

SR 520 Bridge Replacement and HOV Project Freeway Transit Station Usage Report



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FINAL

Study conducted by:

 **EnviroIssues**

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TABLE OF CONTENTS

TOPIC	PAGE NUMBER
Project Background	1
Purpose of Study	1
Methodology	2 - 4
Executive Summary	4 - 5
Key Findings: Montlake Freeway Transit Station	6 - 11
Key Findings: Evergreen Point Freeway Transit Station – Westbound	12 - 15
Key Findings: Evergreen Point Freeway Transit Station – Eastbound	16 - 18
Key Findings: 92 nd Avenue NE/Yarrow Point Freeway Transit Station	19 - 21
Appendix	22 - 29
CD Appendix	

Project Background

State Route 520, the longest floating bridge in the world, travels across Lake Washington from the cities of Kirkland, Bellevue, Hunts Point, Yarrow Point, Clyde Hill and Medina on the east side of the lake to Seattle on the west side. The bridge carries approximately 115,000 vehicles per day.

The Washington State Department of Transportation (WSDOT) has long recognized the need to replace the structure before it reaches its design life in 2020, and because of its vulnerability to seismic and storm damage. After thoroughly studying all options to cross Lake Washington in the Trans-Lake Washington Study, WSDOT determined that replacing SR 520 was the best option, launching the SR 520 Bridge Replacement and HOV Project.

During both the Trans-Lake study and now as the Bridge Replacement Project, WSDOT has been working with all of the jurisdictions within the SR 520 corridor to develop alternatives for the replacement of the facility, and has launched the environmental process to formally evaluate the three alternatives: no-build, 4-Lane, and 6-Lane. The 4-Lane alternative would essentially replace the facility in the configuration that exists today, while the 6-Lane alternative would add a designated HOV lane in each direction.

Project partners include Sound Transit and the Federal Highway Administration (FHWA). Both Sound Transit and King County Metro provide bus transit across the lake, and Sound Transit is also studying options for High Capacity Transit (HCT) across Lake Washington along both the I-90 and SR 520 corridors.

Purpose of Study

As part of the SR 520 Bridge Replacement and HOV Project, WSDOT and the transit providers, Sound Transit and King County Metro, determined that they needed to assess how current freeway transit stations were being utilized. This information—the origin and destination of transit riders—was identified as crucial information necessary to help the agencies evaluate the location and utility of freeway transit stations.

To meet this need, WSDOT conducted a survey of SR 520 freeway transit station users in order to understand the current usage of the Montlake, Evergreen Point, and 92nd Avenue Northeast freeway transit stations. The project team and its partners will use this data—and the conclusions that can be drawn from the data—to refine the alternatives for transit facilities and services within the corridor.

The project team conducted an Origin/Destination (O/D) survey to gather the data necessary to determine current travel patterns served by the existing freeway transit stations.

This report gives an overview of the methodology used for the study, summarizes the findings from the 790 surveys completed by transit users at the Montlake, Evergreen Point, and 92nd Avenue Northeast transit stops on April 28, 2005, and calls out key patterns culled from the data. While this report recognizes the need for additional evaluation, the information contained in the report allows the project team to understand the current usage at the freeway transit stations.

Methodology

In order to provide the most accurate information regarding the usage of the SR 520 freeway transit stations, and the origin and destination of these transit users, a number of field observations, review of existing data, and advanced planning for conducting the survey were imperative.

Bus Route Information

Prior to conducting the survey, an analysis of the bus routes and the frequency of those buses was completed to ensure that the survey results would include the largest number of transit riders. The following summarizes the bus routes, headway, and destinations of buses serving freeway transit station users in the SR 520 corridor:

Bus Route	Headway (minutes)			Destination
	am	mid-day	pm	
1°	15	20	15	Kinnear - Downtown Seattle
7°	10	10	10	Rainier Beach - Downtown Seattle
25	20-30	60	30	Laurelhurst - Montlake - Downtown Seattle
43	10-15	15	10	University District - Montlake - Downtown Seattle
44	10-15	15	10-15	Ballard - Wallingford - University District
48	6-15	15	10-15	Loyal Heights - University District - Columbia City
55°	10-20	30	10-20	Admiral District - Downtown Seattle
65°	15	30	15	Lake City - Wedgwood - University District
68°	15-20	30	15-30	Northgate - Maple Leaf - University District
75°	15-30	30	15-30	Ballard - Northgate - Lake City - University District
133°	3 trips	-----	4 trips	Burien - White Center - University District
205°	3 trips	-----	4 trips	S Mercer Island - University District
167	30	-----	30	Auburn P&R - Kent - Renton - University District
242	15-30	-----	30	North City - Northgate - Overlake
243	3 trips	-----	3 trips	Jackson Park - Montlake - Bellevue
250	30	-----	30	Redmond - Overlake - Downtown Seattle
252	30	-----	30	Kingsgate - Houghton - Downtown Seattle
255	15-30	30	10-20	Brickyard - Kingsgate - Kirkland - Downtown Seattle
256	30	-----	30	Overlake - S. Kirkland - Downtown Seattle
257	30	-----	30	Brickyard - Houghton - Downtown Seattle
260	3 trips	-----	3 trips	Finn Hill - Houghton - Downtown Seattle
261	30	-----	30	Overlake - Bellevue - Downtown Seattle
265	15-20	-----	15-20	Redmond - Houghton - Downtown Seattle
266	20	-----	20	Bear Creek - Redmond - Downtown Seattle
268	30	-----	30	Bear Creek P&R - Downtown Seattle
271	15	30	15	Issaquah - BCC - Bellevue - University District
272	30-60	60	30-60	Eastgate - Crossroad - University District
277	30	-----	30	Juanita - Houghton - University District
311	15-30	-----	15-30	Duvall - Woodinville - Downtown Seattle
424*	30	-----	30	Snohomish – Kingsgate – Montlake -Downtown
540*	15	30	15	Redmond - Kirkland - University District Express
545*	15	30	15	Redmond - Overlake - Downtown Seattle Express
555*	30	-----	30	Issaquah - Bellevue - Northgate Express
982	7:19 a.m.	-----	3:42 p.m.	University Prep, Lakeside School
986	7:24 a.m.	-----	3:42 p.m.	University Prep, Lakeside School

* Sound Transit service ° Route does not directly service station – route was part of trip

Field Observations

Two weeks prior to conducting the survey, field observations were made during all three mid-week peak periods using guidance of hourly boarding and alighting data provided by King County Metro. See Appendix A for boarding data. The observations helped determine the type of survey instrument needed, the hours and anticipated quantity of survey distribution, and overall freeway transit station usage.

Freeway Transit Stations Included in Survey

Based on information about the bus routes and the ridership numbers, surveys were collected at four freeway transit stations, which met the criteria of having at least seven station users per hour:

- Montlake (eastbound)
- Evergreen Point Road (westbound)
- Evergreen Point Road (eastbound)
- 92nd/ Yarrow Point (westbound)

Goal for Completed Surveys

Based on the ridership data that showed approximately 1,200 daily riders using the freeway stations in the SR 520 corridor on an average weekday, there was a goal to receive 340 completed surveys, or approximately 30%, for statistical significance.

By having posters at the transit stops during the week of the survey and by providing an incentive (\$3.00 coffee card) to participants, a total of 790 completed surveys were turned in. The surveys included Business Reply Mail as an option for freeway transit users in a hurry, which resulted in eighty-seven surveys being submitted through the mail.

Advance Notice of Survey

As noted above, there was a very high rate of participation in the survey, due in part to advance notice of the event, staff clearly identified with WSDOT vests, offering a clipboard with the survey to everyone who entered a freeway transit station, and by providing the coffee card incentive. It was also clear that transit riders care very much about transit service and want to help inform any changes that might be made.

Boarding Riders Surveyed

As a result of field observations, surveying only freeway transit station users boarding buses was selected over alighting, or exiting, passengers. This was in order to survey transit users waiting at the stations rather than those in route to their final destination. Using the assumption that most trips on the SR 520 corridor would be round trips, distributing surveys only to those boarding would still allow the majority of freeway transit station users an opportunity to participate in the survey.

Day and Times of Day

Based again on ridership data provided by King County Metro, the survey was conducted on one average weekday and included both peak and non-peak periods between 6 a.m. – 6 p.m. depending on the level of boardings each hour. Surveys were distributed during the following time periods:

- Montlake (eastbound): 6 a.m. – 6 p.m.
- Evergreen Point (westbound): 6 – 9:30 a.m., 3 – 6 p.m.
- Evergreen Point (eastbound): 3 – 6 p.m.
- 92nd/Yarrow Point (westbound): 6 – 9:30 a.m., 3:30 – 5:30 p.m.

Survey Instrument

A survey was developed that could be completed in less than three minutes to ensure that the greatest number of those waiting for buses were able to participate. It was also determined that the survey would be a self-administered tool rather than an interview—or intercept—survey. The survey instrument, included as Appendix B, was aimed at providing the most information about origin and destination, mode of travel to and from the flyer stops, and finally information about trip purpose and likes/dislikes about the freeway transit station environment.

Data Analysis

The survey instrument was developed to ensure that data entry could be efficiently and accurately accomplished and that the data could then be cross-tabulated in various ways to further understand the travel patterns of those using the SR 520 flyer stops. While there were initial cross-tabulations planned, as the data was further reviewed, additional cross tabulations were performed. The following lists the data cross-tabulations:

- All Data by Flyer Stop
- All Data by Flyer Stop by Boarding Direction by Time of Day by Mode of Access
- All Data by Flyer Stop by Mode of Access by Bus Route by Time of Day
- Origin Zip Code by Destination Zip Code
- Origin Zip Code by Origin City
- Destination Zip Code by Destination City

The first three data sorts are on the attached CD and the last three are included in the Appendix. In addition, base data is available on the CD appendix.

Missing Data

Missing Data was a category assigned to respondents that did not complete the question. It is important to note that all 790 surveys included in the study data met the requirement of over 80% completion.

Executive Summary

The survey data helps to clarify the current usage of freeway transit stations along the SR 520 corridor. It explores a number of important issues: Where are travelers going? Where did they come from? How did they arrive at the freeway transit station? How will they continue their trip at the end? The following section highlights the significant function for each freeway transit station.

- 1. The eastbound Montlake freeway transit station serves different user groups in the morning and afternoon peak periods.**
 - Morning boardings originated within City of Seattle neighborhoods and were headed for eastside destinations such as Microsoft as part of regular travel to/from work.
 - Afternoon boardings began in parts of Seattle, concentrating at the University of Washington, and were headed to the eastside as part of regular travel to/from the University of Washington.
- 2. The westbound Evergreen Point freeway transit station primarily functions as a transfer point.**

- Boardings were transferring from a number of bus routes for downtown Seattle-bound or University District-bound bus.
- 3. The eastbound Evergreen Point freeway transit station primarily functions as a transfer point.**
- Boardings originating in University District and Seattle transferred routes to access Kirkland and Redmond as their final destination.
- 4. The westbound 92nd/Yarrow Point freeway transit station serves three functions.**
- Boardings utilize the station to board school bus routes 982 and 986, to transfer to a different bus, or to board a downtown Seattle or University District bound bus.

In order to place the individual freeway transit stations in the context of those studied throughout the SR 520 corridor, the following exhibit helps to compare the mode of access across the four freeway transit stations studied. Arriving at the freeway transit stations by bus accounted for a high percentage of responses. Of the 339 total responses at Montlake in the morning, 197 --or 58%-- utilized a bus to access the Montlake freeway transit station. Similarly, at Evergreen Point westbound, 139 --or 76%-- of the 174 respondents relied upon bus as the mode of access. Other modes to access the stations included walking, biking, being dropped off or parking at a Park-and-Ride lot. It is important to note that some respondents identified using more than one mode to access the station.

Exhibit 1. Freeway Transit Station Mode of Access

MODE	Montlake A.M. (Eastbound)		Montlake P.M. (Eastbound)		Evergreen Pt. (Westbound)		Evergreen Pt. (Eastbound)		92 nd / Yarrow Pt.		Total
Bus	197	58%	140	58%	139	76%	36	95%	10	25%	522
Walked	52	15%	87	36%	12	7%	2	5%	7	18%	164
Biked	70	21%	9	4%	3	2%	0	0%	2	5%	84
Dropped Off	19	6%	5	2%	5	3%	0	0%	15	38%	44
Car/P & R	0	0%	0	0%	25	14%	0	0%	5	13%	34
Other	1	0%	2	1%	0	0%	0	0%	1	3%	4
Total	339	100%	243	100%	184	100%	38	100%	40	100%	852

Key Findings

Key findings for each of the four transit stations are described in the following sections. The data is summarized in three main categories that show the overall functionality of each station:

- Freeway Transit Station User Profile
- Freeway Transit Station Function
- Freeway Transit Station Environment

MONTLAKE FREEWAY TRANSIT STATION EASTBOUND



MONTLAKE FREEWAY TRANSIT STATION - EASTBOUND

This section represents data from 547 completed surveys of eastbound passenger boardings at the Montlake freeway transit station between 6 a.m. – 6 p.m.

Overview of Significant Findings

Eastbound boardings at the Montlake freeway transit station were highest during the morning and afternoon peak periods, while ten or more people an hour boarded during non-peak periods. The morning had slightly more users than the afternoon, with a peak between 8:30 and 9:30 a.m.

Those boarding in the *morning* generally were bound for Redmond, Kirkland, Bellevue and originated in the City of Seattle in neighborhoods such as Montlake, Capitol Hill, Fremont, University District, and Wedgewood/Ravenna. The most frequently cited trip purpose was regular travel to/from work (non-UW). Most morning users reached the Montlake freeway transit station via bus. Of those who accessed the station by bus, use of routes 43 and 48 was predominant.

Those boarding in the *afternoon* were generally bound for Redmond, Bellevue, and Kirkland, Woodinville and Bothell and mainly originated in the University District, with some trips beginning in Lake Union and parts of downtown Seattle. The most frequently cited trip purpose was regular travel to/from the University of Washington. Most afternoon users reached the Montlake freeway transit station via bus or walking. Of those who accessed the station by bus, use of routes 43, 48 and 271 was predominant.

Freeway Transit Station User Profile

To better understand the boardings at the Montlake freeway transit station, data sets will be explained to help illustrate patterns in user profile. Data is described below for the following categories: hourly boardings, trip purpose, the origin and destination of users, and directional travel patterns.

Exhibit 2. Hourly Boarding at the Montlake Freeway Transit Station-Eastbound

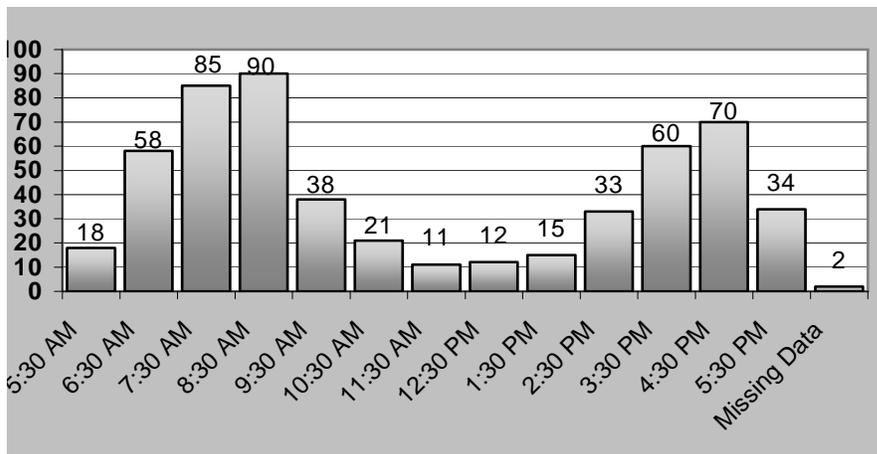


Exhibit 2 represents transit users boarding throughout the day. A peak in riders boarding at the Montlake freeway transit station occurred during typical peak travel hours between 6:30-9:30 a.m. and 3:30-6:30 p.m.

Ninety people --or 16%-- boarded the bus between 8:30 –9:30 a.m. Between 10:00 a.m. -

2:30 p.m., 92 respondents, or 17% of those surveyed throughout the entire day, boarded a bus at Montlake freeway transit station. In the afternoon peak period, it can be noted that an influx in travel began around 3:00 p.m., earlier than the standard 3:30 p.m. definition of peak afternoon travel.

Exhibit 3a. Trip Purpose of Montlake Freeway Transit Station Eastbound Morning Boardings

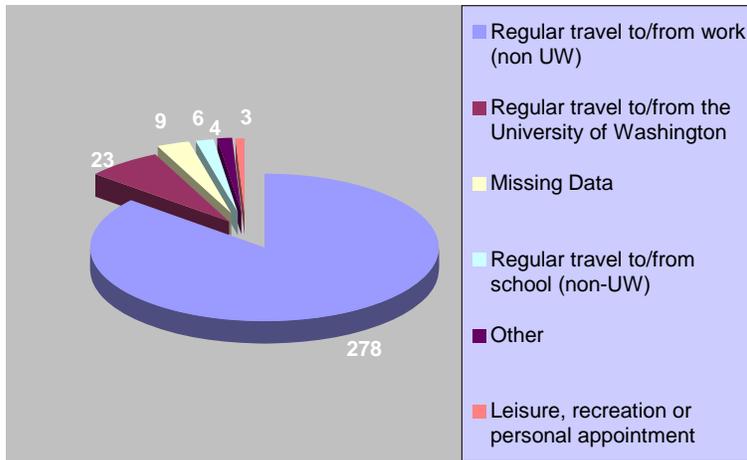


Exhibit 3a highlights the 322 respondents boarding at the freeway transit station in the morning. Of those, 278 boardings were as part of regular travel to/from work (non-University of Washington). This trip purpose accounted for 86% of travel using the Montlake freeway transit station in the morning. The next most frequent trip purpose was

as part of regular travel to/from the University of Washington, which represented 23 -- or 7% -- of boardings.

Exhibit 3b. Trip Purpose of Montlake Freeway Transit Station Eastbound Afternoon Boardings

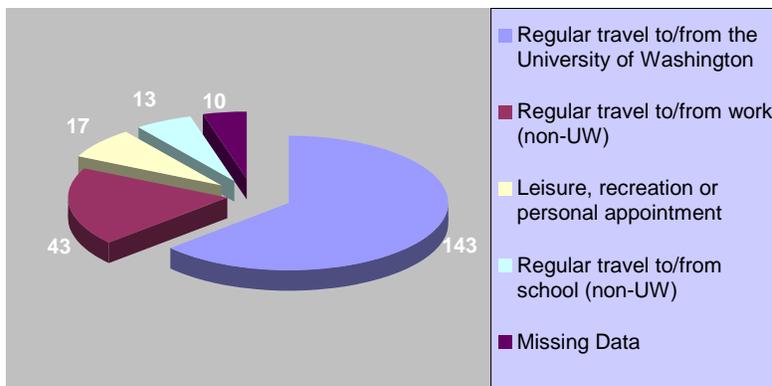


Exhibit 3b highlights the trip purpose for the 225 respondents that boarded buses at the freeway transit station in the afternoon. Of those, 143 --or 64%-- of afternoon transit users utilized the freeway transit station at Montlake as part of regular travel to/from the

University of Washington. Regular travel to/from work (non-UW) accounted for 43 responses-- or 19%-- of the total afternoon response. Leisure, recreation, personal appointment and other trip purposes accounted for 17 responses --or 8%-- of those users that answered this question. Afternoon boardings were identified as part of regular travel to/from school (non-UW) for 13 -- or 6% -- of those that answered this question. It is important to note that one respondent identified more than one purpose of their trip.

Origin and Destination Patterns of Montlake Freeway Transit Station Boardings

Of the 320 *morning* boardings, 297 began their trip within the City of Seattle to include the following areas: Montlake, Capitol Hill, Fremont, Wedgewood/Ravenna, and the University District. The majority -- or 69% -- of morning passengers were bound for the

Microsoft campus. In addition, a representative fraction was destined for Bellevue and Kirkland.

Of the 225 *afternoon* boardings, 185 began their trip in Seattle, with 73 originating at the University of Washington. See Appendix C for more origin and destination information.

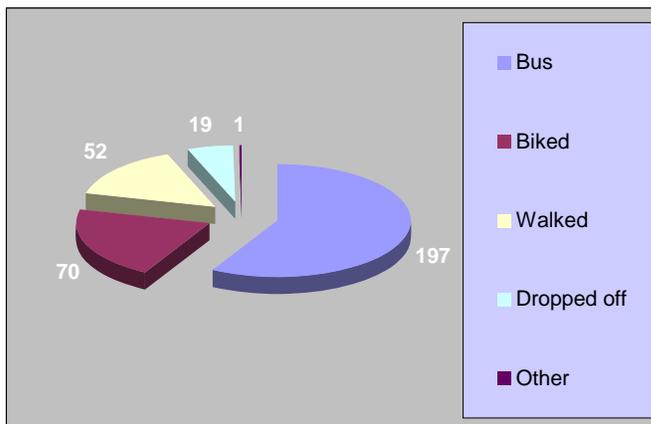
Directional Trip Patterns

Of the 547 total boardings, 437 utilized approximately the same route for their trip in the reverse direction. The remaining 86 respondents that answered this question identified they did not use approximately the same route for their reverse trip.

Freeway Transit Station Function

The function of the Montlake freeway transit station is represented through mode of access and egress to/from the transit station. The data collected for the mode of access/egress can be broken down further to include information about specific bus routes and park-and-ride usage and location.

Exhibit 4a. Morning Mode of Access to Freeway Transit Station



The mode of access in the morning to the Montlake freeway transit station is represented in Exhibit 4a to the left. This exhibit highlights the utilization of the freeway transit station as a transfer point for the 197, or 62%, of transit users accessing the station by bus. It is also important to note the 70 boardings that biked to this freeway station in the morning to board a bus. During preparation in the field, it was observed that

many bicyclists boarded buses only to traverse the lake and alighted immediately east of the floating bridge at the Evergreen Point freeway transit station. Bicycle/pedestrian access across the floating bridge will be included as part of the SR 520 Bridge Replacement and HOV Project, the number of bicyclists currently utilizing the freeway transit station may decline if they decide to bike across the lake. It is important to note that many respondents identified more than one mode of access to the station.

Exhibit 4b. Afternoon Mode of Access to the Montlake Freeway Transit Station

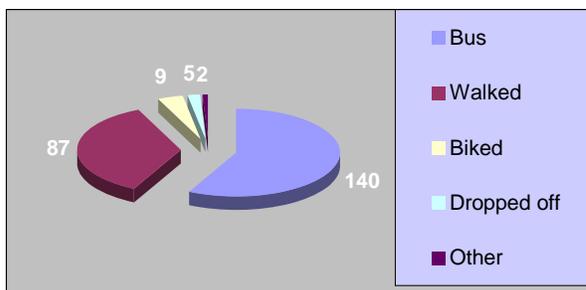


Exhibit 4b highlights the mode of access to the freeway transit station in the afternoon. Of the 225 respondents boarding in the afternoon, 140 -- or 62% -- accessed the station by bus. The next most frequent mode to access Montlake was by walking accounting for 87 -- or 39% -- of those that

answered this question. The remaining afternoon boardings access the station by bike or

were dropped off. It is important to note that some respondents identified more than one mode of access to the station.

Bus Routes Used to Access Montlake Freeway Transit Station - Eastbound

Approximately 30 bus routes were used to access the Montlake freeway transit station. Metro bus routes 43 and 48 were most frequently used in both the morning and afternoon to bring transit station users from locations such as Downtown Seattle, University District, and Loyal Heights. These buses were used with frequency of ten or greater riders throughout the peak periods, with a peak of 38 station users arriving on route number 48 between 7:30 and 9:30 a.m. Other buses used to access the freeway station include bus route 44 from Ballard and bus route 25 from Laurelhurst. Specific bus route data is included in Appendix D.

Exhibit 5a. Morning Mode of Egress to Final Destination

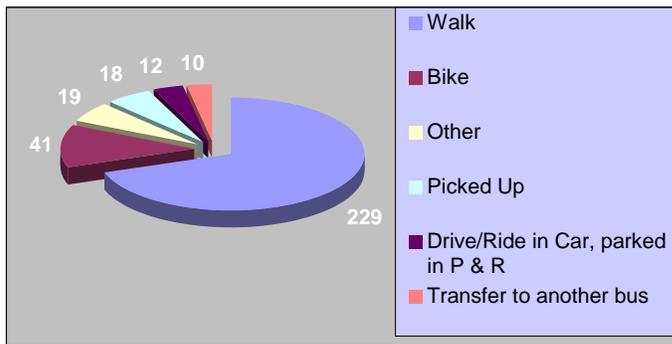


Exhibit 5a illustrates possible modes of egress to reach the final destination of those boarding at Montlake in the morning. After they exit the bus boarded at the Montlake freeway transit station, 229 respondents walk to their final destination. Another 41 transit users are reaching their final destination

by way of bike. 15 users are picked up in route to their selected destination. Transferring to another bus in order arrive at a final destination was selected by 10 users. It is important to note that many respondents identified more than one mode of egress to their final destination.

Exhibit 5b. Afternoon Mode of Egress to Final Destination

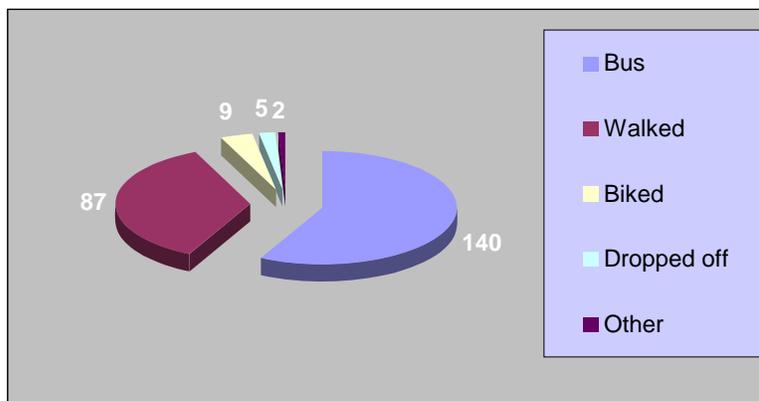


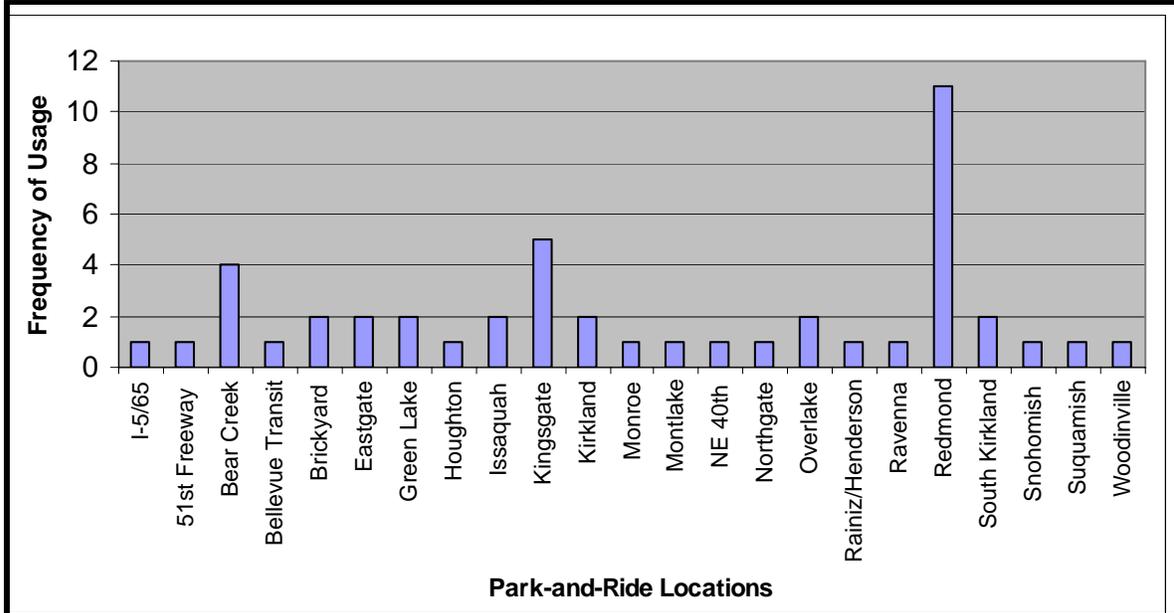
Exhibit 5b highlights the mode used by 225 afternoon boardings to reach their final destination. From the freeway transit station, 140 boardings reached their final destination by bus. Walking was the mode to final destination selected by 87

respondents. The remaining afternoon boardings biked or were dropped off in order reach their final destination. It is important to note that some respondents identified more than one mode of egress to their final destination.

Park-and-Ride Usage and Location

Of the 547 respondents surveyed at the Montlake freeway transit station, 62 boarded at a Park-and-Ride as part of accessing the station. Exhibit 6 below illustrates the usage of Park-and-Ride locations in the morning. The Redmond parking lot was the Park-and-Ride location most frequently used with 11 responses. Users also boarded at Bear Creek and Kingsgate with four and five responses respectively. Please note that only 47 respondents identified which Park-and-Ride location they utilized.

Exhibit 6. Park-and-Ride Location Usage



Freeway Transit Station Environment

Montlake freeway transit station users were asked to identify both positives and negatives of the freeway transit station. Exhibit 7 highlights the responses for the positive qualities. “Frequent service to my destination” was the most frequently selected positive quality of the station with 360 responses. In addition, “walking distance to my destination” was noted as a positive for the station with 224 responses. Other positive qualities of the Montlake freeway transit station included the opportunity to park bicycles, and fast and reliable service to destinations.

Exhibit 8 displays the negative qualities of the Montlake freeway transit station. The most frequent concern was the “waiting environment” with 172 responses. Noise levels, fumes, and size were all complaints included in this category. Another common complaint about the station was the need to stop there because no direct service was offered to the user’s final destination. Other negative qualities included the lack of bike storage, unpredictable bus delays, and the need for more frequent service on specific routes.

Exhibit 7. Positive Qualities of Montlake Freeway Transit Station - Eastbound

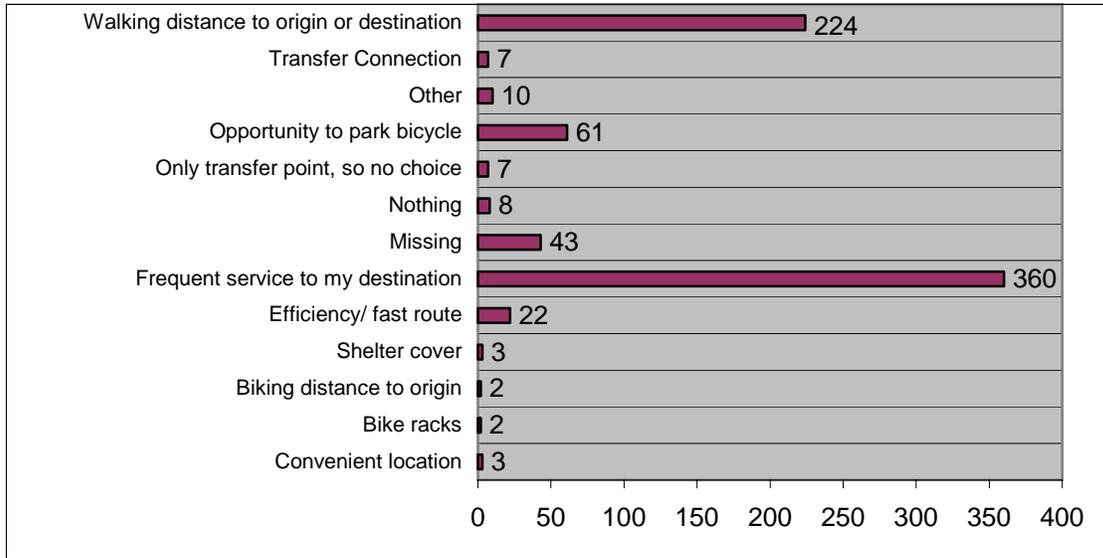
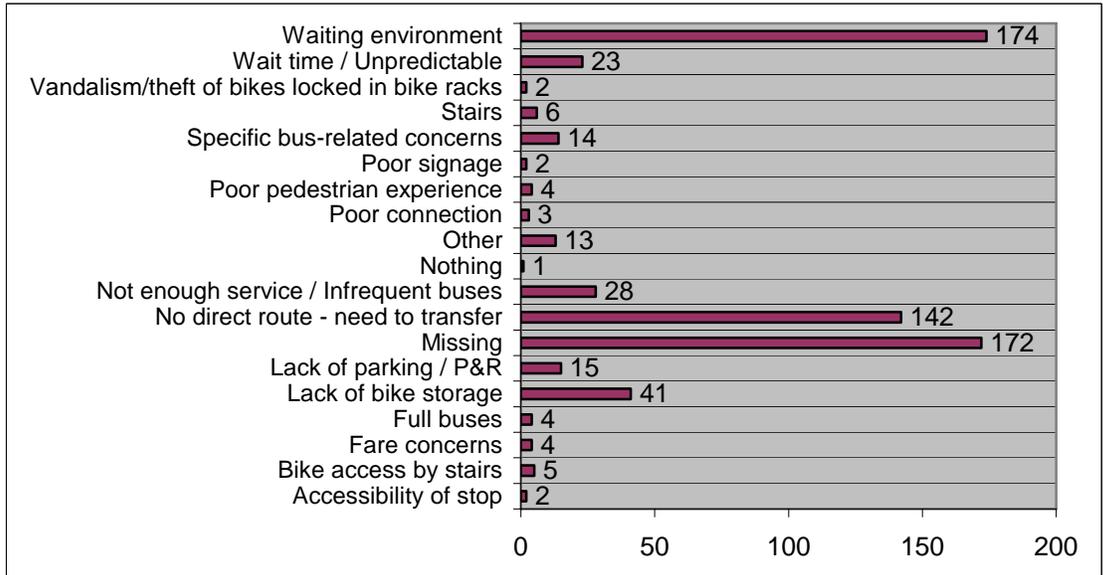


Exhibit 8. Negative Qualities of Montlake Freeway Transit Station - Eastbound



EVERGREEN POINT FREEWAY TRANSIT STATION WESTBOUND



EVERGREEN POINT FREEWAY TRANSIT STATION - WESTBOUND

This section represents data from 174 surveys completed of westbound passenger boardings at the Evergreen Point freeway transit station between 6 - 9:30 a.m. and 3 - 6 p.m.

Overview of Significant Findings

Westbound boardings at the Evergreen Point freeway transit station were highest in the morning peak period, specifically between 7:30 and 8:30 a.m.

Generally, those boarding were in route to Downtown Seattle or the University District. The most frequently cited purpose of their trip was as part of regular travel to/from the University of Washington. The station functions primarily as a transfer point. Of those who accessed the station by bus, use of the Route 311, 540 and 545 was predominant.

Freeway Transit Station User Profile

To better understand the users of the Evergreen Point freeway transit station, data sets are explained to help illustrate patterns in user profile. Data is described below for the following categories: hourly boarding, trip purpose, the origin and destination of users, and directional travel patterns.

Exhibit 9. Hourly Westbound Boarding at the Evergreen Point Freeway Transit Station

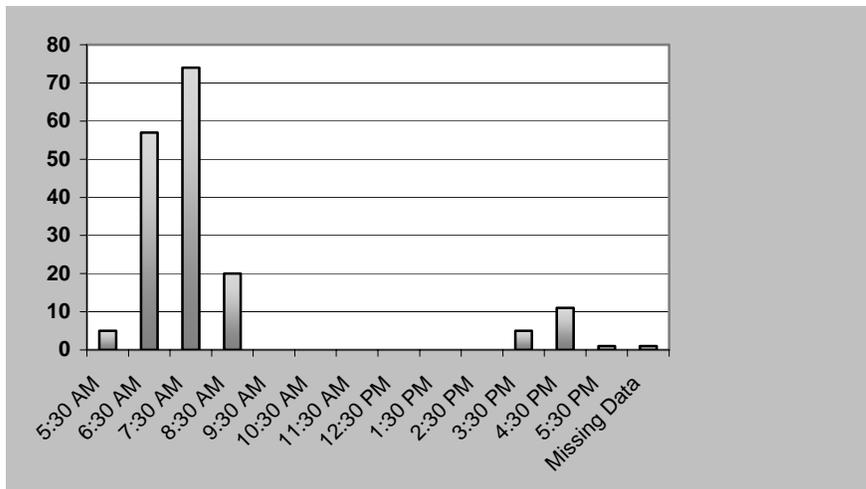


Exhibit 9 represents users boarding westbound at Evergreen Point by the hour between the surveys distribution from 6 – 9:30 a.m. and 3 – 6 p.m.. The morning peak occurs between 7:30 and 8:30 a.m., with 72

riders boarding. In the afternoon, travel patterns spike with 11 riders boarding in the four o'clock hour. According to Metro data and field observations, less than ten people per hour were recorded during non-peak periods, which did not result in survey distribution.

Exhibit 10. Trip Purpose of Evergreen Point Freeway Transit Station Boardings

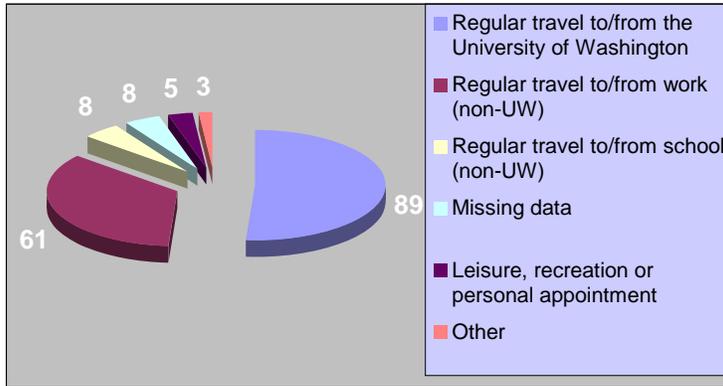


Exhibit 10 draws attention to the 89 respondents (51%) that utilized the Evergreen Point freeway transit station as part of regular travel to/from the University of Washington. Regular travel to/from work (non-UW) represented another 61 responses, or 35%, of the total trip purpose. Leisure, recreation or personal

appointments, and other purposes accounted for the remaining 9% of trip purpose.

Origin and Destination Patterns of Westbound Evergreen Point Freeway Transit Station Boardings

Of the 174 Evergreen Point freeway transit station users, a majority originated in the Redmond, Kirkland and Bellevue areas represented with 42, 33, and 32 responses respectively. Common destinations leaving the Evergreen Point freeway transit station included the University of Washington and Downtown Seattle. Origin and destination city and zip code information is available in Appendix E.

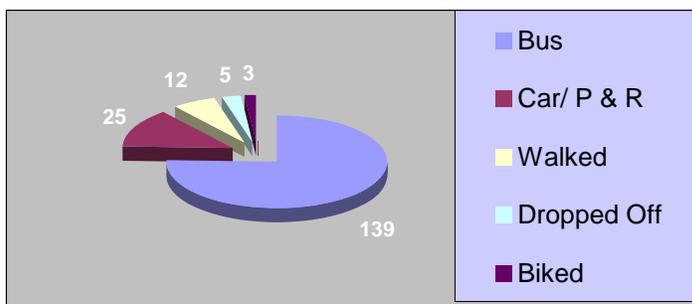
Directional Trip Patterns

Of the 174 respondents, 121 utilized approximately the same route for their trip in the reverse direction. The remaining 49 that answered this question stated they did not use approximately the same route for their reverse trip.

Freeway Station Function

The function of the Evergreen Point freeway transit station is represented through mode of access and egress to/from the freeway transit station. The data collected for the mode of access/egress can be broken down further to include information about specific bus routes and Park-and-Ride usage and location.

Exhibit 11. Mode of Access to Evergreen Point Freeway Transit Station



The mode of access is displayed in Exhibit 11. Of the 174 Evergreen Point freeway transit station transit users, 139 or 79% accessed the station by way of bus. During field observation, it was noted that riders would hurriedly transfer from one downtown Seattle-

bound bus to a University District-bound bus. The answer that included car/drove/park-and-ride was the next most frequent mode of access with 25 responses. This is likely correlated with the close proximity of the Evergreen Point Park-and-Ride. It was observed that those arriving at the station by walking were a combination of local

residents of Medina and a group of young students busing to University Prep and Lakeside School via Routes 982 and 986. It is important to note that some survey respondents identified having used more than one mode to access the freeway transit station.

Bus Routes Used to Access Evergreen Point Freeway Transit Station - Westbound
 Approximately 15 buses serve the Evergreen Point freeway transit station. Sound Transit bus routes 540, 545 and 311 were most frequently used to bring transit station users from locations such as Duvall, Woodinville, Redmond, Overlake and Kirkland. Collectively these buses accounted for 45 of the 156 morning transit station users. Additionally, a large percentage of freeway transit station users at Evergreen Point transferred from a combination of downtown Seattle bus routes to a University District-bound bus and vice-versa. See Appendix F for more bus route information.

Exhibit 12. Mode of Egress to Final Destination

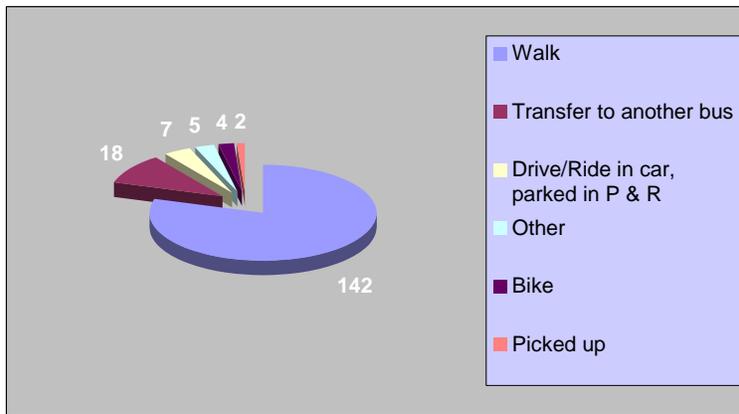


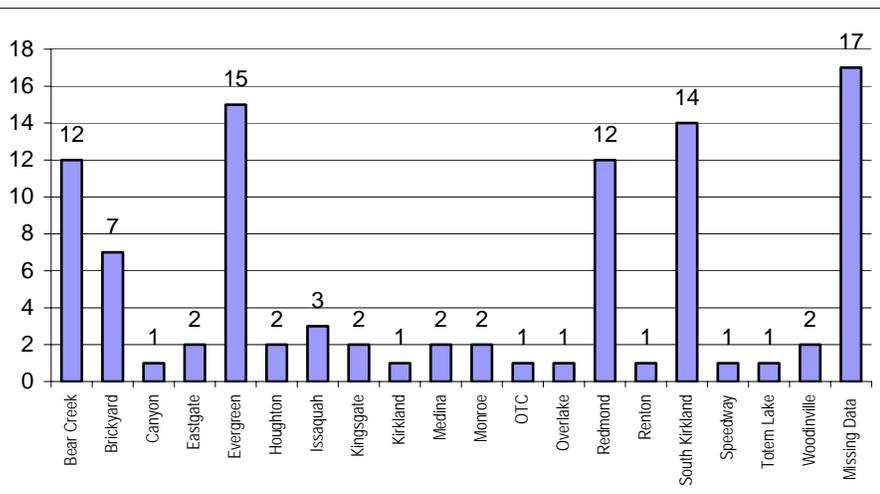
Exhibit 12 illustrates modes of egress to reach users' final destinations. After they exit the bus boarded at the Evergreen Point freeway transit station, 142 users walk to their final destination. Another 18 users transfer to another bus to reach their final destination. The remaining Evergreen Point

freeway transit users drive, bike, or are picked up. It is important to note that some respondents identified using more than one mode to reach their final destination.

Park-and-Ride Usage and Location

Of the 174 survey respondents at the Evergreen Point freeway transit station, 99 people, or 57%, relied on a Park-and-Ride at their origin in order to utilize the freeway transit station. Exhibit 13 below illustrates the usage of Park-and-Ride locations. Fifteen Evergreen Point freeway transit station users utilized the Evergreen Point Park-and-Ride located across the SR 520 Bridge from the westbound freeway transit station. Freeway station users also boarded buses at the South Kirkland, Redmond and Bear Creek Park-and-Rides.

Exhibit 13. Park-and-Ride Usage



Freeway Transit Station Environment

Evergreen Point freeway transit station users were asked to identify both positives and negatives of the freeway transit station. Exhibit 14 highlights the responses for the positive qualities noted by users. “Frequent service to my destination” was the most frequently selected positive quality of the station with 144 responses. In addition, 35 users of the Evergreen Point freeway transit station noted “walking distance to my origin or destination” as a positive quality. Other positives included the convenience of the station, adjacency of Park-and-Ride, and the frequent service to selected destinations.

Exhibit 15 displays the negative qualities of the Evergreen Point freeway transit station. The most frequent concern was the need to stop there because no direct service was offered to the user’s final destination. Another common complaint about the station was the “waiting environment” with 40 responses. Noise levels, fumes, and lack of seating were all complaints included in this category.

Exhibit 14. Positive Qualities of Evergreen Point Freeway Transit Station - Westbound

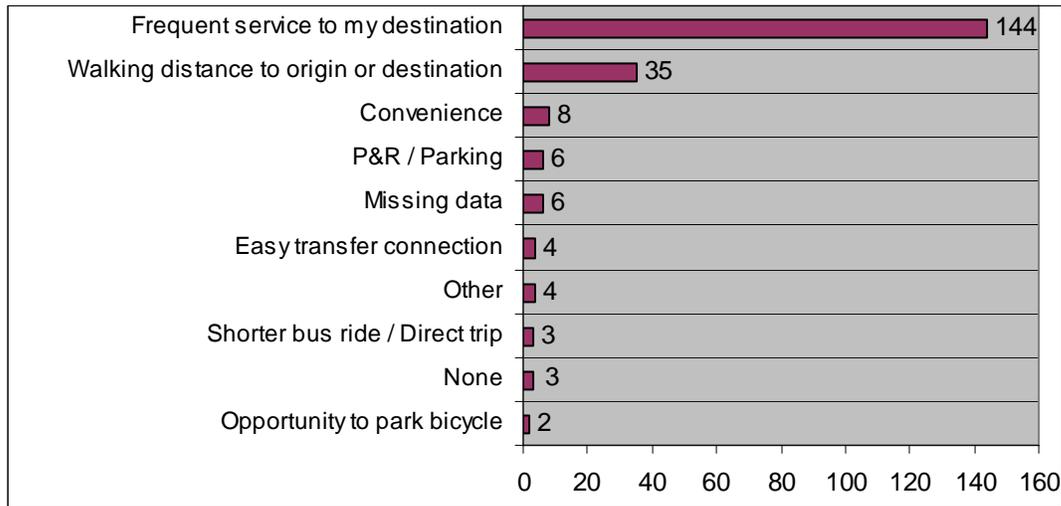
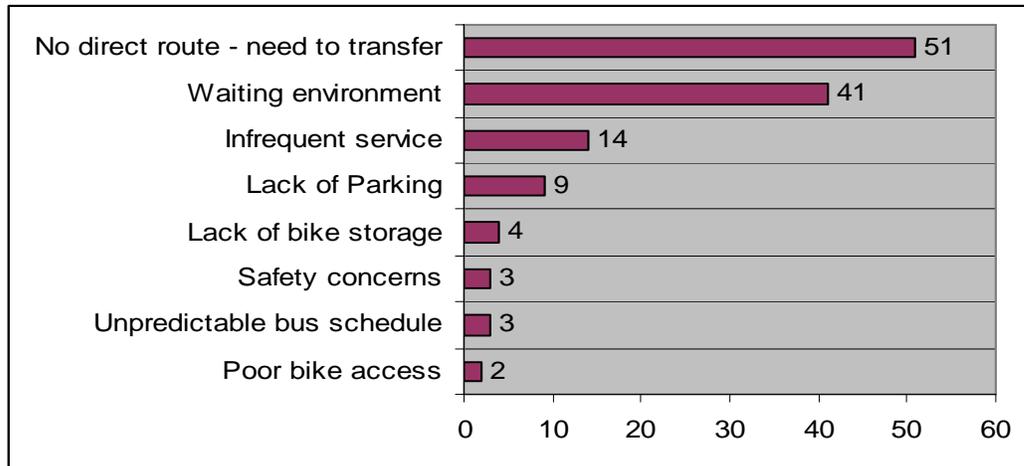


Exhibit 15. Negative Qualities of Evergreen Point Freeway Transit Station - Westbound



EVERGREEN POINT FREEWAY TRANSIT STATION EASTBOUND



EVERGREEN POINT FREEWAY TRANSIT STATION - EASTBOUND

This section represents data from 37 completed surveys gathered at the Evergreen Point freeway transit station eastbound between 3:30 – 6:00 p.m. on Thursday, April 28th.

Overview of Significant Findings

Eastbound boardings at the Evergreen Point freeway transit station were highest between 4:30 – 5:30 p.m.

Generally, those boarding at Evergreen Point freeway transit station accessed the freeway transit station via bus, highlighting the purpose as a transfer location.

More than half of eastbound boardings were part of regular travel to/from the University of Washington. Additionally, regular travel to/from work (non-University of Washington) was a common trip purpose, accounting for over a third of answers.

Freeway Transit Station User Profile

To better understand the users of the Evergreen Point freeway transit station, data sets are explained to help illustrate patterns in user profile. Data is described below for the following categories: hourly boardings, trip purpose, the origin and destination of users, and directional travel patterns.

Exhibit 16. Hourly Eastbound Boardings at the Evergreen Point Freeway Transit Station - Eastbound

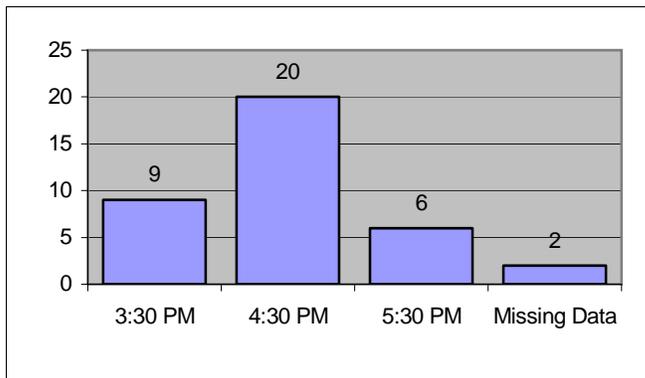


Exhibit 16, to the left, displays the frequency of travel within the afternoon peak hours surveyed. Of these afternoon peak transit station users, 20 boardings, or 57%, occurred between 4:30 – 5:30 p.m. The peak period decreased after 5:30 p.m. with only six boardings between 5:30 and 6:30 p.m.

Exhibit 17. Trip Purpose of Eastbound Evergreen Point Freeway Transit Station Boardings

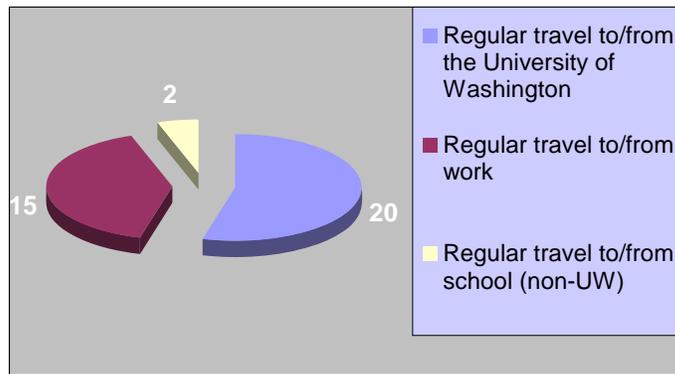


Exhibit 17 displays the trip purpose for 20 respondents as part of regular travel to/from the University of Washington. Fifteen people utilized the freeway transit station as part of regular travel to from work (non-University of Washington). The remaining respondents were traveling to/from a school other than the University of Washington.

Origin and Destination Patterns of Eastbound Boardings at Evergreen Point Freeway Transit Station

Out of 37 origin locations, Seattle represented the place of origin for 30 boardings. Of those surveys with completed street crossing and zip code information, seven trips originated in the University District area, five originated in downtown Seattle and the remaining few originated in Ballard, Northgate and Renton.

The most common destinations were Kirkland and Redmond, with 15 and 11 responses respectively. The remaining destinations for those boarding at the eastbound Evergreen Point freeway transit station included Bellevue, Clyde Hill and Kenmore.

Directional Trip Patterns

Of the 37 boardings, 30 answered that they used approximately the same route for their trip in the reverse direction. The remaining six respondents that answered this question stated they did not use approximately the same route for their reverse trip.

Freeway Station Function

The function of the eastbound Evergreen Point freeway transit station is represented through mode of access and egress to/from the freeway transit station. The data collected for the mode of access/egress can be broken down further into information about specific bus routes and park-and-ride usage and location.

Mode of Access to the Evergreen Point Freeway Transit Station - Eastbound

The majority --or 95%-- of boardings accessed the station by bus. The remaining boardings accessed the freeway station by walking. See specific bus route information below.

Bus Routes Used to Access Freeway Transit Station by Time of Day

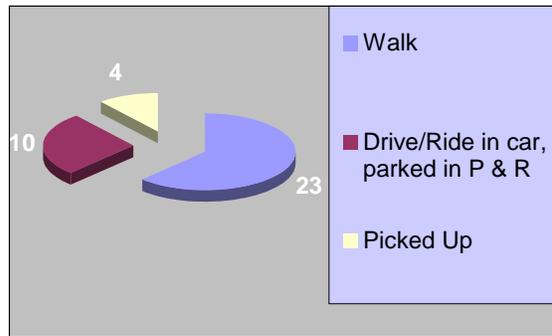
Approximately 15 buses serve the Evergreen Point freeway transit station. Bus routes 271 and 540 were most frequently used to bring transit station users from the University

District area. Additionally, bus routes 255, 311, and 545 originating in Downtown Seattle were used to bring users to the eastbound Evergreen Point freeway transit station, where they transferred to another bus.

Park-and-Ride Usage and Location

Out of 37 boardings, only four users relied on Park-and-Rides as part of their trip. Of those one respondent used Evergreen Point and one person used the South Kirkland Park-and-Ride. The remaining two respondents that indicated using a Park-and-Ride did not indicate which one.

Exhibit 18. Mode of Egress to Final Destination



The exhibit at left indicates 23 respondents walked to their final destination. Driving or riding in a car parked in a Park-and-Ride was the mode selected to reach their final destination by ten users of the station. Four people were picked up as a way to reach their final destination.

Freeway Station Environment

Evergreen Point freeway transit station users were asked to identify both positives and negatives of the freeway transit station. “Frequent service to my destination” was the most frequently selected positive quality of the station, with 25 responses. In addition, 11 users noted the easy transfer and availability of buses at eastbound Evergreen Point freeway transit station. Also, eight people noted the station was “walking distance to my origin or destination” as a positive quality.

The most frequent concern was the “waiting environment” with 12 responses. Noise levels, fumes, and size were all complaints included in this category. Nine users of the eastbound Evergreen Point freeway transit station noted the “need to transfer as a result of no direct service” as a negative quality. Other common complaints included the lack of bike storage, infrequent service of specific routes, and poor local access to nearby parking.

92nd/YARROW POINT FREEWAY TRANSIT STATION WESTBOUND



92ND/YARROW POINT FREEWAY TRANSIT STATION - WESTBOUND

This section represents data from the 29 completed surveys gathered at the westbound 92nd/Yarrow Point freeway transit station between 6:00 – 9:30 a.m. on April 28th, 2005.

Overview of Significant Findings

Westbound boardings at the 92nd/Yarrow Point freeway transit station were highest between 6:30 – 7:30 a.m.

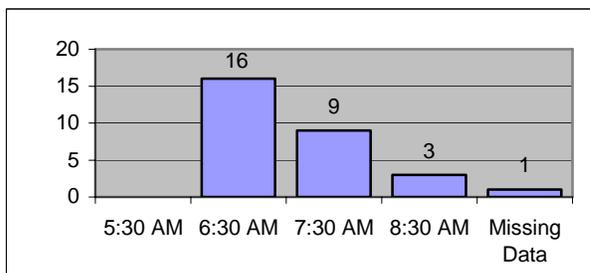
Many individuals boarding at the 92nd/Yarrow Point freeway transit station were dropped off as their mode to access the freeway transit station. Another group of boardings accessed the station by way of a Downtown Seattle or University District destined bus.

Boardings were split as part of regular travel to/from the University of Washington, regular travel to/from work (non-UW), and regular travel to/from school (non-UW). Observed boardings on routes 982 and 986 were restricted to students in route to University Prep or Lakeside School.

Freeway Transit Station User Profile

To better understand the users of the 92nd/Yarrow Point freeway transit station, data sets are explained to help illustrate patterns in user profile. Data is described below for the following categories: hourly boardings, trip purpose, the origin and destination of users, and directional travel patterns.

Exhibit 19. Hourly Eastbound Boardings at the Yarrow Point Freeway Transit Station Westbound



The hourly boardings for the westbound freeway transit station at 92nd/Yarrow Point were concentrated in the morning peak travel period. While field observations showed a number of transit rider that would warrant surveying in the afternoon peak period, on the day of the survey, only six station users were observed boarding, two of whom did not complete the survey and the remaining few were not interested.

Exhibit 20. Trip Purpose of 92nd/Yarrow Point Freeway Transit Station Boardings

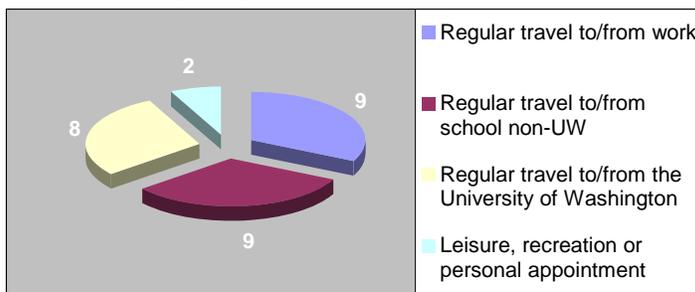


Exhibit 20 displays the trip purpose split almost evenly between regular travel to/from school (non-UW), regular travel to/from work (non-UW), and regular travel to/from the

University of Washington. Students traveling as part of regular travel to/from University Prep and Lakeside School on a chartered bus help to explain the high frequency of boardings as part of travel to/from school other than the University of Washington. The remaining two boardings were for the purpose of leisure, recreation or personal appointment. It is important to note that some respondents identified more than one trip purpose.

Origin and Destination Patterns of Boardings at 92nd/Yarrow Point Freeway Transit Station

Locations of origin for those boarding at the 92nd/Yarrow Point freeway transit station were concentrated in the Bellevue and Clyde Hill areas with 14 and 9 responses respectively. Other trips originated in Redmond, Kirkland, and Sammamish.

Of the transit station users that responded to this question, 19 people indicated Seattle as their destination. Only eight surveys had complete zip code information, but this small sampling of data illustrated destination zip codes throughout parts of the University District and Downtown Seattle. In examination of the bus routes station users boarded, 11 boardings had a destination of either University Prep or Lakeside schools by way of routes 982 and 986. See Appendix G for more origin and destination information.

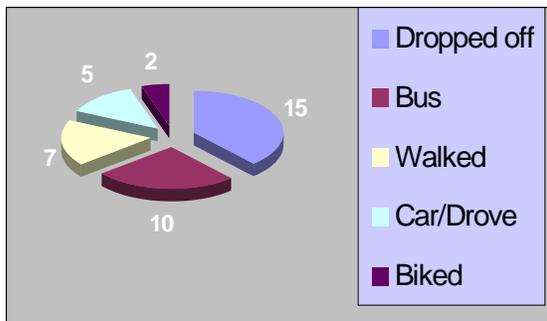
Directional Trip Patterns

Of the 29 boardings, 25 answered they used approximately the same route for their trip in the reverse direction. The remaining few respondents that answered this question stated they did not use approximately the same route for their reverse trip.

Freeway Station Function

The function of the westbound 92nd/Yarrow Point freeway transit station is represented through mode of access and egress to/from the freeway transit station. The data collected for the mode of access/egress can be broken down further into information about specific bus routes and Park-and-Ride usage and location.

Exhibit 21. Mode of Access to the 92nd/Yarrow Point Freeway Transit Station – Westbound



The mode of access to the 92nd/Yarrow Point freeway transit station is represented in Exhibit 21 to the left. This pie chart illustrates the usage of this freeway transit station to serve boardings accessing the station in a variety of ways. A predominant mode to access the 92nd/Yarrow Point freeway transit station was to be dropped off. This was observed, in several cases, to primarily explain the mode of access to the

station for the dozen or so students boarding a private school-bound bus at the station. The next leading mode was to transfer from another bus to access the freeway transit station, thus highlighting one of its functions as a transfer location. Walking accounted

for the mode of arrival at the freeway transit station for seven boardings. The remaining boardings drove and parked in a lot or relied upon biking to access the 92nd/Yarrow Point freeway transit station. Some respondents identified using more than one mode to access the station.

Bus Routes Used to Access Freeway Transit Station

Of the ten people that used bus routes to access the freeway transit station, most frequent routes used were the 540, 545 and 555 bringing station users from Redmond, Kirkland, Issaquah and Bellevue.

Park-and-Ride Usage and Location

Out of 29 boardings, only two users relied on Park-and-Rides as part of their trip. Only one respondent named the location of the Park-and-Ride, which was indicated as the Bellevue Park-and-Ride.

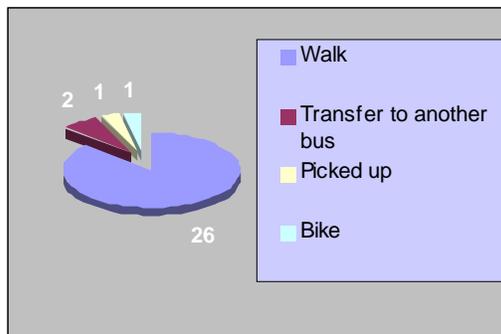


Exhibit 22. Mode of Egress to Final Destination

The exhibit at left indicates 26 respondents walking to their final destination. The mode of egress for two 92nd/Yarrow Point freeway transit stations users was by way of transferring to another bus. The remaining boardings reached their final destination by bike or being picked up. It is important to note that some respondents identified using more than one mode of egress to their final destination.

Freeway Station Environment

92nd/Yarrow Point freeway transit station users were asked to identify both positives and negatives of the freeway transit station. “Walking distance to origin or destination” was most the most frequently selected positive quality of the station with 20 responses. In addition, 15 users noted the “frequent service to my destination” as a positive quality of the freeway transit station at 92nd/Yarrow Point.

The most frequent concern was the “waiting environment” with 11 responses. Noise levels, fumes, and size were all complaints included in this category. Five users noted the inconvenience of the long staircase as a negative quality of the station. Other common complaints included the lack of bike storage, poor visibility, absence of direct routes and lack of parking.