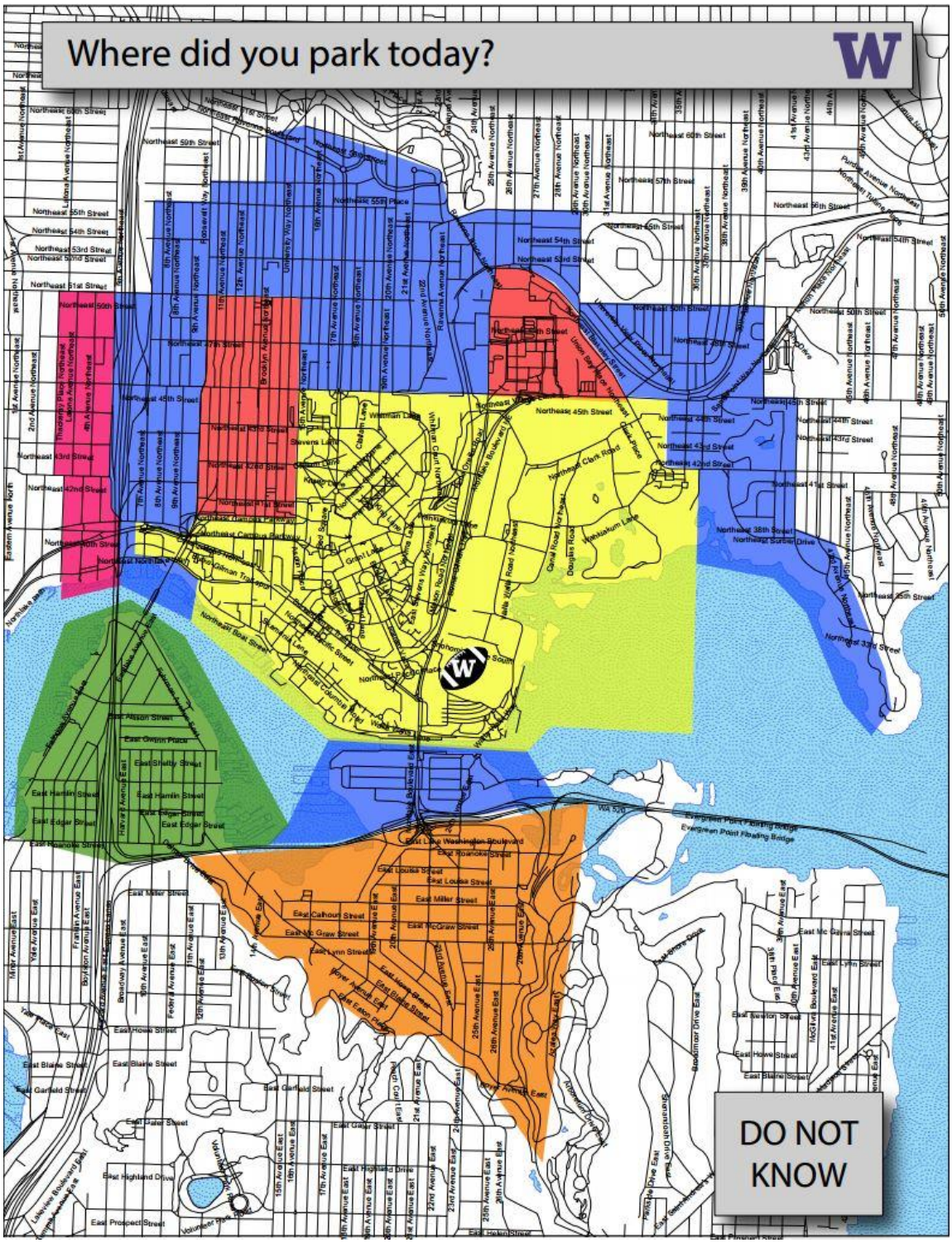


Figure 3: Map Used to Indicate Parking Locations

Of the 1,239 attempted surveys, 1,040 yielded usable responses, for a response rate of 83.9%. With an actual attendance of 56,147 the results are within +/- 2.75% margin of error at 95% confidence.

The population was defined as game attendees who pass through the gates, and the sample was taken from only this population. This population did not include game workers who did not pass through the gates. The travel behavior of game workers is not known.

Like most surveys, this one was subject to non-response error as a result of people who refused to take the survey. Transportation surveys also suffer from social desirability bias. For example, respondents can have a tendency to say that they carpooled when in fact they drove alone in order to portray themselves favorably to the surveyors. Little can be done to suppress social desirability biases; however, it is expected that the proportion of this bias remains constant over time and therefore the data still gives accurate information about relative changes in traveler behavior.

Survey Results

Mode Choice

Less than half of all attendees traveled to the game by car, including 43.5% by carpool and 3.6% by SOV. Taking the bus and walking were the next most popular travel modes. Table 3 and Figure 4 show attendee mode share.

Mode	# Responses	% Responses	Survey Day	Season Average
Carpool	453	43.4	24,401	21,532
Bus	263	25.4	14,250	14,253
Walk	196	18.8	10,584	10,582
Boat	40	3.8	2,161	1,905
SOV	37	3.6	1,998	1,736
Bike	8	0.8	432	381
Other	43	4.1	2,319	2,048
Total	**1,040**	**100%**	**56,147**	**49,542**

Table 3: Survey Response and Projected Mode Share, 2014

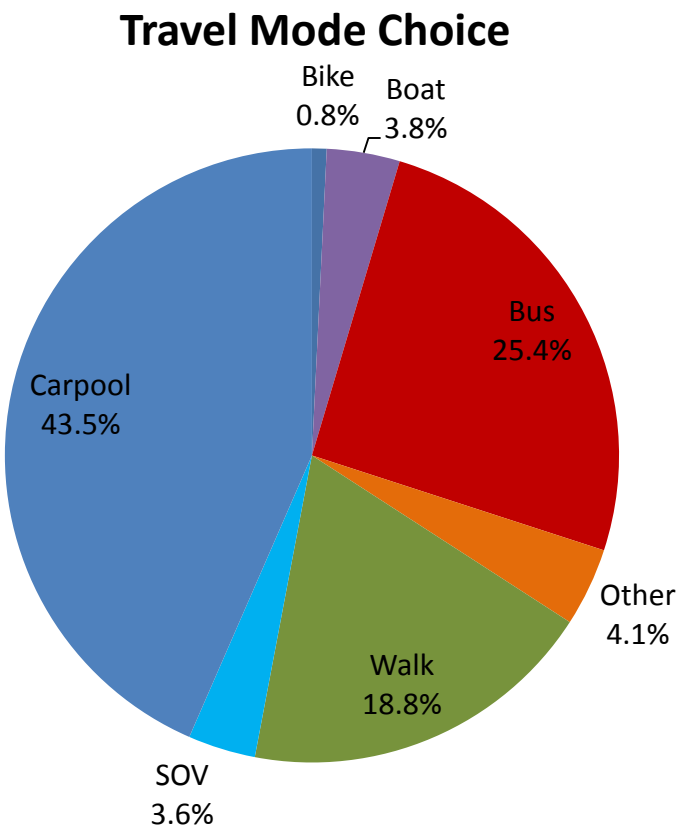


Figure 4: Mode Share, 2014

Table 4 provides a historical comparison of travel mode choice over the ten years of the intercept survey (there was no survey in 2012 because games were held at CenturyLink Field due to Husky Stadium renovation). The two biggest mode shifts between 2013 and 2014 were in carpooling and walking. Walking decreased by almost 1.8 percentage points between 2013 and 2014, while carpooling increased by 1.6 percentage points. In 2013, *ESPN's College Gameday* broadcast its national show live from Red Square on the morning of the survey game at 6 a.m., drawing thousands of fans to campus in the early morning. This event made it more likely for attendees to walk to the stadium from the campus and the downward shift in walking in 2014 and upward shift in driving likely reflects the absence of the *ESPN's College Gameday*.

Mode	2004	2005	2006	2007	2008	2009	2010	2011	2013	2014
Carpool	52.1	46.3	47.6	37.9	49.5	45.0	48.9	43.1	41.9	43.4
Bus	29.9	27.8	23.0	32.5	21.7	25.1	30.2	32.2	25.3	25.4
Walk	8.2	13.5	18.0	22.3	18.4	17.7	12.5	14.5	20.6	18.8
Boat	4.0	6.1	4.4	1.5	2.4	4.8	5.0	4.5	5.2	3.9
SOV	3.9	4.3	4.2	2.5	5.4	3.9	2.9	2.3	2.9	3.6
Bike	0.7	0.7	1.0	0.2	1.1	0.9	0.0	0.5	0.5	0.8
Other	1.2	1.4	1.8	3.3	1.5	2.8	0.5	2.9	3.5	3.6

Table 4: Travel Mode Choice Distribution, 2004 - 2014

Automobile Occupancy and Parking

The majority of people who traveled to the game by car came via carpool; only 7.6% of those who came in an automobile drove alone. Automobile occupancy is summarized in Table 5 below.

Automobile Occupancy	Share (%)
1	7.6
2	46.2
3	13.1
4	23.1
5+	10.0

Table 5: Automobile Occupancy and Share, 2014

On the survey day, approximately 26,400 people arrived in 9,104 vehicles, with an average automobile occupancy of 2.9. These vehicles parked in one of four areas:

- Campus parking lots
- Retail areas (University Way corridor and University Village)
- Neighborhoods within the TMP parking impact area
- Areas outside the TMP parking impact area

Based on average occupancies by parking area, the number of cars parked in each of the four areas are estimated and listed in Table 6.

Parking Area	Passengers	Automobiles	Average Occupancy
Campus	16,905	5,492	3.1
Retail	1,340	484	2.8
Neighborhood	4,394	1,713	2.6
Out of Area	428	186	2.3
Don't know	1,918	670	2.9
Drop Off	1,415	559	2.5
Total	**26,400**	**9,104**	**2.9**

Table 6: Average Occupancy of Parked Automobiles, September 27, 2014

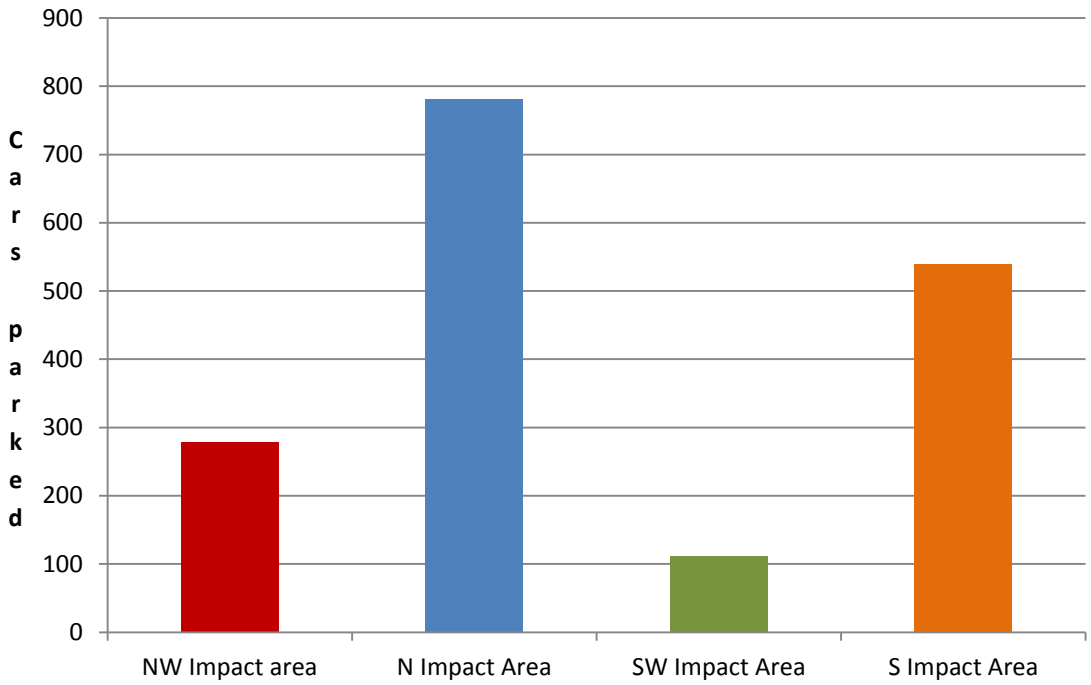


Figure 5: Breakdown of parking in impact areas, 2014

Figure 3 on page 11 is a map shown to all spectators when asked where they parked. The red, blue, green and orange areas are neighborhood impact areas surrounding Husky stadium. These are residential areas with varying levels of public or permit parking. The red sections are the retail areas primarily around University Village. The yellow section identifies on-campus parking. The white area on the map is not considered an impact zone for Gameday parking.

Figure 5 above shows the amount of cars parked in specific neighborhood impact areas. The northwest (red) area had 279 cars parked, the northern (blue) area had 782 cars parked, the southwest (green) area had 112 cars parked, and the south (orange) area had 540 cars parked on survey day. These numbers, added together, comprise 18.8% of total cars parked on the survey day.

Overall game day parking location choices are illustrated in Figure .

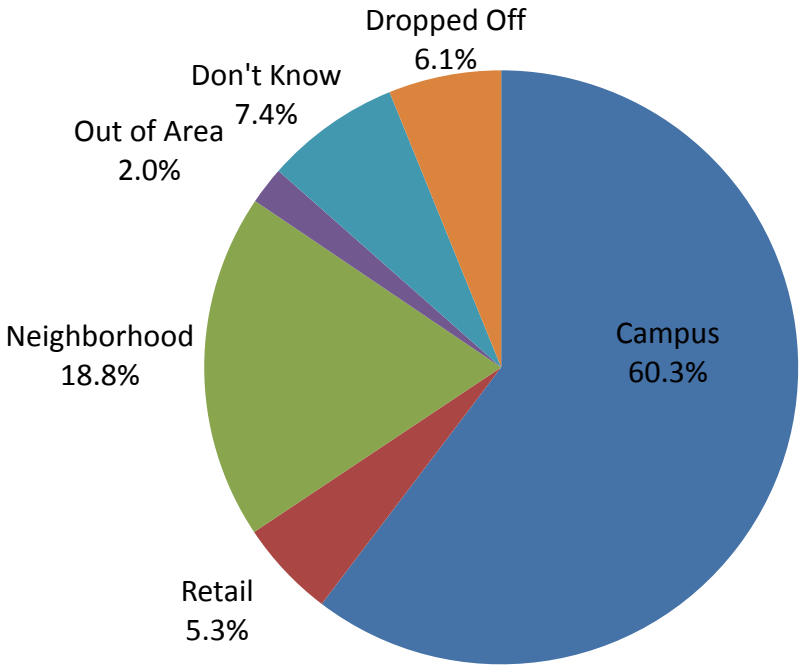


Figure 6: Distribution of Automobiles in Different Parking Areas, 2014

60.3% of attendees who arrived by car parked on campus in approximately 5,492 automobiles. The share of attendees arriving by automobile and the number of cars estimated to have parked on campus is similar to recent years. In 2013, 58.1% of cars parked on campus. Average occupancy for cars parked on campus decreased slightly in 2014 from 2013.

Adjusting for passenger occupancy per vehicle to determine the distribution of cars, 33.5% of vehicles parked in surrounding neighborhoods, retail areas or unidentified locations, a decline of more than 5 percentage points from 2013's 38.7%. Approximately 6.1% of vehicles dropped passengers off without parking for the Husky Football game, compared to 6.5% in 2013. About 1,713 cars were parked within neighborhoods identified as parking impact areas and approximately 484 cars were parked in retail areas. About 528 cars were parked in neighborhoods outside the impact areas. The share of cars parked in impact areas including neighborhoods and retail areas declined from 31.7% in 2013 to 23.6% in 2014.

Buses

25.4% of attendees arrived by charter or transit bus. This is the same percentage as 2013. Across a 10 year span, transit rates have varied greatly-both above and below the 2014 mode share. Due to construction on Rainier Vista, buses were moved to a new, further location on campus. This may have caused some service disruption.

UW Transportation Services and King County Metro Bus Ridership Estimates:

In addition to the intercept survey, data on bus ridership to Husky football games are collected in the following ways:

- Parking lot attendants count charter bus passengers in various lots. In 2014 charter bus counts were not conducted and are not included in this year's report.
- King County Metro employees count Park & Ride bus passengers as they board the buses.
- King County Metro employees count regular transit and Husky Special riders when they leave buses at the stadium. A significant number of passengers may leave the buses before they reach the stadium and then walk several blocks to reach the ticket gates. These passengers are not counted. Passengers going to the game who take routes that stop elsewhere in the University District are also not counted.

During the 2011 football season, these counting methods yielded an average of 376 people on charter buses. Data for charter buses was not collected in 2014. In 2014, there was a season average of 10,025 incoming Metro transit bus passengers. This count should be considered a low estimate of actual bus ridership as it doesn't fully count regular Metro service passengers or all charter bus passengers.

	Pregame			Postgame		
Game	**Trips**	**Passengers**	**Passengers per Trip**	**Trips**	**Passengers**	**Passengers per Trip**
9/6/14	178	9,993	56.1	152	10,601	69.7
9/13/14	146	10,506	72.0	163	11,945	73.3
9/20/14	169	10,520	62.2	163	10,543	64.7
9/27/14	194	10,542	54.3	172	12,980	75.5
10/25/14	164	8,399	51.2	150	8,726	58.1
11/8/14	187	10,188	54.5	170	10,878	64.0
11/22/14	173	9,285	53.7	155	9,733	62.8
Average	173	10,025	57.9	162	10,946	67.6

= Survey Date

Table 7: King County Metro Bus Trips and and Husky Special Service, 2014

In 2014, Husky Route 722 was canceled and a supplemental route to Ballard was opened for game days. Park and ride (P&R) service experienced an increase in ridership between 2013 and 2014. On average, King County Metro provided 123 inbound and 126 outbound P&R bus trips each Saturday game. According to Metro boarding data, an average of 7,726 passengers arrived to each game on the P&R service and 8,874 took the P&R service home. This average was up from 2013's average of 7,495 and 8,801 inbound and outbound passengers. P&R ridership to 2014 home games was 3% higher than 2013. The transportation intercept survey showed the same bus usage in overall transit mode share.

These slight changes in growth imply that the new fare system has been adjusted to by the bus riders.

In addition to the similar rates of inbound and outbound passengers, the discrepancy between the two groups was lower than in 2013. In 2014, 15% more passengers used P&R routes to leave the stadium than arrived in P&R routes. In 2013 and 2011 there was a 17% difference between inbound and outbound passengers. This discrepancy might be due to people taking regular Metro service to the game and using the P&R routes to return home, thus avoiding half the fare and taking advantage of the P&R routes' ability to leave the stadium area quickly. Fares on the P&R service were only checked on the trip to Husky Stadium to speed up boarding after the game and because P&R route passengers paid a round trip fare on the inbound trip to the stadium. Attendees may also being arriving by carpool and leaving by bus for a quicker egress.

Average occupancy per P&R bus changed slightly as well. In 2014, inbound buses carried an average of 63 passengers to the stadium and 68 passengers on return trips to the park and ride. In 2013 Metro occupancy numbers per coach numbers were 63 for inbound trips and 75 for outbound trips. In 2014, Metro made an average of 123 inbound trips and 126 outbound trips, increased from 119 inbound trips and 118 outbound trips made in 2013.

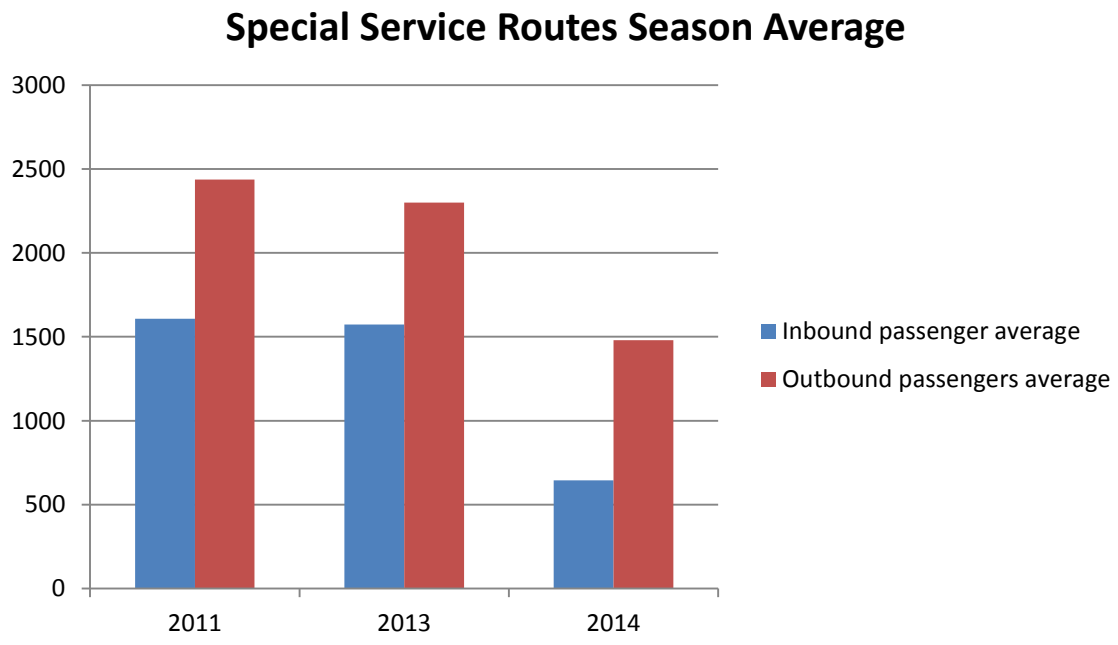


Figure 8: Seasonal passenger average for Husky Special Service routes, 2014

According to Metro's data, the 2014 seasonal passenger average per game was 1,503 for inbound and 3,454 for outbound service on special routes. In 2013 the season average was 2,624 passengers arrived by special service routes and 3,833 passengers used the routes to leave the stadium. By comparison, in 2011 an average of 1,608 passengers arrived and 2,438 passengers left the stadium by Metro's special service. The decline of total inbound

passengers may reflect the change to the 715 special service route, as well as the elimination of the 722 route in 2014.

In general, the larger outbound than inbound rate may reflect an attempt by spectators to avoid bus fares since the special service routes do not charge for rides away from the game. It may also reflect a practice of taking one mode of transportation to the game and then taking a bus away from the game.

Walking

Approximately 10,582 or 18.9% of the attendees walked to the stadium on game day, down from 20.6% in 2013. The decrease in pedestrian mode share is likely due to unusually high numbers from the ESPN GameDay event in 2013. The weather on the survey day was fair and no significant changes had been made to other travel options. This year's figure for walking is within the historitcal range for walking mode share. It is worth nothing this figure may be an underestimate because of a sampling bias; attendees using the student-only gate had a 41% refusal-to-answer rate, much higher than the 15.9% average for the rest of the gates. 95% of student respondents at the student gate walked to the game.

Boats

Based on game day survey data, 3.8% of people arrived by boat on the survey game day, a decrease from 5.2% in 2013. This is low, but consistent with previously observed boat mode shares.

UW Intercollegiate Athletics Boat Passenger Estimate:

ICA counts the number of boats and estimates the number of passengers based on boat size at each Husky football game. Charter boat companies provide ICA with actual passenger counts from the charter boats. ICA uses boat shuttle ticket sales to count the number of passengers in boats anchored off shore.

During the 2014 season, ICA's counts and estimation methods yielded an average of approximately 2,175 people arriving at Husky Stadium per game, representing 4.4% of game attendees. This is consistent with past ICA estimates.

Compared to the survey estimate, ICA's numbers yield a slightly higher boat mode share. In 2014, ICA conducted a detailed inventory and accounting of boats and passengers, so it's likely that their estimates are accurate. However, ICA uses boat occupancy factors for moored boats (3, 4, 6, 8, and 10 passengers for 0-20', 21-30', 31-40', 41-60', and 61-100' boats, respectively) and actual occupancy can change from year to year, which can lead to under or over estimation.

Bicycles

In 2014, approximately 0.8% of surveyed attendees (432 attendees) arrived by bicycle, higher than the percentage in 2013. In addition to survey responses, Transportation Services also conducted a count of bikes parked around Husky Stadium and at the bike valet on the survey game day. The count found a total of 911 bicycles parked around the stadium, representing 1.4% of total game attendance, an increase from 394 bike count in 2013. The

area where the bike count was conducted actually shrank in 2014, suggesting that the later October survey date in 2013 had a substantial impact on the number of fans traveling via bicycle to the 2013 game. 17.6% of bicyclists who rode to the stadium used the bike valet program in its Alaska Airlines Arena location in 2014.

Other

In 2014, approximately 4.1% of survey responses indicated 'Other' for travel mode, up significantly from 3.5% in 2013 and 2.9% in 2011. These 'Other' modes may include motorcycle, taxi, and limousine. It is unclear what forms of transportation are contributing to the growth in the 'Other' category. It could be possible that the growth in transportation network providers may be contributing to the increase in the 'Other' mode to some degree. There was a significant growth in services such as Sidecar, Lyft and Uber between 2011 and 2014 that provide alternatives to traditional taxis. According to a report by Seattle and King County, the number of limousines almost doubled from 600 to 1100 between 2012 and 2013 in addition to a host of transportation network companies starting and expanding during that same time period.[2] While some regulation was implemented in 2013 capping transportation network provider services, the number of new entrants to the Seattle market may be contributing to the growth of the "Other" category.

With the growing interest in utilizing rideshare programs ICA worked with Uber to have attendees walk to a specific part of campus to be picked up by Uber. While specific data was not collected about rideshare modes in 2014, this growing mode needs to be more fully considered in further Husky Stadium transportation studies.

Pre-Expansion Comparison

Figure 8 compares actual 2014 bus and automobile mode shares and vehicles parked on campus with a 1984 baseline and post-expansion projections (from the 1986 Stadium Expansion Plan TMP) using survey game day data. The actuals exceed the expectations of the 1986 Stadium Expansion Parking Plan TMP in all major categories. At 47%, the percentage of patrons who came by car was much lower than 1986's projections of 71% and the total number of cars parked has declined rather than growing slightly as the 1986 projections assumed. With 25% of attendees arriving by bus in 2014, transit ridership has exceeded 1986's projection of 16% by a wide margin.

[2] Seattle City Council. (2013). *City of Seattle and King County Taxi, For Hire Vehicle and Limousine Services Demand Study Final Report.* http://www.seattle.gov/council/issues/taxis/13100301JC%20Seattle%20Final%20Report%20Master.pdf

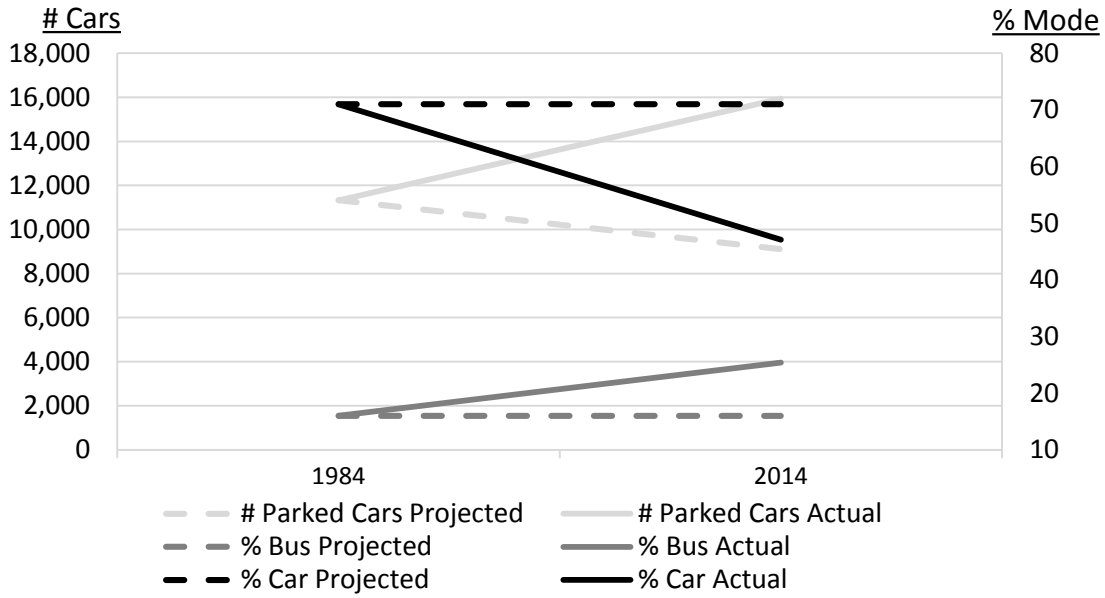


Figure 8: Comparison of Baseline, Actual, and Projected Travel Behavior

Neighborhood Parking Impact Areas

Figure 3 shows the neighborhood parking impact areas defined in City Council Resolution 27435. Portions of these parking impact areas have Special Event RPZs (Residential Parking Zone) for football game days. On the September 27th survey day, an estimated 4,394 people parked in the neighborhood parking impact areas in 1,713 automobiles, a decrease over 2013's survey day with 6,147 people in 2,207 automobiles and a decrease from 2011's 5,639 people in 1,978 automobiles. While 2014's survey showed a decrease in parking in neighborhood impact areas, the September 27, 2014 game also had lower attendance than 2011 and 2013. In addition to the cars parked in impact areas, an estimated 428 cars parked in neighborhoods outside of the impact areas. This was similar to, but lower than 2013's 495 cars and 2011's 444 cars.

The 1986 *Stadium Expansion Parking Plan and Transportation Management Program* cited the need for the City of Seattle to increase enforcement and monitoring in neighborhood parking impact areas during Husky games. The Seattle Police Department provided a summary of parking citations issued in neighborhood parking impact areas during all seven games for the 2014 season. On average, 157 citations were issued per game, a decrease from 219 average citations per game in 2013. The number of citations for automobiles parking in RPZs (as opposed to "Other" citations) was higher than 2010 or 2011, but lower than the 2013 season, with an average of 139 per game. In 2013, the University had requested additional enforcement of the RPZs and this was likely a contributor to the increased citations from some past years. The increased enforcement last year may have contributed to reduced neighborhood parking use in 2014.

	Average police resources per game		Average citations per game			Average citations per officer hour
Year	Parking enforcement officers	Overtime hours	RPZ	Other	Total	
2010	26	155	96	30	126	0.81
2011	26	166	85	55	140	0.84
2013	31	209	184	35	219	1.05
2014	34	228	139	18	157	0.69

Table 9: Average Parking Citation Statistics in Neighborhoods around Husky Stadium

Mapping Survey Respondents and Mode Share

The survey also asked about home zip code of respondents. This section will visualize the sample and mode share of the 937 respondents who also gave us their home zip code in Washington State.

Maps chart two distinct areas, broken down by zip code. The first type of map is state wide and the second type of map is of the Puget Sound area along the I-5 corridor, spanning from Everett to Olympia.

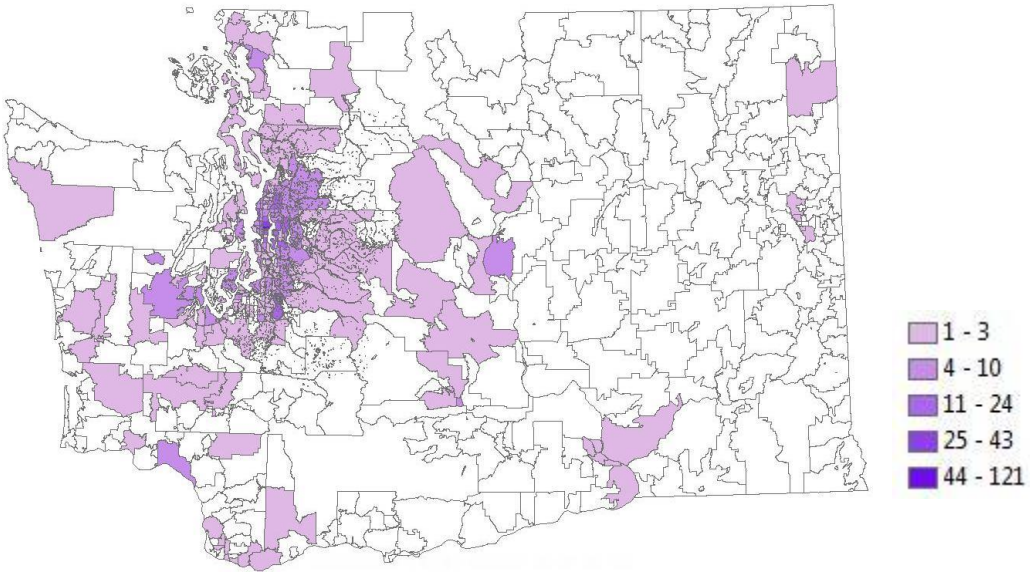


Figure 9, statewide map of survey respondents by zip code, 2014

These two maps represent the total sample size of all respondents who fully answered the survey questions. The key above describes how the range of respondents that came from each zip code, with white zip codes having no respondents and purple zip codes having respondents in the sample. A darker shade of purple represents a higher concentration of respondents from that zip code.

The mode share maps below have different amounts of people, but share the same color scheme.

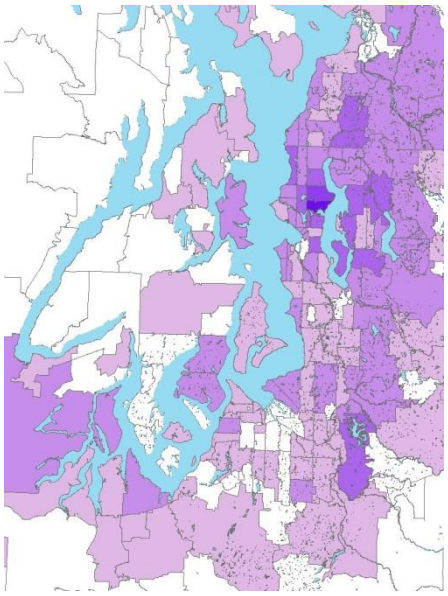
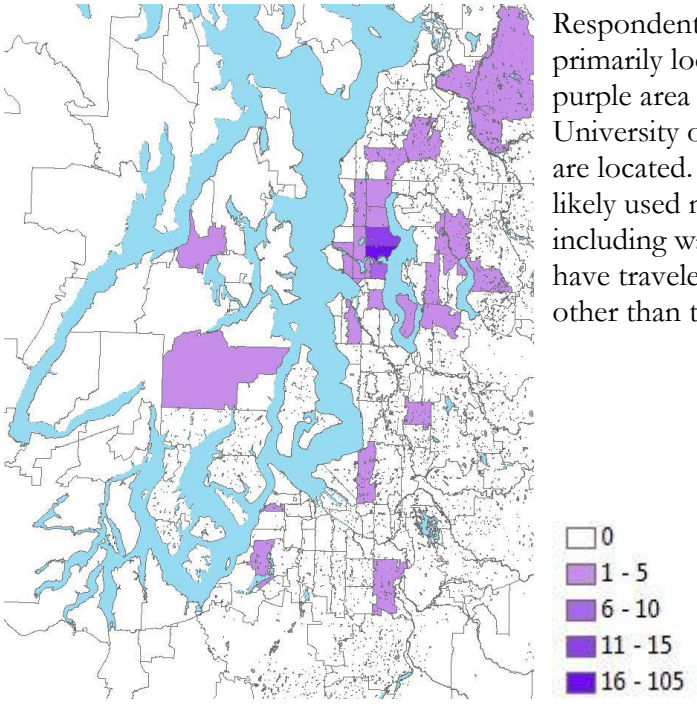


Figure 10, Puget Sound map of survey respondents by zip code, 2014.

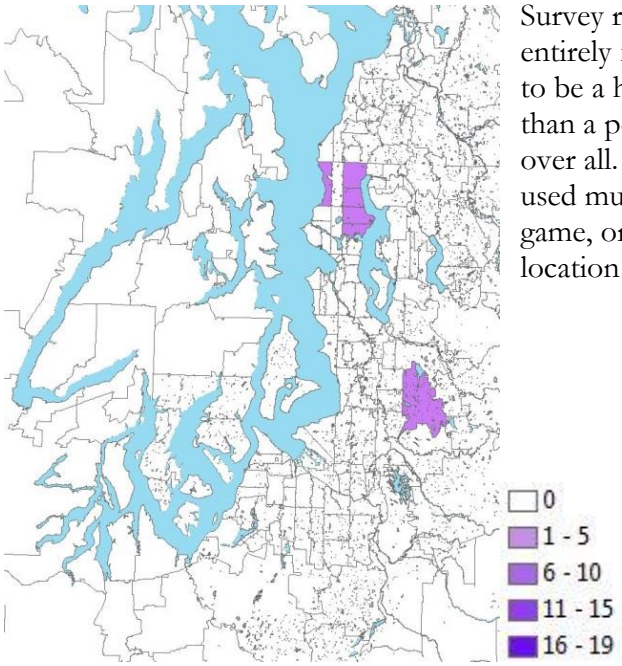
Walking



Respondents who walked to the game were primarily local to the Seattle area. The dark purple area is the 98105 zip code where the University of Washington and Husky Stadium are located. Respondents from outside of Seattle likely used multiple forms of transportation, including walking, to get to the game, or may have traveled to the stadium from a location other than their home.

Figure 11, Puget Sound map of respondents who walked to the game, 2014

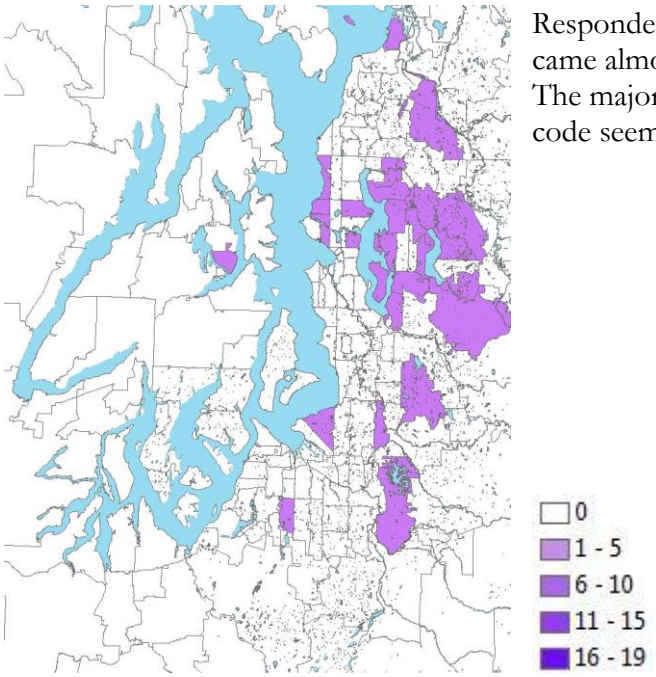
Biking



Survey respondents who biked to the game came entirely from the Puget Sound area. Cycling tends to be a highly localized form of transport and less than a percent of respondents cycled to the game over all. Respondents from outside of Seattle likely used multiple forms of transportation, to get to the game, or may have traveled to the stadium from a location other than their home.

Figure 12, Puget Sound map of respondents who biked to the game, 2014

Boat



Respondents who attended the game by boat came almost entirely from the Puget Sound area. The majority of respondents who gave their zip code seem to live in the eastside of King County.

Figure 13, Puget Sound map of respondents who boated to the game, 2014

Drive-ride

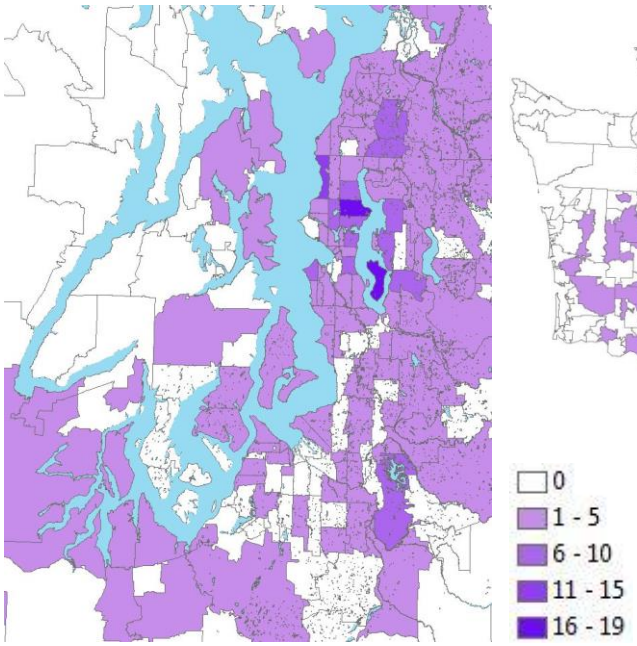


Figure 14, Puget Sound map of respondents who drove or rode to the game, 2014

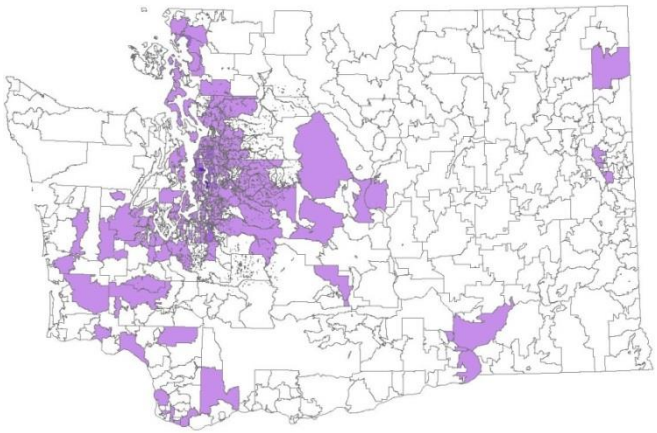
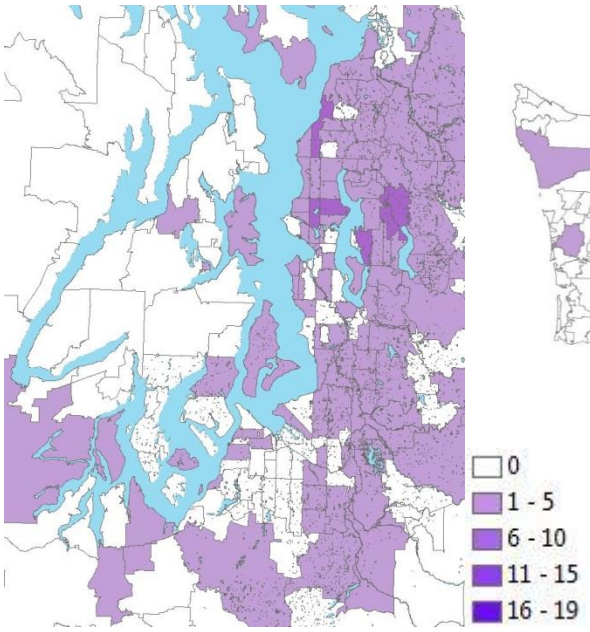


Figure 15, State map of respondent who drove or rode to the game, 2014

The largest amount of respondents either drove or rode to the game. The drive-ride mode share was well-represented both in the Puget Sound region and across the state. The lack of alternatives to driving for state-wide travel likely account for mode-share trends for attendees outside of the Puget Sound area.

Bus



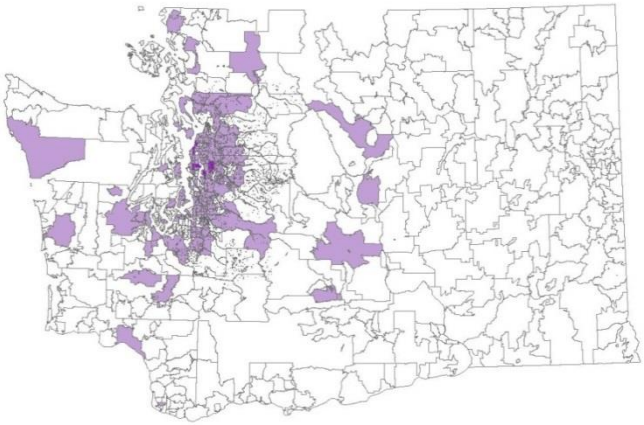
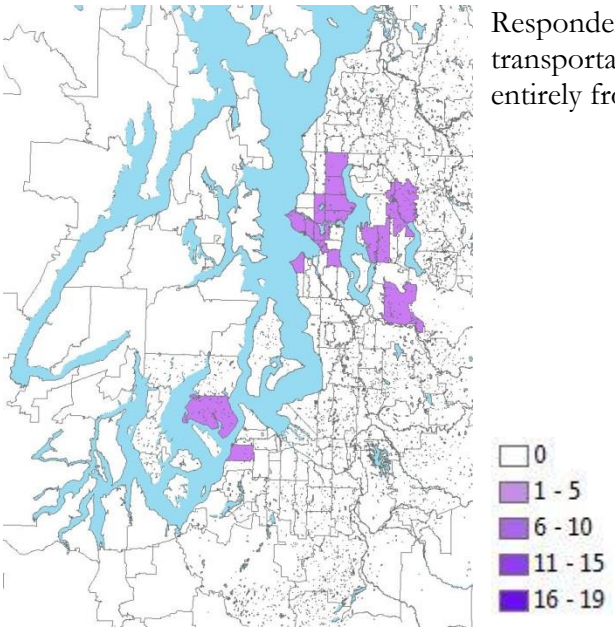


Figure 16, Puget Sound map of respondents who bussed to the game, 2014

Figure 17, State map of respondents who bussed to the game, 2014

Respondents that bussed to Husky Stadium came from primarily in the Puget Sound region, but had some representation from outside the Puget Sound region. The amount of respondents from zip codes who participated in the survey is fairly even, suggesting a broad regional preference for traveling via bus instead concentrated zip codes making up the bulk of users.

Other



Respondents who used other modes of transportation, such as rideshare, taxis or limits came entirely from the Puget Sound region.

Figure 18, Puget Sound map of respondents who used other modes of transport, 2014

Conclusions

The TMP continues to successfully encourage fans to travel to games by modes other than single occupancy vehicles. Only 3.6% of attendees drove alone. The Husky TMP's carpool incentives continue to work well, resulting in an average load of 2.9 passengers per vehicle arriving for the game. The effects of the new transit system fare seem to have shifted rider behavior slightly, but the 25.4% mode share is well above the 1987 established TMP benchmarks and falls within the range of transit mode share recorded in other years before the fare was introduced. The percentage of people who reported walking to the game reached 18.9% and 3.9% of all attendees arrived by boat.

The introduction of the new neighborhood zones to the impact area map used in the intercept survey will allow for a more fine-grained approach to monitoring parking in the neighborhood impact areas. The zip code mapping included this year provided the first picture of the geographic distribution of the Husky Survey sample. Future work with zip codes will examine mode-share in the Seattle area, potentially aiding with marketing research and strategy.

Altogether, the intercept survey and other collected data show that the University continues to meet its goals of reducing auto trips to the stadium area and minimizing parking impacts on surrounding neighborhoods.

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