University of Washington

Stadium Expansion Parking Plan and Transportation Management Report

2021 Report

January 2022

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Executive Summary

During the 2021 Husky Football season, University of Washington implemented the UW Husky Stadium Expansion Parking Plan and Transportation Management Program (TMP). The TMP was first adopted in 1986 to help UW meet and exceed its primary goal of accommodating peak football crowds while also minimizing parking impacts in nearby residential neighborhoods. Each year, UW evaluates the TMP to determine how effectively it meets these goals. The annual evaluation process entails conducting a Husky Gameday Survey and collecting data from several government agency partners (Seattle Police Department, Metro, Sound Transit, UW departments).

The 2021 Gameday Survey was managed by UW Transportation Services (UW TS) in collaboration with UW Intercollegiate Athletics (ICA). Data was recorded through a brief in-person survey ("intercept survey") of patrons attending the Husky football games on October 16, 2021 vs UCLA November 26, 2021 vs WSU. The survey was conducted by a team of approximately 15 people ("survey administrators") who were stationed at each of the Husky Stadium gates and who briefly engaged the patrons as they entered the stadium.

As in previous years, interviewers administered the 2021 intercept survey by targeting a sample size, based on anticipated game attendance and incorporating a reasonable statistical confidence interval[1].

Paid game attendance on October 16 was 62,266, and actual game attendance was 44,002[2]. The survey effort resulted in 1,097 completed survey responses providing a margin of error of +/-2.9%.

Paid game attendance on November 26 was 68,077, and actual game attendance was 46,816. This survey effort resulted in 862 completed surveys providing a margin of error of +/-3.3%

Total completed surveys was 1,980 and total actual attendance was 87,727 providing an overall margin of error of +/-2.2%.

The observed difference in gameday transportation mode split between driving and non-driving options outlined in the TMP implementation exceeds the mode split goal set forth in the 1986 *Stadium Expansion Parking Plan and Transportation Management Program* (Table 1).

[1] "Confidence interval" indicates a range of values that is likely to encompass the true value. In other words, the CI around the sample statistic is calculated in such a way that it has a specified chance of surrounding (or "containing") the value of the corresponding population parameter.

[2] 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 2021 Report.

Mode	Mode Split Goal – 1986	Mode Split Achieved – 2021	Performance*
Personal Vehicle (including ride hail)	71.0%	**48.9%**	Exceeded Goal
Transit	16%	**37.4%**	Exceeded Goal
Walk	8.1%	**10.5%**	Met Goals
Boat	3.9%	**1.1%**	Met Goal
Personal Bike	-	**1.3%**	-
Other	-	**0.8**	-

* Relative to 2.9% margin of error.

Table 1 Gameday Commute Mode Split, 1986 vs 2021

Key findings from the 2021 evaluation are as follows:

1. *Overall automobile usage (48.9%) remained similar to last year ()*. Automobile (including RV's) utilization includes carpool, single occupancy vehicles (SOV), and transportation networking companies (TNC).
    - Carpools (39.6%) increased by 6 percentage points from 2019 (33.3%).
    - SOVs (2.6%) remained similar to 2019 (2.2%).
    - TNC use (6.7%) decreased by nearly 7 percentage points from 2019 (13.3%).
2. *Overall Transit (37%) increased significantly from 2019 (25.1%)*. This category includes both bus and light rail.
    - Metro/charter bus (9.7%) decreased 2 percentage points from 2019 (11.1%).
    - Link Light Rail (27.8%) nearly doubled compared to 2019 (14.0%).
3. *Walking (10.5%) decreased nearly 7 percentage points compared to 2019 (17.1%)*.
4. *Boating (1.1%) was significantly lower than 2019 (5.5%) and 2018 (3.7%)*. This category includes personal boat, ferries, and other kinds of boat commutes.
5. *Bicycling (1.6) remained similar to 2019 (1.2%) and 2018 (1.3%)*. This category includes arrived by personal bicycles and bike share.
6. *The estimated number of vehicles parked in neighborhood impact areas (1,236) showed a large increase from an estimated 531 vehicles in 2019 but is similar to the 1,583 vehicles in 2018 and 1,052 in 2017*.
7. *The number of RPZ parking citations issued per game decreased from 153 in 2019 to 90 in 2021*.
8. *Average automobile occupancy (3.13 occupants/vehicle) was similar to 2019 (3.03 occupants/vehicle) and 2018 (3.1 occupants/vehicle)*.

Background

In 1987, Husky Stadium was expanded from a capacity of 58,000 to accommodate 72,200 spectators. The Transportation Management Program (TMP) was first implemented in 1987 to mitigate the additional impacts of traffic on the surrounding community. Due to the nature of football games, high volumes of people travel to and from Husky Stadium over short periods of time. The TMP serves 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 (UW) is responsible for encouraging patrons 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. As Husky Stadium is near navigable water, boating is also an important component of gameday transportation.

Seattle City Council Resolution 27435 requires UW and the City 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 2021 season and compares it to past seasons.

In 2012, the stadium was renovated to accommodate 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 for the start of the 2013 football season.

The number of transportation options to UW football games has evolved since the implementation of the TMP. In 2016, Sound Transit began operating Link light rail service to the University of Washington, which provided reliable and frequent mass transit service to the stadium. The year 2016 also saw the widespread availability of Transportation Networking Companies (TNC) like Lyft and Uber as an option for commuting to the game. In 2018, University of Washington began partnering with bike share companies to provide rentable dockless bikes for use on campus (and football games) and by 2019 the majority of bike shares included electric-assist bicycles. Finally, 2021 saw the opening of three Link Light Rail stations north of the stadium (Northgate, Roosevelt, and University District).

Introduction

The University of Washington (UW) hosted seven football games at Husky Stadium during the 2021 season (Table 2). All games were held on a Saturday afternoon or evening/night, with the exception of the November 29th game (Friday afternoon over Thanksgiving Holiday).

Date	Opponent	Actual Game Attendance	Sales Attendance
September 4, 2021	Montana	37,916	61,036
September 18, 2021	Arkansas State	27,161	58,772
September 25, 2021	CLA	38,860	60,104
October 16, 2021	UCLA	44,002	62,266
November 6, 2021	Oregon	40,911	63,193
November 13, 2021	Arizona State	27,412	57,858
November 26, 2021	Washington State	46,816	68,077
AVERAGE		**37,583**	**61,615**

*Date of Intercept Survey

Table 2 UW Husky Home Football Games and Attendance, 2021 Season

During the 2021 season, the Husky Stadium Expansion Parking Plan and Transportation Management Program (TMP) was implemented to provide transportation options to football fans. The plan discourages single occupant vehicle (SOV) trips to the stadium and encourages non-SOV modes, including carpooling, transit, charter buses and boating, as well as active transportation modes (walking and bicycling). In addition, the plan monitors parking impacts to the university and surrounding neighborhoods.

The purpose of this report is to evaluate the effectiveness of the TMP during the 2021 season using the following indicators:

- Transportation mode choice utilization
- Average automobile occupancy
- Parking location choice
- Neighborhood parking impacts

Transportation Management Plan Elements

Automobiles (Cars / RVs)

Automobiles are the least desirable gameday transportation mode as this results in high/increased traffic congestion and parking space requirements relative to the number of commuters served by this mode. Management is focused on increasing automobile occupancy rates and mitigating the effects of gameday parking.

Carpool Incentives

Carpool parking rates are designed to promote carpooling and discourage single occupancy vehicle commuting. The 2021 parking rates were unchanged from the 2019-2020 rates (**Table** 3).

Parking Group	Rate
Carpool Vehicles (3+ passengers)	$30
Non-carpool vehicles (Fewer than 3 Passengers)	$40
RV's / Motor Homes	$120
Trailers	$30
Charter Buses	$100

Table 3 UW Campus Gameday Parking Rates, 2020-2021

Restricted Parking Zones

In some surrounding neighborhoods, Special Event Restricted Parking Zones (RPZ) limit gameday parking to neighborhood residents. Seattle's parking enforcement officers patrol these zones and issue citations to non-residents who parked in the restricted zones.

Transportation Networking Companies

Transportation Networking Companies (TNC's) is a relatively new and growing transportation mode providing access to Husky gameday. While TNC's tend to add to traffic congestion to and from the University, they do not require parking space near the stadium. To support the efficient utilization of this transportation mode, UW made preparations in advance of the season to coordinate with Lyft and Uber on pick-up, drop-off, and wayfinding for game goers who used this mode. Signs were placed on the sidewalk along 15th Avenue near the gatehouse and along Stevens Way to guide travelers to TNC staging areas. UW Intercollegiate Athletics (ICA) worked with Lyft and Uber to have attendees walk to a specific part of campus to be picked up after the game. A map to the TNC pickup locations can be found at: https://gohuskies.com/documents/2019/8/9/Husky_Rideshare_Map_2019_.pdf?id=16526.

Transit Modes

The TMP aims to promote public transit as a preferred mode of transportation to the stadium. In addition to regular Saturday bus and Link Light Rail (as of October 2021) service, King County Metro operated the following special services in support of this goal, including Husky Special Service and Park and Ride gameday shuttles (Figure 1).

Husky Special Service

There were no substantial changes to Husky Special Service bus operations in 2021.

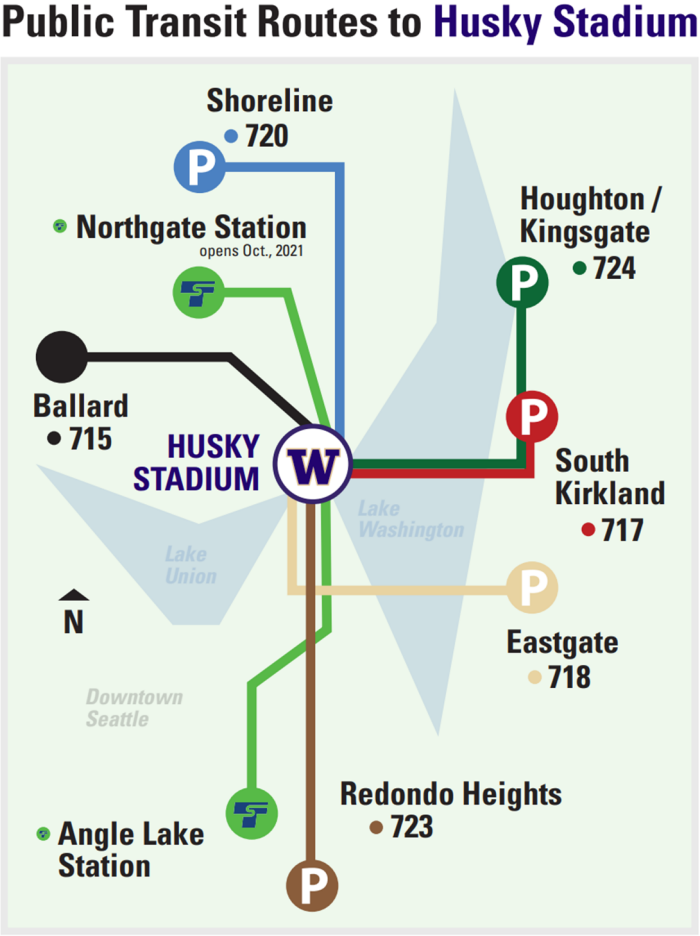


Figure 1 Public Transit Routes to Husky Stadium[3]

Park and Ride Service

Transit service from Park and Ride facilities provided an essential connection between more distant population centers and the stadium (Table 4). In 2021 Saturday gameday shuttle service was available from six regional Park and Ride lots (a decrease from seven in 2019). This service was operated by King County Metro at four locations and UW ICA at two locations (Shoreline and Redondo Heights). For all Park and Ride shuttles, a gameday pass was $16 per game per person (up from $15 in 2019), and a season pass was $70 per person (up from $60 in 2019). Shuttles began boarding at the lots two hours prior to kickoff, with 20-minute interval departures. Following the game, fans boarded buses at specified locations to return to their designated lots. The final buses departed approximately 50 minutes prior to kickoff.

Managed By	Location	Address
Metro	Eastgate	14200 SE Eastgate Way

[3] **Resource:** Public Transit Routes to Husky Stadium [Digital image]. (2019). Retrieved January 16, 2020, from https://gohuskies.com/sports/2016/6/28/football-transportation.aspx

Metro	Houghton	7024 116th Avenue NE
Metro	Kingsgate	12837 116th Avenue NE
Metro	South Kirkland	3801 108th Avenue NE
UW ICA	Redondo Heights	27454 Pacific Hwy S
UW ICA	Shoreline	19000 Aurora Avenue N

Table 4 Park and Ride Shuttle Service

In 2021, UW ICA discontinued a shuttle service from the Northgate Park and Ride to the opening of the Northgate Link light rail station.

The Redondo Heights and Shoreline Shuttles (contracted non-Metro service) were only available through the purchase of a season pass.

Boats

Gameday transportation to the University of Washington is relatively easy since Husky Stadium is located adjacent to Lake Washington, with connections to Lake Union and Puget Sound. Increasing the number of gameday boating commuters can help reduce traffic congestion and parking space requirements.

Boat Moorage

Husky Harbor can dock up to 150 private boats of varying sizes on gameday. Permits for boat moorage were available through a season pass or on a single-game basis. Due to high demand in 2021, season permits were sold out, and single game permits were made available through a waitlist. Moorage was assigned based on boat length overall (LOA)

Shuttle Service

Continuing in 2021, 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 two years of age ride for free). Shuttles were available 2 hours prior to kickoff and 1 hour post-game.

Charter Boats

Charter boats were an option as a form of travel to Husky Stadium. Several Charter companies operated large boats carrying up to 500 people and smaller boats carrying up to 20 people.

Active Transportation (Bicycles)

The University of Washington promotes active transportation options as a healthy, pollution-free mode of gameday transportation.

Bike Valet

UW Transportation Services (TS) continued to provide free bicycle valet parking at Rainier Vista during the 2021 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 bike valet. In addition to

the bike valet, patrons could find free, unattended bicycle parking at numerous racks located around the stadium.

Bike Share

Dockless bikeshare service was available through Lime during the survey period as a provider of electric-assist dockless bikeshare. UW did not partner directly with bikeshare companies to promote use of bikeshare or provide a bikeshare corral service.

Marketing Efforts

ICA posted transportation information on the official Husky Football website, http://www.gohuskies.com/gameday/. The web site focused on providing information to assist patrons in using one of the modes encouraged in the TMP. The website provided contact information as well as information about transit, boating, walking, biking, and parking. UW TS also promoted the bike valet service for gameday commutes with signage directing bicyclists to the valet, and tags placed on bike racks encouraging patrons to use the bike valet service if they were planning to attend the game.
In addition, a UW Facilities Blog Post, https://facilities.uw.edu/blog/posts/2019/09/09/how-get-husky-home-games , promoted non-auto travel alternatives. This marketing strategy generated media coverage and promoted the use of carpooling.

Modifications for the Apple Cup

The following modifications were made on the November 26 game vs Washington State (known as the "Apple Cup") as this game was on a weekday (Friday after Thanksgiving Holiday).

- Only the Redondo Park and Ride remained unchanged. Riders at other locations were required to pre-purchase a shuttle passes operating from alternative Park and Ride lots.
- Normal weekday transit operations limited the ability to provide the usual level of expanded gameday service, however all normal routes were operational on gameday.

Data Collection

Data collection for the 2021 TMP report consisted of the following:

1) Intercept survey of game attendees conducted by UW TS at a football game during the season (October 16 vs UCLA).
2) Bus ridership data collected by King County Metro for 2021 UW football home games.
3) Link Light Rail ridership data collected by Sound Transit for 2021 UW football home games.
4) Campus parking data, bike valet, and bike rack counts collected by UW TS.
5) Parking citations data collected by the Seattle Police Department.
6) Boat passenger, stadium lot counts, and game attendance data collected by ICA.

Intercept Survey Methodology

On Saturday, October 16, 2021, UW TS conducted a survey of football game attendees as they passed through the gates at Husky Stadium. The kickoff time was 5:30 PM, and survey time period began at 3:30 PM. The weather on the survey day was mostly cloudy, with a high of 59°F and a low of 47°F.

Fifteen surveyors in teams of two were deployed dynamically to stadium entrances, proportional to the number of game attendees estimated to enter through each gate. These survey administrators were deployed based on each gate's opening time and adjusted based on the flow of patrons through the gates.

The questions used for the 2021 survey were similar to those used in the 2019 survey. The survey administrators were provided with tablets, laminated pictograms (Figure 2) and keywords/parking map (**Error! Reference source not found.** and Figure), to aid the survey taker in understanding the target transportation modes and parking zones in order to improve accuracy in recording the survey results.

Teams were instructed to conduct the survey according to the following instructions:

1. When you approach the patron, say, "Hello, I am with the University of Washington and we're conducting a quick, 4 question survey.[4] *How did you get to the game today*?" Begin walking with them to their destination and guide them to an answer by showing the pictogram displaying various commute options.
2. If they refuse to answer your question, circle "**REFUSED**" on the survey form.
3. If they answer CAR/RV, circle "CAR/RV" on the survey form then ask:
    a. "How many passengers, including you, came to the game in that vehicle?"
    b. Circle their answer in question 2 on the form.
    b. Then say, "Please point to your approximate parking location on this map" and show them the map.

[4] This question appeared on the 2016 survey using the wording "Did you drive or ride in a car driven to the game today?" It was modified in the 2017 survey to more easily distinguish between riding in a personal vehicle and taking Lyft or Uber to the game.

   c. When they point to an area, circle the corresponding letter on the survey form. If the patron was dropped off and the driver of the car did not park and come to the game circle "**X: Dropped off, did not park.**"
   d. "What is your Home Zip Code?"
4. If they answered no to CAR/RV for your first question, circle **"MODE"** on the survey form and ask:
   a. "What type of transportation did you use to come to the game today?"
   b. Circle the mode they said, then ask:
   c. "What is your Home Zip Code?"
   d. Write down Zip.
5. End the survey with, "Thank you, enjoy the game!"
6. While one partner administers the survey, the other counts out the next 25th (team of 3) or 45th (team of 2) person and prepares to signal their partner.

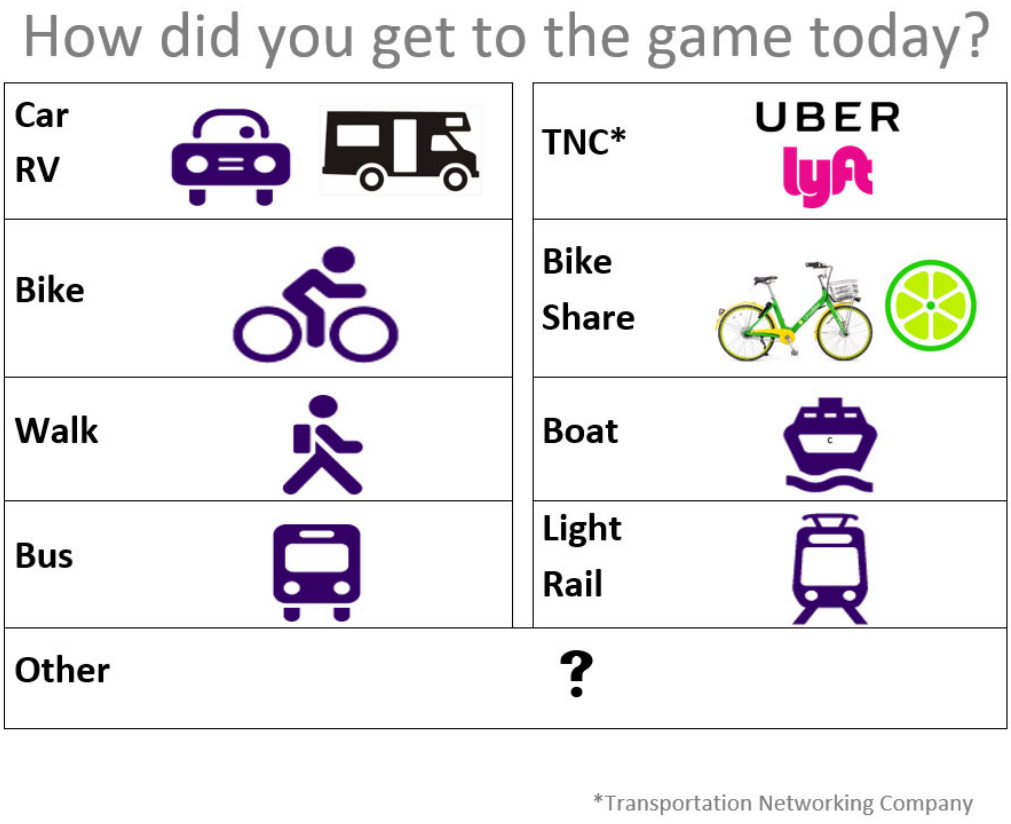


Figure 2 Pictogram for Commute Mode Survey Question

Parking Zone Map Key Words

Question 3 asks Patrons where they parked their CAR/RV. The following list of key words can help Surveyors pinpoint which Area a Patron parked in on the laminated Parking Zone Map.

Ltr	Color	Key Words	Area
X	**Dropped Off**	N/A	Not Parked
A	**Green**	• SW NEIGHBORHOOD (BUT LET'S CLARIFY IF NEIGHBORHOOD IMPACT ZONE) • Eastlake north of 520, across University Bridge, Fairview Ave, Fuhrman Ave.	SW neighborhood
B	**Orange**	• S NEIGHBORHOOD (BUT LET'S CLARIFY IF NEIGHBORHOOD IMPACT ZONE) • West of Washington Arboretum, South of 520, north of Boyer Ave, off 24th	S neighborhood
C	**Blue**	• N NEIGHBORHOOD (BUT LET'S CLARIFY IF NEIGHBORHOOD IMPACT ZONE) • Montlake north of 520, near the Montlake Bridge, south of the Montlake cut or Bridge • Laurelhurst, near Sand Point • Ravenna, along Ravenna Ave • East of I-5, West of Roosevelt, 7th, 8th, 9th Ave	N neighborhood
D	**Pink**	• NW NEIGHBORHOOD (BUT LET'S CLARIFY IF NEIGHBORHOOD IMPACT ZONE) • Wallingford, west of I-5, north of Portage Bay, south of 51st St	NW neighborhood
E	**Red**	• RETAIL • University Village, U Village • U District east of Roosevelt and west of 15th, on the Ave, Brooklyn, 11th, 12th, north to 50th Ave	Retail area
F	**Yellow**	• ON-CAMPUS, CAMPUS • Padelford Garage above Montlake Ave, Portage Bay Garage off 15th Ave • E-1, E-12, E-19 parking lot • Any parking lot designated with the letters C, N, or S • Near the driving range, along Boat Street	On campus
G	**White**	• LET'S CLARIFY IF NEIGHBORHOOD OR N/A • West of Thackery, north of 51st, north of 55th, north of Ravenna, north of 65th • Eastlake south of 520 • East of Washington Arboretum	White area
H	**N/A**	• Patron doesn't know	Patron doesn't know

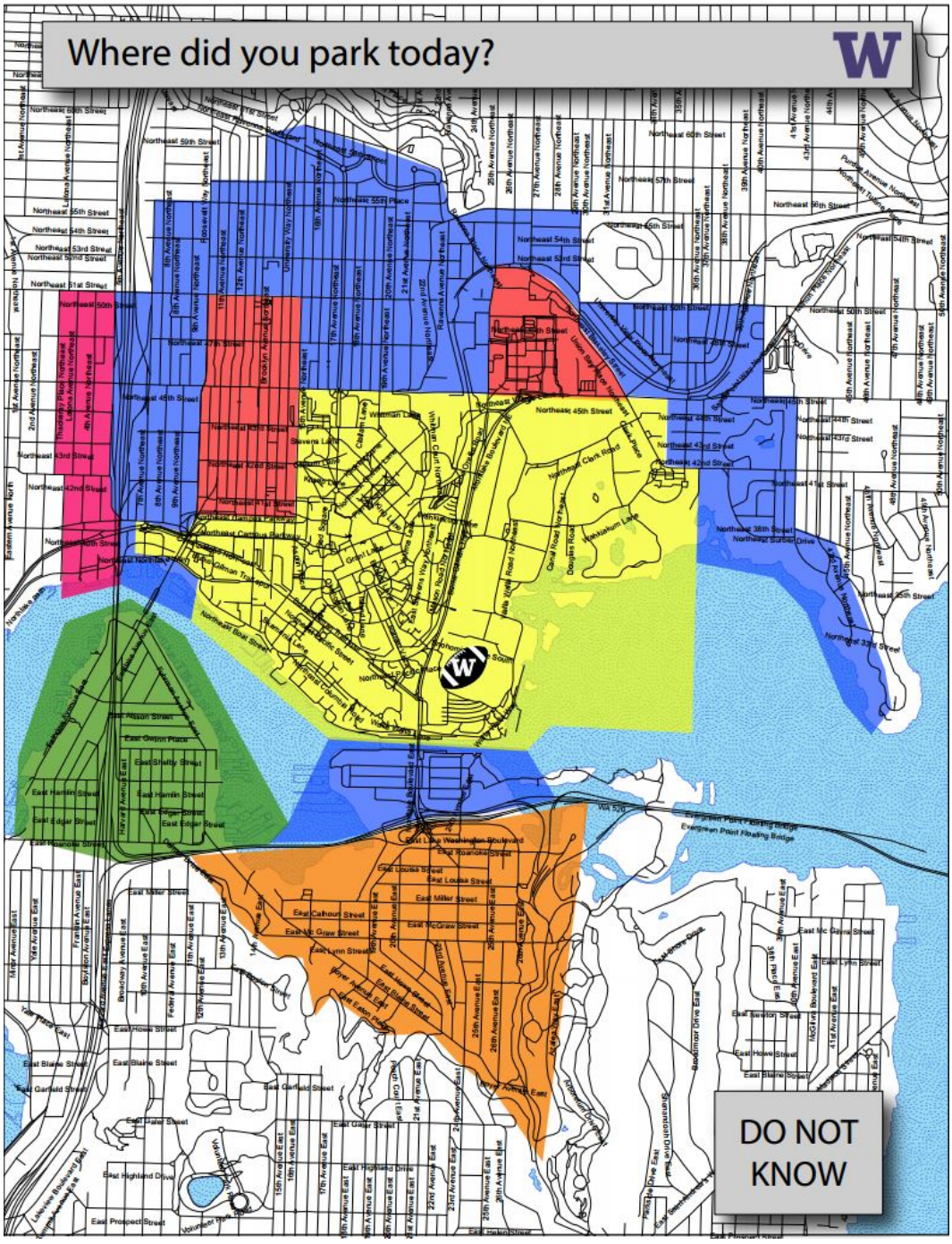


Figure 3 Map of Parking Impact Zones

The red, blue, green and orange areas are neighborhood impact areas surrounding Husky Stadium. These are residential areas with varying levels of public, permitted, or restricted 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.

Gameday Survey Results

Paid game attendance on October 16 was 62,266, and actual game attendance was 44,002[5]. The survey effort resulted in 1,097 completed survey responses providing a margin of error of +/-2.9%.
Paid game attendance on November 26 was 68,077, and actual game attendance was 46,816. This survey effort resulted in 862 completed surveys providing a margin of error of +/-3.3%
Total completed surveys was 1,980 and total actual attendance was 87,727 providing an overall margin of error of +/-2.2%.
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 provides accurate insight on relative changes in traveler behavior.

Gameday Transportation Mode Split

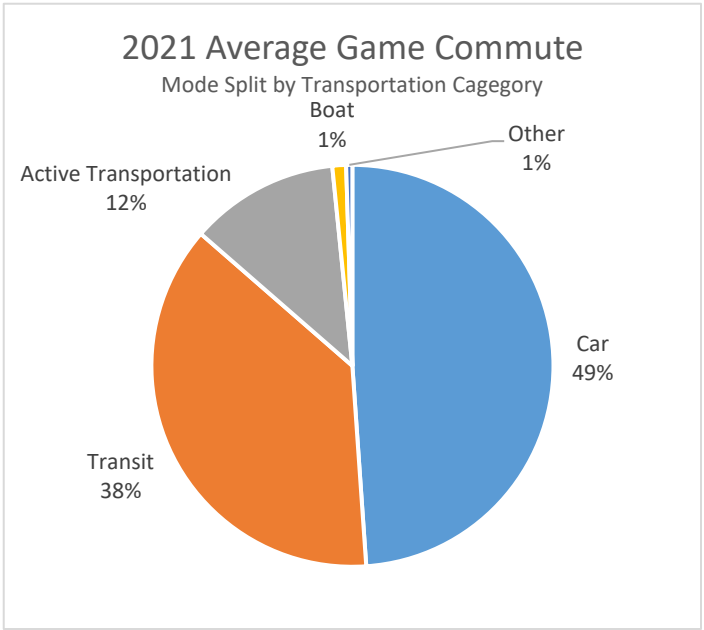
The gameday transportation mode split indicates how the available transportation options were utilized (Table 5 and

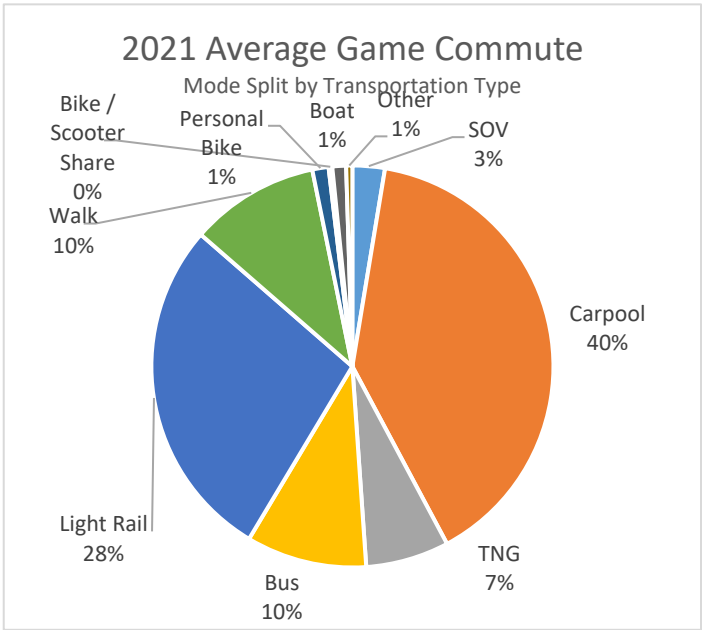
). Slightly less than half of all attendees traveled to the game by car, including 39.6% by carpool, 2.6% by SOV, and 6.7% by TNCs (which do not park during the game). Mass Transit options were also popular, with buses accounting for 9.7% and Light Rail accounting for 27.8%. Active transportation is the third most utilized mode on gameday, with 10.5% of attendees walking and 1.3% using personal bikes. Bikeshare was available (but not promoted by UW) and was only used by 0.3% of surveyed attendees. Boating made up 1.1% (a decrease of more than 4 percentage points over 2019). 0.6% of attendees indicated they used other modes of transportation (these modes were not explicitly specified in the survey).

[5] 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 2021 Report.

Transportation Mode			Survey Responses (10/16)	Survey Day Attendees (10/16)	Survey Responses (11/26)	Survey Day Attendees (11/26)	Mode Split (Two days)	
Car	Personal Car / RV	SOV	27	1,083	24	1,303	**2.6%**	**48.9%**
		Carpool (2+)	453	18,170	321	17,434	**39.6%**	
	TNC		40	1,604	92	4,997	**6.7%**	
Mass Transit	Bus		129	5,174	59	3,204	**9.7%**	**37 %**
	Light Rail		300	12,033	248	13,469	**27.8%**	
Active Transportation	Walk		114	4,573	91	4,942	**10.5%**	**12%**
	Bike		20	802	5	272	**1.3%**	
	Bikeshare		1	40	4	217	**0.3**	
	Boat		7	281	14	760	**1.1%**	**1 %**
	Other		6	241	4	217	**0.6**	**1 %**
	Total		**1,097**	**44,002**	**862**	**46,816**	**100 %**	**100 %**

Table 5 Intercept Survey Responses and Projected Mode Share, 2021





A few important trends can be observed over a ten-year span of the intercept survey (there was no survey in 2012 due to Husky Stadium renovations nor in 2020 due to the COVID-19 pandemic) and the baseline observations made in 1986 (Table 6). Automobile use previously had been decreasing, however there is a noticeable increase after the 2016 introduction of TNC's. Transit use was down in 2019, however this tends to fluctuate year to year. Walking to the game decreased in 2021 yet continues to remain an important mode, and bicycling remains flat after a slight increase after the introduction of bikeshare over the last few years. In 2021, boating captured its lowest measured share.

Mode	Share (%)											
	1986	2009	2010	2011	2013	2014	2015	2016	2017	2018	2019	2021
Automobile (includes TNCs beginning in 2016)	72.0	45.0	51.8	45.4	44.8	47.0	32.7	47.8	41.9	48.1	48.9	**48.9**
Transit (Charter, Metro, Link)	16.0	25.1	30.2	32.2	25.3	25.4	19.6	31.2	36.6	27.8	25.1	**37.4**
Walk	8.1	17.7	12.5	14.5	20.6	18.9	35.7	15.8	15.5	18.5	17.1	**10.5**
Boat	3.9	4.8	5.0	4.5	5.2	3.9	2.6	3.4	3.7	3.7	5.5	**1.1**
Bike (includes Bike Share beginning in 2018)	N/A	0.8	0.0	0.5	0.5	0.8	0.9	0.7	1.3	1.2	1.2	**1.6**

Table 6 Historic Transportation Mode Split, 2009 – 2021 (2021 is Combined Friday/Saturday)

Automobile Occupancy and Parking

Automobile utilization can be summarized by the number of passengers per vehicle (Table 7). A small number of attendees who arrived by automobile drove alone (6.1%), which is higher than observations over the last few years.

Automobile Occupancy	Share (%)			
	2017	2018	2019	2021
1	2.4	1.5	2.1	**6.1**
2	25.2	27.7	28.5	**41.3**
3	17.3	15.8	17.6	**20.1**
4	27.7	24.9	23.5	**20.0**
5+	27.4	30.2	28.4	**12.5**

Table 7 Estimated Split of Automobile Occupancy, 2017-2021

Across the surveyed days, an estimated 18,483 people arrived in 6,255 vehicles, with an average automobile occupancy of 2.95 passengers per car (Table 8). These vehicles parked in one of four type of areas (see Figure for map of parking zones):

- 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

Parking area	Passengers	Automobiles	Avg. Occupancy
Dropped Off	847	267	3.17
Retail	778	305	2.55
Campus	12,007	4,043	2.97
Neighborhood	3,623	1,236	2.93
Out of Area	420	160	2.62
Don't know/ Not Reported	809	244	3.31
Total	**18,483**	**6,255**	**2.95**

Table 8 Average Passenger Occupancy of Automobiles by Parking Location, 2021

Only 35 respondents indicated they were dropped off in a personal car. On the Saturday game, 2,948 people arrived in cars operated by TNCs. On the Friday game that number was 3,137. These cars do contribute to on-street congestion, but do not need to park. Occupancy information for TNC trips was not recorded by survey volunteers, so is omitted from this part of the analysis.

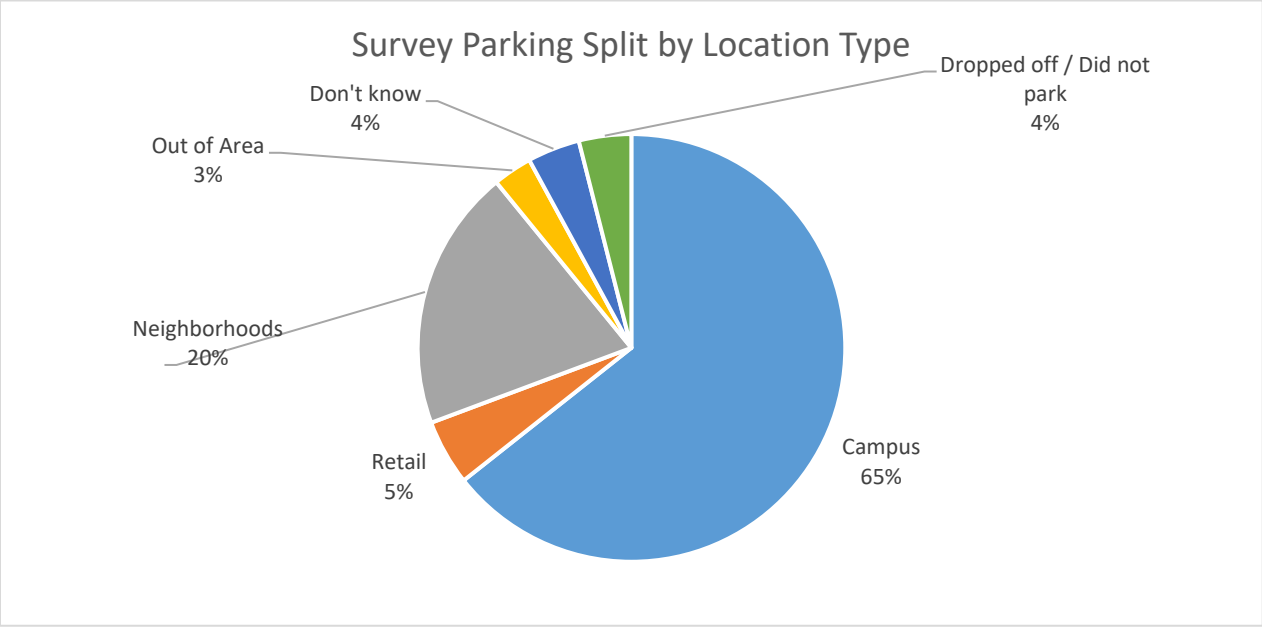


Figure 3 Distribution of Automobiles by Parking Location, 2021

Of the attendees who arrived by car, 42% indicated they parked on campus for an estimated survey day total of 4,043 automobiles, an increase from 2,748 vehicles estimated in 2019. An estimated 1,236 vehicles were parked in neighborhoods identified as parking impact areas and approximately 305 cars were parked in retail areas. About 160 cars were parked in neighborhoods outside the impact areas. The share of cars parked in impact areas (including neighborhoods and retail zones) continues to increase since 2017.
The impacts to individual neighborhood zones were also estimated (Figure 4). The Northwest area had 92 cars parked, the North area had 786 cars parked, the Southwest area had 92 cars parked and the South area had 35 cars parked on survey day.

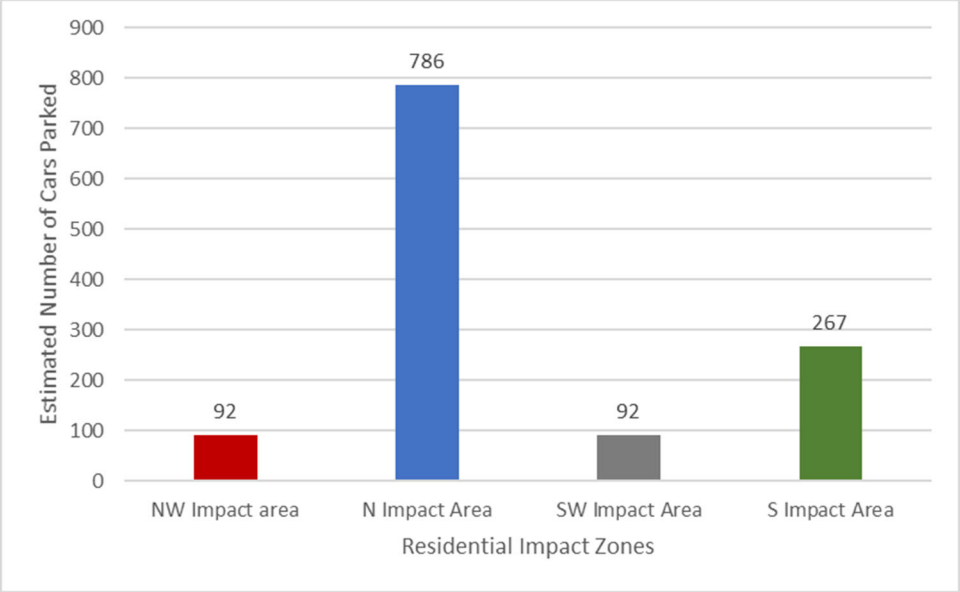


Figure 4 Estimated Number of Cars Parked by Impact Zone, 2021

Transportation Networking Companies

Transportation Networking Companies (TNC) continues to be an important mode for gameday transportation (Table 9). Approximately 7% of survey responses used Lyft, Uber or other TNC to travel to the game, which was a noticeable increase from prior years.

	2016	2017	2018	2019	2021
Responses	67	80	65	78	**133**
Mode Share (%)	7.6	9.3	8.0	13.3	**6.7**

Table 9 TNC Survey Responses, 2016 – 2021

Bus

Survey respondents indicated 10% of gameday travel occurred via Metro or charter bus, which was similar to 11% in 2019 but a decrease from 14% in 2018 and 22% in 2017. This mode includes ridership on KC Metro regular routes, Husky Special Service and Park and Ride shuttle service.

For the six home games in the 2021 season (excluding the Nov 26 Apple Cup) football season, Metro operated an average of 8 trips to the stadium prior to each game and 10 trips from each game on Husky Special Service routes, a slight increase from 2019.

King County Metro Bus Ridership Estimates

In addition to the intercept survey, data on bus ridership to Husky football games provided by KC Metro:

- King County Metro employees count Park and 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 in the University District or before they reach the stadium and then walk several blocks to reach the ticket gates. These passengers are not included in the count for of this report.
- Apple Cup numbers were not provided, since this game occurred on a weekday.

ICA Contracted Charter Bus Ridership Estimates

UW ICA has been managing charter buses for Northgate and Shoreline routes since 2017 and provided the count of charter bus passengers for each game in the 2021 season.

For 2021, the average King County Metro passenger count for all gameday services (Table 10) was 1,704 (pre-game) and 2,082 (post-game). These numbers are lower than 2019 counts of 4,545 pre-game and 4,731 post-game.

	Pre-Game				Post-Game			
	Metro P&R + Special Service			ICA Shuttle	Metro P&R + Special Service			ICA Shuttle
Game	Trips	Riders	Riders / trip	Riders	Trips	Riders	Riders / trip	Riders
Sep 4 Montana	64	1,888	29.5	488	75	1,979	26.4	517
Sept 18 Arkansas State	64	1,462	22.8	395	75	1,881	25.1	391
Sept 25 CAL	64	1,838	28.7	467	75	2,108	28.1	453
Oct 16 UCLA	64	1,799	28.1	448	75	2,138	28.5	464
Nov 6 Oregon	64	1,679	26.2	431	75	2,410	32.1	412
Nov 13 Arizona State	64	1,559	24.4	343	75	1,977	26.4	342
Season Total (Saturdays)	**384**	**10,225**	**159.8**	**2,572**	**450**	**12,493**	**166.6**	**2,579**
Season Average (Saturdays)	**64**	**1,704**	**26.6**	**429**	**75**	**2,082**	**27.8**	**430**
Nov 26 Washington State (Friday)	13	269	20.7	931	10	250	25	977

Table 10 KC Metro and ICA Bus and Shuttle Ridership Counts, 2021

*Actual number of trips not known for Cal game due to late night weather delays

Park and Ride shuttles accounted for a majority of gameday bus service. Metro reported an average count of 1,642 pre-game and 1,802 post-game Park and Ride shuttle passengers for the 2021 season. ICA contracted charter bus shuttles (operating from Northgate and Shoreline Park and Rides) served on average 1,112 pre-game and 1,170 post-game passengers per game. For KC Metro's Husky Special Service, the 2021 passenger average per game was 429 for inbound and 430 for outbound service. These numbers are higher than 2019 as shown in Figure 5. These passenger counts should be considered a lower estimate of total gameday bus ridership since they do not include counts of regular Metro service passengers.

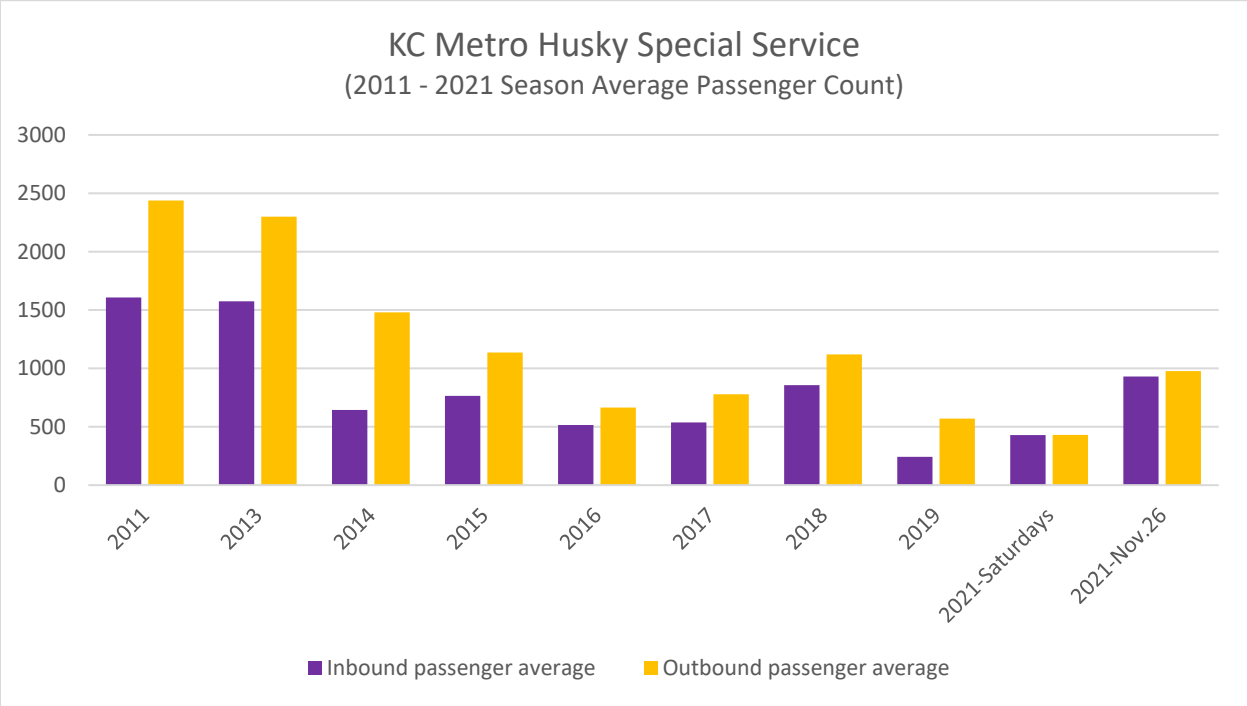


Figure 5 Average Ridership for Husky Special Service Routes, 2011-2021

For the 2021 season, KC Metro implemented the following changes that affect transit/park and ride service to the game:

- KC Metro began operating a fee-based direct gameday shuttle from Northgate due to the opening of the Northgate Link light rail station in October 2021.

Link Light Rail

As per the 2021 intercept survey results, 27.8% of attendees arrived by Link light rail. This is significantly higher than those who arrived by Link light rail in 2019 (14%) due to the light rail station opening at the stadium. This accounts for a Saturday season average of approximately 12,233 gameday attendees. The Apple Cup had approximately 13,015 attendees arrived via light rail.

Sound Transit Link Light Rail Passenger Estimates for the Season

Sound Transit provides daily total ridership counts (alightings and boardings) of passengers who traveled to the UW Station on every game day during the football season. In order to make comparisons with the intercept survey data, it is important to consider the following:

- ST counts total ridership for the day, which would be approximately double the number of game attendees estimated in the intercept survey.
- The intercept survey does not include data on how people return home, therefore it is unknown if some people who use light rail to arrive at the game use a different transportation mode to return home.
- ST counts all passengers at UW Station, which in addition to gameday patrons, includes normal Saturday riders as well as gameday workers not counted in the intercept survey.

According to Sound Transit's ridership data (Table 11), an average of 35,155 passenger trips were made by Link Light Rail at the UW Station for the six Saturday games in the 2021 season (excluding the Friday Apple Cup game against WSU), compared to 12,060 in 2019 and 12,933 in 2018.

Date	Opponent	UW Station - Ridership Estimate
9/4/2021	Montana	4,174
9/18/2021	Arkansas State	3,308
9/25/2021	CAL	4,431
10/16/2021	UCLA	6,278
11/6/2021	Oregon	9,373
11/13/2021	Arizona State	7,591
11/26/2021	Washington State	15,450
Season Average		7,229
Season Average (Sat. Games Only)		5,859

Table 11 Sound Transit Light Rail Ridership Counts, 2021

Walking

Approximately 10.5% of the 2021 attendees walked to the stadium on gameday, significantly less than 2019 (17.1%).

Bicycles

In 2021 approximately 1.3% of surveyed attendees arrived by bicycle, similar to recent years. In addition to survey responses, TS also determined a season average count of bikes parked at the bike valet as well as a count of bikes parked around Husky Stadium on the survey gameday (Table 12). The bike valet had an average of 78 bikes over the two games surveyed. While this is much lower than 2019 it is higher than 2018. The total count of bicycles around Husky Stadium on October 19 yielded 96 bicycles, less than pervious years. Note that several bike racks were not where indicated on the bike rackmap.

	2016	2017	2018	2019	2021
Bike Valet	65	-	37	130	**78**
Stadium Bike Racks	-	171	129	127	**96**

Table 12 Bike Count Summary, 2016 – 2021

Boats

Based on 2021 gameday survey data, 1.1% of people reported they arrived by boat (private or charter), which is a decrease from 2019 (5.5%).

UW ICA Boat Passenger Estimates

ICA provides boat passenger counts from the following sources:

- Counts of the number of permitted boats moored in "Husky Harbor" and estimates the number of passengers based on boat size for each Husky football game.
- Charter boat companies provide ICA with actual passenger counts from the charter boats.
- Counts of shuttle ticket sales for the number of passengers in boats anchored off shore.

For the 2021 season, ICA estimated an average of 1,796 people arriving by boat per game, lower than 2019 (2,749). Charter service provided an average of 3.7 boats per game that carried an average of 722 passengers. Shuttle service carried an average of 178 passengers per game.

Other Modes

In 2021, approximately 0.6% of survey responses indicated 'Other' for travel mode, which was higher lower than 2019 (2.2%) but the same as 2018 (0.6%). These 'Other' modes may include motorcycle, airplane, limousine, or private/party bus (as indicated in some survey records). Some of these modes may reflect a survey respondent misunderstanding the question and providing a mode that did not constitute the final leg of the trip to the game. In addition, the lower number of usable survey records and inclusion of some records previously considered to be erroneous compared to other years may have increased the observed mode share for this survey.

Pre-1986 Stadium Expansion Comparison

Each year, the TMP compares actual 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 gameday data (Figure 6). For 2021. The observed actuals are better than the expectations of the 1986 *Stadium Expansion Parking Plan and Transportation Management Program* in all major categories. At 42.2%, the percentage of patrons who came by personal 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 9.7% of attendees arriving by bus and an additional 27.8% by light rail in 2021, total transit ridership (37.5%) has exceeded 1986's projection of 16%.

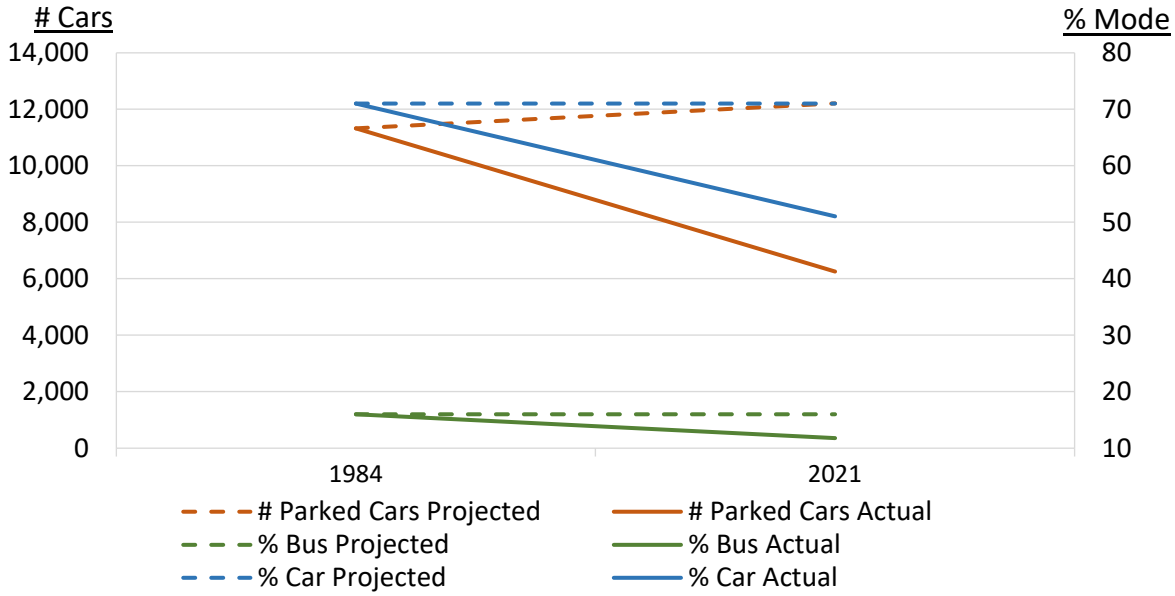


Figure 6 Comparison of Baseline, Actual, and Projected Travel Behavior 1984 – 2021

Neighborhood Parking Impact Areas

Gameday neighborhood parking impact areas (refer to map in Figure 4) are defined by City Council Resolution 27435. Portions of these parking impact areas have Special Event RPZs (Residential Parking Zones) for football game days. On the October 16 survey day, an estimated 3,623 people parked in the neighborhood parking impact areas in 1,236 automobiles, a decrease from 1436 automobiles estimated in 2019. In addition to the cars parked in impact areas, an estimated 160 cars parked in neighborhoods outside of the impact areas.

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 the seven games for the 2021 season, which was compared to historic averages (Table 13). On average, 142 citations were issued per game in 2021, a 14% decrease from 166 average citations per game in 2019. The number of RPZ citations in 2021 were slightly below the trend in number of RPZ citations in previous years, with the exception of 2018.

Year	Average Police Resources / Game		Average Citations / Game			Average Citations / Officer Hour
	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
2015	39	246	144	26	170	0.69
2016	45	259	157	14	171	0.66
2017	38	221	151	57	208	0.94
2018	50	320	103	15	118	0.37
2019	46	323	153	13	166	0.51
2021	**43**	**324**	**90**	**52**	**142**	**0.44**

Table 13 Citation Statistics for Husky Stadium Parking Impact Zones 2011-2021

Gameday Trip Origins of Survey Respondents

The intercept survey asked respondents to provide their home zip code as an estimate of trip origin to the game. Of the 1,980 survey respondents, 1,816 provided zip codes of their home address, 111 were from out of state (several of these are assumed to be students providing a home address rather than their campus address). It is important to note that home address might not necessarily represent gameday trip origin. Because of this, and the lower response rate with respect to reported zip codes, the data in this section is presented to demonstrate relative trends in travel behavior and transportation mode.
For each mode of transportation, travel distance was calculated as the straight line distance from the center of each zip code to Husky Stadium. The number of responses for each zip code was then plotted against these distances. Plots are limited to 100km to direct the focus to local and regional travel rather than out of town visitors or student home locations.

Automobiles (SOV, Carpool and TNC)

Travel by cars (SOV and Carpool) appears to have a fairly even distribution across travel distance to the game (Figure 7). Surprisingly, there is a fairly large number of travelers using a car 10mi or less from the stadium.

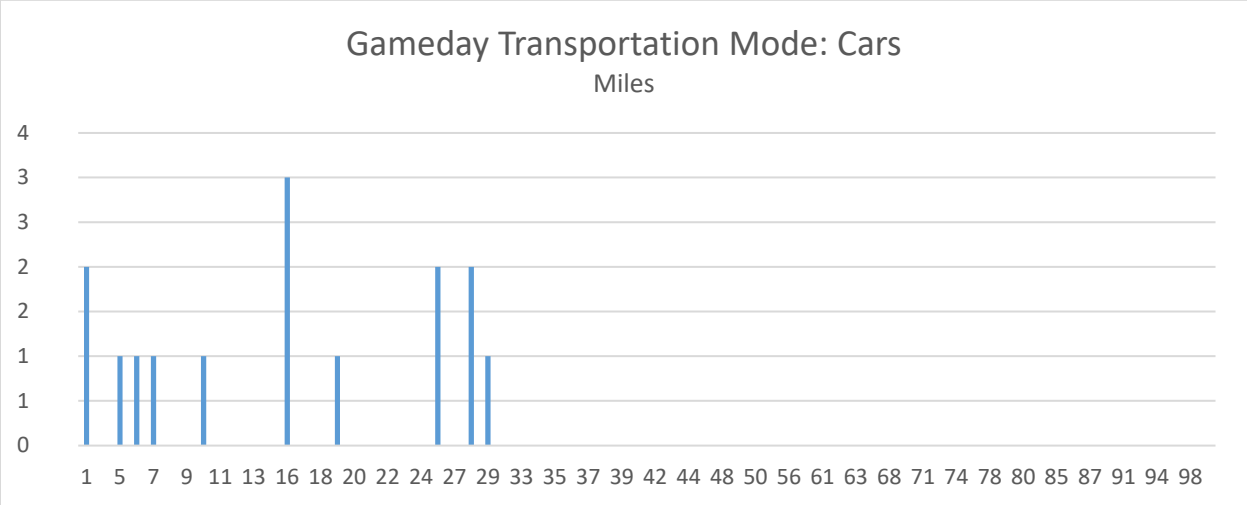


Figure 7 Count of Travelers by Estimated Trip Distance via Car

Most trips by TNC are less than 20mi from the stadium, with a large cluster less than 5mi (Figure 8). It is a reasonable expectation that a trip would not exceed much more than 30-40mi for this mode of transportation

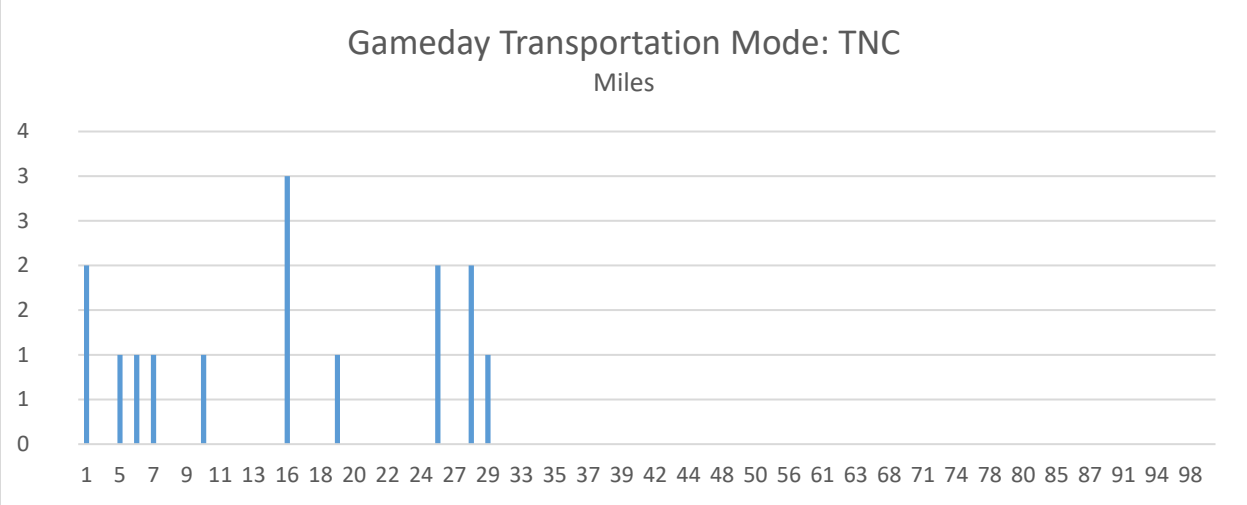


Figure 8 Count of Travelers by Estimated Trip Distance via TNC

Transit (Bus and Light Rail)

While bus commuters seem to be commuting from a number of locations around the region, a large cluster appear to be traveling a distance around 20mi (Figure 9).

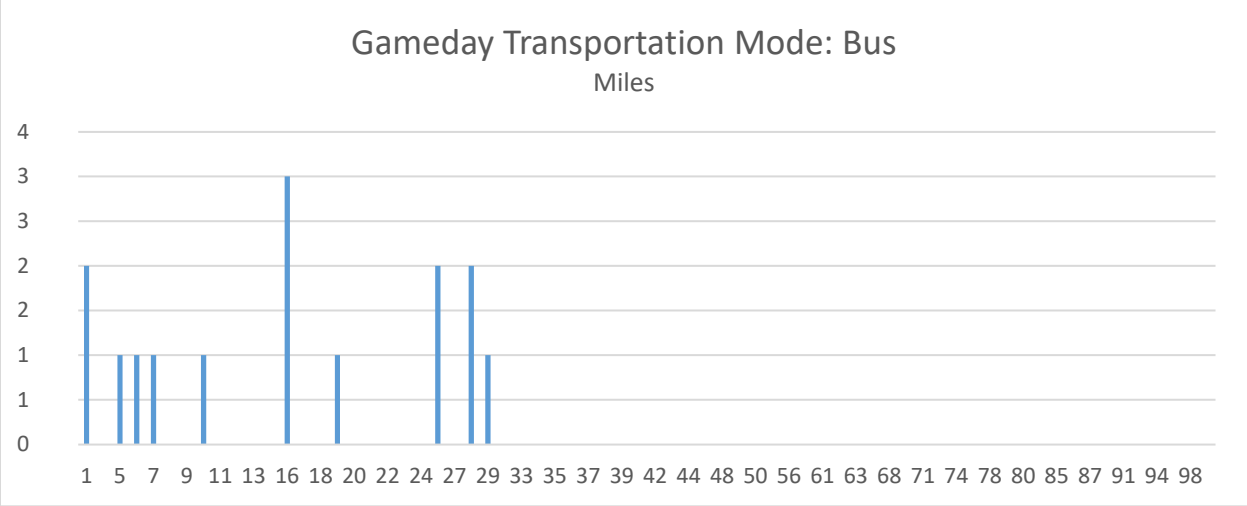


Figure 9 Count of Travelers by Estimated Trip Distance via Bus

Surprisingly, a large number of gameday commuters using Link Light Rail are reporting a travel distance greater than the current total track length (Figure 10). As with previous years, this suggests Link Light Rail serves a large number of out of town visitors.

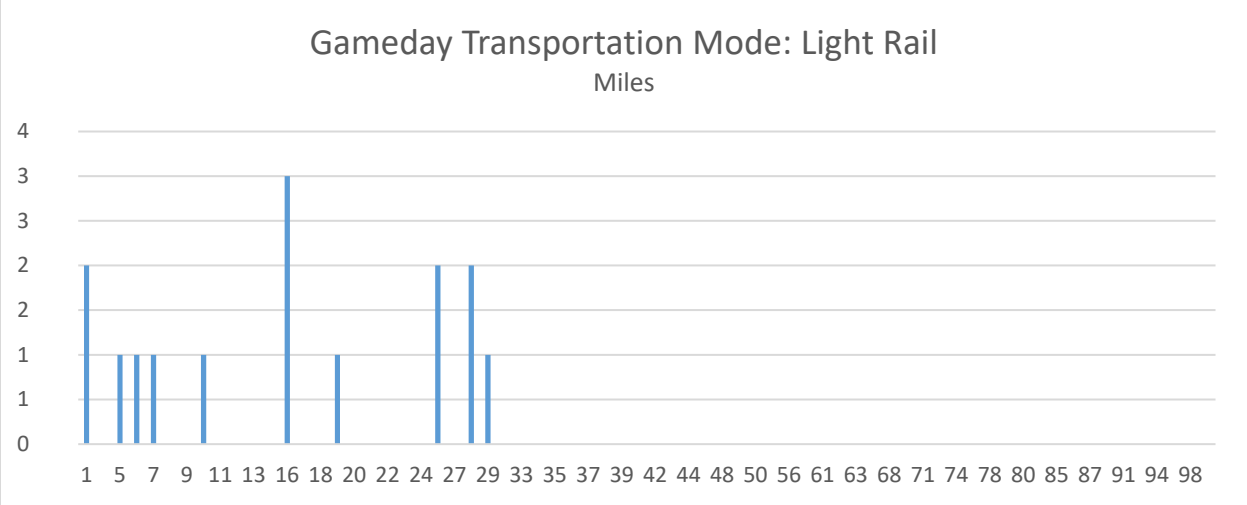


Figure 10 Count of Travelers by Estimated Trip Distance via Light Rail

Active Transportation (Walking and Biking)

The vast majority of walkers to the stadium are travel a distance of only a few miles (Figure 12). The distribution of travel distance by walking highlights the problematic nature of using home zip code for trip origin. While most walkers are less than 5mi from the stadium, there are several responses that are much greater than this distance, which is not a reasonable travel distance for this mode. This likely a product of respondents using home zip code instead of campus or local zip code.

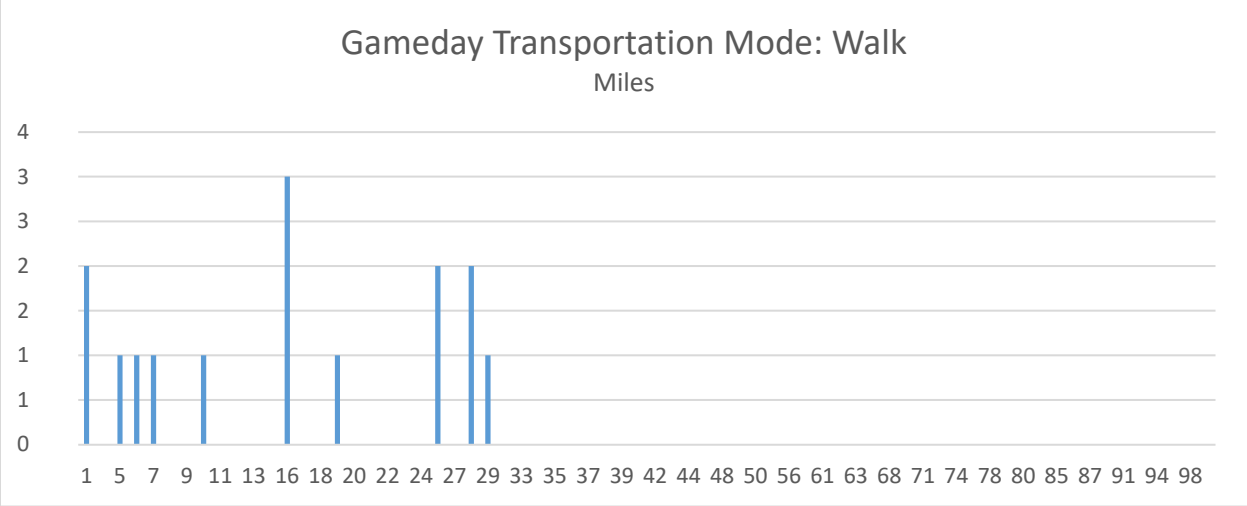


Figure 11 Count of Travelers by Estimated Trip Distance via Walking

Although the mode split for biking to the stadium is fairly low, a majority of bikers are riding less than 10mi to the stadium (Figure 12).

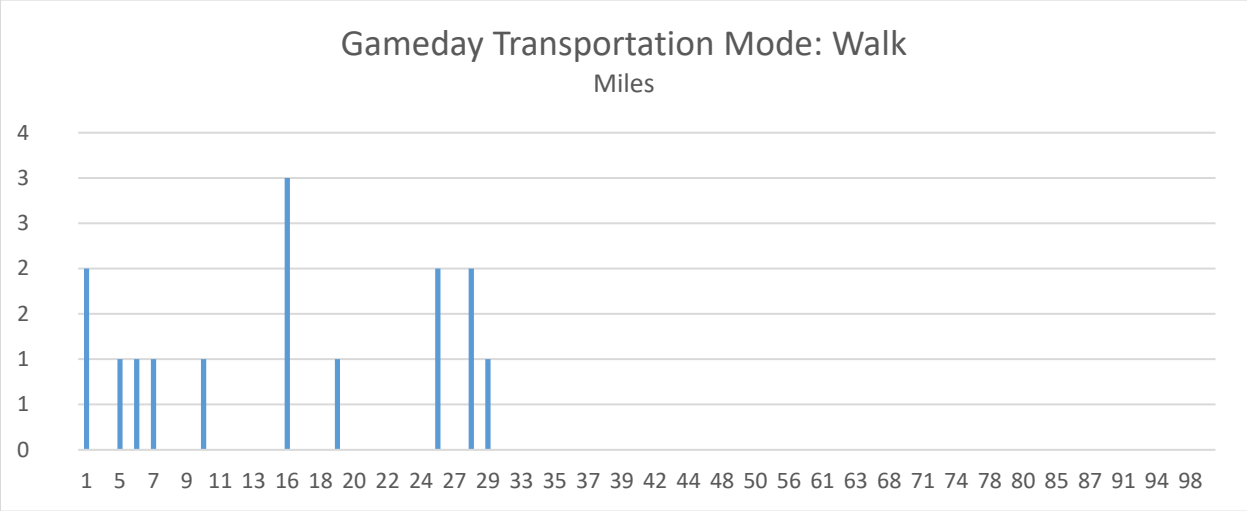


Figure 12 Count of Travelers by Estimated Trip Distance via Bike

Boating

Most boating commuters travel a distance of 20mi or less (Figure 13).

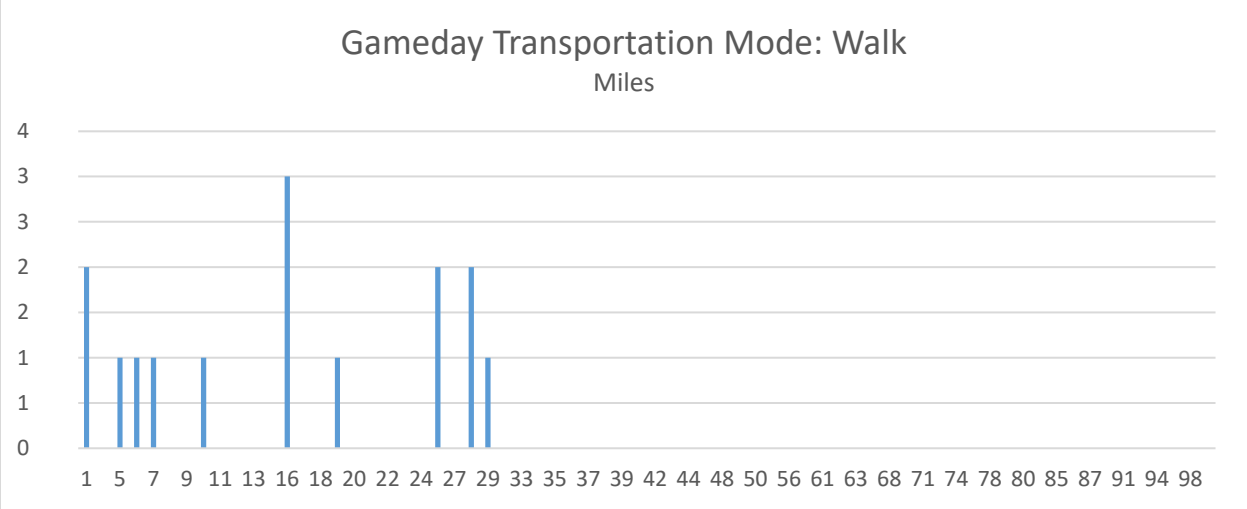
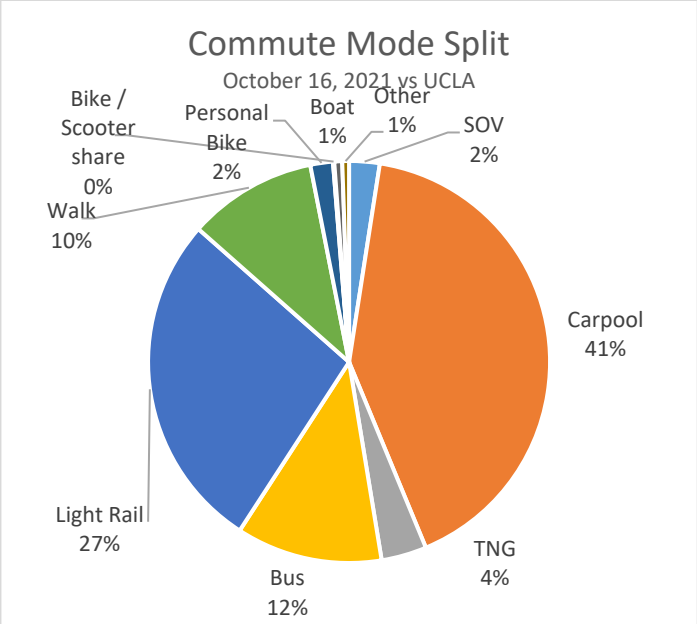


Figure 13 Count of Travelers by Estimated Trip Distance via Boat

2021 Inter-Season Survey Comparison

A total of two gameday intercepts were conducted, the October 16 game against UCLA and the November 26th against WSU ("Apple Cup"). Paid game attendance for the UCLA game was 62,266 with actual attendance being 44,002. Paid attendance for the Apple Cup was 68,077 and actual attendance was 46,816.



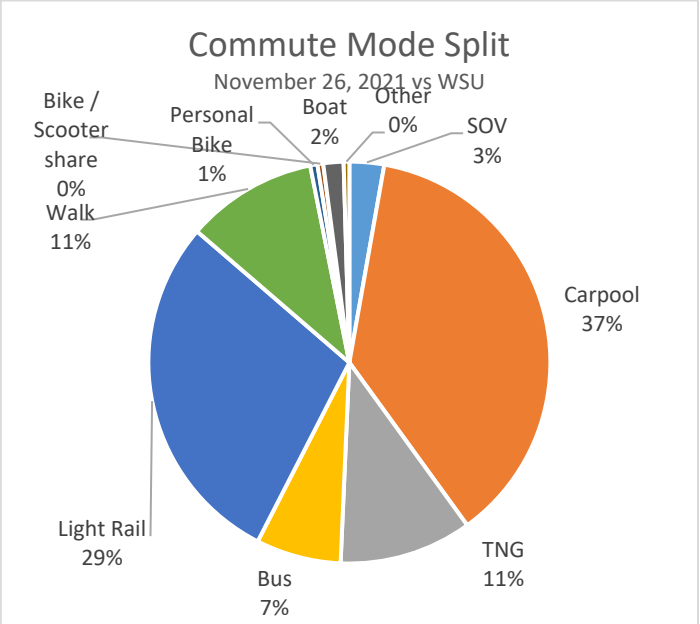


Figure 14 Gameday Commute Mode Split for November 29, 2021

Mode	Mode Split (%)	
	October 16, 2021	November 26, 2021
Car/RV	**43.8**	**40.0**
TNC	**3.6**	**10.7**
Transit	**39.1**	**35.6**
Bike	**1.9**	**1.1**
Walk	**10.4**	**10.6**
Boat	**0.6**	**1.6**
Other	**0.5**	**0.5**

Table 14 Interseason Commute Mode Split Comparison, Oct 16 vs Nov 26

Key comparisons of the data from between these two games (Table 9) are as follows:

1. *Personal automobile usage decreased* 3.8 percentage points for the Apple cup.
2. TNC use increased by 7 percentage points for the Apple cup.
3. *Overall Transit slightly decreased*. Bus ridership decreased slightly, and Light Rail remained the same for the Apple cup.
4. *Boating increased slightly*.
5. *Bicycling decreased significantly.*