FAIRBANKS NORTH STAR BOROUGH

SHORT & LONG RANGE TRANSIT PLAN

FINAL REPORT

JUNE 2013

moore & associates

FAIRBANKS NORTH STAR BOROUGH
2013 Short and Long Range Transit Plan

FINAL DRAFT

June 2013

Prepared by
Moore & Associates, Inc.
28159 Avenue Stanford, Suite 110
Valencia, CA 91355
888.743.5977

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1

EXECUTIVE SUMMARY

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CHAPTER 1 – EXECUTIVE SUMMARY

With more than 99,000 residents, the Fairbanks North Star Borough (FNSB) is Alaska's second largest community after Anchorage, and functions as the transportation hub for central Alaska. The FNSB, founded in 1964, is comprised of the cities of Fairbanks and North Pole, as well as various unincorporated communities located in more rural portions of the region. The FNSB is home to the University of Alaska Fairbanks, with approximately 5,500 students enrolled. The FNSB also hosts significant military installations including Fort Wainright in the city of Fairbanks and Eielson Air Force Base, located south of the city of North Pole. In addition, Fairbanks is a key tourist destination chiefly during the summer season.

The Fairbanks North Star Borough began operating the Metropolitan Area Commuter System (MACS) fixed-route transit service in 1977. As of Fiscal Year 2013, the MACS system included nine fixed routes and provided over 476,000 trips. Key destinations served by the MACS network include the University of Alaska at Fairbanks, Fairbanks International Airport, Downtown Fairbanks Transit Center, East Fairbanks Shopping District, and West Fairbanks Shopping District. While operating hours vary by line, MACS service operates Monday through Friday from 6:00 a.m. until 9:45 p.m., and on Saturday from 8:45 a.m. until 7:45 p.m., although not all routes operate on Saturday. There is no Sunday service.

Complementing FNSB's fixed-route service is the Van Tran Dial-A-Ride service, required by the Americans with Disabilities Act. Van Tran service began in 1988 and serves approximately 20,000 passengers annually. The service utilizes up to five nine-passenger vans and gives priority to ADA-certified disabled and senior passengers within a ¾-mile zone around all MACS fixed routes, although service is provided beyond the ¾-mile buffer on occasion.

Key Findings

- Public awareness and support of fixed-route transit is very high among FNSB residents, although most do not believe the current service meets their travel needs.
- University of Alaska, Fairbanks (UAF) students and faculty comprise roughly one-third of all MACS users during the typical academic year. This market share declines during the summer when UAF is not in session.
- The majority of current MACS users would like to see Sunday service.
- The busiest lines are the Blue and Red Lines, serving the urban core of Fairbanks and UAF, while the least-used line is the Black Line, operating along the Richardson Highway to Salchaket Roadhouse in Salcha.
- System ridership has grown, on average, by nearly seven percent annually since 2007.

Report Overview

This report includes both a Short Range Transit Plan (SRTP) and Long Range Transit Plan (LRTP). The SRTP presents a plan for short-term operational, financial, and capital improvements for FNSB's transit services. The SRTP, covering a five-year horizon, includes strategies to increase service efficiency and effectiveness, and how to finance implementation of those strategies. These strategies reflect findings from rider and non-rider (community) input as well as a review of transit system performance. The LRTP covers an approximate 25-year horizon and describes long-term forecasted population and infrastructural changes that could affect transit provision, as well as approaches the FNSB could take to address these opportunities and challenges. The full report containing both the SRTP and LRTP is organized into the following chapters:

1. Executive Summary;
2. Overview and Population Analysis;
3. Existing Conditions, including performance measures;
4. Public Outreach;
5. Analysis and Recommendations;
6. Financial Plan;
7. Long Range Transit Plan; and
8. Appendices.

The SRTP and LRTP fulfill the requirements set forth by the Federal Transit Administration for short and long range transit plans. As required of all metropolitan planning processes under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), each Plan will:

- Support the economic vitality of the FNSB metropolitan area,
- Increase the safety and security of the transportation system for motorized and non-motorized users,
- Increase the accessibility and mobility of people and for freight within the FNSB,
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and encourage consistency between state and local planning,
- Enhance the integration and connectivity of the transportation system across and between modes,
- Promote efficient system management and operation, and
- Emphasize the preservation of the existing transportation system.

The Overview and Population Analysis chapter describes the FNSB's population characteristics, with a focus on what aspects of the FNSB's population are most relevant to transit planning. It includes the Transit Needs Index map, which provides a general idea of the geographic distribution of Fairbanks residents who are more likely to depend on public transportation for their travel needs. In addition, it

overlays the existing MACS fixed-route network on a map of likely transit-dependent populations to illustrate how well the current MACS system serves those populations.

The Existing Conditions chapter begins by describing the various transportation providers within FNSB including FNSB services such as MACS and Van Tran, taxi companies, as well as other providers such as social service agencies. Following the overview of transportation providers, the chapter focuses on and evaluates MACS service, providing a snapshot of current transit usage and system performance. Such data include ridership at a system level and by line, stop activity along each route, variations in ridership by time of year, and by time of day. Also included are several performance measurements including riders per service hour, farebox recovery, and how MACS compares to other similar transit operations on these performance measurements.

Supplementing the performance data in the Existing Conditions chapter is the feedback summarized in the Public Outreach chapter. Public involvement efforts included two onboard rider surveys (conducted both during winter and summer months) collectively gathering nearly 1,800 rider surveys; seven community meetings; feedback from 18 key stakeholders; and more than 550 community surveys.

Public involvement in the preparation of the 2013 SRTP and LRTP has been important to understanding the transit needs and priorities of residents throughout the FNSB. Through this process four key desires were identified among FNSB transit riders and residents:

1. A desire for improved bus stop shelters and amenities. Rider surveys, and particularly the winter survey, revealed riders were least satisfied with the limited availability of bus shelters at bus stops, particularly during the winter months.
2. Riders desire Sunday service. In the summer and winter surveys, the most-requested service improvement, stated by more than half of riders in each survey, was Sunday service.
3. A desire for more frequent Red and Blue Line Service. Participants at several community meetings described how these lines can become overcrowded during peak operating hours, and how increased frequency would relieve these problems.
4. A need for greater security at the Transit Center. Community meeting participants repeatedly described incidences of public intoxication, panhandling, littering, and public urination that support a perception of the Center being unsafe.

The Analysis and Recommendations chapter begins by summarizing the goals and principles that guided development of the recommendations. A partial list of these goals includes:

- Maximize the efficiency of the MACS program by continually evaluating routes, personnel, and by implementing changes designed to better serve the public within current funding levels.

- Meet the growing need for transportation services in a geographically dispersed residential community.

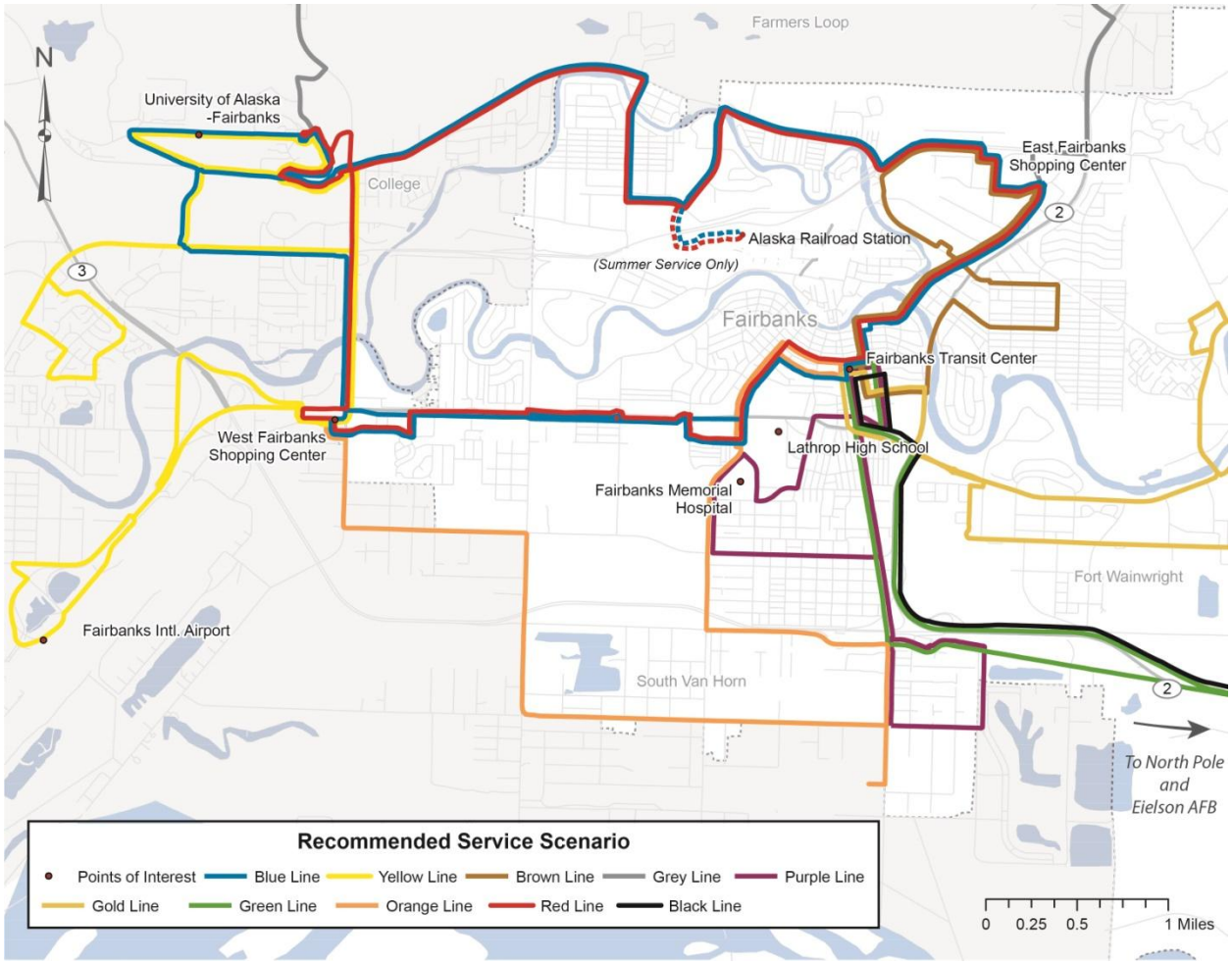
Service and infrastructure recommendations were developed with a focus on furthering these goals while addressing both the needs and realities revealed through demographic analysis, service evaluation, and public outreach efforts. Exhibit 1.1 summarizes each of the recommendations that optimally respond to the FNSB's transit needs, while Exhibit 1.2 provides a map of the MACS system if FNSB were to implement all of the service recommendations.

The Analysis and Recommendations chapter also contains a 'baseline comparison' section. The comparison lists the relative advantages and disadvantages of maintaining existing service as it is currently provided versus implementing all recommendations. In brief, continuing current service as is would cover a large service area, but offer less frequency and very low farebox recovery on certain lines. The recommended scenario, by contrast, reduces the MACS service area, yet serves more people per vehicle service hour and reallocates service to where it is most used.

Exhibit 1.1 Infrastructure and Service Recommendations

Recommendation	Recommendation Type	Catalyst	Rationale/Goal
Increase PM peak service on Red and Blue lines	Service	Community meetings, ride check data	Reduce peak-period loads, improve service for key markets
Adjust schedules on Grey and Purple Lines	Service	Ride check data	Achieve 80 percent on-time performance
Eliminate Yellow Line connection to Transit Center	Service	Ride check data	Increase service to Line's strongest markets, reduce duplicity with Red and Blue Lines
Begin Sunday service on Blue and Red Lines	Service	Onboard survey and community meeting feedback	Respond to majority desire for Sunday service
Add benches and shelters to key stops,	Infrastructure	Onboard survey and community meeting feedback	Improve current rider experience, potentially attract new riders
Construct an improved transfer facility at Fred Meyer West	Infrastructure	Onboard survey and community meeting feedback	Provide a more comfortable waiting area for transferring riders
Construct a larger vehicle storage and maintenance facility	Infrastructure	FNSB existing plans	Accommodate expected increases in fleet size
Improve security and maintenance of the Transit Center	Infrastructure	Community meeting feedback	Improve current rider experience, potentially attract new riders

Exhibit 1.2 Map of Proposed MACS System (Full Implementation)



Following the near-term recommendations is the Financial Plan chapter. This chapter begins by comparing detailed cost projections for the Baseline and Recommended scenarios, giving an idea of expected operating and capital costs associated with continuing service in its present form versus implementing the recommendations provided in the Analysis and Recommendations chapter. After providing cost projections, the Financial Plan chapter breaks down how each scenario's respective operating and capital costs would be financed over the next five years using a combination of fare revenues, local subsidies, and federal grants.

Chapters 1 through 6 together comprise the Short Range Transit Plan, while Chapter 7 contains the Long Range Transit Plan (LRTP). The LRTP provides a more general blueprint which the FNSB may follow in making transit planning decisions over the next 25 years. The Plan describes other local and regional plans for the FNSB, including the Fairbanks Metro 2035 Plan, Vision Fairbanks Plan, and FNSB Comprehensive Land-Use Plan. The LRTP also summarizes the aspects of these plans most relevant to transit planning, giving the FNSB a concise list of upcoming and proposed changes that could present new challenges and opportunities for transit provision throughout the FNSB.

The LRTP also describes transit service types and infrastructure options the FNSB may want to consider in the future, such as flex-route service, bicycle storage facilities, park-and-ride lots, and local circulators. Finally, the LRTP accompanies the descriptions of these service and infrastructure options with key criteria or "trigger points" at which the FNSB should consider these options so that they bring the most benefit to the FNSB and make the most prudent use of resources.

2

OVERVIEW AND POPULATION ANALYSIS

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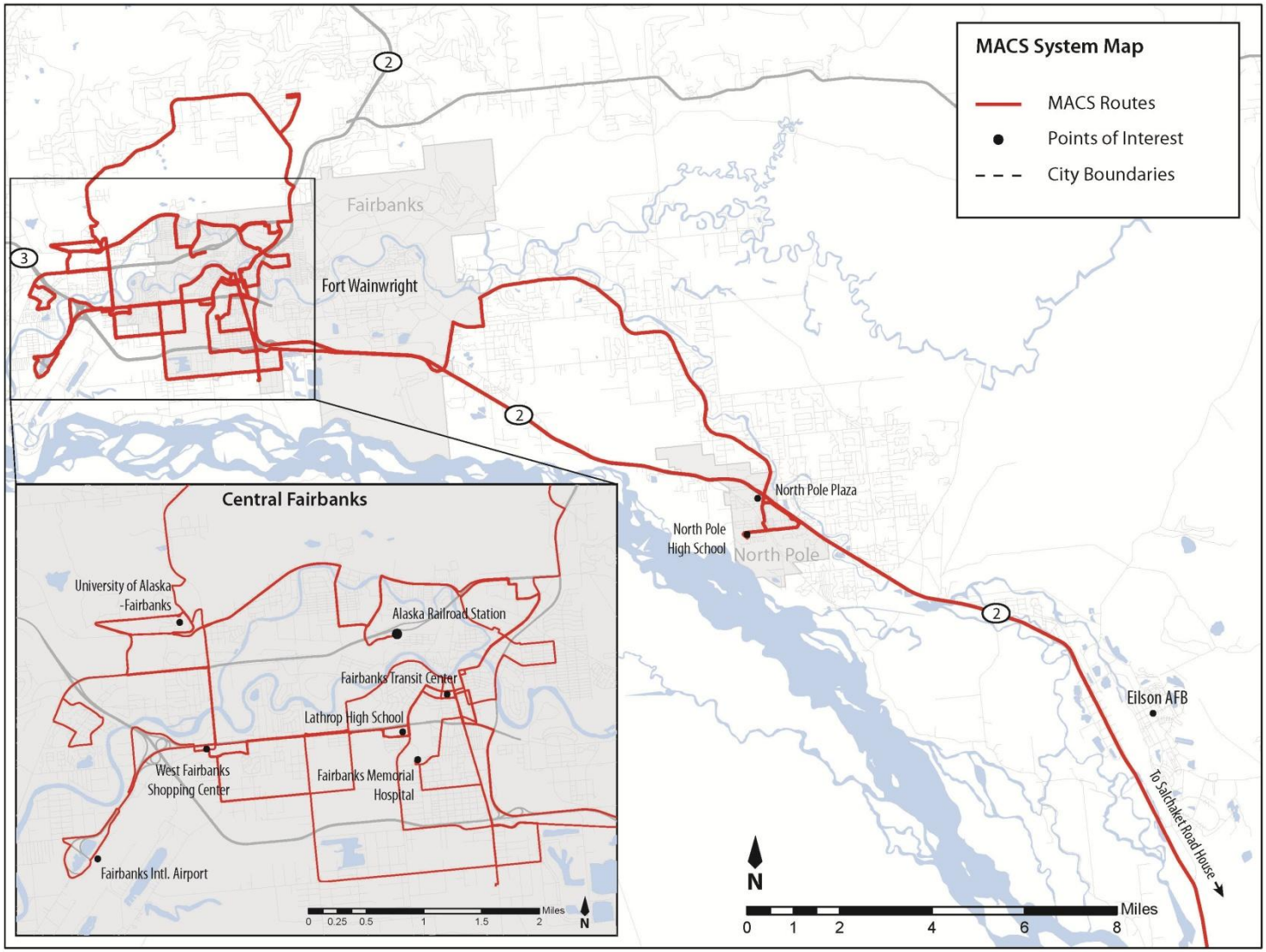
CHAPTER 2 – OVERVIEW AND POPULATION ANALYSIS

With more than 99,000 residents, the Fairbanks North Star Borough (FNSB) is Alaska's second largest community after Anchorage and functions as the transportation hub for interior Alaska. The FNSB itself, founded in 1964, is comprised of the cities of Fairbanks and North Pole, as well as various unincorporated communities located in more rural portions of the FNSB.

The FNSB is home to the University of Alaska Fairbanks, with approximately 5,500 students enrolled. FNSB also hosts significant military installations including Fort Wainright in the city of Fairbanks and Eielson Air Force Base, located south of the City of North Pole. In addition, the FNSB is a key tourist destination chiefly during the summer season.

Fixed-route bus service in the FNSB is marketed as the Metropolitan Area Commuter System (MACS), while demand-response service is marketed as Van Tran. Exhibit 2.1.1 illustrates the MACS service area as well as the current MACS routes. Chapter 3 provides a more in-depth discussion of the MACS service.

Exhibit 2.1.1 MACS Service Area and System Map



2.1 TRANSIT NEED WITHIN THE FAIRBANKS NORTH STAR BOROUGH

With 99,000 people residing in an area of nearly 7,400 square miles, the FNSB has a relatively low population density. Coupled with a sub-arctic climate, providing transit service and attracting ridership can be challenging. To effectively serve those who most depend on transit while also ensuring the MACS service best caters to its strongest markets, a population analysis was performed to see where people who are most likely to utilize transit service (ride-dependent populations) reside. Using Exhibit 2.1.1 above and the Transit Needs Index maps in Exhibits 2.1.2 and 2.1.3, this chapter seeks to provide a solid initial understanding of how well the MACS service currently links potential users to popular destinations.

Ride-Dependent Populations

Ride-dependent populations include individuals who lack the physical or economic means to transport themselves via private vehicles and therefore are more likely to rely on other modes of travel such as public transportation to fulfill their mobility needs. Historically these include low income individuals, seniors, youth, persons with disabilities, and persons with no or limited access to a personal vehicle. Indentifying areas with significant ride-dependent populations serves to identify gaps between existing service (e.g., coverage, frequency) and demand.

To aid in the identification of where ride-dependent populations reside within the FNSB, the project team created the Transit Needs Index (TNI) map presented below in Exhibits 2.1.2 and 2.1.3 using 2010 Decennial Census and 2011 five-year American Community Survey data. The TNI is a score that each census tract receives based on the percent of its population that was either low-income[1], over 59 years old, did not have access to a personal vehicle, or currently used public transit. A higher TNI score indicates that a tract has a higher proportion of residents belonging to one or more ride-dependent groups. In the maps below, darker colors denote areas with a higher TNI score and thus a higher proportion of residents who are more likely to need public transportation services.

Beyond including the more traditionally-recognized ride-dependent groups described above, the TNI also reflect the percent of tract residents who are University of Alaska (UAF) students. This was done because the winter on-board survey revealed that nearly a third of riders paid with a UAF student pass, indicating that students are more likely to be transit riders than the general population.

[1] "Low-income" referred to households whose total income was less than $25,000 per year. See Appendix 1 for more details on the development and definition of the Transit Needs Index.

Given the focus of this chapter is to identify and quantify transit demand, the analysis in this chapter is limited to the Transit Needs Index maps instead of including multiple maps that illustrate individual population characteristics separately. The index maps allow the reader to more quickly gain a clear understanding of where the most likely markets for public transit service are located, rather than inferring from multiple maps. For a table showing the separate population values for each census tract as well as the formula used to calculate the TNI, refer to Appendix A.

Exhibits 2.1.2 and 2.1.3 present TNI maps for the MACS service area, with Exhibit 2.1.2 showing a larger area including the North Pole and unincorporated areas. Further, Exhibit 2.1.3 provides a more detailed view of the city of Fairbanks.

Exhibit 2.1.2 Transit Needs Index Map, MACS Service Area

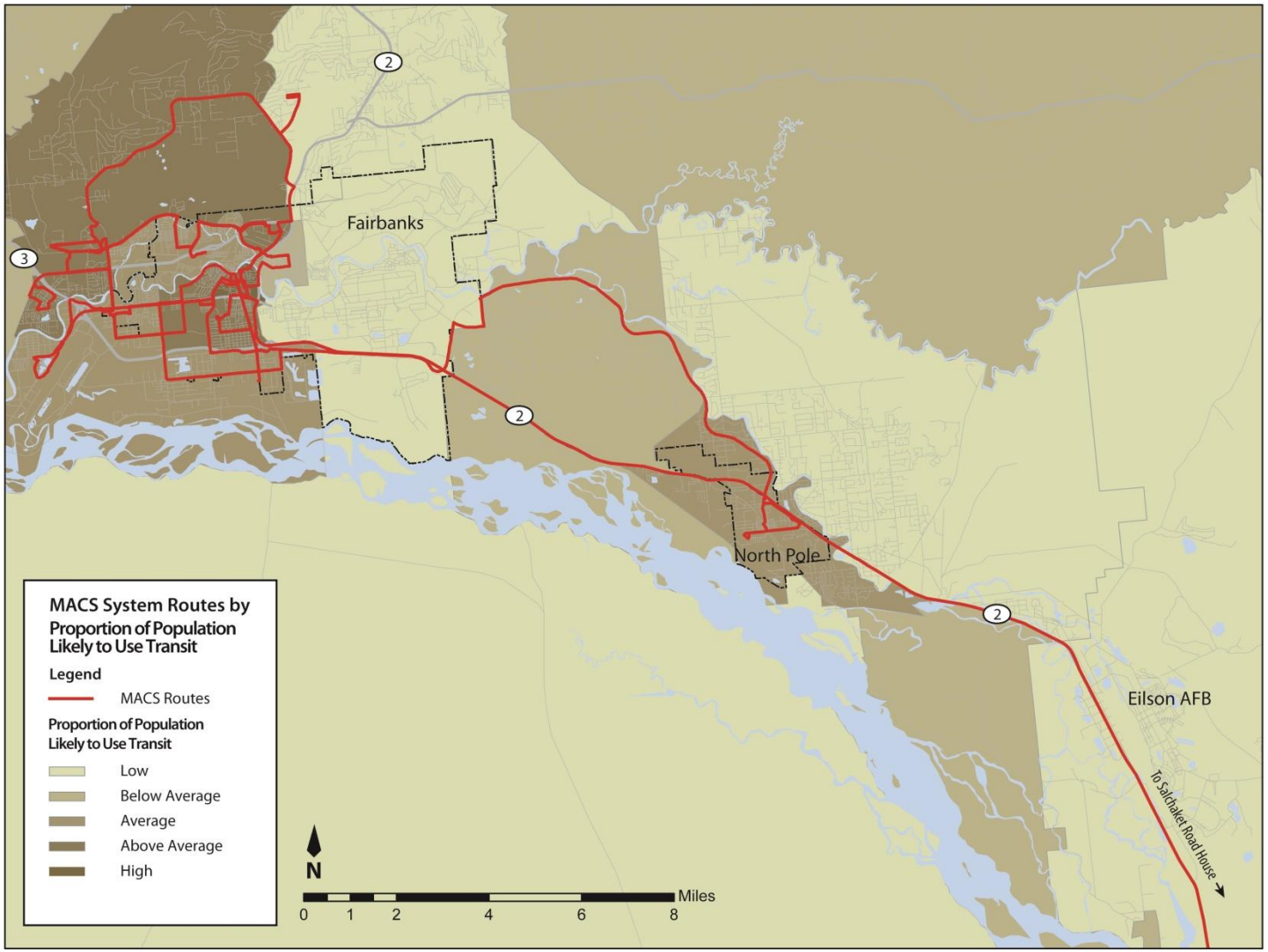
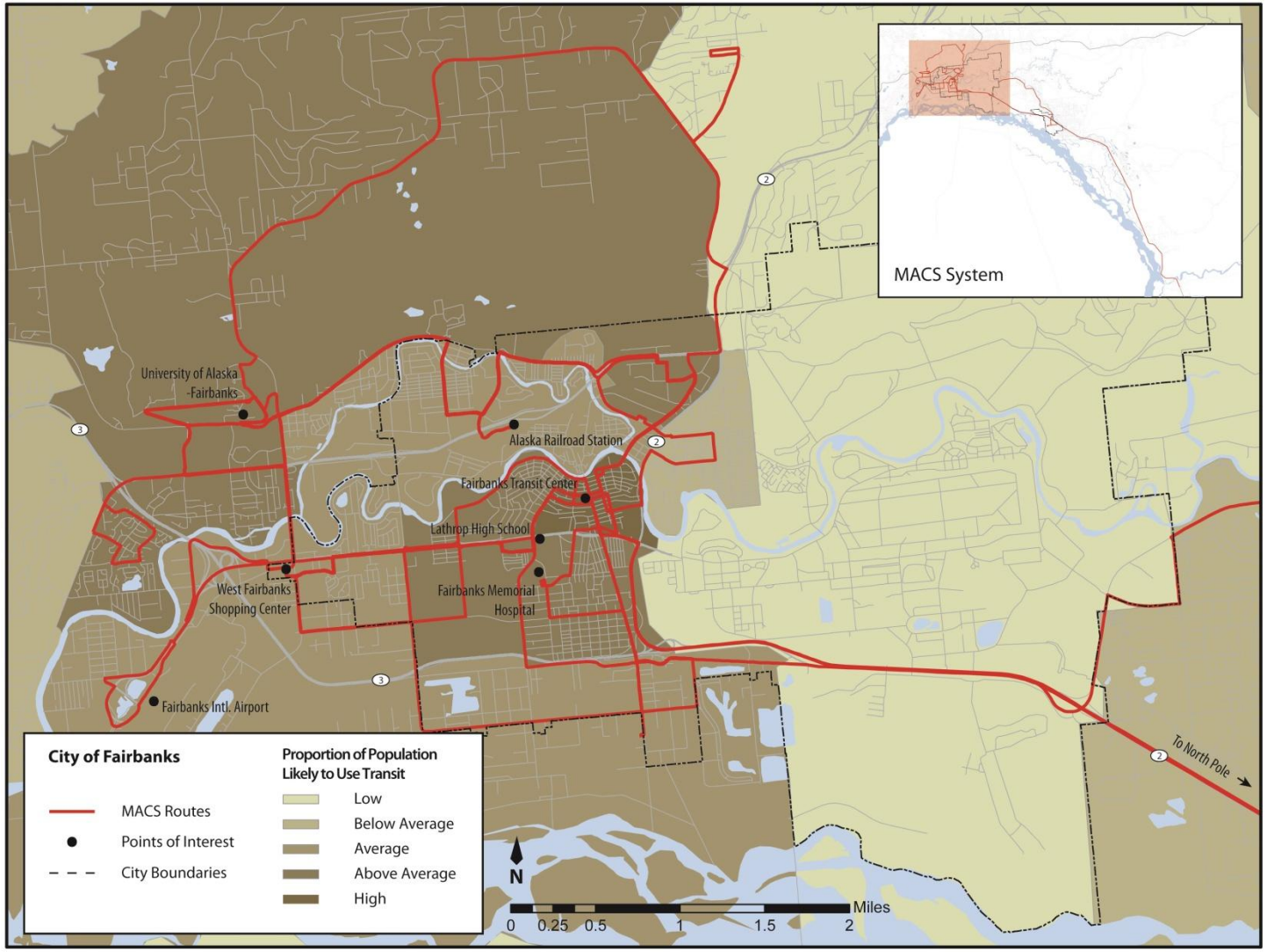


Exhibit 2.1.3 Transit Needs Index Map, Central Fairbanks



TNI Map Discussion

As Exhibits 2.1.2 and 2.1.3 illustrate, the MACS service already caters reasonably well to areas with relatively high incidences of ride-dependent persons. The areas with the highest proportions of ride-dependent populations tend to be in the more urbanized portions of the FNSB, which is generally already served by MACS. Downtown Fairbanks had the highest TNI score, with nearly 40 percent of its households being low income, nearly 18 percent lacking access to a personal vehicle, and 11 percent relying upon using transit to commute to school or work.

TNI Map Limitations

The TNI map is a very rough tool to identify potential markets based on predicted need, yet two points must be defined. First, "need" does not always translate to demand in this map. This is true because while persons with zero vehicles are more likely to use transit than those with vehicles, persons without vehicle access still make the majority of their trips in a vehicle (either getting a ride from a friend, borrowing a car, etc.). What the Transit Needs Index does is provide the best estimation of where potential transit users live while relying purely on demographic data, and can assist in indentifying where transit is more likely to succeed.

In addition, the values in the TNI are percents, and not absolute numbers. For example, while the Farmers Loop census tract has a high proportion of residents that are counted as ride-dependent by the TNI (chiefly UAF students, who comprise more than 22 percent of the tract population), its total population remains fairly low. This means that while a large *proportion* of people along Farmers Loop Road may use transit, the *total number* of people using transit, as Chapter 3 will show, is relatively modest.

Census Data Limitations

It is important to keep in mind that census data do not cover 100 percent of the population, so the data used for the TNI map may not completely reflect the population in each tract. In addition, there were no available block-level data for many of the population measures and instead tract-level data were used. The primary disadvantage of tract-level data is that it may hide significant geographic variation of need within the tract area. Using the Farmers Loop example again, while the TNI maps show the entire area of the tract as having above average transit need, in reality most of the people in the tract are concentrated along Farmers Loop Road and near the UAF campus.

However, an advantage to using census data is that they will serve as a good comparison to survey data by factoring in populations and people who may not have taken the survey.

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3

EXISTING TRANSIT SERVICES

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CHAPTER 3 – EXISTING TRANSIT SERVICES

3.1 EXISTING TRANSPORTATION SERVICES

Metropolitan Area Commuter System

The Fairbanks North Star Borough (FNSB) began operating the Metropolitan Area Commuter System (MACS) fixed-route transit service in 1977. Today, the MACS system is comprise of nine fixed routes providing more than 476,000 trips in Fiscal Year 2013 in the cities of Fairbanks and North Pole, as well as other nearby communities. Exhibit 3.1.2 illustrates the existing MACS routes and key destinations served.

The MACS service is operated by the FNSB Transportation Department, and utilizes six 30-foot buses and four 35-foot buses, which were purchased in 2007; and an additional four 30-foot buses and one van were purchased in 2002. Ten buses operate during peak hours, while four operate during off-peak periods.

Service Area and Operating Hours

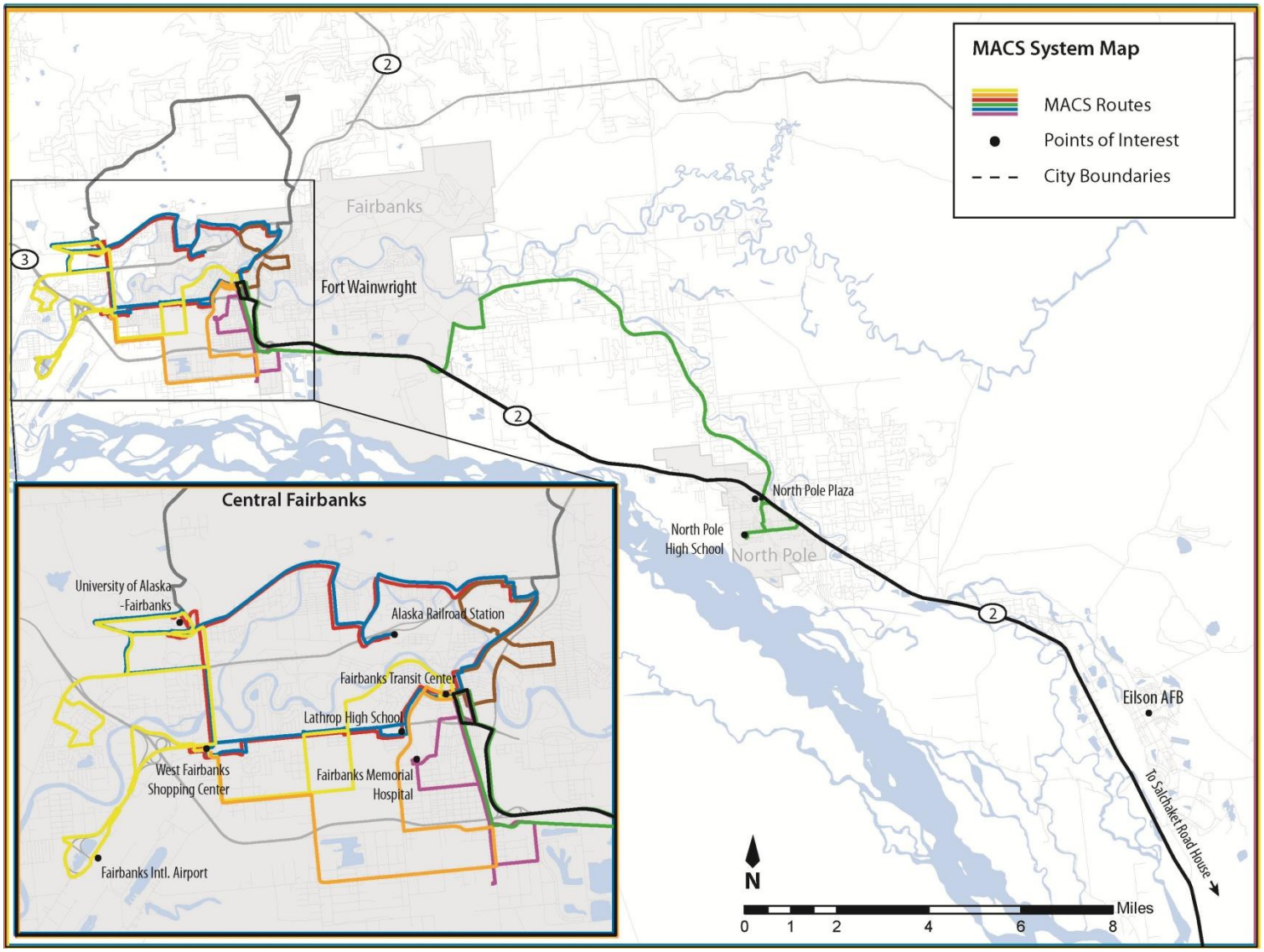
While operating hours vary by line, MACS service currently operates Monday through Friday from 6:00am until 9:45pm, and on Saturday from 8:45am until 7:45pm, although not all routes operate on Saturday. There is no Sunday service.

Exhibit 3.1.1 below summarizes the service provided by each MACS line.

Exhibit 3.1.1 MACS Line Operating Hours and Frequencies

Line	Operating Hours	Frequency (minutes)
Black	Two morning buses and two evening buses in each direction	
Blue	6:30am-9:45pm M-F; 9:15am-7:45pm Saturday	30-60
Brown	7:00am-9:15pm M-F; 9:15am-6:45pm Saturday	60
Green	6:00am-8:47pm M-F; 9:00am-6:30pm Saturday	75-105
Grey	Three morning buses and three evening buses in each direction	
Orange	Four morning buses and Four evening buses westbound; three morning buses and three evening buses eastbound	
Purple	6:30am-9:44pm M-F; 8:45am-7:44pm Saturday	60-75
Red	6:15am-8:45pm M-F; 9:15am-6:45pm Saturday	30-120
Yellow	6:35am-11:45am and 2:30pm-7:40pm M-F; 10:42am-4:45pm Saturday	90-140

Exhibit 3.1.2 MACS System Map and Service Area



Performance Analysis

Exhibit 3.1.3 summarizes the MACS system performance during Fiscal Year 2012 utilizing several metrics of both service efficiency and effectiveness.

Exhibit 3.1.3 Summary of MACS FY 2012 Systemwide Performance

Total 2012 Operating Cost	$3,506,213
Total Trips	428,166
Cost Per Trip	$8.19
Subsidy per Trip	$7.67
Estimated Farebox Recovery	6.3%
Cost per Service Mile	$7.77
Passengers per Hour	17.69

Sources: FNSB Transit Division, National Transit Database

Peer Comparison of MACS Service Using 2011 Data

Exhibit 3.1.4 compares the MACS system to two similar peer operators along several common measures of transit efficiency and effectiveness using data for Fiscal Year 2011 from the National Transit Database. Roseville Transit and Yakima Transit are used as peer operators because they each have comparable service area populations (92,000 and 120,300, respectively, compared with Fairbanks' 97,000) and similar funding sources (although Roseville Transit receives a considerably larger share of its funding from state, rather than federal sources). Ideally, the peer operators would include at least one Alaskan transit operator, given the climatic conditions unique to Alaska. However, there are no operators within Alaska that are reasonably comparable to Fairbanks in terms of service area population, service level, etc.

As Exhibit 3.1.4 shows, MACS service performs better than the peer operators in certain areas and worse in other areas, although it is generally in the middle. Yakima Transit is the most productive of the three operators, with significantly more trips both per Vehicle Service Mile (VSM) and Vehicle Service Hour (VSH) than either MACS or Roseville. However, this relatively high ridership may be explained by the fact that a standard adult monthly pass for Yakima Transit is only $25, which is considerably lower than the $40 cost of a MACS monthly pass. In addition, while MACS's single-ride cash fare is $1.50, Yakima only charges $1.00, which likely boosts ridership.

Exhibit 3.1.4 Like-Peer Comparison of MACS Fixed-Route Service (for Fiscal Year 2011)

Performance Metric	MACS	Roseville, CA	Yakima, WA
Service Area Population	97,581	120,307	92,035
Operating Cost/VSH	$124.07	$148.34	$97.54
Operating Cost/VSM	$7.12	$9.94	$6.85
Operating Cost/Unlinked Trip	$7.59	$21.55	$4.04
Unlinked Trips/VSH	16.34	6.88	24.12
Unlinked Trips/VSM	0.94	0.46	1.69
Total Operating Expenses	$2,974,623	$4,462,863	$5,829,541
Total Farebox Revenue	$342,376	$287,593.00	$598,546
Total Unlinked Trips	391,799	207,085	1,441,649
Fare/Unlinked Trip	$0.87	$1.39	$0.42
Farebox Recovery	12%	6%	10%

Source: National Transit Database

Van Tran

The FNSB Transportation Department began offering Van Tran door-to-door paratransit service as a complement to the MACS fixed-route service in 1988 and provided slightly less than 19,000 unlinked trips in Fiscal Year 2012. Van Tran service operates up to five nine-passenger vans and gives priority to ADA-certified disabled passengers within a ¾-mile zone around all MACS fixed routes, although will travel beyond the ¾-mile buffer on occasion.

Exhibit 3.1.5 Van Tran Cost and Performance Summary

Performance Metric	Van Tran
Service Area Population	96,888
Operating Cost/VSH	$152.32
Operating Cost/VSM	$11.45
Operating Cost/Unlinked Trip	$87.32
Unlinked Trips/VSH	1.7
Unlinked Trips/VSM	0.1
Total Operating Expenses	$1,656,946
Total Farebox Revenue	$34,573
Total Unlinked Trips	18,976
Farebox Recovery	2%

Source: FNSB Transit Division, National Transit Database

Peer Comparison of Van Tran Service Using 2011 NTD Data

Using year 2011 data from the National Transit Database, Van Tran's performance was compared to Yakima's and Anchorage's Dial-A-Ride systems. As was the case for the fixed-route service peer comparison, Yakima was selected given its similar service area population. Unlike the fixed-route peer evaluation, however, Anchorage was selected as the second peer because even though its service area population is significantly larger than Fairbanks', its "Alaska-specific" factors like climate and higher material costs are influential enough in performance such that they are too important to leave out. In short, by selecting Yakima and Anchorage as peers, Van Tran was compared to one system of similar size in a different operating environment, and a second system with a similar operating environment, but which is significantly larger. Data from 2011 were used because more recent data were not available for all three cities.

As the comparison table in Exhibit 3.1.6 shows, Van Tran's operating costs are considerably higher than either of its peers, particularly Yakima, whose per-hour operating cost is less than 25 percent of Fairbanks'. These significant cost differences are attributable at least in part to Fairbanks' harsher weather conditions, which require Van Tran vehicles to operate in extreme temperatures and on roads with sand and gravel, both of which to contribute to higher maintenance costs and slower travel speeds. Further pushing up Fairbanks' operating costs is its use of in-house, unionized labor, while both Anchorage and Yakima contract out their Dial-A-Ride services. In addition, Van Tran's part-time driver schedules are fixed, rather than demand-based, so drivers work the same shifts each week regardless of how many trips are scheduled for their shift.

Exhibit 3.1.6 Van Tran Peer Comparison (FY 2011 Data)

Performance Metric	Van Tran	Anchorage, AK	Yakima, WA
Service Area Population	97,581	218,145	92,035
Operating Cost/VSH	$137.82	$61.39	$32.43
Operating Cost/VSM	$12.24	$5.22	$3.07
Operating Cost/Unlinked Trip	$84.22	$30.89	$15.69
Unlinked Trips/VSH	1.64	1.99	2.07
Unlinked Trips/VSM	0.15	0.17	0.20
Total Operating Expenses	$1,724,825	$6,131,038	$1,305,389
Total Farebox Revenue	$38,699	$1,736,457	$124,761
Total Unlinked Trips	20,479	198,510	83,174
Average Trip Length (mi)	6.88	6.37	3.61
Farebox Recovery	2%	28%	10%

Source: National Transit Database, FNSB Transit Division

Other Dial-A-Ride Models in Alaska

Juneau's Capital Transit contracts with Catholic Community Services (CCS) to provide Dial-A-Ride services to persons over 60 or with disabilities. CCS has been providing Dial-A-Ride service through its

contract with capital transit since 1981 and provides approximately 2,400 rides every month. Seniors and persons with disabilities in Juneau also may receive discount rides through a taxi voucher program in which they receive a 60 percent discount on taxi service to areas outside of Juneau's fixed-route service area. The voucher program is coordinated by southeast Alaska independent living and funded in part through grants from the state of Alaska DOT.

Anchorage's Dial-A-Ride system, AnchorRIDES, operates through a contract with MV Transportation to provide service. Like Fairbanks' and Juneau's services, AnchorRIDES serves riders who are either 60 or older or who have a disability preventing them from using their fixed-route People Mover system. As a supplement to the AnchorRIDES services, the City may instead serve Dial-A-Ride customers using taxi vouchers instead of sending a Dial-A-Ride van.

Other Transportation Services in the FNSB Area

In addition to the publicly-funded MACS and Van Tran services, the FNSB features other transportation providers who have services available either to the general public as well as to specific populations, such as seniors, at-risk youth, low-income/homeless populations, etc. These other providers are summarized in Exhibit 3.1.7.

Exhibit 3.1.7 Other FNSB Transportation Service Providers

Agency Name	Type of Service	Hours of operation	Fare Structure	Key Passenger markets
University of Alaska Fairbanks (UAF)	Intra-campus shuttles	7:15a-10:30p	Free	UAF students
Salvation Army	Assisted Transportation program to provide rides for seniors, with priority given to rides to med appointments	N/A	Free or suggested donation	N/A
Fairbanks Resource Agency	Services for developmentally disabled persons	N/A	N/A	N/A
North Star Council on Aging	Door-door rides to Council Senior Center, medical appointments, shopping, etc.	N/A	N/A	Open to persons over 60
Armed Services YMCA	Y On Wheels shuttle provides door-door service to people within Ft. Wainright base	M-F 7:00am-8:00pm	$1 for all users	Military personnel and their families
Love, INC	Volunteer-based free rides to people that the organization is serving	7:30am-6:00pm (days not specified)	Free or suggested donation	People in need that are using Love, INC's services
Laidlaw (school buses)	K-12 school bus service	N/A	Free for students	K-12 students
Local Taxicab Companies, King Cab	For-hire taxi service	N/A	$1 initial fee + $3.20/mile for King Cab	Open to the public
Fairbanks Youth Advocates	Rides via Safe Place volunteers to FYA shelter	Shelter open from 9pm-8am	Free to eligible, at-risk youth	At-risk teens
Alaska Railroad	Passenger Service to Anchorage and other locations between May and September	One train daily to/from Anchorage	Depends on destination	Open to the public

Sources: University of Alaska Fairbanks, Salvation Army, Fairbanks Resource Agency, North Star Council on Aging, Love, INC, Laidlaw Services, King Cab, Fairbanks Youth Advocates, Alaska Railroad

3.2 PERFORMANCE SUMMARY FOR FIXED-ROUTE SERVICES

While the previous section provided an overview of MACS performance at a system level, there is significant variation in performance across individual lines. This section provides an overview of performance at the line level, including on-time performance, ridership, cost efficiency, and service effectiveness. While certain raw data were not available for each individual line, such as farebox revenue, available data included ridership by line, operating hours by line, and route length were used to extrapolate quantitative performance.

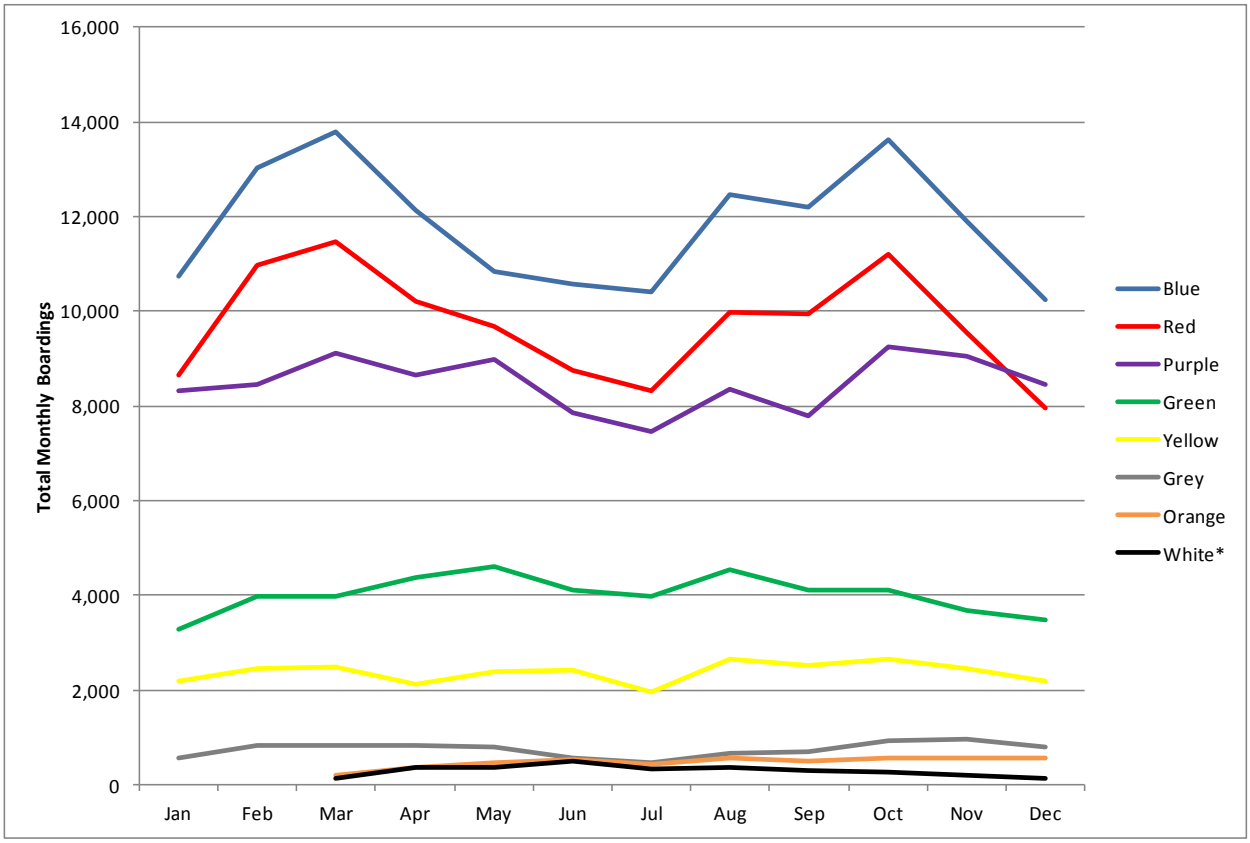
Ridership

In general, ridership on MACS is well below available capacity. For example, during the three days of ride checks, for example, average passenger loads were about half of the seating capacity. Only at one point on one run (for three stops on the Red Line) was the passenger load 100 percent of seating capacity, meaning that there was still room for standees.

Exhibit 3.2.1 breaks down ridership by month and by line for Fiscal Year 2012. The Red, Blue, and Purple Lines are the highest productivity lines at all times of year by a significant margin. Likely contributing to the Red and Blue Lines' high ridership is the fact they serve areas of higher population density, as well as UAF, whose students constitute roughly one third of all MACS riders. There is a pronounced increase in ridership on the Blue and Red Lines during the fall, winter, and spring periods, with a dip during December. This pattern likely results from the large proportion of MACS riders who are UAF students, who are more likely to ride transit, and particularly the Red and Blue Lines, when school is in session.

Brown Line data are omitted from Exhibit 3.2.1 below because while the data in the exhibit cover all of calendar year 2012, the Brown Line did not begin as a separate service until January 2013 (previously it was a part of the Purple Line). In addition, calendar year, rather than fiscal year, data were used for 2012 as it most clearly shows variation between summer and winter months.

Exhibit 3.2.1 Monthly Ridership by Line for Calendar Year 2012



**White Line name was changed to Black Line in January 2013*

Line-by-Line Performance Comparison

Exhibit 3.2.2 summarizes each line's performance utilizing several key measures of both efficiency (amount of service provided per input of money or labor) and effectiveness (passengers served per unit of service). Further below, Exhibit 3.2.3 illustrates each line's estimated farebox recovery and number of passengers per service hour. Important to note is that the data in Exhibits 3.2.1 through 3.2.3 are from Calendar Year, rather than Fiscal Year, 2012.

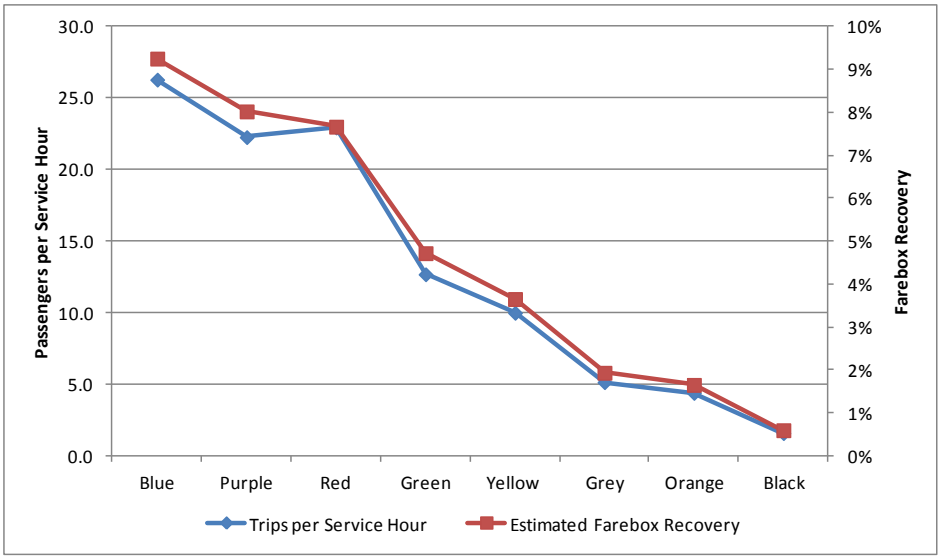
The Blue and Red Lines are the most productive routes in the MACS system as measured by trips per hour, with 26.3 and 22.9 trips per hour, respectively. In contrast, the Black Line is the least productive line, providing less than two trips per service hour. One outcome of this low productivity is its high per-trip operating cost of nearly $86, or roughly the same cost as the average Van Tran Dial-A-Ride trip.

Exhibit 3.2.2 Line-by-Line Performance Summary

Line	Total 2012 Operating Cost	Total Trips	Cost Per Trip	Estimated Subsidy per Trip*	Estimated Farebox Recovery*	Cost per Service Mile	Passengers per Hour
Blue	$849,660	151,178	$5.62	$5.10	9%	$10.68	26.3
Purple	$639,660	98,687	$6.48	$5.96	8%	$11.28	22.3
Red	$807,380	119,053	$6.78	$6.26	8%	$9.91	22.9
Green	$593,880	53,936	$11.01	$10.49	5%	$4.93	12.7
Yellow	$438,900	30,856	$14.22	$13.70	4%	$7.16	10.0
Grey	$246,960	9,208	$26.82	$26.30	2%	$5.53	5.2
Orange	$282,240	8,991	$31.39	$30.87	2%	$8.51	4.4
Black	$317,520	3,674	$86.42	$85.90	1%	$4.51	1.6

**Assumes an average per-passenger fare of $0.52, based on FY 2012 total ridership and operating costs*

Exhibit 3.2.3 Hourly Unlinked Trips and Estimated Farebox Recovery by Line



On-Time Performance by Line

System on-time performance for all lines during the winter ride check was approximately 69 percent, with six percent of surveyed runs arriving early and 25 percent arriving to timepoints late. The Orange Line had the best on-time performance, with its buses arriving at their timepoints on time in nearly 85 percent of instances. The Red Line had the lowest on-time performance at 47 percent, although as explained below, one of its runs was significantly delayed by a car accident that occurred on its route during the ride check.

Comparing on-time performance across lines is difficult. However, since significantly more runs were checked on some lines, like the Blue and Red Lines, than others, like the Grey and Orange Lines. Furthermore, on-time performance was only measured for a small sample of days and not for all runs each day. Therefore, the performance summarized in Exhibit 3.2.6 may not represent 'typical' on-time performance, which will vary depending on traffic, stop activity levels, and, particularly in Fairbanks, weather conditions.

Our winter ride check data identified several reasons for lateness on several of the runs, including:

- *Late starts*, in which the bus began one or more runs five to eight minutes after the scheduled time. The ride check crew observed this on several Grey, Purple, and Yellow Line runs.
- *Heavy stop activity*, such as a large number of boardings at each stop, which increases the amount of time the bus has to wait at each stop. Lateness caused by heavy stop activity was usually less than six minutes over the course of a run, though it may be remedied by adjusting the schedule to account for high-activity stops.
- *Irregular Events*, including accidents and breakdowns. One of the Red Line runs arrived more than 15 minutes late at all of its stops due to a car accident on the route, while a Blue Line bus was delayed due to a mechanical problem, requiring passengers to wait for and then board a backup vehicle. While irregular events, these delays explain much of the poor overall performance of the Red Line.

Summer and Winter On-Time Performance Comparison

Exhibit 3.2.7 below presents summer on-time performance by line. Overall performance for all lines was higher during the summer, with systemwide on-time performance increasing from 69 percent to 78 percent. Interestingly, however, each line retained its position relative to other lines in terms of on-time performance. For example, the Red Line performed poorest in both summer and winter, while the Orange Line performed best during both seasons, arriving at 100 percent of timepoints on time during the summer ride check. This pattern is likely due to routing and ridership patterns that persist year-round, such as more delays related to boarding and alighting on the Red and Blue Lines than on the Orange and Green Lines.

Interestingly, however, the Red Line's poor summer on-time performance reflects more early departures, rather than late, from each stop. This suggests drivers may not be holding at each time point for a long enough period of time.

Exhibit 3.2.5 On-Time Performance by Line (Winter)

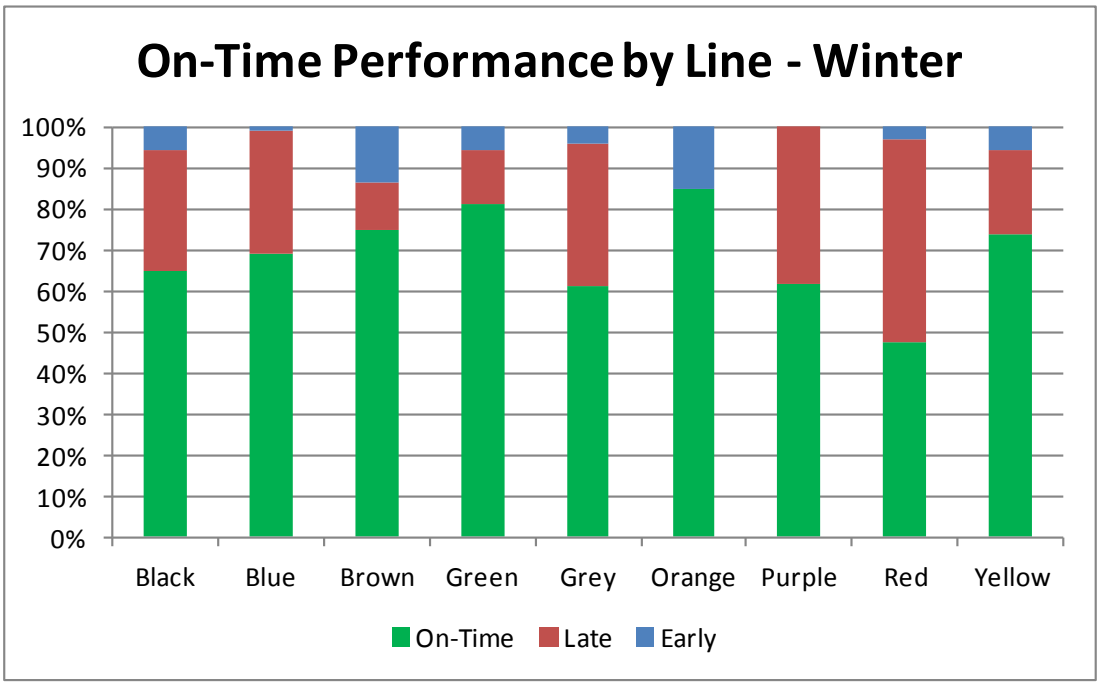
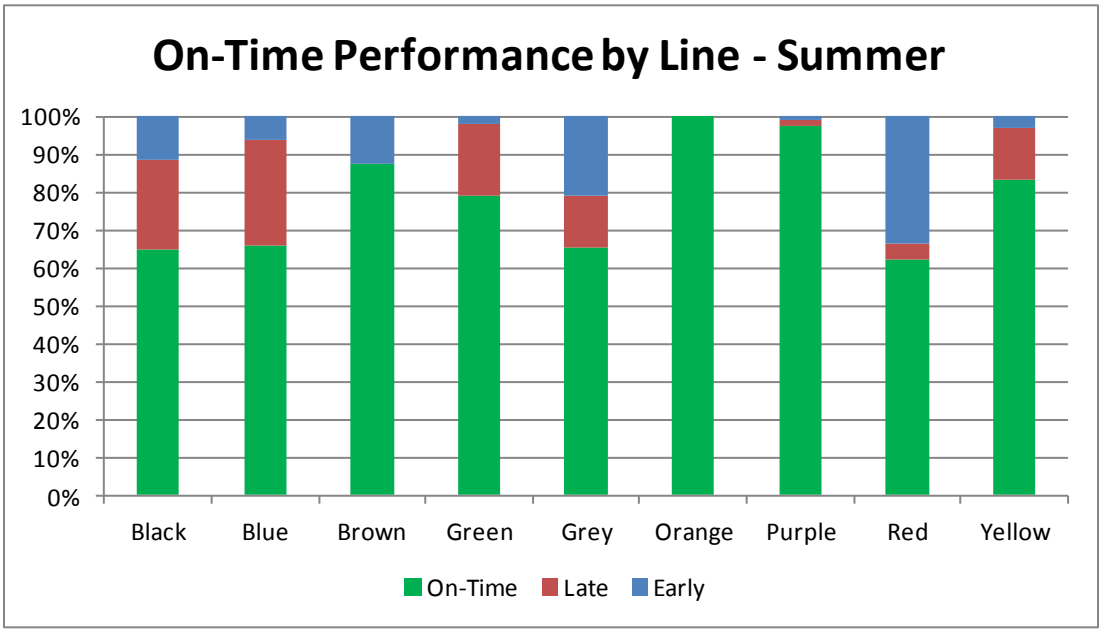


Exhibit 3.2.5 On-Time Performance by Line (Summer)



3.3 LINE-BY-LINE PROFILES FOR MACS SERVICE

Overview

In addition to significant performance variation across different lines within a transit system, there is also considerable variation within the same line. The values in Exhibits 3.2.1 through 3.2.3, while providing a good overall idea of how each line performs with respect to other lines, hide significant variation in terms of when and where people use each line. This section will break down ridership by stop and time of day. In addition to the maps showing the number of boardings and alightings for each stop on each line, Appendix B contains more detailed charts displaying load by stop and total boardings by time of day. Appendix C provides tables listing boarding and alighting numbers by stop. In this section, the four time periods of each day were defined in the following manner:

AM Other – 3:01 AM to 6:00 AM
AM Peak – 6:01 AM to 9:00 AM
Mid-Day – 9:01 AM to 3:30 PM
PM Peak – 3:31 PM to 7:00 PM
PM Other – 7:01 PM to 3:00 AM

The boarding and alighting data in the maps that follow were collected between Wednesday, March 6, and Saturday, March 9, 2013. Boarding and alighting data by stop were collected for all operational days for all lines. As a result, overall data, such as average load by stop and total boardings, may factor in both weekday and Saturday data.

Ride Check Limitations

Not all routes operate during all time periods and, for example, may only operate one or two AM peak bus runs while operating considerably more mid-day or PM peak runs. Such variations in the number of bus runs by time of day will in some instances explain differences in total ridership during different periods of the day. Furthermore, not all runs for all routes received ride checks, and in some cases certain periods of the day received fewer ride checks than others, which may lead to one period appearing to have more periods simply because more runs were checked during that period. To adjust for this, Appendix B also shows average load (passengers on the vehicle) by stop, which provides a better idea of how “busy” each route is at different points and during different periods of the day.

Finally, the boarding and alighting values in the maps for each stop do not include passengers who were already aboard the vehicle when ride check personnel began counting boardings and alightings. If, for example, a ride checker observed two passengers already on a bus when he/she boarded, then one person boarded at the same stop as the ride checker, the data will show one person boarding at that stop. However, total boarding values (e.g., total boardings by time of day, total boardings observed during all ride checks) and load values *do* include these passengers who were already aboard when the ride checker boarded.

BLACK LINE

Ridership Patterns

By Stop

Total Black Line usage was very low, with 14 boardings counted for all checked runs in both the northbound and southbound directions. The busiest stop on the Black Line was the Transit Center stop, with eight total boardings and one alighting. Many Black Line riders using the Transit Center stop were likely transferring to other lines within the MACS system.

Exhibit 3.3.1 Black Line Boarding and Alighting by Stop, Northbound

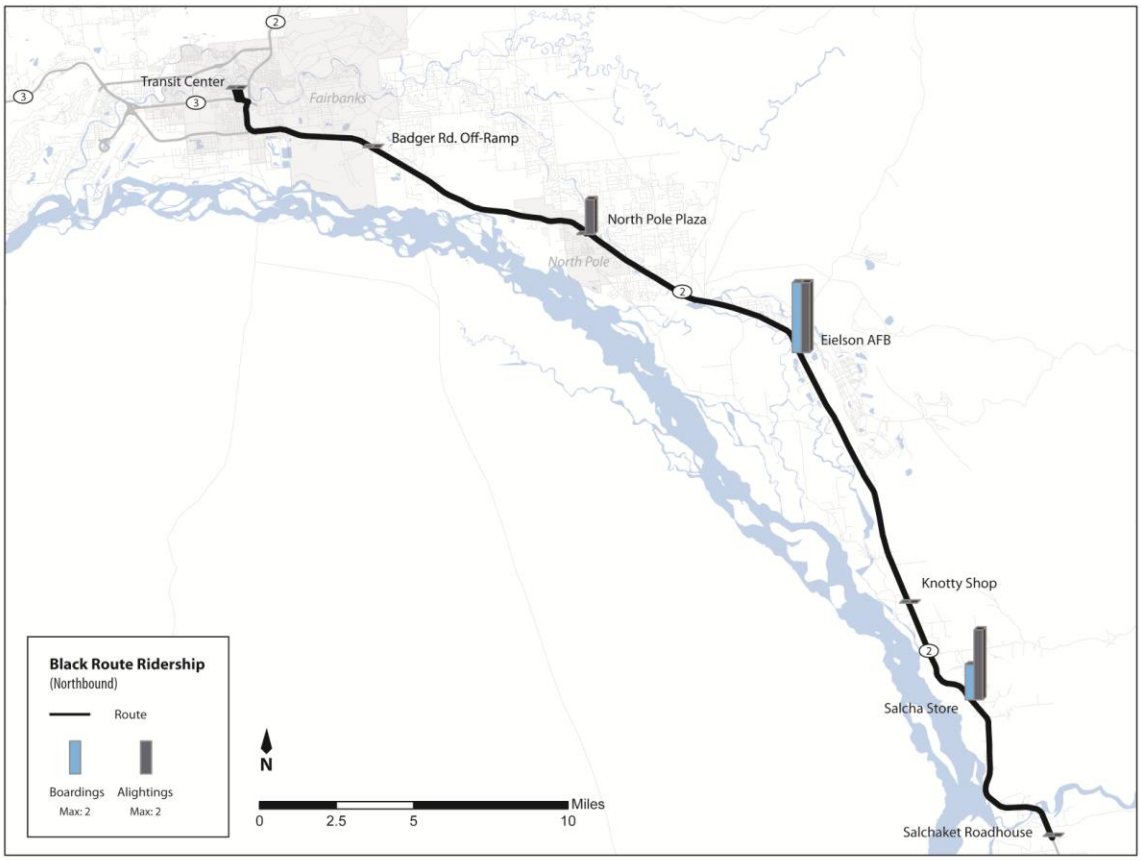
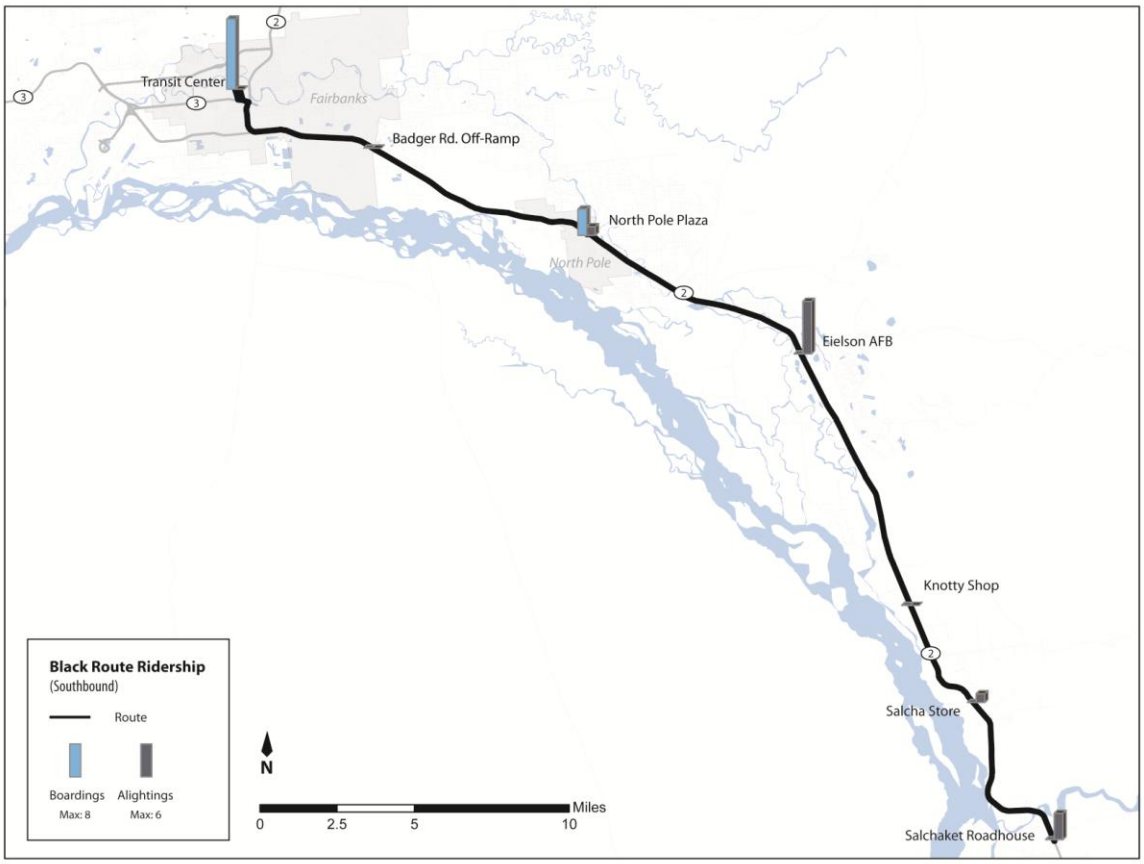


Exhibit 3.3.2 Black Line Boarding and Alighting by Stop, Southbound



By Direction

Black Line ridership was higher in the southbound direction, with nine boardings, than the northbound direction, which only had five boardings. This pattern suggests that very few people use the line for daily, round-trip commutes, while others use the line to travel between Fairbanks and Eielson AFB.

By Time of Day

Due to the extremely low total ridership numbers for the Black Line, one cannot definitely establish whether it is on average busier during the AM peak or the PM peak, though five people boarded during the AM peak and nine during the PM peak. The Black Line does not operate outside the AM or PM peak periods. The highest passenger load measured on a Black Line bus was four people, or about 13 percent of capacity.

BLUE LINE

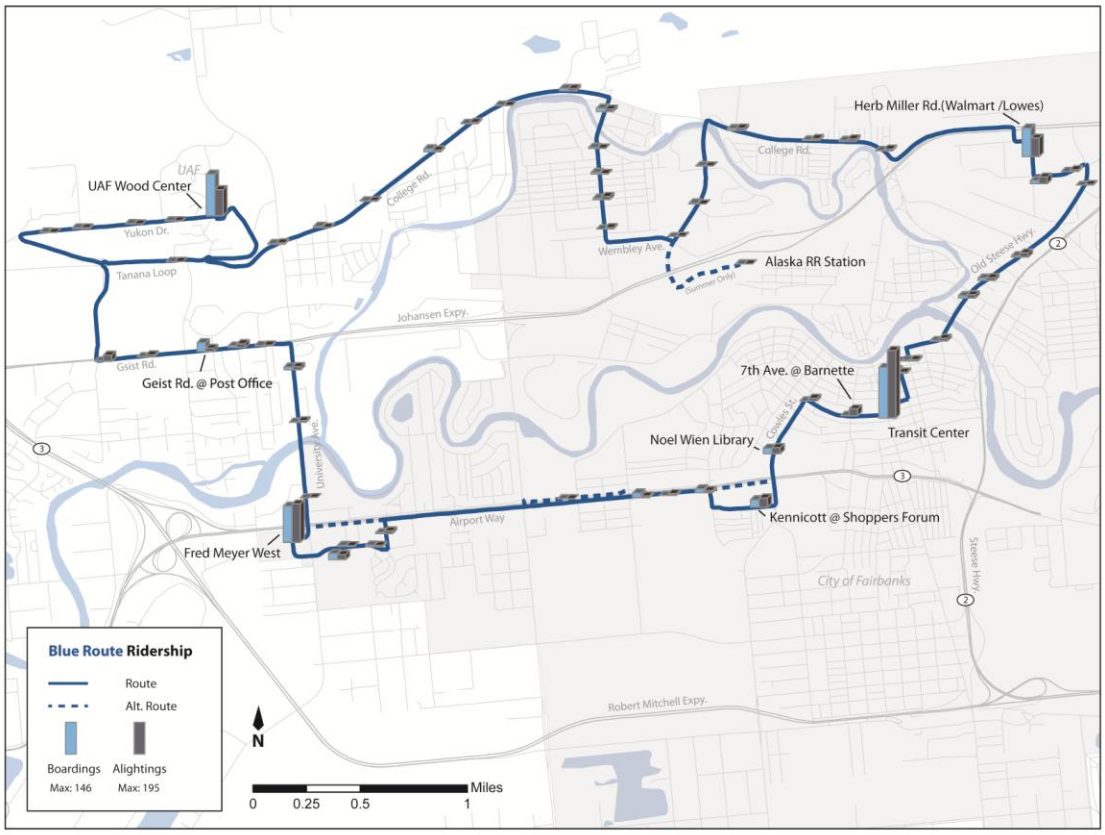
Ridership Patterns

By Stop

With 757 boardings counted during the ride check, the Blue Line was the busiest MACS route. Its high ridership is likely due to the fact that the Blue Line operates relatively frequently (about every half hour) and serves the University of Alaska (UAF), whose students can ride MACS free of charge.

The University of Alaska (UAF) and major transfer points are the busiest stops on the Blue Line. Given that just under a third of rider survey respondents indicated that they paid with their UAF pass, it is not surprising that the UAF Wood Center is among the line's busiest stops, with nearly 200 Blue Line riders using it during the ride check. Other busy Blue Line stops included the Transit Center (341 users, including both the beginning and ending stop activity), Fred Meyer West (216 users), and Herb Miller Road (135 users). The high activity at these stops likely results from a combination of people traveling to these destinations to shop and work as well as transfer to other MACS routes.

Exhibit 3.3.3 Blue Line Boarding and Alighting by Stop



By Direction

As shown by the load-by-stop data in Appendix B, the Blue Line appears to be heavily used by riders traveling to and from UAF and to retail centers. In particular, UAF and the Herb Miller Road stop at the Walmart appear to be popular alighting destinations during the AM peak and popular boarding destinations during the PM peak. Conversely, the stops on Geist Road at the Post Office and Fred Meyer West had many AM peak boardings and PM peak alightings. These trends suggests that many riders live near the Geist Road location and Fred Meyer West locations, and work or attend classes at UAF and the area around the Herb Miller Road Walmart stop.

By Time of Day

Nearly 90 percent of observed Blue Line boardings occurred during the midday and PM peak periods, with the greatest number of boardings during the PM peak. This is due in part to the fact that 16 runs were checked during the mid-day and PM peak periods, whereas only two were checked during the AM peak and one during the PM other period. While only two AM peak runs were checked, only five total Blue Line runs depart from the Transit Center during the AM peak (6:00am to 9:00am) on a typical weekday. Therefore, it is reasonable to assume that an adequate sample of AM peak runs were checked such that if a 100-percent ride check of all runs had been performed, that the distribution of boardings by time of day would not have been significantly different.

Peak loads on the Blue Line occurred between the mid-day period and early afternoon, with the highest peak on a bus reaching 27 riders, or 90 percent of the seat capacity, during the PM peak. At no point on any of the ride checks did the passenger load exceed the seating capacity.

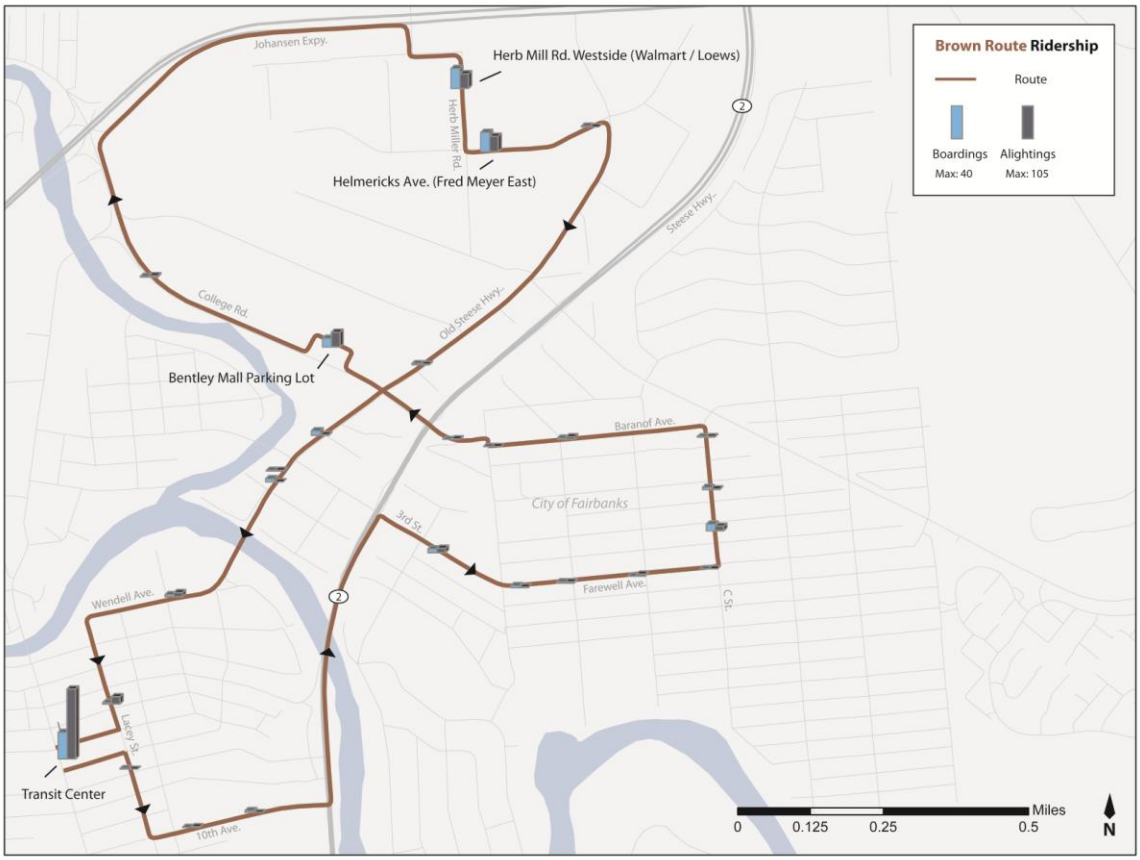
BROWN LINE

Ridership Patterns

By Stop

The ride check team counted 222 Brown Line riders during its ride check. Similar to the stop activity patterns on the Blue Line, the busiest Brown Line stops were at transfer points and in commercial areas. The stops at the Transit Center (145 users, including both departure and arrival) and Helmericks Avenue (52 users) are both transfer points to other lines in the MACS system, while the Bentley Mall parking lot stop (35 users) is located at the Bentley Mall and Sam's Club, which are popular retail destinations.

Exhibit 3.3.4 Brown Line Boarding and Alighting by Stop



By Direction

No overwhelming patterns appeared in terms of the direction of Brown Line riders' travel, though the line's load-by-stop chart Appendix B suggests that people use the Brown Line to as a means to travel between the Transit Center and the East Fairbanks Shopping District.

By Time of Day

The Brown Line had the greatest number of observed riders during the mid-day period and PM peak, which is likely due to the fact that the ride check team performed counts on 15 runs during the mid-day and PM peak periods, and only on two runs during the AM peak period. However, given there are only two total runs on the Brown Line that depart from the Transit Center during the AM peak, this difference in runs checked does not skew the sample with respect to performing a 100-percent ride check. In other words, had all runs been checked, the distribution of boardings by time of day would likely have been similar to the distribution in our sample.

The Brown Line's highest passenger load was 14 riders on a PM peak bus, or about 47 percent of capacity, occurring as the bus was entering Downtown Fairbanks en route to the Transit Center.

GREEN LINE

Ridership Patterns

By Stop

The Green Line, with 387 observed boardings, has stop activity patterns similar to those of other MACS lines. Its busiest stops were at commercial centers such as North Pole Plaza (43 users) and the Transit Center (308 users, including both departure and arrival). Interestingly, stops near McPeak's Badger Store experienced fairly high usage considering that there do not appear to be large numbers of residences or commercial attractions nearby. The stop on Badger at McPeak's, for example, served 40 passengers. Potential explanations for this relatively high ridership could be that a high proportion of residents living near this stop use transit, or there is a major employer nearby.

Exhibit 3.3.5 Green Line Boarding and Alighting by Stop, Northbound

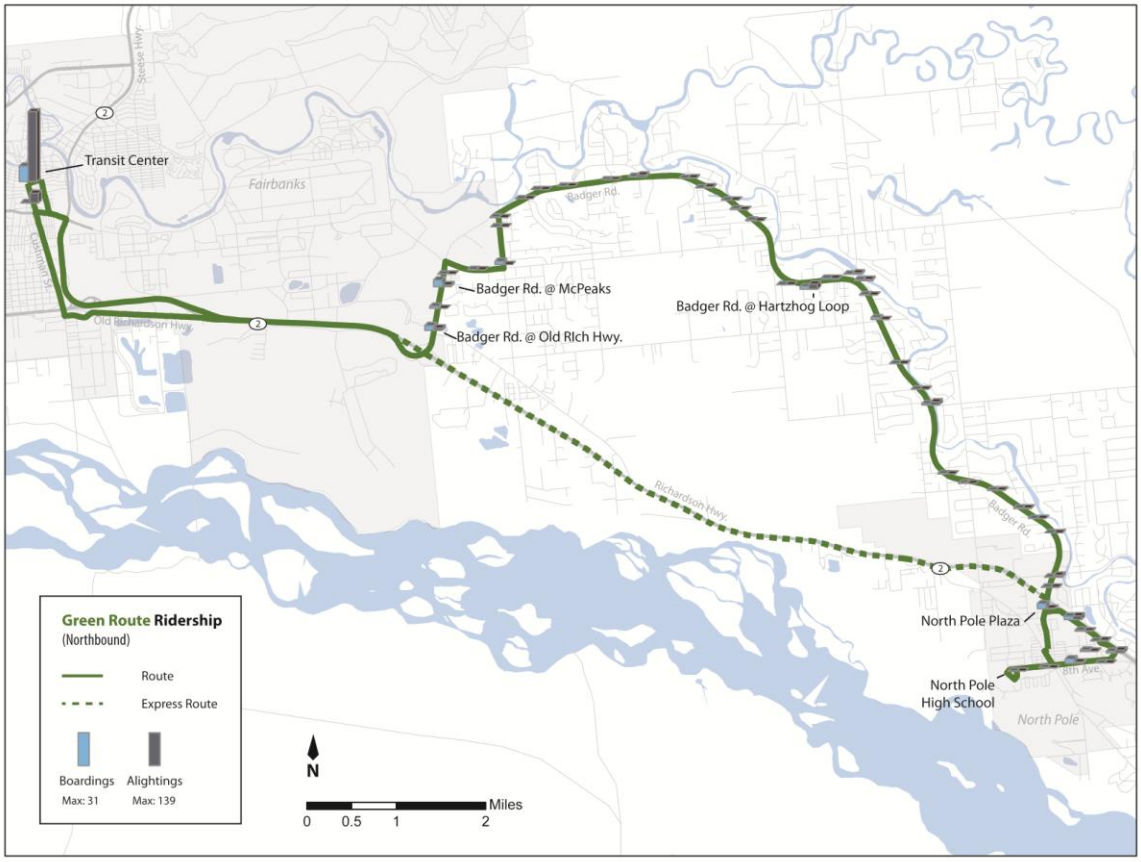
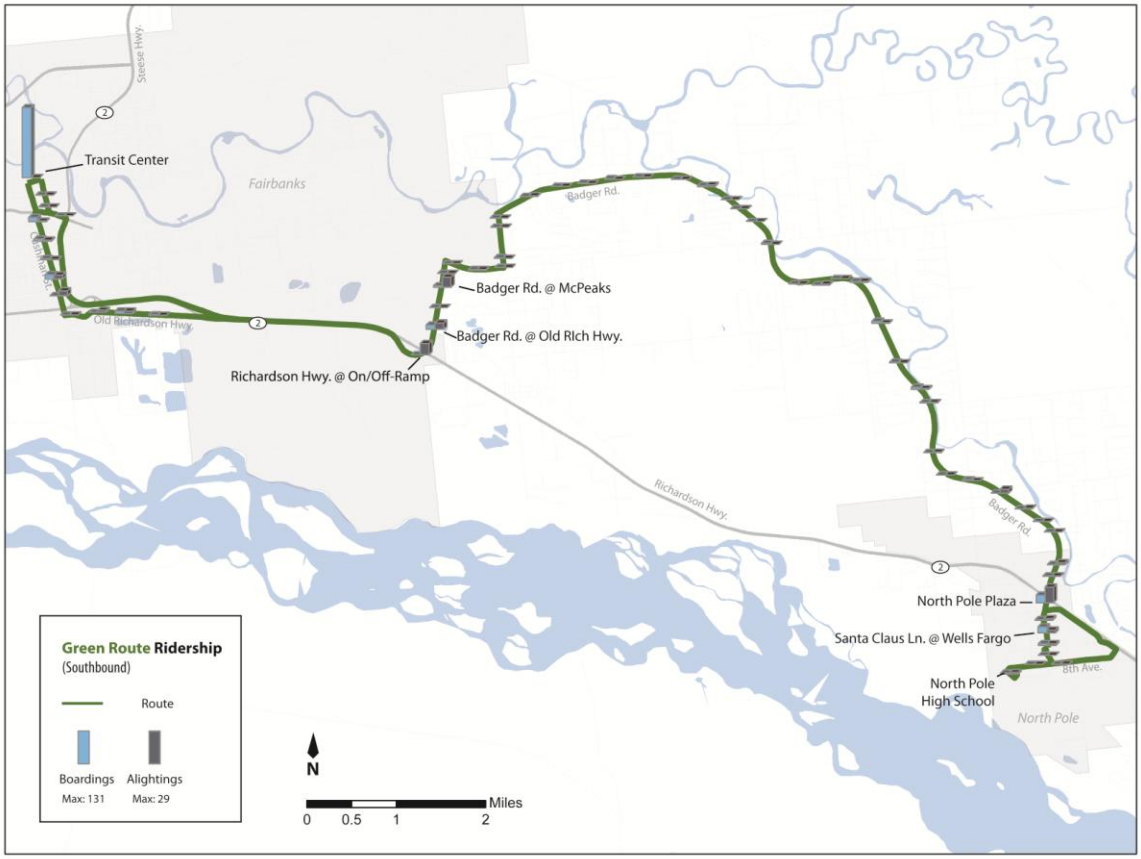


Exhibit 3.3.6 Green Line Boarding and Alighting by Stop, Southbound[2]



By Direction

During the AM Peak period, there is a tendency for people to use the Green Line to travel between North Pole and the Fairbanks Transit Center. This trend is shown by a significant jump in the load at North Pole Plaza, followed by a slow but steady load increase as the bus travels toward the Transit Center, then a sharp drop in at the Center itself. It is assumed that many who are alighting at the Transit Center are either accessing destinations in Downtown Fairbanks or transferring to other MACS lines.

During the PM Peak, this trend is somewhat reversed, with a significant load starting at the Transit Center, with significant alighting at stops near North Pole Plaza. Combined with AM peak travel patterns, it is likely that a significant share of Green Line users use it to commute from North Pole to jobs in Fairbanks.

[2] Boardings illustrated in Exhibit 3.3.6 (southbound) at North Pole Plaza and Santa Claus Lane reflect chiefly riders who will stay on the bus after it passes the line's southern terminus at North Pole High School and ride it north to Fairbanks.

In addition to travel between North Pole and Fairbanks, the Green Line load-by-stop data suggest that the significant amount of stop usage near Badger Road and Richardson Highway is due to people traveling to Fairbanks during the AM Peak and returning to the Badger Road/Richardson Highway area during the PM Peak. As mentioned above, there do not appear to be many houses near this intersection, so the high amount of stop activity is somewhat surprising.

By Time of Day

As with the other lines, the greatest number of Green Line riders used the line during the mid-day period. Many travelers on the Green Line also rode during the PM peak, which had the highest average load. The greatest absolute load (24 passengers, or 80 percent of capacity) also occurred during the peak period, on an outbound bus traveling along Cushman Street between 17th and 24th Avenues.

Bicycles

The Green Line carried significantly more passengers with bicycle than any other line in the MACS system, with 47 riders with bicycles counted during the summer ride check. Many of these passengers boarded at the Transit Center and alighted at various points along Badger Road and in North Pole. The Green Line's relatively high number of passengers with bicycles is likely in part due to the operating environment along Badger Road, with riders likely living beyond reasonable walking distance from stops and instead opting to access the stop by bicycle.

In addition to the ride check team's observations, staff from FNSB report that it is common during the summer to have more riders with bicycles than there is space to store the bicycles on the bus. In some cases, cyclists use the wheelchair space when the rack (with a capacity of three bicycles) is full, though this arrangement is not desirable.

GREY LINE

Ridership Patterns

Of the 21 total riders who rode the Grey Line during the ride check, most were traveling to UAF from origins along Farmer's Loop Road .While many of those who got off at the Wood Center were likely UAF students and employees, the Wood Center stop is also a transfer point to the Blue, Yellow, and Red Lines, so many of the passengers using this stop may have been transferring to another line.

By Stop

Exhibit 3.3.7 Grey Line Boarding and Alighting by Stop, Eastbound

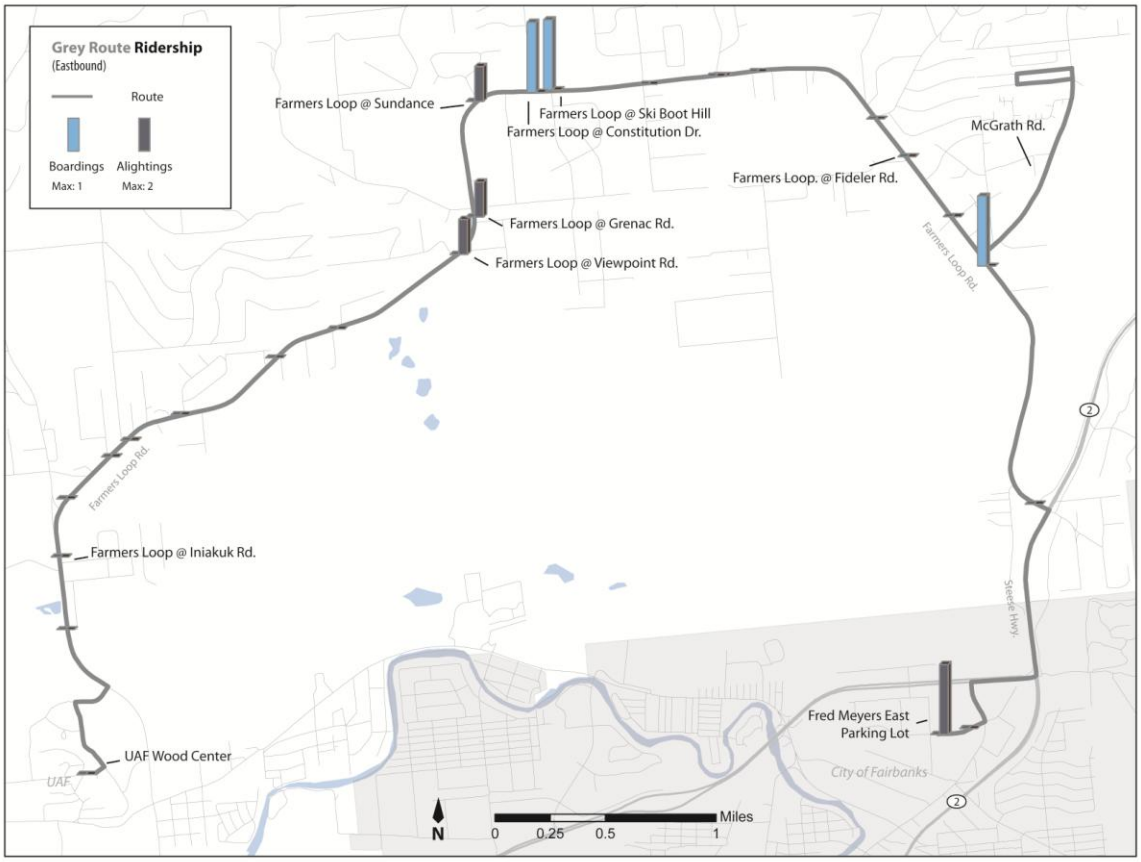
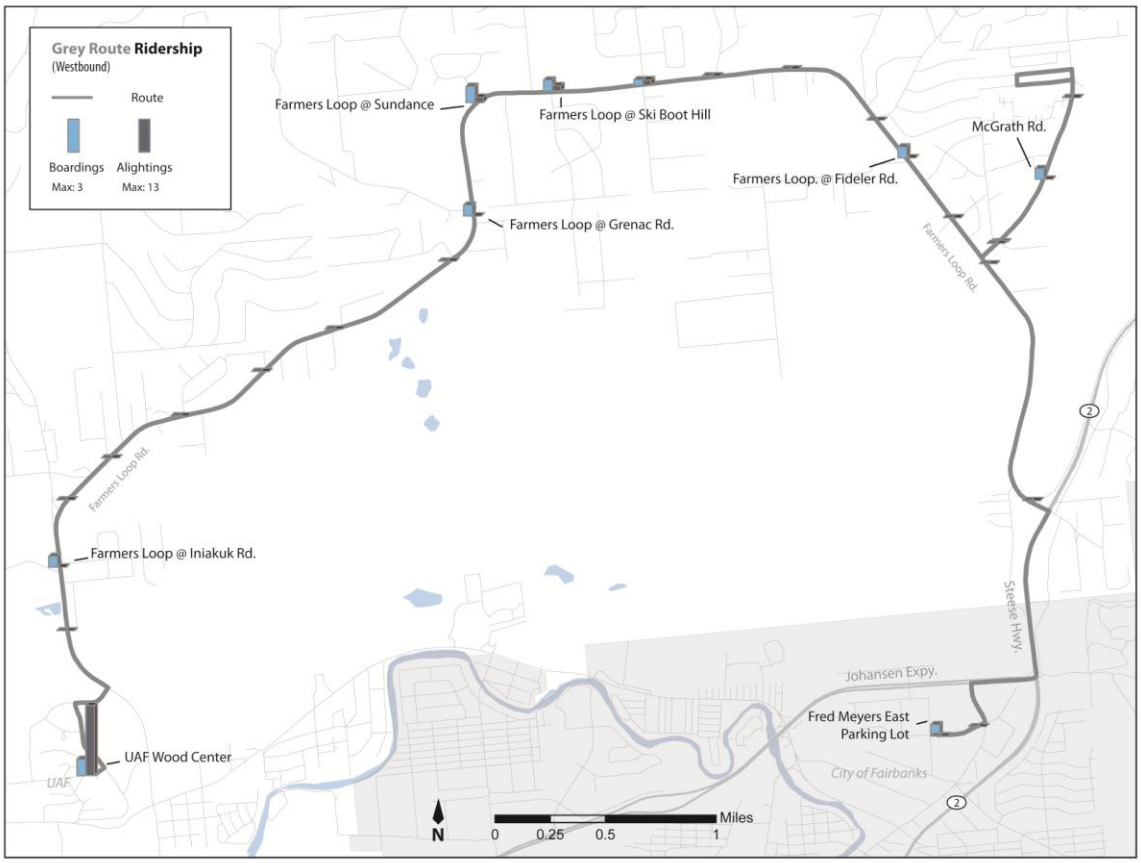


Exhibit 3.3.8 Grey Line Boarding and Alighting by Stop, Westbound



By Direction While the small total number of riders makes reliable generalizations difficult, riders tend to use the Green Line to access UAF during the AM peak, as indicated by the average load increase along Farmer's Loop Road in the westbound direction.

During the PM Peak, there are no clear patterns, and the average load for the eastbound direction never rises above 1.5 riders. This very low absolute load size make it impossible to gain credible insight as to travel patterns, as the sample size is too small.

It is at first somewhat unexpected that there is a fairly clear pattern of people using the Grey Line to travel to UAF in the morning, but an apparently smaller number of people using it during the PM peak. However, this apparent "shortage" of return trips is likely because all three AM peak buses received ride checks, while only two of the three PM peak buses received them. It is possible that other AM peak Grey Line riders made their return trip using the PM peak Grey Line bus that did not receive a ride check and were therefore not counted.

By Time of Day

While only 21 people were observed using the Grey Line, the majority (15 of the 21 riders) rode the line during the AM peak. This discrepancy of nine riders is small in absolute terms, and it is possible it is reflective of the fact ride checks were not performed on all runs. Specifically, only two of the three PM peak runs were checked while all of the AM peak runs were checked. For example, a rider could have boarded during a morning run that was checked, and then returned on a later run that was not checked.

As mentioned above, total counted ridership on the Grey Line was very low with only 21 riders counted during all ride checks. The maximum load for any run at any point was six riders during the AM peak right before the UAF stop, occupying 20 percent of bus seating capacity.

ORANGE LINE

Ridership Patterns

By Stop

The Orange Line's 37 daily riders, like riders on other MACS lines, tended to board and alight at stops with transfers to other lines or shopping opportunities. Such stops on the Orange Line included the Transit Center (24 boardings and alightings) and Fred Meyer West (12 boardings and alightings).

While it had only 12 boardings and alightings, the Behavioral Health Center stop was fairly busy relative to other Orange Line stops. Its relatively high usage could be a due to the fact that the Behavioral Health Center may have a relatively large share of patrons or employees who arrive via the Orange Line.

Exhibit 3.3.9 Orange Line Boarding and Alighting by Stop, Eastbound

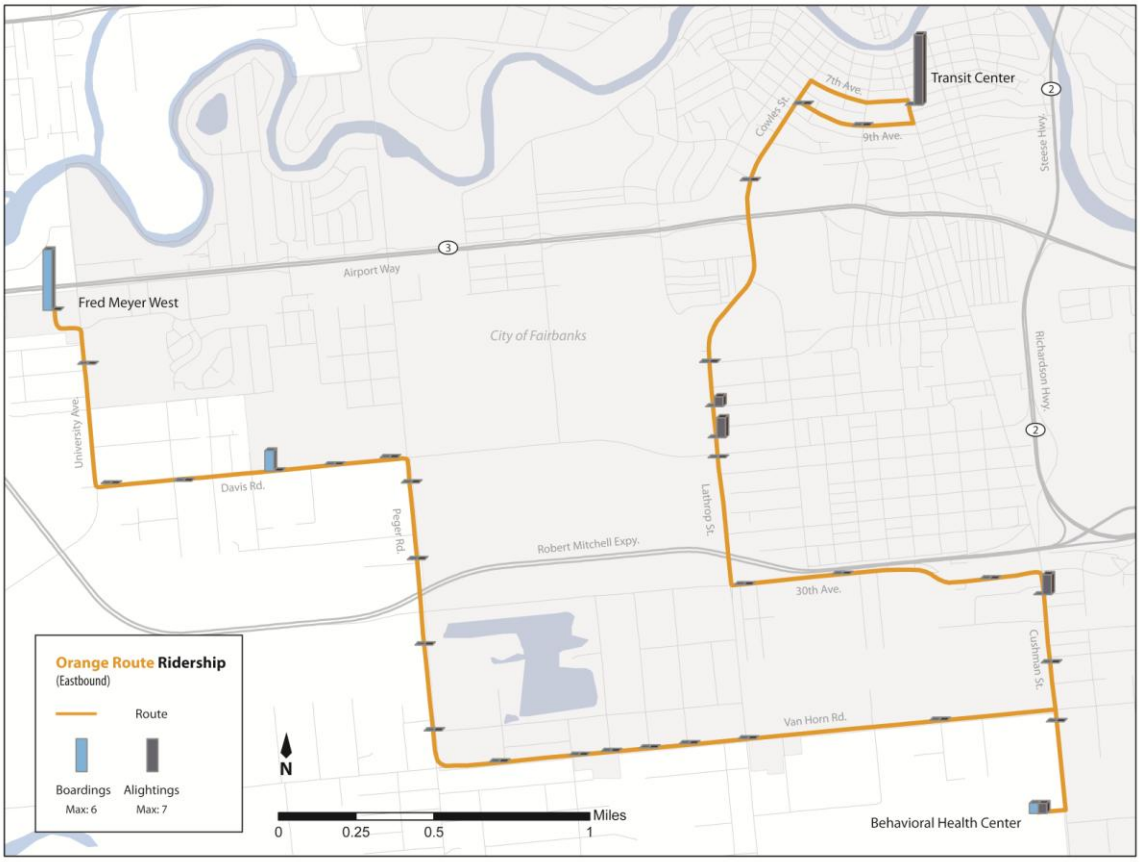
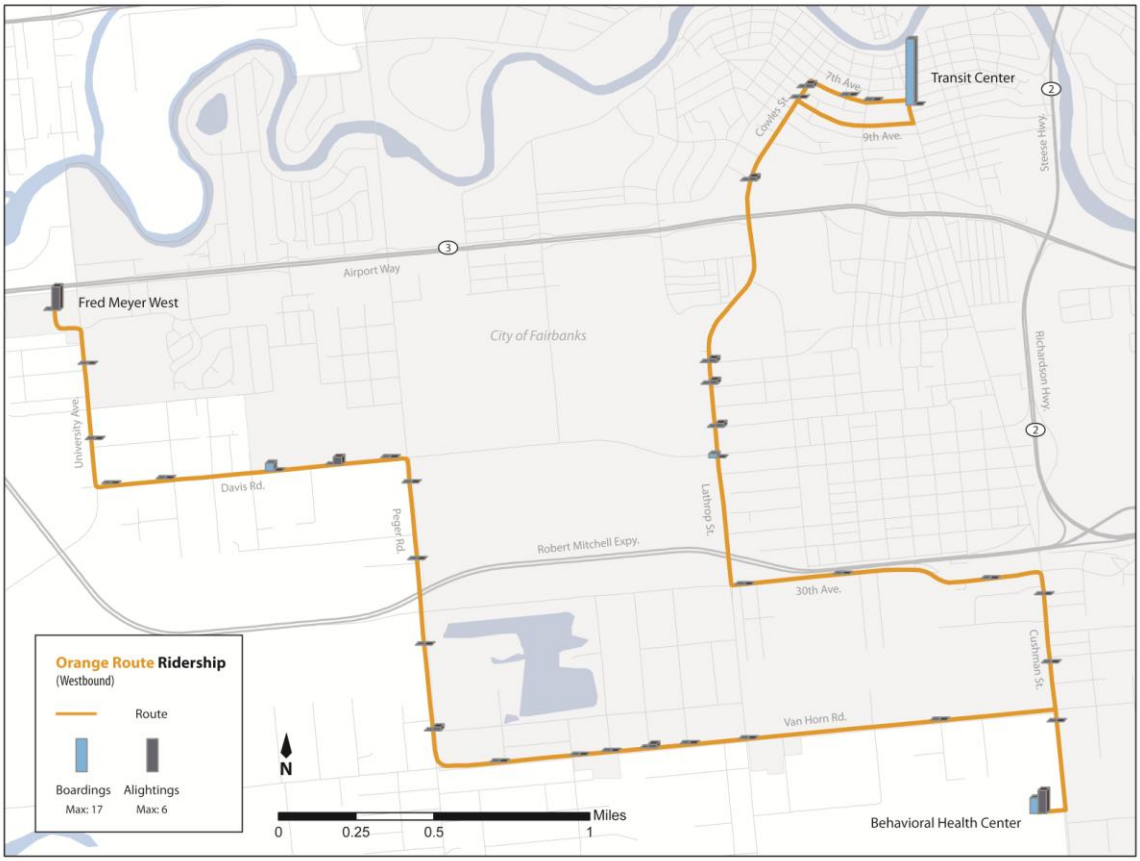


Exhibit 3.3.10 Orange Line Boarding and Alighting by Stop, Westbound



By Direction

As the data in the load-by-stop chart in Appendix B show, the Orange Line does not exhibit any strong directional travel patterns going eastbound from Fred Meyer West to the Transit Center, with the average load being fairly low and consistent over the length of the line. This trend is fairly consistent for the AM peak and mid-day periods.

Going westbound from the Transit Center to Fred Meyer West, the Orange Line has an overall tendency to start with a higher load at the Transit Center, with the load tapering off as the bus travels the route toward Fred Meyer West. As noted above, there is an unexpectedly high amount of stop activity at the Behavioral Health Center, with a significant number of alightings in the AM peak and even more boardings during the mid-day period. It is possible either patients or employees of the Behavioral Health Center use the Orange Line to access the Center in the morning, and then leave in the afternoon. More PM peak ridership data could provide a better test of this pattern and give a better idea of how consistent it may be.

As the Orange Line's boardings-by-time-of-day chart in Appendix B illustrates, no ride checks were performed on Orange Line runs during the PM Peak period, with the latest run being checked in the early afternoon, during the mid-day period. There are, however, two runs in each direction during the PM peak period.

By Time of Day

The small number of Orange Line runs that were checked and its low overall ridership make it difficult to arrive at any conclusions in regards to ridership by time of day. There were more total riders during the AM peak period (23) than during the mid-day period (14). However, three AM peak runs were checked while only one mid-day run was checked. The peak load of seven passengers, or about 23 percent of capacity, occurred on one of the westbound AM peak buses just after leaving the Transit Center. There was a similar peak during the mid-day period, also on a westbound bus, leaving the Behavioral Health Center. The load at this point was also seven passengers, or about 23 percent of bus capacity. No PM Peak Orange Line buses received ride checks, though there it does operate two PM peak period bus runs in each direction.

PURPLE LINE

Ridership Characteristics and Travel Patterns

By Stop

The ride check staff recorded 345 boardings on the Purple Line. As Exhibit 3.3.11 shows, the Transit Center was the busiest stop, with 298 users boarding and alighting buses traveling in both directions. The stop at Cushman and 27th Avenue also saw relatively high activity, part of which likely comes from the Fairbanks Rescue Mission, which houses a homeless shelter, women's shelter, and food bank. Also, each bus run stops twice at this stop, unlike many of the other stops along the Purple Line at which buses only stop once during each run. As a result, this stop's higher activity may be due to the fact that service here is bi-directional.

Exhibit 3.3.11 Purple Line Boarding and Alighting by Stop

By Direction

Three AM peak runs and six PM peak runs were checked, in addition to mid-day runs and several PM other runs. The load data for the three checked AM peak runs indicates a fairly strong pattern of riders using the Purple Line to access the Transit Center. This AM peak trend is illustrated in Appendix B, which shows the load steadily increasing over the length of the route, and then sharply dropping when returning to the Transit Center.

During the PM peak, there is a mild tendency for riders to use the service to travel from the Transit Center to other points along the line. However, the trend is less pronounced and the load during the PM peak is generally lower than during the AM peak.

By Time of Day

The ride check team counted the greatest number of boardings, 163, during the mid-day period. However, this is likely because they performed ride checks on a greater number of bus runs during the mid-day period (eight), than during the AM or PM peaks (six and three runs, respectively). However, this difference is due to the fact that on a normal weekday there are three total AM peak runs and three total PM peak runs that depart from the Transit Center. In other words, fewer AM and PM peak runs were checked because there are simply fewer buses departing during those periods.

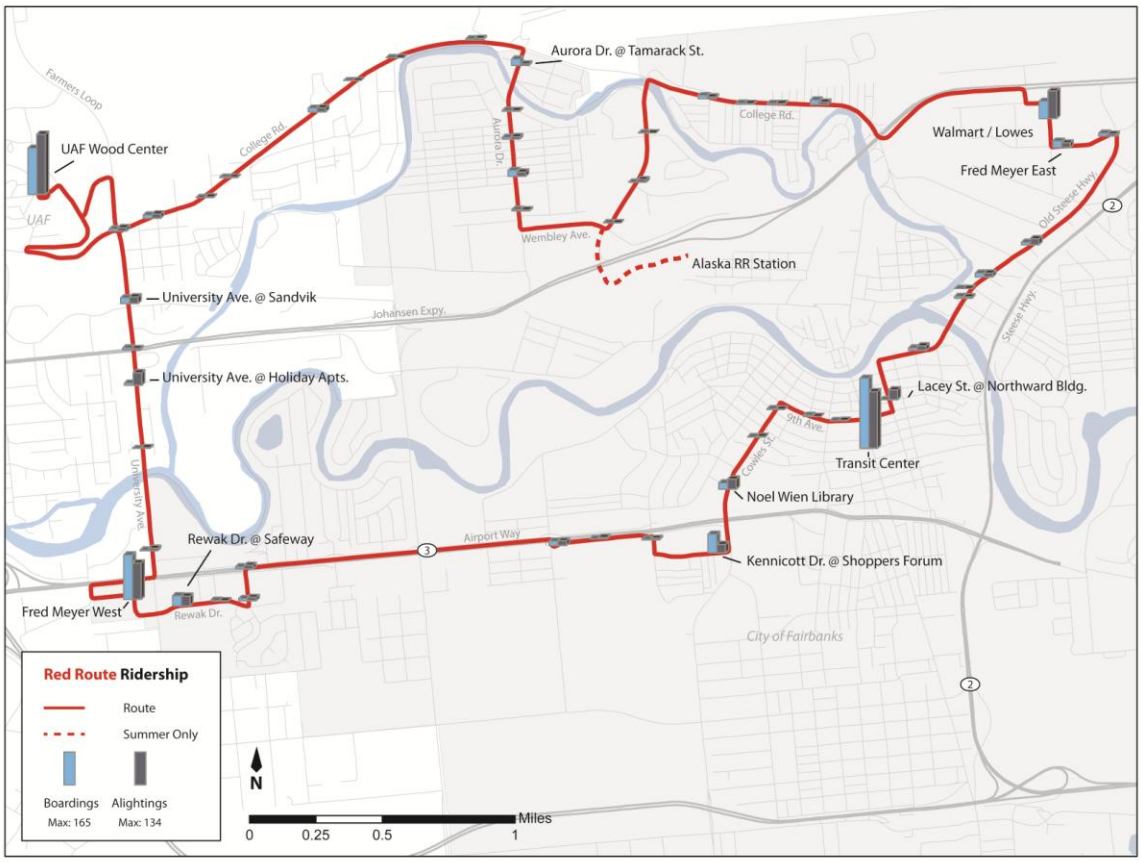
RED LINE

Ridership Characteristics and Travel Patterns

By Stop

The Red Line had 747 boardings during the ride checks performed and was the second-busiest line in the MACS system. Like most of the other lines in the MACS system, the busiest stops tended to be transfer points and retail hubs, including the Transit Center, at which 299 riders were observed boarding or alighting. Similar to other MACS lines serving the University of Alaska, such as the Blue and Grey Lines, the UAF Wood Center stop was also among the line's busiest, with 251 boardings and alightings recorded during the ride check.

Exhibit 3.3.12 Red Line Boarding and Alighting by Stop



By Direction

As load-by-stop data indicate, the during the AM peak, many people use the Red Line to access UAF, as evidenced by the relatively high average load of 10-12 people between the Transit Center and UAF, then a sharp load drop at UAF. Interestingly, the PM peak follows a different load pattern, though it is not complementary, i.e., the many riders who alight at UAF during the AM peak do not board the Red Line again during the PM peak. It is likely that many of these riders board the Blue Line during the PM peak because it runs on a very similar loop as the Red Line, but travels in the opposite direction and thus may provide a more direct route to their destination.

By Time of Day

The highest Red Line usage occurred during the PM peak period, when ride checkers observed 344 riders either boarding or already on the bus when they began the check. The highest observed load on the Red Line was 30 passengers, or 100 percent of seating capacity. This high point occurred during the PM peak along University Avenue just north of Fred Meyer West. This section was the only point on any of the ride checks at which 100 percent of seating capacity was used.

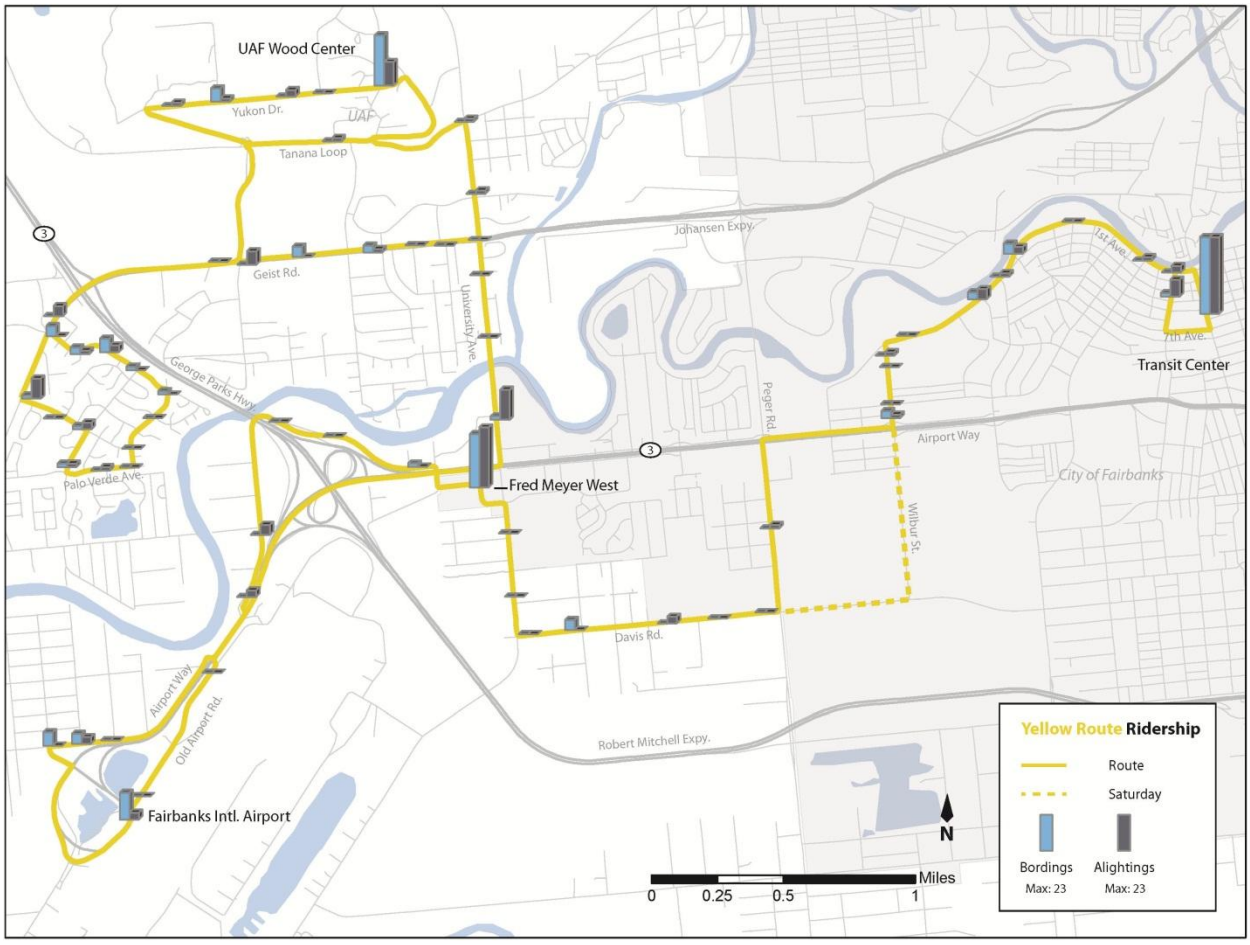
YELLOW LINE

Ridership Characteristics and Travel Patterns

By Stop

The 114 people who rode the Yellow Line during the ride check tended to use stops at transfer points and major shopping destinations such as the Transit Center (46 users) and Fred Meyer West (18 users). As was the case with other lines serving UAF, the Wood Center was also a relatively popular stop along the Yellow Line, with 22 users. Ten people used the Airport stop during the ride check, making it also relatively busy among Yellow Line stops, although not among stops at a system level.

Exhibit 3.3.13 Yellow Line Boarding and Alighting by Stop



By Direction

The Yellow Line's dispersed destinations tend to prevent any strong direction travel patterns from emerging. However, ride check data suggest a notable market for riders traveling between UAF and the

residential areas west of UAF near Chena Pump Road. In addition, there was some activity at the Airport and between Fred Meyer West and UAF.

By Time of Day

The Yellow Line had the greatest number of users during the mid-day period, during which 75 riders were observed either boarding or already aboard when the ride checkers began counting. This high usage is likely due to the fact that while four mid-day buses received ride checks, checks were performed on two AM peak buses and only one PM peak bus.

The highest Yellow Line load occurred during the mid-day period between the Geist Road post office and Fred Meyer West, during which period there were 12 people on board, representing 40 percent of seating capacity.

3.4 SUMMER AND WINTER COMPARISONS OF STOP ACTIVITY

Ridership system wide decreased between the winter and summer surveys, in line with the ridership data for calendar year 2012 shown in Exhibit 3.2.1. Several MACS lines, particularly those serving UAF, experienced significantly different ridership patterns during the summer and winter ride checks. In addition, as discussed more below, the number of wheelchair and bicycle boardings also increased substantially during the summer. While complete charts comparing summer and winter boarding and alighting activity by stop are available in Appendix B, below some of the more significant differences are summarized.

Blue and Red Lines

While these remained the busiest lines during the summer, some of their busiest winter stops experienced significantly less stop activity during the summer. At the UAF Wood Center, the number of Blue Line boardings and alightings decreased from 195 during the winter to 64 during the summer, or nearly two thirds. The Red Line experienced an even greater decrease in stop activity, with its Wood Center boardings and alightings falling from 251 in the winter to 69 in the summer, representing a more than 70-percent decrease.

Similar decreases occurred at other stops along these lines, including at Fred Meyer West and at Herb Miller Road, but the change in ridership at the UAF Wood Center is the most significant.

Brown, Green, Orange, and Purple Lines

Activity on these lines was overall lower during the summer than the winter. However, the decrease was proportional across stops, meaning that activity decreased at all stops by roughly the same percentage.

Yellow Line

Unlike most MACS lines, this line experienced an increase in ridership during the summer. The Yellow Line's total boardings increased from 104 to 132, with the highest increases in stop activity seen at the Transit Center, Fred Meyer West, and the Amherst/Chena Pump stops. There was a significant decrease, however, in stop activity at the UAF Wood Center, with boardings and alightings decreasing from 16 to four.

Grey and Black Lines

Both of these lines experienced such low ridership during both the summer and winter ride checks that it is not possible to confidently establish any patterns in ridership or assert that there is a significant ridership difference between the summer and winter. The Black Line had several more boardings during the summer (18) than during the winter (14), but no clear trends emerged.

Similarly, the Grey Line experienced a slight increase in boardings, with 29 in the summer versus 22 in the winter, but not a large enough increase such that one could assert there is a meaningful seasonal difference.

Wheelchair and Bicycle Boardings

While total ridership decreased between the summer and winter ride checks, the number of passengers both in wheelchairs and using bicycles increased substantially. These increases likely result from more favorable weather conditions. During the winter, more wheelchair users probably spend the extra money to use Van Tran services for their travel needs, while passengers on bikes may drive or carpool.

Exhibit 3.4.1 compares the number of wheelchair boardings by line during the summer and winter ride checks, while Exhibit 3.4.2 presents boardings of passengers with bicycles.

Exhibit 3.4.1 Summer and Winter Wheelchair Boardings by Line

Wheelchair boardings	Winter	Summer
Black	0	0
Blue	1	1
Brown	0	2
Green	1	0
Grey	0	0
Orange	0	0
Purple	2	1
Red	1	10
Yellow	0	3
Total	5	17

Exhibit 3.4.2 Summer and Winter Bicycle Boardings by Line

Bike totals	Winter	Summer
Black	0	0
Blue	4	13
Brown	0	7
Green	4	47
Grey	1	2
Orange	0	0
Purple	0	1
Red	4	1
Yellow	1	4
Total	14	75

4

PUBLIC INVOLVEMENT

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CHAPTER 4 – PUBLIC INVOLVEMENT

Public involvement is a critical and necessary part of the service planning and development process. Customer and community input provides important insight into those locations that warrant transit service as well as indications of where shortcomings within current service delivery may exist. For the purposes of the Short and Long Range Transit Plans, numerous public outreach efforts were conducted. Key stakeholders were identified and targeted to provide insight for the development of public transit within the FNSB. Outreach efforts were conducted at various points throughout the project to provide ongoing opportunities for public involvement.

This section discusses the methodology used and outcome of all community outreach efforts conducted for the Plan. There are four sections presented, each reflecting a different outreach effort:

1. Onboard customer surveys,
2. Community surveys,
3. Stakeholder interviews, and
4. Community meetings.

4.1 ONBOARD CUSTOMER SURVEYS

Methodology

This section presents an analysis of the results of the onboard customer surveys collected on local fixed-route buses. To mitigate any potential effects that significant weather changes may have on ridership and travel behavior, the project team conducted surveys during both the winter and the summer. Winter surveys were collected from March 6 through March 9, 2013, while summer surveys were collected from June 12 through June 15, 2013. The surveys were collected concurrent with ride checks onboard MACS' nine local bus routes.

The winter survey was administered during the University of Alaska's (UAF) regular academic year, while the summer survey was conducted during the typical slower season. Surveys were also conducted during a variety of service day-parts (morning, midday, and afternoon). Surveyors were positioned near the front of the bus to collect boarding and alighting counts as well as facilitate survey distribution and collection. Each passenger age 16 and above was offered the opportunity to participate. In addition, surveyors offered to assist passengers with completing the survey form (i.e., interview) in the event riders were unable to complete the survey on their own. In total, 965 valid responses were collected during the winter survey and 818 valid responses were collected during the summer survey.

Once all survey data were collected, they were entered into a Statistical Package for the Social Sciences (SPSS) software database. After they were cleaned, sample frequencies and initial data cross-

tabulations were generated. Lastly, all processed data were exported into Microsoft Excel to generate charts and graphs for data analysis.

Findings

The following summarizes the results from the fixed-route customer survey. Identical survey instruments were used for both the summer and winter surveys and are provided in Appendix F. Given not all respondents answered every question, the sample size for each specific question is noted.

Questions

Question 1: What line are you riding today?

Worth noting is that while the ride check only counted 14 persons using the Black Line, 17 (winter) respondents indicated having used the Black Line. This discrepancy, and others like it, may be due to people marking the incorrect response option, or the survey being administered to a passenger who alighted from the Black Line (but who did not receive a survey while onboard).

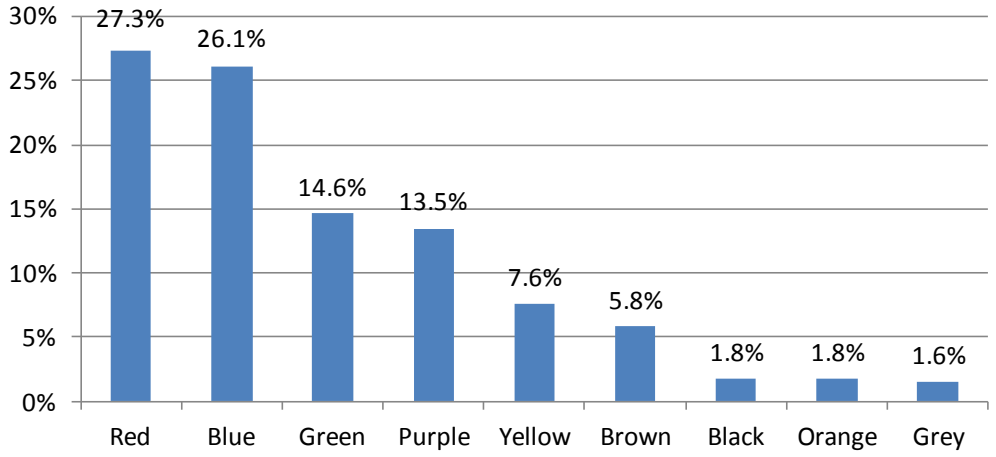
Winter

As illustrated in Exhibit 4.1.1, of the sample of 964, the greatest number of riders reported using the Red and Blue Lines, with 263 (27.3 percent) using the Red Line and 252 (26.1 percent) the Blue Line. These results are in line with the ride check data that indicated the Blue and Red Lines as respectively the first- and second-most patronized routes in the MACS system. The lowest number of respondents (15, or 1.6 percent) reported using the Grey Line.

Summer

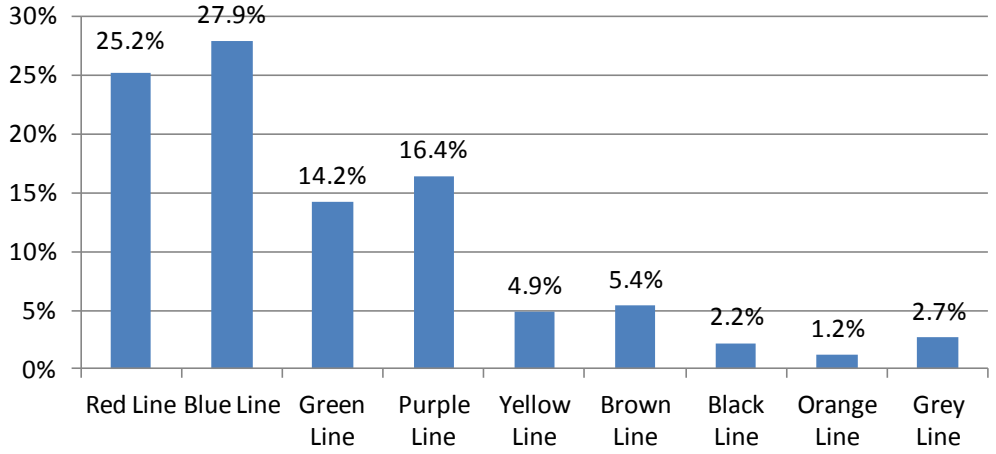
Of the 818 responses to this question, displayed in Exhibit 4.1.2, the Red and Blue Lines continued to have the highest ridership during the summer, with 206 (25.2 percent) and 228 (27.9 percent) respondents, respectively. The Purple, Black, and Grey Lines experienced slight gains in their share of total ridership, although Black and Grey Line ridership was still relatively low.

Exhibit 4.1.1 Ridership by Line – Winter



n = 964

Exhibit 4.1.2 Ridership by Line – Summer



n = 818

Question 2: What is the primary purpose of your trip today?

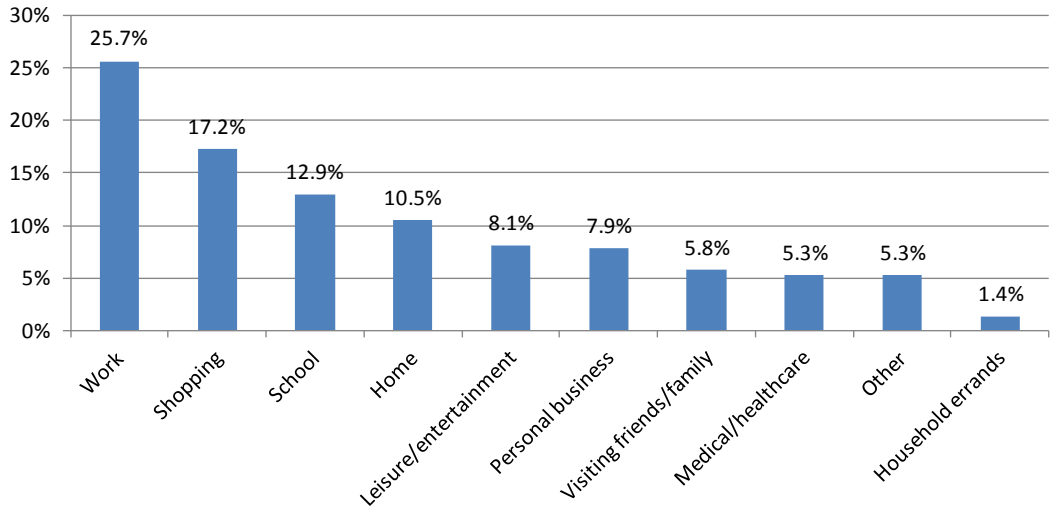
Winter

As Exhibit 4.1.3 shows, the bulk of the 951 riders who answered this question (56 percent) traveled for either work, school, or shopping. These tendencies are reflected in the ride check data presented in Chapter 3, indicating large shopping centers and UAF as being relatively high productivity bus stops.

Summer

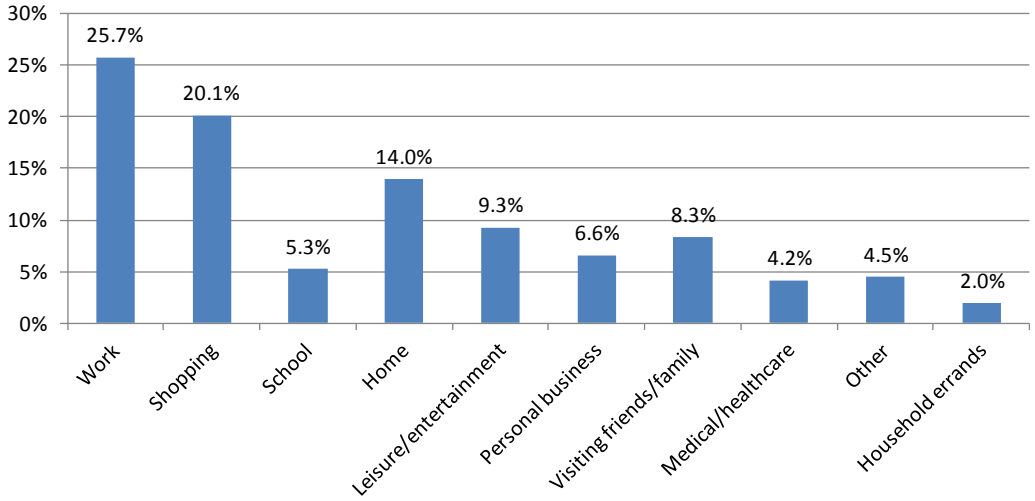
With 816 respondents, whose responses are shown in Exhibit 4.1.4, the distribution of trip purposes during the summer was similar to that found during the winter, with the most common trip purposes being work and shopping. However, there was a 65 percent decrease in the number of respondents who cited "school" as their trip purpose. This decrease is not surprising given the typical UAF academic year ends in May.

Exhibit 4.1.3 Trip Purpose – Winter



n = 951

Exhibit 4.1.4 Trip Purpose – Summer



n = 816

Question 3: Where did you board the bus for this trip?
Question 5: Where will you get off this bus?

Stop boarding and alighting location data were omitted from this analysis due to a broad range of response descriptions for each boarding point. Given respondents did not use standard descriptions when identifying where they boarded or exited the bus, codifying and analyzing the individual locations would have relatively modest result when compared to the level of resources required. Therefore, in lieu of using respondent-provided answers to Questions 3 and 5, a good approximation of stop usage was determined by utilizing the ride check data in Chapter 3.

Question 4: How did you access the bus stop for this trip?

Regardless of season, the majority of riders walk to their bus stop. "Other" responses included hitch hiking, taxi, and using the Van Tran service.

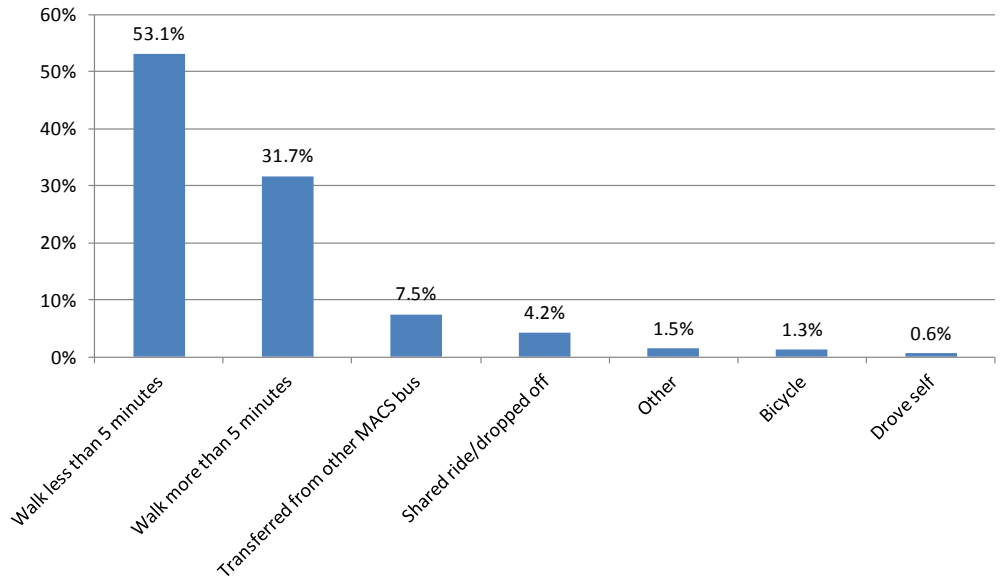
Winter

As shown in Exhibit 4.1.5, the vast majority (85 percent) of the 942 respondents accessed the bus stop by walking, while the balance largely indicated transferring from another MACS route.

Summer

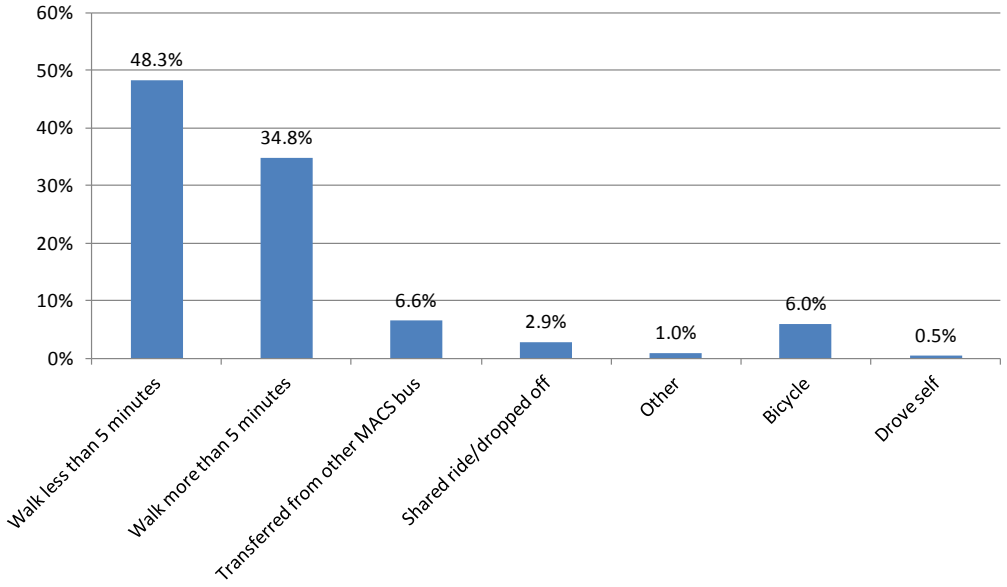
As with the winter survey, most of the 805 riders who answered this question accessed their bus stop by walking. As Exhibit 4.1.6 shows, however, a significant increase in respondents who accessed the origin bus stop via bicycle, from 12 during the winter survey to 48 during the summer. This increase is likely due to warmer weather during the summer and safer bike riding conditions.

Exhibit 4.1.5 Bus Stop Access – Winter



n = 942

Exhibit 4.1.6 Bus Stop Access – Summer



n = 805

Question 6: How will you get from the bus stop to your destination?

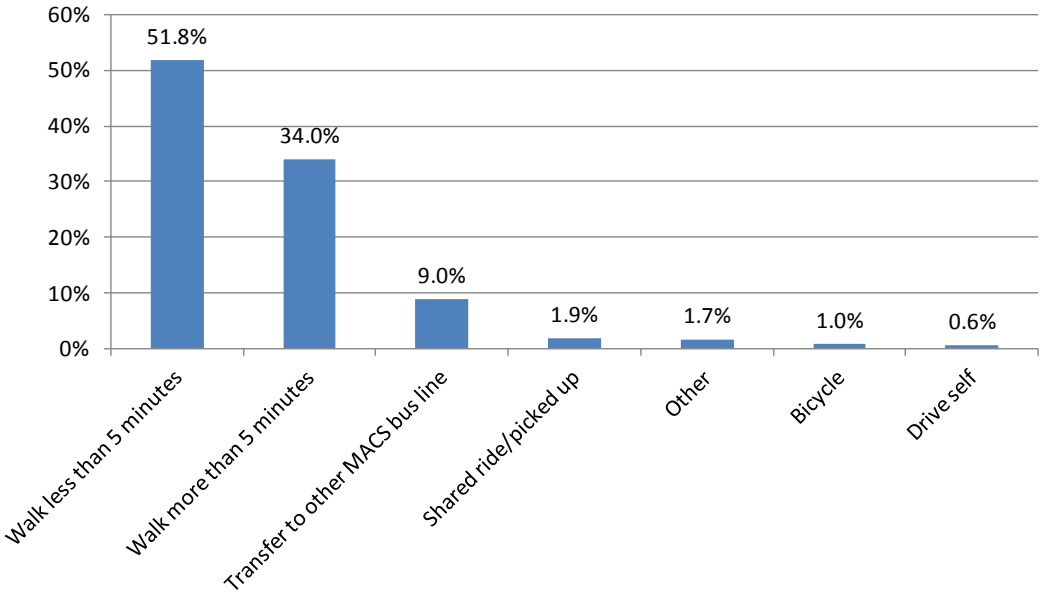
Winter

As observed regarding origin bus stop access, most the 936 respondents (86 percent) indicated accessing their final destination by walking, while the majority of the balance indicated transferring to another MACS route. Other modes used to access final destination are shown in Exhibit 4.1.7

Summer

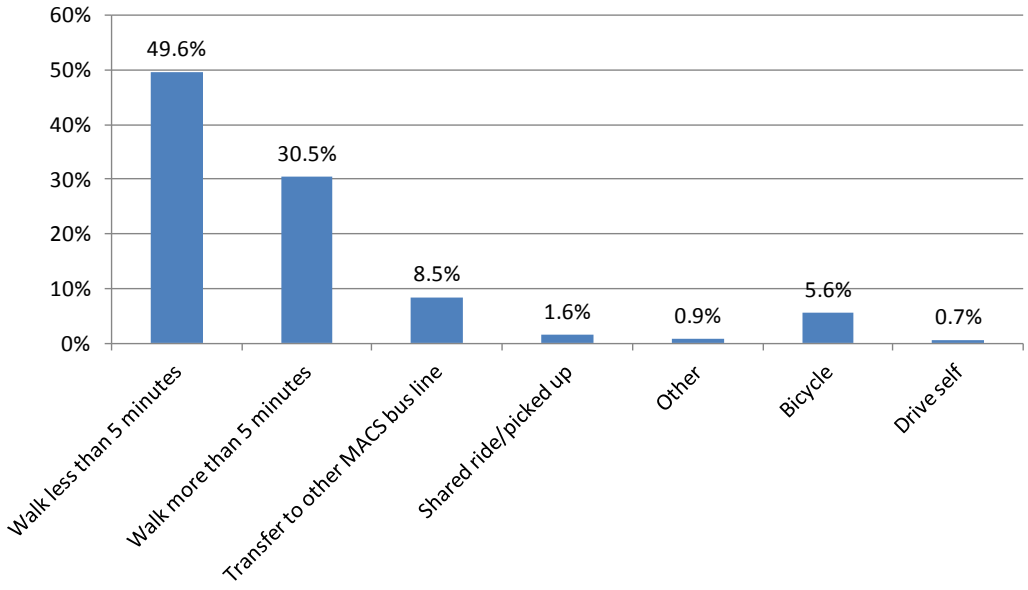
As observed regarding origin bus stop access, most of this question's 801 respondents indicated they would reach their final destination by walking. Also similar to the responses to the origin stop access answers, significantly more respondents reported they would reach their final destination by bicycle during the summer (46) than the winter (9). See Exhibit 4.1.8 for more details.

Exhibit 4.1.7 Access Destination from Bus Stop – Winter



n = 936

Exhibit 4.1.8 Access Destination from Bus Stop – Summer



n = 801

Question 7: Did you have access to a personal vehicle for this trip?

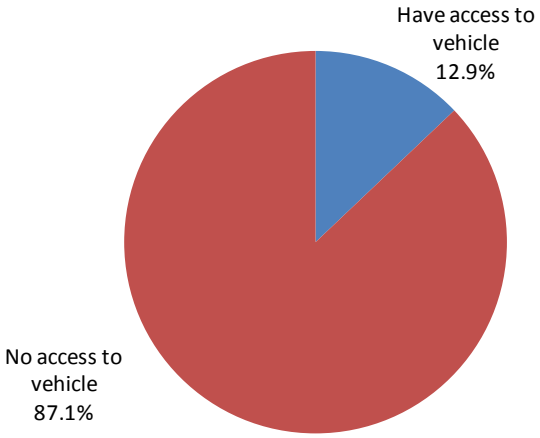
Winter

Of 930 respondents, the majority (87 percent) stated not having access to a personal vehicle to complete the surveyed trip.

Summer

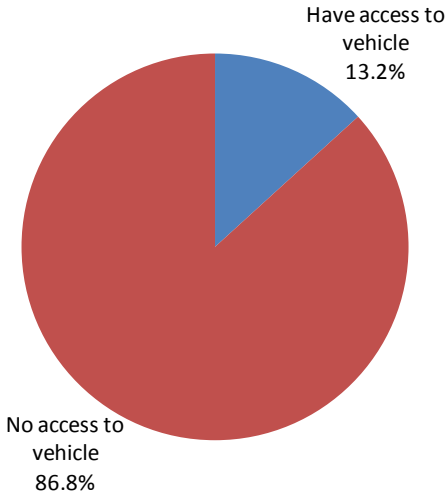
While 793, rather than 930, respondents answered this question during the summer survey, a similar percentage reported not having access to a personal vehicle to complete the surveyed trip.

Exhibit 4.1.9 Access to Personal Vehicle – Winter



n = 930

Exhibit 4.1.10 Access to Personal Vehicle – Summer



n = 793

Question 8: How did you pay for this trip?

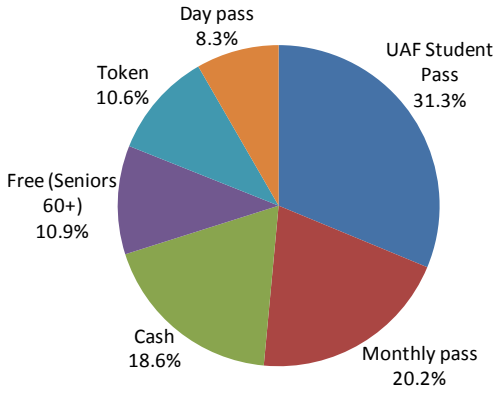
Winter

Nearly a third (31 percent) of the 950 respondents reported paying their fare with their UAF student card, which is free for UAF students. Approximately 20 percent used a monthly pass, suggesting that they are fairly regular riders, while 18.6 percent paid via cash. Other payment methods included tokens, day passes, and seniors who rode for free.

Summer

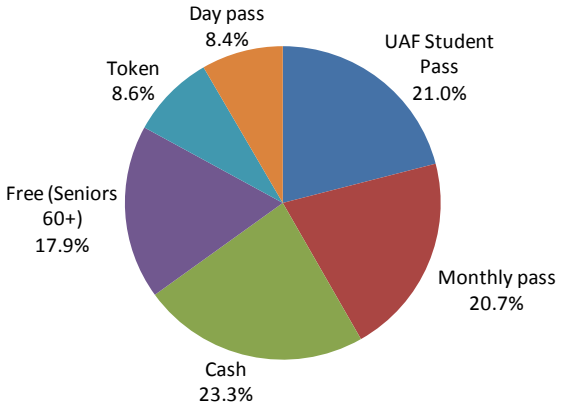
A significantly smaller share of the 810 riders who answered this question during the summer season paid with a UAF student pass (21 percent) than during the winter. Again, this is likely due to UAF's normal academic year ending in May. Payment methods that increased their relative share during the summer season include free senior rides (growing from 11 percent to 18 percent) and day passes (increasing from 18.6 percent to 23.3 percent).

Exhibit 4.1.11 Fare Media – Winter



n = 950

Exhibit 4.1.12 Fare Media – Summer



n = 810

Question 9: Please indicate your satisfaction with various MACS service characteristics by checking the appropriate box.

Overall, customer satisfaction was higher in the summer than in the winter, particularly regarding on-time performance and bus stop amenities. Exhibits 4.1.13 and 4.1.14 show the breakdown of responses for both the summer and winter surveys.

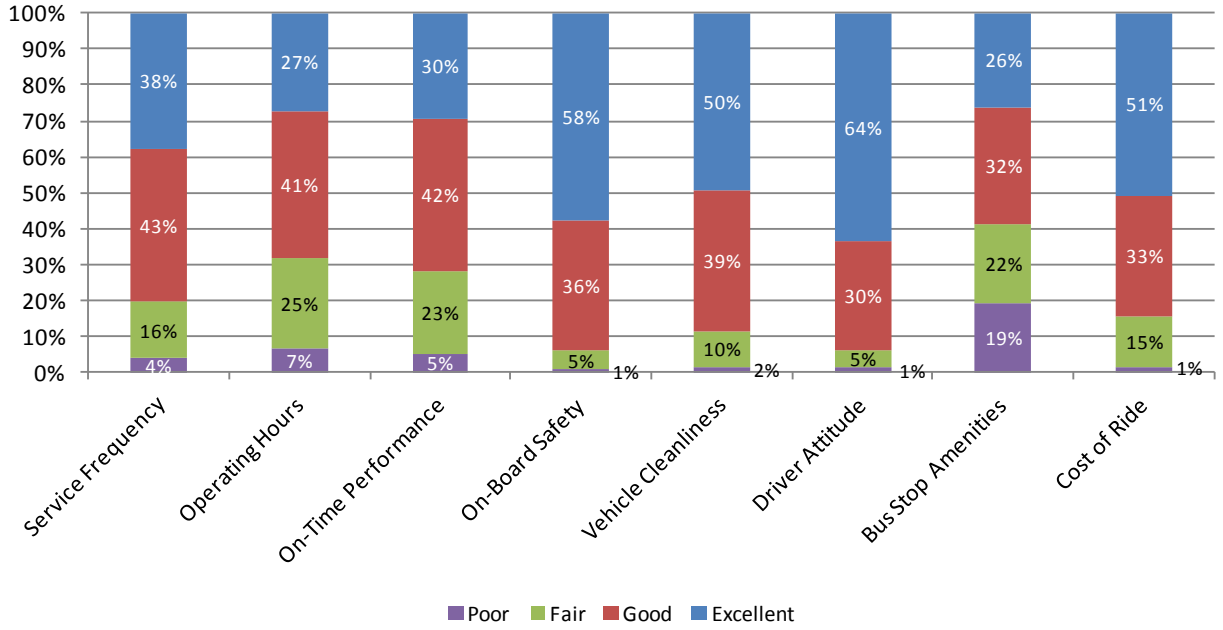
Winter

Among surveyed riders, 913 ranked multiple aspects of MACS service using the criteria "Excellent," "Good," "Fair," or "Poor." These aspects included service frequency, operating hours, on-time performance, onboard safety, vehicle cleanliness, driver attitude, bus stop amenities, and ride cost. Respondents generally were satisfied in most aspects, with most rating them either "Excellent" or "Good." The areas with which respondents appeared to be less satisfied were bus stop amenities (41 percent of riders ranking them "Fair" or "Poor"), operating hours (32 percent ranking "Fair" or "Poor"), and on-time performance (28 percent ranking "Fair" or "Poor").

Summer

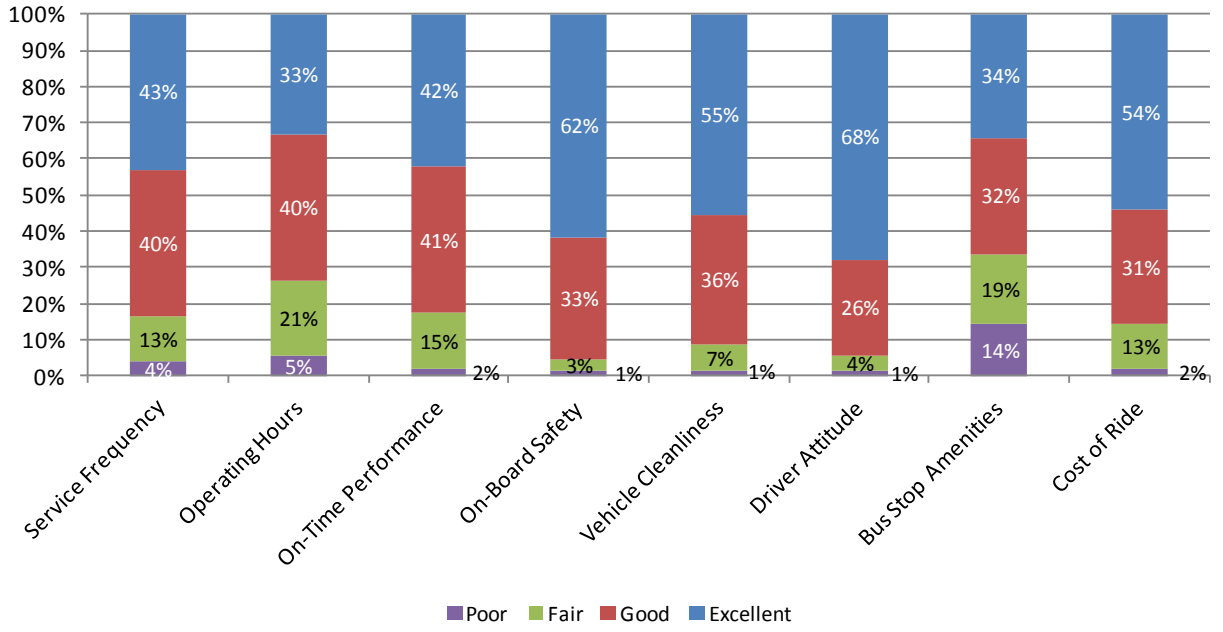
Riders overall appeared to be more satisfied with MACS service during the summer, with a higher percentage giving ratings of "Good" or "Excellent" for all categories. However, transit riders continued to be less satisfied with operating hours and bus stop amenities. Approximately one quarter of respondents rated operating hours as "Fair" or "Poor," while nearly one-third assigned similar ratings to bus stop amenities. The slight improvement in ranking for bus stop amenities may be a result of warmer weather, when bus shelters may be perceived as not as important.

Exhibit 4.1.13 Customer Satisfaction – Winter



Minimum *n* = 888

Exhibit 4.1.14 Customer Satisfaction – Summer



Minimum *n* = 794

Question 10: On average, how many times a week do you ride MACS (consider each one-way trip as one ride)?

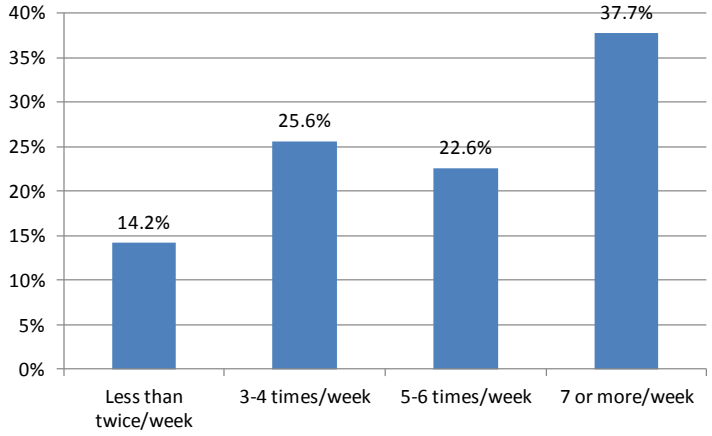
Winter

The majority of 931 respondents were regular MACS users, with approximately 38 percent using the service seven or more times per week, and an additional 23 percent indicating using the service five to six times per week. By contrast, only 14 percent of respondents reported using the service fewer than two times per week.

Summer

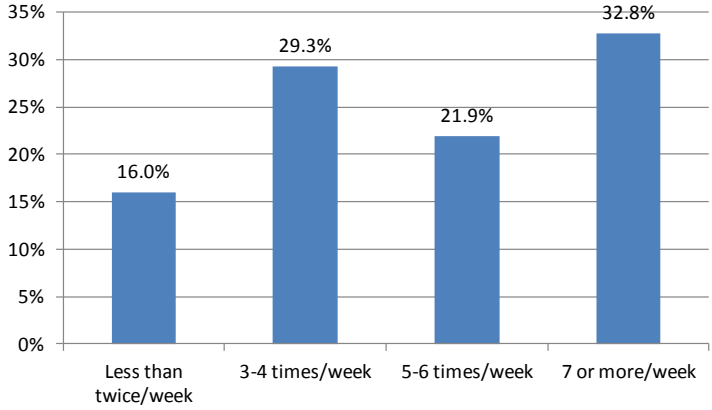
Frequency of use among the 793 summer respondents was similar to the winter. The largest percentage (33 percent) rode seven or more times per week, while the next largest group (29 percent) rode three to four times per week.

Exhibit 4.1.15 Frequency of Usage – Winter



n = 931

Exhibit 4.1.16 Frequency of Usage – Summer



n = 793

Question 11: What, if anything, prevents you from increasing your use of MACS bus service? (multiple responses allowed)

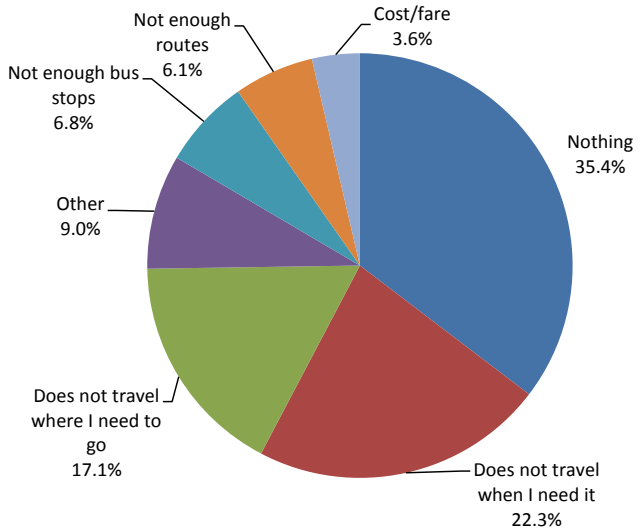
Winter

As shown in Exhibit 4.1.17, of the 965 respondents, the largest share, slightly more than one-third, indicated "nothing" is preventing them from using MACS service more often. Twenty-two percent of respondents indicated the service does not operate when they need to travel, thereby precluding additional rides. Seventeen percent of respondents indicated they would use the service more if the routes "traveled where they needed to go." Of note is that among the nine percent of respondents indicating "other," many identified the absence of Sunday service, which supplements the number of responses indicating the service does not operate when they need it.

Summer

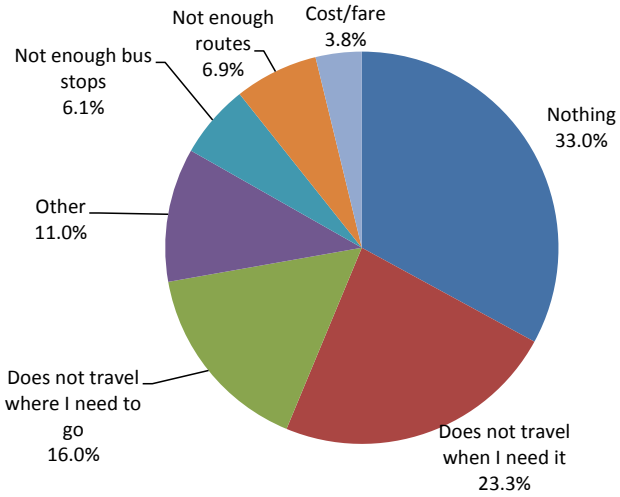
The distribution of reasons preventing riders from using MACS more often during the summer, presented in Exhibit 4.1.18, was nearly identical to the winter. One-third of respondents indicated "nothing" prevents them from using MACS service more often, while 23 percent of respondents indicated not using the service more often because it does not operate when they need to travel.

Exhibit 4.1.17 Barriers to Additional Use – Winter



n = 965 (multiple responses were allowed)

Exhibit 4.1.18 Barriers to Additional Use – Summer



n = 822 (multiple responses were allowed)

Question 12: Please select your top preferences regarding potential MACS service improvements (select only two).[3]

The ranking of service improvements remains consistent regardless of season.

Winter

Of the 965 respondents, more than 57 percent stated that they would like Sunday service, which is very much in line with the distribution of responses to Question 11 indicating that limited operating hours presented a barrier. Of note is the similarly large proportion of frequent and infrequent riders indicating a desire for Sunday service, as indicated in Exhibit 4.1.19.

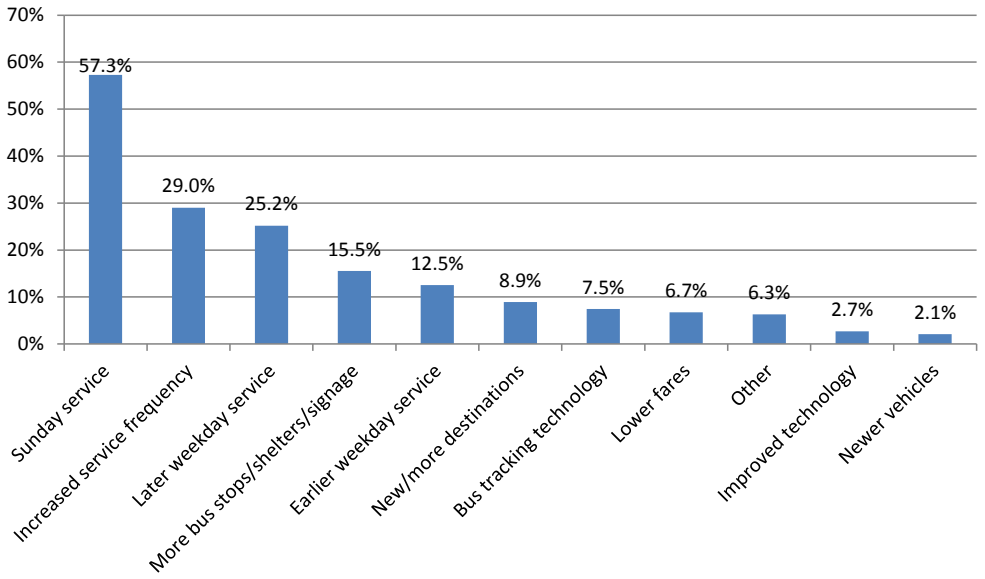
Other improvements respondents would like to see include increased frequency (29 percent of respondents), later weekday service (25.2 percent), and more bus stops and stop amenities (15.5 percent).

Summer

Rider preferences for service improvements during the summer, shown in Exhibit 4.1.20, again were dominated by a desire for Sunday service, which was cited by nearly 59 percent of the 822 respondents. Following the same trends observed in the winter survey data, 30 percent requested more frequency, and 25 percent requested later weekday service.

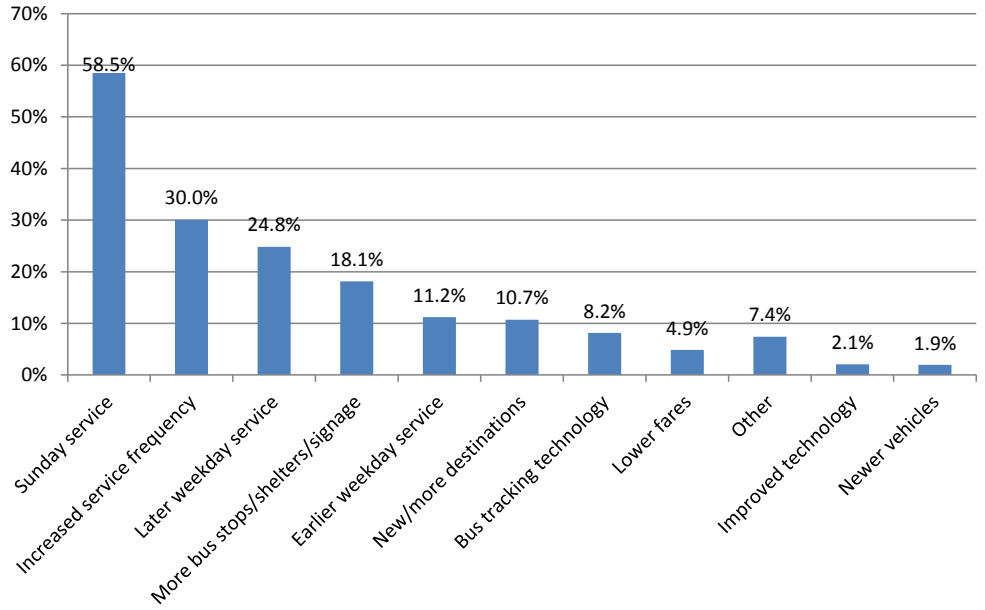
[3] Note: These values do not add up to 100 percent because respondents were allowed to choose more than one response to this question. For example, some riders who indicated wanting Sunday service may also have stated wanting later weekday service.

Exhibit 4.1.19 Preferred Service Improvements – Winter



n = 965 (multiple responses were allowed)

Exhibit 4.1.20 Preferred Service Improvements – Summer



n = 871 (multiple responses were allowed)

Question 13: If a fare increase was necessary to implement your preferred service improvement, what per-trip increase would you support?

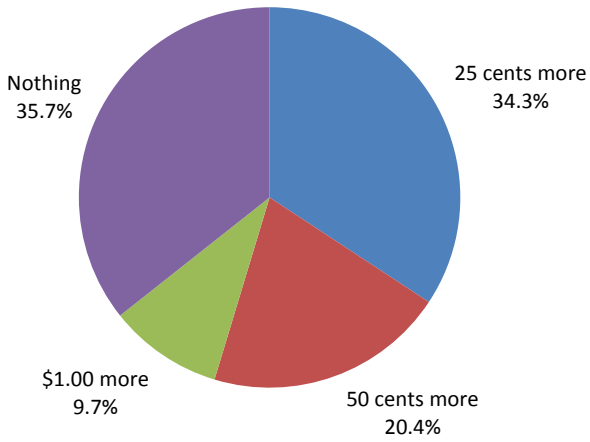
Winter

Approximately 36 percent of 858 respondents stated that no fare increase would be acceptable, even if it were used to pay for their desired improvement. Approximately one-third of respondents, however, would be willing to pay 25 cents more. Twenty percent would pay up to 50 cents more, and just under 10 percent of respondents would pay up to a dollar more in order if the money went toward their desired improvement in service. There was no meaningful difference in response breakdown among the 858 respondents to the summer survey.

Summer

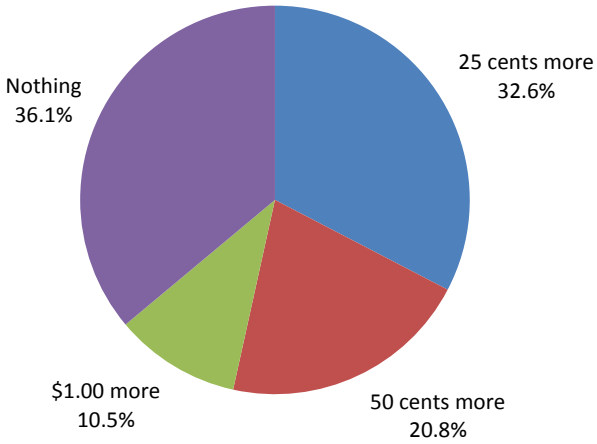
Summer responses very closely mirrored winter responses, with just more than 36 percent stating no fare increase would be acceptable, while approximately 33 percent would be willing to pay 25 cents more.

Exhibit 4.1.21 Acceptable Fare Increase – Winter



n = 858

Exhibit 4.1.22 Acceptable Fare Increase – Summer



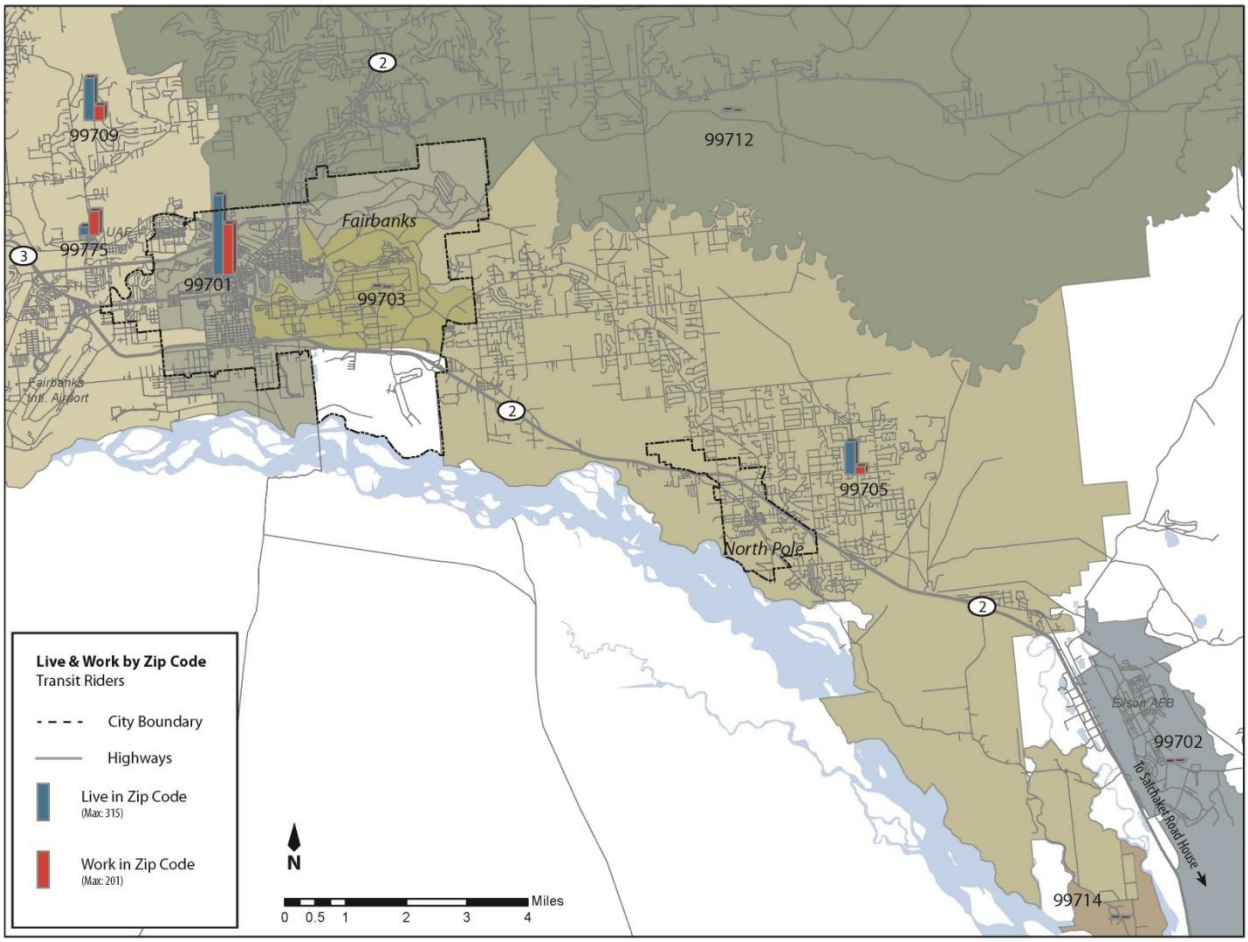
n = 726

Questions 14 and 15: What is your home ZIP code/What is your work or school ZIP code?

Winter

The most popular ZIP codes for both school and work were 99701, covering much of the City of Fairbanks east of Peger Road, and 99709, covering the western parts of Fairbanks, including part of UAF. The map in Exhibit 4.1.23 displays the number of riders who live and work in each ZIP code within the FNSB. Each color denotes a distinct ZIP code, while white parts on the map indicate areas for which no data were available.

Exhibit 4.1.23 Riders Living and Working in Each ZIP Code – Winter



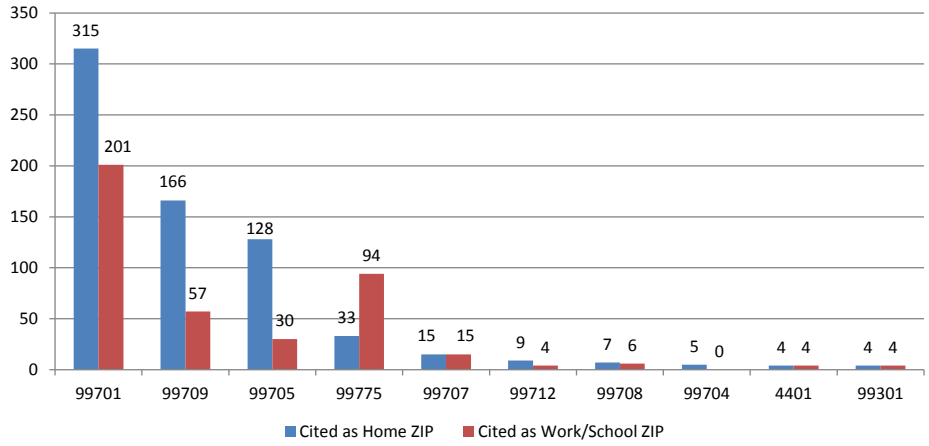
Generally, more respondents provided a home ZIP code than a school or work ZIP code, which is likely related to the results for Question 19, in which nearly a quarter of respondents indicate that they are looking for work. Therefore, they would not have a school or work ZIP code.

The 99775 ZIP code, however, differed in this respect by having a far greater number of respondents label it as their work/school ZIP code, which is likely due to the fact that it is exclusive to UAF and does not contain many residents beyond perhaps some students who live on campus. By contrast, the 99705 ZIP code, covering North Pole and the Badger Road corridor, had the highest ratio of persons residing there to people working there, with more than four times as many respondents working there than living there. This pattern suggests MACS riders in North Pole, and especially Green Line riders, use the MACS service to commute to work in Fairbanks.

Summer

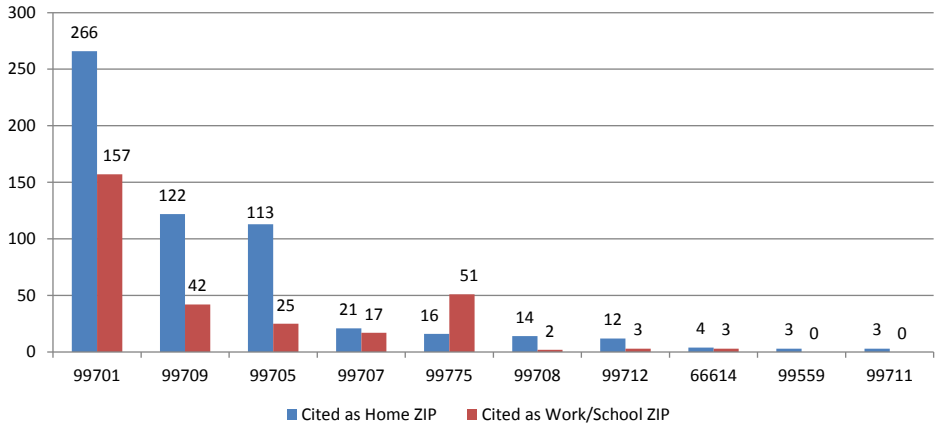
While numbers of riders living and working in each ZIP code varied between summer and winter, the general distribution (e.g., proportions of surveyed riders living and working in each ZIP code) was approximately the same.

Exhibit 4.1.24 Work Versus Home ZIP Code – Winter



n = 777 (Home ZIP Code); *n* = 444 (Work ZIP Code)

Exhibit 4.1.25 Work Versus Home ZIP Code – Summer



n = 636 (Home ZIP Code); *n* = 307 (Work ZIP Code)

Question 16: What is your age?

Winter

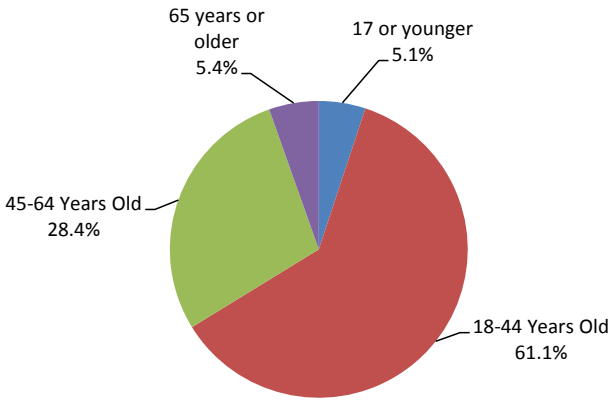
Of the 888 respondents who reported their age, the vast majority (89 percent) were of working adult age, or between 18 and 64 years old. Youth, age 17 and under, comprised five percent of respondents, while approximately six percent of respondents were seniors age 65 and above.

While youth aged 17 and under comprised approximately five percent of total respondents, they constitute approximately a quarter of the FNSB's population, based on Census 2010. This apparent underrepresentation likely results from the fact that surveyors generally do not survey riders who appear to be under 13 years old. Therefore, youth younger than 13 years old are not counted in the data. By contrast, seniors were fairly well represented among MACS riders, as they comprised six percent of respondents and seven percent of the FNSB general population.

Summer

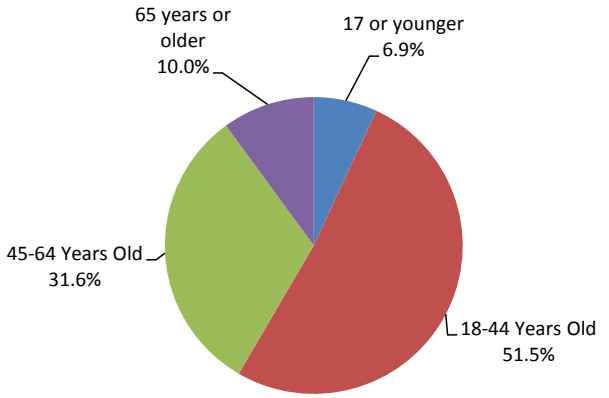
The proportion of 18- to 44-year old riders dropped 10 percentage points, from 61 percent to 51 percent, despite all other categories increasing. This shift likely reflects the fact that UAF's typical school year ends in May, which probably contributes to the significant decrease in the transit rider 18-44 age group.

Exhibit 4.1.26 Respondent Age – Winter



n = 888

Exhibit 4.1.27 Respondent Age – Summer



n = 767

Question 17: What is your gender?

Winter

Fifty-eight percent of the 753 respondents identified themselves as male, while 42 percent cited female. By contrast, according to the 2010 Census, approximately 47 percent of the entire FNSB population is female, suggesting that males are slightly overrepresented among MACS riders.

Summer

Summer proportions were similar, although the proportion of females among the 753 summer survey respondents increased to 47 percent.

Question 18: Please select the technologies you have access to.

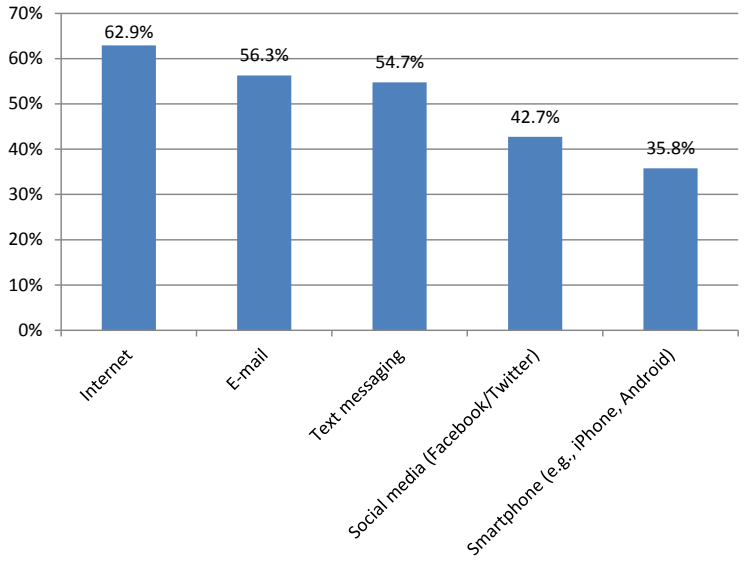
Winter

As shown in Exhibit 4.1.28, 63 percent of 992 respondents indicated having access to the Internet, while 56 percent and 55 percent respectively reported that they have access to email and text messaging. Only 36 percent reported having a smartphone with internet capabilities. While these figures reveal a majority of respondents have Internet access, nearly 40 percent do not have access, and a solid majority (74 percent) does not have access to a smartphone. The relatively low incidence of access to electronic media suggests MACS riders still depend largely on paper schedules, TV/radio announcements, and driver advice in terms of access to transit information.

Summer

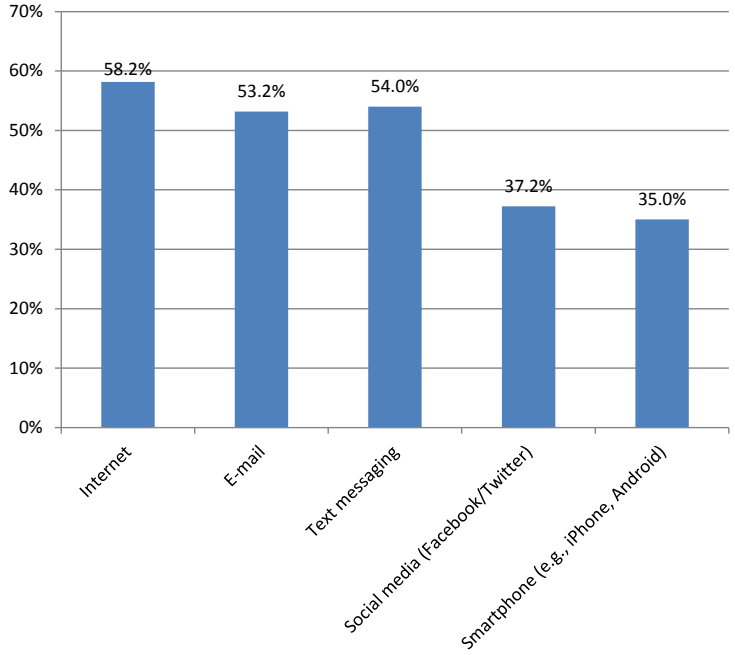
Overall, summer survey respondents, whose responses are shown in Exhibit 4.1.29, reported having somewhat reduced of access to all technologies. For example, whereas 63 percent of winter respondents had internet access, 58 percent of summer riders did. Similarly, while 43 percent of winter riders had access to Twitter, only 37 percent of summer riders did. This shift again was likely influenced by UAF's traditional academic year ending in May, which likely is accompanied by a decrease in the university population.

Exhibit 4.1.28 Access to Technology – Winter



n = 992 (multiple responses were allowed)

Exhibit 4.1.29 Access to Technology – Summer



n = 822 (multiple responses were allowed)

Question 19: What is your employment status?

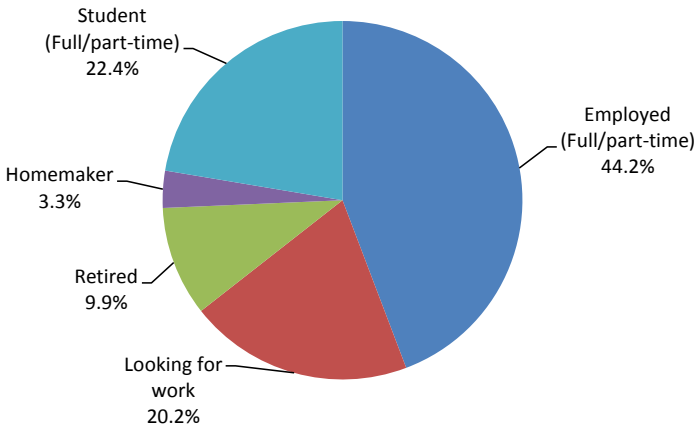
Winter

As shown in Exhibit 4.1.30, among the 868 respondents who provided information about their employment status, the largest share, 44 percent, were employed at least part-time. Approximately 22 percent of respondents indicated that they were at least a part-time student, which is in line with the responses to Question 8, showing approximately one-third of riders paying with a UAF student card. Slightly more than 20 percent of riders stated that they were "looking for work," and approximately 10 percent cited being retired.

Summer

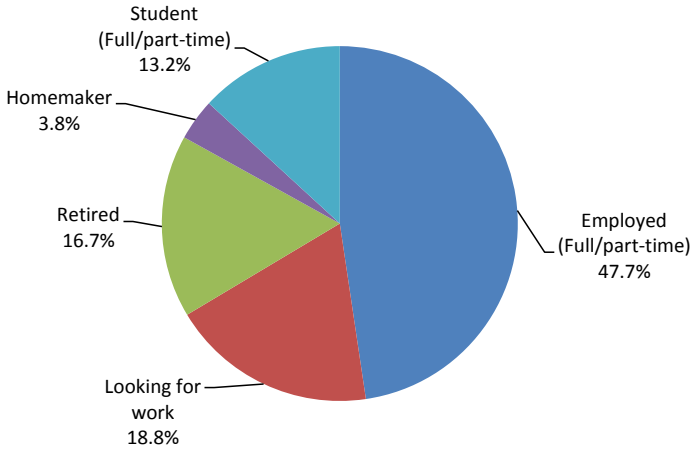
The proportion of respondents who were full- or part-time students, shown in Exhibit 4.1.31, dropped from over 22 percent to just above 13 percent between the winter and summer surveys, likely coinciding with the end of UAF's traditional academic year. The proportion of riders who reported being retired increased substantially, from 10 percent up to nearly 17 percent. However, this increase is likely due to the decrease in students, rather than an increase in persons age 60 and older using the system.

Exhibit 4.1.30 Employment Status – Winter



n = 868

Exhibit 4.1.31 Employment Status – Summer



n = 768

Question 20: What is your annual household income?

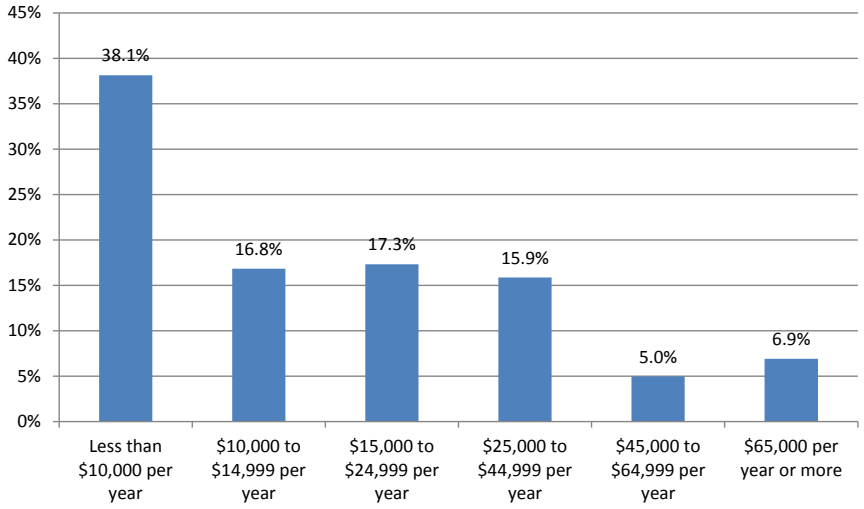
Winter

Over half (55 percent) of 826 respondents reported living in a household with an income of less than $15,000 annually, as shown in Exhibit 4.1.32. By contrast, 11 percent of all FNSB households earn less than $15,000 per year, suggesting that MACS riders are more likely to be from lower-income households than the general population. The disproportionate numbers of lower-income persons among MACS users is likely in part a result of many UAF students using the system, and that most riders (87 percent) lack access to a personal vehicle, chiefly due to affordability.

Summer

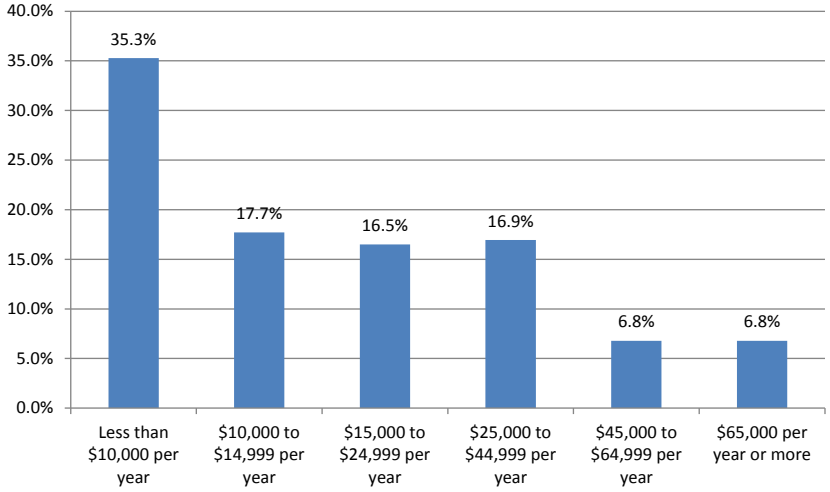
As presented in Exhibit 4.1.33, reported incomes tended to be somewhat higher during the summer season than in the winter. The largest proportion of the 649 respondents, or 35 percent, were in the lowest income bracket, earning less than $10,000 annually, but this is a smaller proportion than the 55 percent who reported being in this bracket during the winter survey. Like with many of the other survey questions, this shift may result from UAF's academic year ending in May. As many students do not have traditional salary jobs, many will report being in the lowest income bracket.

Exhibit 4.1.32 Household Income – Winter



n = 826

Exhibit 4.1.33 Household Income – Summer



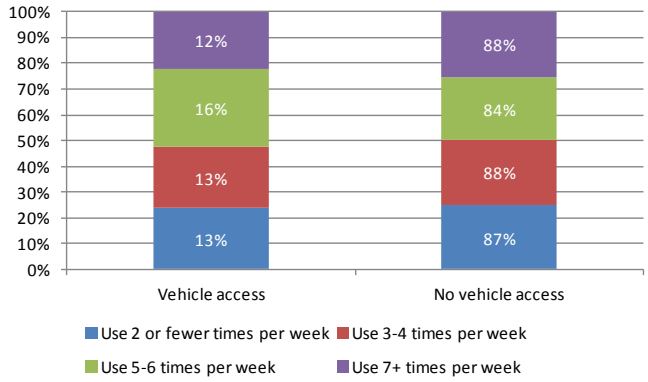
n = 649

ON-BOARD SURVEY CROSS-TABULATIONS (WINTER DATA ONLY)

1: Comparing frequency of use versus vehicle access

Overall, riders with vehicle access used transit about as frequently as riders without access to a vehicle. However, there were considerably more riders surveyed that did not have a vehicle (786) than did have access to a vehicle (117).

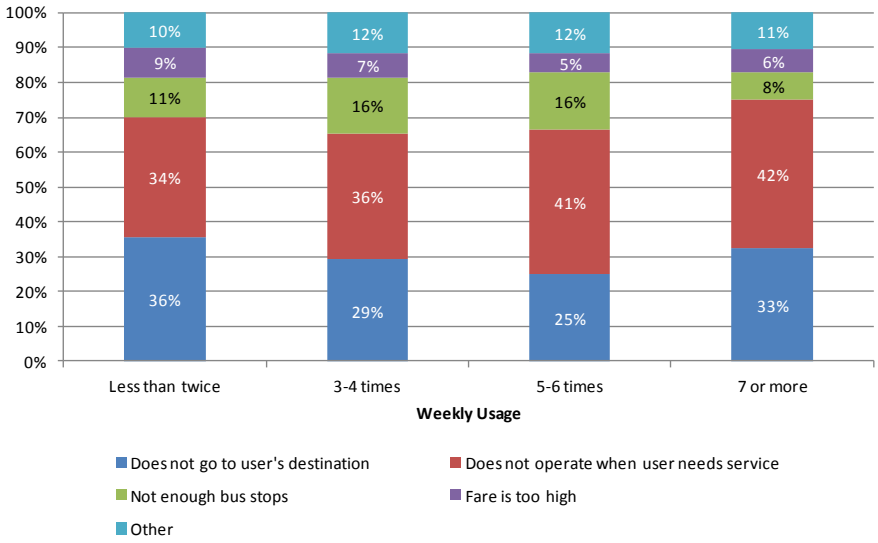
Exhibit 4.1.34 Frequency of MACS Use by Vehicle Access



2: Comparing frequency of use versus what prevents the user from using the MACS system more frequently

The most common reason for not using MACS service more often for both frequent and infrequent riders is that the service does not operate when they need it. This finding fits with the requests for later service and Sunday service revealed in the on-board surveys. The second most common reason for not using MACS service more often was that the service did not go where the rider needed to go.

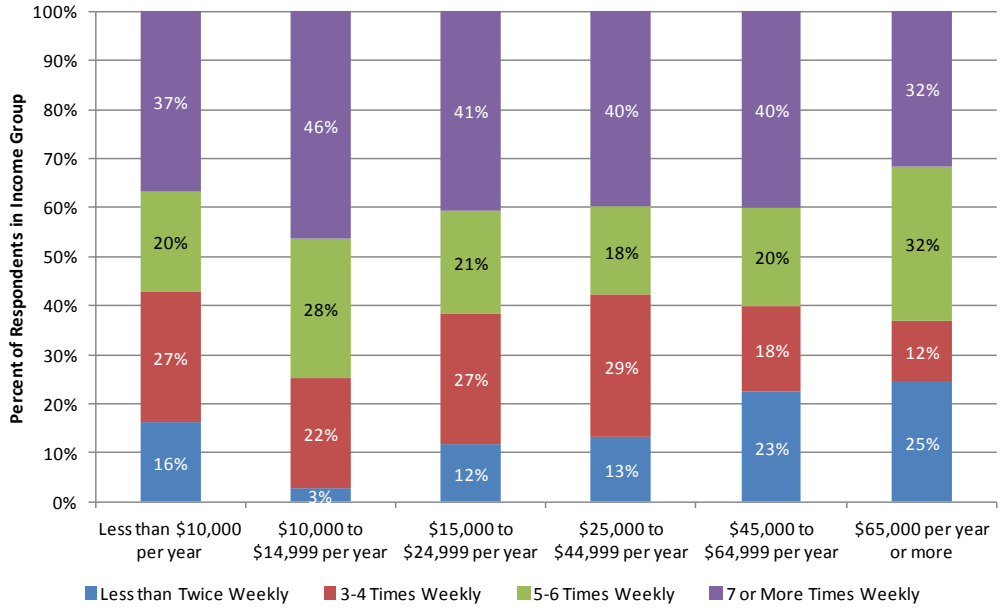
Exhibit 4.1.35 Frequency of MACS Use by Barriers to Increased MACS Use



3: Frequency of usage versus income

Usage generally became less frequent as income increased. However, riders in the lowest income bracket (less than $10,000 per year) rode somewhat less frequently than those in the next bracket. This may be due to more people in higher income brackets working and thus having a regular commute for which they use MACS service, or paying a bus fare may be an onerous expenditure for riders in the lowest income bracket.

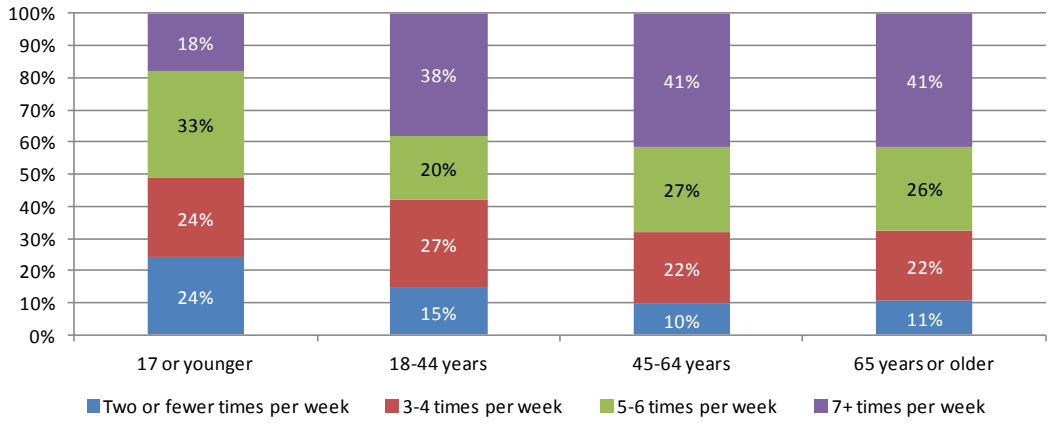
Exhibit 4.1.36 Frequency of MACS Use by Income



4: Frequency of usage by respondent age

Interestingly, frequency of usage tended to increase with age, and youths rode least frequently among all age groups.

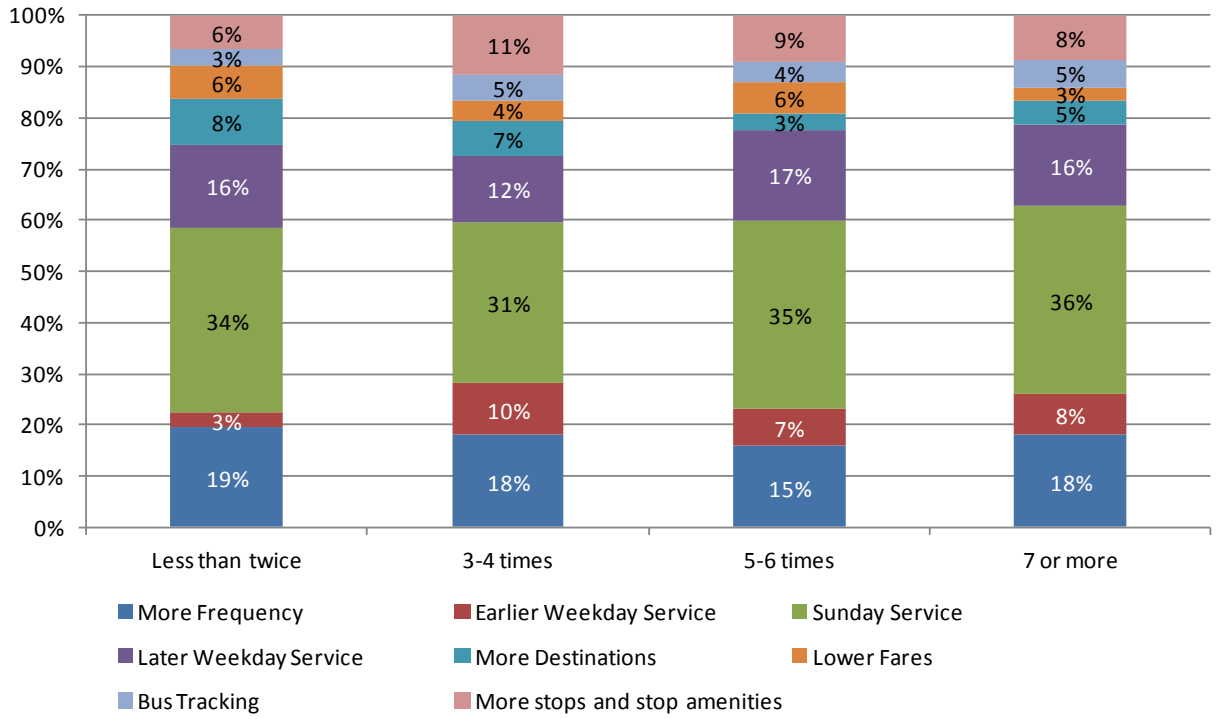
Exhibit 4.1.37 Frequency of MACS Use by Respondent Age



5: Frequency of usage by desired improvement

For most riders, irrespective of how often they used the service, there was a desire for Sunday MACS service, with roughly a third of riders in each group desiring it.

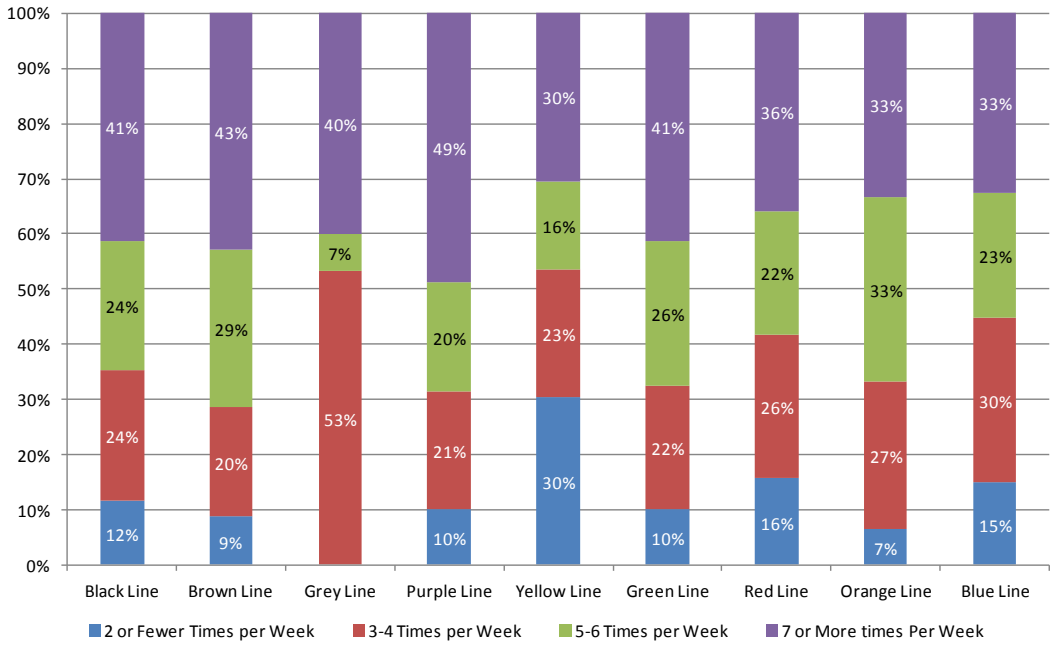
Exhibit 4.1.38 Frequency of MACS Use by Preferred Improvement



6: Frequency of usage by line ridden

Generally, there was not much difference by line in terms of how often MACS riders used the system. However, important to note is that there were significant differences in total ridership across lines. For example, while only 17 surveyed passengers were on the Black Line, over 250 were on the Blue line.

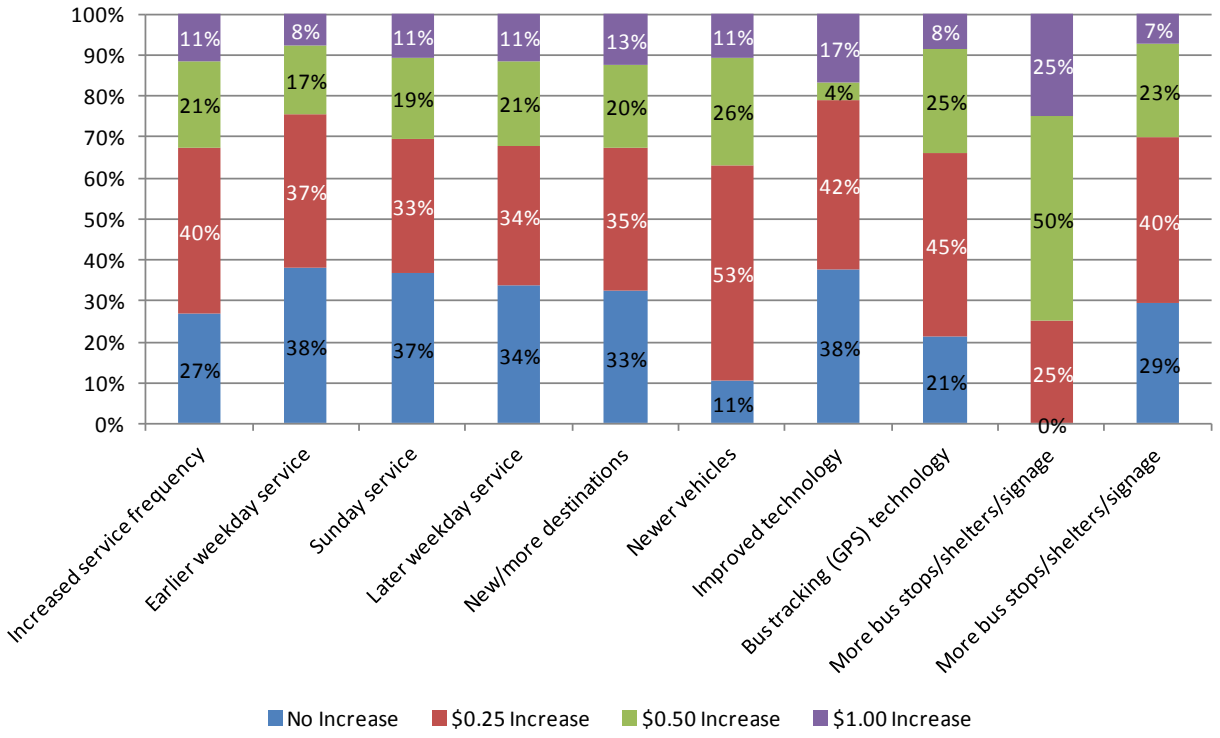
Exhibit 4.1.39 Frequency of MACS Use by Line Ridden



7: Willingness for increased fare versus desired improvement

The 140 surveyed passengers who desired more bus stops and stop amenities were the most willing to pay higher fares in order to receive these amenities, with all of them willing to pay at least a 25-cent fare increase in order to see stop improvements. People who wanted newer vehicles also appeared very willing to pay at least a 25-cent fare increase to have new vehicles. Worth noting, however, is that only 21 respondents indicated wanting newer vehicles as one of their two allowed desired improvements, therefore, this desire is likely not as strong among MACS riders as a whole.

Exhibit 4.1.40 Willingness for Fare Increase by Preferred Improvement



4.2 COMMUNITY SURVEYS

Methodology

To garner feedback from the general public, a community survey was distributed to residents of the Fairbanks North Star Borough, regardless of whether or not they ride transit. It is important to survey the general community to develop service recommendations that may enhance transit's position as a mobility option, particularly among "choice riders."

To ensure maximum participation, postcards were mailed to 1,000 homes throughout the FNSB directing residents to the online survey that was open from the beginning of March 2013 through the end of June 2013. To solicit participation in the online survey, the survey was also promoted through advertisements on local TV channels and in newspapers, notices on buses and bus shelters, and an eblast to local community organizations to promote the survey to their members/clientele.

Through the project team's outreach efforts, 563 valid responses were collected, both in paper and online format. Below is a summary of community survey questions and key patterns found in the analysis. Full response data are provided in Appendix E, and a copy of the survey instrument is in Appendix G.

Awareness and Opinions of Transit Service

Nearly 93 percent of respondents were aware of the MACS fixed-route service, 63 percent knew of at least one taxi service, and over half were aware of Van Tran service. Just over two-thirds stated they learned of the service through seeing one of the vehicles, while nearly 41 percent of respondents learned of the service through using it. A substantial number (nearly 33 percent) reported learning of the service through a sign or advertisement. These figures suggest that increasing program visibility through advertising and ensuring the vehicles are effectively branded is key to establishing and maintaining the brand.

Exhibit 4.2.1 Awareness of Transit Service

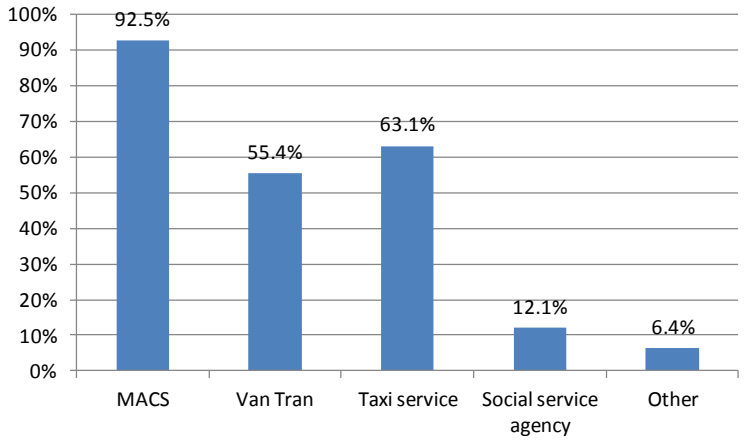
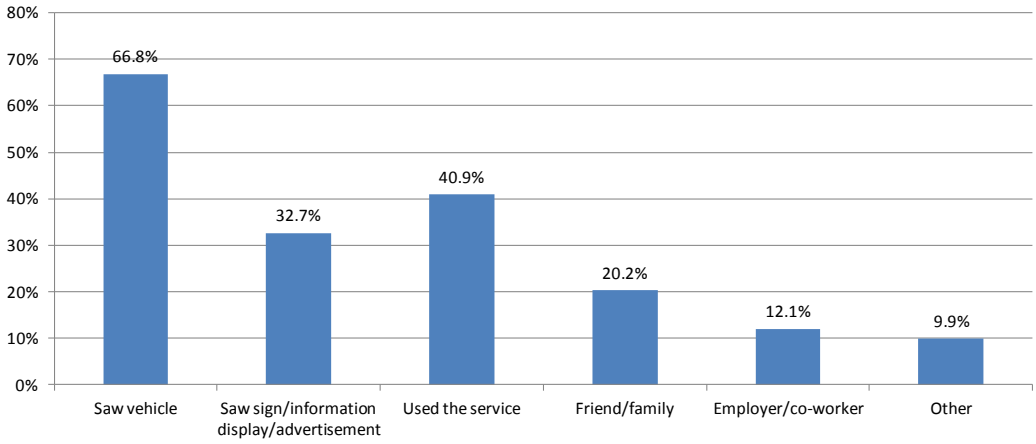
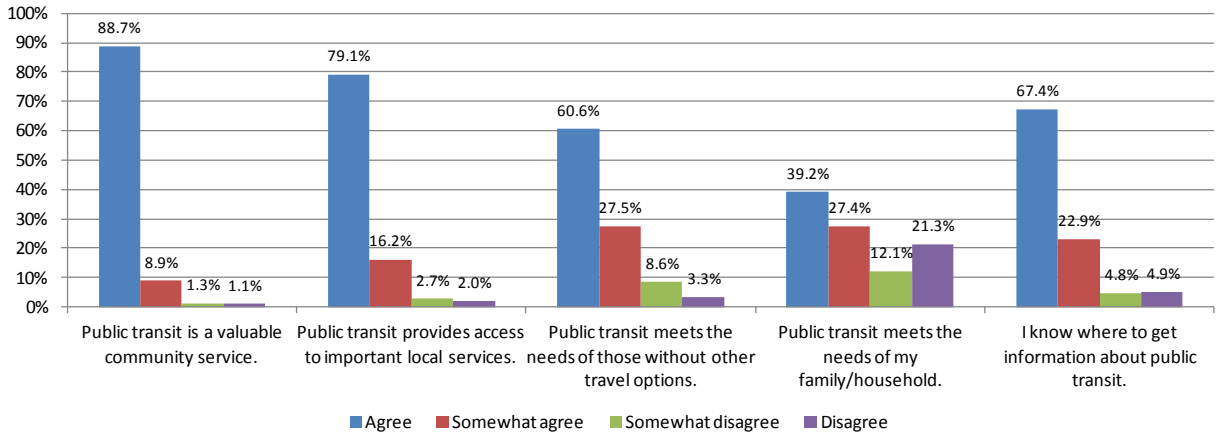


Exhibit 4.2.2 Source of Awareness



A vast majority of respondents (nearly 98 percent) agree or somewhat agree that public transit is a valuable community service, suggesting the people support transit service at least in principle. In addition, 79 percent agree with the statement "transit provides access to important local services," with an additional 16 percent stating they somewhat agree. However, agreement was not as overwhelming in terms of MACS specifically meeting the community's needs. Fewer than 40 percent of respondents agree public transit meets their household's needs. In fact, one-third of respondents said they disagree or somewhat disagree with this statement. However, a majority (60 percent) agree that public transit meets the needs of those without other travel options. In general, respondents appear to support having public transit, but are less likely to agree that it meets their personal or household needs. In addition, more than 90 percent of respondents agree or somewhat agree with the statement indicating they knew where to obtain transit information, indicating a lack of such awareness does not seem to be a barrier.

Exhibit 4.2.3 Perceptions Regarding Public Transit

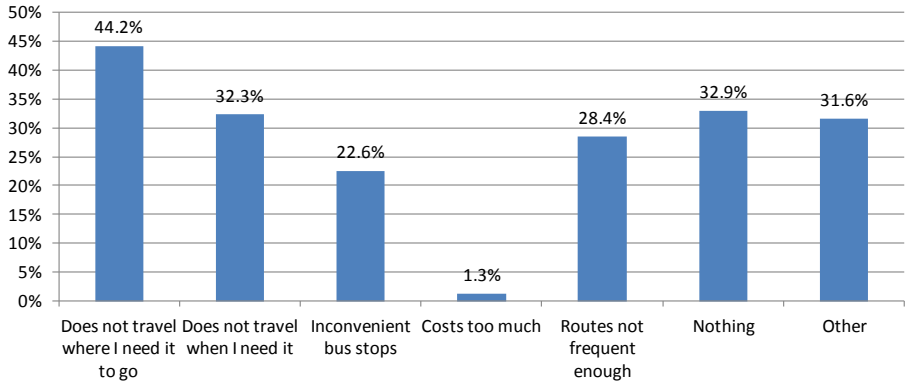


Barriers to Use

Sixty-four percent of community survey respondents stated they were non-riders, meaning they had not used either MACS or Van Tran services within 90 days prior to the survey contact. Slightly more than three-quarters of non-riders cited "driving alone" as their primary mode of transportation, while nearly 12 percent either biked or walked.

Of the 310 respondents indentifying why they don't use MACS service, the most common reason (44.2 percent) was that the service did not go where respondents wished to travel. Nearly one-third stated that they do not ride because the service does not operate when they need to travel, and 31.6 percent stated "other." There was a wide mix among those who stated "other," though the most common "other" reason for not using MACS service, selected by 10 respondents, was that it does not operate on Sunday. Other responses in this category, answered by only one respondent each, included safety concerns at the transit center, bus stops are too cold in the winter, and a lack of service where they live. Nearly one-third of respondents said nothing was preventing them from riding.

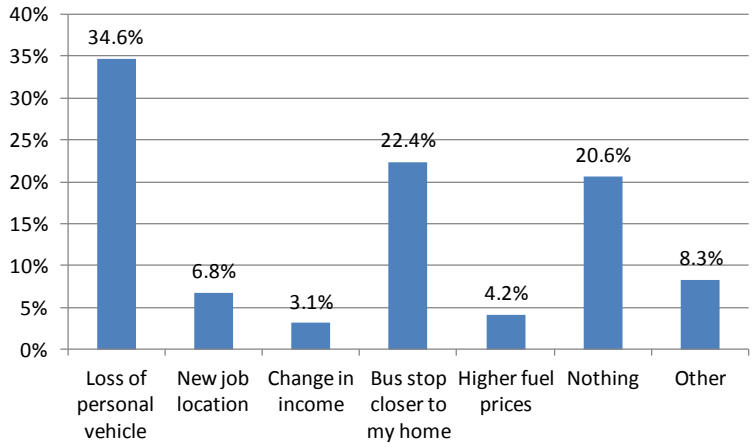
Exhibit 4.2.4 Barriers to Use – Non-Riders



When these respondents were asked how many trips they were likely to make per week if the stated barriers were removed, responses were fairly evenly distributed. The most frequent response was three to four trips (27.4 percent). However, nearly 18 percent indicated they would make 7 or more trips per week.

When asked what sort of change in circumstances would induce them to start using MACS services, nearly 21 percent stated that no change in personal circumstances would get them to start using MACS service. An additional 34.6 percent stated they would use MACS service if they lost access to a personal vehicle. More than 22 percent said they would use MACS service if there was a stop closer to their home. Financial factors such as change in income and higher fuel prices were not significant influences.

Exhibit 4.2.5 Catalyst for MACS Usage – Non-Riders



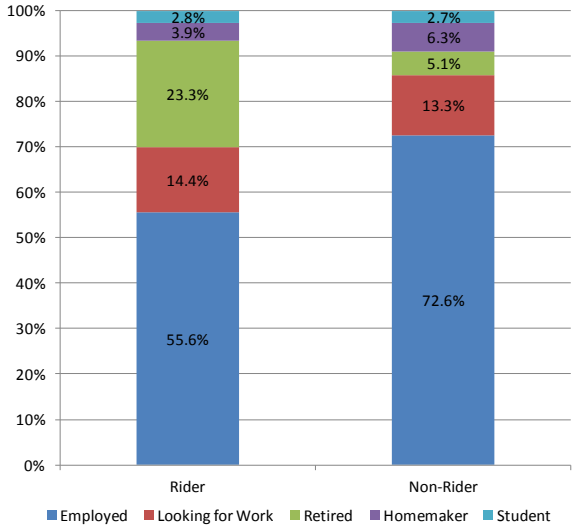
Differences Between Current Riders and Non-Riders

Several crosstabs analyses were run to compare riders with non-riders on several key demographic characteristics, with charts summarizing the findings below.

Employment Status

MACS users (i.e., those who had reported using the service within the 90 days prior to survey contact) were four times more likely to be retired versus non-users (23 percent versus five percent). Non-riders were more likely to be employed than riders (73 percent versus 56 percent). However, both groups were similarly likely to be "looking for work." Interestingly, nearly equal proportions of riders and non-riders were students, though this may be due to the fact that many surveys were collected during the summer after UAF had ended its normal academic year.

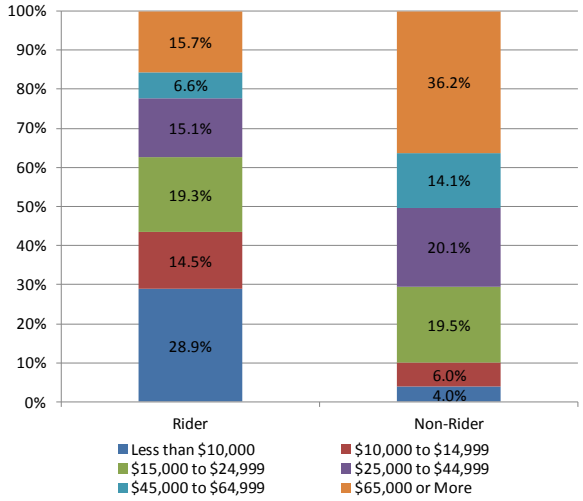
Exhibit 4.2.6 Employment Status – Rider vs. Non-Rider



Household Income

MACS users overall reported a significantly lower household income than non-riders. Thirty percent of riders earned less than $10,000 per year, while fewer than five percent of non-riders fell into that income bracket. At the other end of the income spectrum, slightly less than 16 percent of riders reported a household income of over $65,000 per year, while more than 36 percent of non-riders reported being in that income group.

Exhibit 4.2.7 Household Income – Rider vs. Non-Rider



Language Spoken at Home

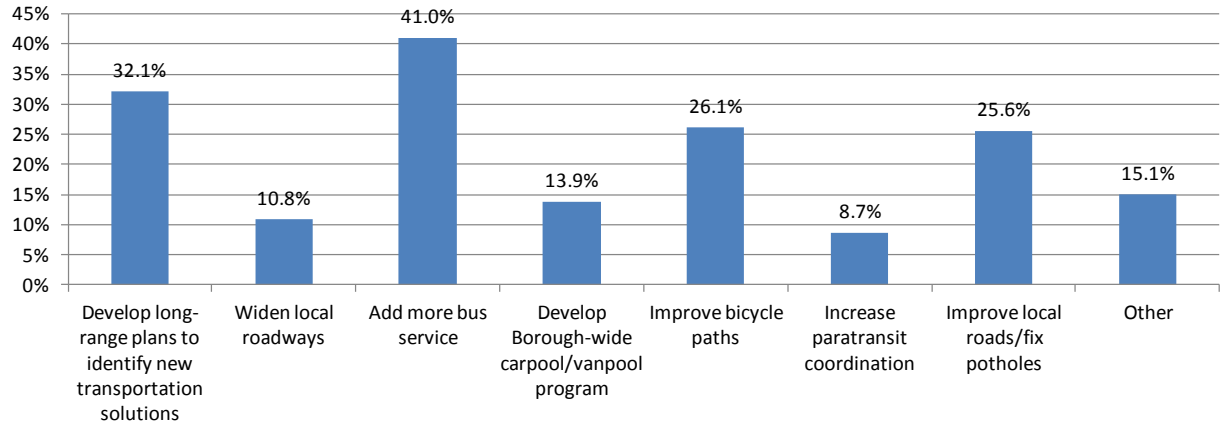
Sixteen percent of MACS riders speak a language other than English at home, or more than double the proportion of non-riders (seven percent) who speak a language other than English at home. The most common languages cited across the sample as a whole included Spanish (12 respondents), German (8), Athabaskan/Gwich'in/other native tongues (5), American Sign Language/ASL (3), Bulgarian (2), Chinese (2), and French (2).

Planning-Related Topics

In addition to responding to questions related to current travel habits and demographic information, respondents also provided information on their planning-related concerns for the FNSB as they pertain both to transportation and other areas.

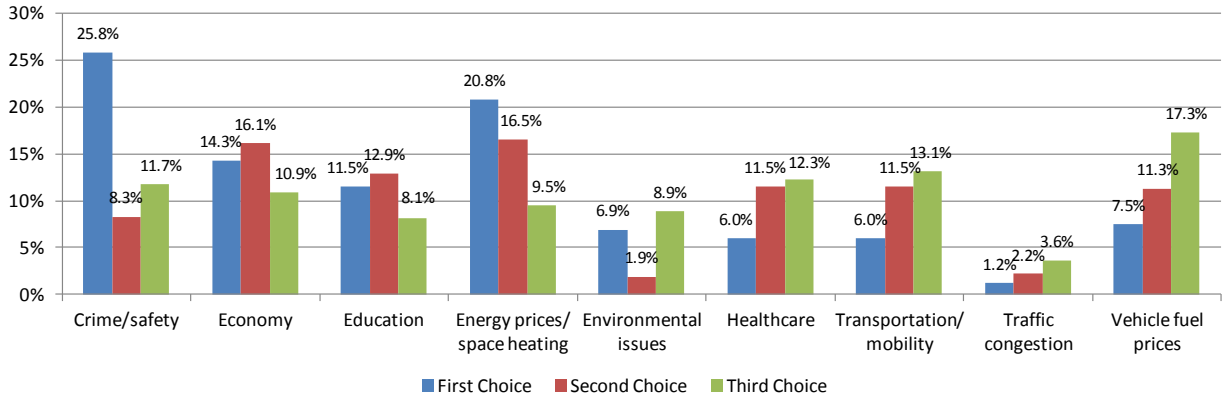
For transportation-related concerns, residents appear to support more investment in alternative modes of transportation. The largest share of respondents (41 percent) believe the FNSB should focus on adding more bus service as a long-term mobility issue, while slightly more than one-quarter believe the FNSB should improve bicycle paths. Approximately one-quarter of respondents also believe the FNSB should improve local roads and fix potholes.

Exhibit 4.2.8 Transportation-Related Priorities



When compared to other major issues for the FNSB, however, transportation in general was not at the front of most residents' minds. Only six percent of respondents listed it as their top concern. More important concerns included crime and safety, with 26 percent of respondents listing it as their top concern, and energy prices, cited by 21 percent of residents as their top concern.

Exhibit 4.2.9 Overall Community Priorities



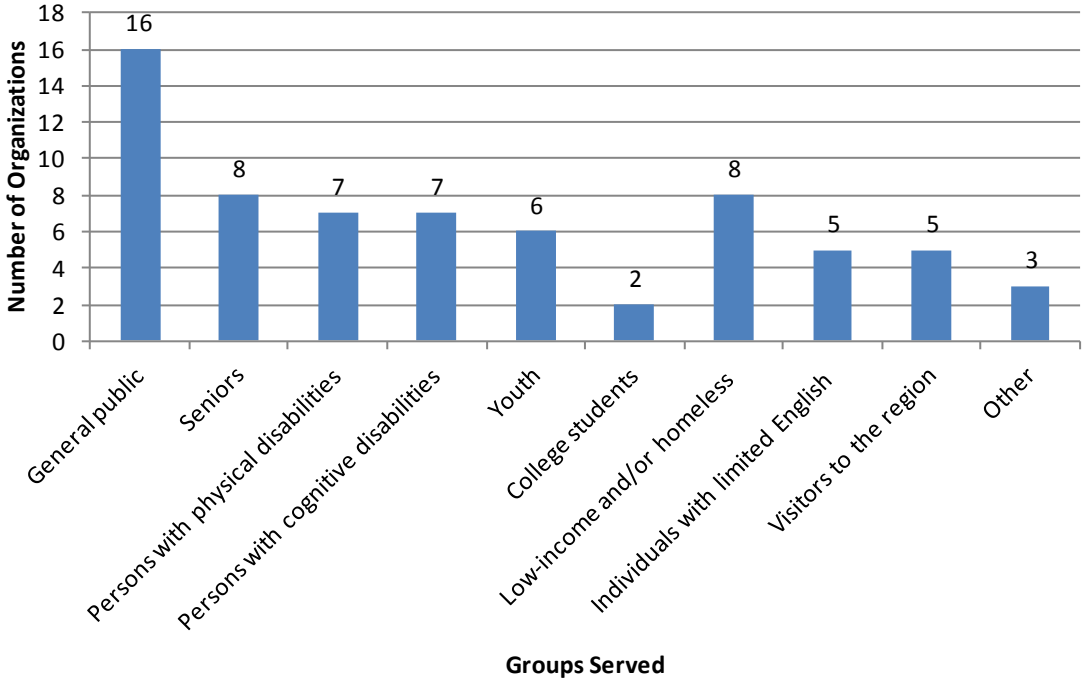
4.3 STAKEHOLDER INPUT

To gain a more complete understanding of FNSB transportation services and needs, the project team sent out a stakeholder survey via Survey Monkey to a total of 58 stakeholders that included senior centers, homeless shelters, social service agencies, the Alaska Public Health Center, the City of Fairbanks, City of North Pole, Fairbanks Youth Advocates, and other organizations. The survey, of which there is a copy in Appendix F, covered several transportation-related topics, including:

- The people or groups the organization serves (e.g., youth, homeless, elderly, etc.),
- Clients' normal travel mode(s),
- Any transportation services the organization provides, and
- Concerns and thoughts the organization has related to transportation in the FNSB and transportation issues that are specific to their clients.

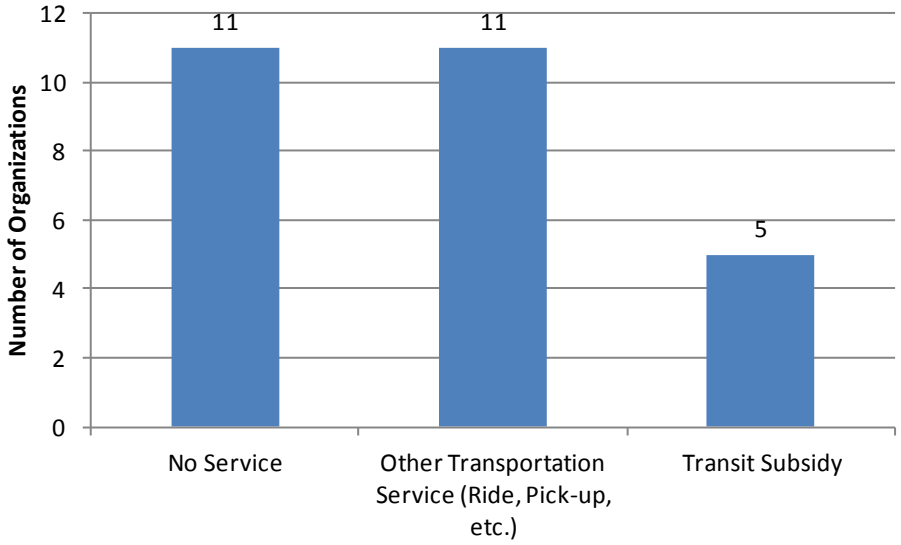
In addition to inviting representatives from each of these organizations to complete the online survey, the project team also provided them with its email and phone contact information in the event the respondent wanted to do a live interview or find out more about the project. Out of the 58 stakeholder organizations invited to complete the survey, 27 people representing 24 different organizations responded. Exhibits 4.3.1 and 4.3.2 below summarize the types of organizations that responded and the transportation services they provide.

Exhibit 4.3.1 Groups Served by Stakeholder Organizations



**Respondents were allowed to select more than one answer*

Exhibit 4.3.2 Stakeholder-Provided Transportation Services



Some of the major transportation-related concerns that respondents expressed included:

- A desire for increased frequency, Sunday service, and later Saturday service on MACS lines,
- A need for public transportation to Fort Wainwright, particularly among groups serving veterans,
- A desire for service along Chena Hot Springs Road,
- Better sidewalks and integration of transit service with other alternative transportation modes
- A need for more transit routes/transportation services into rural areas,
- A desire for bus stop poles to be closer to shelters at certain stops,
- Requests for increased safety at existing bus stops, and
- Lower-cost bus passes for qualifying low-income individuals.

4.4 COMMUNITY MEETINGS

Methodology

In an effort to obtain insight regarding need, perceptions, opinions, and attitudes toward transit services in the Fairbanks North Star Borough, the project team fielded questions in an interactive group setting where participants were free to talk with other group members. Each participant was also provided with the opportunity to fill out a community survey instrument and provide their feedback anonymously. Exhibit 4.5.1 summarizes the focus group meetings for this project.

Exhibit 4.4.1 Community Meetings

Date	Time	Venue	Attendance
5/13/2013	10:30 a.m.-12:00 p.m.	Noel Wien Library - Auditorium	13
	2:00 p.m.-3:30 p.m.	University of Alaska Fairbanks - Wood Center	7
	7:00 p.m.-8:30 p.m.	Salcha Senior Citizens' Building	15
5/14/2013	10:30 a.m.-12:00 p.m.	North Pole City Hall	2
	2:00 p.m.-3:30 p.m.	Fairbanks Senior Center	18
	5:30 p.m.-7:00 p.m.	North Pole City Hall	0
	7:30 p.m.-8:30 p.m.	Noel Wien Library - Auditorium	13

Findings from Public Meetings

After conducting the public meetings listed in Exhibit 4.5.1, attendees' feedback and questions were reviewed and are summarized below, grouped according to service aspect (e.g., infrastructure, service, planning, accessibility, etc.). For the complete meeting minutes from each public meeting, refer to Appendix G.

Service and Scheduling

- Service to Pump House restaurant on Chena Pump Road wanted.
- Fairbanks Senior Center staff and patrons want bus service to come closer to the Center on Moore Street as well as serve the Pioneer Senior Center.
- Service span not long enough for UAF class schedules, general desire to have later service.
- At two different meetings, attendees were concerned that MACS did not serve numerous social service centers, including homeless shelters, the mental health center, food bank, and other services for low-income residents.
- Several Salcha residents expressed a desire for Van Tran or other Dial-A-Ride service out to Salcha.
- Attendees at two different meetings wanted greater service frequency on the Red and Blue Lines.
- Attendees at two different meetings wanted more service to southern parts of Fairbanks.

Fare Policy

- Attendees at two different meetings stated that MACS should provide free or discounted rides to people who can show proof of homelessness.

Infrastructure

- More and better shelters (block wind, benches), particularly along Blue Line, mentioned at 2 meetings. At one meeting several attendees suggested that MACS solicit financial support from businesses near bus stops to help finance shelter construction and improvements.
- Participants at three of the community meetings said that they wanted to have park-and-ride lots with engine heater plug-ins for their vehicles, though they did not specify preferred lot locations.

Other

- Transit Center is unkempt, not well-maintained.
- Overall desire to improve environment at the Transit Center, particularly safety and security.

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DEMAND ANALYSIS AND RECOMMENDATIONS

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CHAPTER 5 – DEMAND ANALYSIS AND RECOMMENDATIONS

5.1 GUIDING GOALS AND OBJECTIVES

Goals Guiding Recommendations

Underlying the recommendations are the FNSB's goals as stated in its budget for FY 2013/2014. Specifically, the MACS program seeks to:

- Maximize the efficiency of the FNSB's fixed-route transportation system by continually evaluating routes, personnel, and by implementing changes designed to better serve the public within current funding levels.
- Utilize applicable state and federal grants for public transportation to improve service to the local community.
- Expand current maintenance building capacity to allow more bus storage, maintenance bays and administrative office space.
- Where feasible, improve access to fixed-route bus stops for persons with disabilities

Similarly, the Van Tran Paratransit program seeks to:

- Meet the community's demand for a safe, reliable, and cost-effective transportation system for the disabled in a responsive and efficient manner.
- Ensure compliance with the Americans with Disabilities Act (ADA) as it applies to the Transportation Department.
- Utilize applicable state and federal grants pertaining to paratransit transportation in order to reduce funding costs to the local community.
- Meet the growing need for transportation services in a geographically dispersed residential community.
- Develop an efficient partnership with other transportation providers to meet the growing transportation needs.
- Develop better methods to efficiently dispatch and schedule patrons and drivers.

These goals were kept in mind for each system as recommendations, outlined in the service scenarios below, were developed. The recommendations are the most practical and efficient means for the FNSB to further its goals for both MACS and Van Tran service. As a means of addressing these goals, the recommendations were informed by the rigorous demand analysis steps performed, which are summarized in the following section.

5.2 DEMAND ANALYSIS

The demand analysis and near-term forecasting employed a combination of National Transit Database data; U.S. census data; data from onboard surveys, community surveys, and community meeting minutes. Land use plans were also analyzed, but because the effects of land-use changes on transit use are less certain and can take significantly more time to have an effect on travel demand, land use plans' effects on transit provision are discussed in Chapter 7, covering the Long Range Transportation Plan.

Census Data Analysis

The demand analysis began with the census tract-level demographic mapping, and particularly the Transit Needs Index (TNI) map described in Chapter 2. The TNI map illustrated the proportion of the population in each FNSB census tract who belonged to one or more "ride-dependent" populations that, according to industry standards, are more likely to rely on transit service, such as low-income populations, households without access to a private vehicle, persons with disabilities, etc. In addition, the index considered UAF students as a "ride-dependent" population because most are able to use MACS service for free and thus constitute a significant transit market.

As the TNI map in Chapter 2 indicates, the existing MACS network aligns pretty well with the distribution of ride-dependent populations in the FNSB. In other words, routes tend to serve areas with a relatively high proportion of ride-dependent persons, and the tract with the highest ride-dependent population (in Downtown Fairbanks) has the greatest level of transit service.

Onboard Surveys and Ride Checks

Below are some of the main takeaways gleaned from analyzing both summer and winter onboard survey and ride check data. Chapter 3 provides a more detailed presentation and discussion of the ride check and onboard survey results.

Winter

The winter ride check and onboard survey revealed several key trends that influenced the recommendations:

- The most popular destinations in the MACS service area are UAF, East Fairbanks Shopping District, and West Fairbanks Shopping District. The Transit Center is the most-used stop in terms of boardings and alightings, but many riders who use this stop are likely transferring to other routes.
- The Blue and Red Lines are the busiest lines in the MACS system, particularly during the PM peak period, while the Black Line had the lowest ridership.
- Sunday service was the most-requested service improvement.
- More than 40 percent of riders believed bus stop amenities were "fair" or "poor." Overall, riders were most likely to support a fare increase if it resulted in better stop amenities.

Summer

- The proportion of riders paying with a UAF student card fell by about a third, from 31 percent down to 21 percent
- Significantly more respondents used a bicycle to access their boarding stop (from 12 in the winter up to 48 during the summer survey).
- Overall satisfaction with the system was higher, though customers were still least satisfied with bus stop amenities and span of operating hours.
- Sunday service was still the most requested improvement, cited by nearly 59 percent of survey respondents.

Community Surveys

The community surveys gathered feedback from both riders and non-riders, allowing us to understand the travel needs of non-riders and what prevents them from using MACS service. The community survey data also provided an opportunity to compare riders and non-riders on key demographic characteristics. Some of the findings, which are discussed in more detail in Chapter 4, include:

- Nearly 90 percent of respondents, including both riders and non-riders, believe public transit is a valuable community service,
- Less than 40 percent believe public transit meets their household's needs,
- Two of the most common barriers to using public transit, together cited by more than three quarters of respondents, are that service does not travel where the respondent needs to go or when he/she needs to go there,
- More than 40 percent of respondents believe adding more bus service should be a priority for the FNSB
- Riders, on average, have considerably lower incomes than non-riders, and
- The two most common catalysts that would get current non-riders to begin using MACS service include losing their personal vehicle (cited by 35 percent of respondents) and having a bus stop closer to their home (22 percent of respondents).

Community Meetings

Of the seven community meetings conducted throughout the MACS service area, the most commonly identified aspects included:

- Increased frequency on the Red and Blue Lines.
- Bringing MACS service closer to the Pioneer Senior Center and Fairbanks Senior Center on Moore Street.
- More and better bus shelters for protection against/from the elements.
- A lack of safety and cleanliness at the Transit Center.
- Park-and-ride lots.

Stakeholder Interviews

To gain a more complete understanding of FNSB transportation services and needs, a stakeholder survey was sent out via Survey Monkey to a total of 58 stakeholders that included senior centers, homeless shelters, social service agencies, the Alaska Public Health Center, the City of Fairbanks, City of North Pole, and other organizations. Some of the major concerns described in the 27 responses received, discussed in more detail in Chapter 4, include:

- A desire for increased frequency, Sunday service, and later Saturday service on MACS lines,
- A need for public transportation to Fort Wainright,
- Requests for increased safety at existing bus stops, and
- Better sidewalks and integration of transit service with other alternative transportation modes

5.2 AMENITY AND INFRASTRUCTURE RECOMMENDATIONS

Infrastructure Recommendation 1: Add Benches and Shelters to Key Stops

Both onboard survey respondents and community meeting participants showed a strong interest in more amenities at MACS bus stops. Given the extreme temperatures that Fairbanks experiences during the winter, such desires are understandable, therefore it is recommended that MACS install both benches and protective shelters at more stops. In particular, it is recommended MACS begin with the shelter replacements and upgrades described in the 2012 FMATS Bus Stop Shelter Report. As funding is available, it is recommended MACS prioritize future shelter and bench installation at stops meeting the following criteria:

- Relatively high number of boardings and alightings,
- Stops where people are likely to transfer between MACS lines, and
- There are few, if any, alternative locations providing shelter in close proximity to the bus stop (e.g., awnings at local businesses, etc.).

By using these criteria to identify/prioritize stops for the installation of bus stop shelters, the FNSB can maximize both the number of riders who benefit from each shelter as well as to what degree they benefit from it. Examples of current stops meeting these criteria include Fred Meyer West, the Transit Center, UAF Wood Center, and Fred Meyer East. Installing shelters that protect riders from wind, rain, and snow will not only make current users' experiences more comfortable, but also attract potential riders who may currently be deterred by the lack of shelters.

Infrastructure Recommendation 2: Improve Security and Maintenance of the Transit Center

Participants at several of the seven community meetings described feeling uncomfortable or unsafe at the Transit Center due to persons panhandling or appearing intoxicated. In addition, several more complained the Transit Center was unreasonably unclean, making the customer experience unpleasant. To address these concerns, the FNSB should collaborate with the City of Fairbanks to provide a more frequent presence of Fairbanks police at the Transit Center, even if in the form of patrols passing the Transit Center more frequently. This heavier police presence would ideally be coupled with stricter enforcement of quality-of-life laws against such activities as public intoxication, panhandling, littering, etc.

Infrastructure Recommendation 3: A Larger Vehicle Storage and Maintenance Facility

In anticipation of potential increases in MACS fleet size, as well as to potentially accommodate the fleet needs of other FNSB departments, it is recommended that the FNSB construct a larger vehicle facility as discussed in the long-term goals of the FNSB's FY 2014 MACS budget.

Infrastructure Recommendation 4: Construct an Improved Transfer Facility at Fred Meyer West

Fred Meyer West is the meeting point of four different MACS routes and is also a major shopping location, making it not only a popular destination, but also a significant potential transfer point. If the FNSB implements Service Recommendation 4, which would require additional timed transfers between the Red, Blue, and Yellow Lines, it is recommended the FNSB upgrade the amenities at this stop to provide transit users with a more comfortable and safer wait. Specific improvements would include creating a larger, enclosed waiting space such as the shelter that currently stands at the UAF Wood Center stop. Such an improved shelter would accommodate more passengers and to provide greater protection from the elements, particularly during winter months.

Infrastructure Recommendation 5: Install Bicycle Racks at Key Stops

As discussed in Chapter 3, a significant number of riders carry bicycles on buses during the summer, and in some cases there are more bicycles than current buses can accommodate. The Green Line is the most affected among all MACS lines, likely because it connects destinations that are farther apart from each other, making cycling a more attractive means by which to access its stops.

To ensure riders can continue to access the MACS system by bicycle, it is recommended that FNSB install bike racks at stops, especially along the Green Line. Green Line racks would be particularly useful along Badger Road, and especially at the Badger/McPeak's stop, which experienced a relatively high number of bicycle boardings and alightings. Other recommended locations for bike racks include the Transit Center, Fred Meyer West, and the UAF Wood Center.

At busier stops, such as Fred Meyer West, the Transit Center, and the UAF Wood Center, racks should be grouped together and covered to protect bikes from the elements. For all stops, racks should be located in a highly visible location, as having bicycles in a hidden or semi-hidden location can encourage and facilitate theft. In addition, racks should be as close to the stop or boarding location as possible without blocking or impeding the movement of other users or pedestrians. Close proximity will not only increase convenience for cyclists, but also help to make other riders who are potential cyclists aware of the racks as an option.

5.3 VAN TRAN RECOMMENDATIONS

The recommendations developed for Van Tran focus on maintaining compliance with ADA regulations regarding Dial-A-Ride service, reduce operating costs, and economically expand service hours.

Continue Use of Interactive Voice Response Software

In 2013, Van Tran began using Interactive Voice Response (IVR) software, which automatically calls users to confirm reservations, allows 24-hour cancellation, and automatically updates driver schedules based on calls. Implementation of IVR software has shown promising results, with cancellations and no-shows dropping from 13 percent of all reservations in June 2012 to nine percent in June 2013. While modest, this drop suggests the IVR software is improving system efficiency and it is recommended Van Tran continue to utilize it. To further leverage the benefits offered by IVR, it is also recommended Van Tran consider setting up a web-based reservation system to allow customers to arrange pick up online. Such a web-based system would increase reservation flexibility by allowing users to reserve rides 24 hours a day.

Implement Complementary Sunday Van Tran Service

The following section describing MACS service recommendations contains a recommendation to provide Red and Blue Line service on Sundays. However, the Americans with Disabilities Act requires all fixed-route service include complementary paratransit service to operate within a ¾-mile radius of all fixed routes. To ensure ADA compliance, it is recommended Van Tran provide Sunday paratransit service within the minimum ¾-mile radius of the Red and Blue Lines on Sundays.

Implement Demand-Based Driver Shifts

Van Tran drivers currently work under a fixed shift schedule in which each driver is on duty during the same time of day the same days of the week, irrespective of how many rides are requested during his or her shift. This setup leads to time periods during shifts in which there can be very few or zero rides requested, but the driver is still being paid for a full shift, leading to a very high cost per ride. To reduce per-ride labor costs, it is recommended that the FNSB implement demand-based shift scheduling.

Demand-based scheduling would entail employing a base level of one to two full-time employees to ensure there is minimal staff on hand to cover demand-response calls with additional, part-time staff being used when needed. The part-time staff shifts could be scheduled using a combination of known reservation times as well as subscription service schedules. Through such demand-based scheduling, Van Tran would be able to better tailor its labor supply to demand and increase the number of rides per labor hour. In turn, this greater productivity would reduce the per-trip cost of providing Van Tran services. At the same time, retaining one or two full-time employees would ensure Van Tran could serve short-notice calls.

Implement a Travel Trainer Program

Given the high per-trip cost of providing Van Tran service, it is recommended the FNSB begin a travel trainer program for current and potential Van Tran users. A travel trainer program would familiarize current Van Tran users with less expensive alternatives to Van Tran, such as MACS fixed-route service, encouraging a mode shift away from using Van Tran service to using alternatives that are less costly for FNSB to provide.

While a travel trainer program was recommended in the 2011 Mobility Management Plan, the FNSB did not implement it due to a shortage of funding to hire a travel trainer. To reduce costs, it is recommended the FNSB focus their travel training on group sessions for seniors, rather than for all Van Tran users. Focusing on seniors in a group setting would be less expensive than providing one-on-one training to all Van Tran users, with each group session costing as little as $200[4]. If the FNSB hosted such sessions on a monthly basis, it would cost as little as $2400 per year, plus some initial startup costs for the first sessions[5].

Considering the average Van Tran trip cost $87 in 2012, reducing Van Tran use by less than 100 trips per year could pay for the annual cost of providing monthly travel training. Since Van Tran currently carries provides over 20,000 trips per year, the actual reduction in Van Tran trips, and corresponding savings, would likely be significantly greater. In addition, in a study involving 56 seniors in Fairfax County, Virginia who received travel training, the proportion of participants who began using fixed-route transit at least somewhat regularly nearly doubled after receiving the training[6]. While the training was somewhat more in-depth than what is proposed for Van Tran, entailing both “on-the-road” and classroom components, the results are promising and suggest that even a modest travel training program in the FNSB would be a worthwhile investment.

Offer Taxi Vouchers to Van Tran Users when Appropriate

In addition to the above recommendations, it is recommended the FNSB explore supplementing the current Dial-A-Ride service capacity by offering taxi vouchers to users for use during hours in which Van Tran does not operate. Providing taxi vouchers would provide greater travel flexibility for current Van Tran users as they would be able to travel during more times of the day, yet cost less on a per-trip basis than expanding Van Tran service hours. However, implementing this recommendation would require review of current labor agreements surrounding the contracting out of Dial-A-Ride services.

[4] *Funding the Public Transportation Needs of an Aging Population*. Nelson/Nygaard Associates, 2010.
[5] In our budget, we assume $4,000 for the first year to account for initial startup costs and other, unexpected costs, then $3,000 per year plus inflation for subsequent years.
[6] *Get On Board!* Project Evaluation, Northern Virginia Transportation Commission, 2008

5.4 MACS SERVICE RECOMMENDATIONS AND SCENARIOS

SCENARIO 1 – BASELINE SCENARIO

A baseline service scenario assumes that no changes would made to MACS service, other than the addition of the Gold Line, which will begin providing service to Fort Wainright beginning in August 2013. Below are some of the advantages and disadvantages of continuing current service as is versus implementing the recommendations, described in more detail in the Scenario 2 description.

Advantages

- Enables a transfer-free, "one-seat" ride from Fairbanks International Airport to both UAF and the Transit Center via the Yellow Line.
- Covers a large service area, particularly along Richardson Highway south of North Pole via the Black Line.

Disadvantages

- "One-seat" rides on Yellow Line come at the expense of directness: accessing the Airport from UAF requires traveling through Downtown, and many who use it to travel Downtown could do so using the Red or Blue Lines.
- Ridership and farebox recovery are very low on the Black Line, with an average per-trip operating cost of $86 in 2012.
- Schedules that are overly optimistic about average operating speeds lead to poor on-time performance and discourage a broader segment of current residents from using the service.
- Overall, bonuses of coverage and reduced transfers result in costs of longer travel times and less frequency.

SCENARIO 2 – RECOMMENDED SCENARIO

Service Recommendation 1: Increase PM Peak Frequency on the Red and Blue Lines

It is recommended that FNSB reduce headways on the Blue and Red Lines to have buses serve each stop approximately every 20 minutes between 3:30pm and 6:30pm, rather than every 30 to 45 minutes like is currently done. Buses on these lines have the highest average passenger load, and the Red Line was the only line for which the load reached 100 percent of capacity (i.e., all seats were occupied). Increasing frequency on the Red and Blue Lines would provide more transit service to the most popular MACS destinations and cater to its strongest markets. In addition, greater frequency will increase on-time performance by reducing delays related to heavy boarding and alighting, as discussed in Recommendation 2.

Providing these shorter headways on the Blue and Red Lines combined would require six to seven additional operating hours on each normal weekday. The extra Blue Line runs would require one more bus to be in operation during the PM peak than currently operate, while the extra Red Line runs would

also require one additional bus. In total, the Red and Blue Line service increases would require two additional buses to be in operation during the PM peak.

Service Recommendation 2: Adjust Schedules on Lines with Poor On-Time Performance

The ride check observation suggested MACS' somewhat low on-time performance was due to reasons often beyond operator control, and likely a product of schedules not building in sufficient time to account for such events as traffic delays, heavy boarding, wheelchair boarding, etc. To improve on-time performance, it is recommended that the FNSB adjust the published MACS schedules to include more recovery time on lines with low on-time performance. Lines with low on-time performance (below 80 percent) for which schedule adjustments are being recommended include (using winter on-time performance data):

- Blue Line – 69 percent on time,
- Grey Line – 61 percent on time,
- Purple Line – 62 percent on time, and
- Red Line – 47 percent on time.

Additional recovery time would better allow drivers to adhere to the published schedule even when unforeseen events may delay service. Doing so would make the service more predictable and reliable for users. Sample revised schedules are provided in Appendix H.

Our first recommendation to add PM peak service to the Blue and Red Lines would in many instances improve on-time performance. Because much of the recurring causes of poor on-time performance for these two lines are related to heavy boarding and alighting activity, on-time performance would improve in part due to having more frequent service, which would result in fewer boardings per stop per run and therefore fewer boarding-related delays.

For the Grey and Purple Lines, bus stops and times of day at which the greatest delays occurred were identified, and the scheduled departure time was shifted so as to better accommodate potential delays that occur at or slightly before those stops. For example, the Purple Line tended to consistently fall about four minutes behind schedule by the time it arrived at the Easy Street/Lakeview Terrace time-point, so four minutes were added to the schedule at that time point to bring it closer in line with the real arrival time.

Service Recommendation 3: Eliminate the Yellow Line Connection to the Transit Center

To serve its strongest markets, reduce service duplication with the Red and Blue Lines, and increase frequency at no additional operating cost, it is recommended that the FNSB remove the section of the Yellow Line connecting Fred Meyer West to the Transit Center. The resulting Yellow Line Route would appear as shown in the Recommended Scenario map in Exhibit 5.4.1.

As described in Chapter 3, the Yellow Line's strongest markets are between residential areas west of UAF and the UAF campus, along University Avenue, and between Fred Meyer West and the Airport. The adjusted Yellow Route as depicted in Exhibit 5.4.1 would allow service at all Yellow Line stops eight times on weekdays, instead of the current six with some stops west of UAF receiving service up to 11 times per day. In addition, the recommended route would reduce existing service duplication with the Red and Blue Lines between Fred Meyer West and the Transit Center. Even along the stretch of University Avenue where duplication with the Red and Blue Lines would continue, the Yellow Line would be providing more service along MACS' busiest corridor, making the "duplication" more beneficial.

An example schedule for the proposed Yellow Line service is provided in Appendix H, along with details as to when and where it would have a timed-transfer with the Blue and Red Lines.

There are several drawbacks to the proposed Yellow Line routing. First, if implemented as recommended in Exhibit 5.4.1, there would no longer be a direct connection between the Airport and the Transit Center. However, the ride check data suggest that there is not a particularly strong travel market between the Transit Center and the Airport. Furthermore, scheduling so as to allow timed-transfers with the Red and Blue lines at Fred Meyer West would maintain reasonably fast travel times between the Transit Center and the Airport. In fact, for travelers going from the Airport to Downtown Fairbanks, travel times would likely be faster via a timed-transfer, given the current route requires all Downtown-bound riders traveling from the Airport to pass through UAF and the residential areas west of UAF.

Another drawback to the proposed route is that it removes service along First Avenue and along Davis Road, though this removal should not have significant effects along either road. The segment of Davis Road currently receiving Yellow Line service would still have Orange Line service connecting to both the Transit Center and Fred Meyer West. The segment of First Avenue currently receiving Yellow Line service would not have any replacement service in the near-term. However, only nine people used stops along First Avenue during the winter ride checks, indicating that there is little current demand along the corridor.

In short, while significantly shortening the Yellow Line would remove a "one-seat" ride to Downtown Fairbanks from the Airport and remove bus service along some corridors between Downtown Fairbanks and Fred Meyer West, it is believed the increase in service to the line's strongest segments outweighs such drawbacks.

Service Recommendation 4: Begin Sunday Service on Red and Blue Lines

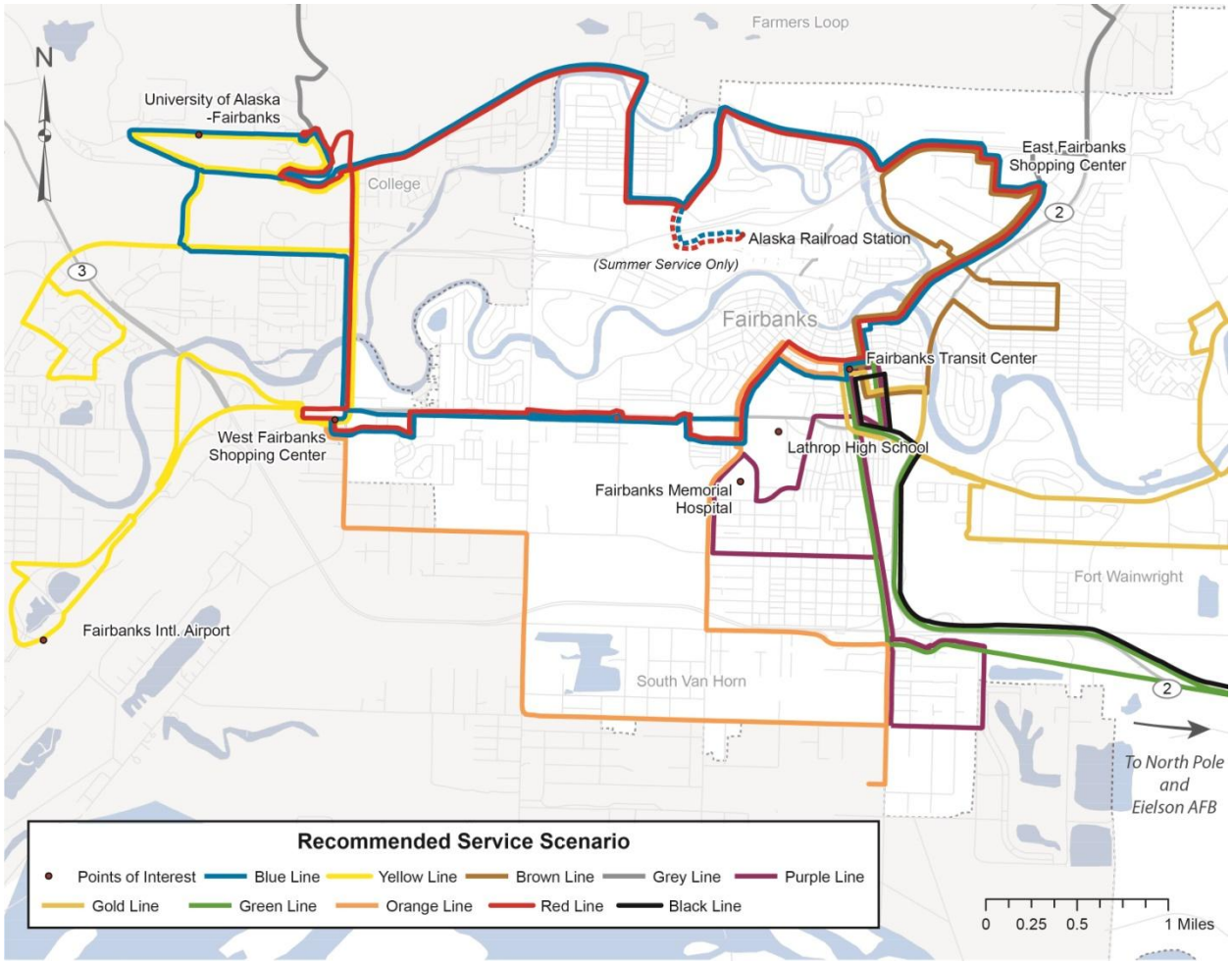
Winter and summer onboard survey data indicated Sunday service as among the most strongly desired improvements. To address the pronounced desire for Sunday service, it is recommended that the FNSB provide eight Blue Line runs and eight Red Line runs on Sunday between 9:00 a.m. and 5:00 p.m., with draft schedule details provided in Appendix H.

Realizing Sunday ridership may be very low in spite of strong stated interest in the service, it is recommended that the FNSB begin Sunday service only on the Blue and Red Lines for a six-month trial period. If at the end of this six-month period the trial service does not meet the performance standards presented in Exhibit 5.5.1, it is recommended the FNSB consider eliminating the service. In addition, it is recommended that the FNSB not implement Sunday Blue and Red Line service if doing so precludes it from implementing any of the other near-term recommendations.

Summary Map of Recommended Changes

Exhibit 5.4.1 provides an overview of what the MACS fixed-route system would look like upon implementing all recommended service changes. While the map does not illustrate the entire MACS network, it does show areas that will be affected by service changes. The Gold Line routing is approximate and had not been finalized at press time.

Exhibit 5.4.1 Recommended Service Scenario Map



5.5 CRITERIA FOR EVALUATING SERVICE CHANGES AND PERFORMANCE STANDARDS

Criteria for Evaluating Service Changes

Each service recommendation was developed to effectively respond to the needs identified through ride checks, onboard surveys, community surveys, and community meetings. As such, implementing the service recommendations should help the FNSB more effectively serve the needs of existing riders as well as attract potential new riders. However, it will be important for the FNSB to evaluate the recommendations if it implements them and to make any adjustments as necessary. The matrix in Exhibit 5.5.1 can serve as a guide which the FNSB can use to monitor the outcomes of any of the recommendations that it implements.

Exhibit 5.5.1 Post-Implementation Evaluation Criteria for Service Recommendations

Service Recommendation	Criteria for Evaluation	Standards to Meet within Pilot Period	Length of Pilot Period (months)
Increase PM peak service on Red and Blue Lines	On-time performance	Achieve minimum on-time performance of 80 percent	indefinite
	Peak load	Do not exceed 120 percent of seating capacity	indefinite
	Passengers/VSH	(doesn't need to be exactly the same, but should attract some new riders)	12
Adjust schedules on Grey and Purple Lines	Monitor on-time performance	Maintain on-time performance above 80 percent on all lines	indefinite
Reduce Black Line service to once weekly	Public Input and Feedback	Adjust remaining Black Line service as necessary to best meet needs of users	indefinite
Eliminate Yellow Line connection to Transit Center	Passengers/VSH	≥ 10 passengers/VSH	12
	Farebox recovery	≥ 7 percent	12
	Public Input and Feedback	Listen to feedback both in favor and against the service change	indefinite
Begin Sunday service on Blue and Red Lines	Passengers/VSH	Equal to or greater than systemwide average	6
	Farebox recovery	Equal to or greater than systemwide average	6

Overall Performance Standards for MACS and Van Tran

Exhibits 5.6.2 and 5.6.3 establish several key performance goals, or standards, for MACS and Van Tran to meet or exceed over the next five years. Certain measurements such as farebox recovery and on-time performance were selected based on industry standards for transit system evaluation, while others such as Van Tran operating cost per trip were selected based on client goals discussed at the beginning of Chapter 5. Standards for each measurement were determined using past performance data, performance of peer operators, and through discussions with the client.

Exhibit 5.5.2 MACS Systemwide Performance Standards

Performance Measure	Standard to Meet
On-time performance	80 percent year-round average
Peak load	≤120 percent of seating capacity
Productivity	14 trips/VSH
Farebox recovery	10 percent
Service Coverage	70 percent of residents in urbanized areas are within 1/2-mile of a MACS stop

Exhibit 5.5.3 Van Tran Performance Standards

Performance Measure	Standard to Meet
On-time performance	All pickups within ±15 minutes of scheduled time
Operating Cost per Trip	Reduce by 12 percent over FY 2012 cost
Cancellation/No-Show Rate	6 percent
Farebox recovery	5 percent

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FINANCIAL PLAN

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CHAPTER 6 – FINANCIAL PLAN

This chapter presents the capital requirements and five-year operating budget projections required to support each of the scenarios contained within the Demand Analysis and Recommendations chapter (Chapter 5). As Chapter 5 describes, two service scenarios were developed based on input received from the community: Baseline and Recommended. The Baseline scenario assumes the FNSB will continue existing services in their current form and includes service and infrastructure changes that will happen in the near term. The Recommended scenario assumes the FNSB will implement all of the recommended service and infrastructure changes, in addition to any changes that it already has planned and funded for the near-term.

This chapter is composed of three sections: a Capital Plan forecasting capital costs for each scenario along with potential funding sources; an Operations Plan projecting operations costs for each scenario, along with potential funding sources; and a Financial Plan estimating the cost of implementing each scenario coupled with estimated revenue streams to meet those costs.

In calculating future costs under both scenarios, the following assumptions were used:

- A 2.7 percent annual inflation rate, based on average inflation since 1980,
- A five-year life span for all cutaway buses used for Dial-A-Ride service,
- A 10-year life span for all 30-foot diesel buses, and
- A 12-year life span for all 35-foot diesel buses.

6.1 CAPITAL COST FORECASTS

Capital Cost Forecast – Baseline Scenario

Exhibit 6.1.1 outlines the forecasted capital costs based on the FNSB implementing the Baseline scenario. Baseline forecasted capital costs include planned vehicle purchases, stop upgrades and replacements, and expansion of FNSB's transit vehicle facility. While amenity costs are "front-loaded" to the FY 2013/2014 implementation year, these upgrades could reasonably be spread out over multiple years and installed as funding becomes available. The total vehicle facility cost, according to the FNSB, will be approximately $20M. The $20M total facility upgrade cost was placed in Fiscal Year 2017/2018 to denote that the revenue necessary to pay for the proposed facility will likely be accrued across a period of several years, the length of which will vary depending on the amount of funding disbursed each year.

Exhibit 6.1.1 Baseline Capital Cost Forecast[7]

Baseline Scenario	FY 2013/2014		FY 2014/2015		FY 2015/2016		FY 2016/2017		FY 2017/2018	
	Quantity	Total Cost	Quantity	Total Cost	Quantity	Total Cost	Quantity	Total Cost	Quantity	Total Cost
Fleet										
Gillig Low-Floor 35' Bus	3	$ 1,149,000	0	$ -	0	$ -	0	$ -	0	$ -
Ford E-350 Cutaway	0	$ -	0	$ -	6	$ 432,000	0	$ -	0	$ -
Bus Stops and Amenities										
New Shelters	27	$ 661,500	0	$ -	0	$ -	0	$ -	0	$ -
Replacement Shelters	10	$ 180,000	0	$ -	0	$ -	0	$ -	0	$ -
New Signs	238	$ 119,000	0	$ -	0	$ -	0	$ -	0	$ -
Replacement Signs	121	$ 60,500	0	$ -	0	$ -	0	$ -	0	$ -
Facilities										
Rehabilitate Existing bus facility	0	$ -	0	$ -	0	$ -	0	$ -	1	$20,000,000
Total		$ 2,170,000		$ -		$ 432,000		$ -		$20,000,000

Sources: FNSB Transit Division; California Association for Coordinated Transportation

Capital Cost Forecast – Recommended Scenario

Exhibit 6.1.2 outlines the forecasted capital costs based on the FNSB implementing all recommended infrastructure upgrades and vehicle purchases, in addition to estimated baseline capital costs. The major extra capital expenses incurred under the Recommended Scenario with respect to the Baseline Scenario include the heated bus shelter at Fred Meyer West and the purchase of three additional 35-foot buses to support the PM peak service increases recommended in Chapter 5. Other vehicle purchase dates are based on their expected service life. For example, the six cutaways to be purchased in Fiscal Year 2016 would replace the six purchased in 2011 because these vehicles have a five-year expected service life.

As with the Baseline Scenario forecast, amenity costs are "front-loaded" to Fiscal Year 2013/2014 implementation year, although they could reasonably be spread out over multiple years and addressed as funding becomes available. The $20M facility cost, also included in the baseline forecast, was placed

[7] Bus facility cost of $20M is the total cost, which is assumed to be broken up into smaller quantities to be paid over several years, depending on the amount of federal funding available each year.

in the 2017/2018 Fiscal Year as it is anticipated that the full funding amount will be accrued over several years, depending on annual funding availability.

Exhibit 6.1.2 Recommended Capital Cost Forecast

	FY 2013/2014		FY 2014/2015		FY 2015/2016		FY 2016/2017		FY 2017/2018	
Recommended Scenario	Quantity	Total Cost	Quantity	Total Cost	Quantity	Total Cost	Quantity	Total Cost	Quantity	Total Cost
Fleet										
Gillig Low-Floor 35' Bus	6	$ 2,298,000	0	$ -	0	$ -	6	$ 2,489,209	0	$ -
Ford E-350 Cutaway	0	$ -	0	$ -	6	$432,000	0	$ -	0	$ -
Bus Stops and Amenities										
New Shelters	27	$ 661,500	0	$ -	0	$ -	0	$ -	0	$ -
Replacement Shelters	10	$ 180,000	0	$ -	0	$ -	0	$ -	0	$ -
New Signs	238	$ 119,000	0	$ -	0	$ -	0	$ -	0	$ -
Replacement Signs	121	$ 60,500	0	$ -	0	$ -	0	$ -	0	$ -
Improved Bus Shelter at Fred Meyer West	1	$ 56,000	0	$ -	0	$ -	0	$ -	0	$ -
Facilities										
Expand and Rehabilitate Existing bus facility	0	$ -	0	$ -	0	$ -	0	$ -	1	$20,000,000
Total		$ 3,375,000		$ -		$432,000		$ 2,489,209		$20,000,000

Sources: FNSB Transit Division; California Association for Coordinated Transportation; LNI Signs, Inc.

Funding Sources for Capital Costs

Federal

Several federal funding sources are available for capital assistance. Three sources that are particularly applicable to the FNSB are described below, while Exhibit 6.1.3 provides a more complete listing of potential federal funding sources.

Congestion Mitigation and Air Quality (CMAQ) funds are disbursed to "non-attainment" areas where levels of certain pollution and particulate matter exceed federal standards. CMAQ funds aim to help such non-attainment areas meet federal air quality standards by helping to finance transportation projects that reduce air pollution. At the time of this report, the FNSB has $1.2M in CMAQ funds budgeted for bus shelter replacements and installations.

Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities Grants will provide $258M nationally during Fiscal Year 2014, allotted to individual recipients based on the number of seniors and persons with disabilities in their service area. FNSB could potentially put these funds toward future replacement Van Tran purchases as needed. In addition, projects to improve bus stop access, provide more stop amenities, etc., may also be eligible for Section 5310 funds as such projects can make transit more accessible for seniors and disabilities.

Section 1122 Transportation Alternatives Grants provide up to an 80 percent match for projects that improve non-motorized transportation, including improvements to bicycle and pedestrian infrastructure, and projects that improve non-motorized access to transit. The FNSB would likely be

eligible to use 1122 funding, for example, to finance bicycle parking at stops, improve wheelchair access to stops, etc.

Exhibit 6.1.3 Summary of Federal Funding Sources for Capital Assistance

Program Name	Description/Purpose	Eligibility	Recipient	Grant Type	FY 2014 Allocation
Congestion Mitigation and Air Quality (CMAQ) Funds	For projects that reduce air pollution generated by the transportation sector.	Available for areas that do not meet the National Ambient Air Qualirty Standards (non-attainment areas) and former non-attainment areas that are now in compliance.	State	Formula, based on state's FY 2009 CMAQ funds and total federal transportation funds.	$2.2B nationally
Section 5339 Bus and Bus Facilities Formula Grants	For capital projects to replace and rehabilitate transit vehicles and construct transit-related vehicle facilities.	States or public or private agencies that provide fixed-route transit service to the general public.	State	Formula, based on population density and system size.	$428M nationally
Section 5307 and 5340 Urbanized Area Formula Grants	For public transportation capital purchases, planning, job access projects for low-income populations.	Must have Urbanized Area (UZA) of over 50,000; can cover up to 50% of operating costs for UZAs with population <200,000.	FNSB	Formula, based on population density and system size.	$4.4B nationally
Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities	To provide better access to seniors and disabled populations to transit services.	For capital projects designed to meet transportation needs of seniors and those with disabilities for whom public transportation is insufficient, inappropriate, or unavailable.	State, designated for areas whose population is <200,000	Formula, based on number of seniors and individuals with disabilities.	$258M nationally
Section 1122 Transportation Alternatives	For projects that improve non-motorized transportation and non-driving access to transit	Generally provides 80 percent match for eligible projects	State	50 percent based on population, 50 percent at state's discretion	$819M nationally

State

While the Alaska Department of Transportation & Public Facilities helps finance certain transit projects, since 2008 state funding sources have contributed to at most five percent of capital costs, and often less. Given their fairly minor role in capital finance, no specific state-level capital funding sources were identified. However, in Fiscal Year 2012, the State contributed approximately $218,000 in matching fund assistance for the FNSB to purchase vehicles[8].

Local

Financial assistance for transit capital projects at the local level has traditionally been fairly low in Fairbanks. However, depending on the political will, residents may in the future be willing to tax themselves in order to finance future transit capital projects. Examples of successful propositions to increase local taxes to finance transit capital improvements include Los Angeles County's Measure R, which levied sales tax increase to fund several rail expansion projects, as well as Phoenix's Proposition 400.

[8] Source: FNSB Transit Division

6.2 OPERATIONS COST FORECASTS

Operations Cost Forecast – Baseline Scenario

Exhibit 6.2.1 below provides a five-year operations cost forecast for MACS and Van Tran service, assuming baseline conditions. Given the Gold Line routing has not been finalized and there are no ridership projections for it, it was not included in the cost forecasts.

Exhibit 6.2.1 Baseline Operations Cost Forecast

Baseline Scenario	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
Continuation of Existing Fixed-Route Service	$ 3,600,881	$ 3,698,105	$ 3,797,953	$ 3,900,498	$ 4,005,812
Continuation of existing Van Tran Service Levels	$ 1,701,684	$ 1,747,629	$ 1,794,815	$ 1,843,275	$ 1,893,043
Total	$ 5,302,564	$ 5,445,734	$ 5,592,768	$ 5,743,773	$ 5,898,855

Source: FNSB Transit Division

Operations Cost Forecast – Recommended Scenario

Exhibit 6.2.2 below provides a five-year operations cost forecast for MACS and Van Tran services, assuming FNSB implements all recommended service changes. Note that recommendations to adjust the Grey and Purple Line schedules, shown in Appendix H, do not appear even though they add approximately 655 VSH annually. The cost of these extra hours is not factored in because they are essentially the annual total of all delays currently experienced by these lines. In other words, the schedule adjustments would make it so the scheduled operating hours are equal to the actual operating hours. Therefore, assuming drivers are paid according to actual, rather than scheduled, operating hours, there should be no cost increase because no actual operating hours will be added.

For Van Tran operations cost estimates, it is conservatively estimated that travel training as recommended in Chapter 5 would lead to a 10 percent mode shift from Dial-A-Ride service to fixed-route service. This shift estimate is based on a 2008 evaluation of travel training in northern Virginia, which induced roughly 50 percent of training recipients to shift from Dial-A-Ride to fixed-route services for at least some of their trips.

Exhibit 6.2.2 Recommended Operations Cost Forecast

Recommended Scenario	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
Fixed-Route Service					
Continuation of existing service	$ 3,600,881	$ 3,698,105	$ 3,797,953	$ 3,900,498	$ 4,005,812
Add Blue Line Service (PM peak)	$ 181,177	$ 186,069	$ 191,093	$ 196,253	$ 201,552
Add Blue Line Service (Sunday)	$ 58,309	$ 59,884	$ 61,501	$ 63,161	$ 64,866
Add Red Line Service (PM peak)	$ 232,942	$ 239,232	$ 245,691	$ 252,325	$ 259,138
Add Red Line Service (Sunday)	$ 57,304	$ 58,851	$ 60,440	$ 62,072	$ 63,748
Modify Yellow Route	No change from Baseline	No change from Baseline	No change from Baseline	No change from Baseline	No change from Baseline
Increased Security at Transit Center	$ 60,000	$ 61,620	$ 63,284	$ 64,992	$ 66,747
Demand-Response Service					
Complementary Sunday ADA Van Tran Service	$ 73,115	$ 75,089	$ 77,116	$ 79,198	$ 81,337
Continuation of existing Van Tran Service Levels	$ 1,701,684	$ 1,747,629	$ 1,794,815	$ 1,843,275	$ 1,893,043
Monthly Travel Training	$ 4,000	$ 3,000	$ 3,081	$ 3,164	$ 3,250
Mode Shift from Van Tran to Fixed-Route	$ (170,168)	$ (174,763)	$ (179,481)	$ (184,327)	$ (189,304)
Total	$ 5,799,244	$ 5,954,716	$ 6,115,493	$ 6,280,611	$ 6,450,188

Funding Sources for Operations Costs

State

Since 2008, state funding has accounted generally for two percent or less of operations funding. Therefore, no specific state funding sources for operations are recommended at this time.

Local

The FNSB currently receives the majority of its operating assistance through transfers from the General Fund (approximately $3.8M for FY 2013)[9]. The financial plans (Section 6.3), assume assistance through transfers from the General Fund will continue to increase at the rate of inflation of 2.7 percent, or less if the funding is not needed.

[9] FY 2013 Fairbanks North Star Borough Approved Budget, page 75.

6.3 FINANCIAL PLANS

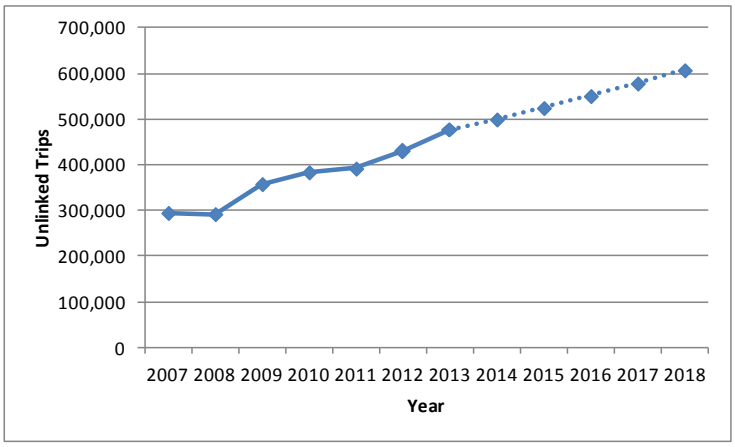
While the capital and operations costs forecasts detailed where money would be going for both Baseline and Recommended scenarios, the Financial Plans describe where money could come from in order to finance the costs associated with each scenario. Exhibits 6.3.2 and 6.3.4 below breakdown the separate likely revenue sources to fund costs associated with each scenario. For both the Baseline and Recommended Financial Plan tables, the following assumptions were made:

- Local subsidy funding levels would follow an estimated average inflation rate of 2.7 percent[10],
- Any unmet funding needs left over after fare revenues and local subsidies would be covered by one or more of the federal assistance sources described in Sections 6.1 and 6.2,
- Given its historically minor role and uncertain future role, no costs will be covered using state funding, and
- No changes in fare structure would occur.

Baseline Financial Plan

Exhibit 6.3.2 provides a five-year financial forecast of both revenues and expenditures for the Baseline scenario. Expenditures in Exhibit 6.3.2 and calculated revenues were based the assumptions listed at the beginning of this section as well as assuming that fare revenues would rise in proportion to a conservatively-estimated five percent annual increase in total MACS ridership, based on observed trends between 2007 and 2012[11] (Exhibit 6.3.1).

Exhibit 6.3.1 Baseline MACS Ridership Growth Estimate



[10] Based on past inflation rates in the State of Alaska since 1980.

[11] FY 2013 data were not factored into calculation of the average annual ridership growth rate because in this year the Purple Line was split into the Purple and Brown Lines. This split caused some trips that were originally "one-seat" to require a transfer, thus making journeys which were formerly "single-seat" into two-seat trips. By splitting single-seat trips into two trips, the level of unlinked trips would appear to increase, even though the number of unique riders wouldn't change.

Exhibit 6.3.2 Baseline Scenario Financial Plan

Baseline Scenario	FY 2013/2014	2014/2015	2015/2016	FY 2016/2017	FY 2017/2018
Revenue					
Fare Revenue (Fixed-Route and Demand Response)	$ 343,258	$ 358,464	$ 374,378	$ 391,033	$ 408,465
Federal Operating Funds	$ 1,178,744	$ 1,204,632	$ 1,230,922	$ 1,257,611	$ 1,291,956
Federal Capital Funds[14]	$ 2,170,000	$ -	$ 432,000	$ -	$ 20,000,000
Net General Fund Transfers	$ 3,780,562	$ 3,882,637	$ 3,987,468	$ 4,095,130	$ 4,198,434
Total Revenue	$ 7,472,564	$ 5,445,734	$ 6,024,768	$ 5,743,773	$ 25,898,855
Expenditures					
Capital Expenditures	$ 2,170,000	$ -	$ 432,000	$ -	$ 20,000,000
Operations Expenditures	$ 5,302,564	$ 5,445,734	$ 5,592,768	$ 5,743,773	$ 5,898,855
Total Expenditures	$ 7,472,564	$ 5,445,734	$ 6,024,768	$ 5,743,773	$ 25,898,855

Recommended Financial Plan

Our Financial Plan for the Recommended Scenario is shown in Exhibit 6.3.4. Under the Recommended Scenario, the following assumptions in developing ridership projections were used:

- Red and Blue Line ridership would initially increase proportionally to the increase in service hours resulting from added PM peak service and Sunday service[13].
- Yellow Line ridership will not be significantly different from the Baseline Scenario, as it is assumed that decreases in ridership resulting from the elimination of the Transit Center connection will be roughly canceled out by increases in ridership due to greater frequency in the areas of the Line's highest ridership.
- After initial increases due to the service changes, it is assumed that in subsequent years the system wide ridership will increase at the Baseline rate of five percent, as shown in Exhibit 6.3.3.
- There will be no change in fare structure for MACS.

[12] Federal capital funding sources have historically included Congestion Mitigation and Air Quality (CMAQ) funding and Urban Area Formula Grants (Section 5307). Other potential federal sources are included in Exhibit 6.1.3. Additionally, the $20M in federal funding listed in FY 2017/2018 represents a total that will likely be disbursed over several years, depending on the amount of funding available each year.

[13] Assumes an increase of 13.2 Rides per added VSH. 13.2 rides/VSH was the system-wide average in calendar year 2012.

Exhibit 6.3.3 Comparison of Ridership Increases, Baseline and Recommended Scenarios

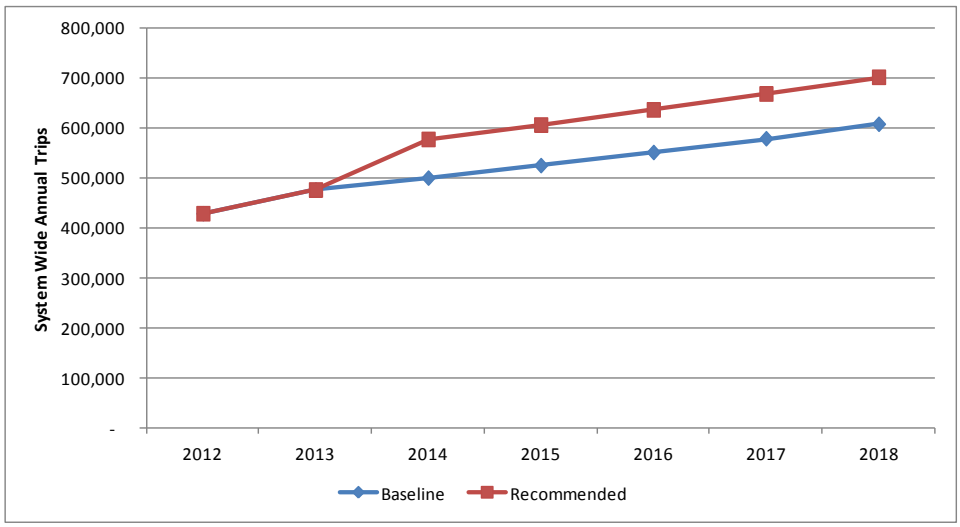


Exhibit 6.3.4 Recommended Scenario Financial Plan

Recommended Scenario	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
Revenue					
Fare Revenue (Fixed-Route and Demand Response)	$ 388,405	$ 405,707	$ 423,818	$ 442,779	$ 462,630
Federal Operating Funds[16]	$ 1,630,277	$ 1,666,372	$ 1,704,207	$ 1,742,703	$ 1,781,860
Federal Capital Funds	$ 3,375,000	$ -	$ 432,000	$ 2,489,209	$ 20,000,000
General Fund Transfers	$ 3,780,562	$ 3,882,637	$ 3,987,468	$ 4,095,130	$ 4,205,698
Total Revenue	$ 9,174,244	$ 5,954,716	$ 6,547,493	$ 8,769,820	$ 26,450,188
Expenditures					
Capital Expenditures	$ 3,375,000	$ -	$ 432,000	$ 2,489,209	$ 20,000,000
Operations Expenditures	$ 5,799,244	$ 5,954,716	$ 6,115,493	$ 6,280,611	$ 6,450,188
Total Expenditures	$ 9,174,244	$ 5,954,716	$ 6,547,493	$ 8,769,820	$ 26,450,188
Difference from Baseline	$ 1,701,680	$ 508,982	$ 522,725	$ 3,026,047	$ 551,333

[14] See footnote 14.

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7

LONG RANGE TRANSIT PLAN

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CHAPTER 7 – LONG RANGE TRANSIT PLAN

Vision and Goals of the Long Range Transit Plan

Our SRTP recommendations form the initial steps toward fulfilling a more long range vision for transit throughout the FNSB. While the SRTP recommendations focus on improving system performance and efficiency, the long-term plan (LRTP) envisions a transit system that is an integral part of the FNSB's future with greater alternative transportation options and development that supports those options. To that end, the long-term recommendations consider and complement other transportation plans including Vision Fairbanks, the 2010 North Pole Land-Use Plan, 2005 Fairbanks Comprehensive Land-Use Plan, and the Fairbanks 2035 Metro Plan.

This chapter begins by outlining the land use and transportation projects and goals outlined in other transportation plans. It then discusses potential long-term transit goals that FNSB can follow for transit service as well as catalyst and trigger points for implementing various service types and service levels.

7.1 FUTURE LAND USE AND MARKET ANALYSIS

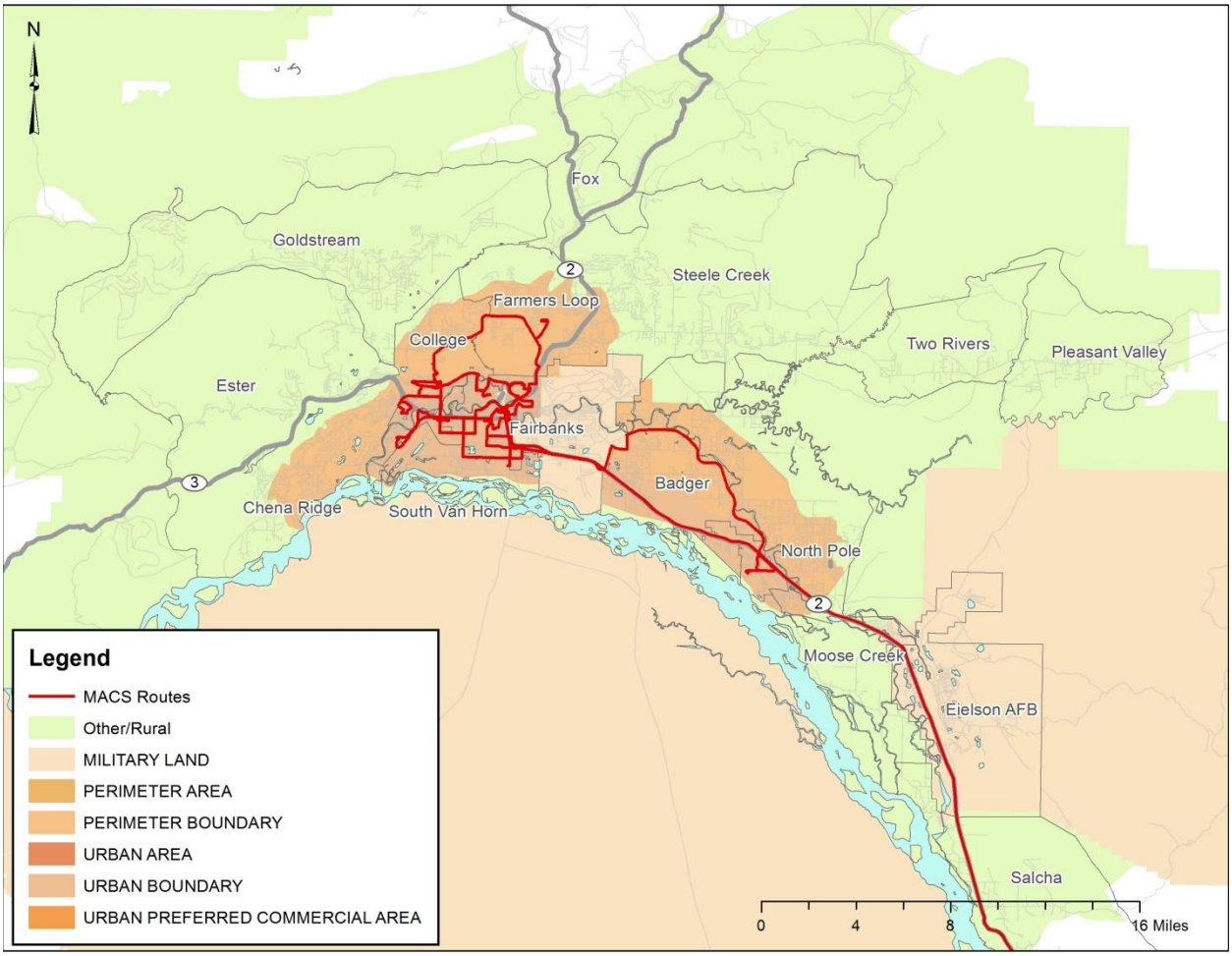
Development location and type plays a large role where people go and how they get there. Therefore, an analysis of current land-use regulations and plans is essential to estimate future transit demand within the FNSB. This section will analyze the 2005 Fairbanks Comprehensive Land-Use Plan, 2010 North Pole Land-Use Plan, and the 2008 Vision Fairbanks Plan. Each of these plans offers insight into where development within the FNSB could potentially occur, the type of development, and its forecast density. This section will analyze each of these plans and describe how each of these plans may be relevant to providing future transit service, including increased coverage area, transit network density, transit mode, and frequency.

Fairbanks Land Use Plan

Exhibit 7.1.1 presents a simplified version of the 2005 Fairbanks Comprehensive Land-Use Plan Map. At its zoomed-out scale, the map provides a rough overview of where development may occur within the next 25 years. As Exhibit 7.1.1 shows, the 2005 land use map limits potential future growth to areas that largely fall within MACS service area, so if the FNSB does select new routes, it will likely be a densification of routes within its current network, rather than extending its coverage area significantly.

Again, Exhibit 7.1.1 is a simplified map, combining down multiple zone types into essentially "urban" and "rural." For a more detailed look at zoning, Exhibit 7.1.2 shows a more zoomed-in map of North Pole that reflects more detail with respect to zone types, while Exhibit 7.1.3 shows the proposed zoning for Downtown Fairbanks under the Vision Fairbanks plan (described more below).

Exhibit 7.1.1 Land-Use Map from 2005 Fairbanks Comprehensive Land-Use Plan



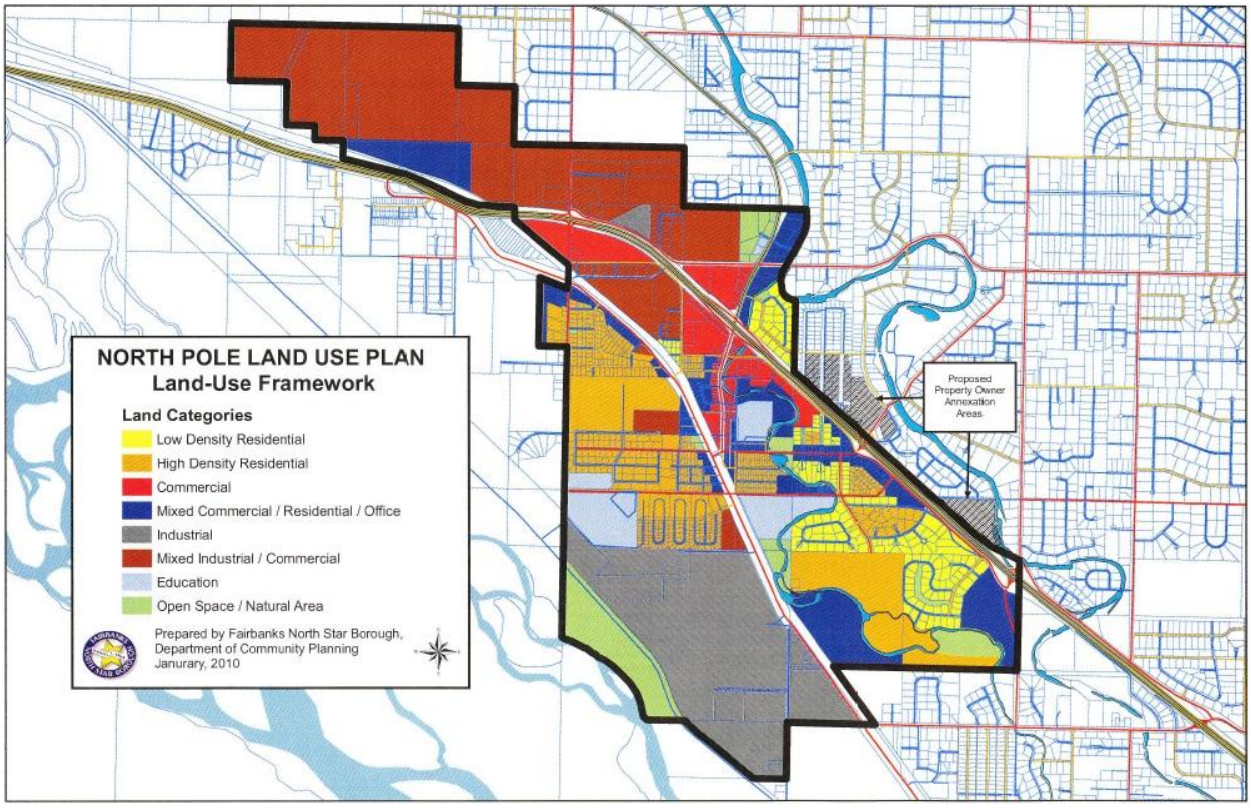
2010 North Pole Land-Use Plan

The goals and zoning outlined in the 2010 North Pole Land-Use Plan are potentially conducive to increased transit service in the North Pole area. Specific goals stated in the North Pole Plan that could be well-complemented by increased transit service include:

- "Improve and maintain pedestrian and bike circulation."
- "Create a mixed-use core area."
- "Create opportunities for new businesses, industry, and redevelopment."

As Exhibit 7.1.2 below also shows, the Plan's proposed land-use patterns in and around North Pole Plaza, North Pole High School, the North Pole Branch Library and along the Richardson Highway should be kept in consideration by the FNSB as future areas of service expansion. Given these areas are designated as "high-density residential," "commercial," or "mixed commercial/residential/office," there is significant potential for increases in both population as well as jobs, which together would create a larger market for increased transit service in North Pole.

Exhibit 7.1.2 2005 North Pole Land-Use Plan



Vision Fairbanks 2008

Exhibit 7.1.3 presents the proposed Vision Fairbanks Land-Use Plan, whose focus is on Downtown Fairbanks. The Plan encompasses significant land use changes as well as transportation changes (described in the next section) for the Downtown area. The potential land-use changes that could be most relevant for transit provision include an increase in population and job density and more mixing of land uses. With Downtown Fairbanks potentially growing both as a place that people live and visit, in concert with a more pedestrian- and transit-oriented environment, FNSB may want to consider increasing service to the Downtown area in the future. In particular, service changes could include more frequent services on existing lines, local shuttle services to connect destinations within the Vision Fairbanks study area, and more direct connections to Downtown from other parts of the FNSB.

In addition to proposed land use changes that would significantly increase travel demand to and within Downtown Fairbanks, Vision Fairbanks also recommends ambitious land use changes to the currently industrial area between Downtown and the Alaska Railroad depot, including converting the current industrial land uses to higher-density residential, commercial, and mixed-use zoning. As with the potential for increased activity Downtown should recommended land-use changes become a reality, a similar transition in this presently industrial area, which currently does not receive transit service, would likely generate additional demand for transit.

Exhibit 7.1.3 Vision Fairbanks Downtown Plan

Source: 2008 Vision Fairbanks Plan

Important to keep in mind with the Vision Fairbanks Plan is that it is more of a general guide for development in Central Fairbanks over the next 20 to 50 years, rather than a set-in-stone prescription. Many of the more ambitious land use changes outlined in the plan will likely take more than 15 to 20 years to become a reality, if ever. Therefore, this overview of Vision Fairbanks is intended to ensure then FNSB keeps the plan in mind as they plan and modify transit service within Downtown Fairbanks. Specifically, knowledge of Vision Fairbanks and its status will allow it to better plan service changes and involve itself in any planning processes that could affect transit service.

2005 Fairbanks North Star Borough Comprehensive Plan

Containing both transportation and land use elements, the 2005 Comprehensive Plan states that future commercial development proposed outside of currently designated commercial areas needs to consider whether public transit service is available to the proposed development site. This element of the Plan may promote future transit use by increasing the likelihood that commercial trip generators are transit accessible. It may also require expansion of transit services in order to service future commercial developments.

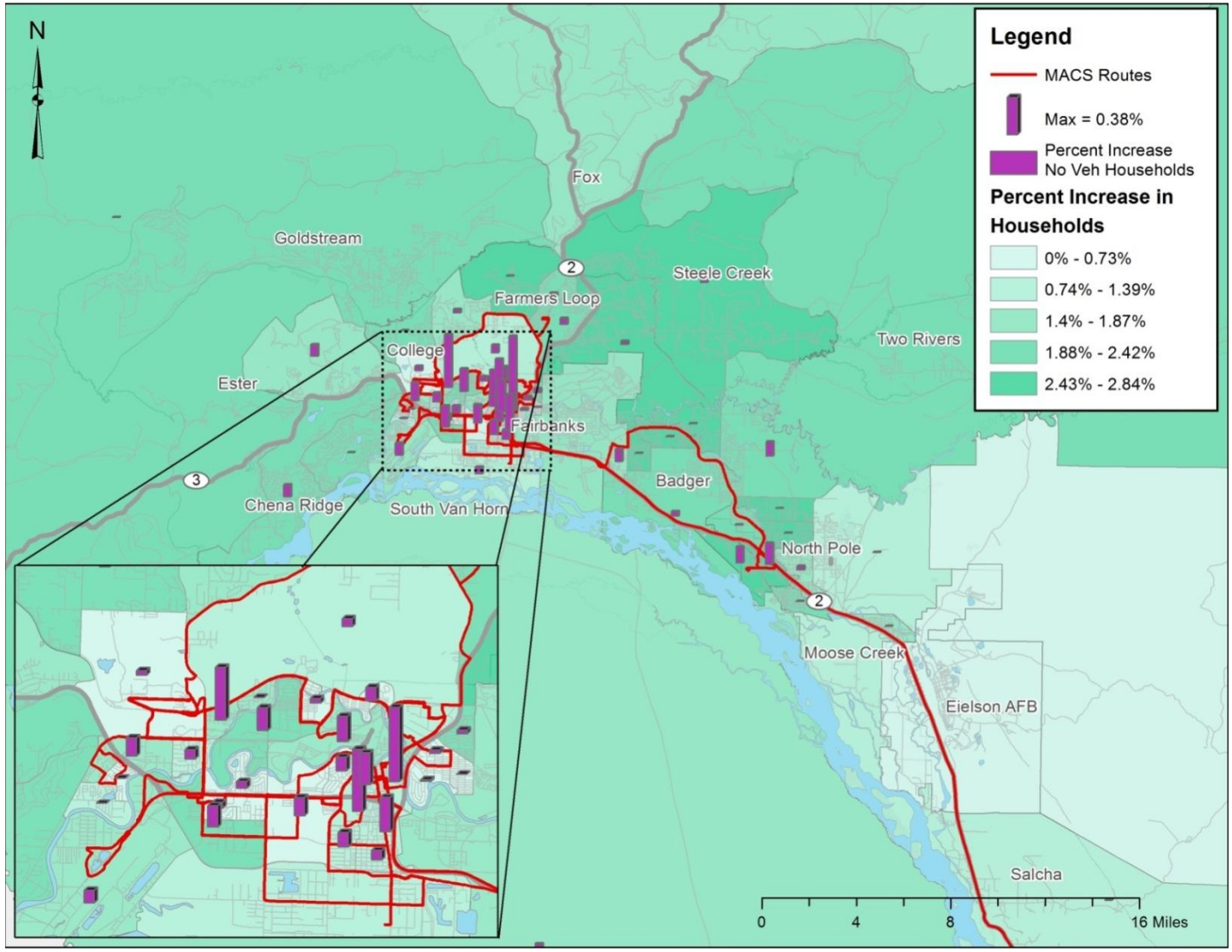
Fairbanks Metro 2035 Plan

In addition to considering current and future land-use designations, it is recommended that the FNSB also consider potential population increases as forecasted by the 2010 Fairbanks Metro 2035 Plan. This Plan, which focuses on transportation infrastructure and is discussed in the following section, forecasts growth by census tract and block group for the FNSB area.

If the projections in Exhibit 7.1.4 are correct, the MACS core service area in and around Downtown Fairbanks will continue to be its strongest market as it is expected to have relatively high levels of growth both in total number of households as well as in zero-vehicle households.

As Exhibit 7.1.4 also shows, while the strongest growth (i.e., up to three percent) occurs in areas outside of the current MACS service area, this does not necessarily translate to an increase in demand for transit because much of the population growth will be among households with at least one vehicle. A good illustration is in Steele Creek, where total number of households is expected to grow by over 2.5 percent by 2035, yet whose growth in zero-vehicle households will be close to zero. As a result, Steele Creek likely will not need new transit service in spite of the forecast population growth.

Exhibit 7.1.4 Projected Increases in Population Growth by Census Block Group through 2035



7.2 PLANNED INFRASTRUCTURE AND NETWORK CHANGES

As important as predicting future development patterns is anticipating changes to transportation infrastructure and services. Changes to the street network, for example, may require routing changes or open up opportunities for more efficient routing. Therefore, to complement the overview of relevant land-use patterns, the LRTP also will review changes to the transportation network that may affect MACS service in the future.

Fairbanks Metro 2035 Plan (from 2010)

Many of the Fairbanks Metro 2035 Plan's recommendations do not have any significant implications for future transit provision in the long term, primarily consisting of road rehabilitation and vehicle capacity increases away from current service areas. However, the FNSB should take into account several recommended improvements provided in the Plan which are summarized below. These recommendations, if executed, could potentially affect MACS routing and service provision.

Improved pedestrian facilities, including sidewalk and intersection amenities, in the Downtown Area along Cushman, Gaffney, and Lacey Streets. As these recommendations are being planned or implemented, the FNSB should involve itself in planning discussions to ensure that improvements beneficial to transit are implemented, such as curb extensions, queue-jump lanes, spaces for bus shelters, etc. The Plan specifically recommends these conversions to occur between 2016 and 2025, though several sidewalk improvements, such as wheelchair ramps, are slated to be constructed in late 2013.

A new bridge extending Chena Small Tracts Road across the Chena River, connecting Airport Way with Chena Pump Road. It is recommended that the FNSB consider the opportunities that such a connection could create, such as new service connecting residential areas around Chena Pump Road to the Airport and Downtown Fairbanks.

Vision Fairbanks 2008

In addition to its proposed land-use changes, the Vision Fairbanks plan recommends significant changes to the street network as well as transit service in and near Downtown Fairbanks. In particular, street network and infrastructure changes that could open up new possibilities for transit include:

Connecting Charles Street directly to the Alaska Railroad train depot, which would open up possibilities to provide more direct transit service to Downtown Fairbanks from both the Depot as well as from UAF, traveling via Charles Street rather than via Fred Meyer East. In addition, if the significant land use recommendations for more mixed-use development in the industrial areas south of the Depot come to fruition, there will likely be a stronger demand for transit service, be it in the form of a local shuttle service or new longer fixed-route line.

Improved bicycle and pedestrian facilities, such as new sidewalk construction and widening, in Downtown and just north of Downtown across the Chena River. As recommended in the section discussing the Fairbanks Metro 2035 Plan, it is recommended that the FNSB actively participate in any discussions surrounding sidewalk and streetscape changes. By participating in these discussions, the FNSB can better ensure that any streetscape decisions that the City makes consider improvements that benefit transit, including space for stops and shelters and curb extensions.

Moving the Transit Center from its current location across Cushman Street to the present site of the Sadler's Home Furnishings store. This relocation would provide more space for the Transit Center and make it a part of a multimodal transportation center that features local transit, tour bus, parking, and rental car facilities. Following the move, the Transit Center's current location would become the Cushman Square park and retail anchor.

Exhibit 7.2.1 Vision Fairbanks Circulation Plan

Source: 2008 Vision Fairbanks Plan

2005 Fairbanks North Star Borough Comprehensive Plan

The 2005 Fairbanks North Star Borough Comprehensive Plan entails both land use and transportation recommendations. Among its transportation recommendations that could affect MACS service include:

Recessed bus stops in appropriate areas, which would allow buses to load and unload without blocking vehicle travel lanes. While recessed stops may improve vehicle flow, it is important to note they can increase delays for buses by forcing them to wait for an opening in traffic when reentering the travel lane after picking up passengers.

Light Rail and Bus Rapid Transit (BRT) were mentioned in the Comprehensive Plan as options to facilitate travel between North Pole and Fairbanks in the long term. However, with approximately 4,000 riders per month, Green Line ridership is not nearly high enough to justify the cost of such high-capacity transit. As an initial upgrade to service along the corridor, however, the FNSB may consider increasing limited-stop service between North Pole and Fairbanks.

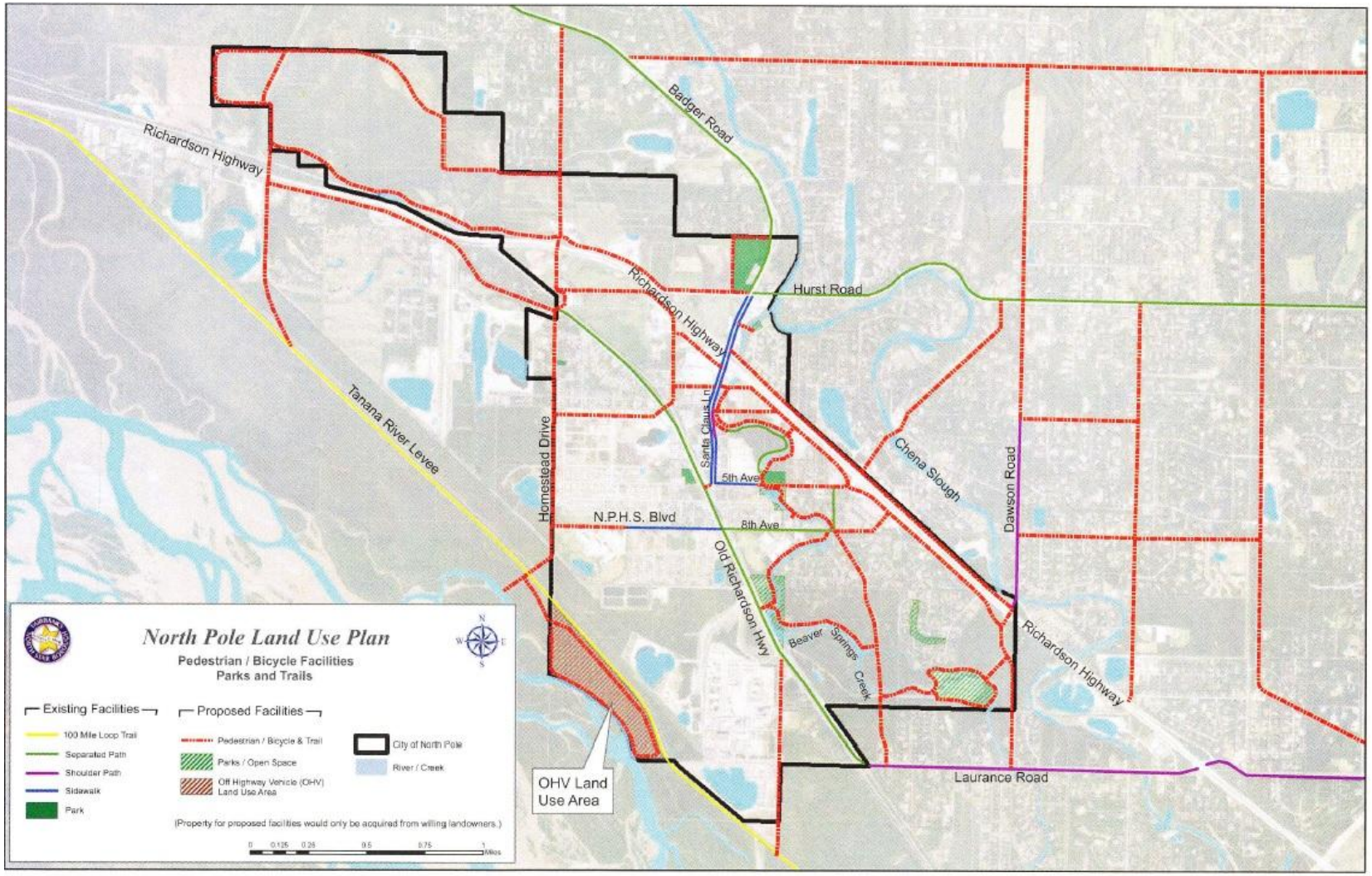
2010 North Pole Land-Use Plan

In addition to providing an idea of potential land-use elements that could affect transit demand, the 2010 North Pole Land-Use Plan also illustrates potential transit and transportation network changes that FNSB should keep in mind for long-term planning, which are presented in Exhibits 7.2.2 and 7.2.3. Potential changes include:

Dedicated bikeways, shown in Exhibit 7.2.2, are proposed for Badger Road by North Pole Plaza, as well as along other local streets in and around North Pole Plaza. If these bikeways are built, the FNSB may consider installing bicycle lockers at the North Pole Plaza bus stop. Bicycle lockers, described more in the following section, coupled with dedicated bike routes by which to access North Pole Plaza would increase the number of potential riders who could access the stop at North Pole Plaza.

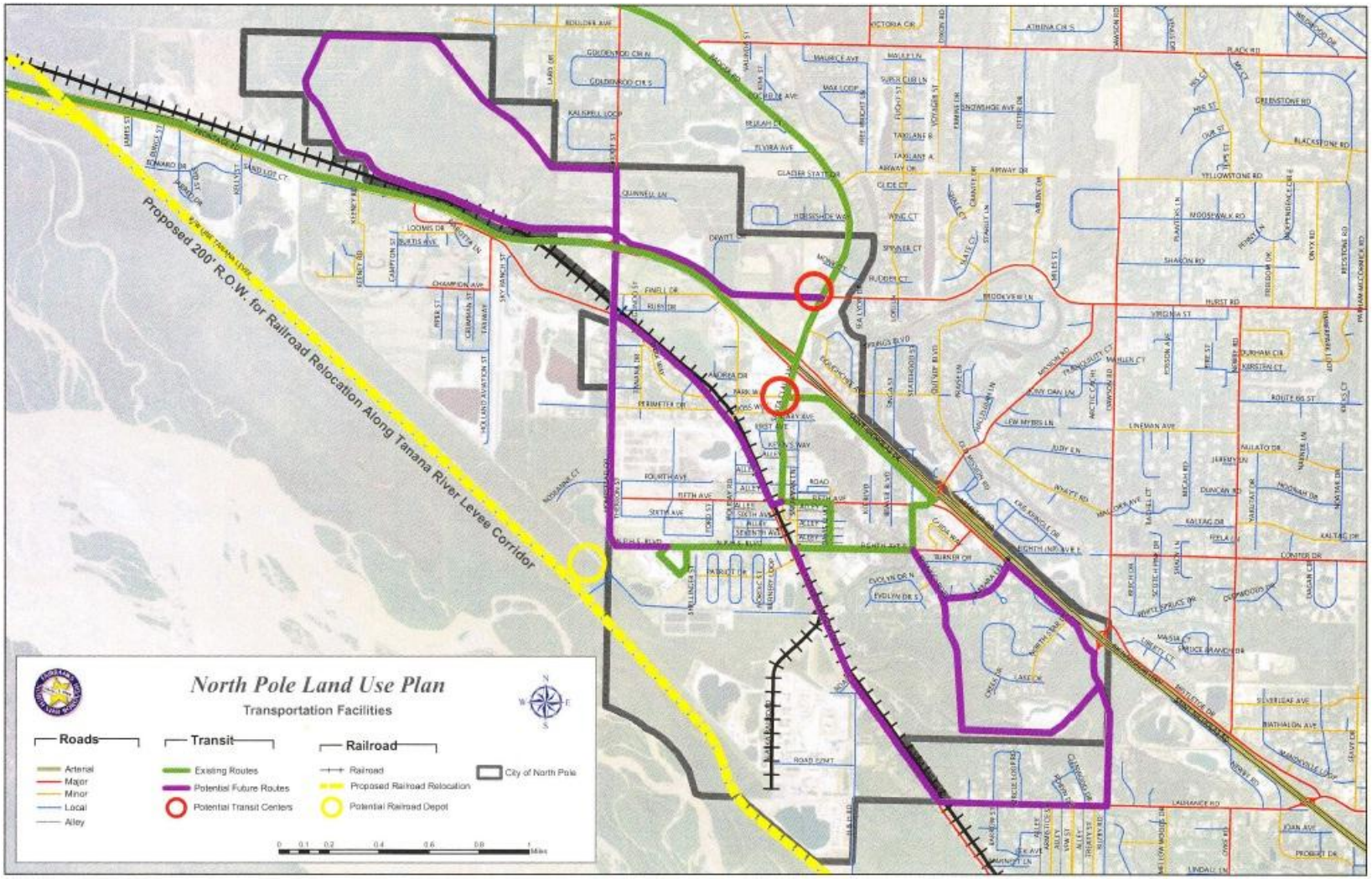
A local circulator for North Pole, shown in Exhibit 7.2.3, would increase transit access in North Pole and could either act as a feeder service to the Green Line, or even act as a new direct service to Fairbanks. However, as discussed in the following section, justification for new transit service would be contingent upon sufficient development and demand occurring as outlined in Section 7.1.

Exhibit 7.2.2 Proposed North Pole Bicycle Network



Source: 2010 North Pole Land Use Plan

Exhibit 7.2.3 Proposed North Pole Transportation Network Changes



Source: 2010 North Pole Land Use Plan

7.3 A LONG TERM PLANNING GUIDE FOR FNSB

The plans and projections discussed above together provide an idea of the potential directions that development may take in the FNSB. In particular, they contain provisions for encouraging denser, mixed-use development in existing areas, rather than lower-density, peripheral development. In addition, they recommend projects across the FNSB that will create a safer and more comfortable environment for pedestrians and cyclists. Both of these general directions for development could potentially provide more opportunities for increased MACS ridership and benefit in the future. To complement these plans and promote alternative transportation in the FNSB as effectively as possible, this section describes certain infrastructural and service-related investments that the FNSB could make in the long term as these plans are implemented. As importantly, however, this section also specifies criteria the FNSB should use when determining when and how to make investments.

Overall Guiding Goals for Transit Development in FNSB

Tying into the vision stated at the beginning of this chapter, as well as some of the FNSB's current goals, it is recommended that the FNSB keep the following goals in mind when determining what improvements to consider.

- Maximize the efficiency of the FNSB's fixed-route transportation system by continually evaluating routes, personnel, and providing service levels and service types that are most appropriate to the operating environment.
- Participate in land-use planning and transportation planning activities to keep abreast of potential new routing possibilities and travel markets, as well as provide input regarding how such changes can most improve transit access and ridership.

Service Types and Appropriateness for FNSB

Many forms of public transportation exist, ranging from Dial-A-Ride to high-capacity heavy rail, and each has an appropriate context in which it is the most efficient and effective way to serve the needs of a population. Described below are some of the public transportation options available that could potentially be appropriate for the FNSB. In addition to describing each mode, this section discusses operating environments in which they are most appropriate and how they may be used in Fairbanks.

Fixed-route local bus service, which provides the bulk of MACS service presently, will continue to be an important part of the transportation network in the FNSB. Fixed-route bus service functions best in areas of relatively high population or job density, with at least seven dwellings per acre in order to produce enough riders to support the service (Newman & Kenworthy, 2006). Below such densities, flex-route or Dial-A-Ride services, described below, may be more appropriate.

Flex-route local buses are similar to fixed-route bus service in that they follow the same default route, but receive buffer time in their schedules and can deviate from the default route in order to pick up users who have difficulty accessing stops on the normal route. Permissible deviations vary from system to system, yet generally range between ¼-mile and ¾-mile. While allowing route deviations may significantly hinder a route's ability to adhere to a published schedule, flex routes can save considerable operating expenses because they do not require complementary ADA paratransit service.

In the FNSB, flex-route local service would be most appropriate in areas where the population is too dispersed to support regular fixed-route bus service. Flex-route service could particularly save on Dial-A-Ride expenses by encouraging patrons to share a fixed-route bus rather than take more separate, likely solo trips using Dial-A-Ride service.

Local bus circulators generally seek to move riders within a confined area, such as a central business district or area with high tourist activity. Successful circulator programs generally depend on having frequent enough service such that users do not need to refer to a schedule, are planned with input and coordination among businesses along the circulator route, and are a part of a broader travel demand management scheme to reduce vehicle usage for trips within the Downtown area.

While Fairbanks does not presently have sufficient demand within Downtown to support such a circulator service, particularly in the winter, the FNSB should keep such a service in mind for Fairbanks' Downtown area. If Vision Fairbanks' land use recommendations are carried out and there is more activity in the Downtown area, the FNSB may consider implementing a local circulator service as outlined in the 2008 Vision Fairbanks Plan that connects the Alaska Railroad depot with key destinations Downtown. Such a service could particularly work during the summer tourist season, when there are more visitors who arrive without a personal vehicle.

Limited-stop/express buses operate on a fixed route and schedule similar to local buses, but aim to move riders across longer distances more quickly by taking faster, more direct routes, stopping only at higher-ridership stops, or a combination of each. Depending on the operating environment and demand, express services may serve only as peak-period commuter services, or may operate throughout the day. The FNSB already operates part-time express service on some of the Green Line runs between North Pole and Fairbanks, during which times it returns to Fairbanks via the Richardson Highway instead of Badger Road.

While this report does not contain any near-term recommendations for The FNSB that incorporate express or limited-stop services, there is potential for such service in the FNSB in the future. One market in particular that may benefit from increased express service would be commuters who travel between North Pole and Fairbanks. If there is sufficient population growth in North Pole, it is

recommended that the FNSB consider running a bi-directional express service, instead of the current express service that only operates inbound from North Pole to Fairbanks.

Implementation of any increases in express service between North Pole and Fairbanks. However, this should be contingent upon identifying sufficient demand, and particularly population and job increases in North Pole. In addition, an express service could potentially leverage more ridership if key boarding locations, such as North Pole Plaza, had bike lockers and/or park-and-ride lots. However, such infrastructural improvements in themselves require careful consideration, which is described below in the discussion on long-term infrastructure improvements.

Dial-A-Ride services, such as Van Tran, provide door-to-door service for users, who arrange trips via phone reservation. While the Americans for Disabilities Act mandates all transit agencies to complement fixed-route service with Dial-A-Ride service, Dial-A-Ride can also be a more cost-effective means of providing public transportation to users who live in areas that lack the population density to support fixed- or deviated-route transit service.

Dial-A-Ride provision is also very expensive, with Van Tran spending an average of $87 per trip in Fiscal Year 2012. While Van Tran service is essential for users who are wheelchair-bound, it is recommended that the FNSB explore contracting with local taxi companies to subsidize taxi rides for Dial-A-Ride users who do not require a wheelchair lift, since in some cases a taxi ride could be less expensive than Van Tran service. However, any such negotiations would entail negotiating modifications to the existing Van Tran labor contracts, which prohibit contracting out Van Tran services to third party operators.

Infrastructure Improvements and Appropriateness for FNSB

From requests for better bus shelters to park-and-rides, bike lockers, and vehicle facilities, the FNSB has many potential infrastructural projects that could improve current riders' experiences as well as attract new riders.

Park-and-ride lots provide transit access for people who live beyond a normally reasonable walking distance from a transit line that will take them to their final destination. When appropriately placed, park-and-ride lots can increase transit ridership, reduce traffic congestion to popular destinations, and provide users with a less expensive alternative to driving the whole way to their destination.

While community meeting minutes suggested the FNSB residents would use a park-and-ride facility if provided, it is not recommended that such a facility be built in the near term. Based on current congestion levels and parking availability throughout the FNSB, it is not likely there are sufficient incentives for current drivers to switch to using a park-and-ride lot. However, the FNSB should keep in mind the following criteria when determining when and where to locate a park-and-ride facility.

1. The park-and-ride location should ideally be located away from or on the periphery of congested areas, and where a significant number of people live. The location should also be along major driving routes to popular destinations so as to make it as convenient as possible to people who currently drive the whole way to their final destination. Locating along major driving routes will also reduce travel time via transit by providing a more direct route to the final destination.
2. The travel time between the park-and-ride facility and the user's final destination via transit should be at least comparable to making the same trip by driving.
3. The destination(s) of the majority of the target user population should be in a location(s) that regularly experiences significant traffic congestion, has limited or expensive parking, and has many final endpoints that are near transit stops. These three conditions provide transit with a competitive advantage over driving because transit allows users to avoid both time and money costs associated with limited parking, reduce stress related to driving in congested conditions, and, if facilities such as carpool or bus-only lanes are provided, reduce travel time.

Given these criteria, North Pole presently offers the most future promise as a location for a park-and-ride facility. Rider and community surveys indicate that many people live in North Pole and commute to Fairbanks, indicating a potential travel market. In particular, North Pole Plaza satisfies the first criteria listed above in that it is near the major route between North Pole and Fairbanks and is centrally located within North Pole. If the FNSB were to eventually implement a park-and-ride facility at North Pole Plaza, it is recommended, as an initial step, that the FNSB explore the possibility of negotiating with the property owner of the Plaza to use existing parking space. Sharing parking spaces with North Pole Plaza would save construction costs and be a more prudent and feasible way to implement a pilot park-and-ride program.

However, as discussed above, existing traffic and development patterns do not suggest that transit presently has enough competitive advantages over solo driving in terms of convenience and speed such that a park-and-ride lot would attract a sufficient number of new riders to justify the investment. However, even without significant increases in congestion throughout the FNSB, should fuel prices rise, there may be a market for people who wish to use transit in order to save money on gas.

Bicycle parking at key stops is included as a short term recommendation to reduce the need for riders to carry their bicycles on MACS buses. Like park-and-ride centers, bicycle parking can bolster transit use by significantly increasing the area within which people can access a given transit stop. Furthermore, bicycle parking increases transit access to populations who live too far from transit to access it on foot, yet cannot afford to drive a personal vehicle.

When considering bicycle parking in the long term, the FNSB should keep in mind several "best practices" as a guide for adding bicycle parking to transit stops such that it most effectively promotes ridership and encourages FNSB residents to try alternative modes of transportation:

1. Transit stops with bicycle parking should be adequately accessible by bicycle, and be well-connected to dedicated bicycle facilities such as off-street paths and bike lanes, calm, bicycle-friendly streets, or a combination of the two.

2. Transit-focused bicycle parking should be reasonably secure and protected from the elements. Unlike bicycle parking in retail districts, people who use a bicycle to access transit often park for longer periods (e.g., eight hours or more), increasing their bicycle's exposure to inclement weather and potential thieves. Examples of ways to provide more protected bicycle parking include locating parking in a covered but highly visible area with, ideally with a security guard present, or providing completely enclosed bicycle lockers that users can rent.

As this chapter alluded to above in Section 7.2, North Pole Plaza could be a well-suited future location for bike racks or lockers if the City of North Pole installs the bike facilities as proposed in Exhibit 7.2.2. If the North Pole Plaza stop were connected to such a robust, dedicated network of bikeways and had secure bicycle parking, the potential transit market could significantly increase as more people would be able to access the stop.

In addition to North Pole Plaza, the Fred Meyer West stop may be another promising candidate for receiving bicycle racks or lockers. In addition to offering connections to multiple MACS fixed-route lines, Fred Meyer West is itself a popular retail destination and within reasonably close cycling distance to multiple higher-density housing complexes.

Long-term Fleet Planning for FNSB

The FNSB's transit vehicle fleet in the long-term will best serve the transit-riding public by ensuring that its fleet is adequately sized and has a vehicle composition that is suited to the types of service it provides.

One critical aspect of fleet planning is ensuring that there is a sufficient number of *spare vehicles*. Spare vehicles are additional vehicles above and beyond the number that are used during peak revenue service. They service as backup vehicles in case a regular vehicle breaks down during revenue service or there is unusually high demand. The *spare ratio* is equal to the number of spare vehicles divided by the number of vehicles in revenue service during the peak operating period. For example, if the FNSB has 12 buses in total and ten operate during the peak period, then the spare ratio is 20 percent (2/10).

The Federal Transit Administration (FTA) stipulates that for agencies with 50 or more total transit vehicles, they are eligible to receive funding to maintain a spare ratio of 20 percent. However, the MACS fleet is considerably smaller than 50 vehicles. Therefore, it will likely be eligible for a larger spare ratio. Following the Recommended service scenario and financial plan will maintain a spare ratio of 25 percent through 2018. As MACS service increases, the FNSB should maintain a similar spare ratio.

In addition to spare vehicles, a transit agency should also have *contingency vehicles*. Unlike spare vehicles, contingency vehicles are not used unless there is an emergency situation, such as if all spares are being used or if there is a mass evacuation. For funding considerations, the FTA does not include contingency vehicles in its spare ratio calculation. It does, however, stipulate that vehicles can only obtain "contingency" status after reaching the end of their normal minimum service life.

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A

DEMOGRAPHICS AND TRANSIT NEEDS INDEX CALCULATION

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APPENDIX A – DEMOGRAPHICS AND TRANSIT NEEDS INDEX CALCULATION

As discussed in Chapter 2, the Transit Needs Index (TNI) provides a quick way of estimating a census tract's potential transit market by calculating the proportion of its population that is more likely to depend on transit. The formula developed to calculate each tract's TNI score is as follows:

TNI = percent low-income households[15] *+ percent of persons commuting via public transit + (1.25*percent zero vehicle households) + (0.25*percent of persons over 59) + percent of persons who are current UAF students*

The TNI gave more weight (1.25) to the number of households with zero vehicles because both industry research as well as past analyses completed by Moore & Associates show that not having access to a vehicle has a particularly strong influence on whether someone will use transit. Using similar reasoning, the index attached a somewhat lower weight (0.25) to the number of people over 59 years of age because when controlling for income and vehicle access, age is not a particularly strong determinant of transit use.

Exhibit A.1 illustrates the number of people and households in each of the FNSB's 19 census tracts that have each of the characteristics factored into the TNI formula. As described in Chapter 2, people with disabilities are also considered to more likely use transit than the general population. However, there were no recent census data available for the disabled population in the FNSB area.

Also important to note both here and with respect to the map in Chapter 2 is Census Tract 19 (highlighted in Exhibit A.1 in grey), received a relatively high TNI score. However, its score is increased by the fact that it is the geographically largest tract in the FNSB, being more than three times the size of the next largest tract. One implication of Tract 19's relatively large size is that while there are persons in small portions of Tract 19 that reside near the periphery of the MACS service area, much of its population is very dispersed and beyond any reasonable potential MACS service area, even if they do fall under one of the "ride-dependent" categories. Therefore, even though the TNI map shows Tract 19 as having low to moderate transit need, it is not recommended that it receive any transit expansions in the near term.

[15] Households with an income below $25,000. The 2013 poverty line for a three-person household in Alaska was $24,400 and the average household size for the FNSB region was slightly above 2.5 persons.

Exhibit A.1 Transit Needs Index Score Values

Tract Number	Total Tract Population	Total Tract Workers	Total Tract Households	Low-Income Households	People Using Transit to Get to Work	Households with no vehicles	People 60 or Older	UAF students	Transit Needs Index Score
1	1709	816	1056	39.9%	10.9%	17.6%	26.5%	9.0%	0.884
2	3418	1552	1408	21.5%	4.6%	6.8%	16.3%	6.5%	0.452
3	4958	2220	2033	24.2%	4.4%	7.3%	10.8%	6.9%	0.473
4	4717	2460	1841	12.2%	1.2%	1.2%	14.2%	5.3%	0.238
5	2371	1567	1319	15.8%	0.0%	0.6%	13.9%	13.9%	0.340
6	4024	1998	1774	21.4%	0.4%	2.2%	13.5%	11.0%	0.388
7	4142	2531	1809	17.9%	0.7%	1.7%	14.8%	9.5%	0.339
8	5388	3404	2304	14.0%	3.2%	8.6%	10.7%	18.9%	0.495
9	5772	3047	2102	8.0%	0.5%	2.3%	11.5%	11.4%	0.256
10	1529	624	583	24.0%	0.0%	1.7%	15.4%	8.2%	0.382
11	8143	3411	1850	12.1%	1.3%	0.0%	0.2%	6.8%	0.203
12	6854	3161	2232	5.4%	0.0%	0.0%	14.0%	6.4%	0.154
13	6462	3140	2097	16.6%	1.9%	2.2%	13.3%	22.2%	0.469
14	7357	3340	2444	9.7%	3.1%	0.0%	10.6%	6.7%	0.222
15	10052	5169	3336	7.1%	0.0%	1.9%	8.5%	7.6%	0.193
16	4836	2607	1766	14.2%	2.8%	8.8%	9.8%	9.3%	0.397
17	1422	548	483	19.0%	0.0%	0.8%	17.4%	5.1%	0.296
18	2743	1366	765	4.7%	0.0%	0.0%	0.7%	14.8%	0.196
19*	11684	6029	4381	14.3%	0.2%	0.9%	13.2%	8.0%	0.269

**Tract 19's TNI score data were omitted from the TNI map in Chapter 2*

B

LINE-BY-LINE RIDERSHIP AND LOAD CHARTS

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APPENDIX B – LINE-BY-LINE RIDERSHIP AND LOAD CHARTS

The following charts supplement the line-by-line descriptions provided in Chapter 3. Note that all load-by-stop charts are "zeroed out" at the last stop. This does not always mean that every bus completely emptied out at the last stop. For most of the loop routes (e.g., the Blue Line) many passengers stayed on the bus to continue on to a different stop that was past the Blue Line's official last stop at the Transit Center. Passengers who stayed on the bus during its last stop were counted as having alighted at the last stop, then immediately boarding the next run, even though they may have actually stayed on the same bus until its next run started.

In addition, all load-by-stop and boarding by time of day charts use exclusively **winter** ride check data. The stop activity comparison charts, as indicated, include both summer and winter ride check data.

BLACK LINE

Exhibit B.1 Northbound Black Line Average Daily Load by Stop

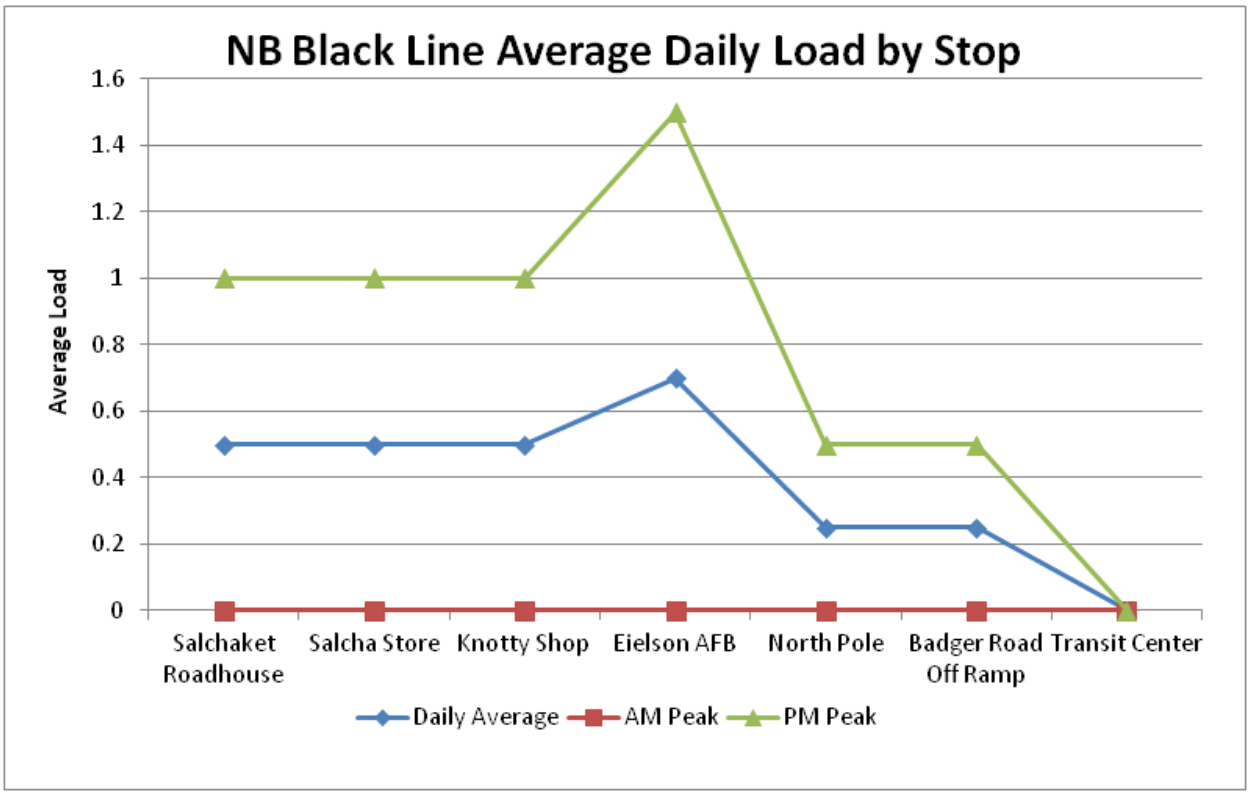


Exhibit B.2 Southbound Black Line Average Daily Load by Stop

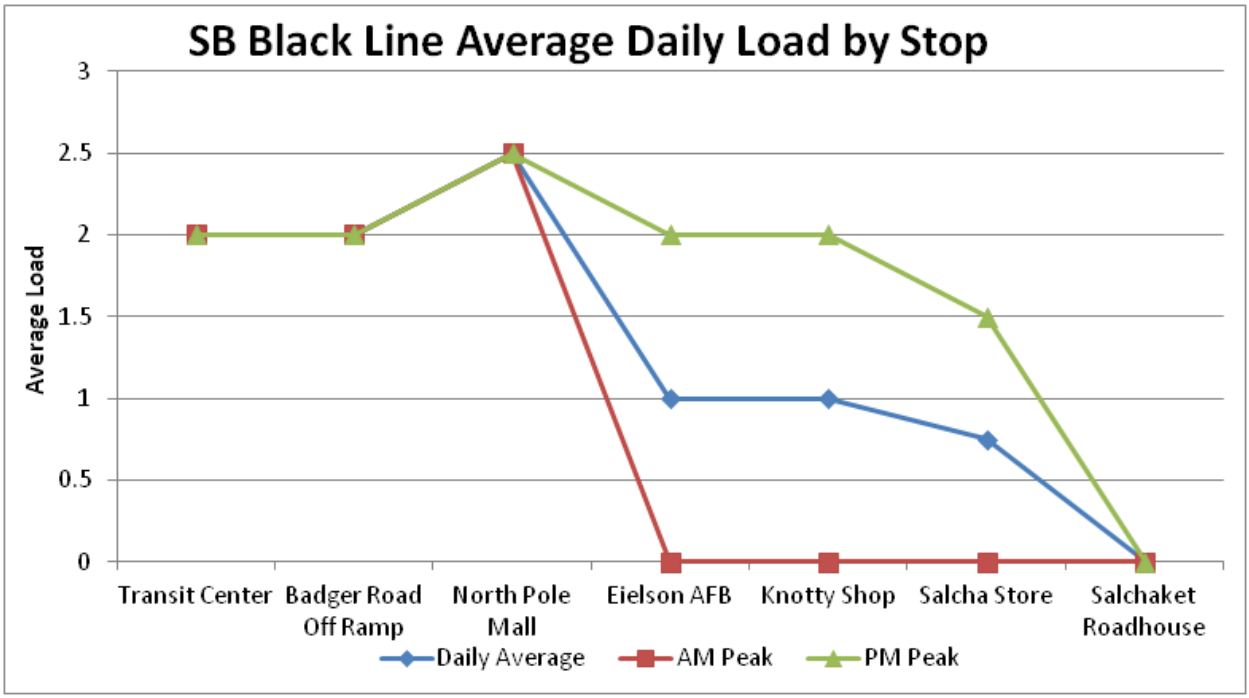


Exhibit B.3 Black Line Boardings by Time of Day

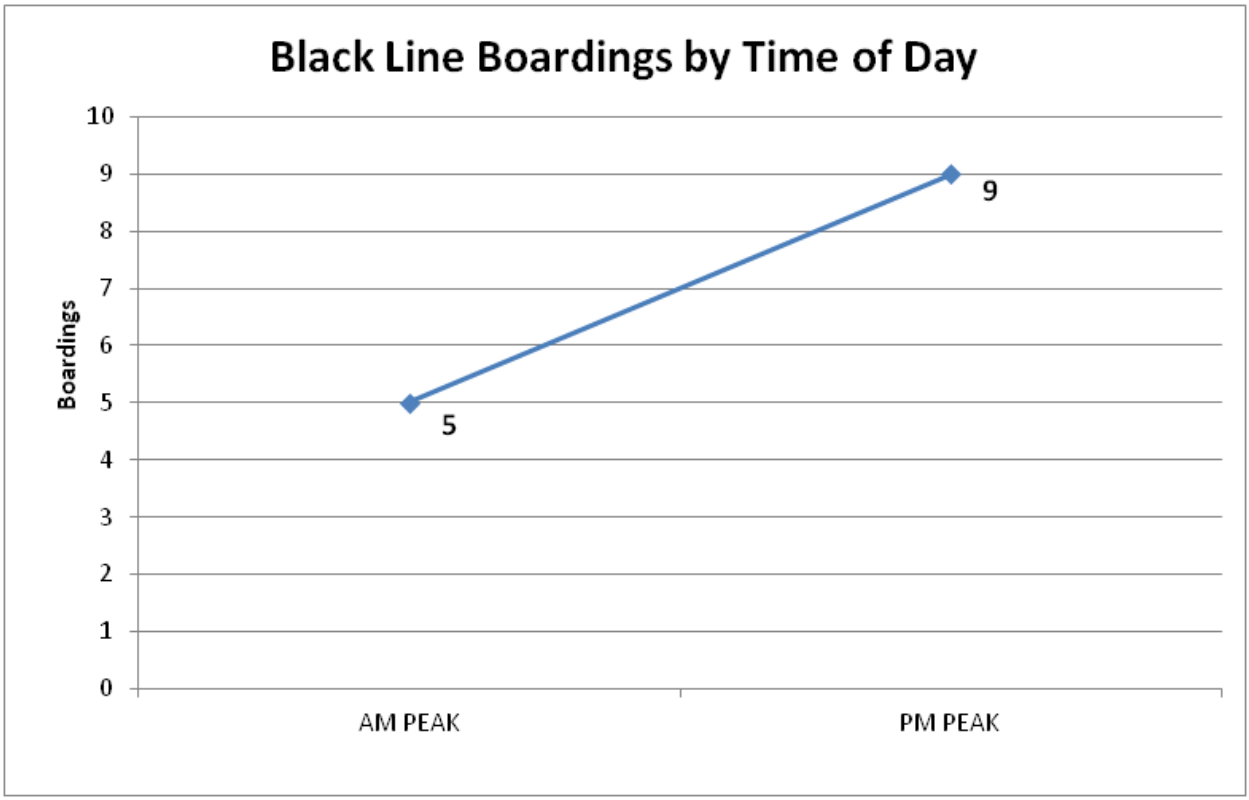


Exhibit B.4 Northbound Black Line Comparison of Summer and Winter Stop Activity

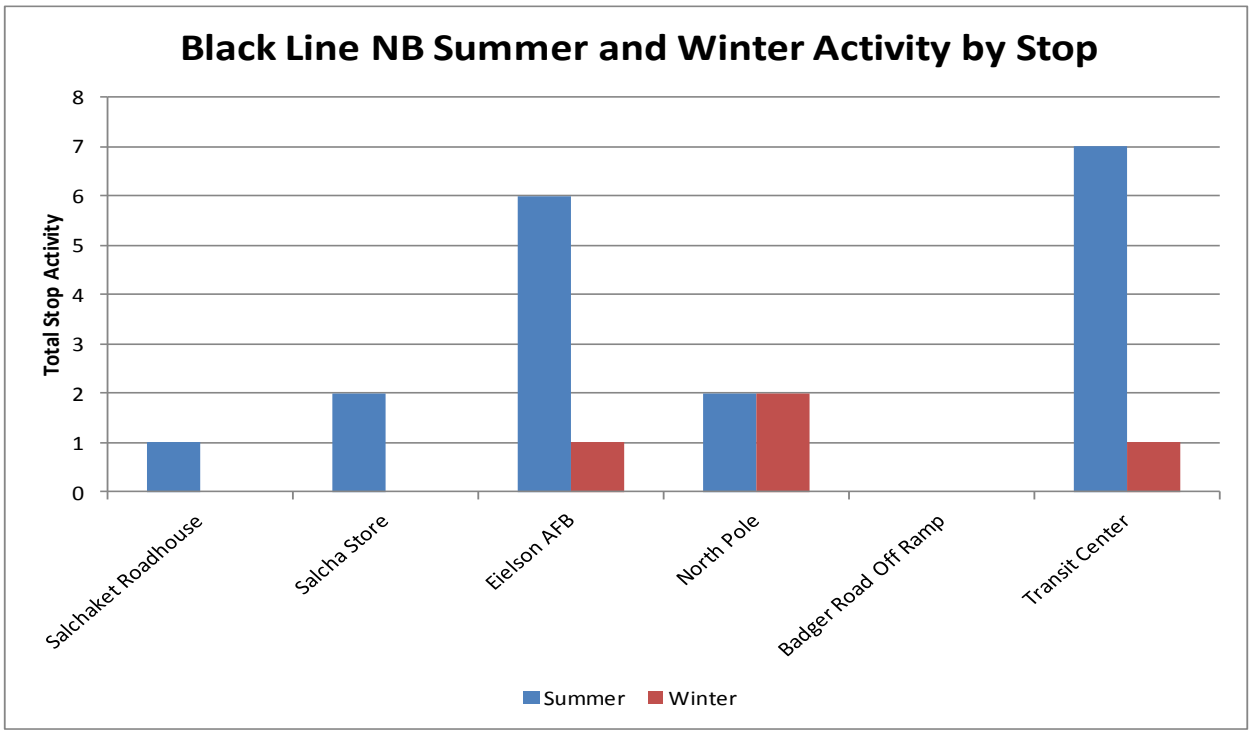
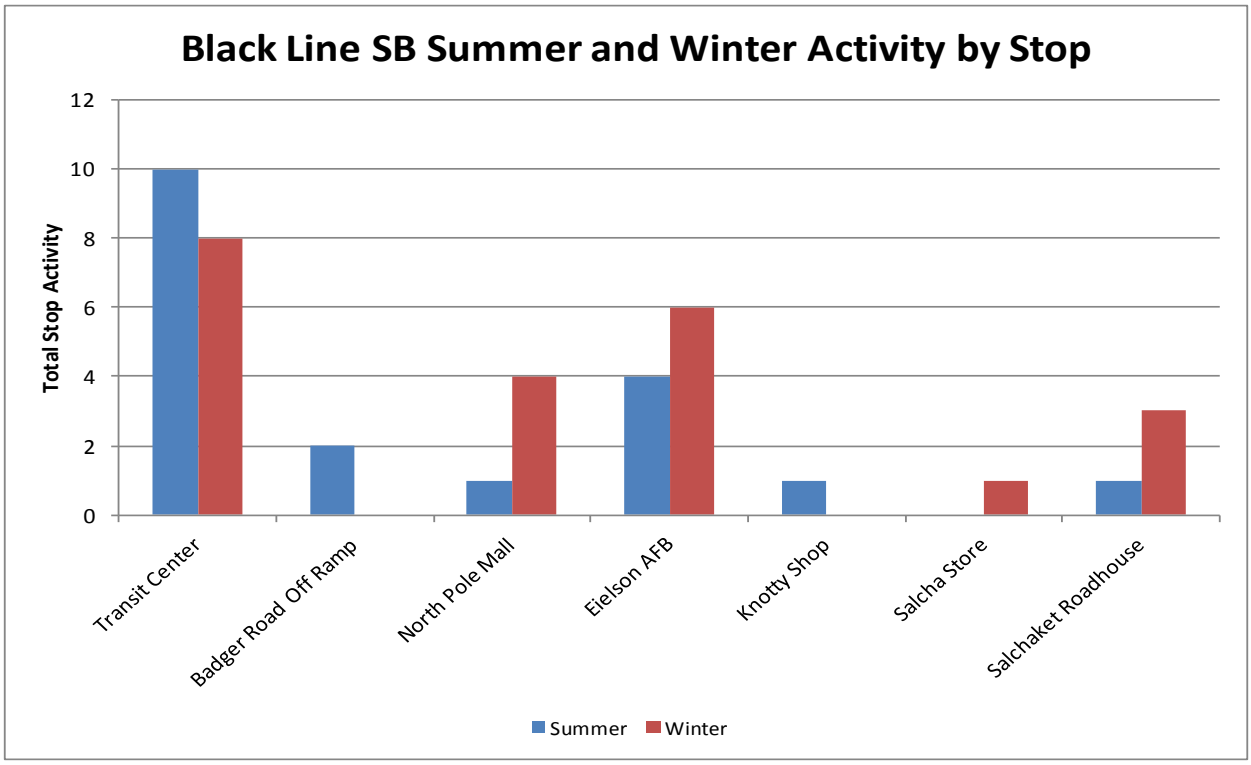


Exhibit B.5 Southbound Black Line Comparison of Summer and Winter Stop Activity



BLUE LINE

Exhibit B.6 Blue Line Daily Average Load by Stop

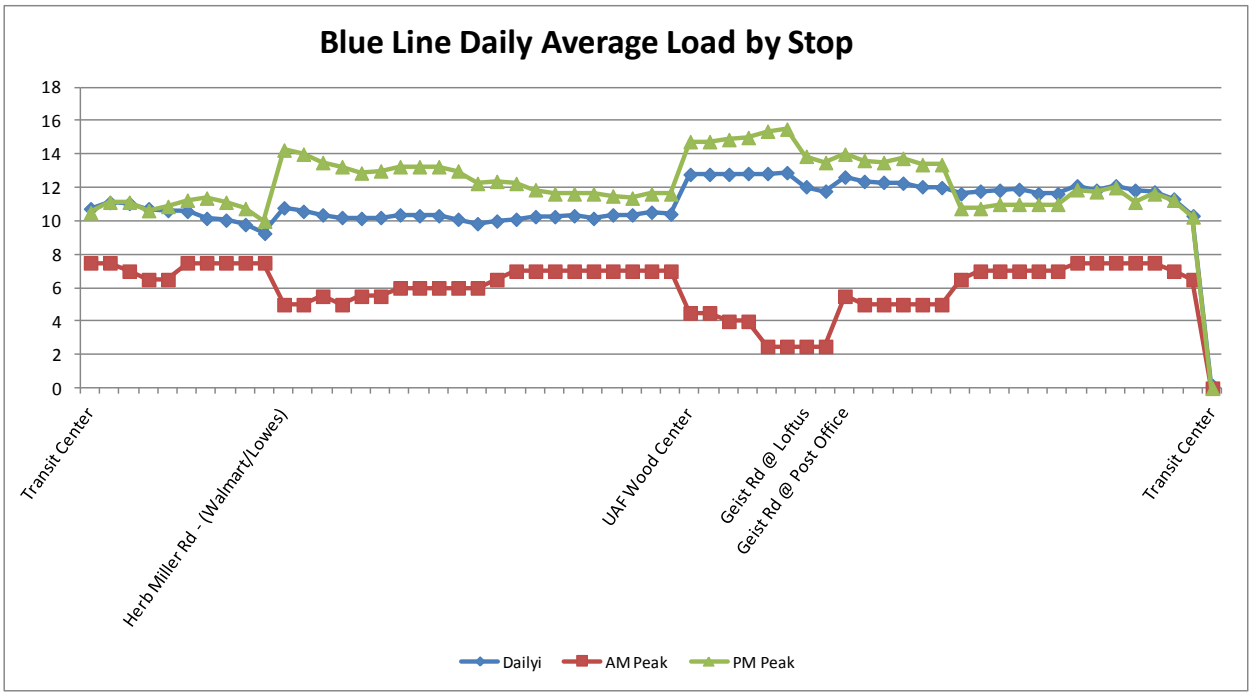


Exhibit B.7 Blue Line Boardings by Time of Day

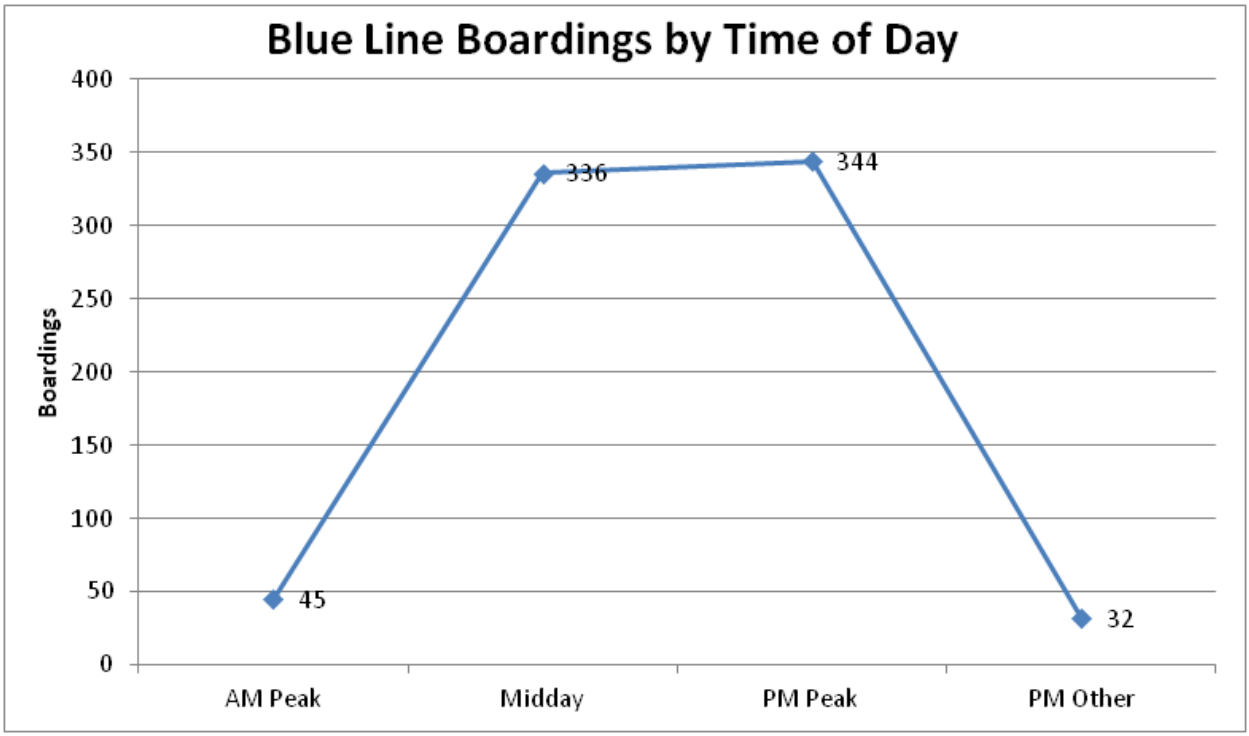
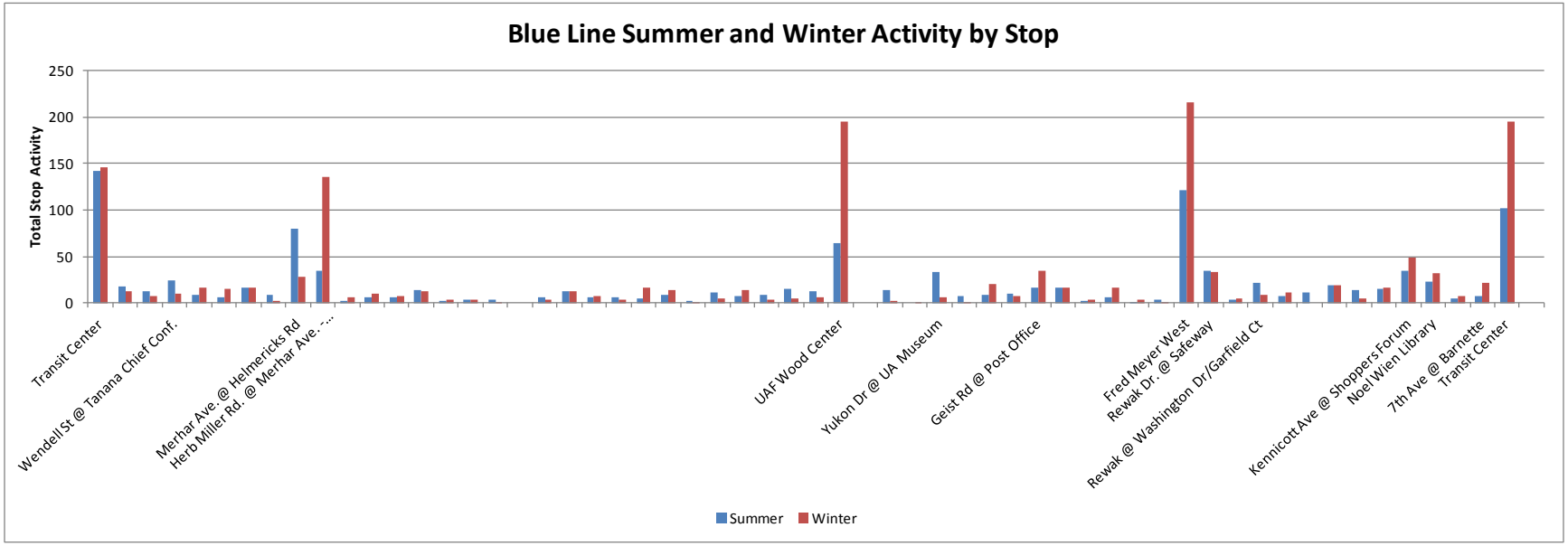


Exhibit B.8 Blue Line Summer and Winter Activity by Stop



BROWN LINE

Exhibit B.9 Brown Line Daily Average Load by Stop

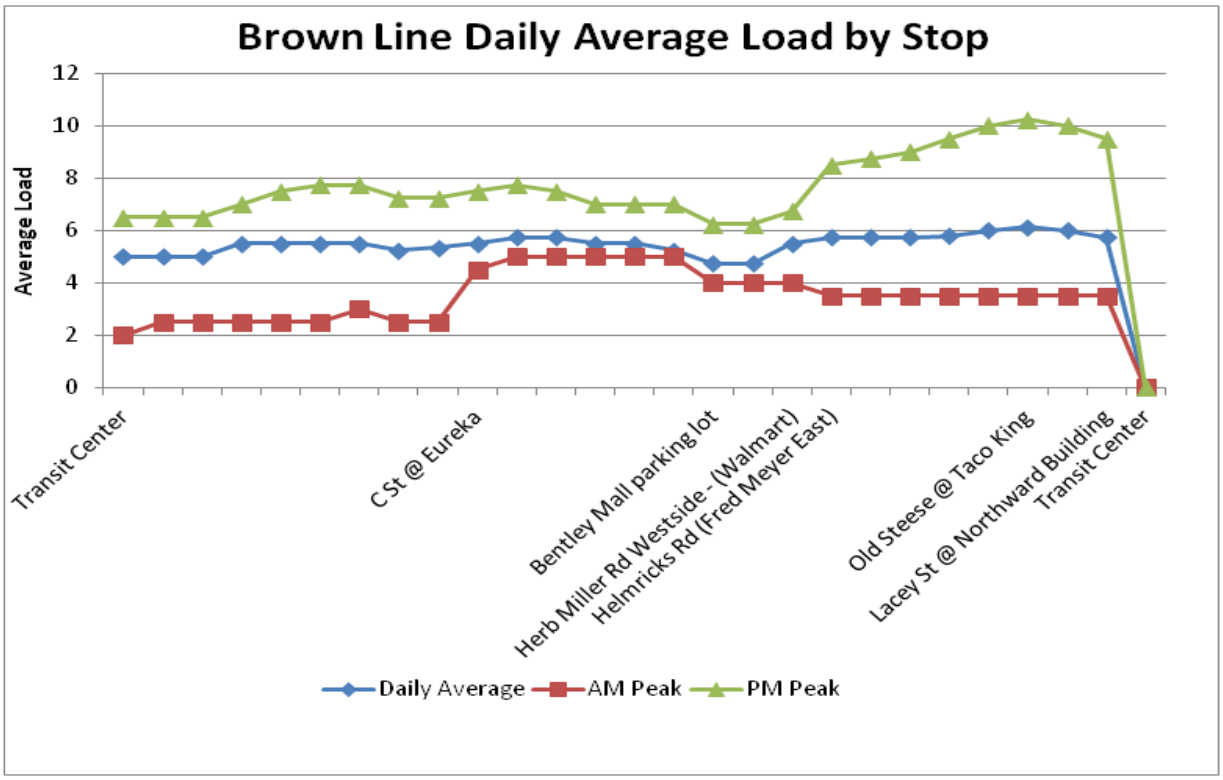


Exhibit B.10 Brown Line Boardings by Time of Day

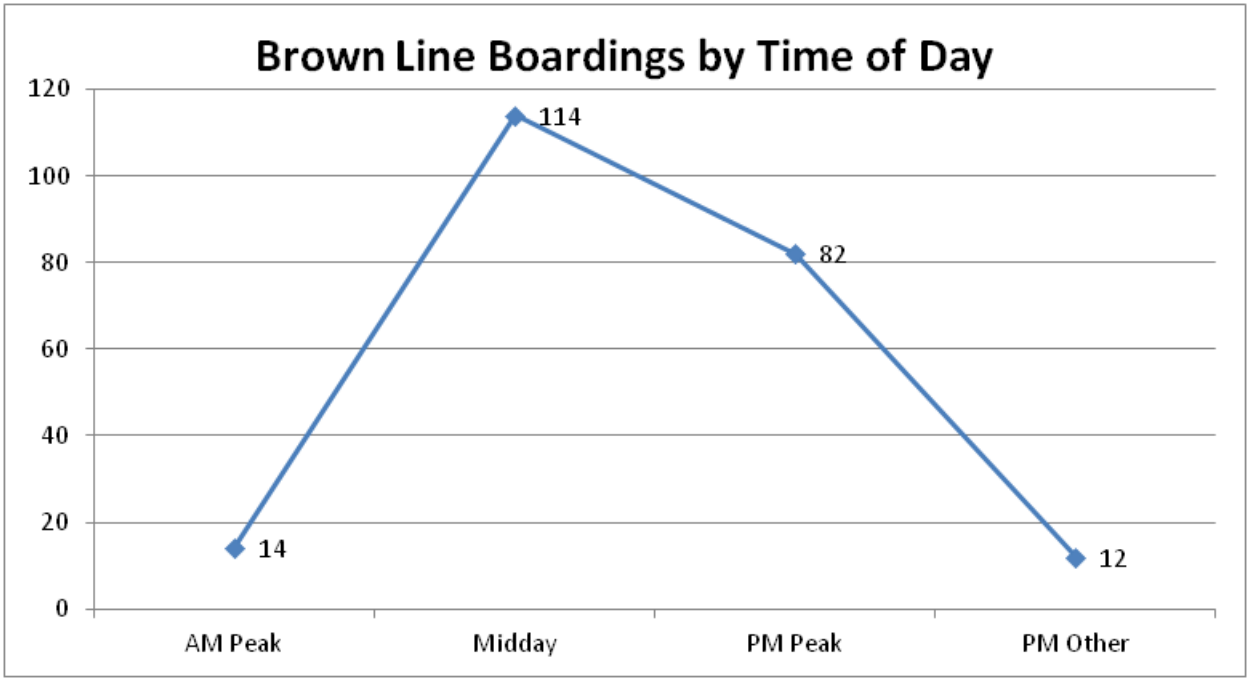
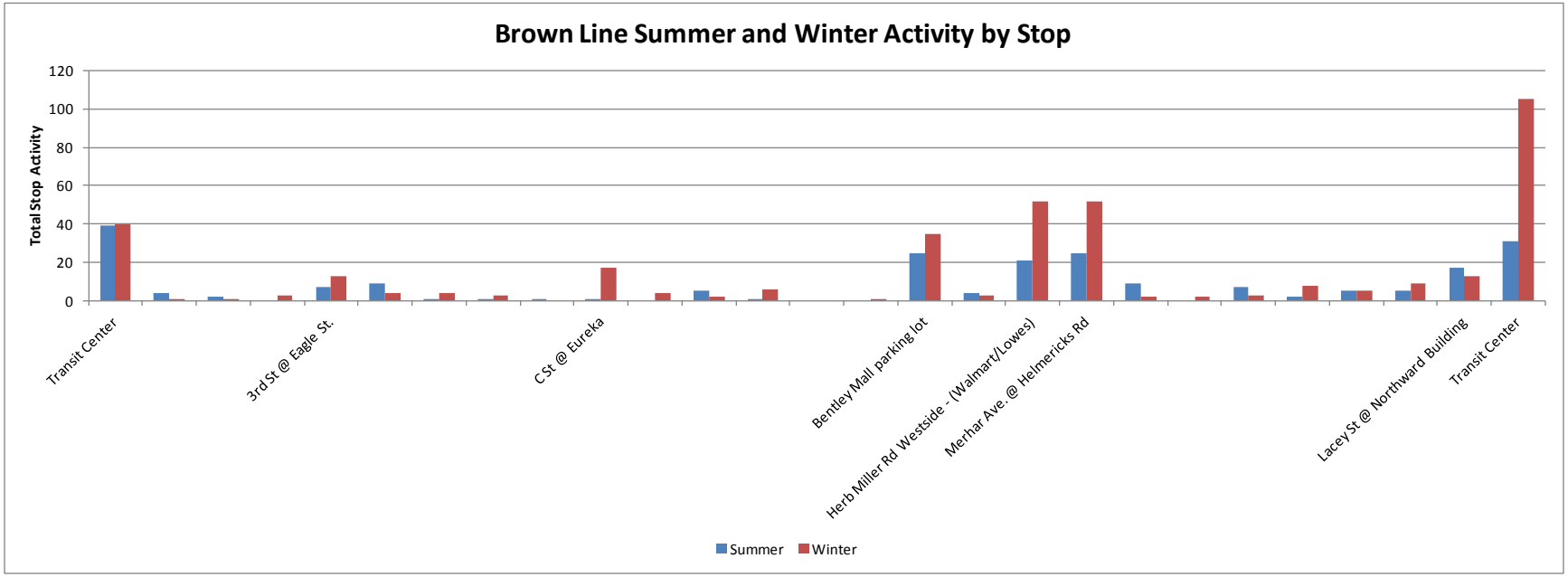


Exhibit B.11 Brown Line Summer and Winter Activity by Stop



GREEN LINE

Load by Stop

Note that the Green Line boarding and alighting map in Chapter 3 separates the Green Line into 'northbound' and 'southbound' directions, while the load-by-stop chart below combines data for both directions. Separate inbound and outbound maps were made because enough stop locations are bi-directional (i.e., the bus stops at the same intersection/landmark in both directions) that the Green Line was treated as a linear, rather than loop route, and made separate maps for each direction.

The load-by-stop chart shown below, however, seeks to show that the southern "end" of the line that was established at North Pole High School was, for many passengers, not the end of the line. Such passengers, many of who boarded at stops such as North Pole Plaza, were instead using the Green Line to travel to Fairbanks. As the load-by-stop chart shows below, during the AM peak, people board the bus between North Pole Plaza and the high school, but do not get off at the high school as they are using the Green Line to travel to Fairbanks.

In essence, the maps in Chapter 3 seek to show how boarding and alighting by stop varies depending on the direction, while the chart below illustrates how the number of people on board fluctuates throughout the entire round trip from the Transit Center and back.

Exhibit B.12 Green Line Daily Load by Stop

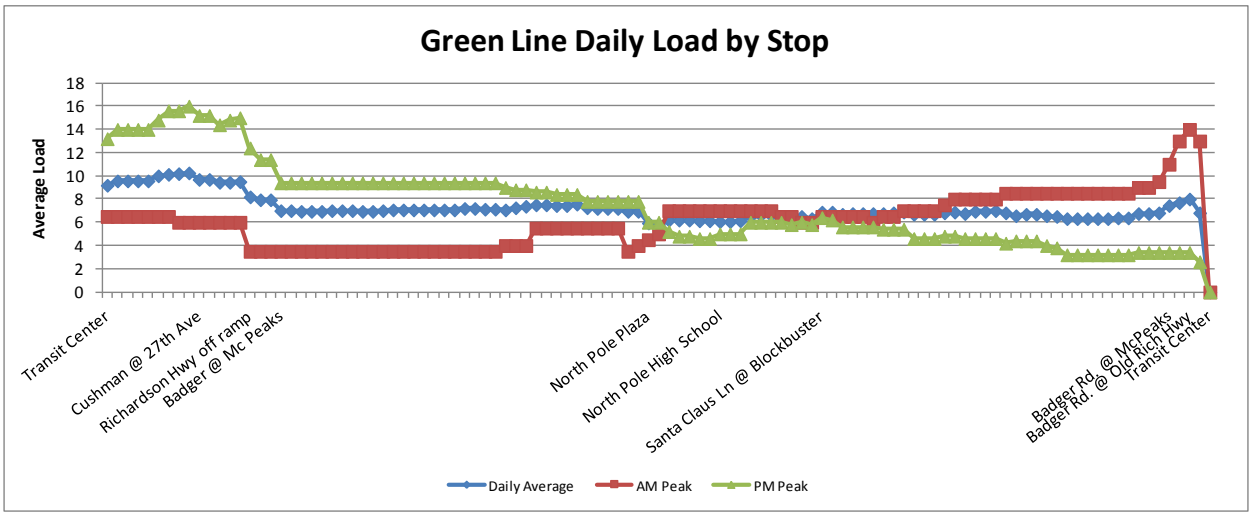


Exhibit B.13 Green Line Boarding by Time of Day

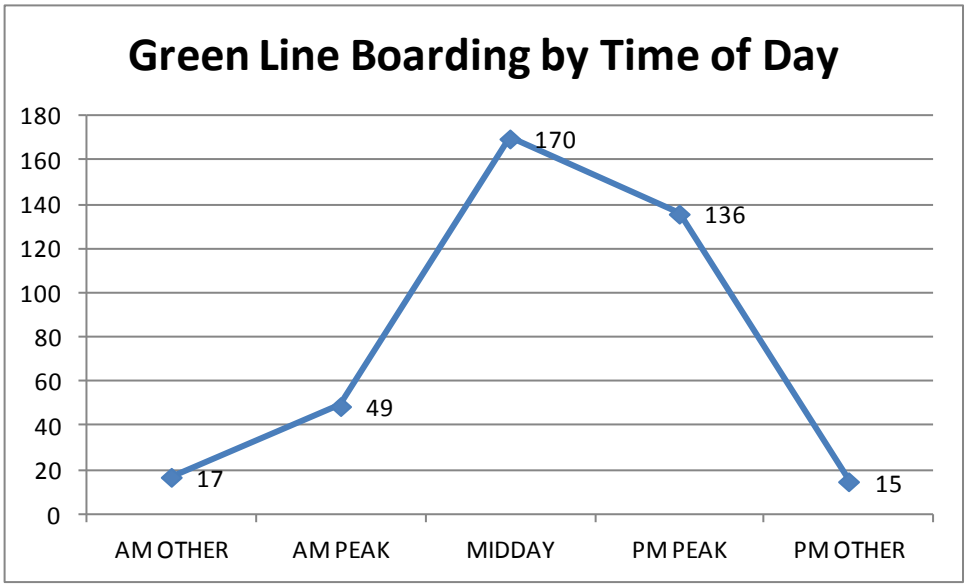
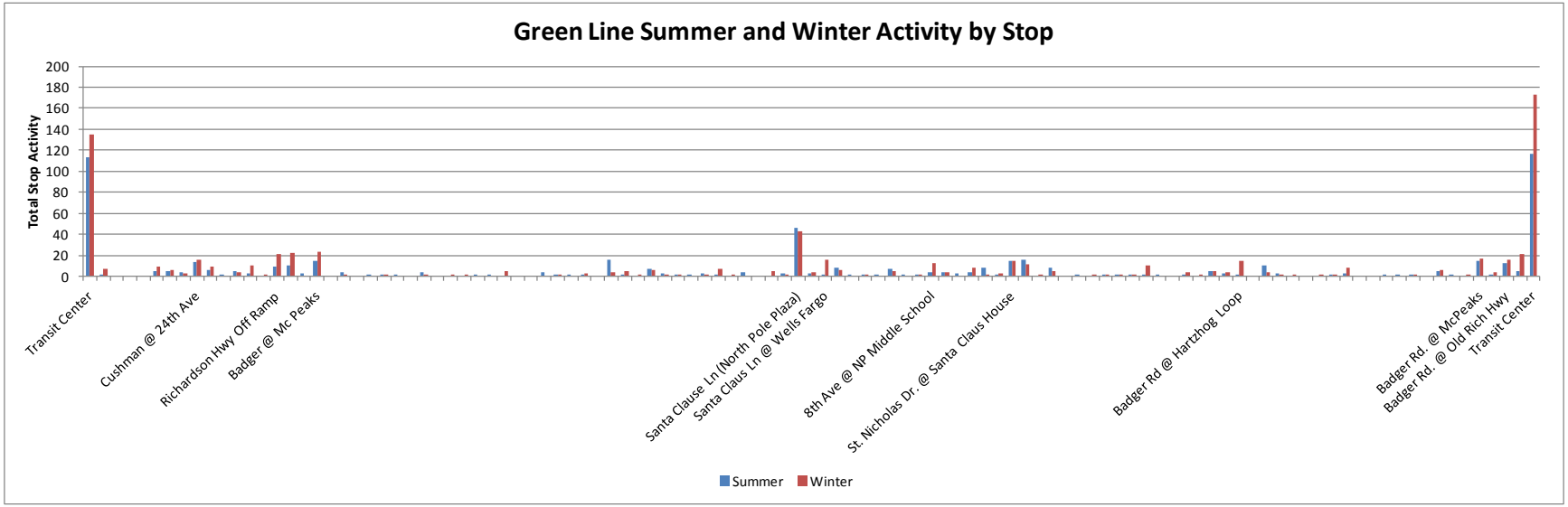


Exhibit B.14 Green Line Summer and Winter Activity by Stop



GREY LINE

Exhibit B.15 Grey Line Westbound Line Average Daily Load by Stop

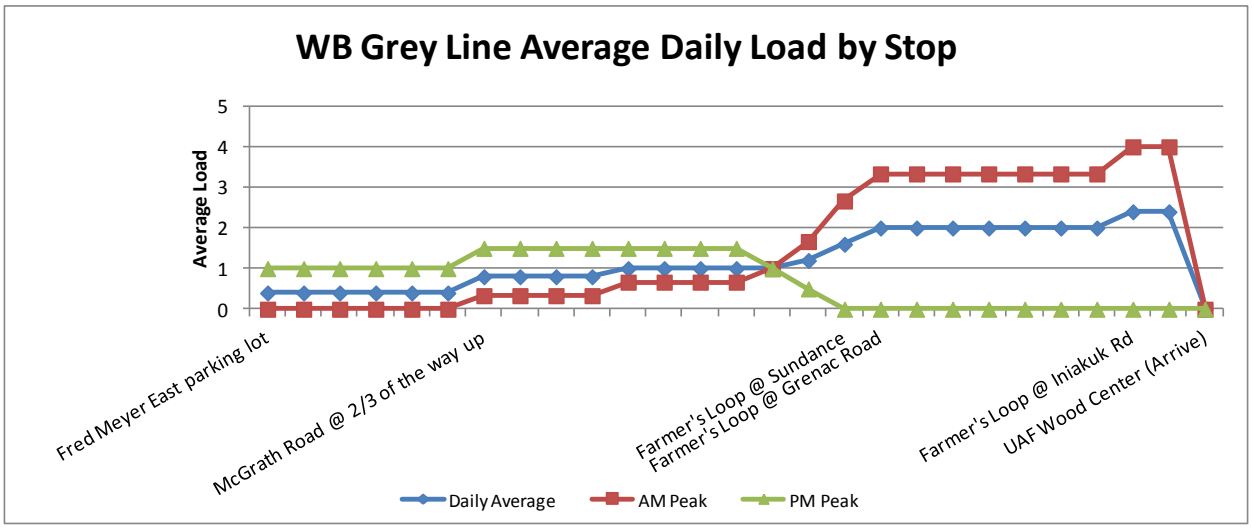


Exhibit B.16 Grey Line Eastbound Line Average Daily Load by Stop

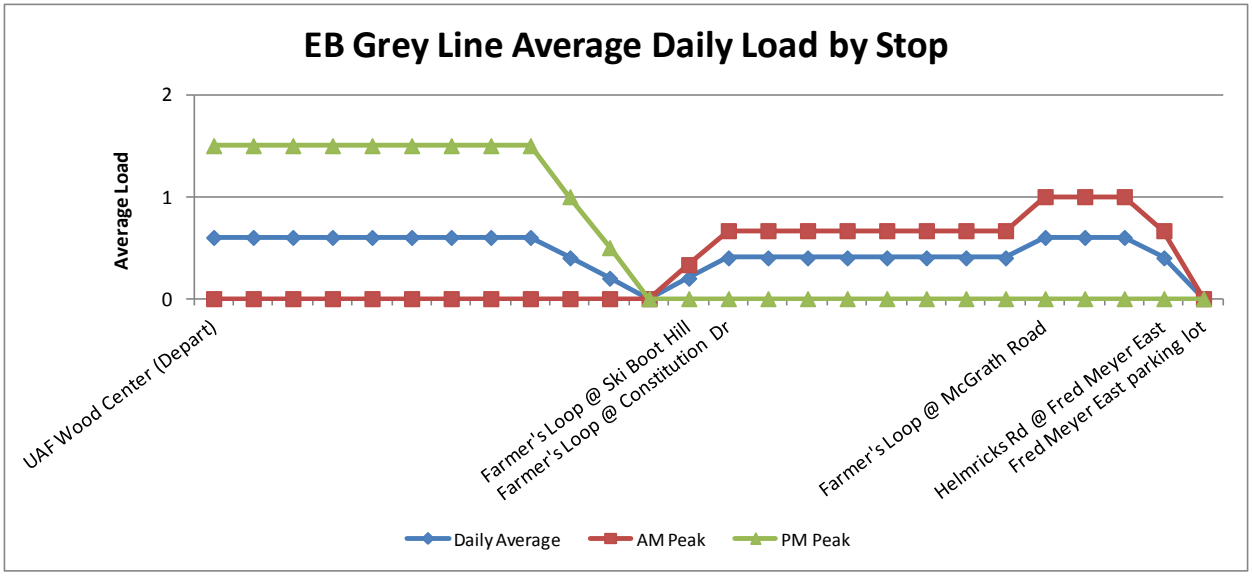


Exhibit B.17 Grey Line Boardings by Time of Day

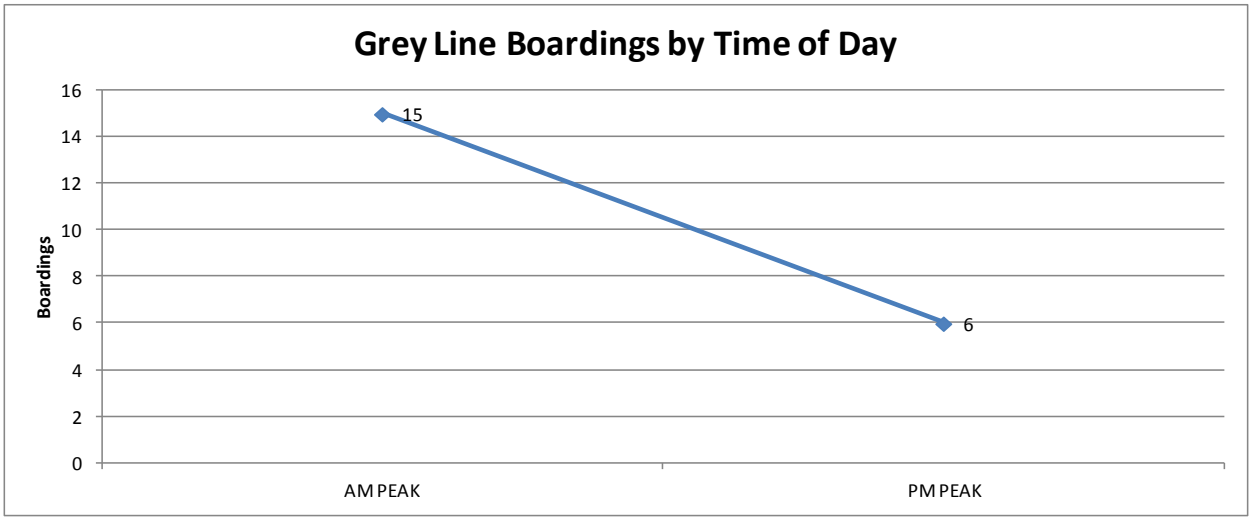


Exhibit B.18 Grey Line Eastbound Summer and Winter Activity by Stop

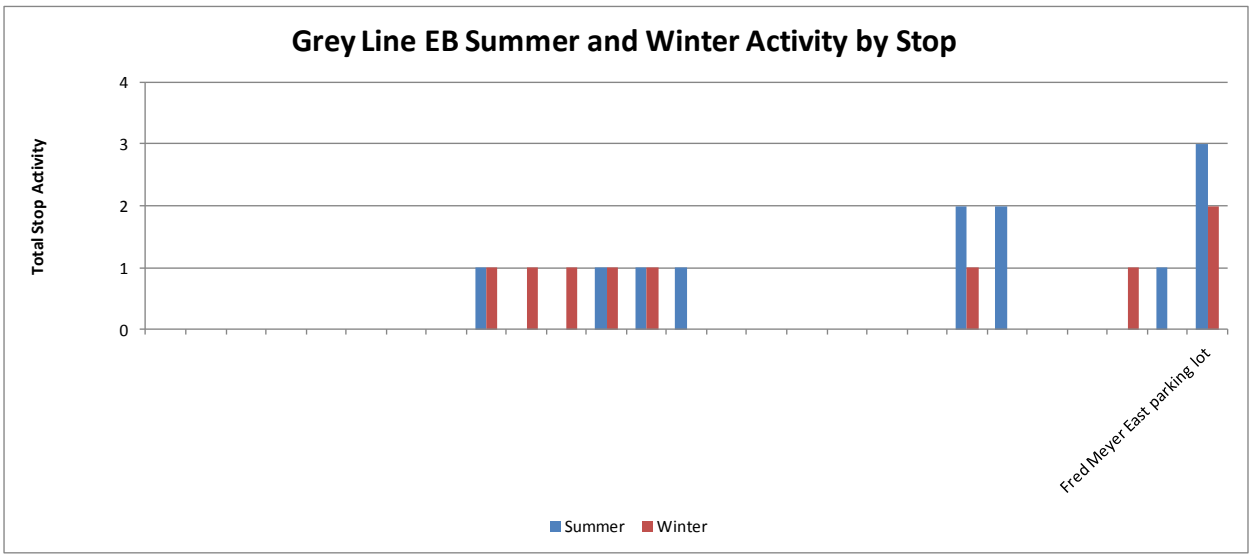
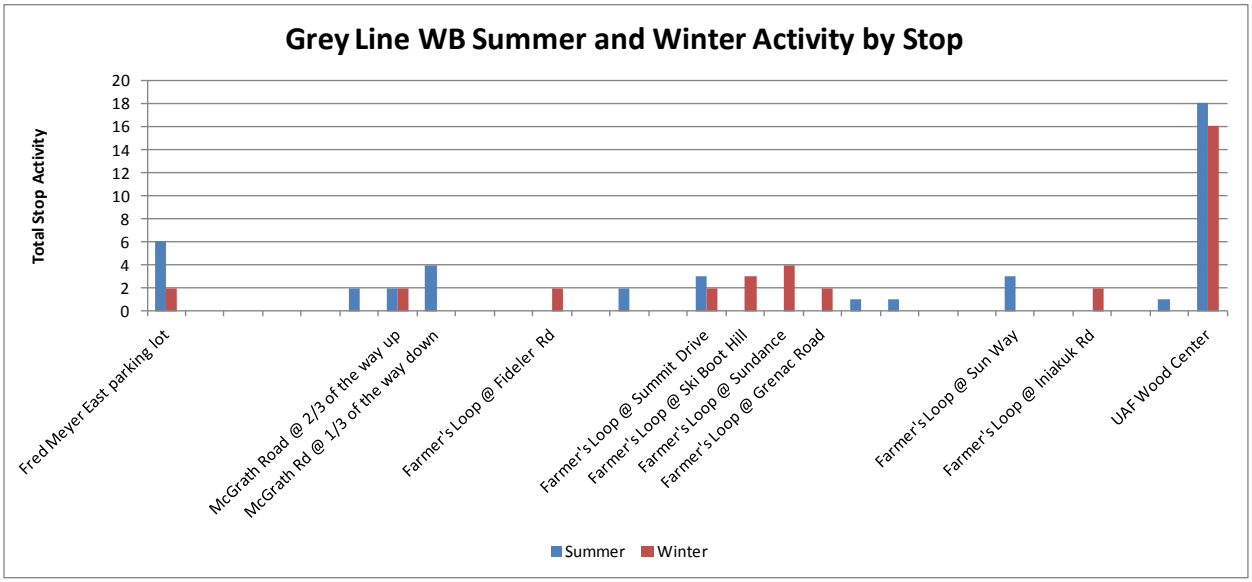
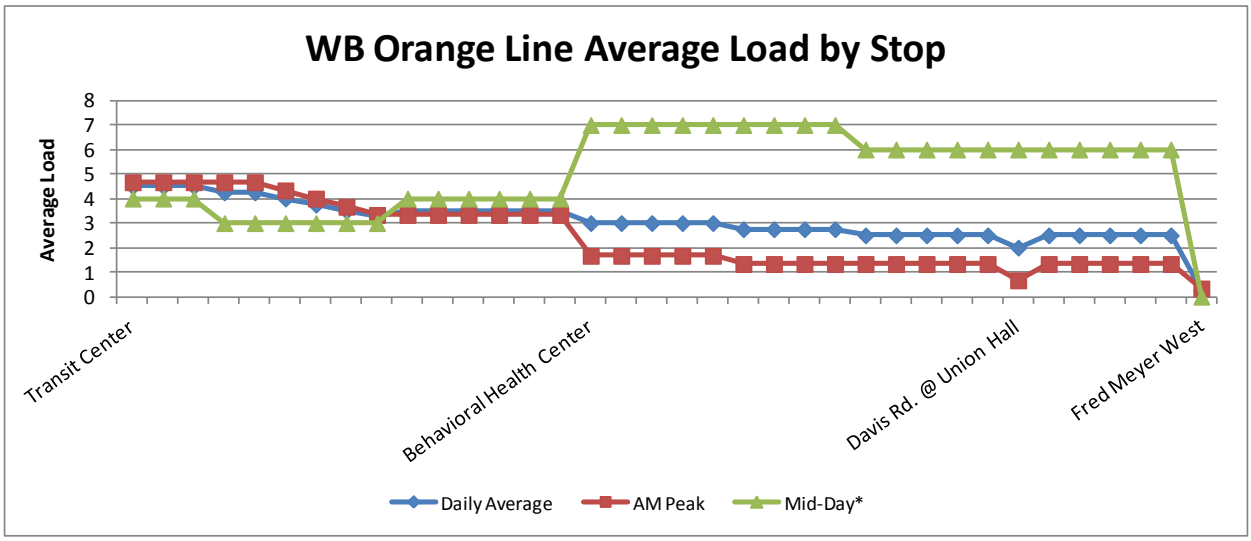


Exhibit B.19 Grey Line Westbound Summer and Winter Activity by Stop



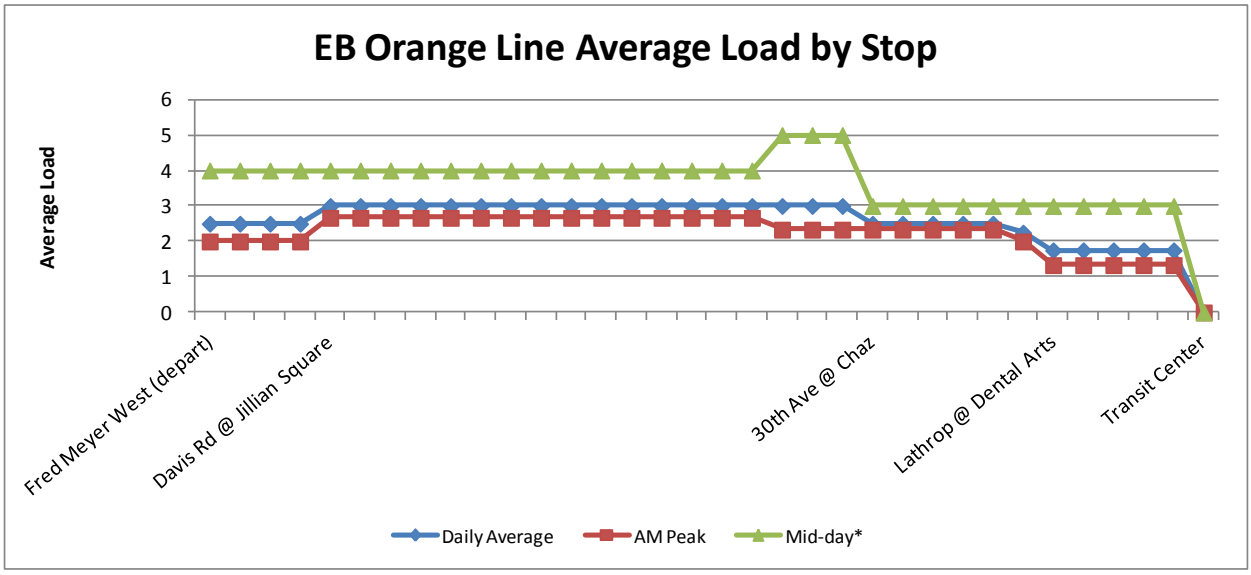
ORANGE LINE

Exhibit B.20 Orange Line Westbound Average Load by Stop



**No PM peak runs were surveyed*

Exhibit B.21 Orange Line Eastbound Average Load by Stop



**No PM peak runs were surveyed*

Exhibit B.22 Orange Line Boardings by Time of Day

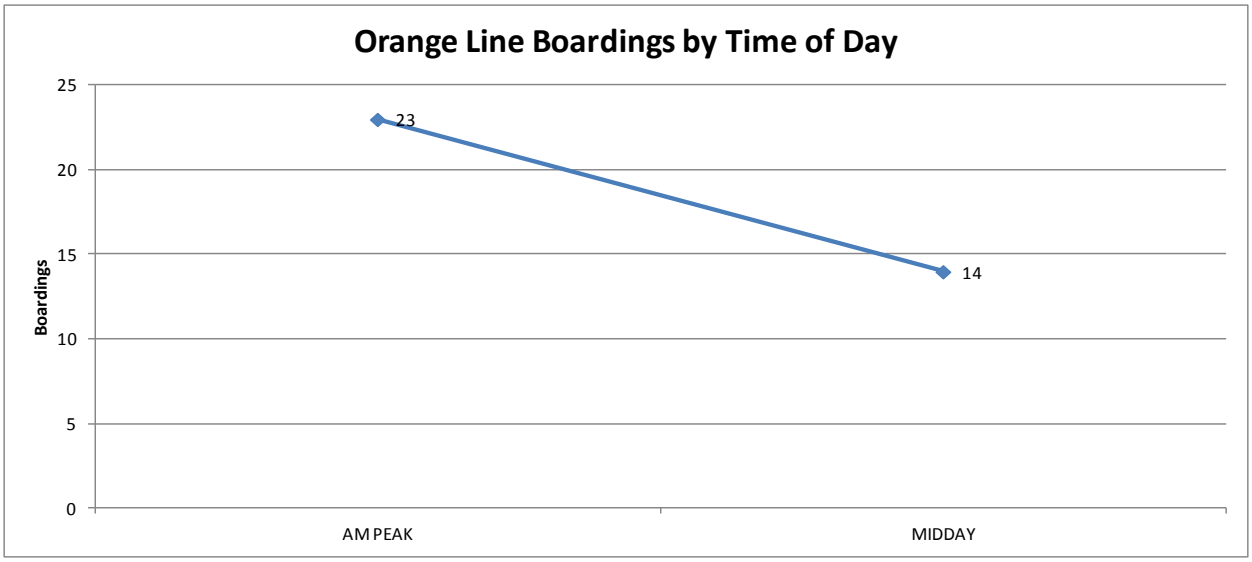


Exhibit B.23 Orange Line Eastbound Summer and Winter Activity by Stop

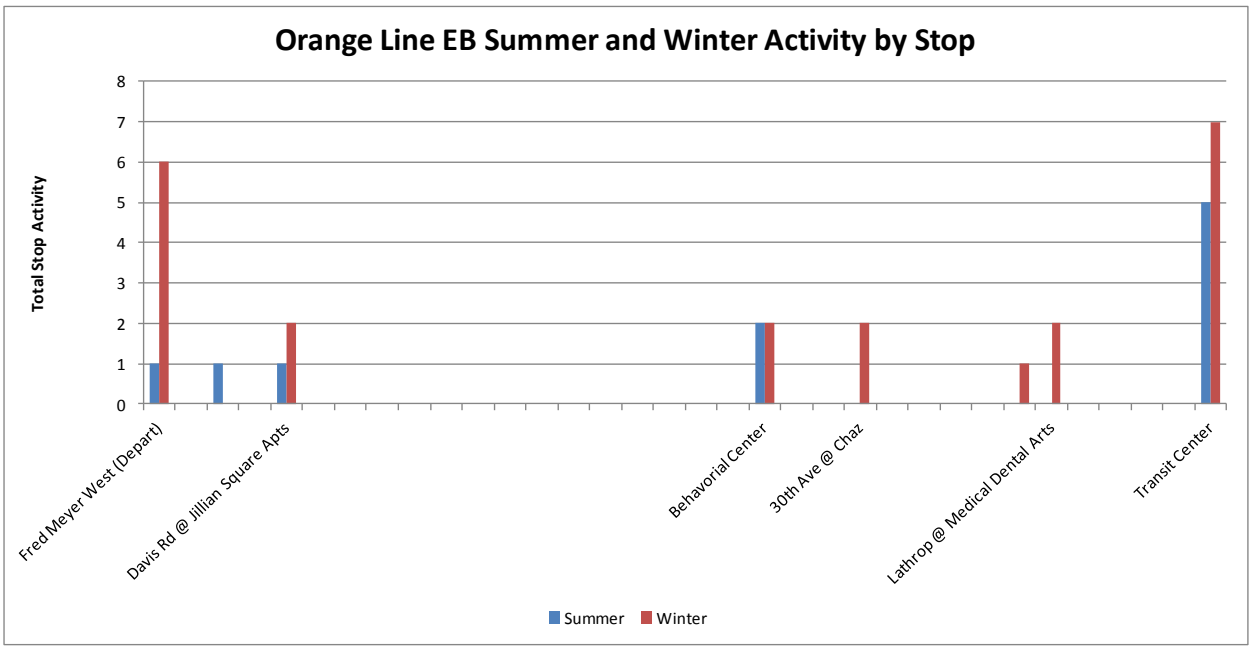
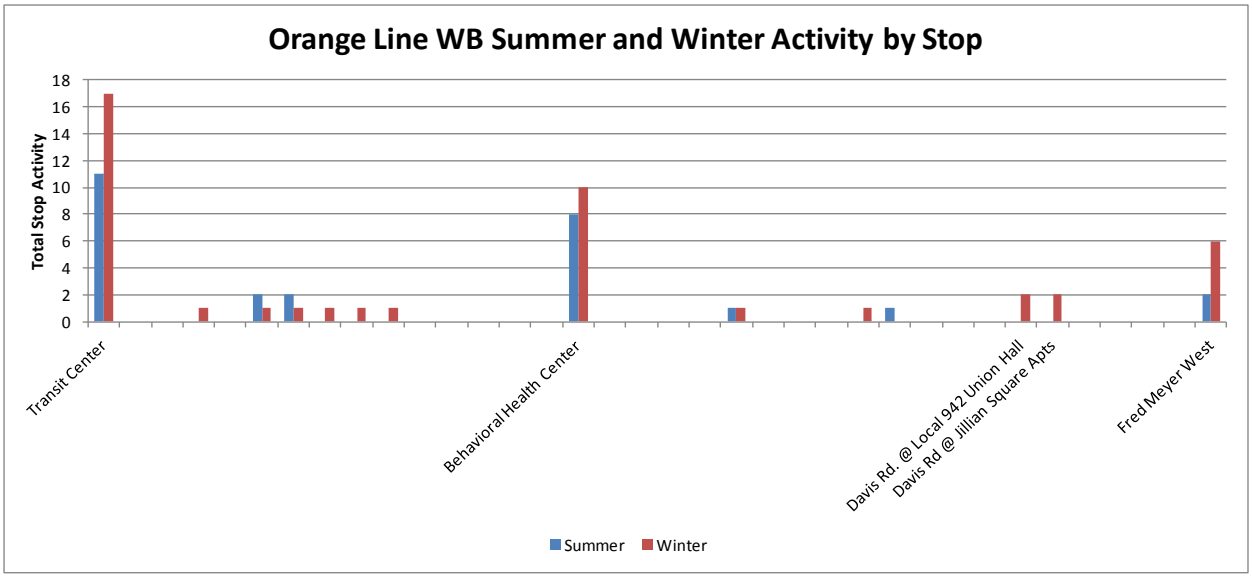


Exhibit B.24 Orange Line Westbound Summer and Winter Activity by Stop



PURPLE LINE

Exhibit B.25 Purple Line Average Load by Stop

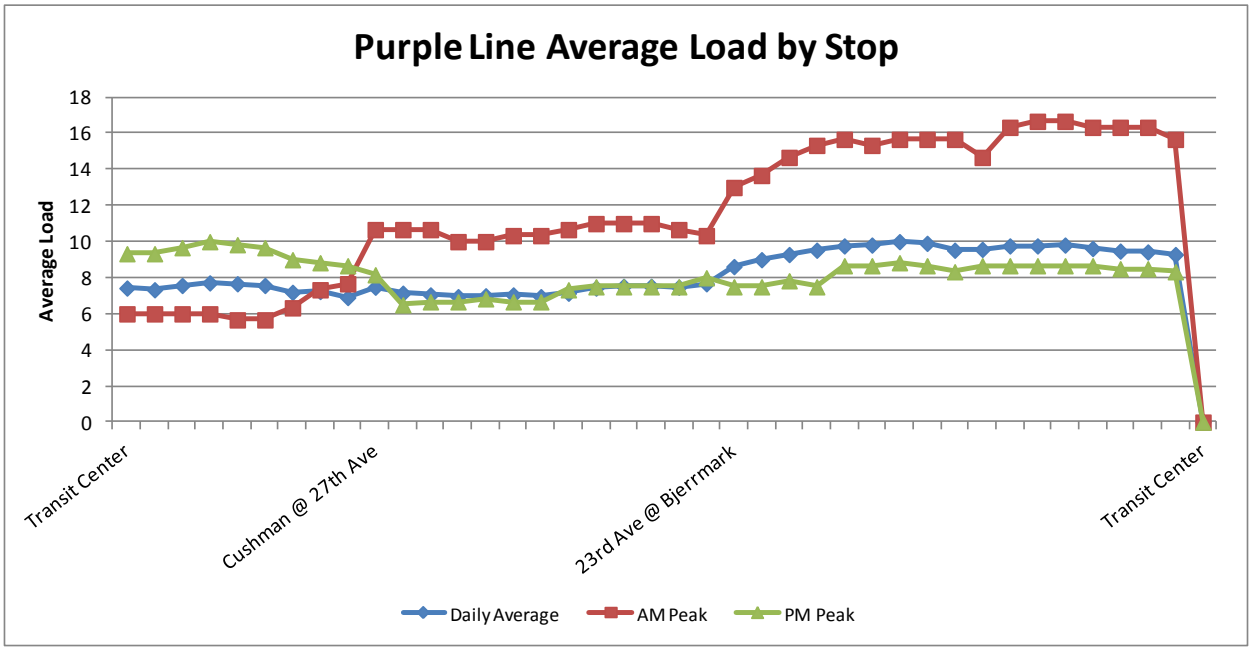


Exhibit B.26 Purple Line Boardings by Time of Day

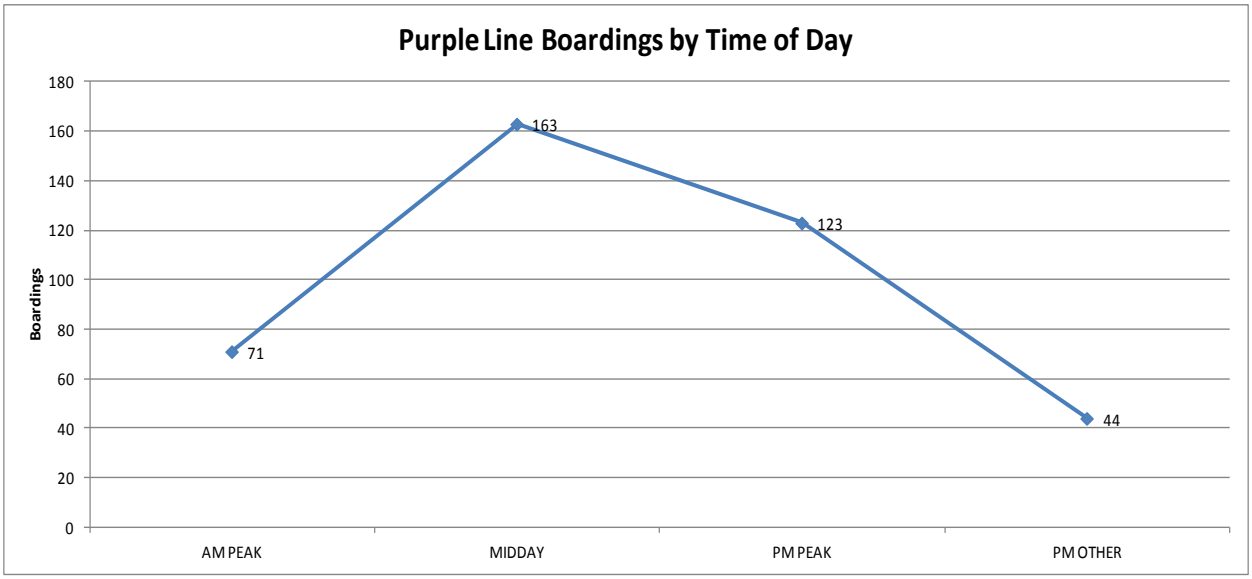
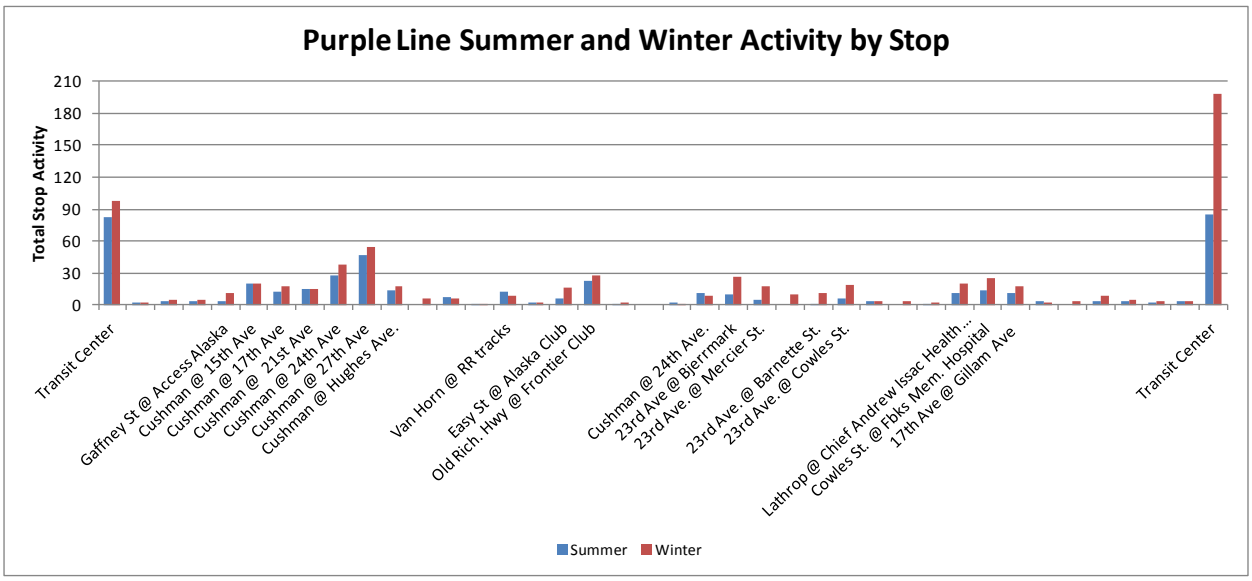


Exhibit B.27 Purple Line Summer and Winter Activity by Stop



RED LINE

Exhibit B.28 Red Line Average Load by Stop

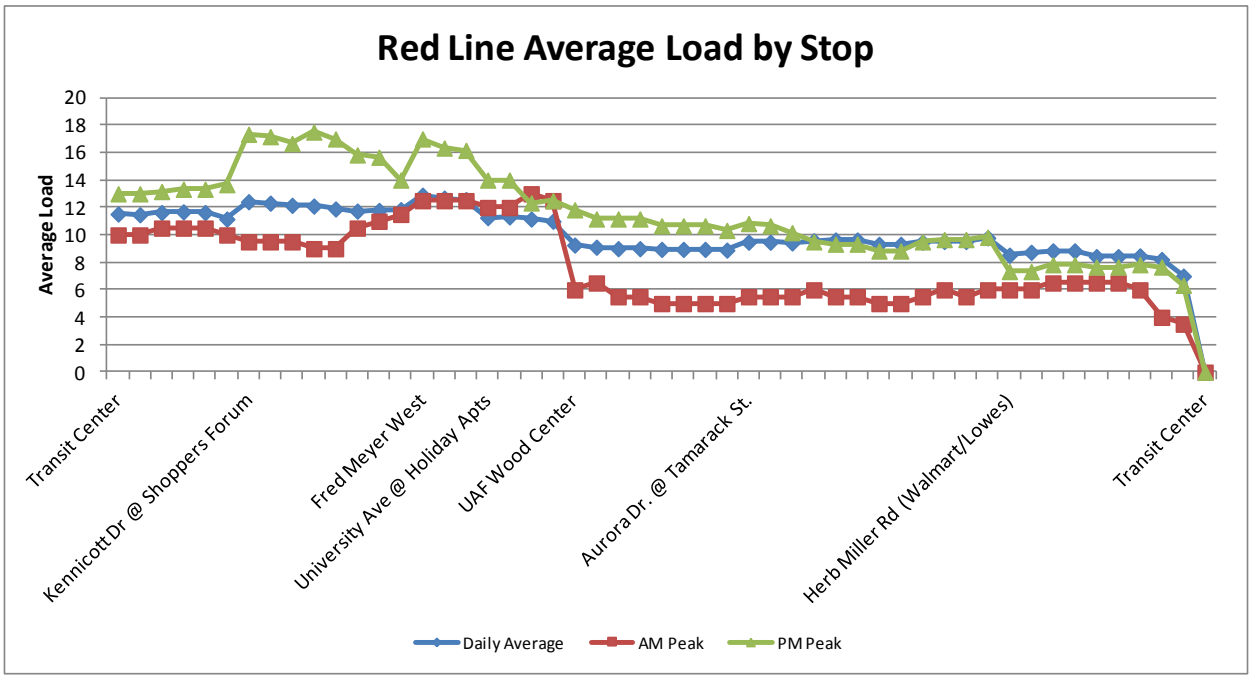


Exhibit B.29 Red Line Boardings by Time of Day

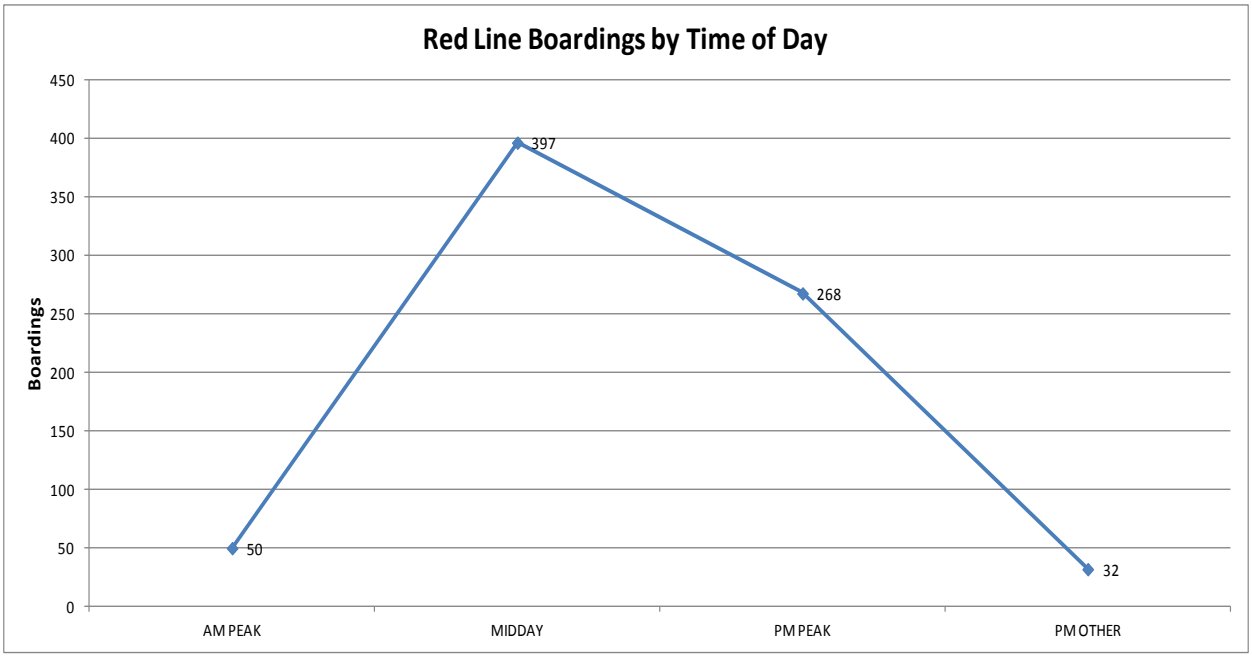
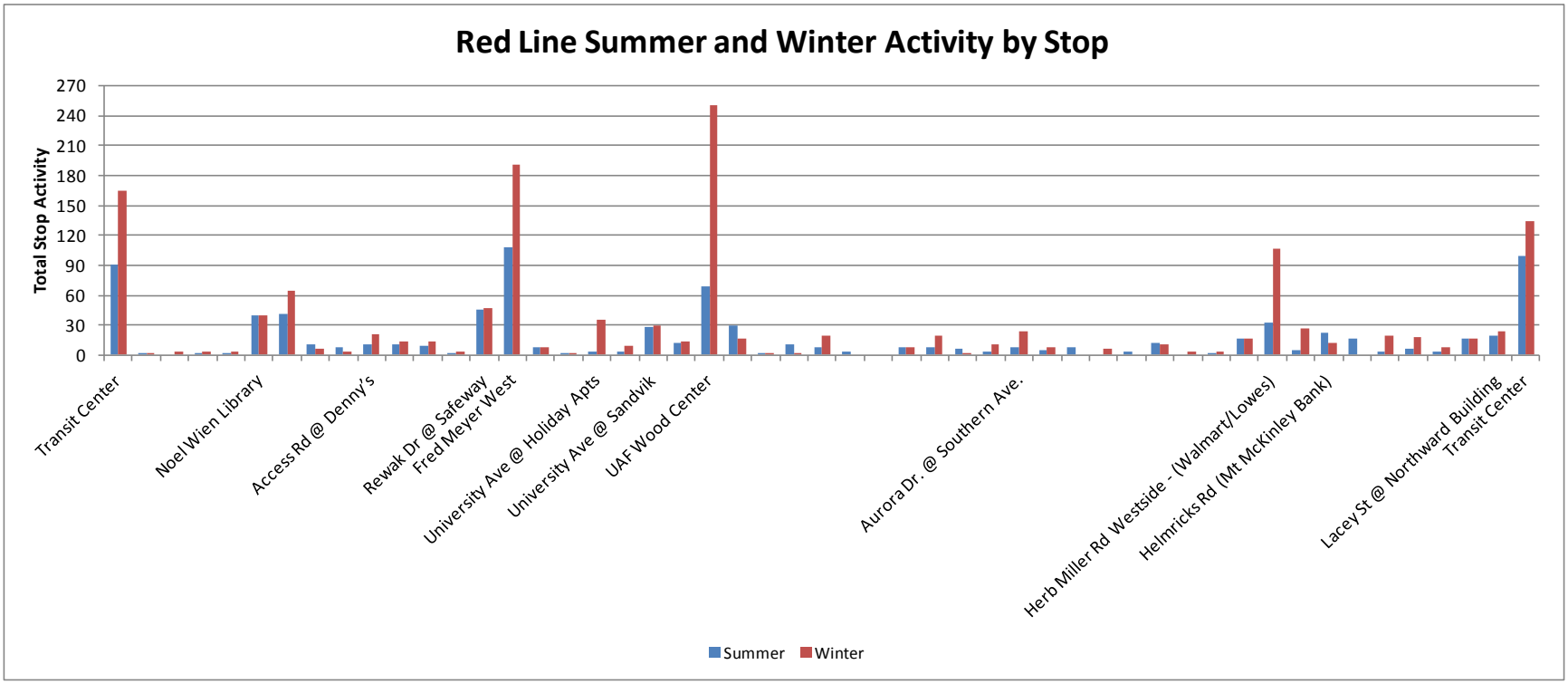


Exhibit B.30 Red Line Summer and Winter Activity by Stop



YELLOW LINE

Exhibit B.31 Yellow Line Average Load by Stop

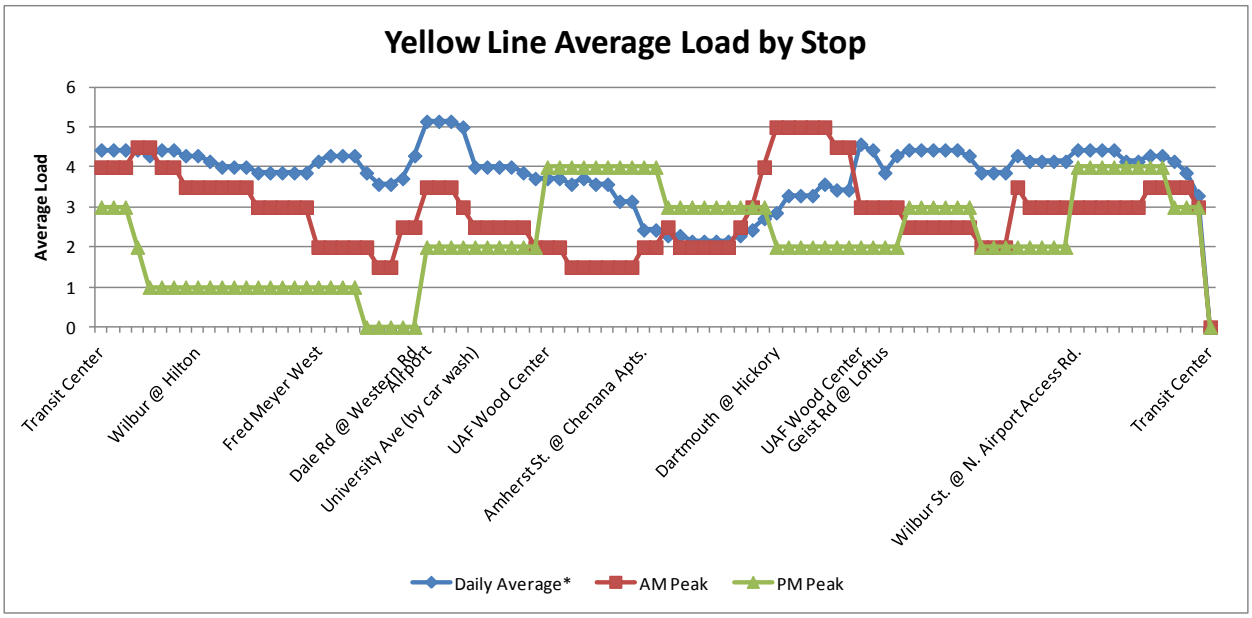


Exhibit B.32 Yellow Line Boarding By Time of Day

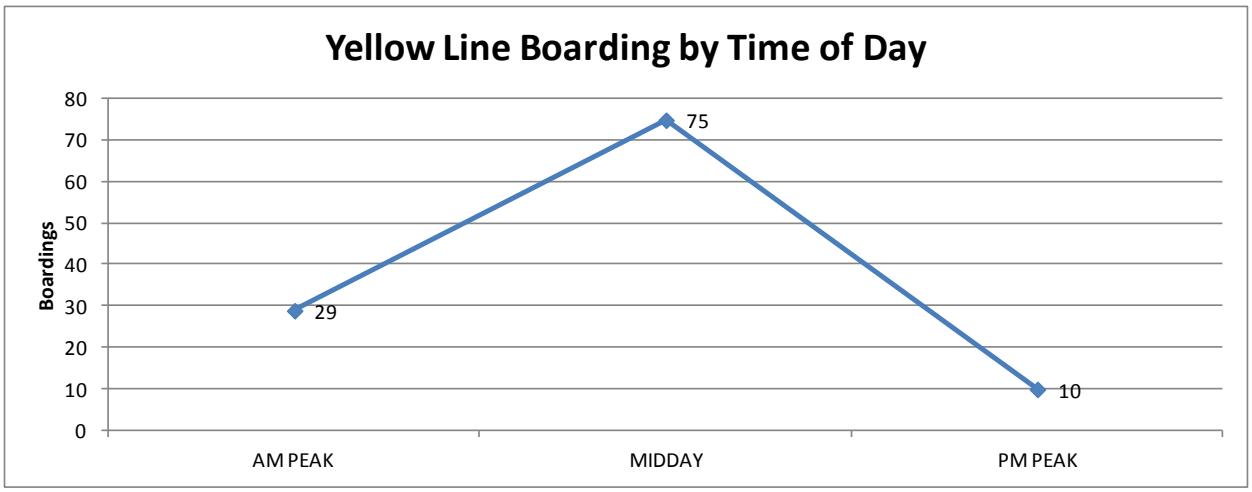
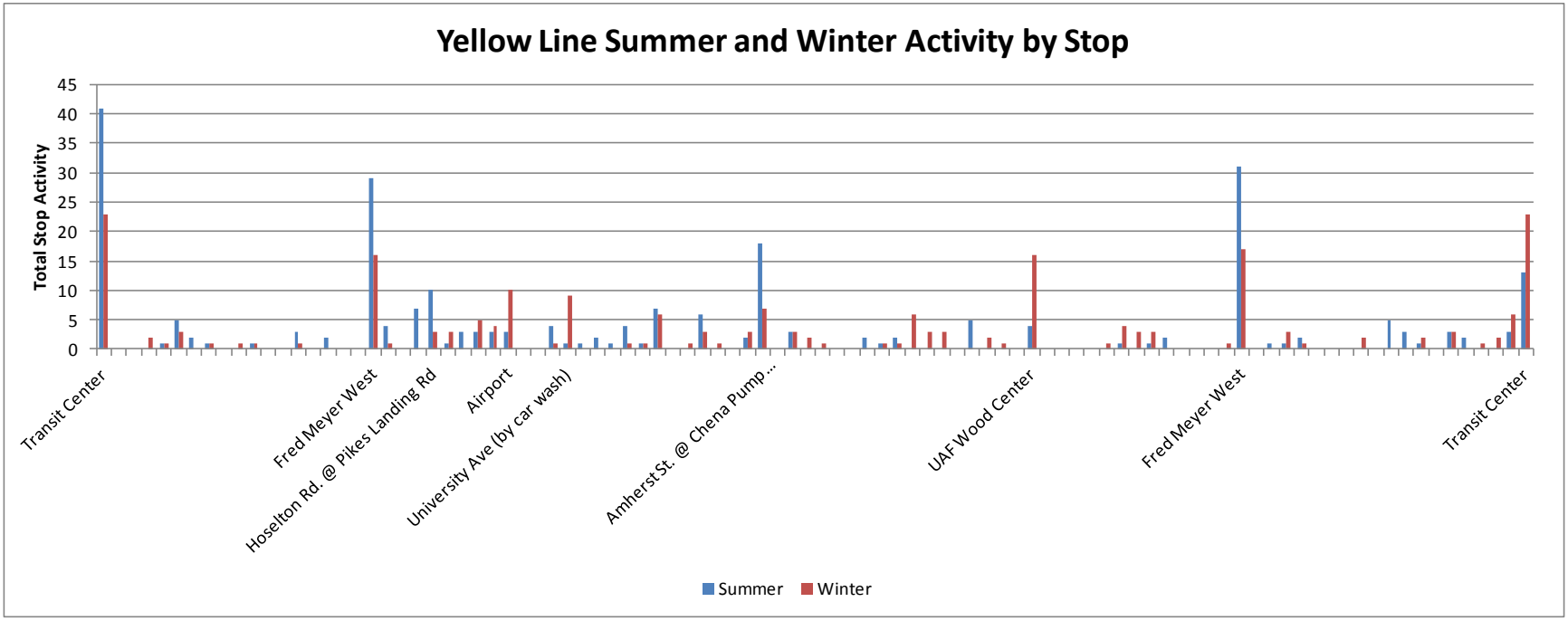


Exhibit B.33 Yellow Line Summer and Winter Activity by Stop



C

LINE-BY-LINE BOARDING AND ALIGHTING TABLES

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APPENDIX C – LINE-BY-LINE BOARDING AND ALIGHTING TABLES

C.1 WINTER BOARDING AND ALIGHTING TABLES BY LINE

The following tables provide the total number of boardings and alightings at each stop, total stop activity (boardings plus alightings), and whether a rider boarded with a bicycle or a mobility device.

Linear routes, including the Green, Grey and Orange Lines, have most of their stops listed twice. In such instances, each listing gives the number of boardings and alightings at that stop in each direction (e.g., inbound and outbound, eastbound and westbound). In the case of the Black Line, there are two separate tables that respectively provide data for each direction.

BLACK LINE

Exhibit C.1.1 Northbound Black Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Salchaket Roadhouse	0	0	0	0	0	0	0
Salcha Store	0	0	0	0	0	0	0
Eielson AFB	1	0	0	0	0	0	1
North Pole	0	2	0	0	0	0	2
Badger Road Off Ramp	0	0	0	0	0	0	0
Transit Center	0	1	0	0	0	0	1
Subtotals	1	3	0	0	0	0	
Total boarding and alighting (with WC activity)	**1**	**3**					

Exhibit C.1.2 Southbound Black Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	8	0	0	0	0	0	8
Badger Road Off Ramp	0	0	0	0	0	0	0
North Pole Mall	3	1	0	0	0	0	4
Eilson AFB	0	6	0	0	0	0	6
Knotty Shop	0	0	0	0	0	0	0
Salcha Store	0	1	0	0	0	0	1
Salchaket Roadhouse	0	3	0	0	0	0	3
Subtotals	11	11	0	0	0	0	
Total boarding and alighting (with WC activity)	**11**	**11**					

BLUE LINE

Exhibit C.1.3 Blue Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	144	0	0	0	2	0	146
Lacey St @ Parking Garage	10	3	0	0	0	0	13
Noble @ 1st Ave	3	4	0	0	0	0	7
Wendell St @ Tanana Chief Conf.	2	8	0	0	0	0	10
Old Steese @ 2nd St. (Steese Mall)	7	9	0	0	0	0	16
Old Steese @ Timberland (Gavora Mall)	7	8	0	0	0	0	15
Old Steese @ Cornerstone Mall	4	12	0	0	0	0	16
Old Steese @ Bostons Pizza	0	2	0	0	0	0	2
Helmricks Rd @ Mt McKinley Bank	0	5	0	0	0	0	5
Helmricks Rd @ Fred Meyer East	9	19	0	0	0	0	28
Herb Miller Rd - (Walmart/Lowes)	82	53	0	0	0	0	135
College Rd. @ Harriett Ave.	1	5	0	0	0	0	6
College Rd @ Marietta Ave	3	7	0	0	0	0	10
College Rd. @ Diane	2	5	0	0	0	0	7
College Rd. @ Creamer's Field	6	7	0	0	0	0	13
Danby St. @ Ann Wien Elementary	2	1	0	0	0	0	3
Danby St. @ Randy Smith Jr. High	3	0	0	0	0	0	3
Danby St. @ Wembley Ave.	0	1	0	0	0	0	1
AKRR Depot	0	0	0	0	0	0	0
Aurora Dr. @ Marika Rd.	0	4	0	0	0	0	4
Aurora Dr. @ Southern Ave.	4	9	0	0	0	0	13
Aurora Dr. @ Carr Ave.	5	2	0	0	0	0	7
Aurora Dr. @ Bridgewater Dr.	3	1	0	0	0	0	4
Aurora Dr. @ Tamarack St.	10	7	0	0	0	0	17
College Rd. @ Aurora Motel	7	7	0	0	0	0	14
College Rd. @ Alaska Way	1	0	0	0	0	0	1
College Rd. @ Caribou Way	1	4	0	0	0	0	5
College Rd. @ Westwood Way/RS Loop	9	5	0	0	0	0	14
College Rd. @ Jarvis St.	2	2	0	0	0	0	4
College Rd. @ Hays St.	4	1	0	0	0	0	5
Alumni Dr @ University Ave	2	4	0	0	0	0	6
UAF Wood Center	119	74	0	0	1	1	195
Tanana Dr @ Patty Center	0	0	0	0	0	0	0
Yukon Dr @ MBS Dorms	1	1	0	0	0	0	2
Yukon Dr @ Reichart Building	1	0	0	0	0	0	1
Yukon Dr @ UA Museum	3	3	0	0	0	0	6
Yukon Dr @ Butrovich/West Arctic Health	1	0	0	0	0	0	1
Geist Rd @ Loftus	2	18	0	0	0	0	20
Geist Rd @ National Park Service	1	6	0	0	0	0	7
Geist Rd @ Post Office	25	9	0	0	0	0	34
Geist Rd @ McDonald's	5	10	0	0	0	1	16
Geist Rd @ Wilcox Ave.	1	2	0	0	0	0	3
University Ave @ Holiday Apts	8	9	0	0	0	0	17
University Ave @ Goldizen St.	0	4	0	0	0	0	4
University Ave (by car wash)	0	1	0	0	0	0	1
Fred Meyer West	103	111	1	0	1	0	216
Rewak Dr. @ Safeway	18	15	0	0	0	0	33
Rewak Dr. @ Klondike Inn	3	2	0	0	0	0	5
Rewak @ Washington Dr/Garfield Ct	5	4	0	0	0	0	9
Washington Dr @ Washington Plaza	3	8	0	0	0	0	11
Pioneer Park	0	0	0	0	0	0	0
Airport Way Access Rd @ Denny's Restaurant	14	5	0	0	0	0	19
Airport Way Access Rd @ Urgent Care	0	5	0	0	0	0	5
Access Road @ Lathrop	11	6	0	0	0	0	17
Kennicott Ave @ Shoppers Forum	22	27	0	0	0	0	49
Noel Wien Library	15	17	0	0	0	0	32
7th Ave @ Cowles	0	8	0	0	0	0	8
7th Ave @ Barnette	1	20	0	0	0	0	21
Transit Center	0	192	0	1	0	0	193
Subtotal	695	752	1	1	4	2	1455
Total boarding and alighting (with WC activity)	696	753					

BROWN LINE

Exhibit C.1.4 Brown Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	40	0	0	0	0	0	40
Lacey @ 7th Ave	1	0	0	0	0	0	1
10th Ave @ Noble	0	1	0	0	0	0	1
10th Ave @ Dixon Apts	3	0	0	0	0	0	3
3rd St @ Eagle St.	6	7	0	0	0	0	13
Farewell Ave @ Hamilton Ave.	3	1	0	0	0	0	4
Farewell Ave @ A St	2	2	0	0	0	0	4
Farewell Ave @ B St	0	3	0	0	0	0	3
Farewell Ave @ C St	0	0	0	0	0	0	0
C St @ Eureka	10	7	0	0	0	0	17
C St @ Dunbar	3	1	0	0	0	0	4
Baranof @ C St	1	1	0	0	0	0	2
Baranof St. @ A St.	2	4	0	0	0	0	6
Baranof St @ Hamilton	0	0	0	0	0	0	0
College Rd @ Gas Line	0	1	0	0	0	0	1
Bentley Mall parking lot	13	22	0	0	0	0	35
College Rd - M&O Schucks	1	2	0	0	0	0	3
Herb Miller Rd Westside - (Walmart/Lowes)	30	22	0	0	0	0	52
Helmricks Rd (Fred Meyer East)	29	23	0	0	0	0	52
Helmricks Rd (Mt McKinley Bank)	1	0	0	0	0	0	1
Old Steese @ Fred Meyer East	1	1	0	0	0	0	2
Old Steese @ Safeway Gas	2	1	0	0	0	0	3
Old Steese @ North Gate Square	7	1	0	0	0	0	8
Old Steese @ Taco King	5	0	0	0	0	0	5
Morris Thompson Visitors Center	3	6	0	0	0	0	9
Lacey St @ Northward Building	2	11	0	0	0	0	13
Transit Center	0	105	0	0	0	0	105
Subtotal	165	222	0	0	0	0	
Total boarding and alighting (with WC activity)	**165**	**222**					

GREEN LINE

Normally, zero people should be counted as boarding a bus at the end of a run. However, the Green Line data show a total of 31 people boarding at the end of the run at the Transit Center. This apparent discrepancy occurred because ride checks weren't 100 percent, and in some cases, riders were seen getting on to the bus when it ended its run at the Transit Center. If a total ride check had been performed, these 31 people would have been listed as being "already onboard" for the next bus run. However, the next run was not counted, so they were counted as boarding at the end of the surveyed run.

Exhibit C.1.5 Green Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	131	0	0	0	4	0	135
Noble St @ 8th Ave	6	0	0	0	1	0	7
Noble St @ 10th Ave.	0	0	0	0	0	0	0
Noble St @ Gaffney St	0	0	0	0	0	0	0
Gaffney St @ Access Alaska	0	0	0	0	0	0	0
Cushman @ 15th Ave	8	1	0	0	0	0	9
Cushman @ 17th Ave	4	2	0	0	0	0	6
Cushman @ 21st Ave	2	1	0	0	0	0	3
Cushman @ 24th Ave	8	7	0	0	1	0	16
Cushman @ 27th Ave	0	9	0	0	0	0	9
Old Richardson @ 30th Ave	0	0	0	0	0	0	0
Old Richardson @ Frontier Lodge	0	4	0	0	0	0	4
Old Richardson @ Alaska Club	5	5	0	0	0	0	10
Old Richardson @ Greer	1	0	0	0	0	0	1
Richardson Hwy off ramp @ on ramp	0	21	0	0	0	0	21
Badger @ Old Rich	7	12	1	0	0	2	22
Badger @ Sirlin	0	0	0	0	0	0	0
Badger @ Mc Peaks	3	19	0	0	0	1	23
Holmes @ Badger	0	0	0	0	0	0	0
Holmes @ Gravel Pit	1	1	0	0	0	0	2
Holmes @ Blazer Trail	0	0	0	0	0	0	0
Dennis @ Holmes	0	0	0	0	0	0	0
Dennis @ Stol	1	0	0	0	0	0	1
Dennis @ Duckpond Rd	0	0	0	0	0	0	0
Dennis @ Old Badger Rd	0	0	0	0	0	0	0
Badger @ Lakloey	0	1	0	0	0	0	1
Badger @ River View RV Park	0	0	0	0	0	0	0
Badger @ Lincolnwood	1	0	0	0	0	0	1
Badger @ Joy	1	0	0	0	0	0	1
Badger @ Old Badger Rd	0	0	0	0	0	0	0
Badger @ Loose Moose Loop	0	0	0	0	0	0	0
Badger @ Mattie	2	3	0	0	0	0	5
Badger @ Bobanna	0	0	0	0	0	0	0
Badger @ Kendall	0	0	0	0	0	0	0
Badger @ Endecott	0	0	0	0	0	0	0
Badger @ Peede (Holmes)	2	0	0	0	0	0	2
Badger @ Sandusky	0	0	0	0	0	0	0
Badger @ Hartzog Loop (Dave's Shop)	1	2	0	0	0	0	3
Badger @ Arctic Fox	0	0	0	0	0	0	0
Badger @ Nordale	2	2	0	0	0	0	4
Badger @ Bradway	4	1	0	0	0	0	5
Badger @ 2440 Badger	1	0	0	0	0	0	1
Badger @ Badger Trading Post	4	2	0	0	0	0	6
Badger @ Marigold	1	1	0	0	0	0	2
Badger @ Lions	0	1	0	0	0	0	1
Badger @ Larix Drive	0	0	0	0	0	0	0
Badger @ Peridot Rd.	2	0	0	0	0	0	2
Badger @ Plack Road	0	7	0	0	0	0	7
Badger @ Kimi	0	1	0	0	0	0	1
Badger @ Elvira	0	0	0	0	0	0	0
Badger @ Glacier State	0	0	0	0	0	0	0
Badger @ Monk Ct (Star of the North)	1	4	0	0	0	0	5
Badger @ Hurst Rd	1	1	0	0	0	0	2
Santa Clause Ln (North Pole Plaza)	14	29	0	0	0	0	43

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Exhibit C.1.5 Green Line Boarding and Alighting by Stop (Cont'd from North Pole Plaza)

Santa Claus Ln @ 1st Ave	1	3	0	0	0	0	4
Santa Claus Ln @ Wells Fargo	11	5	0	0	0	0	16
Santa Claus Ln @ 5th Ave	3	3	0	0	0	0	6
Old Rich @ 6th Ave	0	0	0	0	0	0	0
NPHS Blvd @ Owens St	0	1	0	0	0	0	1
NPHS Blvd @ Holiday St	0	0	0	0	0	0	0
North Pole High School	2	3	0	0	0	0	5
North Pole HS @ exit	0	0	0	0	0	0	0
NPHS Blvd @ Old Rich (South side of road)	1	0	0	0	0	0	1
8th Ave @ NP Middle School	9	3	0	0	0	0	12
8th Ave @ Blanket	3	1	0	0	0	0	4
8th Ave @ Ouida	0	0	0	0	0	0	0
8th Ave @ St Nicholas Dr	3	5	0	0	0	0	8
St. Nicholas Dr. @ 5th Ave	0	1	0	0	0	0	1
St Nicholas Dr @ Campground	2	1	0	0	0	0	3
St. Nicholas Dr. @ Santa Claus House	7	8	0	0	0	0	15
Santa Claus Ln @ Blockbuster Video	10	1	0	0	0	0	11
Badger Rd @ Doughchee	1	1	0	0	0	0	2
Badger Rd. @ Hurst Rd (Beaverbrook)	1	4	0	0	0	0	5
Badger Rd. @ Airway	0	0	0	0	0	0	0
Badger Rd @ Jolly Acres	0	0	0	0	0	0	0
Badger Rd @ Kimi	1	1	0	0	0	0	2
Badger Rd. @ Plack Rd.	1	1	0	0	0	0	2
Badger Rd @ Peridot	1	0	0	0	0	0	1
Badger Rd. @ Topaz	1	0	0	0	0	0	1
Badger Rd. @ Repp	3	6	0	0	0	1	10
Badger Rd. @ Badger Trading Post	0	0	0	0	0	0	0
Badger @ 2440 Badger	0	0	0	0	0	0	0
Badger Rd. @ Bradway	4	0	0	0	0	0	4
Badger Rd @ Candlite Loop	1	0	0	0	0	0	1
Badger Rd. @ Nordale Rd.	2	3	0	0	0	0	5
Badger Rd @ Arctic Fox	1	3	0	0	0	0	4
Badger Rd @ Hartzhog Loop	0	10	0	0	0	0	10
Badger Rd @ Sundusky	0	0	0	0	0	0	0
Badger Rd @ Badger Gas	2	2	0	0	0	0	4
Badger Rd. @ Endecott	1	0	0	0	0	0	1
Badger Rd. @ Kendall	2	0	0	0	0	0	2
Badger Rd. @ Bobanna	0	0	0	0	0	0	0
Badger Rd. @ Landing Rd.	0	2	0	0	0	0	2
Badger Rd. @ Loose Moose	0	1	0	0	0	0	1
Badger Rd. @ Old Badger Rd	1	4	0	0	1	2	8
Badger Rd. @ Joy	0	0	0	0	0	0	0
Badger Rd. @ River Veiw RV Park	0	0	0	0	0	0	0
Badger Rd @ Lowood	0	0	0	0	0	0	0
Badger Rd. @ Lakloey Dr.	0	0	0	0	0	0	0
Dennis @ Old Badger Rd	1	0	0	0	0	0	1
Dennis @ Duckpond Rd	0	0	0	0	0	0	0
Dennis @ Holmes	6	0	0	0	0	0	6
Holmes @ Blazer Trail	0	0	0	0	0	0	0
Holmes Rd @ Gravel Pit	1	0	0	0	1	0	2
Badger Rd. @ McPeaks	13	3	0	0	1	0	17
Badger @ Sirlin	4	0	0	0	0	0	4
Badger Rd. @ Old Rich Hwy	10	5	0	0	0	1	16
Cushman @ 12th Ave	1	20	0	0	0	0	21
Transit Center	31	139	0	1	0	2	173
Subtotals	**356**	**377**	**1**	**1**	**4**	**4**	
Total boarding and alighting (with WC activity)	**357**	**378**					

GREY LINE

Exhibit C.1.6 Grey Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Fred Meyer East parking lot	2	0	0	0	0	0	2
Helmricks Rd (Fred Meyer East)	0	0	0	0	0	0	0
Helmricks Rd (Mt McKinley Bank)	0	0	0	0	0	0	0
Farmers Loop @ Old Steese (Mocha Dan's)	0	0	0	0	0	0	0
Farmer's Loop @ McGrath Rd	0	0	0	0	0	0	0
McGrath Rd @ 1/3 of the way up	0	0	0	0	0	0	0
McGrath Road @ 2/3 of the way up	2	0	0	0	0	0	2
McGrath Rd @ 1/3 of the way down	0	0	0	0	0	0	0
McGrath Rd @ 2/3 of the way down	0	0	0	0	0	0	0
Farmer's Loop @ Alexander	0	0	0	0	0	0	0
Farmer's Loop @ Fideler Rd	1	0	0	0	1	0	2
Farmer's Loop @ Skyline Drive	0	0	0	0	0	0	0
Farmer's Loop @ Mile 3 Marker	0	0	0	0	0	0	0
Farmer's Loop @ Water Through Rd	0	0	0	0	0	0	0
Farmer's Loop @ Summit Drive	1	1	0	0	0	0	2
Farmer's Loop @ Ski Boot Hill	2	1	0	0	0	0	3
Farmer's Loop @ Sundance	3	1	0	0	0	0	4
Farmer's Loop @ Grenac Road	2	0	0	0	0	0	2
Farmer's Loop @ Viewpointe Drive	0	0	0	0	0	0	0
Farmer's Loop @ Shuros Drive	0	0	0	0	0	0	0
Farmer's Loop @ Elbert Road	0	0	0	0	0	0	0
Farmer's Loop @ Scenic Loop	0	0	0	0	0	0	0
Farmer's Loop @ Sun Way	0	0	0	0	0	0	0
Farmer's Loop @ Ballaine Road	0	0	0	0	0	0	0
Farmer's Loop @ Iniakuk Rd	2	0	0	0	0	0	2
Farmer's Loop @ Madcap Lane	0	0	0	0	0	0	0
UAF Wood Center	3	12	0	0	0	1	16
Farmer's Loop @ Madcap Lane	0	0	0	0	0	0	0
Farmer's Loop @ Inakuk	0	0	0	0	0	0	0
Farmer's Loop @ Ballaine Road	0	0	0	0	0	0	0
Farmer's Loop @ Sun Way	0	0	0	0	0	0	0
Farmer's Loop @ Auburn Drive	0	0	0	0	0	0	0
Farmer's Loop @ Scenic Loop	0	0	0	0	0	0	0
Farmer's Loop @ Sunnyside Dr	0	0	0	0	0	0	0
Farmer's Loop @ Midnight Sun St	0	0	0	0	0	0	0
Farmer's Loop @ Veiwpoint Rd	0	1	0	0	0	0	1
Farmer's Loop @ Candamar Rd	0	1	0	0	0	0	1
Farmer's Loop @ Sundance	0	1	0	0	0	0	1
Farmer's Loop @ Ski Boot Hill	1	0	0	0	0	0	1
Farmer's Loop @ Constitution Dr	1	0	0	0	0	0	1
Farmer's Loop @ Crossman/Summit	0	0	0	0	0	0	0
Farmer's Loop @ Water Thrush Rd	0	0	0	0	0	0	0
Farmer's Loop @ Delphininium	0	0	0	0	0	0	0
Farmer's Loop @ Bouton Ct	0	0	0	0	0	0	0
Farmer's Loop @ Skyline Drive	0	0	0	0	0	0	0
Farmer's Loop @ Fideler Rd	0	0	0	0	0	0	0
Farmer's Loop @ Alexander	0	0	0	0	0	0	0
Farmer's Loop @ McGrath Road	1	0	0	0	0	0	1
Farmers Loop @ Sourdough Fuel Mart	0	0	0	0	0	0	0
Helmricks Rd @ Mt McKinley Bank	0	0	0	0	0	0	0
Helmricks Rd @ Fred Meyer East	0	1	0	0	0	0	1
Fred Meyer East parking lot	0	2	0	0	0	0	2
Subtotal	21	21	0	0	1	1	44
Total boarding and alighting (with WC activity)	21	21					

ORANGE LINE

Exhibit C.1.7 Orange Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	17	0	0	0	0	0	17
5th Ave @ Barnette	0	0	0	0	0	0	0
5th Ave @ Wickersham	0	0	0	0	0	0	0
Cowles @ 6th Ave	0	1	0	0	0	0	1
Cowles @ 8th Ave	0	0	0	0	0	0	0
Noel Wien Library	0	1	0	0	0	0	1
Lathrop @ Chief Andrew Issac Health Center	0	1	0	0	0	0	1
Lathrop @ Big Dipper Ice Arena	0	1	0	0	0	0	1
Lathrop @ 22nd	0	1	0	0	0	0	1
Lathrop @ Soccer Fields (south of 23rd Ave)	1	0	0	0	0	0	1
30th Ave @ Boys and Girls Home	0	0	0	0	0	0	0
30th Ave @ Holm Town Nursery	0	0	0	0	0	0	0
30th Ave @ Arctic Spas	0	0	0	0	0	0	0
Cushman @ Hughes Ave.	0	0	0	0	0	0	0
Cushman @ Lithia Chevrolet	0	0	0	0	0	0	0
Behavioral Health Center	4	6	0	0	0	0	10
Van Horn Rd. @ Cushman	0	0	0	0	0	0	0
Van Horn @ Frontier Plumbing/Bank	0	0	0	0	0	0	0
Van Horn @ Lathrop	0	0	0	0	0	0	0
Van Horn @ International	0	0	0	0	0	0	0
Van Horn @ Industrial	0	1	0	0	0	0	1
Van Horn @ North Van Horn	0	0	0	0	0	0	0
Van Horn @ IDEA Home School	0	0	0	0	0	0	0
Van Horn @ Kenworth	0	0	0	0	0	0	0
Peger @ Standard	0	1	0	0	0	0	1
Peger @ Transit Maintenance Center	0	0	0	0	0	0	0
Peger @ Pickett/Animal Hospital	0	0	0	0	0	0	0
Peger @ DOT	0	0	0	0	0	0	0
Davis Rd @ Peger Rd	0	0	0	0	0	0	0
Davis Rd. @ Local 942 Union Hall	0	2	0	0	0	0	2
Davis Rd @ Jillian Square Apts	2	0	0	0	0	0	2
David Rd @ Alston	0	0	0	0	0	0	0
Davis Rd @ University	0	0	0	0	0	0	0
University Ave. @ Holden	0	0	0	0	0	0	0
University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Fred Meyer West	6	6	0	0	0	0	12

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Exhibit C.1.7 Orange Line Boarding and Alighting by Stop (Cont'd from Fred Meyer West)

University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Davis Rd @ University	0	0	0	0	0	0	0
Davis Rd @ Alston	0	0	0	0	0	0	0
Davis Rd @ Jillian Square Apts	2	0	0	0	0	0	2
Davis Rd @ Local 942 Union Hall	0	0	0	0	0	0	0
Surgery Center	0	0	0	0	0	0	0
Peger @ Pickett/Animal Hospital	0	0	0	0	0	0	0
Peger @ Transit Maintenance Center	0	0	0	0	0	0	0
Peger @ Alyeska Tire	0	0	0	0	0	0	0
Van Horn @ Bowers Office Products	0	0	0	0	0	0	0
Van Horn @ IDEA Home School	0	0	0	0	0	0	0
Van Horn @ North Van Horn	0	0	0	0	0	0	0
Van Horn @ Industrial	0	0	0	0	0	0	0
Van Horn @ International	0	0	0	0	0	0	0
Van Horn @ Lathrop	0	0	0	0	0	0	0
Van Horn @ John Deere	0	0	0	0	0	0	0
Van Horn @ Frontier Plumbing/Bank	0	0	0	0	0	0	0
Van Horn Rd. @ Cushman	0	0	0	0	0	0	0
Behavorial Center	1	1	0	0	0	0	2
Cushman @ Hughes Ave.	0	0	0	0	0	0	0
Cushman @ Lithia Chevrolet	0	0	0	0	0	0	0
30th Ave @ Chaz	0	2	0	0	0	0	2
30th Ave @ Arctic Fire and Safety	0	0	0	0	0	0	0
30th Ave @ Holm Town Nursery	0	0	0	0	0	0	0
30th Ave @ Women's Clinic	0	0	0	0	0	0	0
Lathrop @ Soccer Fields (south of 23rd Ave)	0	0	0	0	0	0	0
Lathrop @ 21st Ave	0	1	0	0	0	0	1
Lathrop @ Medical Dental Arts	0	2	0	0	0	0	2
Lathrop @ Chief Andrew Issac Health Center	0	0	0	0	0	0	0
Noel Wien Library	0	0	0	0	0	0	0
7th Ave @ Cowles	0	0	0	0	0	0	0
7th Ave @ Barnette	0	0	0	0	0	0	0
Transit Center	0	7	0	0	0	0	7
Subtotals	**33**	**34**	**0**	**0**	**0**	**0**	
Total boarding and alighting (with WC activity)	**33**	**34**					

PURPLE LINE

Exhibit C.1.8 Purple Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	97	0	1	0	0	0	98
Noble St @ 8th Ave	0	2	0	0	0	0	2
Noble St @ 10th Ave.	5	0	0	0	0	0	5
Noble St @ Gaffney St	4	1	0	0	0	0	5
Gaffney St @ Access Alaska	5	6	0	0	0	0	11
Cushman @ 15th Ave	9	11	0	0	0	0	20
Cushman @ 17th Ave	5	13	0	0	0	0	18
Cushman @ 21st Ave	8	7	0	0	0	0	15
Cushman @ 24th Ave	15	22	0	1	0	0	38
Cushman @ 27th Ave	33	21	0	0	0	0	54
Cushman @ Hughes Ave.	5	12	1	0	0	0	18
Cushman @ Lithia Chevrolet	2	4	0	0	0	0	6
Van Horn Rd. @ Cushman	2	4	0	0	0	0	6
Van Horn @ Braddock (Fulford Electric)	1	0	0	0	0	0	1
Van Horn @ RR tracks	5	4	0	0	0	0	9
Easy St @ Lakeveiw entrance	0	2	0	0	0	0	2
Easy St @ Alaska Club	10	6	0	0	0	0	16
Old Rich. Hwy @ Frontier Club	17	11	0	0	0	0	28
Old Rich Hwy @ Romans	2	0	0	0	0	0	2
Old Rich Hwy @ Leasure St	0	0	0	0	0	0	0
Cushman @ 27th Ave	0	1	0	0	0	0	1
Cushman @ 24th Ave.	6	2	0	0	0	0	8
23rd Ave @ Bjerrmark	23	3	0	0	0	0	26
23rd Ave. @ Mercier St.	13	5	0	0	0	0	18
23rd Ave. @ Turner St.	8	2	0	0	0	0	10
23rd Ave. @ Barnette St.	8	3	0	0	0	0	11
23rd Ave. @ Cowles St.	12	7	0	0	0	0	19
23rd Ave @ Lathrop (Interior Community Health)	2	1	0	0	0	0	3
Lathrop @ 21st Ave	4	0	0	0	0	0	4
Lathrop @ Medical Dental Arts	0	2	0	0	0	0	2
Lathrop @ Chief Andrew Issac Health Center	6	14	0	0	0	0	20
Cowles St. @ Fbks Mem. Hospital	13	12	0	0	0	0	25
17th Ave @ Gillam Ave	11	7	0	0	0	0	18
Gillam Ave. @ 16th Ave	1	1	0	0	0	0	2
Gillam Ave. @ 15th Ave.	2	1	0	0	0	0	3
Gillam Ave. @ 14th Ave.	2	6	0	0	0	0	8
Gaffney St @ McAffee Chiropractic	1	4	0	0	0	0	5
Gaffney St. @ Turner St.	1	2	0	0	0	0	3
Cushman @ 12th Ave	0	3	0	0	0	0	3
Transit Center	0	197	0	1	0	0	198
Subtotals	**338**	**399**	**2**	**2**	**0**	**0**	
Total boarding and alighting (with WC activity)	**340**	**401**					

RED LINE

Exhibit C.1.9 Red Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	162	0	1	0	2	0	165
5th Ave @ Barnette	0	1	0	0	0	0	1
5th Ave @ Wickersham	3	0	0	0	0	0	3
Cowles @ 6th Ave	2	1	0	0	0	0	3
Cowles @ 9th Ave	1	2	0	0	0	0	3
Noel Wien Library	15	24	0	0	0	0	39
Kennicott Dr @ Shoppers Forum	44	20	0	0	0	0	64
Lathrop @ Airport Way Access Road	2	4	0	0	0	0	6
Access Rd @ Urgent Care	0	3	0	0	0	0	3
Access Rd @ Denny's	10	11	0	0	0	0	21
Washington @ Washington Plaza	5	9	0	0	0	0	14
Washington @ Rewak Dr.	5	8	0	0	0	0	13
Rewak Dr @ Klondike Inn	2	1	0	0	0	0	3
Rewak Dr @ Safeway	24	23	0	0	0	0	47
Fred Meyer West	105	85	0	1	0	0	191
University Ave (by car wash)	2	6	0	0	0	0	8
University Ave @ Goldizen St	0	2	0	0	0	0	2
University Ave @ Holiday Apts	5	30	0	0	0	1	36
University Ave @ Geist Rd.	5	4	0	0	0	0	9
University Ave @ Sandvik	13	16	0	0	0	0	29
Alumni Dr @ University Ave	4	7	0	0	1	1	13
UAF Wood Center	109	142	0	0	0	0	251
College Rd. @ Hess St.	7	10	0	0	0	0	17
College Rd. @ Across from UAF Bldg	0	2	0	0	0	0	2
College Rd. @ Mike's Chevron	1	1	0	0	0	0	2
College Rd. @ Westwood Way	9	10	0	0	0	0	19
College Rd. @ Caribou Way	0	0	0	0	0	0	0
College Rd. @ Alaska Way	0	0	0	0	0	0	0
College Rd. @ Aurora Motel	3	4	0	0	0	0	7
Aurora Dr. @ Tamarack St.	15	4	0	0	0	0	19
Aurora Dr. @ Bridgewater Dr.	1	1	0	0	0	0	2
Aurora Dr. @ Carr Dr.	4	5	0	0	0	1	10
Aurora Dr. @ Southern Ave.	13	10	0	0	1	0	24
Aurora Dr. @ Marika Rd.	4	3	0	0	0	0	7
Danby Rd @ Wembley	0	0	0	0	0	0	0
Danby Rd @ Randy Smith Jr. High	0	6	0	0	0	0	6
Danby Rd @ Ann Wien Elementary	0	0	0	0	0	0	0
College Rd. @ Kathryn	7	4	0	0	0	0	11
College Rd. @ Bonnie St	2	1	0	0	0	0	3
College Rd @ Mary Leigh	2	2	0	0	0	0	4
College Rd @ Geraldo's	11	6	0	0	0	0	17
Herb Miller Rd Westside - (Walmart/Lowes)	41	65	0	0	0	0	106
Helmricks Rd (Fred Meyer East)	15	11	0	0	0	0	26
Helmricks Rd (Mt McKinley Bank)	7	5	0	0	0	0	12
Old Steese @ Fred Meyer East	0	0	0	0	0	0	0
Old Steese @ Safeway Gas	6	14	0	0	0	0	20
Old Steese @ North Gate Square	9	9	0	0	0	0	18
Old Steese @ Taco King	4	3	0	0	0	0	7
Morris Thompson Visitors Center	6	11	0	0	0	0	17
Lacey St @ Northward Building	0	23	0	0	0	0	23
Transit Center	0	133	0	0	0	1	134
Subtotals	**742**	**742**	**1**	**1**	**4**	**4**	
Total boarding and alighting (with WC activity)	**743**	**743**					

YELLOW LINE

Exhibit C.1.10 Yellow Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	22	0	0	0	1	0	23
1st Ave @ Cowles St.	0	0	0	0	0	0	0
1st Ave @ State St.	0	0	0	0	0	0	0
1st Ave @ Grant St.	1	1	0	0	0	0	2
1st Ave @ Lathrop St.	0	1	0	0	0	0	1
2nd Ave @ Birch Park	2	1	0	0	0	0	3
2nd Ave @ Curling Club	0	0	0	0	0	0	0
Wilbur @ 2nd Ave (Carlson Center)	0	1	0	0	0	0	1
Wilbur @ Hilton	0	0	0	0	0	0	0
Wilbur @ Access Rd	0	1	0	0	0	0	1
Peger Rd. @ DMV	0	1	0	0	0	0	1
Davis Rd @ Peger Rd	0	0	0	0	0	0	0
Davis Rd. @ Local 942 Union Hall	0	0	0	0	0	0	0
Davis Rd @ Jillian Square Apts	0	1	0	0	0	0	1
David Rd @ Alston	0	0	0	0	0	0	0
Davis Rd @ University	0	0	0	0	0	0	0
University Ave. @ Holden	0	0	0	0	0	0	0
University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Fred Meyer West	9	7	0	0	0	0	16
Boat St @ Best Western	1	0	0	0	0	0	1
Boat St. @ River's Edge RV Park	0	0	0	0	0	0	0
Boat St. @ River's Edge Resort	0	0	0	0	0	0	0
Hoselton Rd. @ Pikes Landing Rd	0	3	0	0	0	0	3
Hoselton Rd. @ Pikes Lodge	0	2	0	0	0	1	3
Dale Rd @ Discovery Dr	0	0	0	0	0	0	0
Dale Rd. @ Broadmoor Ave.	3	2	0	0	0	0	5
Dale Rd @ Western Rd	4	0	0	0	0	0	4
Airport	8	2	0	0	0	0	10
Airport Frontage Rd.@ Air Cargo	0	0	0	0	0	0	0
Airport Frontage Rd. @ Fedex	0	0	0	0	0	0	0
Fred Meyer West	0	1	0	0	0	0	1
University Ave (by car wash)	1	8	0	0	0	0	9
University Ave @ Goldizen St	0	0	0	0	0	0	0
University Ave @ Holiday Apts	0	0	0	0	0	0	0
University Ave @ Geist Rd.	0	0	0	0	0	0	0
University Ave @ Sandvik	0	1	0	0	0	0	1
Alumni Dr @ University Ave	0	1	0	0	0	0	1
UAF Wood Center	3	3	0	0	0	0	6
Yukon Dr @ MBS Dorms	0	0	0	0	0	0	0
Yukon Dr @ Reichart Building	0	1	0	0	0	0	1
Yukon Dr @ UA Museum	2	1	0	0	0	0	3
Yukon Dr @ Butrovich/West Arctic Health	0	1	0	0	0	0	1
Geist Rd @ Loftus	0	0	0	0	0	0	0
Chena Pump Road @ Justa Store	0	3	0	0	0	0	3

(Continued on next page)

Exhibit C.1.10 Yellow Line Boarding and Alighting by Stop (Cont'd from Justa Store)

Amherst St. @ Chenana Apts.	1	6	0	0	0	0	7
Amherst St @ Glasgow	0	0	0	0	0	0	0
Amherst St @ Trinidad	1	2	0	0	0	0	3
Trinidad @ Palo Verde	1	1	0	0	0	0	2
Palo Verde @ Penn Place	0	1	0	0	0	0	1
Palo Verde @ Steelhead	0	0	0	0	0	0	0
Steelhead @ Amherst St	0	0	0	0	0	0	0
Steelhead @ Stanford	0	0	0	0	0	0	0
Steelhead @ Dartmouth	1	0	0	0	0	0	1
Dartmouth @ Trinidad	1	0	0	0	0	0	1
Dartmouth @ Woodridge	4	2	0	0	0	0	6
Dartmouth @ Hickory	2	1	0	0	0	0	3
Dartmouth @ Chena Pump Rd	3	0	0	0	0	0	3
Thompson Dr @ Geist	0	0	0	0	0	0	0
Yukon Dr @ Butrovich/West Arctic Health	0	0	0	0	0	0	0
Yukon Dr @ UA Museum	2	0	0	0	0	0	2
Yukon Dr @ Reichart Building	0	1	0	0	0	0	1
Yukon Dr @ MBS Dorms	0	0	0	0	0	0	0
UAF Wood Center	12	4	0	0	0	0	16
Tanana Dr @ Patty Gym	0	1	0	0	0	0	1
Geist Rd @ Loftus	0	4	0	0	0	0	4
Geist Rd @ National Park Service	3	0	0	0	0	0	3
Geist Rd @ Post Office	2	1	0	0	0	0	3
Geist Rd @ McDonald's	0	0	0	0	0	0	0
Geist Rd @ Wilcox Ave.	0	0	0	0	0	0	0
University Ave @ Holiday Apts	0	0	0	0	0	0	0
University Ave @ Goldizen St.	0	0	0	0	0	0	0
University Ave (by car wash)	0	1	0	0	0	0	1
Fred Meyer West	7	10	0	0	0	0	17
University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Davis Rd @ University	0	0	0	0	0	0	0
Davis Rd @ Alston	3	0	0	0	0	0	3
Davis Rd @ Jillian Square Apts	0	1	0	0	0	0	1
Davis Rd @ Local 942 Union Hall	0	0	0	0	0	0	0
Peger Rd. @ Davis Rd.	0	0	0	0	0	0	0
Peger Rd. @ DMV	0	0	0	0	0	0	0
Wilbur St. @ N. Airport Access Rd.	2	0	0	0	0	0	2
Wilbur @ Hilton	0	0	0	0	0	0	0
Wilbur @ 2nd Ave (Growden Park)	0	0	0	0	0	0	0
2nd Ave @ Curling Club	0	0	0	0	0	0	0
2nd Ave @ Birch Park	0	2	0	0	0	0	2
1st Ave @ Lathrop St.	0	0	0	0	0	0	0
1st ave @ Grant St	2	1	0	0	0	0	3
1st Ave @ State St	0	0	0	0	0	0	0
1st Ave @ Cowles St.	0	1	0	0	0	0	1
1st Ave @ Barnette St.	0	2	0	0	0	0	2
Barnette St. @ 3rd Ave.	1	5	0	0	0	0	6
Transit Center	0	23	0	0	0	0	23
Subtotal	104	113	0	0	1	1	219
Total boarding and alighting (with WC activity)	104	113					

C.2 SUMMER BOARDING AND ALIGHTING TABLES BY LINE

Note: In some instances, the total boardings may not equal total alightings. If total boardings are greater than total alightings, this would be due to (1) a rider continuing on past the "end" of the line, such as a rider boarding the Blue Line before the Transit Center en route to a destination past the Transit Center, or (2) a rider missed his/her stop and had to stay on the bus for the return trip.

If total alightings are greater than total boardings, this is due to the fact that in some cases, riders were already on the vehicle when the ride checker began counting. Therefore, these passengers will be counted as alighting, but not boarding.

BLACK LINE

Exhibit C.2.1 Northbound Black Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Salchaket Roadhouse	1	0	0	0	0	0	1
Salcha Store	2	0	0	0	0	0	2
Eielson AFB	6	0	0	0	0	0	6
North Pole	0	2	0	0	0	0	2
Badger Road Off Ramp	0	0	0	0	0	0	0
Transit Center	0	7	0	0	0	0	7
Subtotal	9	9	0	0	0	0	
Total boarding and alighting (with WC activity)	9	9					

Exhibit C.2.2 Southbound Black Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	10	0	0	0	0	0	10
Badger Road Off Ramp	0	2	0	0	0	0	2
North Pole Mall	0	1	0	0	0	0	1
Eilson AFB	0	4	0	0	0	0	4
Knotty Shop	0	1	0	0	0	0	1
Salcha Store	0	0	0	0	0	0	0
Salchaket Roadhouse	0	1	0	0	0	0	1
Subtotal	10	9	0	0	0	0	
Total boarding and alighting (with WC activity)	10	9					

BLUE LINE

Exhibit C.2.3 Blue Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	139	0	0	0	3	0	142
Lacey St @ Parking Garage	12	6	0	0	0	0	18
Noble @ 1st Ave	8	4	0	0	0	0	12
Wendell St @ Tanana Chief Conf.	11	13	0	0	0	0	24
Old Steese @ 2nd St. (Steese Mall)	6	3	0	0	0	0	9
Old Steese @ Timberland (Gavora Mall)	3	3	0	0	0	0	6
Old Steese @ Cornerstone Mall	6	10	0	0	0	0	16
Old Steese @ Bostons Pizza	4	5	0	0	0	0	9
Merhar Ave. @ Helmericks Rd	24	54	0	0	1	1	80
Herb Miller Rd. @ Merhar Ave. - (Walmart/Lowes)	19	16	0	0	0	0	35
College Rd. @ Harriett Ave.	0	2	0	0	0	0	2
College Rd @ Marietta Ave	0	6	0	0	0	0	6
College Rd. @ Diane	1	5	0	0	0	0	6
College Rd. @ Creamer's Field	7	6	0	0	0	1	14
Danby St. @ Ann Wien Elementary	1	1	0	0	0	0	2
Danby St. @ Randy Smith Jr. High	1	2	0	0	0	0	3
Danby St. @ Wembley Ave.	0	3	0	0	0	0	3
AKRR Depot	0	0	0	0	0	0	0
Aurora Dr. @ Marika Rd.	2	4	0	0	0	0	6
Aurora Dr. @ Southern Ave.	5	7	0	0	0	0	12
Aurora Dr. @ Carr Ave.	5	1	0	0	0	0	6
Aurora Dr. @ Bridgewater Dr.	2	4	0	0	0	0	6
Aurora Dr. @ Tamarack St.	0	5	0	0	0	0	5
College Rd. @ Aurora Motel	5	4	0	0	0	0	9
College Rd. @ Alaska Way	0	2	0	0	0	0	2
College Rd. @ Caribou Way	5	6	0	0	0	0	11
College Rd. @ Westwood Way/RS Loop	6	1	0	0	0	0	7
College Rd. @ Jarvis St.	6	3	0	0	0	0	9
College Rd. @ Hays St.	5	10	0	0	0	0	15
Alumni Dr. @ University Ave	3	9	0	0	0	0	12
UAF Wood Center	45	18	0	0	0	1	64
Tanana Dr @ Patty Center	0	0	0	0	0	0	0
Yukon Dr. @ MBS Dorms	6	8	0	0	0	0	14
Yukon Dr. @ Reichart Building	0	0	0	0	0	0	0
Yukon Dr @ UA Museum	12	21	0	0	0	0	33
Yukon Dr. @ Butrovich/West Arctic Health	6	2	0	0	0	0	8
Geist Rd @ Loftus	7	1	0	0	1	0	9
Geist Rd @ National Park Service	1	9	0	0	0	0	10
Geist Rd @ Post Office	8	7	0	0	1	0	16
Geist Rd @ McDonald's	11	6	0	0	0	0	17
Geist Rd @ Wilcox Ave.	0	2	0	0	0	0	2
University Ave @ Holiday Apts	4	1	0	0	1	0	6
University Ave @ Goldizen St.	0	1	0	0	0	0	1
University Ave (by car wash)	0	3	0	0	0	0	3
Fred Meyer West	74	45	0	0	1	1	121
Rewak Dr. @ Safeway	22	13	0	0	0	0	35
Rewak Dr. @ Klondike Inn	4	0	0	0	0	0	4
Rewak @ Washington Dr/Garfield Ct	10	12	0	0	0	0	22
Washington Dr. @ Washington Plaza	4	4	0	0	0	0	8
Pioneer Park	4	7	0	0	0	0	11
Airport Way Access Rd @ Denny's Restaurant	11	7	0	0	1	0	19
Airport Way Access Rd @ Urgent Care	4	9	0	0	1	0	14
Access Road @ Lathrop	4	11	0	0	0	0	15
Kennicott Ave @ Shoppers Forum	11	21	0	0	2	1	35
Noel Wien Library	10	11	1	0	1	0	23
7th Ave @ Cowles	0	4	0	0	0	1	5
7th Ave @ Barnette	3	5	0	0	0	0	8
Transit Center	24	78	0	0	0	0	102
Subtotal	571	501	1	0	13	6	1092
Total boarding and alighting (with WC activity)	**572**	**501**					

BROWN LINE

Exhibit C.2.4 Brown Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	38	0	0	0	1	0	39
Lacey @ 7th Ave	0	4	0	0	0	0	4
10th Ave @ Noble	0	1	0	0	0	1	2
10th Ave @ Dixon Apts	0	0	0	0	0	0	0
3rd St @ Eagle St.	1	6	0	0	0	0	7
Farewell Ave @ Hamilton Ave.	3	6	0	0	0	0	9
Farewell Ave @ A St	1	0	0	0	0	0	1
Farewell Ave @ B St	0	1	0	0	0	0	1
Farewell Ave @ C St	0	1	0	0	0	0	1
C St @ Eureka	1	0	0	0	0	0	1
C St @ Dunbar	0	0	0	0	0	0	0
Baranof @ C St	3	2	0	0	0	0	5
Baranof St. @ A St.	1	0	0	0	0	0	1
Baranof St @ Hamilton	0	0	0	0	0	0	0
College Rd @ Gas Line	0	0	0	0	0	0	0
Bentley Mall parking lot	15	7	2	0	1	0	25
College Rd - M&O Schucks	1	1	0	0	2	0	4
Herb Miller Rd Westside - (Walmart/Lowes)	4	16	0	0	1	0	21
Merhar Ave. @ Helmericks Rd	14	11	0	0	0	0	25
Old Steese @ Fred Meyer East	3	6	0	0	0	0	9
Old Steese @ Fred Meyer East	0	0	0	0	0	0	0
Old Steese @ Safeway Gas	5	0	0	0	2	0	7
Old Steese @ North Gate Square	1	1	0	0	0	0	2
Old Steese @ Taco King	4	1	0	0	0	0	5
Morris Thompson Visitors Center	2	3	0	0	0	0	5
Lacey St @ Northward Building	0	16	0	0	0	1	17
Transit Center	8	22	0	0	0	1	31
Subtotal	105	105	2	0	7	3	222
Total boarding and alighting (with WC activity)	**107**	**105**					

GREEN LINE

Normally, zero people should be counted as boarding a bus at the end of a run. However, the Green Line data show a total of 31 people boarding at the end of the run at the Transit Center. This apparent discrepancy occurred because ride checks weren't 100 percent, and in some cases, riders were seen getting on to the bus when it ended its run at the Transit Center. If a total ride check had been performed, these 31 people would have been listed as being "already onboard" for the next bus run. However, the next run was not counted, so they were counted as boarding at the end of the surveyed run.

Exhibit C.2.5 Green Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	101	0	0	0	12	0	113
Noble St @ 8th Ave	1	0	0	0	0	0	1
Noble St @ 10th Ave.	0	0	0	0	0	0	0
Noble St @ Gaffney St	0	0	0	0	0	0	0
Gaffney St @ Access Alaska	0	0	0	0	0	0	0
Cushman @ 15th Ave	3	1	0	0	1	0	5
Cushman @ 17th Ave	2	1	0	0	2	0	5
Cushman @ 21st Ave	1	3	0	0	0	0	4
Cushman @ 24th Ave	11	2	0	0	0	0	13
Cushman @ 27th Ave	1	5	0	0	0	0	6
Old Richardson @ 30th Ave	0	1	0	0	0	0	1
Old Richardson @ Frontier Lodge	1	4	0	0	0	0	5
Old Richardson @ Alaska Club	1	1	0	0	1	0	3
Old Richardson @ Greer	0	0	0	0	0	0	0
Richardson Hwy off ramp @ on ramp	0	7	0	0	0	2	9
Badger @ Old Rich	0	9	0	0	0	1	10
Badger @ Sirlin	1	1	0	0	1	0	3
Badger @ Mc Peaks	5	5	0	0	4	1	15
Holmes @ Badger	0	0	0	0	0	0	0
Holmes @ Gravel Pit	0	4	0	0	0	0	4
Holmes @ Blazer Trail	0	0	0	0	0	0	0
Dennis @ Holmes	0	1	0	0	0	0	1
Dennis @ Stol	1	0	0	0	0	0	1
Dennis @ Duckpond Rd	0	1	0	0	0	0	1
Dennis @ Old Badger Rd	0	0	0	0	0	0	0
Badger @ Lakloey	3	1	0	0	0	0	4
Badger @ River View RV Park	0	0	0	0	0	0	0
Badger @ Lincolnwood	0	0	0	0	0	0	0
Badger @ Joy	0	0	0	0	0	0	0
Badger @ Old Badger Rd	1	0	0	0	0	0	1
Badger @ Loose Moose Loop	1	0	0	0	0	0	1
Badger @ Mattie	0	0	0	0	0	0	0
Badger @ Bobanna	0	0	0	0	0	0	0
Badger @ Kendall	0	0	0	0	0	0	0
Badger @ Endecott	0	3	0	0	0	1	4
Badger @ Peede (Holmes)	1	1	0	0	0	0	2
Badger @ Sandusky	0	2	0	0	0	0	2
Badger @ Hartzog Loop (Dave's Shop)	1	1	0	0	0	0	2
Badger @ Arctic Fox	0	0	0	0	0	0	0
Badger @ Nordale	10	6	0	0	0	0	16
Badger @ Bradway	2	0	0	0	0	0	2
Badger @ 2440 Badger	0	0	0	0	0	0	0
Badger @ Badger Trading Post	4	0	0	0	3	0	7
Badger @ Marigold	2	0	0	0	1	0	3
Badger @ Lions	1	0	0	0	0	0	1
Badger @ Larix Drive	1	0	0	0	0	0	1
Badger @ Peridot Rd.	1	2	0	0	0	0	3
Badger @ Plack Road	0	2	0	0	0	0	2
Badger @ Kimi	0	0	0	0	0	0	0
Badger @ Elvira	0	2	0	0	0	2	4
Badger @ Glacier State	0	0	0	0	0	0	0
Badger @ Monk Ct (Star of the North)	0	0	0	0	0	0	0
Badger @ Hurst Rd	2	1	0	0	0	0	3
Santa Clause Ln (North Pole Plaza)	16	26	0	0	2	2	46

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Exhibit C.2.5 Green Line Boarding and Alighting by Stop (Cont'd from North Pole Plaza)

Santa Claus Ln @ 1st Ave	1	1	0	0	1	0	3
Santa Claus Ln @ Wells Fargo	2	0	0	0	0	0	2
Santa Claus Ln @ 5th Ave	3	4	0	0	0	1	8
Old Rich @ 6th Ave	0	2	0	0	0	0	2
NPHS Blvd @ Owens St	0	1	0	0	0	1	2
NPHS Blvd @ Holiday St	0	1	0	0	0	0	1
North Pole High School	4	3	0	0	0	0	7
North Pole HS @ exit	1	0	0	0	0	0	1
NPHS Blvd @ Old Rich (South side of road)	0	2	0	0	0	0	2
8th Ave @ NP Middle School	1	2	0	0	1	0	4
8th Ave @ Blanket	3	1	0	0	0	0	4
8th Ave @ Ouida	1	2	0	0	0	0	3
8th Ave @ St Nicholas Dr	0	2	0	0	0	2	4
St. Nicholas Dr. @ 5th Ave	4	3	0	0	0	1	8
St Nicholas Dr @ Campground	1	0	0	0	0	0	1
St. Nicholas Dr. @ Santa Claus House	8	7	0	0	0	0	15
Santa Claus Ln @ Blockbuster Video	14	1	0	0	1	0	16
Badger Rd @ Doughchee	0	0	0	0	0	0	0
Badger Rd. @ Hurst Rd (Beaverbrook)	4	2	0	0	1	1	8
Badger Rd. @ Airway	0	0	0	0	0	0	0
Badger Rd @ Jolly Acres	1	0	0	0	1	0	2
Badger Rd @ Kimi	0	0	0	0	0	0	0
Badger Rd. @ Plack Rd.	1	0	0	0	1	0	2
Badger Rd @ Peridot	2	0	0	0	0	0	2
Badger Rd. @ Topaz	1	1	0	0	0	0	2
Badger Rd. @ Repp	1	0	0	0	0	0	1
Badger Rd. @ Badger Trading Post	0	1	0	0	0	0	1
Badger @ 2440 Badger	0	0	0	0	0	0	0
Badger Rd. @ Bradway	0	1	0	0	0	0	1
Badger Rd @ Candlite Loop	0	0	0	0	0	0	0
Badger Rd. @ Nordale Rd.	1	3	0	0	0	1	5
Badger Rd @ Arctic Fox	1	1	0	0	1	0	3
Badger Rd @ Hartzhog Loop	1	0	0	0	0	0	1
Badger Rd @ Sundusky	0	0	0	0	0	0	0
Badger Rd @ Badger Gas	6	3	0	0	1	0	10
Badger Rd. @ Endecott	3	0	0	0	0	0	3
Badger Rd. @ Kendall	0	0	0	0	0	0	0
Badger Rd. @ Bobanna	0	0	0	0	0	0	0
Badger Rd. @ Landing Rd.	0	0	0	0	0	0	0
Badger Rd. @ Loose Moose	0	1	0	0	0	0	1
Badger Rd. @ Old Badger Rd	1	1	0	0	1	0	3
Badger Rd. @ Joy	0	0	0	0	0	0	0
Badger Rd. @ River Veiw RV Park	0	0	0	0	0	0	0
Badger Rd @ Lowood	1	0	0	0	0	0	1
Badger Rd. @ Lakloey Dr.	2	0	0	0	0	0	2
Dennis @ Old Badger Rd	1	0	0	0	1	0	2
Dennis @ Duckpond Rd	0	0	0	0	0	0	0
Dennis @ Holmes	5	0	0	0	0	0	5
Holmes @ Blazer Trail	1	0	0	0	0	0	1
Holmes Rd @ Gravel Pit	0	0	0	0	0	0	0
Badger Rd. @ McPeaks	9	4	0	0	2	0	15
Badger @ Sirlin	2	0	0	0	0	0	2
Badger Rd. @ Old Rich Hwy	9	1	0	0	2	0	12
Cushman @ 12th Ave	1	4	0	0	0	0	5
Transit Center	0	107	0	0	6	4	117
Subtotal	272	255	0	0	47	20	169
Total boarding and alighting (with WC activity)	272	255					

GREY LINE

Exhibit C.2.6 Grey Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Fred Meyer East parking lot	6	0	0	0	0	0	6
Helmricks Rd (Fred Meyer East)	0	0	0	0	0	0	0
Helmricks Rd (Mt McKinley Bank)	0	0	0	0	0	0	0
Farmers Loop @ Old Steese (Mocha Dan's)	0	0	0	0	0	0	0
Farmer's Loop @ McGrath Rd	0	0	0	0	0	0	0
McGrath Rd @ 1/3 of the way up	0	2	0	0	0	0	2
McGrath Road @ 2/3 of the way up	0	2	0	0	0	0	2
McGrath Rd @ 1/3 of the way down	4	0	0	0	0	0	4
McGrath Rd @ 2/3 of the way down	0	0	0	0	0	0	0
Farmer's Loop @ Alexander	0	0	0	0	0	0	0
Farmer's Loop @ Fideler Rd	0	0	0	0	0	0	0
Farmer's Loop @ Skyline Drive	0	0	0	0	0	0	0
Farmer's Loop @ Mile 3 Marker	1	0	0	0	1	0	2
Farmer's Loop @ Water Thrush Dr	0	0	0	0	0	0	0
Farmer's Loop @ Summit Drive	2	0	0	0	1	0	3
Farmer's Loop @ Ski Boot Hill	0	0	0	0	0	0	0
Farmer's Loop @ Sundance	0	0	0	0	0	0	0
Farmer's Loop @ Grenac Road	0	0	0	0	0	0	0
Farmer's Loop @ Viewpointe Drive	1	0	0	0	0	0	1
Farmer's Loop @ Shuros Drive	1	0	0	0	0	0	1
Farmer's Loop @ Elbert Road	0	0	0	0	0	0	0
Farmer's Loop @ Scenic Loop	0	0	0	0	0	0	0
Farmer's Loop @ Sun Way	2	1	0	0	0	0	3
Farmer's Loop @ Ballaine Road	0	0	0	0	0	0	0
Farmer's Loop @ Iniakuk Rd	0	0	0	0	0	0	0
Farmer's Loop @ Madcap Lane	0	0	0	0	0	0	0
Farmer's Loop @ N. Tawana	1	0	0	0	0	0	1
UAF Wood Center	3	13	0	0	0	2	18
Farmer's Loop @ Madcap Lane	0	0	0	0	0	0	0
Farmer's Loop @ Inakuk	0	0	0	0	0	0	0
Farmer's Loop @ Ballaine Road	0	0	0	0	0	0	0
Farmer's Loop @ Sun Way	0	0	0	0	0	0	0
Farmer's Loop @ Auburn Drive	0	0	0	0	0	0	0
Farmer's Loop @ Scenic Loop	0	0	0	0	0	0	0
Farmer's Loop @ Sunnyside Dr	0	0	0	0	0	0	0
Farmer's Loop @ Midnight Sun St	0	0	0	0	0	0	0
Farmer's Loop @ Veiwpoint Rd	0	1	0	0	0	0	1
Farmer's Loop @ Candamar Rd	0	0	0	0	0	0	0
Farmer's Loop @ Sundance	0	0	0	0	0	0	0
Farmer's Loop @ Ski Boot Hill	1	0	0	0	0	0	1
Farmer's Loop @ Constitution Dr	0	1	0	0	0	0	1
Farmer's Loop @ Crossman/Summit	0	1	0	0	0	0	1
Farmer's Loop @ Water Thrush Rd	0	0	0	0	0	0	0
Farmer's Loop @ Delphininium	0	0	0	0	0	0	0
Farmer's Loop @ Bouton Ct	0	0	0	0	0	0	0
Farmer's Loop @ Skyline Drive	0	0	0	0	0	0	0
Farmer's Loop @ Fideler Rd	0	0	0	0	0	0	0
Farmer's Loop @ Alexander	0	0	0	0	0	0	0
Farmer's Loop @ McGrath Road	2	0	0	0	0	0	2
McGrath Rd @ 1/3 of the way down	2	0	0	0	0	0	2
Farmers Loop @ Sourdough Fuel Mart	0	0	0	0	0	0	0
Helmricks Rd @ Mt McKinley Bank	0	0	0	0	0	0	0
Helmricks Rd @ Fred Meyer East	0	0	0	0	0	0	0
Helmricks Rd @ Walmart	0	1	0	0	0	0	1
Fred Meyer East parking lot	1	2	0	0	0	0	3
Subtotal	27	24	0	0	2	2	55
Total boarding and alighting (with WC activity)	27	24					

ORANGE LINE

Exhibit C.2.7 Orange Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	11	0	0	0	0	0	11
5th Ave @ Barnette	0	0	0	0	0	0	0
5th Ave @ Wickersham	0	0	0	0	0	0	0
Cowles @ 6th Ave	0	0	0	0	0	0	0
Cowles @ 8th Ave	0	0	0	0	0	0	0
Noel Wien Library	2	0	0	0	0	0	2
Lathrop @ Chief Andrew Issac Health Center	0	2	0	0	0	0	2
Lathrop @ Big Dipper Ice Arena	0	0	0	0	0	0	0
Lathrop @ 22nd	0	0	0	0	0	0	0
Lathrop @ Soccer Fields (south of 23rd Ave)	0	0	0	0	0	0	0
30th Ave @ Boys and Girls Home	0	0	0	0	0	0	0
30th Ave @ Holm Town Nursery	0	0	0	0	0	0	0
30th Ave @ Arctic Spas	0	0	0	0	0	0	0
Cushman @ Hughes Ave.	0	0	0	0	0	0	0
Cushman @ Lithia Chevrolet	0	0	0	0	0	0	0
Behavioral Health Center	2	6	0	0	0	0	8
Van Horn Rd. @ Cushman	0	0	0	0	0	0	0
Van Horn @ Frontier Plumbing/Bank	0	0	0	0	0	0	0
Van Horn @ Lathrop	0	0	0	0	0	0	0
Van Horn @ International	0	0	0	0	0	0	0
Van Horn @ Industrial	0	1	0	0	0	0	1
Van Horn @ North Van Horn	0	0	0	0	0	0	0
Van Horn @ IDEA Home School	0	0	0	0	0	0	0
Van Horn @ Kenworth	0	0	0	0	0	0	0
Peger @ Standard	0	0	0	0	0	0	0
Peger @ Transit Maintenance Center	0	1	0	0	0	0	1
Peger @ Pickett/Animal Hospital	0	0	0	0	0	0	0
Peger @ DOT	0	0	0	0	0	0	0
Davis Rd @ Peger Rd	0	0	0	0	0	0	0
Davis Rd. @ Local 942 Union Hall	0	0	0	0	0	0	0
Davis Rd @ Jillian Square Apts	0	0	0	0	0	0	0
David Rd @ Alston	0	0	0	0	0	0	0
Davis Rd @ University	0	0	0	0	0	0	0
University Ave. @ Holden	0	0	0	0	0	0	0

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Exhibit C.2.7 Orange Line Boarding and Alighting by Stop (Cont'd from Fred Meyer West)

University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Fred Meyer West	1	2	0	0	0	0	3
University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Davis Rd @ University	0	1	0	0	0	0	1
Davis Rd @ Alston	0	0	0	0	0	0	0
Davis Rd @ Jillian Square Apts	1	0	0	0	0	0	1
Davis Rd @ Local 942 Union Hall	0	0	0	0	0	0	0
Surgery Center	0	0	0	0	0	0	0
Peger @ Pickett/Animal Hospital	0	0	0	0	0	0	0
Peger @ Transit Maintenance Center	0	0	0	0	0	0	0
Peger @ Alyeska Tire	0	0	0	0	0	0	0
Van Horn @ Bowers Office Products	0	0	0	0	0	0	0
Van Horn @ IDEA Home School	0	0	0	0	0	0	0
Van Horn @ North Van Horn	0	0	0	0	0	0	0
Van Horn @ Industrial	0	0	0	0	0	0	0
Van Horn @ International	0	0	0	0	0	0	0
Van Horn @ Lathrop	0	0	0	0	0	0	0
Van Horn @ John Deere	0	0	0	0	0	0	0
Van Horn @ Frontier Plumbing/Bank	0	0	0	0	0	0	0
Van Horn Rd. @ Cushman	0	0	0	0	0	0	0
Behavorial Center	1	1	0	0	0	0	2
Cushman @ Hughes Ave.	0	0	0	0	0	0	0
Cushman @ Lithia Chevrolet	0	0	0	0	0	0	0
30th Ave @ Chaz	0	0	0	0	0	0	0
30th Ave @ Arctic Fire and Safety	0	0	0	0	0	0	0
30th Ave @ Holm Town Nursery	0	0	0	0	0	0	0
30th Ave @ Women's Clinic	0	0	0	0	0	0	0
Lathrop @ Soccer Fields (south of 23rd Ave)	0	0	0	0	0	0	0
Lathrop @ 21st Ave	0	0	0	0	0	0	0
Lathrop @ Medical Dental Arts	0	0	0	0	0	0	0
Lathrop @ Chief Andrew Issac Health Center	0	0	0	0	0	0	0
Noel Wien Library	0	0	0	0	0	0	0
7th Ave @ Cowles	0	0	0	0	0	0	0
7th Ave @ Barnette	0	0	0	0	0	0	0
Transit Center	0	5	0	0	0	0	5
Subtotal	18	19	0	0	0	0	37
Total boarding and alighting (with WC activity)	18	19					

PURPLE LINE

Exhibit C.2.8 Purple Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	81	0	0	0	1	0	82
Noble St @ 8th Ave	0	2	0	0	0	0	2
Noble St @ 10th Ave.	0	3	0	0	0	0	3
Noble St @ Gaffney St	1	2	0	0	0	0	3
Gaffney St @ Access Alaska	0	3	0	0	0	0	3
Cushman @ 15th Ave	14	6	0	0	0	0	20
Cushman @ 17th Ave	6	6	0	0	0	0	12
Cushman @ 21st Ave	7	8	0	0	0	0	15
Cushman @ 24th Ave	14	14	0	0	0	0	28
Cushman @ 27th Ave	22	24	1	0	0	0	47
Cushman @ Hughes Ave.	5	8	0	0	0	0	13
Cushman @ Lithia Chevrolet	0	0	0	0	0	0	0
Van Horn Rd. @ Cushman	5	2	0	0	0	0	7
Van Horn @ Braddock (Fulford Electric)	0	1	0	0	0	0	1
Van Horn @ RR tracks	5	7	0	0	0	0	12
Easy St @ Lakeveiw entrance	2	0	0	0	0	0	2
Easy St @ Alaska Club	4	2	0	0	0	0	6
Old Rich. Hwy @ Frontier Club	16	7	0	0	0	0	23
Old Rich Hwy @ Romans	1	0	0	0	0	0	1
Old Rich Hwy @ Leasure St	0	0	0	0	0	0	0
Cushman @ 27th Ave	1	1	0	0	0	0	2
Cushman @ 24th Ave.	5	6	0	0	0	0	11
23rd Ave @ Bjerrmark	7	3	0	0	0	0	10
23rd Ave. @ Mercier St.	5	0	0	0	0	0	5
23rd Ave. @ Turner St.	0	0	0	0	0	0	0
23rd Ave. @ Barnette St.	1	0	0	0	0	0	1
23rd Ave. @ Cowles St.	3	3	0	0	0	0	6
23rd Ave @ Lathrop (Interior Community Health)	1	2	0	0	0	0	3
Lathrop @ 21st Ave	0	0	0	0	0	0	0
Lathrop @ Medical Dental Arts	0	1	0	0	0	0	1
Lathrop @ Chief Andrew Issac Health Center	6	5	0	0	0	0	11
Cowles St. @ Fbks Mem. Hospital	10	4	0	0	0	0	14
17th Ave @ Gillam Ave	8	2	0	0	0	1	11
Gillam Ave. @ 16th Ave	2	2	0	0	0	0	4
Gillam Ave. @ 15th Ave.	0	0	0	0	0	0	0
Gillam Ave. @ 14th Ave.	1	2	0	0	0	0	3
Gaffney St @ McAffee Chiropractic	1	3	0	0	0	0	4
Gaffney St. @ Turner St.	0	2	0	0	0	0	2
Cushman @ 12th Ave	0	4	0	0	0	0	4
Transit Center	9	76	0	0	0	0	85
Subtotal	243	211	1	0	1	1	457
Total boarding and alighting (with WC activity)	244	211					

RED LINE

Exhibit C.2.9 Red Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	89	0	0	0	1	0	90
5th Ave @ Barnette	1	0	0	0	0	0	1
5th Ave @ Wickersham	0	0	0	0	0	0	0
Cowles @ 6th Ave	2	0	0	0	0	0	2
Cowles @ 9th Ave	1	0	0	0	0	0	1
Noel Wien Library	21	19	0	0	0	0	40
Kennicott Dr @ Shoppers Forum	22	12	0	0	6	1	41
Lathrop @ Airport Way Access Road	8	2	0	0	0	0	10
Access Rd @ Urgent Care	1	7	0	0	0	0	8
Access Rd @ Denny's	5	6	0	0	0	0	11
Washington @ Washington Plaza	1	9	0	0	0	0	10
Washington @ Rewak Dr.	0	9	0	0	0	0	9
Rewak Dr @ Klondike Inn	0	1	0	0	0	0	1
Rewak Dr @ Safeway	19	26	0	0	0	0	45
Fred Meyer West	50	53	0	0	0	5	108
University Ave (by car wash)	4	3	0	0	0	0	7
University Ave @ Goldizen St	1	1	0	0	0	0	2
University Ave @ Holiday Apts	0	4	0	0	0	0	4
University Ave @ Geist Rd.	0	3	0	0	0	0	3
University Ave @ Sandvik	12	16	0	0	0	0	28
Alumni Dr @ University Ave	0	12	0	0	0	0	12
UAF Wood Center	38	30	1	0	0	0	69
College Rd. @ Hess St.	20	7	0	0	2	0	29
College Rd. @ Across from UAF Bldg	2	0	0	0	0	0	2
College Rd. @ Mike's Chevron	5	6	0	0	0	0	11
College Rd. @ Westwood Way	4	4	0	0	0	0	8
College Rd. @ Caribou Way	3	0	0	0	0	0	3
College Rd. @ Alaska Way	0	0	0	0	0	0	0
College Rd. @ Aurora Motel	4	2	0	0	1	0	7
Aurora Dr. @ Tamarack St.	3	5	0	0	0	0	8
Aurora Dr. @ Bridgewater Dr.	1	5	0	0	0	0	6
Aurora Dr. @ Carr Dr.	2	1	0	0	0	0	3
Aurora Dr. @ Southern Ave.	5	3	0	0	0	0	8
Aurora Dr. @ Marika Rd.	1	4	0	0	0	0	5
Danby Rd @ Wembley	4	4	0	0	0	0	8
Danby Rd @ Randy Smith Jr. High	0	0	0	0	0	0	0
Danby Rd @ Ann Wien Elementary	2	1	0	0	0	0	3
College Rd. @ Kathryn	5	7	0	0	0	0	12
College Rd. @ Bonnie St	0	0	0	0	0	0	0
College Rd @ Mary Leigh	2	0	0	0	0	0	2
College Rd @ Geraldo's	13	3	0	0	0	0	16
Herb Miller Rd Westside - (Walmart/Lowes)	13	20	0	0	0	0	33
Helmricks Rd (Fred Meyer East)	3	2	0	0	0	0	5
Helmricks Rd (Mt McKinley Bank)	17	5	0	0	0	0	22
Old Steese @ Fred Meyer East	14	3	0	0	0	0	17
Old Steese @ Safeway Gas	3	1	0	0	0	0	4
Old Steese @ North Gate Square	2	4	0	0	0	0	6
Old Steese @ Taco King	3	1	0	0	0	0	4
Morris Thompson Visitors Center	3	13	0	0	0	0	16
Lacey St @ Northward Building	0	20	0	0	0	0	20
Transit Center	23	76	0	0	0	0	99
Subtotal	432	410	1	0	6	2	859
Total boarding and alighting (with WC activity)	433	410					

YELLOW LINE

Exhibit C.2.10 Yellow Line Boarding and Alighting by Stop

	Passenger		Wheelchair		Bike		Total
STOP	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	
Transit Center	38	0	0	0	3	0	41
1st Ave @ Cowles St.	0	0	0	0	0	0	0
1st Ave @ State St.	0	0	0	0	0	0	0
1st Ave @ Grant St.	0	0	0	0	0	0	0
1st Ave @ Lathrop St.	1	0	0	0	0	0	1
2nd Ave @ Birch Park	4	0	1	0	0	0	5
2nd Ave @ Curling Club	2	0	0	0	0	0	2
Wilbur @ 2nd Ave (Carlson Center)	0	1	0	0	0	0	1
Wilbur @ Hilton	0	0	0	0	0	0	0
Wilbur @ Access Rd	0	0	0	0	0	0	0
Peger Rd. @ DMV	0	1	0	0	0	0	1
Davis Rd @ Peger Rd	0	0	0	0	0	0	0
Davis Rd. @ Local 942 Union Hall	0	0	0	0	0	0	0
Davis Rd @ Jillian Square Apts	2	1	0	0	0	0	3
David Rd @ Alston	0	0	0	0	0	0	0
Davis Rd @ University	2	0	0	0	0	0	2
University Ave. @ Holden	0	0	0	0	0	0	0
University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Fred Meyer West	15	14	0	0	0	0	29
Boat St @ Best Western	0	3	0	0	0	1	4
Boat St. @ River's Edge RV Park	0	0	0	0	0	0	0
Boat St. @ River's Edge Resort	7	0	0	0	0	0	7
Hoselton Rd. @ Pikes Landing Rd	2	8	0	0	0	0	10
Hoselton Rd. @ Pikes Lodge	0	1	0	0	0	0	1
Dale Rd @ Discovery Dr	2	1	0	0	0	0	3
Dale Rd. @ Broadmoor Ave.	1	2	0	0	0	0	3
Dale Rd @ Western Rd	2	1	0	0	0	0	3
Airport	0	3	0	0	0	0	3
Airport Frontage Rd.@ Air Cargo	0	0	0	0	0	0	0
Airport Frontage Rd. @ Fedex	0	0	0	0	0	0	0
Fred Meyer West	0	4	0	0	0	0	4
University Ave (by car wash)	0	1	0	0	0	0	1
University Ave @ Goldizen St	1	0	0	0	0	0	1
University Ave @ Holiday Apts	0	1	0	0	0	1	2
University Ave @ Geist Rd.	0	1	0	0	0	0	1
University Ave @ Sandvik	0	4	0	0	0	0	4
University Ave @ College Rd.	0	1	0	0	0	0	1
UAF Wood Center	3	3	1	0	0	0	7
Yukon Dr @ MBS Dorms	0	0	0	0	0	0	0
Yukon Dr @ Reichart Building	0	0	0	0	0	0	0
Yukon Dr @ UA Museum	3	3	0	0	0	0	6
Yukon Dr @ Butrovich/West Arctic Health	0	0	0	0	0	0	0
Geist Rd @ Loftus	0	0	0	0	0	0	0
Chena Pump Road @ Justa Store	0	2	0	0	0	0	2

(Continued on next page)

Exhibit C.2.10 Yellow Line Boarding and Alighting by Stop (Cont'd from Justa Store)

Amherst St. @ Chena Pump (Chenana Apts.)	14	3	0	0	0	1	18
Amherst St @ Glasgow	0	0	0	0	0	0	0
Amherst St @ Trinidad	0	3	0	0	0	0	3
Trinidad @ Palo Verde	0	0	0	0	0	0	0
Palo Verde @ Penn Place	0	0	0	0	0	0	0
Palo Verde @ Steelhead	0	0	0	0	0	0	0
Steelhead @ Amherst St	0	0	0	0	0	0	0
Steelhead @ Stanford	0	2	0	0	0	0	2
Steelhead @ Dartmouth	0	1	0	0	0	0	1
Dartmouth @ Trinidad	0	2	0	0	0	0	2
Dartmouth @ Woodridge	0	0	0	0	0	0	0
Dartmouth @ Hickory	0	0	0	0	0	0	0
Dartmouth @ Chena Pump Rd	0	0	0	0	0	0	0
Thompson Dr @ Geist	0	0	0	0	0	0	0
Yukon Dr @ Butrovich/West Arctic Health	1	4	0	0	0	0	5
Yukon Dr @ UA Museum	0	0	0	0	0	0	0
Yukon Dr @ Reichart Building	0	0	0	0	0	0	0
Yukon Dr @ MBS Dorms	0	0	0	0	0	0	0
UAF Wood Center	3	0	1	0	0	0	4
Yukon Dr @ MBS Dorms	0	0	0	0	0	0	0
Yukon Dr @ Reichart Building	0	0	0	0	0	0	0
Yukon Dr @ UA Museum	0	0	0	0	0	0	0
Yukon Dr @ Butrovich/West Arctic Health	0	0	0	0	0	0	0
Thompson Dr @ Geist	0	0	0	0	0	0	0
Geist Rd @ Loftus	1	0	0	0	0	0	1
Geist Rd @ National Park Service	0	0	0	0	0	0	0
Geist Rd @ Post Office	0	1	0	0	0	0	1
Geist Rd @ McDonald's	1	1	0	0	0	0	2
Geist Rd @ Wilcox Ave.	0	0	0	0	0	0	0
University Ave @ Holiday Apts	0	0	0	0	0	0	0
University Ave @ Goldizen St.	0	0	0	0	0	0	0
University Ave (by car wash)	0	0	0	0	0	0	0
Fred Meyer West	16	14	0	0	1	0	31
University Ave. @ Sophie Plaza	0	0	0	0	0	0	0
Davis Rd @ University	0	1	0	0	0	0	1
Davis Rd @ Alston	1	0	0	0	0	0	1
Davis Rd @ Jillian Square Apts	0	2	0	0	0	0	2
Davis Rd @ Local 942 Union Hall	0	0	0	0	0	0	0
Peger Rd. @ Davis Rd.	0	0	0	0	0	0	0
Peger Rd. @ DMV	0	0	0	0	0	0	0
Wilbur St. @ N. Airport Access Rd.	0	0	0	0	0	0	0
Wilbur @ Hilton	0	0	0	0	0	0	0
Wilbur @ 2nd Ave (Growden Park)	1	3	0	0	0	1	5
2nd Ave @ Curling Club	1	1	0	1	0	0	3
2nd Ave @ Birch Park	0	1	0	0	0	0	1
1st Ave @ Lathrop St.	0	0	0	0	0	0	0
1st ave @ Grant St	1	2	0	0	0	0	3
1st Ave @ State St	0	2	0	0	0	0	2
1st Ave @ Cowles St.	0	0	0	0	0	0	0
1st Ave @ Barnette St.	0	0	0	0	0	0	0
Barnette St. @ 3rd Ave.	0	3	0	0	0	0	3
Transit Center	4	9	0	0	0	0	13
Subtotal	129	111	3	1	4	4	252
Total boarding and alighting (with WC activity)	132	112					

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D

ONBOARD SURVEY RESULTS

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APPENDIX D – ONBOARD SURVEY RESULTS

Question 1: What line are you riding today?

Exhibit D.1 Winter Surveys by Line

Q1. Winter Results		
	Frequency	**Percent**
Red	263	27.3%
Blue	252	26.1%
Green	141	14.6%
Purple	130	13.5%
Yellow	73	7.6%
Brown	56	5.8%
Black	17	1.8%
Orange	17	1.8%
Grey	15	1.6%
Total	964	100.0%

Exhibit D.2 Summer Surveys by Line

Q1. Summer Results		
	Frequency	**Percent**
Red	206	25.2%
Blue	228	27.9%
Green	116	14.2%
Purple	134	16.4%
Yellow	40	4.9%
Brown	44	5.4%
Black	18	2.2%
Orange	10	1.2%
Grey	22	2.7%
Total	818	100.0%

Question 2: What is the primary purpose of your trip today?

Exhibit D.3 Winter Trip Purposes

Q2. Winter Results		
	Frequency	**Percent**
Work	244	25.7%
Shopping	164	17.2%
School	123	12.9%
Home	100	10.5%
Leisure/entertainment	77	8.1%
Personal business	75	7.9%
Visiting friends/family	55	5.8%
Medical/healthcare	50	5.3%
Other	50	5.3%
Household errands	13	1.4%
Total	951	100.0%

Exhibit D.4 Summer Trip Purposes

Q2. Summer Results		
	Frequency	**Percent**
Work	210	25.7%
Shopping	164	20.1%
School	43	5.3%
Home	114	14.0%
Leisure/entertainment	76	9.3%
Personal business	54	6.6%
Visiting friends/family	68	8.3%
Medical/healthcare	34	4.2%
Other	37	4.5%
Household errands	16	2.0%
Total	816	100.0%

Question 3: Where did your board the bus for this trip?

Results were omitted from this analysis due to a broad range of response descriptions for each boarding point. In lieu of using respondent-provided answers to Questions 3 and 5, a good approximation of stop usage was determined by utilizing the ride check data in Chapter 3.

Question 4: How did you access the bus stop for this trip?

Exhibit D.5 Winter Stop Access Mode

Q4. Winter Results		
	Frequency	**Percent**
Walk less than 5 minutes	500	53.1%
Walk more than 5 minutes	299	31.7%
Transferred from other MACS bus	71	7.5%
Shared ride/dropped off	40	4.2%
Other	14	1.5%
Bicycle	12	1.3%
Drive self	6	0.6%
Total	942	100.0%

Exhibit D.6 Summer Stop Access Mode

Q4. Summer Results		
	Frequency	**Percent**
Walk less than 5 minutes	389	48.3%
Walk more than 5 minutes	280	34.8%
Transferred from other MACS bus	53	6.6%
Shared ride/dropped off	23	2.9%
Other	8	1.0%
Bicycle	48	6.0%
Drive self	4	0.5%
Total	805	100.0%

Question 5: Where will you get off this bus?

Results were omitted from this analysis due to a broad range of response descriptions for each boarding point. In lieu of using respondent-provided answers to Questions 3 and 5, a good approximation of stop usage was determined by utilizing the ride check data in Chapter 3.

Question 6: How will you get from the bus stop to your destination?

Exhibit D.7 Winter Final Destination Access Mode

Q6. Winter Results		
	Frequency	**Percent**
Walk less than 5 minutes	485	51.8%
Walk more than 5 minutes	318	34.0%
Transfer to other MACS bus	84	9.0%
Shared ride/picked up	18	1.9%
Other	16	1.7%
Bicycle	9	1.0%
Drive self	6	0.6%
Total	936	100.0%

Exhibit D.8 Summer Final Destination Access Mode

Q6. Summer Results		
	Frequency	**Percent**
Walk less than 5 minutes	408	50.9%
Walk more than 5 minutes	251	31.3%
Transfer to other MACS bus	70	8.7%
Shared ride/picked up	13	1.6%
Other	7	0.9%
Bicycle	46	5.7%
Drive self	6	0.7%
Total	801	100.0%

Question 7: Did you have access to a personal vehicle for this trip?

Exhibit D.9 Winter Vehicle Access

Q7. Winter Results		
	Frequency	**Percent**
Yes	120	12.9%
No	810	87.1%
Total	930	100.0%

Exhibit D.10 Summer Vehicle Access

Q7. Summer Results		
	Frequency	**Percent**
Yes	105	13.2%
No	688	86.8%
Total	793	100.0%

Question 8: How did you pay for this trip?

Exhibit D.11 Winter Fare Payment Methods

Q8. Winter Results		
	Frequency	Percent
UAF Student Pass	297	31.3%
Monthly Pass	192	20.2%
Cash	177	18.6%
Free (Seniors 60+)	104	10.9%
Token	101	10.6%
Day Pass	79	8.3%
Total	950	100.0%

Exhibit D.12 Summer Fare Payment Methods

Q8. Summer Results		
	Frequency	Percent
UAF Student Pass	170	21.0%
Monthly Pass	168	20.7%
Cash	189	23.3%
Free (Seniors 60+)	145	17.9%
Token	70	8.6%
Day Pass	68	8.4%
Total	810	100.0%

Question 9: Please indicate your satisfaction with various MACS service characteristics by checking the appropriate box.

Exhibit D.13 Winter Satisfaction with MACS Service

Q9. Winter Results																
	Service Frequency		Operating Hours		On-Time Performance		Onboard Safety		Vehicle Cleanliness		Driver Attitude/ Helpfulness		Bus Stop Amenities		Cost of Ride	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Excellent	345	37.8%	248	27.3%	267	29.5%	525	57.6%	449	49.6%	582	63.7%	239	26.4%	452	50.9%
Good	390	42.7%	373	41.1%	383	42.3%	332	36.4%	352	38.9%	274	30.0%	292	32.3%	296	33.3%
Fair	142	15.6%	225	24.8%	207	22.9%	48	5.3%	91	10.0%	46	5.0%	200	22.1%	129	14.5%
Poor	36	3.9%	62	6.8%	48	5.3%	6	0.7%	14	1.5%	11	1.2%	173	19.1%	11	1.2%
Total	913	100.0%	908	100.0%	905	100.0%	911	100.0%	906	100.0%	913	100.0%	904	100.0%	888	100.0%

Exhibit D.14 Summer Satisfaction with MACS Service

Q9. Summer Results																
	Service Frequency		Operating Hours		On-Time Performance		Onboard Safety		Vehicle Cleanliness		Driver Attitude/ Helpfulness		Bus Stop Amenities		Cost of Ride	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Excellent	343	43.2%	262	33.4%	330	42.1%	484	61.9%	433	55.4%	530	67.9%	264	34.2%	416	54.2%
Good	320	40.3%	316	40.3%	318	40.6%	261	33.4%	280	35.9%	206	26.4%	248	32.1%	240	31.3%
Fair	101	12.7%	164	20.9%	119	15.2%	27	3.5%	58	7.4%	35	4.5%	149	19.3%	96	12.5%
Poor	30	3.8%	42	5.4%	16	2.0%	10	1.3%	10	1.3%	10	1.3%	111	14.4%	15	2.0%
Total	794	100.0%	784	100.0%	783	100.0%	782	100.0%	781	100.0%	781	100.0%	772	100.0%	767	100.0%

Question 10: On average, how many times a week do you ride MACS (consider each one-way trip as one ride)?

Exhibit D.15 Winter Weekly MACS Usage

Q10. Winter Results		
Weekly MACS Usage	**Frequency**	**Percent**
Less than twice	132	14.2%
3-4 times	238	25.6%
5-6 times	210	22.6%
7 or more times	351	37.7%
Total	931	100.0%

Exhibit D.16 Summer Weekly MACS Usage

Q10. Summer Results		
	Frequency	**Percent**
Less than twice	127	16.0%
3-4 times	232	29.3%
5-6 times	174	21.9%
7 or more times	260	32.8%
Total	793	100.0%

Question 11: What, if anything, prevents you from increasing your use of MACS bus service? (multiple responses allowed)

Exhibit D.17 Winter Factors Preventing Increased MACS Usage

Q11. Winter Results														
	Not enough bus stops		Cost/fare		Not enough routes		Does not travel when I need it		Does not travel where I need to go		Nothing		Other	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	75	7.8%	40	4.1%	67	6.9%	246	25.5%	188	19.5%	353	36.6%	96	9.9%
Not selected	890	92.2%	925	95.9%	898	93.1%	719	74.5%	777	80.5%	612	63.4%	869	90.1%
Total	965	100.0%	965	100.0%	965	100.0%	965	100.0%	965	100.0%	965	100.0%	965	100.0%

Exhibit D.17a Winter Factors Preventing Increased MACS Usage – Other Factors[16]

Q11 (Other). Winter Results		
	Frequency	Percent
Bus stop amenities	6	8.5%
Connections/transfers	4	5.6%
Boring	1	1.4%
Doesn't go where I need to	4	5.6%
Don't need to travel more	1	1.4%
Express route	1	1.4%
Frequency	6	8.5%
Get back to school	1	1.4%
Have own car	3	4.2%
Like riding my bike	1	1.4%
Live out of area	5	7.0%
Lack of weekend/Sunday service	21	29.6%
On-time performance	3	4.2%
Safety/security	1	1.4%
Schedule	7	9.9%
Takes too long	2	2.8%
Taxi	1	1.4%
Weather	3	4.2%
Total	71	100.0%

[16] In the winter survey, 96 respondents indicated "other" factors prevented them from using MACS more, but only 71 actually indicated/described what their other factor was, hence the discrepancy in the total number of "other" responses in Exhibits D.17 and D.17a

Exhibit D.18 Summer Factors Preventing Increased MACS Usage

Q11. Summer Results														
	Not enough bus stops		Cost/fare		Not enough routes		Does not travel when I need it		Does not travel where I need to go		Nothing		Other	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	53	6.1%	33	3.8%	60	6.9%	203	23.3%	139	16.0%	287	33.0%	96	9.9%
Not selected	818	93.9%	838	96.2%	811	93.1%	668	76.7%	732	84.0%	584	67.0%	869	90.1%
Total	871	100.0%	871	100.0%	871	100.0%	871	100.0%	871	100.0%	871	100.0%	965	100.0%

Exhibit D.18a Summer Factors Preventing Increased MACS Usage – Other Factors[17]

Q11 (Other). Summer Results		
	Frequency	Percent
All of the above	1	1.0%
Bus stop/vehicle amenities	7	7.1%
Connections/transfers	1	1.0%
Doesn't go where I need to	3	3.1%
Driver attitude	2	2.0%
Frequency	3	3.1%
Have other transportation	4	4.1%
Live out of area/visitor	20	20.4%
Lack of weekend/Sunday service	30	30.6%
Medical reasons	4	4.1%
New in town	1	1.0%
No need	1	1.0%
On-time performance	3	3.1%
Road construction	1	1.0%
Safety/security	1	1.0%
Schedule	12	12.2%
Smokers	1	1.0%
Sometimes	1	1.0%
Takes too long	1	1.0%
Weather	1	1.0%
Total	98	100.0%

[17] In the summer survey, 96 respondents indicated "other" factors prevented them from using MACS more, but 98 actually indicated/described what their other factor was, this discrepancy is due to the fact that some respondents did not indicate an "other" reason, but nonetheless filled out the other factor portion of the survey.

Question 12: Please select your top preferences regarding potential MACS service improvements (select only two).

Exhibit D.19 Winter Preferred Service Improvements

Q12. Winter Results										
	Increased service frequency		Earlier weekday service		Sunday service		Later weekday service		New/more destinations	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	280	29.0%	121	12.5%	553	57.3%	243	25.2%	86	8.9%
Not selected	685	71.0%	844	87.5%	412	42.7%	722	74.8%	879	91.1%
Total	965	100.0%	965	100.0%	965	100.0%	965	100.0%	965	100.0%

Q12. Winter Results (continued)										
	Lower fares		Newer vehicles		Improved technology		Bus tracking (GPS) technology		More bus stops/ shelters/signage	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	65	6.7%	22	2.3%	26	2.7%	72	7.5%	150	15.5%
Not selected	900	93.3%	943	97.7%	939	97.3%	893	92.5%	815	84.5%
Total	965	100.0%	965	100.0%	965	100.0%	965	100.0%	965	100.0%

Exhibit D.20 Summer Preferred Service Improvements

Q12. Summer Results										
	Increased service frequency		Earlier weekday service		Sunday service		Later weekday service		New/more destinations	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	247	30.0%	92	11.2%	481	58.5%	204	24.8%	88	10.7%
Not selected	575	70.0%	730	88.8%	341	41.5%	618	75.2%	734	89.3%
Total	822	100.0%	822	100.0%	822	100.0%	822	100.0%	822	100.0%

Q12. Summer Results (continued)										
	Lower fares		Newer vehicles		Improved technology		Bus tracking (GPS) technology		More bus stops/ shelters/signage	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	40	4.9%	16	1.9%	17	2.1%	67	8.2%	149	18.1%
Not selected	782	95.1%	806	98.1%	805	97.9%	755	91.8%	673	81.9%
Total	822	100.0%	822	100.0%	822	100.0%	822	100.0%	822	100.0%

Question 13: If a fare increase was necessary to implement your preferred service improvement, what per-trip increase would you support?

Exhibit D.21 Winter Acceptance of Fare Increases to Fund Improvements

Q13. Winter Results		
	Frequency	**Percent**
25 cents more	294	34.3%
50 cents more	175	20.4%
$1.00 more	83	9.7%
Nothing	306	35.7%
Total	858	100.0%

Exhibit D.22 Summer Acceptance of Fare Increases to Fund Improvements

Q13. Summer Results		
	Frequency	**Percent**
25 cents more	237	32.6%
50 cents more	151	20.8%
$1.00 more	76	10.5%
Nothing	262	36.1%
Total	726	100.0%

Questions 14 and 15: What is your home ZIP code/What is your work or school ZIP code?

Exhibit D.23 Winter Home ZIP Code

Q14. Winter Results		
	Frequency	**Percent**
99701	315	40.4%
99702	6	0.8%
99703	4	0.5%
99705	128	16.4%
99706	2	0.3%
99707	15	1.9%
99708	7	0.9%
99709	166	21.3%
99711	2	0.3%
99712	9	1.2%
99775	33	4.2%
Other Alaska ZIP codes	42	5.4%
Outside Alaska/not found	51	6.5%
Total	780	100.0%

Exhibit D.24 Winter Work/School ZIP Code

Q15. Winter Results		
99701	201	45.3%
99702	5	1.1%
99705	30	6.8%
99706	1	0.2%
99707	15	3.4%
99708	6	1.4%
99709	57	12.8%
99711	1	0.2%
99712	4	0.9%
99775	94	21.2%
Other Alaska ZIP codes	5	1.1%
Outside Alaska/not found	25	5.6%
Total	444	100.0%

Exhibit D.25 Summer Home ZIP Code

Q14. Summer Results		
	Frequency	**Percent**
99701	266	41.8%
99702	2	0.3%
99703	1	0.2%
99705	113	17.8%
99706	2	0.3%
99707	21	3.3%
99708	14	2.2%
99709	122	19.2%
99710	1	0.2%
99711	3	0.5%
99712	12	1.9%
99714	3	0.5%
99775	16	2.5%
Other Alaska ZIP codes	23	3.6%
Outside Alaska/not found	37	5.8%
Total	636	100.0%

Exhibit D.26 Summer Work/School ZIP Code

Q15. Summer Results		
99701	157	47.6%
99702	4	1.2%
99703	3	0.9%
99705	25	7.6%
99707	17	5.2%
99708	2	0.6%
99709	42	12.7%
99710	1	0.3%
99711	1	0.3%
99712	3	0.9%
99714	3	0.9%
99715	1	0.3%
99775	53	16.1%
Other Alaska ZIP codes	7	2.1%
Outside Alaska/not found	11	3.3%
Total	330	100.0%

Question 16: What is your age?

Exhibit D.27 Winter Rider Age

Q16. Winter Results		
	Frequency	Percent
17 or younger	45	5.1%
18-44 years old	543	61.1%
45-64 years old	252	28.4%
65 years or older	48	5.4%
Total	888	100.0%

Exhibit D.28 Summer Rider Age

Q16. Summer Results		
	Frequency	Percent
17 or younger	53	6.9%
18-44 years old	395	51.5%
45-64 years old	242	31.6%
65 years or older	77	10.0%
Total	767	100.0%

Question 17: What is your gender?

Exhibit D.29 Winter Rider Gender

Q17. Winter Results		
	Frequency	Percent
Male	438	58.2%
Female	315	41.8%
Total	753	100.0%

Exhibit D.30 Summer Rider Gender

Q17. Summer Results		
	Frequency	Percent
Male	344	53.3%
Female	301	46.7%
Total	645	100.0%

Question 18: Please select the technologies you have access to.

Exhibit D.31 Winter Rider Access to Technology

Q18. Winter Results										
	Internet		Email		Text messaging		Social media (Facebook/Twitter)		Smartphone (iPhone, Android)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	624	62.9%	558	56.3%	543	54.7%	424	42.7%	355	35.8%
Not selected	368	37.1%	434	43.8%	449	45.3%	568	57.3%	637	64.2%
Total	992	100.0%	992	100.0%	992	100.0%	992	100.0%	992	100.0%

Exhibit D.32 Summer Rider Access to Technology

Q18. Summer Results										
	Internet		Email		Text messaging		Social media (Facebook/Twitter)		Smartphone (iPhone, Android)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Selected	478	58.2%	437	53.2%	444	54.0%	306	37.2%	288	35.0%
Not selected	344	41.8%	385	46.8%	378	46.0%	516	62.8%	534	65.0%
Total	822	100.0%	822	100.0%	822	100.0%	822	100.0%	822	100.0%

Question 19: What is your employment status?

Exhibit D.33 Winter Rider Employment Status

Q19. Winter Results		
	Frequency	Percent
Employed (full-/part-time)	384	53.2%
Looking for work	175	24.2%
Retired	86	11.9%
Homemaker	29	4.0%
Student (full-/part-time)	48	6.6%
Total	722	100.0%

Exhibit D.34 Summer Rider Employment Status

Q19. Summer Results		
	Frequency	Percent
Employed (full-/part-time)	45	5.9%
Looking for work	543	70.8%
Retired	252	32.9%
Homemaker	252	32.9%
Student (full-/part-time)	48	6.3%
Total	1,140	148.6%

Question 20: What is your annual household income?

Exhibit D.35 Winter Rider Household Income

Q20. Winter Results		
	Frequency	**Percent**
Less than $10,000 per year	315	38.1%
$10,000 to $14,999 per year	139	16.8%
$15,000 to $24,999 per year	143	17.3%
$25,000 to $44,999 per year	131	15.9%
$45,000 to $64,999 per year	41	5.0%
$65,000 or more per year	57	6.9%
Total	826	100.0%

Exhibit D.36 Summer Rider Household Income

Q20. Summer Results		
	Frequency	**Percent**
Less than $10,000 per year	229	35.3%
$10,000 to $14,999 per year	115	17.7%
$15,000 to $24,999 per year	107	16.5%
$25,000 to $44,999 per year	110	16.9%
$45,000 to $64,999 per year	44	6.8%
$65,000 or more per year	44	6.8%
Total	649	100.0%

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E

COMMUNITY SURVEY RESULTS

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APPENDIX E – COMMUNITY SURVEY RESULTS

FREQUENCY TABLES

All respondents were asked to complete Questions 1 through 5.

Exhibit E.1 Transit Awareness

Q1. Select all transit/transportation service(s) you are currently aware of.		
	Frequency	**Percent of Respondents**
MACS	521	92.5%
Van Tran	312	55.4%
Taxi service	355	63.1%
Social service agency	68	12.1%
Other	36	6.4%
Total Responses	1,292	

n = 563

Multiple answers were allowed, therefore the total number of responses exceeds the sample size.

Exhibit E.2 Source of Transit Awareness

Q2. How did you become aware of these services?		
	Frequency	**Percent of Respondents**
Saw vehicle	376	66.8%
Saw sign/information display/advertisement	184	32.7%
Used the service	230	40.9%
Friend/family	114	20.2%
Employer/co-worker	68	12.1%
Other	56	9.9%
Total	1,028	

n = 563

Multiple answers were allowed, therefore the total number of responses exceeds the sample size.

Exhibit E.3 Perception of Transit

Q3. Please indicate your level of agreement with the following statement:										
	Public transit is a valuable community service.		Public transit provides access to important local services.		Public transit meets the needs of those without other travel options.		Public transit meets the needs of my family/household.		I know where to get information about public transit.	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Agree	489	88.7%	434	79.1%	331	60.6%	210	39.2%	368	67.4%
Somewhat agree	49	8.9%	89	16.2%	150	27.5%	147	27.4%	125	22.9%
Somewhat disagree	7	1.3%	15	2.7%	47	8.6%	65	12.1%	26	4.8%
Disagree	6	1.1%	11	2.0%	18	3.3%	114	21.3%	27	4.9%
Total	551	100.0%	549	100.0%	546	100.0%	536	100.0%	546	100.0%

n = 536 – 551

Exhibit E.4 Public Transit Use (Household)

Q4. Does anyone in your household use public transit?		
	Frequency	Percent
Yes	225	41.7%
No	315	58.3%
Total	540	100.0%

n = 540

Exhibit E.5 Public Transit Use (Personal)

Q5. Have you used public transit in the FNSB within the past 90 days?		
	Frequency	Percent
Yes	195	35.8%
No	349	64.2%
Total	544	100.0%

n = 544

Respondents citing use of MACS or Van Tran in the 90 days prior to survey contact (Question 5) were instructed to complete Questions 6 through 11.

Exhibit E.6 Public Transit Mode (Rider)

Q6. Which public transit service do you use most often?		
	Frequency	Percent
MACS	204	96.2%
Van Tran	8	3.8%
Total	212	100.0%

n = 212

Exhibit E.7 Frequency of Use (Rider)

Q7. How many times a week do you typically ride public transit?		
	Frequency	**Percent**
Zero	1	0.5%
Less than twice	75	35.2%
3-4 times	62	29.1%
5-6 times	29	13.6%
7 or more	46	21.6%
Total	213	100.0%

n = 213

Exhibit E.8 Trip Purpose (Rider)

Q8. What is your most common trip purpose when riding public transit?		
	Frequency	**Percent**
Home	42	19.6%
Work	59	27.6%
School	14	6.5%
Visiting friends/family	24	11.2%
Medical/healthcare	7	3.3%
Leisure/entertainment	28	13.1%
Personal business/ household errands	6	2.8%
Other	25	11.7%
Total	214	100.0%

n = 214

Exhibit E.9 Barriers to Increased Use of Public Transit (Rider)

Q9. What, if anything, prevents you from increasing your use of MACS bus service?														
	Does not travel where I need it to go		Does not travel when I need it		Inconvenient bus stops		Costs too much		Routes not frequent enough		Nothing		Other	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Selected	57	10%	45	8.0%	27	4.8%	6	1.1%	75	13.3%	49	8.7%	51	9.1%
Not selected	506	90%	518	92.0%	536	95.2%	557	98.9%	488	86.7%	514	91.3%	512	90.9%
Total	563	100%	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%

Exhibit E.10 Anticipated Additional Transit Usage (Rider)

Q10. If those barriers no longer existed, how many more trips per week would you make on public transit?		
	Frequency	**Percent**
Less than two more	50	24.2%
3-4 more trips	66	31.9%
5-6 more trips	35	16.9%
7 or more trips	56	27.1%
Total	207	100.0%

n = 207

Exhibit E.11 Change in Personal Circumstances Affecting Transit Use (Rider)

Q11. Is there a change in your personal circumstances that would cause you to use MACS more often?		
	Frequency	**Percent**
Loss of personal vehicle	56	25.8%
New job location	15	6.9%
Change in income	10	4.6%
Bus stop closer to my home	34	15.7%
Higher fuel prices	12	5.5%
Nothing	73	33.6%
Other	17	7.8%
Total	217	100.0%

n = 217

Respondents citing no use of MACS or Van Tran in the 90 days prior to survey contact (Question 5) were instructed to complete Questions 12 through 15.

Exhibit E.12 Primary Method of Transportation (Non-Rider)

Q12. What is your primary method of transportation?		
	Frequency	Percent
Walk	23	5.7%
Bicycle	24	5.9%
Personal vehicle/drive alone	311	76.8%
Carpool/vanpool	15	3.7%
Mobility device (wheelchair, scooter, etc.)	12	3.0%
Taxi	4	1.0%
Other	16	4.0%
Total	405	100.0%

n = 405

Exhibit E.13 Barriers to Use of Public Transit (Non-Rider)

Q13. What, if anything, is preventing you from using public transit?														
	Does not travel where I need it to go		Does not travel when I need it		Inconvenient bus stops		Costs too much		Routes not frequent enough		Nothing		Other	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Selected	137	24.3%	100	17.8%	70	12.4%	4	0.7%	88	15.6%	102	18.1%	98	17.4%
Not selected	426	75.7%	463	82.2%	493	87.6%	559	99.3%	475	84.4%	461	81.9%	465	82.6%
Total	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%

Exhibit E.14 Anticipated Transit Usage (Non-Rider)

Q14. If those barriers no longer existed, how many trips per week would you likely make on public transit?		
	Frequency	**Percent**
None	74	19.5%
Less than two trips	76	20.1%
3-4 more trips	104	27.4%
5-6 more trips	57	15.0%
7 or more trips	68	17.9%
Total	379	100.0%

n = 379

Exhibit E.15 Change in Personal Circumstances Affecting Transit Use (Non-Rider)

Q15. Is there a change in your personal circumstances that would encourage you to use MACS?		
	Frequency	**Percent**
Loss of personal vehicle	133	34.6%
New job location	26	6.8%
Change in income	12	3.1%
Bus stop closer to my home	86	22.4%
Higher fuel prices	16	4.2%
Nothing	79	20.6%
Other	32	8.3%
Total	384	100.0%

n = 384

All respondents were asked to complete Questions 16 through 25.

Exhibit E.16 Long-Term Mobility Issues

Q16. In your opinion, what long-term mobility issues should the FNSB focus on?																
	Develop long-range plans to identify new transportation solutions		Widen local roadways		Add more bus service		Develop Borough-wide carpool/vanpool program		Improve bicycle paths		Increase paratransit coordination		Improve local roads/fix potholes		Other	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Selected	181	32.1%	61	10.8%	231	41.0%	78	13.9%	147	26.1%	49	8.7%	144	25.6%	85	15.1%
Not selected	382	67.9%	502	89.2%	332	59.0%	485	86.1%	416	73.9%	514	91.3%	419	74.4%	478	84.9%
Total	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%	563	100.0%

Exhibit E.17 Top Issues for the FNSB

Q17. What issues (in general) are your top three concern(s) for the FNSB?						
	First Choice		Second Choice		Third Choice	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Crime/safety	130	25.8%	42	8.3%	59	11.7%
Economy	72	14.3%	81	16.1%	55	10.9%
Education	58	11.5%	65	12.9%	41	8.1%
Energy prices/ space heating	105	20.8%	83	16.5%	48	9.5%
Environmental issues	35	6.9%	40	7.9%	45	8.9%
Healthcare	30	6.0%	58	11.5%	62	12.3%
Transportation/ mobility	30	6.0%	58	11.5%	66	13.1%
Traffic congestion	6	1.2%	11	2.2%	18	3.6%
Vehicle fuel prices	38	7.5%	57	11.3%	87	17.3%
Total	504	100.0%	495	100.0%	481	100.0%

n = 481-504

Question 18 asked respondents to provide their home ZIP code and work/school ZIP code (if applicable).

Exhibit E.18 Top Reported ZIP Codes

Top Five Reported ZIP Codes		
	Frequency	**Percent**
99701	145	31.9%
99709	132	29.0%
99705	64	14.1%
99712	44	9.7%
99714	13	2.9%

Question 19 asked respondents to indicate the cross streets nearest their home. No notable patterns were observed. Due to the complexity of the responses, this data is not included in this Appendix.

Exhibit E.19 Employment Status

Q20. What is your current employment status?		
	Frequency	**Percent**
Employed (Full-/part-time)	344	65.4%
Looking for work	74	14.1%
Retired	65	12.4%
Homemaker	28	5.3%
Student (Full-/part-time)	15	2.9%
Total	526	100.0%

n = 526

Exhibit E.20 School Status

Q21. Do you attend school?		
	Frequency	**Percent**
Yes	65	12.5%
No	454	87.5%
Total	519	100.0%

n = 519

Exhibit E.21 Age

Q22. What is your age?		
	Frequency	**Percent**
17 or younger	4	0.8%
18-44 years	261	49.5%
45-64 years	198	37.6%
65 years or older	64	12.1%
Total	527	100.0%

n = 527

Exhibit E.22 Gender

Q23. What is your gender?		
	Frequency	**Percent**
Male	239	45.4%
Female	287	54.6%
Total	526	100.0%

n = 526

Exhibit E.23 Home Language

Q24. Do you speak a language other than English at home?		
	Frequency	**Percent**
Yes	53	10.2%
No	467	89.8%
Total	520	100.0%

n = 520

Exhibit E.24 Home Language – Specify

Language Other Than English - Specify	
	Frequency
Spanish	12
German	8
Athabaskan/Gwich'in/other native tongue	5
American Sign Language/ASL	3
Bulgarian	2
Chinese	2
French	2
Italian	1
Russian	1
Tai	1

Exhibit E.25 Household Income

Q25. What was your total household income in 2012?		
	Frequency	**Percent**
Less than $10,000 per year	67	14.0%
$10,000 to $14,999 per year	43	9.0%
$15,000 to $24,999 per year	90	18.8%
$25,000 to $44,999 per year	89	18.6%
$45,000 to $64,999 per year	53	11.1%
$65,000 per year or more	136	28.5%
Total	478	100.0%

n = 478

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F

SURVEY INSTRUMENTS

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APPENDIX F – SURVEY INSTRUMENTS

Exhibit F.1 Onboard Survey Instrument

MACS Customer Survey 2013

Date:_____

1. Which MACS line are you currently riding?
☐1 Black Line ☐2 Brown Line ☐3 Grey Line ☐4 Purple Line
☐5 Yellow Line ☐6 Green Line
☐7 Red Line ☐8 Orange Line
☐9 Blue Line

2. What is the primary purpose for your trip today?
☐1 Home ☐2 Work ☐3 School ☐4 Shopping
☐5 Visiting friends/family
☐6 Medical/healthcare
☐7 Leisure/entertainment ☐8 Household errands
☐9 Personal business ☐10 Other

3. Where did you board the bus for this trip?
Landmark or stop name _____
or cross-streets: _____ and _____

4. How did you access the bus stop for this trip?
☐1 Walk more than 5 minutes
☐2 Walk less than 5 minutes
☐3 Bicycle ☐4 Shared ride/dropped off ☐5 Drove self
☐6 Transferred from another MACS bus line
☐7 Other (specify) _____

5. Where will you get off this bus?
Landmark or stop name _____
or cross-streets: _____ and _____

6. How will you get from the bus stop to your destination?
☐1 Walk more than 5 minutes
☐2 Walk less than 5 minutes
☐3 Bicycle ☐4 Shared ride/picked up ☐5 Drive self
☐6 Transfer to another MACS bus line
☐7 Other (specify) _____

7. Did you have access to a personal vehicle for this trip?
☐1 Yes ☐2 No

8. How did you pay for this trip?
☐1 Cash ☐2 Day pass ☐3 Monthly pass ☐4 Token
☐5 Free (Seniors 60+) ☐6 UAF Student Pass

9. Please indicate your satisfaction with various MACS service characteristics by checking the appropriate box.

		Excellent	Good	Fair	Poor
A	Frequency of service				
B	Operating hours				
C	On-time performance				
D	Safety while on the bus				
E	Vehicle cleanliness				
F	Driver attitude/helpfulness				
G	Bus stop amenities (shelters/benches)				
H	Cost of bus ride				

Continued on reverse

Winter 2013

10. On average, how many times a week do you ride MACS? (Consider each one-way trip as one ride)
☐1 Less than twice ☐2 3-4 times
☐3 5-6 times ☐4 7 or more

11. What, if anything, prevents you from increasing your use of MACS bus service?
☐1 Does not travel where I need to go
☐2 Does not travel when I need it
☐3 Not enough bus stops ☐4 Cost/fare
☐5 Not enough routes ☐6 Nothing
☐7 Other _____

12. Please select your top preferences regarding potential MACS service improvements (select only two).
☐1 Increased service frequency
☐2 Earlier weekday service
☐3 Sunday service ☐4 Later weekday service
☐5 New/more destinations (specify) _____
☐6 Lower fares ☐7 Newer vehicles
☐8 Improved technology
☐9 Bus tracking (GPS) technology
☐10 More bus stops/shelters/signage

13. If a fare increase was necessary to implement your preferred service improvement, what per trip fare increase would you support?
☐1 25¢ more ☐2 50¢ more
☐3 $1.00 more ☐4 Nothing

Please tell us:

14. Home zip code:_____

15. Work/school zip code:_____

16. Age:
☐1 17 or younger ☐2 18-44 years ☐3 45-64 years
☐4 64 years or older

17. Your gender: ☐1 Male ☐2 Female

18. Please select the technologies you have access to:
☐1 Internet ☐2 E-mail
☐3 Smartphone (i.e., iPhone, Android, etc.)
☐4 Text messaging
☐5 Social media (Facebook/Twitter)

19. What is your current employment status?
☐1 Employed (Full/part-time)
☐2 Looking for work ☐3 Retired
☐4 Homemaker ☐5 Student (full/part-time)

20. What is your annual household income?
☐1 Less than $10,000 per year
☐2 $10,000 to $14,999 per year
☐3 $15,000 to $24,999 per year
☐4 $25,000 to $44,999 per year
☐5 $45,000 to $64,999 per year
☐6 $65,000 per year or more

THANK YOU FOR YOUR PARTICIPATION

Exhibit F.2 Community Survey Instrument

SECTION 1 (All Respondents)

1. Select all transit/transportation service(s) you are currently aware of.
   ☐ MACS ☐ Van Tran
   ☐ Taxi Service ☐ Social service agency
   ☐ Other (please specify) _____

2. How did you become aware of these services?
   ☐ Saw vehicle ☐ Sign/advertisement
   ☐ Used the service ☐ Friend/family
   ☐ Employer/coworker ☐ Other (please specify)
   _____

3. Please indicate your level of agreement with the following statements:

	Agree	Somewhat agree	Somewhat disagree	Disagree
ublic transit is a valuable community ervice				
ublic transit provides access to mportant local services				
ublic transit meets the needs of those ithout other travel options				
ublic transit meets the needs of my amily/household				
know where to get information about ublic transit				

4. Does anyone in your household use public transit?
   ☐ Yes
   ☐ No

5. Have you used public transit in the FNSB within the past 90 days?
   ☐ Yes – [if yes continue to Section 2, question 6]
   ☐ No – [if no continue to Section 3, question 12]

SECTION 2 (Only respondents citing they have used MACS or Van Tran in the past 90 days)

6. Which transit service do you use most often?
   ☐ Local Fixed-route (MACS) ☐ Van Tran

7. How many times a week do you typically ride public transit?
   ☐ Less than twice per week ☐ 3-4 times
   ☐ 5-6 times ☐ 7 or more times

8. What is you most common trip purpose when riding public transit?
   ☐ Home ☐ Work ☐ Visiting friends/family ☐ Medical/healthcare ☐ School
   ☐ Shopping ☐ Leisure/entertainment ☐ Personal business/household errands ☐ Other

9. What, if anything, is preventing you from using public transit more often?
   ☐ Does not travel where I need to go ☐ Does not travel when I need it ☐ Inconvenient bus stops ☐ Costs too much
   ☐ Routes not frequent enough ☐ Nothing ☐ Other (specify)_____

10. If those barriers no longer existed, how many more trips per week would you make on public transit?
    ☐ Less than two more trips ☐ 3-4 more trips
    ☐ 5-6 more trips ☐ 7 or more trips

11. Is there a change in your personal circumstances which would cause you to use MACS more often?
    ☐ Loss of personal vehicle ☐ New job location ☐ Change in income ☐ Bus stop closer to my home
    ☐ Higher fuel prices ☐ Nothing ☐ Other (specify) _____
    (Continue to Section 4, Question 16)

SECTION 3 (Only respondents citing they have not used MACS or Van Tran in the past 90 days)

12. What is your primary method of transportation?
☐ Walk ☐ Bicycle ☐ Personal vehicle/drive alone ☐ Carpool/vanpool
☐ Taxi ☐ Mobility device (wheelchair, scooter, etc.)
☐ Other (specify)_____

13. What, if anything, is preventing you from using public transit?
☐ Does not travel where I need to go ☐ Does not travel when I need it ☐ Inconvenient bus stops ☐ Costs too much
☐ Routes not frequent enough ☐ Nothing ☐ Other (specify)_____

14. If those barriers no longer existed, how many trips per week would you likely make on public transit?
☐ None ☐ Less than two trips ☐ 3-4 trips
☐ 5-6 more trips ☐ 7 or more trips

15. Is there a change in your personal circumstances which would encourage you to use MACS or Van Tran?
☐ Loss of personal vehicle ☐ New job location ☐ Change in income ☐ Bus stop closer to my home
☐ Higher fuel prices ☐ Nothing ☐ Other (specify) _____
(Continue to Section 4, Question 16)

SECTION 4 (All Respondents)

16. In your opinion, what long-term mobility issues should the FNSB focus on?

☐ Develop long-range plans to identify new transportation solutions
☐ Widen local roadways
☐ Add more bus service
☐ Develop borough-wide carpool/vanpool program
☐ Improve bicycle paths
☐ Increase paratransit coordination
☐ Improve local roads/fix potholes
☐ Other
(specify)_____

17. What issues (in general) are your top three concern(s) for the FNSB?

	First Choice	Second Choice	Third Choice
Crime/safety			
Economy			
Education			
Energy prices/space heating			
Environmental issues			
Healthcare			
Transportation/mobility			
Traffic congestion			
Vehicle fuel prices			

18. Please provide the following information:

Home zip code _____

Work/school zip code (if applicable)
_____

19. What are the cross streets nearest your home?

Cross street 1: _____

Cross street 2: _____

Nearby landmark (if applicable):

_____

20. What is your current employment status?
☐ Employed full/part-time
☐ Retired
☐ Looking for work
☐ Homemaker
☐ Student full/part-time

21. Do you attend school?
☐ Yes ☐ No
If Yes, what school:_____

22. What is your age?
☐ Younger than 17 ☐ 18-44
☐ 45-64 ☐ 65 years or older

23. What is your Gender?
☐ Male
☐ Female

24. Do you speak a language other than English at home?
☐ Yes
☐ No
If Yes, please specify:_____

25. What was your total household income in 2012?
☐ Under $10,000 ☐ $10,000-$14,999
☐ $15,000-$24,999 ☐ $25,000-$44,999
☐ $45,000-$64,999 ☐ $65,000 or more

26. Please provide you contact information to be kept up to date on important transit news, events, and future opportunities to provide your insight!

Name: _____

Email: _____

Phone: _____

Mailing address:_____

_____

Exhibit F.3 Stakeholder Survey Instrument

FNSB 2013 Transit Stakeholder Survey

Thank you for taking a few moments to complete the 2013 FNSB Transit Stakeholder Survey. Your input will help shape the future of transit service in the Fairbanks North Star Borough.

Fax your completed survey to **661.253.1208** or **email** to **kathy@moore-associates.net**.

1	What organization or community do you represent?
2	Your name:
3	Your title:
4	Your phone number:
5	The community/population you represent includes the following (check all that apply): ❑ General public ❑ Seniors ❑ Persons with physical disabilities ❑ Persons with cognitive disabilities ❑ Other (specify:_____) ❑ Youth ❑ College Students ❑ Low-income and/or homeless individuals ❑ Individuals with limited English proficiency ❑ Visitors to the region
6	How do individuals in your community/represented clientele typically travel? (check all that apply) ❑ Public bus ❑ Drive own personal vehicle ❑ Ride with friends or family members ❑ Other (specify:_____) ❑ School bus ❑ Private transportation program (specify: _____) ❑ Bicycle/walking
7	Do you offer any type of transportation services or public transit subsidies to your community/clientele? ❑ No ❑ Yes, transportation service (describe) _____ ❑ Yes, transit subsidy (describe) _____
8	What is the most significant mobility need you currently observe among your members or clients (alternately, throughout the Borough as a whole) that is not being met?
9	What is the most significant mobility need you anticipate affecting your members or clients (alternately, the Borough as a whole) across the next 10 to 15 years?
10	What do you believe to be the single greatest improvement (regarding local transportation) which the FNSB could make or implement?

G

COMMUNITY MEETING MINUTES

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APPENDIX G – COMMUNITY MEETING MINUTES

Monday, May 13, 10:30 a.m. (Noel Wien Library)
Count: 13 (including Channel 11 and *Daily Miner*)

- Patron who currently uses the Van Tran services commented that the Van Tran shuttles and MACS buses are nice and clean.
- Attendee wanted more explanation of the new Gold Line and was told that service will begin in July, serving Fort Wainwright.
- Comment: Patron rides MACS daily to work; is pleased with schedule.
- Comment: Would like to see more covered/sheltered bus stops, also with benches (many Red Line stops have benches and shelters but most Blue Line bus stops do not).
    - Transportation Manager response: Five new shelters will be installed this summer, most likely in July.
- Question: Will the new shelters or any future shelters be heated?
    - Transportation Manager response: Not at this time.
- Suggestion: Designate a place for people to park for the day, plug in their car, and ride the bus or carpool (i.e., park and ride)?
- Question: Any opportunity to help the homeless people of Fairbanks? Is it possible to give them free rides or discounted rides if they have proof of homelessness?
- Question: Will the new shelters be wheelchair accessible?
    - Transportation Manager response: Yes.

Monday, May 13, 2 p.m. (University of Alaska – Fairbanks)
Count: 7 (including Channel 13 news)

- Discussion: What locations should be served that are currently not served?
    - Chena Pump Road
    - Two Rivers
    - Rosie Creek
    - Gold Hill Road
    - Chena Hot Spring Road
    - Gold Stream Roan
- Comment: Ridership is ever increasing, particularly the Red and Blue Lines, which justifies increasing frequency of service.
- Most common reason for travel on MACS is shopping (Walmart and Fred Meyer), according to University meeting attendees.

- Comment: I live off of Geist and take the Yellow and Blue lines. The buses are always full and there is no place for me (a senior) to sit. I use the bus for all reasons. I have no access to a car. I cannot get a retail job because the bus service ends early and I won't be able to get home from a job.
    - Requests later operating hours, full weekend service, more frequency, and more buses on the busy lines.
- Comment: The Yellow Line to the airport ends service around 7 p.m.; "this is not logical." People who have later flights are unable to get there or have to arrive several hours before their flight takes off.
    - Requests later operating hours.
- Comment: Taxis in Fairbanks are too expensive. We need the bus but we need it to be dependable.
- Comment: MACS needs to add service to The Pump House (restaurant) and past it (west).
- Question: How will the Gold Line work (in reference to going on base)?
    - Transportation Manager response: The buses will have to stop at Fort Wainwright Post Security, where a security guard will board the bus and ride along through the base.
- Comment: Would like the Yellow Line to have more stops.
- Comment: Chena Pump/Chena Ridge areas are dense enough to have bus service there.
- Comment: Need a Park and Ride in town where people can park and plug in their cars.
- Comment: It is difficult and time-consuming to ride from one end of the Yellow Line to the other.
- Comment: Service needs to be added to the back side of the airport; businesses are booming near the airport and employees and customers need transportation to get there.
- Comment: Suggest free or discounted fare for the homeless folks and youth (with proof of homelessness).
- Comment: Homeless people get stuck at the shelter because they can't afford the bus and it's too far to walk to the nearest bus stop (especially in the winter).
    - A Rescue Mission stop needs to be added (27th and South Cushman).
- Comment: "Many people in town, including myself, are unable to look for work without access to [public] transportation."
- Comment: We need better bus stop shelters (heated, block wind, have benches).
- Comment: "The stop at Walmart needs to be fixed."

Monday, May 13, 7 p.m. (Salcha Senior Center)
Count: 15

- Comment: Would like to see Van Tran or another Dial-a-Ride service out to Salcha.
- Comment: Would like to see a personalized or customized service for the Salcha Seniors (particularly the senior center or rides to healthcare and medical appointments).
- Comment: Currently it takes too long and too many transfers on MACS to get to where you need to go [from Salcha to Fairbanks].
- Comment: Need to have a Park and Ride (with plug-ins).
- Comment: "Seniors needs more direct and priority service."
- Comment: In Salcha, it's difficult for people to get to the current MACS bus stops (we have to travel through bear country or walk a few miles to get to a stop).
    - Comment: More people would ride if they had a way to get to the current bus stops (i.e., local circulator).
- Comment: We won't park and leave our cars somewhere unless there are plug-ins.

Day 1 count: 35 attendees

Tuesday, May 14, 10:30 a.m. (North Pole City Hall)
Count: 2

A gentleman walked in and declared that he is opposed to anything the FNSB proposes to do, does not want public transit service to expanded, and would like the service to "fail" or end altogether.

- Comment: Have been using the bus for less than 1 year now. Use service to get into town [Fairbanks]. Ride the Green Line to the Yellow or Orange Line.
- Comment: Sometimes I have to wait over one hour for a bus to get home. In the winter, that one hour is unbearable so I would rather drive.
    - Transportation Manager response: Informed patron that the MACS call center offers complimentary trip planning assistance.
- Question: Is it feasible to have a light rail system from Fairbanks to North Pole?
    - Transportation Manager response: Not really. It requires a [more] dense population and is expensive to build/run.
- Question: Any thought to getting buses that are electric or run off of natural gas?
    - Transportation Manager response: Yes, we have been discussing that as an option.
- Comment: When I ride MACS, there are plenty of available seats. The buses are clean and safe.
- Comment: Reason I ride: personal business, Wal-Mart, get out of North Pole.
- Comment: Transit Center is the "pivot point."
- Comment: Convenient and nice to have bike racks on each bus.
- Comment: Nice that the buses kneel.
- Comment: Can feel every bump in the road & most windshields on the buses have cracks.

Tuesday, May 14, 2 p.m. (Fairbanks Senior Center)
Count: 18 (including Access Alaska representative and Glenn Miller)

- Comment [from senior center staff member]: Concerned that bus won't/doesn't come far enough "down" to reach the senior center.
- Comment: Seniors and other immobile people cannot get to the current designated bus stops. Senior center needs a stop.
- Question: Is it possible for MACS to reach the main entertainment and dwelling areas of Fairbanks (particularly the senior housing complexes and senior centers)?
- Comment: The closest stop to the Golden Towers senior complex is across the street and many of the seniors cannot safely get across the street.
- Comment: There is no/not enough service to South Fairbanks (26th & 27th).
    - It's too far for people to walk to reach a MACS bus stop.

- Comment: Pioneer Senior Center needs to be serviced – over 200 residents who are potential riders. Moore Senior Living has over 20 potential riders and is not serviced.
- Comment: MACS needs to reach the homeless shelter, women's shelter, food bank, and other locations that low-income and at-risk people depend on to survive.
- Comment: Need a Park and Ride – more people would ride if they had a place to safely park and plug in their car.
    - Suggestion: Have a place to store/park bikes at bus stop or transit center (bike lockers) for if people don't want to take their bike on the bus.
- Suggestion: Develop a donation-based paratransit or Van Tran extension. May generate more money/enough money to maintain a new service [specifically for seniors and disabled].
- Comment: Would like to expand hours of operation on the Red and Blue Lines. Particularly for students at UAF. The bus schedule should be reflective of class schedules.
- Comment: Many stores in town are open 24/7 but people can't get to them because the current MACS service ends too early.

Tuesday, May 14, 5:30 p.m. (North Pole City Hall)

Count: 0

Tuesday, May 14, 7:30 p.m. (Noel Wein Library)

Count: 13

- Comment: I live near Old Richardson – 6 Mile housing complex – where over 100 potential riders live but no bus comes near us. It is a low-income development where the residents really need public transportation.
- Suggestion: Have a bus that travels down Bradley and connects to Badger.
- Comment: Why can't the Black Line have stops on/at Old Richardson Hwy? The current bus stops are way too far [4-6 miles] away.
- Comment: "MACS is a way to save money and more affordable than having my own vehicle."
- Comment: The Purple Line was changed, but not in a good way. It used to go to the mental health center and now that stop has been eliminated. Those people need the bus.
- Question: "Why not have the Purple Line extend to the middle school down to the new subdivision?"
- Comment: The Orange Line does not run frequently enough.

- Question: How about adding an annual or yearly bus pass at a discounted price if you pay for it up front?
- Comment: There are not enough/no benches at the Transit Center [particularly in the smoking area].
- Comment: The Transit Center is not kept up, trash is everywhere, the trash cans are over flowing, and no one takes care of the grounds.
- Comment: All bus stops need to have shelters.
- Comment: The stops near the hospital need to have better shelters and benches.
- Comment: "Rather than expand routes, we need to make the current experience better" – including having heated shelters [especially if you would like to attract non-riders].
- Comment: FNSB needs to do a better job at encouraging people who currently drive to ride the bus or at least give it a try. We need to get more and new riders on the buses (attract new riders/choice riders).
- Comment: The Purple Line was split into the Brown Line, supposedly to make it better and more efficient, but now it runs even less frequently. This route needs to run every 30 minutes during peak hours.
- Comment: Many needed stops were removed from the Purple Line.
- Comment: The Orange Line doesn't run during mid-day and needs to.
- Comment: The hospitals need to be serviced (mental hospital and regular hospital).
- Comment: Lack of shelters on all routes.
    - "Is it possible to get shelters made locally?" "What's the plan for the new shelters?"
- Question: "Can the four vans (old vanpool vans that are not being used) be used as shuttles?" (for North Pole, Badger, Downtown areas, etc.)
- Comment: When is MACS going to serve the Walmart, Lowe's, and Barnes & Noble shopping center?
    - Idea: work with local business to better the bus stops/benches outside their location to attract more business; it's a win-win for both the customer and business owner.
- Comment: Why is there a stop at Badger Dump? (unnecessary)
- Comment: Security guard at Transit Center does not do his job.
- Comment: Rider called the call center to report an incident with the security guard but everyone kept pushing him off and not taking his call. Two months later and he has yet to hear back from anyone from MACS, the City, or the Borough.
- Comment: There are a lot of panhandlers and drunks at the Transit Center. This scares riders away. The security guards don't do anything about it.
    - Security at the transit hub needs to be "beefed up."
- Comment: The Transit Center is dirty and the bathrooms are not maintained and have graffiti all over them. Trash is constantly everywhere.
- Comment: the Pioneer Home needs to be served (senior center).

- Question: Why can't MACS service more residential areas? Especially the low-income housing communities.
- The stop on Third Street near Lowe's needs to be reevaluated.
- Comment: The Purple Line does not serve UAF very well, particularly the athletic/recreation center.
- Comment: MACS needs to service Chena Health Center.
- Comment: MACS needs to run later (later operating hours).
- Comment: 24th and Chena Hot Springs Rd needs to be served.
- Suggestion: Get locals and volunteers (maybe even Cub Scouts) to help build shelters.
- Comment: Need service to old Steese Hwy and Chena Hot Springs Rd (Curry Corner).

Day 2 count: 33 attendees

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SAMPLE RECOMMENDED SCHEDULES

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APPENDIX H – SAMPLE RECOMMENDED SCHEDULES

Exhibit H.1 Revised Blue Line Schedule (Weekday)

Transit Center (Depart)	Herb Miller Rd - (Walmart/Lowes)	College Rd. @ Diane	AKRR Depot (Summer Only)	Aurora Dr. @ Tamarack St.	UAF Wood Center (Depart)	Yukon Dr @ UA Museum	Tanana Dr @ Patty Center	Fred Meyer West	Pioneer Park (Summer Only)	Kennicott Ave @ Shoppers Forum	Transit Center (Arrive)
					6:45:00 AM	6:47:00 AM		6:55:00 AM		7:06:00 AM	7:13:00 AM
6:30:00 AM	6:35:00 AM	6:38:00 AM		6:43:00 AM	6:57:00 AM						
					7:23:00 AM		7:25:00 AM	7:35:00 AM			7:43:00 AM
7:16:00 AM	7:26:00 AM	7:29:00 AM	7:33:00 AM	7:36:00 AM	7:45:00 AM	7:47:00 AM		7:55:00 AM		8:04:00 AM	8:10:00 AM
7:47:00 AM	7:57:00 AM	8:00:00 AM	8:04:00 AM	8:07:00 AM	8:16:00 AM	8:18:00 AM		8:28:00 AM		8:38:00 AM	8:44:00 AM
8:17:00 AM	8:27:00 AM	8:31:00 AM		8:37:00 AM	8:48:00 AM		8:50:00 AM	9:01:00 AM		9:11:00 AM	9:18:00 AM
8:48:00 AM	8:58:00 AM	9:02:00 AM		9:08:00 AM	9:19:00 AM		9:21:00 AM	9:32:00 AM		9:42:00 AM	9:46:00 AM
9:21:00 AM	9:31:00 AM	9:35:00 AM		9:41:00 AM	9:52:00 AM		9:54:00 AM	10:05:00 AM		10:15:00 AM	10:21:00 AM
10:24:00 AM	10:34:00 AM	10:38:00 AM		10:44:00 AM	10:55:00 AM		10:57:00 AM	11:08:00 AM		11:18:00 AM	11:24:00 AM
11:54:00 AM	12:04:00 PM	12:08:00 PM		12:14:00 PM	12:25:00 PM		12:27:00 PM	12:37:00 PM	12:41:00 PM	12:47:00 PM	12:52:00 PM
12:55:00 PM	1:05:00 PM	1:09:00 PM		1:15:00 PM	1:26:00 PM		1:28:00 PM	1:38:00 PM	1:42:00 PM	1:47:00 PM	1:53:00 PM
1:56:00 PM	2:06:00 PM	2:10:00 PM		2:16:00 PM	2:27:00 PM		2:29:00 PM	2:43:00 PM	2:47:00 PM	2:52:00 PM	2:56:00 PM
3:00:00 PM	3:10:00 PM	3:14:00 PM		3:20:00 PM	3:31:00 PM		3:33:00 PM	3:47:00 PM	3:51:00 PM	3:56:00 PM	3:59:00 PM
3:30:00 PM	3:40:00 PM	3:44:00 PM		3:50:00 PM	4:01:00 PM		4:03:00 PM	4:17:00 PM	4:21:00 PM	4:26:00 PM	4:29:00 PM
3:50:00 PM	4:00:00 PM	4:06:00 PM		4:12:00 PM	4:21:00 PM		4:23:00 PM	4:37:00 PM	4:41:00 PM	4:46:00 PM	4:50:00 PM
4:10:00 PM	4:20:00 PM	4:26:00 PM		4:32:00 PM	4:41:00 PM	4:43:00 PM		4:54:00 PM	4:58:00 PM	5:03:00 PM	5:07:00 PM
4:32:00 PM	4:42:00 PM	4:48:00 PM		4:54:00 PM	5:03:00 PM		5:05:00 PM	5:19:00 PM	5:23:00 PM	5:28:00 PM	5:32:00 PM
4:52:00 PM	5:02:00 PM	5:08:00 PM		5:14:00 PM	5:23:00 PM	5:25:00 PM		5:36:00 PM	5:40:00 PM	5:45:00 PM	5:49:00 PM
5:12:00 PM	5:24:00 PM	5:30:00 PM		5:36:00 PM	5:45:00 PM		5:47:00 PM	5:58:00 PM	6:02:00 PM	6:07:00 PM	6:12:00 PM
5:32:00 PM	5:44:00 PM	5:50:00 PM		5:56:00 PM	6:05:00 PM	6:07:00 PM		6:18:00 PM	6:22:00 PM	6:27:00 PM	6:32:00 PM
5:52:00 PM	6:04:00 PM	6:10:00 PM		6:16:00 PM	6:25:00 PM		6:27:00 PM	6:38:00 PM	6:42:00 PM	6:47:00 PM	6:52:00 PM
6:15:00 PM	6:27:00 PM	6:33:00 PM		6:39:00 PM	6:48:00 PM	6:50:00 PM		7:01:00 PM	7:05:00 PM	7:10:00 PM	7:15:00 PM
6:45:00 PM	6:57:00 PM	7:03:00 PM		7:09:00 PM	7:16:00 PM		7:18:00 PM	7:29:00 PM	7:33:00 PM	7:38:00 PM	7:42:00 PM
7:18:00 PM	7:30:00 PM	7:36:00 PM		7:42:00 PM	7:49:00 PM	7:51:00 PM		8:02:00 PM	8:06:00 PM	8:11:00 PM	8:15:00 PM
8:25:00 PM	8:37:00 PM	8:43:00 PM		8:49:00 PM	8:56:00 PM		8:58:00 PM	9:09:00 PM	9:13:00 PM	9:18:00 PM	9:23:00 PM
9:29:00 PM	9:39:00 PM	9:44:00 PM	9:48:00 PM	9:52:00 PM	10:00:00 PM						

Exhibit H.2 Blue Line Sunday Schedule

Transit Center (Depart)	Herb Miller Rd - (Walmart/Lowes)	College Rd. @ Diane	AKRR Depot (Summer Only)	Aurora Dr. @ Tamarack St.	UAF Wood Center (Depart)	Yukon Dr @ UA Museum	Tanana Dr @ Patty Center	Fred Meyer West	Pioneer Park (Summer Only)	Kennicott Ave @ Shoppers Forum	Transit Center (Arrive)
9:00:00 AM	9:10:00 AM	9:14:00 AM		9:20:00 AM	9:31:00 AM		9:33:00 AM	9:43:00 AM	9:47:00 AM	9:53:00 AM	9:58:00 AM
10:00:00 AM	10:10:00 AM	10:14:00 AM		10:20:00 AM	10:31:00 AM		10:33:00 AM	10:43:00 AM	10:47:00 AM	10:52:00 AM	10:58:00 AM
11:00:00 AM	11:10:00 AM	11:14:00 AM		11:20:00 AM	11:31:00 AM		11:33:00 AM	11:43:00 AM	11:47:00 AM	11:52:00 AM	11:58:00 AM
12:00:00 PM	12:10:00 PM	12:14:00 PM		12:20:00 PM	12:31:00 PM		12:33:00 PM	12:43:00 PM	12:47:00 PM	12:52:00 PM	12:58:00 PM
2:00:00 PM	2:10:00 PM	2:14:00 PM		2:20:00 PM	2:31:00 PM		2:33:00 PM	2:43:00 PM	2:47:00 PM	2:52:00 PM	2:58:00 PM
3:00:00 PM	3:10:00 PM	3:14:00 PM		3:20:00 PM	3:31:00 PM		3:33:00 PM	3:43:00 PM	3:47:00 PM	3:52:00 PM	3:58:00 PM
4:00:00 PM	4:10:00 PM	4:14:00 PM		4:20:00 PM	4:31:00 PM		4:33:00 PM	4:43:00 PM	4:47:00 PM	4:52:00 PM	4:58:00 PM
5:00:00 PM	5:10:00 PM	5:14:00 PM		5:20:00 PM	5:31:00 PM		5:33:00 PM	5:43:00 PM	5:47:00 PM	5:52:00 PM	5:58:00 PM

Exhibit H.3 Revised Grey Line Schedule (Eastbound)

UAF Wood Center (Depart)	Farmer's Loop @ Ballaine Road	Farmer's Loop @ Scenic Loop	Farmer's Loop @ Candamar Rd	Farmer's Loop @ Crossman/Summit	Farmer's Loop @ McGrath Road	Fred Meyer East parking lot
7:19:00 AM	7:25:00 AM	7:26:00 AM	7:28:00 AM	7:30:00 AM	7:35:00 AM	7:44:00 AM
8:19:00 AM	8:25:00 AM	8:26:00 AM	8:28:00 AM	8:30:00 AM	8:35:00 AM	8:44:00 AM
9:19:00 AM	9:25:00 AM	9:26:00 AM	9:28:00 AM	9:30:00 AM	9:35:00 AM	9:44:00 AM
4:19:00 PM	4:25:00 PM	4:26:00 PM	4:28:00 PM	4:30:00 PM	4:35:00 PM	4:44:00 PM
5:19:00 PM	5:25:00 PM	5:26:00 PM	5:28:00 PM	5:30:00 PM	5:35:00 PM	5:44:00 PM
6:19:00 PM	6:25:00 PM	6:26:00 PM	6:28:00 PM	6:30:00 PM	6:35:00 PM	6:44:00 PM

Exhibit H.4 Revised Grey Line Schedule (Westbound)

Fred Meyer East parking lot	Farmer's Loop @ McGrath Rd	Farmer's Loop @ Summit Drive	Farmer's Loop @ Grenac Road	Farmer's Loop @ Scenic Loop	Farmer's Loop @ Ballaine Road	UAF Wood Center (Arrive)
6:45:00 AM	6:54:00 AM	7:04:00 AM	7:07:00 AM	7:09:00 AM	7:10:00 AM	7:14:00 AM
7:45:00 AM	7:54:00 AM	8:04:00 AM	8:07:00 AM	8:09:00 AM	8:10:00 AM	8:14:00 AM
8:45:00 AM	8:54:00 AM	9:04:00 AM	9:07:00 AM	9:09:00 AM	9:10:00 AM	9:14:00 AM
3:45:00 PM	3:54:00 PM	4:04:00 PM	4:07:00 PM	4:09:00 PM	4:10:00 PM	4:14:00 PM
4:45:00 PM	4:54:00 PM	5:04:00 PM	5:07:00 PM	5:09:00 PM	5:10:00 PM	5:14:00 PM
5:45:00 PM	5:54:00 PM	6:04:00 PM	6:07:00 PM	6:09:00 PM	6:10:00 PM	6:14:00 PM

Exhibit H.5 Revised Purple Line Schedule (Weekday)

Transit Center	Easy St @ Lakeweiw entrance	23rd Ave @ Lathrop (Interior Community Health)	Lathrop @ Chief Andrew Issac Health Center	Cowles St. @ Fbks Mem. Hospital	Transit Center
6:30:00 AM	6:43:00 AM	6:51:00 AM	6:54:00 AM	6:59:00 AM	7:07:00 AM
7:45:00 AM	7:58:00 AM	8:06:00 AM	8:09:00 AM	8:14:00 AM	8:22:00 AM
8:45:00 AM	8:58:00 AM	9:06:00 AM	9:09:00 AM	9:14:00 AM	9:22:00 AM
9:45:00 AM	9:58:00 AM	10:06:00 AM	10:09:00 AM	10:14:00 AM	10:22:00 AM
11:15:00 AM	11:28:00 AM	11:36:00 AM	11:39:00 AM	11:44:00 AM	11:52:00 AM
12:15:00 PM	12:28:00 PM	12:36:00 PM	12:39:00 PM	12:44:00 PM	12:52:00 PM
1:15:00 PM	1:28:00 PM	1:36:00 PM	1:39:00 PM	1:44:00 PM	1:52:00 PM
2:15:00 PM	2:28:00 PM	2:36:00 PM	2:39:00 PM	2:44:00 PM	2:52:00 PM
3:15:00 PM	3:28:00 PM	3:36:00 PM	3:39:00 PM	3:44:00 PM	3:52:00 PM
4:15:00 PM	4:28:00 PM	4:36:00 PM	4:39:00 PM	4:44:00 PM	4:52:00 PM
5:15:00 PM	5:28:00 PM	5:36:00 PM	5:39:00 PM	5:44:00 PM	5:52:00 PM
6:15:00 PM	6:28:00 PM	6:36:00 PM	6:39:00 PM	6:44:00 PM	6:52:00 PM
7:15:00 PM	7:28:00 PM	7:36:00 PM	7:39:00 PM	7:44:00 PM	7:52:00 PM
8:15:00 PM	8:28:00 PM	8:36:00 PM	8:39:00 PM	8:44:00 PM	8:52:00 PM
9:15:00 PM	9:28:00 PM	9:36:00 PM	9:39:00 PM	9:44:00 PM	9:52:00 PM

Exhibit H.6 Revised Purple Line Schedule (Saturday)

Transit Center	Easy St @ Lakeweiw entrance	23rd Ave @ Lathrop (Interior Community Health)	Lathrop @ Chief Andrew Issac Health Center	Cowles St. @ Fbks Mem. Hospital	Transit Center
8:45:00 AM	8:58:00 AM	9:06:00 AM	9:09:00 AM	9:14:00 AM	9:22:00 AM
9:45:00 AM	9:58:00 AM	10:06:00 AM	10:09:00 AM	10:10:00 AM	10:18:00 AM
10:45:00 AM	10:58:00 AM	11:06:00 AM	11:09:00 AM	11:10:00 AM	11:18:00 AM
11:45:00 AM	11:58:00 AM	12:06:00 PM	12:09:00 PM	12:10:00 PM	12:18:00 PM
12:45:00 PM	12:58:00 PM	1:06:00 PM	1:09:00 PM	1:10:00 PM	1:18:00 PM
1:45:00 PM	1:58:00 PM	2:06:00 PM	2:09:00 PM	2:10:00 PM	2:18:00 PM
2:45:00 PM	2:58:00 PM	3:06:00 PM	3:09:00 PM	3:10:00 PM	3:18:00 PM
3:45:00 PM	3:58:00 PM	4:06:00 PM	4:09:00 PM	4:10:00 PM	4:18:00 PM
4:45:00 PM	4:58:00 PM	5:06:00 PM	5:09:00 PM	5:10:00 PM	5:18:00 PM
5:45:00 PM	5:58:00 PM	6:06:00 PM	6:09:00 PM	6:10:00 PM	6:18:00 PM
6:45:00 PM	6:58:00 PM	7:06:00 PM	7:09:00 PM	7:10:00 PM	7:18:00 PM
7:15:00 PM	7:28:00 PM	7:36:00 PM	7:39:00 PM	7:40:00 PM	7:48:00 PM

Exhibit H.7 Revised Red Line Weekday Schedule

Transit Center (Depart)	Kennicott Dr @ Shoppers Forum	Fred Meyer West	University Ave @ Sandvik	UAF Wood Center (Arrive)	UAF Wood Center (Depart)	Aurora Dr. @ Tamarack St.	Railroad Depot (Summer Only)	Helmricks Rd (Mt McKinley Bank)	Transit Center (Arrive)
6:15:00 AM	6:19:00 AM	6:30:00 AM	6:36:00 AM		6:45:00 AM	6:52:00 AM		7:05:00 AM	7:12:00 AM
6:45:00 AM	6:49:00 AM	7:00:00 AM	7:06:00 AM		7:15:00 AM	7:22:00 AM	7:28:00 AM	7:35:00 AM	7:42:00 AM
7:17:00 AM	7:21:00 AM	7:32:00 AM	7:38:00 AM		7:47:00 AM	7:54:00 AM	7:55:00 AM	8:07:00 AM	8:14:00 AM
7:47:00 AM	7:51:00 AM	8:02:00 AM	8:08:00 AM		8:17:00 AM	8:24:00 AM		8:37:00 AM	8:44:00 AM
8:19:00 AM	8:23:00 AM	8:34:00 AM	8:40:00 AM		8:49:00 AM	8:56:00 AM		9:09:00 AM	9:16:00 AM
9:21:00 AM	9:25:00 AM	9:36:00 AM	9:42:00 AM		9:51:00 AM	9:58:00 AM		10:11:00 AM	10:18:00 AM
10:51:00 AM	10:55:00 AM	11:06:00 AM	11:12:00 AM		11:21:00 AM	11:28:00 AM		11:41:00 AM	11:48:00 AM
11:53:00 AM	11:57:00 AM	12:08:00 PM	12:14:00 PM		12:23:00 PM	12:30:00 PM		12:43:00 PM	12:50:00 PM
12:55:00 PM	12:59:00 PM	1:10:00 PM	1:16:00 PM		1:25:00 PM	1:32:00 PM		1:45:00 PM	1:52:00 PM
1:57:00 PM	2:01:00 PM	2:12:00 PM	2:18:00 PM		2:27:00 PM	2:34:00 PM		2:47:00 PM	2:54:00 PM
2:59:00 PM	3:03:00 PM	3:14:00 PM	3:20:00 PM		3:29:00 PM	3:36:00 PM		3:49:00 PM	3:56:00 PM
3:25:00 PM	3:29:00 PM	3:40:00 PM	3:46:00 PM		3:55:00 PM	4:02:00 PM		4:15:00 PM	4:22:00 PM
3:45:00 PM	3:49:00 PM	4:00:00 PM	4:06:00 PM		4:15:00 PM	4:22:00 PM		4:35:00 PM	4:42:00 PM
4:05:00 PM	4:09:00 PM	4:20:00 PM	4:26:00 PM		4:35:00 PM	4:42:00 PM		4:55:00 PM	5:02:00 PM
4:27:00 PM	4:31:00 PM	4:42:00 PM	4:48:00 PM		4:57:00 PM	5:04:00 PM		5:17:00 PM	5:24:00 PM
4:47:00 PM	4:51:00 PM	5:02:00 PM	5:08:00 PM		5:17:00 PM	5:24:00 PM		5:37:00 PM	5:44:00 PM
5:07:00 PM	5:11:00 PM	5:22:00 PM	5:28:00 PM		5:37:00 PM	5:44:00 PM		5:57:00 PM	6:04:00 PM
5:27:00 PM	5:31:00 PM	5:42:00 PM	5:48:00 PM		5:57:00 PM	6:04:00 PM		6:17:00 PM	6:24:00 PM
5:47:00 PM	5:51:00 PM	6:02:00 PM	6:08:00 PM		6:17:00 PM	6:24:00 PM		6:37:00 PM	6:44:00 PM
6:07:00 PM	6:11:00 PM	6:22:00 PM	6:28:00 PM		6:37:00 PM	6:44:00 PM		6:57:00 PM	7:04:00 PM
6:27:00 PM	6:31:00 PM	6:42:00 PM	6:48:00 PM		6:57:00 PM	7:04:00 PM		7:17:00 PM	7:24:00 PM
6:55:00 PM	6:59:00 PM	7:10:00 PM	7:16:00 PM		7:25:00 PM	7:32:00 PM		7:45:00 PM	7:52:00 PM
7:27:00 PM	7:31:00 PM	7:42:00 PM	7:48:00 PM		7:57:00 PM	8:04:00 PM		8:17:00 PM	8:24:00 PM
8:00:00 PM	8:04:00 PM	8:15:00 PM	8:21:00 PM		8:30:00 PM	8:37:00 PM		8:50:00 PM	8:57:00 PM

Exhibit H.8 Sunday Red Line Schedule

Transit Center (Depart)	Kennicott Dr @ Shoppers Forum	Fred Meyer West	University Ave @ Sandvik	UAF Wood Center (Arrive)	UAF Wood Center (Depart)	Aurora Dr. @ Tamarack St.	Railroad Depot (Summer Only)	Helmricks Rd (Mt McKinley Bank)	Transit Center (Arrive)
9:00:00 AM	9:04:00 AM	9:15:00 AM	9:21:00 AM		9:30:00 AM	9:37:00 AM		9:50:00 AM	9:57:00 AM
10:00:00 AM	10:04:00 AM	10:15:00 AM	10:21:00 AM		10:30:00 AM	10:37:00 AM		10:50:00 AM	10:57:00 AM
11:00:00 AM	11:04:00 AM	11:15:00 AM	11:21:00 AM		11:30:00 AM	11:37:00 AM		11:50:00 AM	11:57:00 AM
12:00:00 PM	12:04:00 PM	12:15:00 PM	12:21:00 PM		12:30:00 PM	12:37:00 PM		12:50:00 PM	12:57:00 PM
2:00:00 PM	2:04:00 PM	2:15:00 PM	2:21:00 PM		2:30:00 PM	2:37:00 PM		2:50:00 PM	2:57:00 PM
3:00:00 PM	3:04:00 PM	3:15:00 PM	3:21:00 PM		3:30:00 PM	3:37:00 PM		3:50:00 PM	3:57:00 PM
4:00:00 PM	4:04:00 PM	4:15:00 PM	4:21:00 PM		4:30:00 PM	4:37:00 PM		4:50:00 PM	4:57:00 PM
5:00:00 PM	5:04:00 PM	5:15:00 PM	5:21:00 PM		5:30:00 PM	5:37:00 PM		5:50:00 PM	5:57:00 PM

Exhibit H.9 Revised Yellow Line Schedule (Weekday)

Fred Meyer West (Depart)	UAF Wood Center	Steelhead @ Stanford	UAF Wood Center	Geist Rd @ Post Office	Fred Meyer West	Airport	Fred Meyer West (Arrive)
		6:32:00 AM	6:43:00 AM				
	6:43:00 AM	6:56:00 AM	7:08:00 AM				
7:20:00 AM	7:28:00 AM	7:41:00 AM	7:53:00 AM	8:01:00 AM	8:04:00 AM	8:17:00 AM	8:25:00 AM
8:35:00 AM	8:43:00 AM	8:56:00 AM	9:08:00 AM	9:16:00 AM	9:19:00 AM	9:32:00 AM	9:40:00 AM
9:50:00 AM	9:58:00 AM	10:11:00 AM	10:23:00 AM	10:31:00 AM	10:34:00 AM	10:47:00 AM	10:55:00 AM
12:00:00 PM	12:08:00 PM	12:21:00 PM	12:33:00 PM	12:41:00 PM	12:44:00 PM	12:57:00 PM	1:05:00 PM
2:00:00 PM	2:08:00 PM	2:21:00 PM	2:33:00 PM	2:41:00 PM	2:44:00 PM	2:57:00 PM	3:05:00 PM
3:15:00 PM	3:23:00 PM	3:36:00 PM	3:48:00 PM	3:56:00 PM	3:59:00 PM	4:12:00 PM	4:20:00 PM
4:30:00 PM	4:38:00 PM	4:51:00 PM	5:03:00 PM	5:11:00 PM	5:14:00 PM	5:27:00 PM	5:35:00 PM
5:45:00 PM	5:53:00 PM	6:06:00 PM	6:18:00 PM	6:26:00 PM	6:29:00 PM	6:42:00 PM	6:50:00 PM
6:45:00 PM	6:53:00 PM	7:06:00 PM					

Exhibit H.10 Revised Yellow Line Schedule (Saturday)

Fred Meyer West (Depart)	UAF Wood Center	Steelhead @ Stanford	UAF Wood Center	Geist Rd @ Post Office	Fred Meyer West	Airport	Fred Meyer West (Arrive)
		10:42 AM	10:53 AM	11:01 AM	11:05 AM	11:17 AM	11:25 AM
11:35 AM	11:43 AM	11:57 AM	12:08 PM	12:16 PM	12:20 PM	12:32 PM	12:40 PM
12:50 PM	12:58 PM	1:12 PM	1:23 PM	1:31 PM	1:35 PM	1:47 PM	1:55 PM
2:05 PM	2:13 PM	2:27 PM	2:38 PM	2:46 PM	2:50 PM	3:02 PM	3:10 PM
3:20 PM	3:28 PM	3:42 PM	3:53 PM	4:01 PM	4:05 PM	4:17 PM	4:25 PM
4:35 PM	4:43 PM	4:57 PM	5:08 PM	5:16 PM	5:20 PM	5:32 PM	5:40 PM
5:50 PM	5:58 PM	6:12 PM	6:23 PM	6:31 PM	6:35 PM	6:47 PM	6:55 PM