Portland State
UNIVERSITY

2009 Bike Survey Report

Housing and Transportation Services
September 2009

Table of Contents

Executive Summary....3

Introduction....4

Methodology....5

Survey Results and Analysis....6-14
- Respondent Makeup....6
- Mode Split....7
- Commute Patterns....10
- Motivations, Perceptions and Concerns....12

Bike Parking & Bike Count....15-17
- Bike Parking Inventory....15
- Bike Count & Parking Occupancy....15
- Bike Parking Perceptions....16

Limitations....18

Recommendations for Action....19

Tables and Figures

- Figure I. Survey notification methods....6
- Figure II. Respondents by comfort level....6
- Figure III. Mode split for bike survey respondents, 2006-2009....7
- Figure IV. Mode split by comfort level....8
- Figure V. Mode split by term....8
- Figure VI. Mode split by term for beginning riders....9
- Figure VII. Mode split by term for semi-regular riders....9
- Figure VIII. Mode split by term for confident, frequent riders....9
- Figure IX. Bike commute time....10
- Figure X. Bike survey respondent locations....11
- Figure XI. Motivation for bike commuting....12
- Figure XII. Initial inspiration for bike commuting....12
- Figure XIII. Challenges of biking to campus....13
- Figure XIV. Encouragement for bike commuting....13
- Figure XV. Experiences with bike-related theft....14

- Table I. Respondents by age range....6
- Table II. Comments related to bike parking....16
- Table III. Perceptions and experiences related to bike parking locations....17

Appendix A: Survey Instrument....21

Appendix B: Bike Parking Count Results....27

Executive Summary

The PSU Bike Survey is an annual effort to assess bicyclists' experiences and perceptions regarding bike commuting to PSU and bike parking on campus. Carried out in conjunction with a bike parking inventory and bike count, the survey helps PSU understand the motivating factors behind mode choice and how programs and capital improvements can best serve the transportation needs of the campus community, including students, faculty/staff, and people who live or work in the University District. The survey specifically targets bike commuters who park their bikes at PSU.

Similar to past surveys, the majority of 2009 survey respondents heard about the survey through flyers tagged to their bikes by PSU staff members during peak classroom hours on May 18 and May 21. The survey was available online between May 18 and May 29 and received 199 responses. PSU students comprised the majority of respondents (67%), followed by City of Portland employees (11%), PSU staff (8%) and PSU faculty (6%). In addition to the survey, staff members counted bikes during peak hours in order to assess demand for bike parking at various locations around campus.

KEY RECOMMENDATIONS

- PSU should advocate for improvements to safety on downtown routes to campus.
- The PSU Bike Co-op should expand its services to include bike repair classes and professional repair services.
- Underutilized bike parking should be promoted through signage located in over-capacity bike parking locations.
- Secure bike parking should be expanded, particularly in buildings adjacent to outdoor parking that is reaching capacity.
- Deterring bike theft should be prioritized as an important function of campus public safety operations.

KEY FINDINGS

- A total of 824 bikes were counted parked in the University District during peak Thursday classroom hours on a day in May, including 62 bikes locked to something other than a bike parking facility.
- During a two-day bike count, average occupancy during peak afternoon classroom hours was observed to be 66%; however, many bike parking locations on campus were observed to be at over 100% capacity.
- Bicycling trips comprised 75% of all trips taken by respondents, or an average of 3.5 bike commutes per respondent, during the survey week.
- The most common motivations for bike commuting are that bicycling is fun, environmentally friendly and good for personal health/fitness
- Besides weather, perceived challenges to bike commuting are maintaining a professional appearance, availability of bike parking and concerns about safety.

Introduction

The PSU Bike Survey is an annual effort to assess bicyclists' interests and perceptions regarding bike commuting to PSU and bike parking on campus. By specifically targeting bike commuters, the bike survey helps PSU understand the motivating factors behind mode choice and how programs and capital improvements can best serve the transportation needs of the campus community, including students, faculty/staff, and people who live or work in the University District. The survey is designed to complement biennial transportation surveys of PSU students and employees.

The survey asks bicyclists about their commuting and bike parking experiences on campus. A bike parking inventory and bike count are carried out in conjunction with the survey to assess bike parking supply and demand in various areas of campus. This report documents results of the 2009 survey conducted between May 18 and May 29 and the bike parking occupancy count conducted on May 18 and May 21.

Methodology

SURVEY DESIGN & PUBLICATION

The survey (see *Appendix A*) consisted of 15 questions regarding student preferences and behaviors, including:

- mode choice for the week prior to the survey
- primary mode by term
- commute time and location of origin
- motivations for bicycling
- opportunities to improve cyclists' commuting experiences
- issues regarding bike-transit connections
- experiences with theft while parked at PSU
- bike parking experiences and needs

As an incentive to take the survey and to provide additional personal information (such as home address), a $25 gift certificate to the PSU Bike Coop and a roadside repair kit were raffled off. The survey instrument was designed to maintain consistency with past surveys; however, some questions were modified, limiting comparison of some trends over time. The survey was published using Vovici survey software, and was linkable through a URL address posted on the Bike Coop website and printed on the survey fliers and posters.

SURVEY DISTRIBUTION

Unlike the student and employee transportation surveys, which seek to attain a sample population that is representative of the campus-wide population, the bike survey specifically targets bike commuters, including PSU students, faculty and staff; non-PSU employees who work in the University District; and visitors to the University District.

The survey was available online between May 18 and May 29, and several efforts were made to encourage bike commuters to take the survey. The primary notification effort was flyering all bikes parked on campus during peak classroom hours on two weekdays, an effort carried out in conjunction with the bike count. Additional efforts to notify bike commuters of the survey included: hanging posters around campus, distributing flyers at weekly biker breakfasts, posting a link to the survey on the PSU Bicycle Cooperative website, and sending a broadcast email with the survey link to all Bike Coop members.

BIKE PARKING INVENTORY & BIKE COUNT

Staff members conducted a count of all bikes parked on campus during two segments of peak classroom hours between 12:30 p.m. and 1:45 p.m. on Monday, May 18, and Thursday, May 21. The weather on both days was clear, with no precipitation and higher than average temperatures (81 degrees on Monday and 74 degrees on Thursday). Days with good weather were deliberately selected for the bike count in order to evaluate peak demand for bike parking. Since most classes are on Monday and Wednesday or Tuesday and Thursday, one day from each group was chosen for the count. Staff members observed 760 parked bikes on Monday and 824 bikes on Thursday. Some bikes were observed during Thursday's count that still had flyers attached from Monday's count.

Respondent Makeup

RESPONSE RATE

A total of 199 unique responses were recorded by the online survey, making the sample slightly smaller than that of the 2008 survey (227) but larger than that of the 2007 survey (143). As shown in *Figure I*, the overwhelming majority of respondents (80%) heard about the survey through a flyer attached to their bikes.

A response rate was calculated by dividing the total number of respondents who heard about the survey via a flyer attached to a bike or an email by the total estimated number of people contacted via email or flyers.* Based on this calculation, the response rate was 11%, compared with 17% in 2008. However, due to the assumptions built into this calculation (the estimated total people contacted), the likelihood for error is high.

DEMOGRAPHICS

The makeup of respondents was similar to past surveys. PSU students comprised the majority of respondents (67%), followed by City of Portland employees (11%), PSU staff (8%) and PSU faculty (6%).

Consistent with past surveys, the majority of survey respondents (65%) were male. Additionally, the percentage of female respondents decreased from 40% in 2008 to 31% in 2009 (4% of 2009 respondents were "other" or declined to answer the question). The average age of survey respondents was 32.2, and the age distribution of respondents is shown in *Table I*.

COMFORT LEVEL

Respondents were asked to rate their comfort level as cyclists, as shown in *Figure II*. Compared to 2008 respondents, more 2009 respondents described themselves as "comfortable, semi-regular/ seasonal riders" (27% in 2009 compared to 20% in 2008), while fewer respondents described themselves as "confident, frequent riders" (66% in 2009 compared to 73% in 2008). This may indicate that more new cyclists are starting to commute on an occasional and semi-regular basis, but the number of riders transitioning to being confident, all-weather riders is showing slower growth. Bike respondents who described themselves as "beginner; just starting out" comprised 7% of respondents in both 2008 and 2009.

Figure I. **Survey Notification Methods**

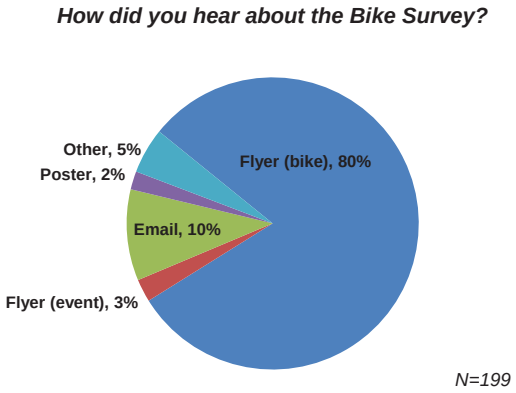
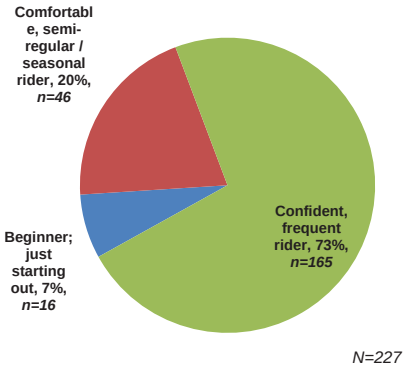


Table I. **Respondents by Age Range**

Age	n	%
20 and under	16	8%
21-25	46	23%
26-30	48	24%
31-35	33	17%
36-40	16	8%
41-45	12	6%
46-50	10	5%
51-55	10	5%
56-60	5	3%
Over 60	3	2%
Total	**199**	**100%**

Figure II. **Respondents by Comfort Level**



* An adjustment was made to account for the estimated overlap of those people who both received an email from the bike coop and found a flyer tagged on their bike.

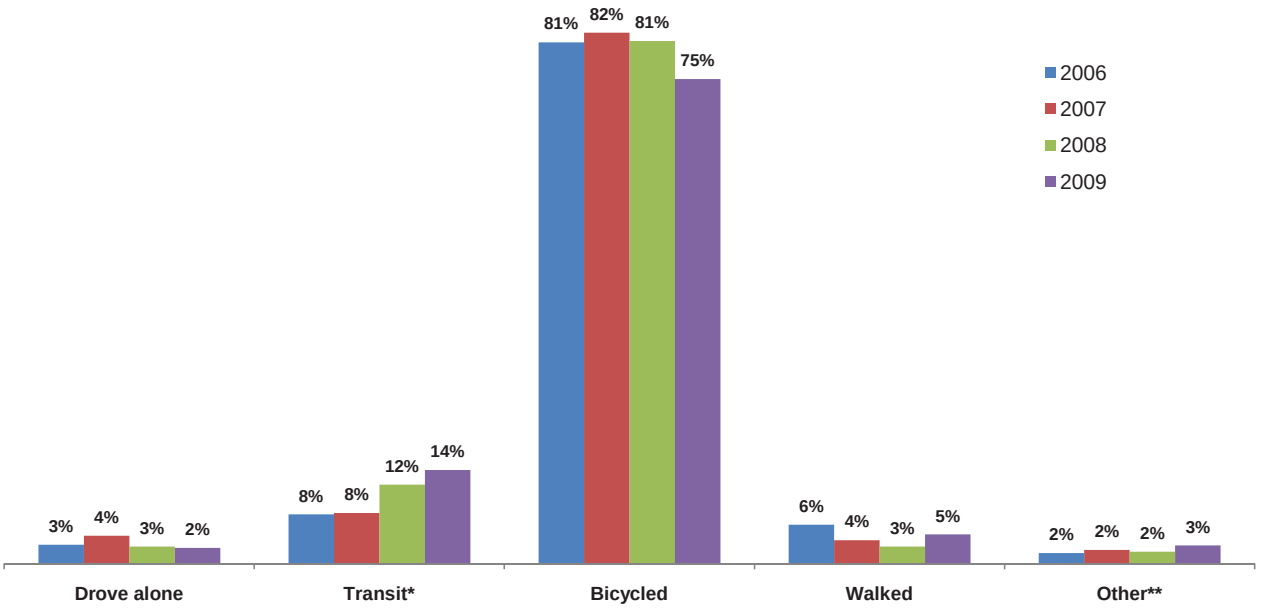
Mode Split

MODE SPLIT FOR ALL TRIPS IN THE WEEK PRIOR TO THE SURVEY

The 199 survey respondents took a total of 927 commute trips to campus in the week prior to the survey, averaging 4.67 commute trips per respondent. Bicycling trips comprised 695 (75%) of these trips, or an average of 3.5 bike commutes per respondent in the survey week. *Figure III* shows the mode split for bike survey respondents between 2006 and 2009. Since 2007, Bike Survey results have indicated an increase in the number of transit trips taken by respondents and a decrease in the overall mode share for bicycling. This may reflect the growing proportion of riders who are "semi-regular" rather than "frequent" riders and who are more inclined to take transit than bike on a rainy day.

Figure III. **Mode Split for Bike Survey Respondents, 2006-2009**

How did you travel to PSU each day LAST WEEK? [If you used more than one method, mark the one in which you traveled the farthest]

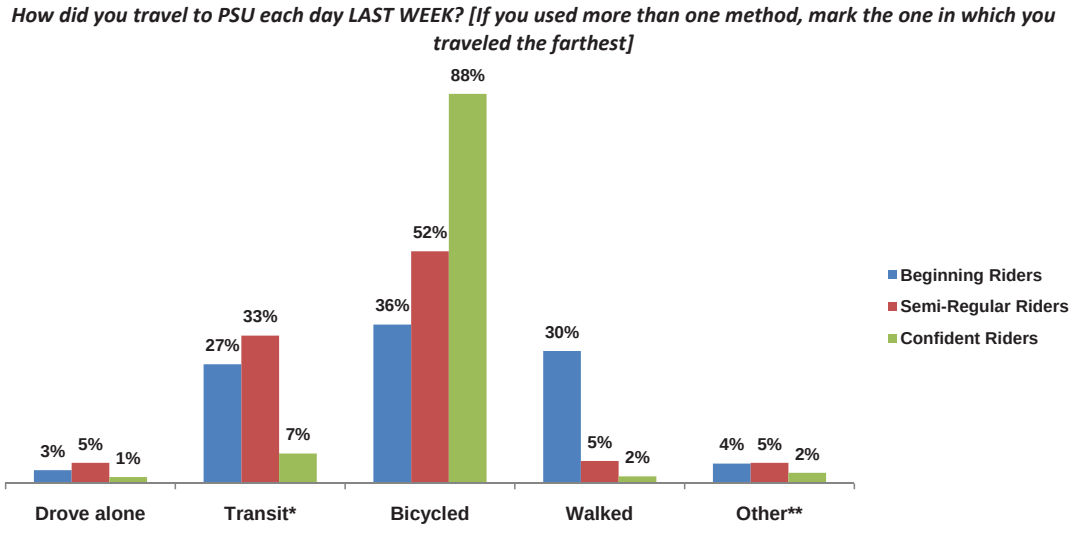


*Transit = Rode bus, MAX or Portland Streetcar
**Other = Motorcycled, carpooled, dropped off, or other

Mode Split

Figure IV shows the mode split for trips according to respondent comfort level. Predictably, the percentage of trips made by bicycle is incrementally higher among cyclists' with higher comfort levels.

Figure IV. **Mode Split by Comfort Level**

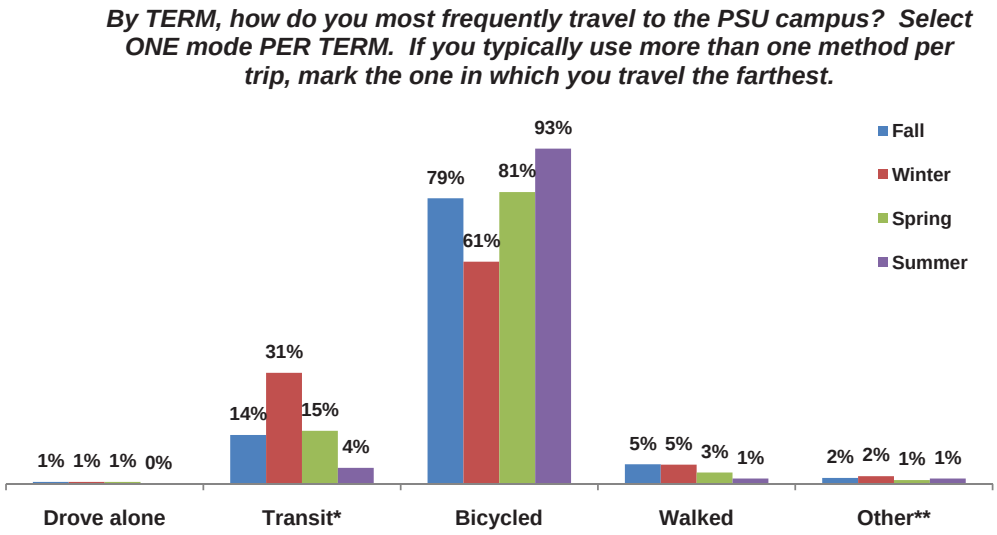


*Transit = Rode bus, MAX or Portland Streetcar
**Other = Motorcycled, carpooled, dropped off, or other

MODE SPLIT BY TERM

Figure V shows the primary mode reported by cyclists for each term, while *Figures VI*, *VII*, and *VIII* show the primary mode by term for cyclists in each comfort level. Unsurprisingly, transit use is far higher in the winter and slightly higher in the fall than in the spring and summer, and the tendency to bike during days of inclement weather is higher among more experienced, confident cyclists.

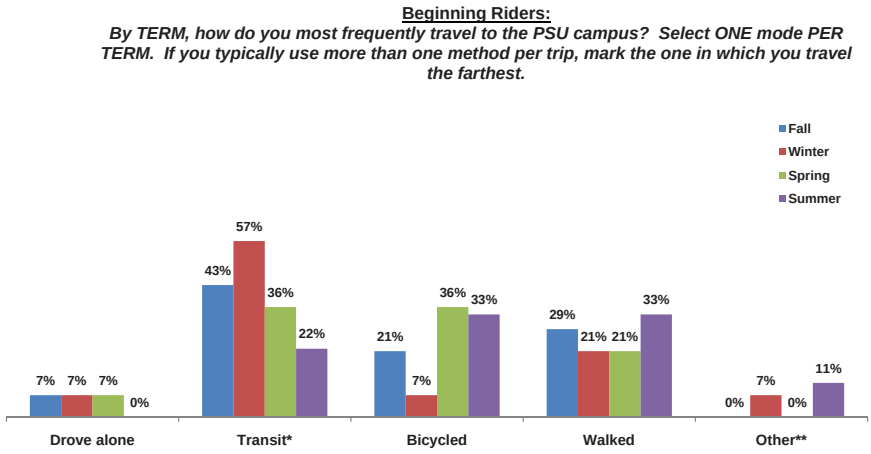
Figure V. **Mode Split by Term**



*Transit = Rode bus, MAX or Portland Streetcar
**Other = Motorcycled, carpooled, dropped off, or other

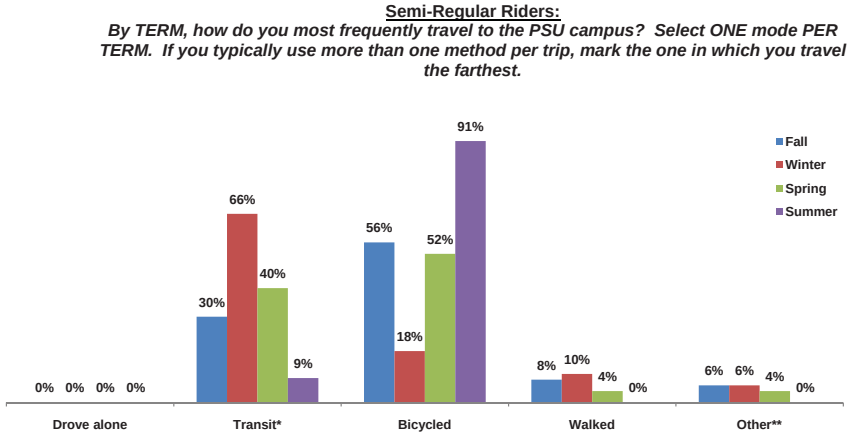
Mode Split

Figure VI. Mode Split by Term for Beginning Riders



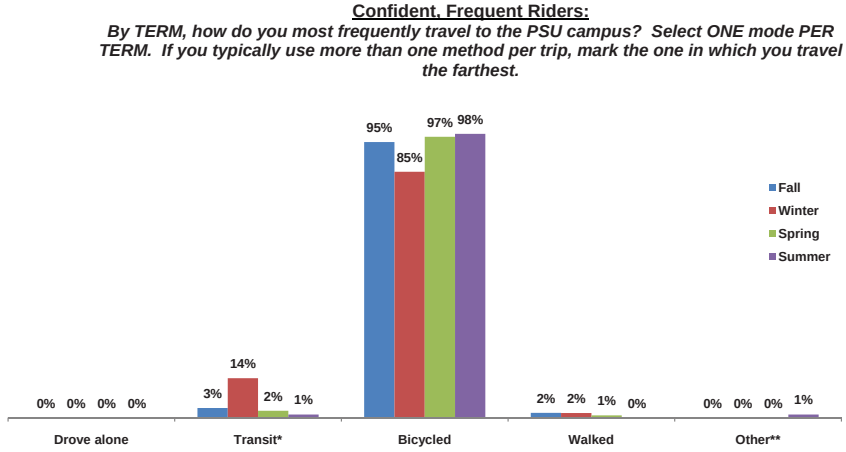
*Transit = Rode bus, MAX or Portland Streetcar
**Other = Motorcycled, carpooled, dropped off, or other

Figure VII. Mode Split by Term for Semi-Regular Riders



*Transit = Rode bus, MAX or Portland Streetcar
**Other = Motorcycled, carpooled, dropped off, or other

Figure VIII. Mode Split by Term for Confident, Frequent Riders



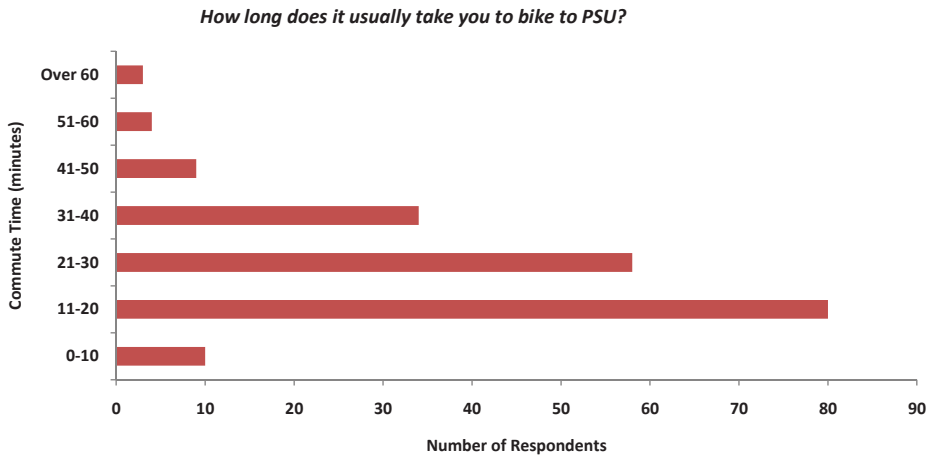
*Transit = Rode bus, MAX or Portland Streetcar
**Other = Motorcycled, carpooled, dropped off, or other

Commute Patterns

COMMUTE TIMES

Figure IX shows the range of bike commute times for all respondents.

Figure IX. **Bike Commute Time**



RESPONDENT LOCATIONS

Figure X shows the location of respondents. A total of 161 respondents are represented in the map. Five respondents were located outside of Oregon, and 32 respondents did not provide an address. Approximately 33% of respondents live within 2 miles of campus, and 90% live within 5 miles of campus, with Smith Union being used as the point location for campus. The majority of respondents lived on the inner East side.

BIKE-TRANSIT CONNECTIONS

Of the 136 respondents who have ever biked to a bus, MAX or streetcar stop, 95% reported that they usually brought their bike on board, while 5% usually parked it at the transit stop. However, respondents who ride to a transit stop may be under-represented in the survey sample due to the fact that the primary notification for the survey was to tag flyers to bikes parked on campus.

Commute Patterns

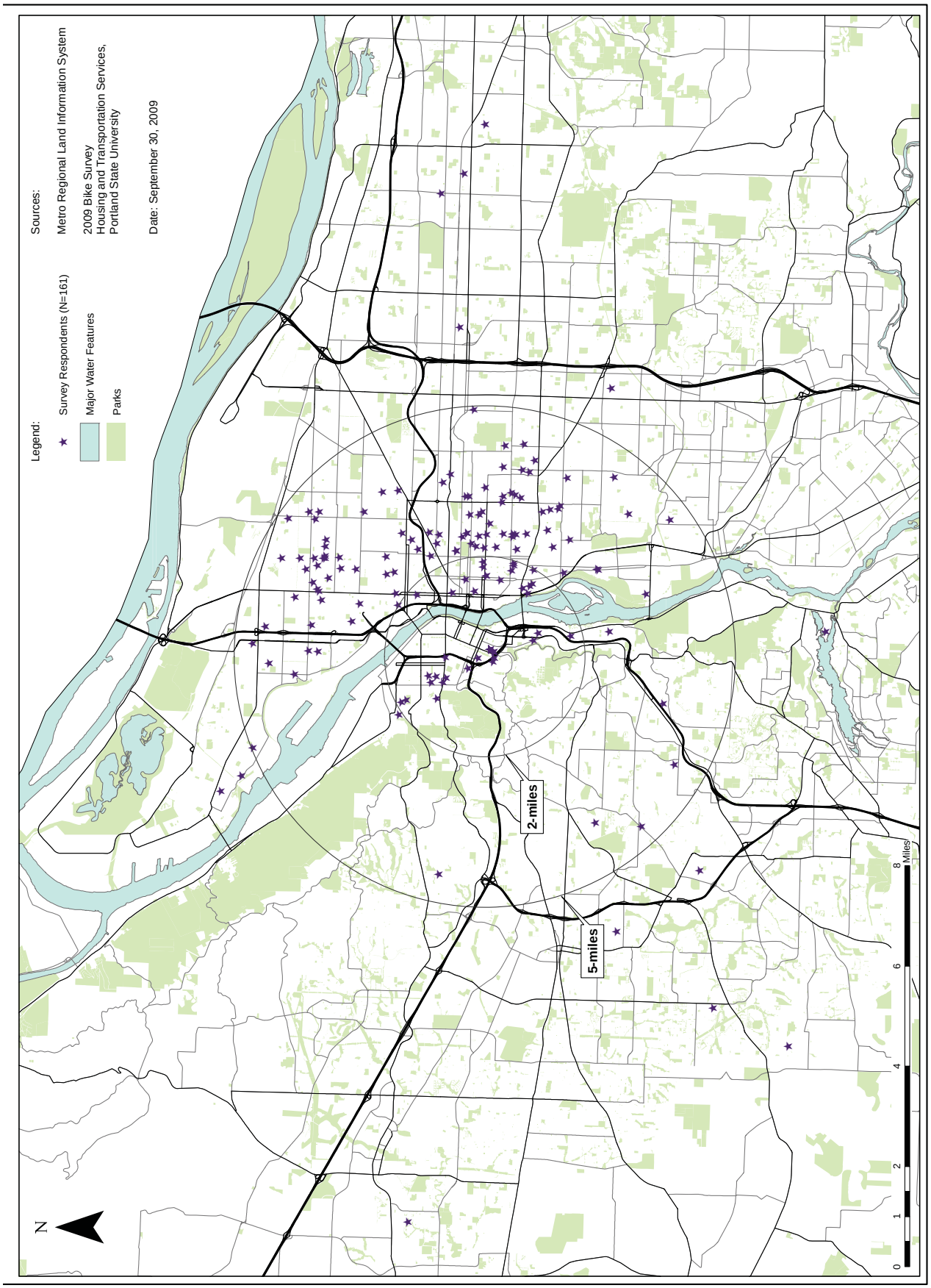


Figure X. **Bike Survey Respondent Locations**

Motivations, Perceptions & Concerns

OVERALL PERCEPTIONS & CONCERNS

The survey included several questions regarding motivations, perceptions and concerns related to biking to campus. *Figures XI*, *XII*, *XIII* and *XIV* show the results of these questions. All of these questions instructed respondents to choose up to three responses to each question, with additional space for open-ended comments, some of which are highlighted beside the graphs.

Figure XI. **Motivation for Bike Commuting**

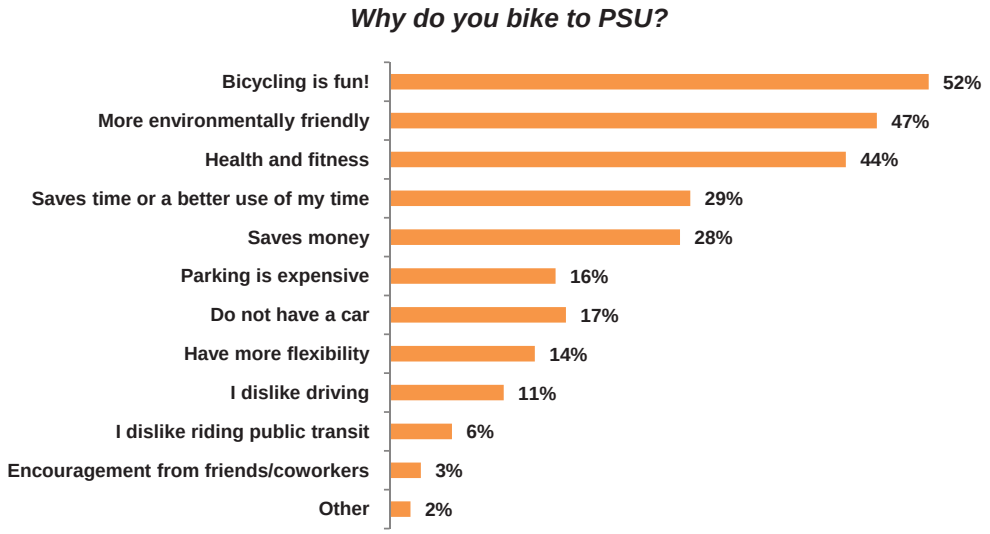
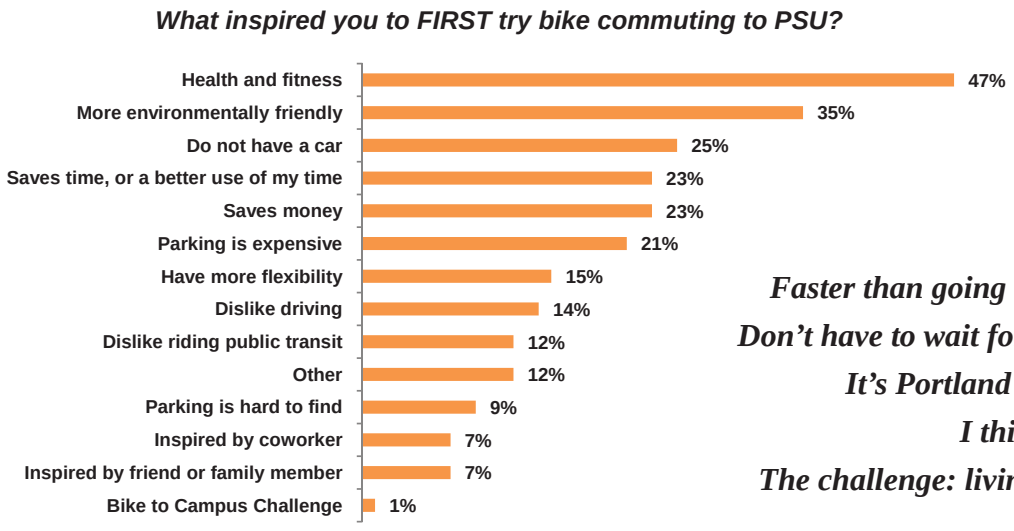


Figure XII. **Initial Inspiration for Bike Commuting**



Faster than going by foot.

Don't have to wait for bus transfers.

It's Portland culture.

I think boys who bike are cuties.

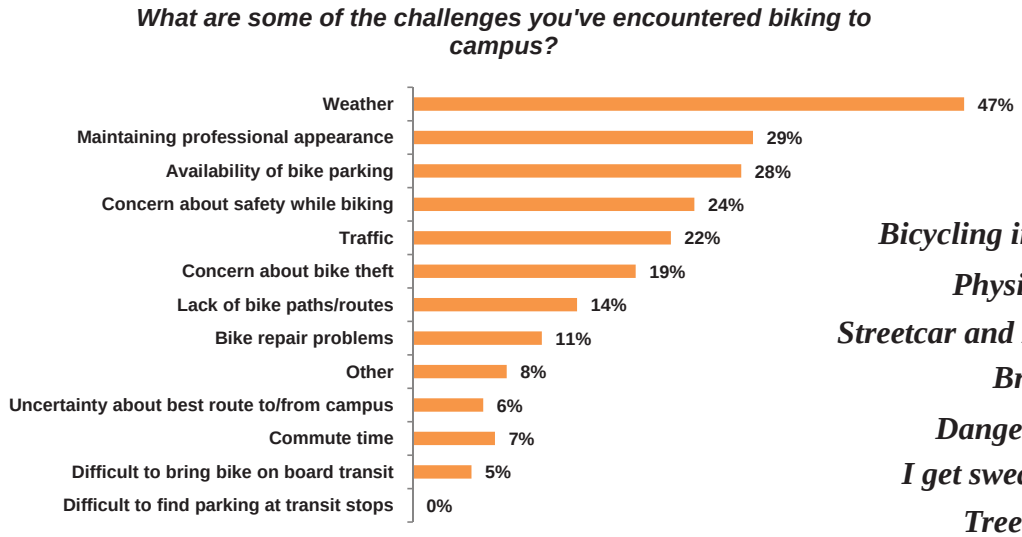
The challenge: living car-free.

Car broke down.

Transferred to PSU for bike friendliness.

Motivations, Perceptions & Concerns

Figure XIII. **Challenges of Biking to Campus**



Bicycling in winter night peak traffic.

Physical stamina...too tired to work.

Streetcar and MAX rails are dangerous.

Broadway hotel zone hazards.

Dangerous drivers; door zone.

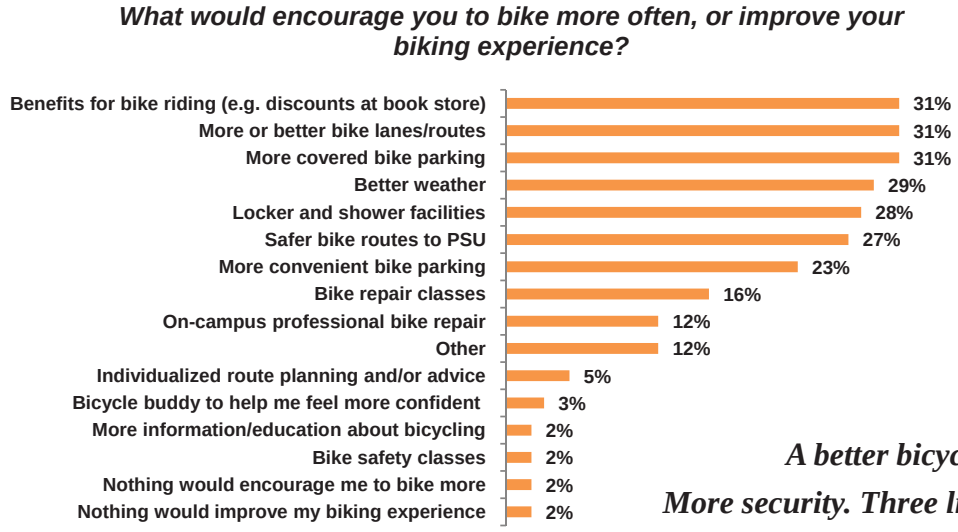
I get sweaty.

Tree debris in the road and the air.

Hauling schoolbooks.

Limited dry space to park on campus.

Figure XIV. **Encouragement for Bike Commuting**



A better bicycle.

More security. Three lights stolen.

Fewer cars on the road. Eliminating parking.

Lighting on Terwiliger.

Designated bike boulevards.

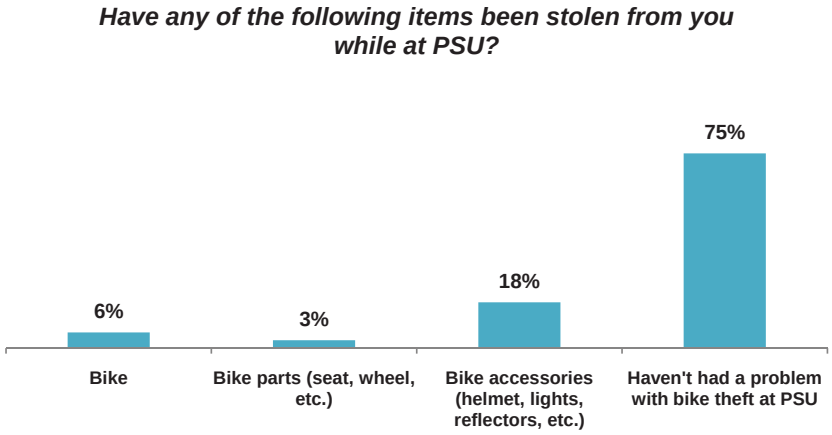
Money to purchase rain gear for winter.

Motivations, Perceptions & Concerns

EXPERIENCES WITH THEFT

A new question was added to the 2009 survey to assess respondents' experiences with bike theft in the University District. As shown in *Figure XV*, 6% of respondents have had a bike stolen while at PSU, and 18% have had bike accessories stolen. The question did not ask how recently respondents had experienced bike-related theft, what time of day/week the theft occurred or where it occurred. Future surveys could examine such issues to gain a greater understanding of when and where theft occurs.

Figure XV. **Experiences with Bike-Related Theft**



INSPIRATION, MOTIVATION AND ENCOURAGEMENT

The main sources of inspiration for respondents to start commuting by bike were health and fitness and environmental consciousness. Motivations for continuing to bike were similar, although "bicycling is fun!" was cited as the most common motivation, while health/fitness and the environment were also important. In terms of how PSU could improve the bike commuting experience, respondents called for incentives such as reduced locker room fees, free snacks and drinks, a Flexpass equivalent for bike commuters, and deals on helmets, lights and fenders. They also called for bike lane improvements and more covered bike parking.

A moderate number of respondents said that the availability of bike repair classes (16%) or on-campus professional repair (12%) would encourage them to bike more. However, other possible Bike Co-op services -- such as safety classes, a bicycle buddy program, and more information -- were not rated highly as things that would encourage respondents to bike more.

CHALLENGES FOR BIKE COMMUTERS

Weather, maintaining a professional appearance, and availability of bike parking were the top three challenges respondents cited for biking to campus. While it is clear that bike commuters are also transit riders, survey respondents do not seem view bike-transit connections as a challenge to biking to campus. However, commuters who park their bikes at transit stops and take transit for the final leg of their commute trip may be under-represented in the survey sample due to the fact that the primary method of publicizing the survey was flyering bikes parked on campus.

Bike Parking

BIKE PARKING CAPACITY

At any given time, some bike parking may be temporarily closed due to construction. During the survey weeks, construction along the west edge of Smith and Neuberger and in other areas eliminated some bike parking capacity; a total of 581 racks were counted on campus that week. Based on an average occupancy of two bikes per staple rack, and varied capacity for other types of bike parking furnishings, the estimated bike parking capacity in the survey week was 1,129.

BIKE RACK OCCUPANCY

The total bikes locked to bike parking facilities was 719 on the first day of the count and 762 on the second day of the count, for an overall average occupancy of 66%. In addition to these bikes, several bikes were observed locked to objects other than bike racks, such as light posts or fences. The total bikes lock to something other than a bike parking facility was 41 on the first day of the count and 62 on the second day of the count. *Appendix B* provides the full results of the bike parking inventory and bike counts. Most significantly, results of the bike count suggest that the areas of campus with the most bike parking capacity continue to be over-capacity, despite the availability of underutilized bike parking nearby. Highlights from the bike count include:

- Cramer Hall and Smith Memorial Student Union were both observed to be over-capacity (108% and 101% of capacity, respectively) during the bike count, with several staple racks observed to have three or four bikes locked to them. The loading dock inside the Fourth Avenue Building was also estimated to be about 53% over-capacity.

- Construction projects were present that limited the usual capacity in some high-demand bike parking locations. This may have contributed to the bike parking near Cramer Hall and Smith Union being over-capacity during the bike count.

- Many of the most highly utilized bike parking areas also seem to be the places with the most bike parking capacity, such as the Urban Plaza and the locations between Cramer and Smith Union. This trend could reflect either the fact that bike parking supply has not kept up with demand, or it could reflect the tendency of cyclists to head to the areas with the greatest number of bike racks, regardless of whether or not these locations are closest to their final destination, thus increasing the demand for parking exponentially for areas considered to be bike parking hubs.

Bike Parking

BIKE PARKING PERCEPTIONS

The spaces between Smith Memorial and Neuberger Hall and between Cramer and Lincoln Hall were identified as the places where respondents most frequently have trouble finding parking, as shown in *Figure XVI*. These two areas have more bike parking than any other location on campus, but were still observed to be at or over capacity during the two-day bike count. Additional comments regarding bike parking are shown in *Figure XVII*.

Figure XVI. **Locations where respondents have trouble finding bike parking**

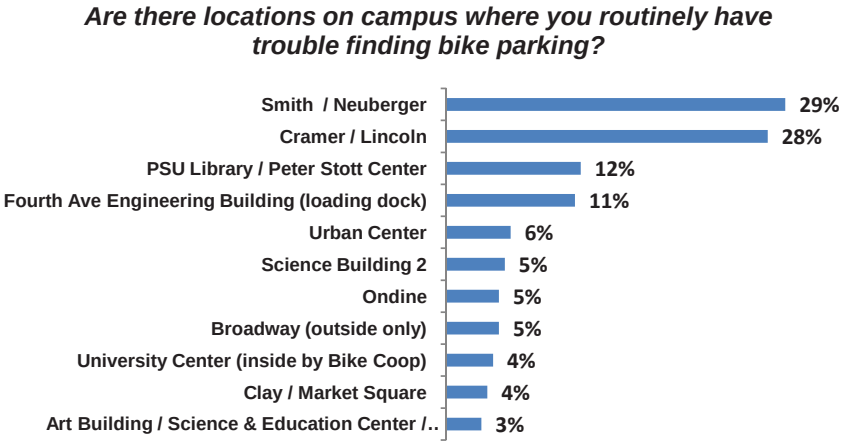


Table II. **Comments related to bike parking.**

# Comments	Themes
17	More covered parking
9	More parking in the FAB garage
2	More indoor parking
2	More bike parking near Cramer/Smith/Neuberger
2	Consider alternatives to staples that are a more efficient use of space
1	Permission to take bike inside buildings if parking isn't available
1	PSU students shouldn't park inside the FAB garage
1	Many people come early to the FAB garage in order to be assured of bike parking
1	More bike parking at Clay
1	More bike parking near Extended Studies building
1	More lighting by bike parking
1	More parking in heavily trafficked areas (safer from theft)
1	More parking in the MCB garage
1	Need bike parking for the Sixth Ave. Building
1	Don't spend money on expensive racks; more staples are fine

Table III. Perceptions and experiences related to bike parking locations

Respondents' Usual Bike Parking Location	n	%	*Spacing between bike racks (sufficient room)*	*Always enough bike parking at this location.*	*My bike is safe from damage at this location.*	*My bike is safe from theft at this location.*	*This parking is close to the place(s) I need to go.*	*Overall, I have a positive impression of this parking.*
Art Building / Science & Education Center / Unitus: Outside	3	2%	4.0	3.3	3.0	2.7	4.7	3.7
Broadway: Outside	5	3%	4.0	2.8	3.0	2.6	4.4	3.6
Clay / Market Square	3	2%	4.0	2.0	3.0	2.7	4.7	3.0
Cramer / Lincoln	38	20%	3.6	2.4	3.1	3.1	4.4	3.5
East Hall	1	1%	3.6	2.4	3.1	3.1	4.4	3.5
Fourth Ave Building: Inside at the Loading Dock	25	13%	3.6	2.4	3.2	3.1	4.4	3.5
Fourth Ave Building: Outside	15	8%	3.6	2.3	3.2	3.1	4.5	3.4
Harder House / XSB / Parkway: Outside	4	2%	3.8	2.8	3.0	3.5	4.5	4.3
Helen Gordon	1	1%	4.0	3.0	3.8	3.8	4.5	4.3
Hoffman Hall / Epler Hall / King Albert	1	1%	4.0	3.5	3.5	3.5	4.5	4.0
Market Center Building: Inside in the Garage	7	4%	3.4	3.4	4.3	4.3	5.0	4.4
PSU Library / Peter Stott Center	9	5%	4.3	2.8	3.3	3.3	4.7	3.8
Ondine	2	1%	4.5	2.5	2.0	2.0	4.0	3.5
Schools of Business Administration / Education	6	3%	4.3	4.2	3.7	3.5	4.5	4.0
Science Building 1 / Stratford	2	1%	2.5	2.5	2.5	3.0	4.0	3.0
Science Building 2	10	5%	3.7	2.5	2.7	2.9	4.5	3.4
Shattuck	5	3%	4.2	3.4	3.6	3.0	4.8	4.0
Smith Union / Neuberger Hall	28	15%	3.9	2.6	3.2	3.3	4.4	3.6
University Center: Inside by Bike Co-op	4	2%	3.0	3.0	3.5	3.0	4.0	4.0
University Center: Outside	7	4%	3.9	2.3	3.7	3.6	4.9	4.0
Urban Center	16	8%	3.5	3.0	3.8	3.4	4.4	4.1
Overall	**192**	**100%**	**3.8**	**2.8**	**3.2**	**3.2**	**4.5**	**3.7**

Key	
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

Limitations

SURVEY LIMITATIONS

The biggest limitation of the bicycle survey is that its sample population is small. Commuters who only bike occasionally or who did not bike to PSU during the two days that bikes were tagged with flyers in May, as well as commuters who park their bikes at transit stops, are probably under-represented in the survey sample.

Another limitation is created by the Vovici survey technology, which does not enable administrators to limit the number of options selected by respondents to a given question. Although respondents were asked to list their primary mode (the mode by which they traveled the farthest) for each day and term, many respondents selected multiple modes for days of the week and for the term. In these cases, respondents were either assigned a primary mode based on an assumption about which mode was their primary mode, or their responses were eliminated altogether from that portion of the analysis. Additionally, for the motivational questions, respondents were instructed to select "no more than three" options; however, many respondents selected more than three options. For this reason, data was cleaned on a question-by-question basis, to eliminate responses that didn't comply with the survey instructions.

Finally, the designers of future bike surveys may want to reconsider the value of having a long list of options for the questions regarding motivations and concerns. For some questions in the 2009 survey, the options presented were not all mutually exclusive, and several options were similar to other options. Having similar options causes a diffusion of responses that may skew the results to favor those options that are the most individually distinct. For example, in response to the question, "What inspired you to FIRST try bike commuting to PSU?" the options "health and fitness" and "more environmentally friendly" -- the most commonly selected options for that question -- were also the options that were the most individually distinct. Other options contained more similarity; for example, "saves money" and "parking is expensive" are not mutually exclusive choices. While having many options allows for understanding the specific details of people's motivations and perceptions as bike commuters, limiting respondents to three options skews the results. There are a variety of ways this could be addressed in future surveys:

- limit the number of options to ensure mutual exclusivity
- allow respondents to select all options that apply
- have respondents rate the importance of all factors on a scale of 1 to 5

BIKE COUNT LIMITATIONS

The bike parking inventory is not easily compared between years due to changes in the area covered. In order to ensure comparability of surveys between years, it is recommended that all blocks within the University District be included in the bike count, regardless of whether or not they are owned by PSU.

Recommendations for Action

INTEGRATED BIKE AND TRANSIT OPTIONS

The bike surveys from 2007 to 2009 have shown steady increases in transit ridership among bike survey respondents. This trend suggests the importance of integrated planning for bike commuting and transit, such as advocating for increased bike capacity on transit vehicles or providing a discounted limited-ride TriMet pass for bike commuters who want to use transit as their secondary commute mode. However, it is unclear from the survey results whether or not bike parking availability at transit stops is a motivating factor in encouraging bike commuting.

BIKE COOP

Several respondents commented that the Co-op is a major asset and that they were glad it was moving into a bigger space. Based on survey results, it is recommended that the Co-op offer more repair classes and services when it moves into its new location and expands. Additionally, the Co-op could benefit from additional marketing presence to ensure that bike commuters are aware of its presence.

BIKE PARKING

Similar to past surveys, the central locations surrounding Cramer Hall, Smith Memorial Student Union and Neuberger Hall were identified as the top locations where more bike parking is needed. Some of these areas are reaching capacity for traditional bike parking facilities, such as staple racks. In these locations, it is recommended that alternative parking structures, or indoor parking facilities, be considered.

However, the presence of underutilized parking within a one-block radius of these areas could also suggest a lack of awareness of other parking spaces. It is recommended that signage be added to those areas with the highest demand to direct people to additional bike parking.

Providing additional indoor parking could also help to encourage increased bike commuting by providing a more secure bike parking option. Given that 25% of respondents have had some experience with bike theft and that the Fourth Avenue Building's loading dock (the primary secure access location surveyed) is over-capacity, secure access parking is clearly an area that could be improved. In addition to increasing secure access parking, deterrence of bike theft should be more heavily prioritized as a function of campus public safety operations.

BIKE ROUTES

Finally, bike routes and traffic safety concerns were a major theme throughout the survey results. It is recommended that PSU strongly encourage the City of Portland to establish or improve the following routes leading to and from the PSU campus:

- Create a new off-street path connecting Waterfront Park at SW Clay to SW Harrison along the east side of Naito Parkway. Extend to SW Lincoln for connection to Milwaukie light rail transit (LRT) plan.
- Incorporate shared lane markings into SW Harrison between Naito Parkway and SW Broadway.
- Extend the Broadway Cycle Track pilot project to include all of Broadway from the Broadway Bridge through to PSU campus.
- Create a northbound cycle track on SW 4th from SW Lincoln to NW Everett.
- Re-orient the SW and NW Park Blocks to form a two-way, low-traffic bicycle boulevard.
- Extend the SW Main bike lane from SW 1st to SW Park.
- Ensure world-class bicycle connectivity from the PSU campus to the new Willamette River bridge called for in the Milwaukie LRT plan through improvements to SW Lincoln, SW Harrison, SW Naito, SW River Parkway and SW Moody
- Extend SW 12th bike lane from SW Jefferson to NW Lovejoy.
- Extend bike lanes on SW 4th and SW 6th fully across the I-405 overpass, and improve integration to the existing street system at SW Lincoln and SW Jackson.

Appendix A: Survey Instrument

PSU 2009 Bicycle Survey

If you commute to the PSU campus, or use PSU bicycle facilities, we want your feedback! Please complete this voluntary survey to help us learn more about cyclist choices and preferences. The survey will take about 3-5 minutes to complete. Your responses to survey questions will be kept confidential, but will be combined with other students' responses for analysis. Completing this survey acts as your consent to participate. Please complete the survey only once.

If you choose to include your contact information at the end of this survey, you will be entered in a raffle to win a roadside repair kit and a $25 gift certificate to the PSU Bicycle Coop!

If you have any questions about this survey, or how the results will be used, please contact Emily Lieb (elieb@pdx.edu) or Rani Boyle (iboyle@pdx.edu) at 503-725-9545. If you have questions regarding your rights as a research subject, please contact the Human Subjects Research Review Committee (HSRRC) at 503-725-4288.

The deadline for completing this survey is Friday, May 22.

1) How did you learn about the PSU Bicycle Survey? (Select one)

- ○ Flyer attached to bike
- ○ Flyer at event
- ○ Poster
- ○ Website
- ○ Email
- ○ Other (please specify)

If you selected other, please specify:

2) Please select the option that best describes your level of experience as a bike commuter:

- ○ Beginner, just starting out
- ○ Comfortable, semi-regular/seasonal rider
- ○ Confident, frequent rider

3) What are some of the challenges you've encountered with biking to campus? (Select up to THREE responses)

- ☐ Weather
- ☐ Maintaining professional appearance
- ☐ Concern about safety while biking
- ☐ Traffic
- ☐ Commute time
- ☐ Lack of bike paths/routes
- ☐ Uncertainty about best route to/from campus
- ☐ Concern about bike theft
- ☐ Bike repair problems
- ☐ Availability of bike parking
- ☐ Difficult to find parking at transit stops
- ☐ Difficult to bring bike on board transit
- ☐ Other (please specify)

If you selected other, please specify:

Appendix A: Survey Instrument

4) How did you travel to PSU each day LAST WEEK? [If you used more than one method, mark the one in which you traveled the farthest]

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Drove alone	☐	☐	☐	☐	☐	☐	☐
Motorcycle/Scooter	☐	☐	☐	☐	☐	☐	☐
Was Dropped off	☐	☐	☐	☐	☐	☐	☐
Carpool (two or more persons)	☐	☐	☐	☐	☐	☐	☐
Rode the Bus or MAX	☐	☐	☐	☐	☐	☐	☐
Rode Portland Streetcar	☐	☐	☐	☐	☐	☐	☐
Bicycled	☐	☐	☐	☐	☐	☐	☐
Walked	☐	☐	☐	☐	☐	☐	☐
Did not come to PSU this day	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐

5) By TERM, how do you most frequently travel to the PSU campus? Select ONE mode PER TERM. If you typically use more than one method per trip, mark the one in which you travel the farthest.

	Fall	Winter	Spring	Summer
Drove alone	☐	☐	☐	☐
Motorcycle/Scooter	☐	☐	☐	☐
Was Dropped off	☐	☐	☐	☐
Carpool (two or more persons)	☐	☐	☐	☐
Rode the Bus or MAX	☐	☐	☐	☐
Rode Portland Streetcar	☐	☐	☐	☐
Bicycled	☐	☐	☐	☐
Walked	☐	☐	☐	☐
Did not come to PSU this day	☐	☐	☐	☐
Other	☐	☐	☐	☐

6) If you ever BIKE to a BUS, MAX, or STREETCAR stop, what do you usually do with your bike?

- ○ Park it at the stop
- ○ Bring it on board

7) Why do you bike to PSU? (Select up to THREE responses)

- ☐ Do not have a car
- ☐ Saves time, or a better use of my time
- ☐ Bicycling is fun!
- ☐ I dislike driving
- ☐ I dislike riding public transit
- ☐ Health and fitness
- ☐ Have more flexibility
- ☐ Saves money
- ☐ Parking is expensive
- ☐ More environmentally friendly
- ☐ Encouragement from friends/coworkers
- ☐ Other (please specify)

If you selected other, please specify:

Appendix A: Survey Instrument

7) Why do you bike to PSU? (Select up to THREE responses)

- ☐ Do not have a car
- ☐ Saves time, or a better use of my time
- ☐ Bicycling is fun!
- ☐ I dislike driving
- ☐ I dislike riding public transit
- ☐ Health and fitness
- ☐ Have more flexibility
- ☐ Saves money
- ☐ Parking is expensive
- ☐ More environmentally friendly
- ☐ Encouragement from friends/coworkers
- ☐ Other (please specify)

If you selected other, please specify:

8) What inspired you to FIRST try bike commuting to PSU? (Select up to THREE responses)

- ☐ Do not have a car
- ☐ Saves time, or a better use of my time
- ☐ Dislike driving
- ☐ Dislike riding public transit
- ☐ Health and fitness
- ☐ Have more flexibility
- ☐ Saves money
- ☐ Parking is expensive
- ☐ Parking is hard to find
- ☐ More environmentally friendly
- ☐ Inspired by coworker
- ☐ Inspired by friend or family member
- ☐ Bike to Campus Challenge
- ☐ Other (please specify)

If you selected other, please specify:

9) What would encourage you to bike more often, or improve your biking experience? (Select up to THREE options)

- ☐ More information/education about bicycling
- ☐ Individualized route planning and/or advice
- ☐ More or better bike lanes/routes
- ☐ Safer bike routes to PSU
- ☐ Bike repair classes
- ☐ On-campus professional bike repair
- ☐ Bike safety classes
- ☐ More convenient bike parking
- ☐ More covered bike parking
- ☐ Secure indoor bike parking
- ☐ Benefits for bike riding (e.g. discounts at book store)
- ☐ Locker and shower facilities
- ☐ A bicycle buddy to help me feel more confident about biking
- ☐ Better weather
- ☐ Nothing would encourage me to bike more
- ☐ Nothing would improve my biking experience
- ☐ Other (please specify)

If you selected other, please specify:

10) How long does it usually take you to bike to PSU?

- ○ 10 minutes or less
- ○ 11-20 minutes
- ○ 21-30 minutes
- ○ 31-40 minutes
- ○ 41-50 minutes
- ○ 51-60 minutes
- ○ More than an hour
- ○ Other (please specify)

If you selected other, please specify:

11) What is the zip code of your residence?

5- Digit Zip Code Required
Format: 99999

Appendix A: Survey Instrument

12) Please choose the location where you usually park your bike:

- Art Building: Inside stairwell
- Art Building / Science & Education Center / Unitus: Outside
- Blackstone / Montgomery / Simon Benson: Bike Lockers
- Blackstone / Montgomery / Simon Benson: Outside
- Blumel Hall: Shelter
- Blumel Hall / St. Helens: Outside
- Broadway: Bike Lockers
- Broadway: Outside
- Clay / Market Square
- Cramer / Lincoln
- East Hall
- Fourth Ave Building / Engineering Building: Inside at the Loading Dock
- Fourth Ave Building / Engineering Building: Outside
- Harder House / XSB / Parkway: Bike Lockers
- Harder House / XSB / Parkway: Outside
- Helen Gordon
- Hoffman Hall / Epler Hall / King Albert
- Market Center Building: Inside in the Garage
- Market Center Building: Outside
- PSU Library / Peter Stott Center
- Native American Center
- Ondine
- Schools of Business Administration / Education
- Science Building 1 / Stratford
- Science Building 2
- Shattuck
- Smith Center / Neuberger Hall
- University Center: Inside by Bike Co-op
- University Center: Outside
- Parking Structure 2 / University Services / Koinonia
- Urban Center

13) The following statements refer to the location where you usually park your bike.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Spacing between bike racks allows sufficient room to lock my bike.					
There is always enough bike parking at this location.					
My bike is safe from damage at this location.					
My bike is safe from theft at this location.					
This bike parking is close to the place(s) I need to go.					
Overall, I have a positive impression of this bike parking.					

14) What are your primary concerns when you park your bike on campus? [Select up to THREE responses]

- Distance to final destination
- Availability of bike racks
- Ease of use
- Safety from damage
- Safety from theft
- Personal safety
- Whether bike rack is covered
- Whether bike parking area is well-lit
- Other (please specify)

If you selected other, please specify:

15) Have any of the following items been stolen from you while at PSU? (Select all that apply)

- Bike
- Bike parts (seat, wheel, etc.)
- Bike accessories (helmet, lights, reflectors, etc.)
- No, I haven't had a problem with bike theft at PSU

Appendix A: Survey Instrument

16) Are there locations on campus where you routinely have trouble finding bike parking? (Select all that apply)

- Art Building: Inside stairwell
- Art Building / Science & Education Center / Unitus: Outside
- Blackstone / Montgomery / Simon Benson: Bike Lockers
- Blackstone / Montgomery / Simon Benson: Outside
- Blumel Hall: Shelter
- Blumel Hall / St. Helens: Outside
- Broadway: Bike Lockers
- Broadway: Outside
- Clay / Market Square
- Cramer / Lincoln
- East Hall
- Fourth Ave Building / Engineering Building: Inside at the Loading Dock
- Fourth Ave Building / Engineering Building: Outside
- Harder House / XSB / Parkway: Bike Lockers
- Harder House / XSB / Parkway: Outside
- Helen Gordon
- Hoffman Hall / Epler Hall / King Albert
- Market Center Building: Inside in the Garage
- Market Center Building: Outside
- PSU Library / Peter Stott Center
- Native American Center
- Ondine
- Schools of Business Administration / Education
- Science Building 1 / Stratford
- Science Building 2
- Shattuck
- Smith Center / Neuberger Hall
- University Center: Inside by Bike Co-op
- University Center: Outside
- Parking Structure 2 / University Services / Koinonia
- Urban Center

17) Which best describes you?

- Faculty (PSU)
- Staff (PSU)
- Student (PSU)
- Visitor to PSU
- Staff of PSU tenant (eg. USGS, PacifiCorp, etc)
- City of Portland employee
- Other (please specify)

If you selected other, please specify:

18) What is your age?

19) What is your gender?

- Female
- Male
- Other
- Decline to respond

20) Do you have any suggestions/comments regarding bike commuting to PSU?

Appendix A: Survey Instrument

○ Decline to respond

20) Do you have any suggestions/comments regarding bike commuting to PSU?

21) Please provide your contact information in order to be eligible to win the raffle. [You will receive no solicitations from having responded to this survey]

Name	
Address Line 1	
Address Line 2	
City	
State	Format: XX
Zip Code (5 Digit)	Format: 99999

Join the Bike to Campus Challenge 2009! You will be directed to http://biketocampus.org/psu in 5 seconds!

Thank you for participating!

Appendix B: Bike Count Results

Block	Location	# Racks	Capacity	5/18/2009		5/21/2009		Average Occupancy
				Rack	Non-Rack	Rack	Non-Rack	
Art Building	Stairwell	1	3	0	0	1	0	17%
	East	0	0	NA	0	NA	0	NA
	South	0	0	NA	0	NA	0	NA
	West	4	8	7	0	6	3	81%
	total	***5***	***11***	***7***	***0***	***7***	***3***	***64%***
Blackstone / Montgomery Court / Simon Benson House	North	15	30	19	0	26	0	75%
	East	1	2	1	0	2	0	75%
	South	0	0	NA	0	NA	NA	NA
	West lockers*	38	38	NA	0	NA	NA	NA
	total	***16***	***32***	***20***	***0***	***28***	***0***	***75%***
Blumel Hall / St. Helen's	North	4	8	2	0	0	0	13%
	East	0	0	NA	0	NA	0	NA
	South	24	48	18	0	16	0	35%
	West	0	0	NA	0	NA	0	NA
	total	***28***	***56***	***20***	***0***	***16***	***0***	***32%***
Broadway Hall	North lockers	4	4	0	0	1	0	13%
	North	7	14	9	0	9	0	64%
	East	2	4	2	0	4	0	75%
	South	4	8	7	1	6	1	81%
	West	3	6	0	1	0	0	0%
	total	***20***	***36***	***18***	***2***	***20***	***1***	***53%***
Clay St. Building	North	0	0	NA	0	NA	0	NA
	East	2	4	3	0	4	2	88%
	South	0	0	NA	0	NA	0	NA
	West	2	4	4	0	1	0	63%
	total	***4***	***8***	***7***	***0***	***5***	***2***	***75%***
Cramer Hall	North	20	40	40	2	47	7	109%
	East	2	4	3	1	4	0	88%
	South	5	10	10	4	13	0	115%
	West	2	4	4	0	4	2	100%
	total	***29***	***58***	***57***	***7***	***68***	***9***	***108%***
Education & Business Building	North	14	28	11	0	10	0	38%
	East	12	24	7	0	4	0	23%
	South	2	4	4	0	2	3	75%
	West	8	16	8	0	8	0	50%
	total	***36***	***72***	***30***	***0***	***24***	***3***	***38%***
East Hall (Hot Lips, Cheerful Tortoise, etc.)	North	4	8	6	2	5	0	69%
	East	1	2	1	0	3	0	100%
	South	2	4	0	0	1	0	13%
	West	2	4	1	0	1	0	25%
	total	***9***	***18***	***8***	***2***	***10***	***0***	***50%***
Engineering Building	North	0	0	NA	0	NA	0	NA
	East	0	0	NA	0	NA	0	NA
	South	7	14	2	0	2	1	14%
	West	11	22	17	0	17	0	77%
	total	***18***	***36***	***19***	***0***	***19***	***1***	***53%***

Appendix B: Bike Count Results

Block	Location	# Racks	Capacity	5/18/2009		5/21/2009		Average Occupancy
				Rack	Non-Rack	Rack	Non-Rack	
Fourth Ave. Building / City Development Center	North	7	14	10	0	9	0	68%
	East	0	0	NA	0	NA	0	NA
	South	31	62	27	0	39	0	53%
	West	0	0	NA	0	NA	0	NA
	Loading Dock	27	34	54	0	50	0	153%
	total	***65***	***110***	***91***	***0***	***98***	***0***	***86%***
Harder House / XSB / Parkway	North	0	0	NA	0	NA	0	NA
	East	1	2	2	2	1	3	75%
	South	18	18	NA	0	NA	0	NA
	South	0	0	NA	0	NA	1	NA
	West	2	4	1	0	2	0	38%
	total	***3***	***6***	***3***	***2***	***3***	***4***	***50%***
Helen Gordon	North	1	2	2	1	1	0	75%
	East	1	2	1	0	1	0	50%
	South	0	0	NA	0	NA	3	NA
	West	0	0	NA	0	NA	0	NA
	total	***2***	***4***	***3***	***1***	***2***	***3***	***63%***
Hoffman Hall / Epler Hall / King Albert	North	4	8	1	1	3	0	25%
	East	12	24	3	0	8	0	23%
	South	0	0	NA	0	NA	0	NA
	West	0	0	NA	0	NA	0	NA
	total	***16***	***32***	***4***	***1***	***11***	***0***	***23%***
Ione Plaza	North	5	10	9	0	9	0	90%
	East	1	2	1	1	2	0	75%
	South	2	4	3	0	6	0	113%
	West	1	2	2	1	0	0	50%
	total	***9***	***18***	***15***	***2***	***17***	***0***	***89%***
Park Plaza Apartments / Research Greenhouse	North	1	2	0	0	0	0	0%
	East	2	4	1	0	1	0	25%
	South	0	0	NA	0	NA	0	NA
	West	0	0	NA	0	NA	0	NA
	total	***3***	***6***	***1***	***0***	***1***	***0***	***17%***
Parking Structure 1	Center	0	0	NA	0	NA	0	NA
	total	***0***	***0***	***NA***	***0***	***NA***	***0***	***NA***
Parking Structure 3	Center	0	0	NA	0	NA	0	NA
	total	***0***	***0***	***NA***	***0***	***NA***	***0***	***NA***
Peter Stott Center	North	18	36	14	0	16	0	42%
	East	4	8	7	0	5	0	75%
	South	0	0	NA	0	NA	0	NA
	West	0	0	NA	0	NA	0	NA
	total	***22***	***44***	***21***	***0***	***21***	***0***	***48%***
Science Building 1 / Stratford Hall	North	0	0	NA	0	NA	1	NA
	East	3	6	5	1	7	1	100%
	South	6	12	6	0	9	0	63%
	West	0	0	NA	0	NA	0	NA
	total	***9***	***18***	***11***	***1***	***16***	***2***	***75%***

Appendix B: Bike Count Results

Block	Location	# Racks	Capacity	5/18/2009		5/21/2009		Average Occupancy
				Rack	Non-Rack	Rack	Non-Rack	
Science Building 2	North	4	8	4	0	7	0	69%
	East	4	8	7	0	6	0	81%
	South	0	0	NA	0	NA	0	NA
	West	3	6	3	0	4	0	58%
	total	***11***	***22***	***14***	***0***	***17***	***0***	***70%***
Science & Education Center	North	3	6	0	0	0	0	0%
	East	1	2	0	0	1	0	25%
	South	0	0	NA	0	NA	0	NA
	West	0	0	NA	0	NA	0	NA
	total	***4***	***8***	***0***	***0***	***1***	***0***	***6%***
Shattuck Hall / CPSO	North	8	16	16	0	12	0	88%
	East	5	10	2	0	0	0	10%
	South	4	8	2	0	3	0	31%
	West	14	28	22	0	21	0	77%
	total	***31***	***62***	***42***	***0***	***36***	***0***	***63%***
Sixth Ave. Building	North	0	0	NA	0	NA	2	NA
	East	0	0	NA	9	NA	0	NA
	South	3	6	0	0	0	0	0%
	West	0	0	NA	2	NA	0	NA
	total	***3***	***6***	***0***	***11***	***0***	***2***	***0%***
Smith Center	North	31	62	62	0	69	0	106%
	East	4	8	3	0	8	1	69%
	South	0	0	NA	0	NA	0	NA
	West	0	0	NA	2	NA	0	NA
	total	***35***	***70***	***65***	***2***	***77***	***1***	***101%***
St. Mary's	North	0	0	NA	0	NA	0	NA
	East	2	4	3	0	1	0	50%
	South	0	0	NA	0	NA	0	NA
	West	2	4	0	0	0	0	0%
	total	***4***	***8***	***3***	***0***	***1***	***0***	***25%***
Student Recreation Center	North	0	0	NA	0	NA	0	NA
	East	0	0	NA	0	NA	0	NA
	South	0	0	NA	0	NA	0	NA
	West	0	0	NA	0	NA	0	NA
	total	***0***	***0***	***NA***	***0***	***NA***	***0***	***NA***
Unitus Building	North	0	0	NA	0	NA	0	NA
	East	0	0	NA	4	NA	8	NA
	South	2	4	4	0	0	0	50%
	West	0	0	NA	0	NA	0	NA
	total	***2***	***4***	***4***	***4***	***0***	***8***	***50%***
University Center Building	Bike Co-op	7	14	14	0	11	0	89%
	Bike Co-op	20	40	3	0	3	0	8%
	North	1	2	0	2	0	1	0%
	East	0	0	NA	0	NA	0	NA
	South	9	18	14	0	14	0	78%
	West	2	4	0	0	0	0	0%
	total	***39***	***78***	***31***	***2***	***28***	***1***	***38%***

Appendix B: Bike Count Results

Block	Location	# Racks	Capacity	5/18/2009		5/21/2009		Average Occupancy
				Rack	Non-Rack	Rack	Non-Rack	
University Place	North	2	4	0	0	1	1	13%
	South	0	0	NA	0	NA	0	NA
	East	0	0	NA	0	NA	0	NA
	West	0	0	NA	0	NA	0	NA
	total	***2***	***4***	***0***	***0***	***1***	***1***	***13%***
Urban Center	Bookstore	15	30	30	0	28	0	97%
	Pizzicato	6	12	12	0	11	0	96%
	Seattle's Best	7	14	12	0	12	0	86%
	North	4	8	4	0	5	1	56%
	total	***32***	***64***	***58***	***0***	***56***	***1***	***89%***
USB / PS2 / K-House	North	0	0	NA	0	NA	1	NA
	East	0	0	NA	2	NA	0	NA
	South	2	4	1	0	0	1	13%
	West	7	14	2	0	1	0	11%
	total	***9***	***18***	***3***	***2***	***1***	***2***	***11%***

*** Lockers were not counted**