

2018 Service Implementation Plan



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2018 Service Implementation Plan

Original Adopted December 2017

Amended March 2018

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2018 Service Implementation Plan

Executive Summary



March 2018

Executive Summary

2018 Service Implementation Plan

Each year, Sound Transit prepares a Service Implementation Plan that guides delivery of ST Express bus, Sounder commuter rail, and Link light rail services. In coordination with the annual agency budget process, the Service Implementation Plan provides both a forward look at future service plans and a review of existing ridership and performance trends.

The 2018 Service Implementation Plan, initially approved in December 2017 and amended in March 2018, proposed changes to ST Express routes in the I-90 corridor beginning in September 2018. Service changes are necessary to accommodate construction related to the delivery of East Link. When Sound Transit opens East Link service will extend to 10 stations in Judkins Park, Mercer Island, Bellevue and Overlake by 2023 and to Redmond by 2024.

More Service Delivered in 2017

For Sound Transit, the conclusion of 2017 marks another year of increased delivery of regional transit service. Rapidly growing ridership on Link light rail drove the addition of more three-car trains to provide increased capacity. On Sounder four new round trips on the growing south line increased peak passenger capacity and offered customers more schedule flexibility. On ST Express approximately 17,000 additional hours of service were added since the end of 2016 to improve on-time performance.

Estimates indicate Sound Transit will serve over 47 million passengers by the end of 2017, nearly 159,000 on the average weekday.





Planning for Future Changes

For several key planning process, development of final recommendations will continue into 2018. Service planners will continue to develop service change concepts and conduct public outreach processes to inform future service changes. Any major change to service requires Board approval as an amendment to the SIP, or would be included in the 2019 SIP process as applicable.

I-90 Bus Options during East Link Construction (2018)

Changes Riders Will See Starting in September 2018

- Closing the Rainier Freeway Station
- Maintaining bus access to Rainier Avenue via two existing bus stops near Rainier Avenue South and South Charles Street
- Closing the I-90 bus ramp connecting buses to the Downtown Seattle transit tunnel
- Beginning Link light rail construction at the Rainier Freeway Station
- Changes to Sound Transit Routes 550 and 554
- Changes to King County Metro routes

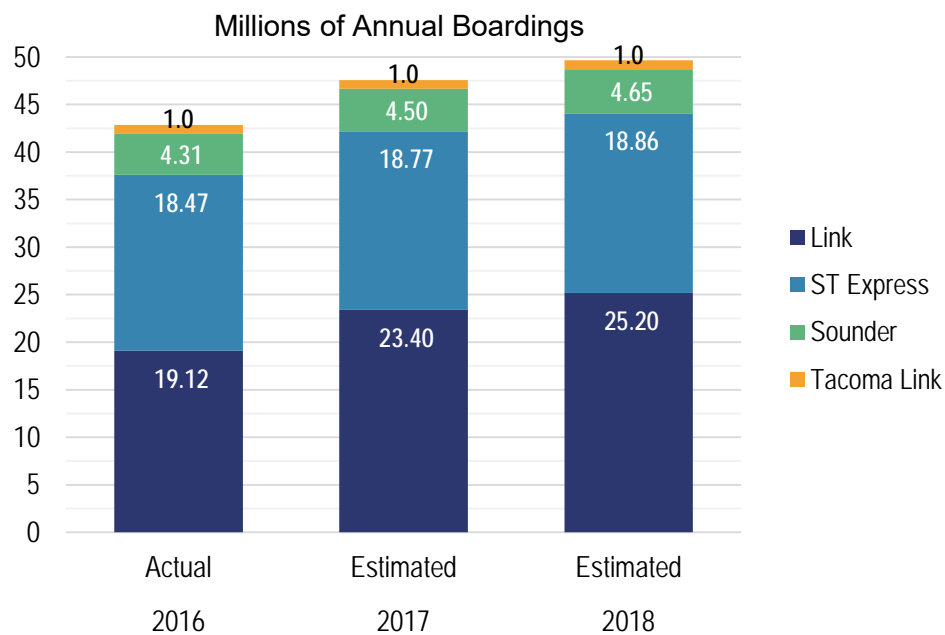
Construction of the new Judkins Park Link Station requires closure of the Rainier Freeway Station and the I-90 bus ramp that connects buses to the downtown tunnel. Routes 550 and 554 will no longer stop at the Rainier Freeway Station and will no longer use the I-90 bus ramp that connects buses to downtown Seattle beginning in September 2018. Service changes will be necessary to continue serving customers who use those routes to get to jobs, education, services and recreation around Seattle and the Eastside.

Since the Rainier Freeway Station provides important access to the Eastside and Downtown Seattle for communities in the Rainier Valley, Sound Transit determined that bus routes need to change when construction starts to maintain service to the Rainier Valley area. When East Link opens in 2023, the Rainier Freeway Station will re-open as the Judkins Park Station.

Continued Ridership Growth Expected

Ridership on Sound Transit trains and buses is expected to continue to grow through 2018. System-wide ridership is estimated to increase by 16 percent over 2016, exceeding 49 million by the end of 2018. Link estimates show ridership growing to over 25 million by the end of 2018 as customers continue to embrace extensions to University of Washington and Angle Lake added in 2016. New trains on Sounder will drive ridership in 2018 to increase by an estimated eight percent over 2016. Modest estimated growth in ST Express ridership will add approximately two percent more riders over 2016. Tacoma Link estimates predict generally flat ridership trends into 2018. Figure 1 shows annual boardings by mode, with 2016 actuals and estimates for 2017 and 2018.

FIGURE 1 - ANNUAL BOARDINGS BY MODE 2016-2018





Light Rail Construction & Transit Integration Continues

Between 2017 and 2023, Sound Transit system ridership will grow by an estimated 62 percent, driven by regional growth and the benefits of fast, reliable high-capacity transit. Transit integration offers opportunities to maximize the efficient use of transit resources in the region, while also improving the customer experience. Sound Transit recognizes that coordination with partner agencies contributes to building an effective regional system. Sound Transit will engage partner agencies and the public to deliver an integrated transit network as build-out of the network continues. The Service Implementation Plan includes a preliminary service plan for the next five years to document upcoming system opportunities and challenges, informing customers and partner agencies of future service changes Sound Transit may consider.

Public Input

Customers and members of the public were encouraged to comment on the draft plan through email, letter, via telephone, or in-person at a public meeting held in the Joni Earl Great Hall on November 2nd. Opportunities for public comment to the Board of Directors were scheduled for the November 2nd and December 7th Operations & Administration Committee meetings and the Board meeting on December 21st.

Review the plan: soundtransit.org/sip

Comment: servicechanges@soundtransit.org

Call: 1-866-940-4387

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2018 Service Implementation Plan

INTRODUCTION



Introduction

Each year, Sound Transit prepares a Service Implementation Plan that guides delivery of ST Express bus, Sounder commuter rail, and Link light rail services. In coordination with the annual agency budget process, the Service Implementation Plan provides both a forward look at future service plans and a review of existing ridership and performance trends. This year's Service Implementation Plan has a minor change to the structure and layout, combining the Corridor Ridership and Route-Level Performance to better represent the corridors that Sound Transit serves.

What is in the Service Implementation Plan?

- **2018 Adopted Changes.** This section discusses upcoming changes that will occur in 2018.
- **Title VI Evaluation.** Assessment of potential impacts resulting from major service changes on minority, low income, and limited English speaking communities.
- **Five-Year Service Outlook & Plan.** A look ahead to upcoming opportunities and challenges; preliminary service plans, ridership estimates, revenues, and operating costs for the years 2019-2023.
- **System Ridership & Performance Analysis.** Assessment of ridership and service effectiveness by mode as defined in the *Service Standards & Performance Measures*.
- **Corridor Ridership & Route Profiles.** Measurement of ridership in major travel corridors, with a focus on evaluating recent corridor level trends; detailed profiles of each route and line in the system, with ridership and service productivity data, stop-level ridership, summary of service levels, and reference maps for each route and line.

AGENCY OVERVIEW

Mission

Sound Transit plans, builds, and operates regional transit systems and service to improve mobility for Central Puget Sound.

Sound Move, ST2, and ST3

In 1996, voters in Central Puget Sound approved the Sound Move plan with a mandate to build a mass transit system connecting major urban centers in Snohomish, King, and Pierce counties. Covering more than 1,000 square miles, the Sound Transit District serves a population of over 3 million people. The Sound Transit District is composed of more than 50 cities, including most of the urban areas of King, Pierce, and Snohomish counties. Voters approved a second phase of mass transit, Sound Transit 2 (ST2), in 2008 and a third phase of mass transit expansion, Sound Transit 3 (ST3), in 2016. Under the plans, the regional light rail system will reach over 50 miles by 2024 expanding to Lynnwood, Bellevue, Overlake, and Federal Way and over 110 miles by 2041 with expansions to Everett, Issaquah, Kirkland, West Seattle, Ballard, and Tacoma. Frequent peak service will operate on the 83-mile Sounder commuter rail line from Everett to Lakewood, and ST Express bus will continue to serve major regional travel corridors with new BRT corridors along SR 522 and I-405. Figure 2 shows the existing Sound Transit system and approved ST2 and ST3 projects.

FIGURE 2: EXISTING SOUND TRANSIT SYSTEM & APPROVED ST2 AND ST3 PROJECTS



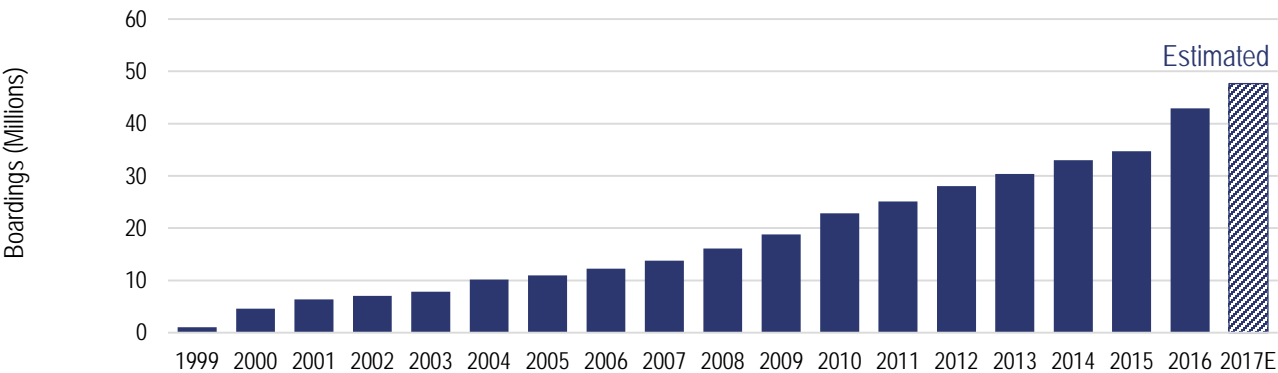
Service Modes Provided & Ridership

Sound Transit operates two light rail lines, two commuter rail lines, and 28 express bus routes which served 42.8 million passengers in 2016. In 2016, Sound Transit provided approximately 630,000 annual trips on ST Express, Link light rail, Sounder commuter rail, and Tacoma Link. Over 876,000 annual platform hours across all modes of service were operated throughout 2016.

In 2017 Sound Transit had modest service improvements to increase capacity on existing Sounder, Link, and ST Express trips after large ridership increases in 2016. This year saw the addition of two new round-trips on Sounder south line to address increases in ridership and provide more frequent peak-period trips for customers, which completes the ST2-funded service additions for Sounder. Additional cars on the existing midday trains also allow for additional capacity for existing south line customers. The arrival of new double decker buses provide additional capacity to Snohomish County routes. Finally, in 2017, ST Express bus service added 15,000 additional annualized platform hours to improve schedule reliability with increasing congestion in the region.

Figure 3 outlines annual system-wide ridership since Sound Transit service began in 1999 through 2017. By the end of 2017, ridership on Sound Transit’s network of rail and express bus services will reach an estimated 47 million annual passenger boardings.

FIGURE 3: TOTAL ANNUAL ST SYSTEM RIDERSHIP 1999-2017



Sound Transit Services



ST Express: Fast, frequent regional bus service

ST Express offers fast, frequent, two-way service on 28 routes connecting Snohomish, King, and Pierce Counties. Sound Transit provides this bus service via service agreements with our transit partners: King County Metro, Pierce Transit, and Community Transit. ST Express provides service to over 50 transit centers and park-and-ride lots.



Sounder: High-capacity commuter rail

Sounder commuter rail spans three counties, serving commuters on the north line from Everett to Seattle and on the south line from Lakewood to Seattle. Sound Transit owns the railway between Lakewood and Tacoma, and BNSF Railway, owner of the railroad between Tacoma and Everett, operates Sounder service under a contract with Sound Transit. Amtrak provides maintenance for the Sounder fleet of locomotives and passenger cars.



Link: Frequent, reliable high-capacity light rail

Link light rail operates on over 20 miles of alignment between the University of Washington Station and Angle Lake Station in the city of SeaTac, serving 16 passenger stations, including four stations in the Downtown Seattle Transit Tunnel. King County Metro operates and maintains the system through an intergovernmental agreement with oversight by agency staff. Paratransit service is also operated by King County Metro within the Link service area.



Tacoma Link: Light rail with multimodal connections

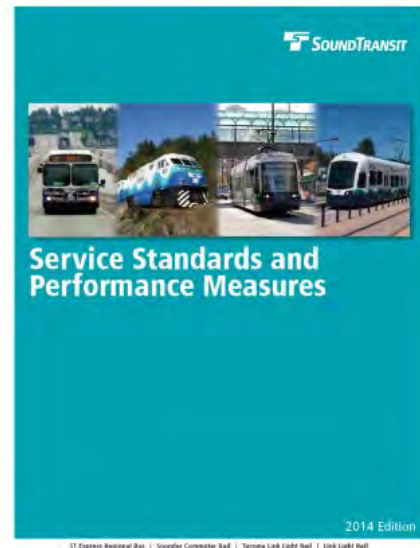
Tacoma Link is a 1.6-mile light rail passenger line that runs through the heart of downtown Tacoma. There are six unique stations complete with artwork that reflects the history and community of Tacoma. Trains run every 12 minutes during peak hours and every 24 minutes at all other times.

SERVICE IMPLEMENTATION PLAN PROCESS

Service Standards

Since 1998, Sound Transit has used its Board adopted *Service Standards and Performance Measures* to plan and manage Sound Transit services. Service standards and performance measures are a set of guidelines that are used to design, evaluate and manage transit service with the objective of maximizing efficiency, effectiveness, and service quality in the system. The document also describes how Sound Transit service should be designed to reflect the characteristics of a high-speed, limited-stop regional system.

Service Planners use the document to guide a multi-step process to identify the level and type of service that should be provided, as well as a process to implement any changes needed to meet established priorities. The agency has updated the original document three times, in 2006, 2010 and most recently in 2014. An update of the Service Standards was kicked off in Q4 2017.



Major and Administrative Service Changes

The *Service Standards and Performance Measures* define criteria for making major or administrative service changes. A major service change is any single change in service on an individual bus or rail route that would add or eliminate more than 25 percent of the route's weekly platform service hours, and/or move the location of a stop or station by more than a half mile. All major service changes include public participation and are approved by the Board. An administrative service change is any single change, or cumulative changes, that affects a route's service hours by less than 25 percent or does not move a stop by more than half a mile. Administrative changes are typically implemented to address near-term operational issues of the service. Any change classified as administrative may be made without Board approval, allowing staff to be responsive in addressing service quality issues.

Proposed Service Change Process

Development of the proposed service changes included in the Service Implementation Plan is driven by five primary guides:

- **Voter-approved Sound Move, ST2, and ST3 plans:** The completion of major capital projects drives service changes including starting new service, opening new alignments and stations, and modifying existing service to maximize the connectivity of the overall regional transit network for the customer.
- **Agency budget:** coordination to ensure that proposed changes are included and funded as part of the annual budget, if funding is available.
- **Application of the Board adopted Service Standards and Performance Measures:** On an on-going basis, staff use the *Service Standard and Performance Measures* to monitor and manage the performance and service quality of the Sound Transit system. Evaluation of key ridership and service performance indicators identifies investment priorities or opportunities for performance improvement. The results of service analysis guide the development of proposed changes, additions, or reductions to Sound Transit service within available operating budget.

- **Service equity analysis (Title VI evaluation):** staff performs a service equity analysis based on the major service change definitions outlined in the *Service Standards and Performance Measures* to ensure that any of the proposed changes do not cause a disparate impact on Title VI communities, as defined in the Service Equity Analysis section of this document. Proposed service changes are modified to minimize and/or mitigate any disparate impacts to these communities.
- **Regional coordination with partner agencies:** staff continually works with partner transit agencies to identify opportunities for increased coordination and integration. Proposed service changes in this category may include scheduled coordination to facilitate transfers or major structural changes to the network to integrate bus and rail services.

Public Process and Board Approval

Each year the Service Implementation Plan is released publicly at least one month before presentation to the Operations and Administration Committee of the Board of Directors. In years with proposed major service changes open house style meetings are held in areas most directly affected by the proposed service changes. Prior to presentation to the Board of Directors, a public hearing is held allowing opportunities for comment on any major service changes. Customers and members of the public are encouraged to comment on the draft plan through email, letter, telephone, or in-person at a public meeting.

Review the plan: soundtransit.org/sip

Comment: servicechanges@soundtransit.org

Call: 1-866-940-4387

Implementing Service Changes

The Service Implementation Plan is implemented through the twice-yearly service change process. These times correspond to the service change dates when transit operators change work assignments. Staff prepares detailed instructions for the operating partners as well as internal staff responsible for carrying out rider communications (e.g., rider alert messages, schedule publication) and other tasks (e.g., changes to signage) associated with the service changes. One to two weeks prior to a major service change, staff generally “street-team” on-location to notify customers face-to-face about upcoming changes. Immediately after service changes are implemented, staff works closely with the operating partners to resolve any unanticipated operational issues. In addition, street teams continue into the first week of the service change to assist customers in locating their service.

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2018 ADOPTED SERVICE CHANGES



2018 Service Changes

The 2018 Service Implementation Plan includes a major service change on ST Express Routes 550 and 554 to accommodate upcoming construction of the Judkins Park station for the East Link extension. This package of service changes was approved as an amendment by the Board in March 2018. No major service changes to Sounder, Link, or Tacoma Link were proposed for 2018. In addition to a description of upcoming service changes, this section also includes estimated service statistics and estimated ridership by mode for 2018. For ridership and service estimates through 2023, as well as a preliminary service plan, refer to the Five Year Service Outlook & Plan section or the Appendix of this document.

ADOPTED 2018 SERVICE CHANGES

I-90 Rainier Freeway Station Closure

To accommodate East Link construction along I-90, both the D-2 roadway which connects the Downtown Seattle Transit Tunnel and 5th Ave S to the I-90 mainline, as well as the Rainier Freeway Station, will close in September 2018, impacting Sound Transit Routes 550 and 554. Route 550 would skip the Rainier Freeway Station (RFS) and continue downtown via I-90, while Route 554 would exit at Rainier Ave S to serve a new stop location at Rainier Ave S and S Charles St to maintain access between East King County and the Rainier Valley. Finalized schedules for I-90 services will be developed prior to the September 2018 service change. A summary of the adopted 2018 changes is presented in Table 1 below. An explanation of all service change alternatives reviewed as well as the process used to arrive at the preferred alternative can be found in the Service Equity Analysis section.

TABLE 1: 2018 I-90 SERVICE CHANGES

Route	Description	Adopted Service Change	Service Change Date	Service Change Type
550	Bellevue - Seattle	Route will no longer serve the Rainier Freeway Station. Route will proceed on the I-90 mainline to Downtown Seattle. Frequency reductions are expected.	September	Major
554	Issaquah - Seattle	Route to exit I-90 at Rainier Ave S and stop at Rainier Ave & Charles St (0.3 miles north) instead of the RFS. Route to continue express to downtown via Rainier Ave S and S Dearborn Street and make all regular stops downtown. Outbound trips will stop at 2 nd Ave Ext S & Yesler St instead of 5 th Ave S & S Jackson St. Frequency reductions are expected.	September	Minor

Each service change has been classified as either major or administrative. A service change is defined as major if vehicle hours of a route change by 25% or more or a stop is eliminated or moves by more than half a mile. The closure of the Rainier Freeway Station is a major service change, because Route 550 will no longer serve the stop.

Figures 4 and 5 show existing and future I-90 service. A new pair of stops on Rainier Avenue will serve the same area as the current RFS. Route 554 will serve this stop, which will provide multiple options for the 380 daily Sound Transit riders commuting from Rainier Avenue to the Eastside, as well as many King County Metro (KCM) riders. In addition, KCM reverse-peak routes and trips, which travel eastbound from Seattle in the morning peak and westbound to Seattle in the afternoon peak, will stop at Rainier Avenue. Sound Transit has coordinated heavily with KCM on this project, and both agencies have chosen an alternative that balances the needs of all customers while maintaining service to communities that are most transit-reliant.

FIGURE 4: CURRENT I-90 SERVICE

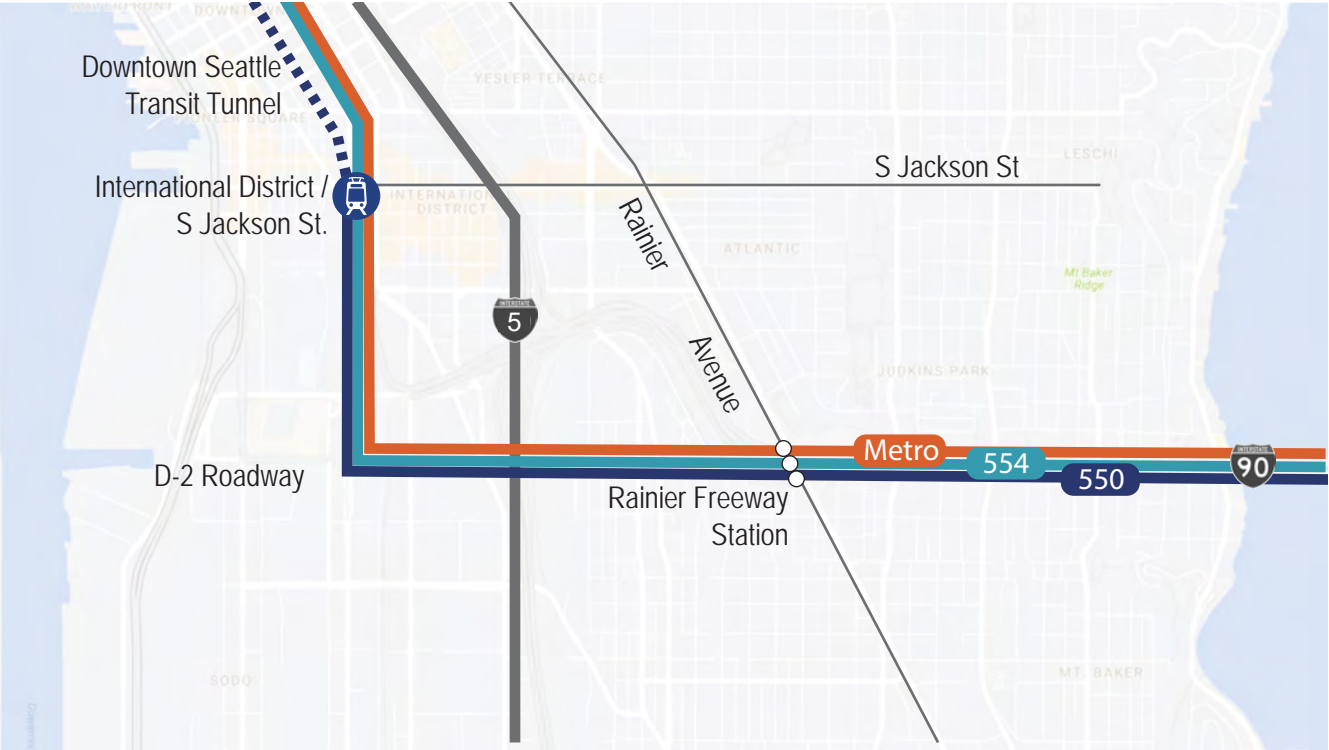


FIGURE 5: ADOPTED SEPTEMBER 2018 SERVICE CHANGE



International District Stop Change

To facilitate a more direct outbound path for Route 554 from Seattle to Issaquah, eastbound 554 trips and KCM Issaquah-bound routes will serve a different stop in the International District. The current stop at 5th Ave S & S Jackson St was in the most direct path for buses accessing the D-2 Roadway, but is no longer the most efficient stop. In September 2018, the stops at S Washington St & 4th Ave S as well as 5th Ave S and S Jackson St will be consolidated into an expanded 2nd Ave Ext S and Yesler Way stop. All other 554 stops and all 550 stops will remain in place for the time being.

Schedule Development

Service change proposals were developed within current operational constraints, which prevent increases to operating hours or fleet requirements on either route. Schedule modifications will ensure that customers transferring at key transfer points to access Bellevue or Rainier Avenue would have minimal wait times. Schedules on Route 554 will also be coordinated with the KCM routes that serve some of the same stops to encourage an even distribution of riders between the routes at peak hours.

However, adding more buses to the fleet to serve these routes is not an option at this time due to regional constraints on storage and maintenance space capacity at partner agency bus bases. Because these service changes will increase travel times on both routes, maintaining current frequencies would demand more operating time from a bus fleet that is already operating near the maximum level possible given maintenance needs. At peak hours, it would also require more buses than are currently available. Therefore, Sound Transit anticipates slightly reducing frequencies on both Routes 550 and 554 in order to work within these constraints. Finalized schedules will be released the month before the service change, with the goal of minimizing customer impacts at the peak periods.

Transit Priority Improvements

Due to growing congestion in the region, frequency reductions, and construction from a variety of sources, some delay to bus customers is inevitable in the years leading up to the opening of East Link. Sound Transit is committed to minimizing this delay to the greatest extent possible and is working with agency partners on several improvement projects.

To keep people moving in the corridor and further mitigate the effects of construction, Sound Transit is also investing heavily in capital improvements in the corridor in collaboration with the Seattle and Washington State Departments of Transportation. These improvements have been put on a priority list with the goal of completion by the beginning of the service change. The projects will help minimize travel times along new paths between downtown and I-90. Capital improvements will include:

- **Northbound 4th Avenue from I-90 to Weller:** Red bus lane treatment to discourage cars from using the lane meant for buses
- **I-90 westbound off-ramp at 4th Ave S:** Transit-only lane to bypass traffic and speed up travel times
- **I-90 eastbound mainline:** Bus will run on shoulder between approximately the I-5 northbound off-ramp to the I-5 southbound on-ramp
- **I-90 eastbound on-ramp from southbound Rainier Ave:** bus-only hard shoulder running lane to bypass traffic
- **Seattle Boulevard between 4th Ave S and 5th Ave S:** Reconfigure intersection to create two right turn only lanes from Seattle Blvd to 4th Ave S at all times.

ESTIMATED MODAL SERVICE HOURS & MILES

Based on the 2018 service plan, planners worked closely with finance staff to estimate four key service statistics that drive operating costs included in the 2018 budget:

- **Platform hour:** Any hour a transit vehicle is operating, which includes in-service hours, deadhead hours and layover hours. Typically, this is the total amount of time the transit vehicle is away from the operating base.
- **Revenue hour:** An hour in which a transit vehicle is in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.
- **Platform Mile:** Any mile a transit vehicle operates, which includes in-service miles and deadhead miles. Typically, this is the total distance the transit vehicle travels while away from the operating base.
- **Revenue Mile:** The distance a transit vehicle operates in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.

Link and Sounder include both train and vehicle statistics to reflect operation of multiple cars within an individual train. For each mode the following section includes hours and miles, actuals and estimates:

- **2016:** as reported to FTA's National Transit Database
- **2017:** estimate of year-end totals based on year-to-date trends and projections for the last few months of the year
- **2018:** estimate based on the adopted service plan

Link

In 2018 Link train statistics will be similar to that of 2017; however, the implementation of additional 3-car trains in service during peak and off-peak periods result in increased vehicle statistics over the previous year's projections. Link service hours and miles through 2018 are presented in Table 2.

TABLE 2: LINK SERVICE HOURS AND MILES 2016-2018

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES	REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train Statistics				Vehicle Statistics			
2016	Actual	90,019	93,975	1,803,023	1,930,496	204,824	214,003	4,103,169	4,375,289
2017	Estimated	96,926	101,186	1,941,385	2,078,640	251,758	262,822	5,042,572	5,399,080
2018	Estimated	97,017	101,281	1,943,197	2,080,580	263,064	274,625	5,269,034	5,641,552

Souder

Souder statistics increase in 2018 due to a full year of operation of the two new round trips added in September 2017. Souder service hours and miles by line through 2018 are presented in Table 3.

TABLE 3: SOUNDER SERVICE HOURS AND MILES 2016-2018

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES	REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train Statistics				Vehicle Statistics			
	North Line								
2016	Actual	2,698	2,893	69,699	71,820	7,124	7,627	184,338	189,840
2017	Estimated	2,890	3,073	75,070	76,826	7,225	7,683	187,676	192,066
2018	Estimated	2,890	3,073	75,070	76,826	7,225	7,683	187,676	192,066
	South Line								
2016	Actual	7,618	8,211	235,266	242,628	52,151	56,169	1,610,403	1,660,561
2017	Estimated	8,584	9,245	271,063	278,204	57,415	61,740	1,810,765	1,857,474
2018	Estimated	9,652	10,435	305,734	314,186	67,564	73,042	2,140,136	2,199,301
	Souder Total								
2016	Actual	10,316	11,104	304,965	314,448	59,275	63,796	1,794,741	1,850,401
2017	Estimated	11,474	12,318	346,133	355,030	64,641	69,423	1,998,441	2,049,540
2018	Estimated	12,542	13,508	380,804	391,012	74,789	80,725	2,327,812	2,391,367

Tacoma Link

Tacoma Link statistics remain largely consistent in 2018, as service levels are unchanged. Minor variations reflect estimates of additional service on special events and based on which days of the week holidays fall. Since Tacoma Link operates as a one-car train, train and vehicle statistics are identical. Tacoma Link service hours and miles through 2018 are presented in Table 4.

TABLE 4: TACOMA LINK SERVICE HOURS AND MILES 2016-2018

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train & Vehicle Statistics			
2016	Actual	9,868	9,905	75,983	76,262
2017	Estimated	9,809	9,846	75,527	75,805
2018	Estimated	9,900	9,937	76,000	76,500

ST Express

Increases in estimated service statistics for ST Express reflect a full year of operation of 2017 service additions. ST Express service statistics are presented on Tables 5-7 on three levels: ST Express system total, by operating partner, and by subarea. Table 5 includes total hours and miles for all ST Express routes including scheduled, special event, extra service, and contingency. Next, Table 6 shows the distribution of only scheduled platform hours, the key cost driver for ST Express, by operating partner. Finally, Table 7 lists only scheduled platform hours by subarea. The service hour totals of Tables 6 and 7 differ slightly from the totals of Table 5, as Tables 6 and 7 do not include the budgeted general schedule maintenance and extra service hours.

Route level estimates for ST Express are included in the Appendix.

TABLE 5: ST EXPRESS TOTAL SERVICE HOURS AND MILES 2016-2018

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
2016	Actual	609,563	764,880	11,920,347	16,200,954
2017	Estimated	608,578	783,389	11,942,295	16,314,712
2018	Estimated	617,710	794,780	12,118,429	16,557,882

Estimates include scheduled service, special event, and extra service. All estimated hours are subject to change based on end of year actuals

TABLE 6: ST EXPRESS PLATFORM HOURS BY OPERATING PARTNER 2016-2018

YEAR		COMMUNITY TRANSIT	KING COUNTY METRO	PIERCE TRANSIT	TOTAL
2016	Actual	150,285	279,372	331,496	761,153
2017	Estimated	147,945	293,051	337,893	778,889
2018	Estimated	147,214	297,233	345,834	790,280

Estimates only include scheduled service and do not include special event or extra service. All estimated hours are subject to change based on end of year actuals

TABLE 7: ST EXPRESS SCHEDULED PLATFORM HOURS BY SUBAREA 2016-2018

YEAR		SNOHOMISH COUNTY	EAST KING COUNTY	SOUTH KING COUNTY	PIERCE COUNTY	TOTAL
2016	Actual	126,856	352,397	79,304	202,595	761,153
2017	Estimated	124,379	367,443	80,523	206,545	778,889
2018	Estimated	123,764	371,731	82,059	212,726	790,280

Estimates only include scheduled service and do not include special event or extra service. All estimated hours are subject to change based on end of year actuals.

ESTIMATED RIDERSHIP

Sound Transit estimates ridership for all its modes on an annual basis for inclusion in the Service Implementation Plan and the annual agency budget. The modeling process has many inputs that affect anticipated utilization of transit service, including historical ridership data, fuel prices, and employment, among other inputs. Other key inputs include population and employment projections developed by the Puget Sound Regional Council (PSRC) and the previous year's annual and average weekday boardings. Table 8 shows the projected annual boardings by year for each of the Sound Transit modes and Table 9 shows projected weekday boardings for each of the Sound Transit modes.

Ridership on Sound Transit trains and buses will reach record levels in 2018. Ridership across all modes is estimated to increase by 4 percent over 2017 to reach nearly 50 million by the end of 2018. Link will continue to grow by another 8 percent in 2018. The new Sounder schedule implemented in September 2017 will result in annualized ridership gains in 2018 of 8 percent from 2016. Both ST Express and Tacoma Link estimates predict little change in ridership for the next several years. Paratransit transit boardings are also expected to be relatively flat over the upcoming year.

TABLE 8: ANNUAL BOARDINGS BY MODE 2016-2018

MODE	2016	2017	2018
	Actual	Estimated	Estimated
ST Express	18,470,408	18,770,000	18,860,000
Sounder	4,312,113	4,500,000	4,650,000
Link	19,121,621	23,400,000	25,200,000
Tacoma Link	938,315	910,000	940,000
Paratransit	48,243	60,000	60,000
System Total	42,890,700	47,640,000	49,710,000

TABLE 9: AVERAGE WEEKDAY BOARDINGS BY MODE 2016-2018

MODE	2016	2017	2018
	Actual	Estimated	Estimated
ST Express	64,130	65,200	65,500
Sounder	16,662	17,400	18,000
Link	59,118	73,000	78,700
Tacoma Link	3,182	3,100	3,200
Paratransit	158	175	180
System Total	143,206	158,847	165,600

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SERVICE EQUITY ANALYSIS (TITLE VI EVALUATION)



Service Equity Analysis (Title VI Evaluation)

INTRODUCTION

As part of the annual Service Implementation Plan, Sound Transit conducts a service equity analysis, also known as a Title VI evaluation analysis, to ensure that changes to transit service are consistent with Title VI policies defined by the Federal Transit Administration (FTA) and Board policies defined by the Sound Transit Board of Directors. The FTA is responsible for ensuring that federally supported transit services and related benefits are distributed by applicants and recipients of FTA assistance in a manner consistent with Title VI, Section 601 of the Civil Rights Act of 1964, which states:

No person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

This section of the SIP provides an assessment of potential impacts to minority, low income and limited English speaking communities associated with the changes approved in this Service Implementation Plan.

POLICIES AND DEFINITIONS

The section below describes Sound Transit's approved policies for conducting and identifying major service changes, as well as for assessing their impacts on Title VI populations.

Service Standards and Performance Measures

Service standards and performance measures are a set of guidelines that are used to design, evaluate and modify transit service. The standards and measures establish baselines to obtain optimum efficiency and effectiveness in the system on a short-term basis, while maintaining or improving the quality of service. Planning and day-to-day management of transit service is based on the established service standards and performance measures. The guidelines provide a multi-step process to identify the level and type of service that should be provided, as well as a process to implement any changes needed to meet established priorities.

The *Service Standards and Performance Measures* defines the criteria for making major or administrative service changes, as well as guidelines and driving factors for the type of changes needed to ensure Sound Transit services are meeting the demand for regional transit in the Puget Sound area.

Major Service Change

Resolution R2013-18, adopted by the Sound Transit Board of Directors in 2013, established policies for conducting equity analyses of major service changes and assessing the impacts on minority and low income populations. This policy defines a major service change as follows:

A major service change is any single change in service on an individual bus or rail route that would add or eliminate more than 25 percent of the route's weekly platform service hours, and/or move the location of a stop or station by more than a half mile.

Adverse Effects

The adopted policy, described above, also defines potential adverse effects of major service changes and thresholds for determining whether the proposed service change would have a disparate impact on minority populations and/or a disproportionate burden on low-income populations. The definitions are as follows:

- *A potential adverse effect is defined as a geographical or time-based addition or reduction in service which includes but is not limited to: changes to span of service, changes to frequency of service, or elimination of routes or route segments.*
- *A disparate impact occurs when the minority percentage of the population adversely affected by a major service change is greater than the average minority percentage of the population of Sound Transit's service area.*
- *A disproportionate burden occurs when the low income percentage of the population adversely affected by a major service change is greater than the average low income percentage of the population of Sound Transit's service area.*

Per Sound Transit's policy, if any disparate impact or disproportionate burden is found during the service equity analysis, Sound Transit will consider steps to avoid, minimize, or mitigate the adverse impacts and reanalyze the modified changes to determine if the impacts are removed or lessened.

Definitions and Data Analysis

The following sections describe the data definitions and methodologies used by Sound Transit to develop estimates for Title VI populations within the Sound Transit service area.

Demographic Analysis Methodology and Title VI Data Definitions

Sound Transit uses census demographic data to identify Title VI communities (Minority, Low Income, & Limited English Proficiency) for service equity analysis and calculates the system-wide or mode specific average representation of these communities within the general population. Sound Transit uses the 2010 designated Census Tracts as the geographic basis for assessing the Title VI populations.

Sound Transit uses the most recent five-year demographic estimates available from American Community Survey (ACS). The ACS dataset identifies Minority, Low Income and Limited English Proficiency (LEP) populations as follows:

- **Minority:** Persons who self-identify as being one or more of the following ethnic groups: American Indian and Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian and Other Pacific Islander.
- **Low income:** Persons whose median household income is below the federal poverty level.
- **Limited English Proficiency (LEP):** Persons who identify a language other than English as their primary language and are not fluent in English.

The following sections describe the methodology for identifying each of the Title VI populations for the purposes of the annual service equity analysis.

Service Area Methodology

Most transit agencies in the United States define their service area as a buffered distance around each of their transit routes. Given the unique service characteristics of Sound Transit service – limited stops connecting regional urban and employment centers – the agency defines its service area based on a radial distance from each transit stop, rather than the transit route alignment. Table 10 below provides details on Sound Transit’s service area by stop type.

TABLE 10: SERVICE AREA DEFINITIONS

TYPE	SERVICE AREA (MILES)
Bus Stop without parking	0.5
Rail station without parking	1.0
Major bus facilities with parking	2.5
Rail station with parking	5.0

Sound Transit Title VI Population Estimates

Using the demographic analysis and Title VI definitions previously outlined in this section, averages for the three Title VI populations for the Sound Transit service area are identified.

The population representation for any Title VI analysis is calculated using the percentage of area that falls within the district or mode’s service area to estimate the specific number of people that fall within each of the Title VI categories. For example, if a census tract total is 10 acres and 3 acres are in the service area, based on the previously identified methodologies, then 30 percent of the tract’s total population, and in turn the respective Title VI populations, is considered to be within the service area. This methodology assumes an even distribution of population throughout the census tract.

Using the 2011-2015 ACS Dataset, as shown in Table 11 below, the Title VI population averages for the Sound Transit service area are: Minority - 37.6 percent, Low Income - 12.2 percent, and LEP - 10.2 percent. These averages serve as a comparison in the service change analysis conducted by Sound Transit.

TABLE 11: TITLE VI POPULATIONS IN SOUND TRANSIT DISTRICT

TITLE VI POPULATIONS	PERCENTAGE OF SOUND TRANSIT DISTRICT POPULATION
Minority	37.6%
Low Income	12.2%
Limited English Proficiency (LEP)	10.2%

SERVICE EQUITY EVALUATION OF 2018 SERVICE CHANGES

Routes 550 and 554 provide service to diverse communities throughout the region. This Title VI Evaluation provides an analysis of the minority, low income and Limited English Proficient communities impacted by this service restructure and explains why Sound Transit has chosen to prioritize these communities.

TABLE 12: 2018 I-90 SERVICE CHANGES

Route	Description	Adopted Service Change	Service Change Date	Service Change Type
550	Bellevue - Seattle	Route will no longer serve the Rainier Freeway Station. Route will proceed on the I-90 mainline to Downtown Seattle. Frequency reductions are expected.	September	Major
554	Issaquah - Seattle	Route to exit I-90 at Rainier Ave S and stop at Rainier Ave & Charles St (0.3 miles north) instead of the RFS. Route to continue express to downtown via Rainier Ave S and S Dearborn Street and make all regular stops downtown. Outbound trips will stop at 2 nd Ave Ext S & Yesler Way instead of 5 th Ave & Jackson St. Frequency reductions are expected.	September	Minor

Each service change has been classified as either major or administrative. A service change will be defined as major if vehicle hours of a route change by 25% or more or a stop or station location is eliminated or moves by more than half a mile. The closure of the Rainier Freeway Station is a major service change, because Route 550 will no longer serve the stop. Changes on Route 554 are considered a minor service change because the stop is moving less than 0.5 miles. However, due to the unique nature of this stop as a freeway station and the fact that Route 554 will change course, Sound Transit is treating it as a major service change for purposes of the Title VI analysis and outreach strategy.

Results of the Title VI evaluation shown in Table 13 display the percentages of Title VI populations for both the RFS and the Route 550 and 554 service areas. Shaded cells indicate that the Title VI population is a higher proportion of the general population compared to Sound Transit district averages. To complement the service change analysis for this service change, a series of maps corresponding to the three Title VI categories, Figures 7 to 9, were also developed. Service area representation, analysis, and averages represented in Figures 3 through 10 are strictly Sound Transit specific.

TABLE 13: ROUTES 550 & 554 TITLE VI EVALUATION RESULTS

Title VI Populations	Rainier Freeway Station Area	Bellevue area	550 Service Area	554 Service Area	Sound Transit District Average
Minority	51.0%	37.1%	35.6%	37.3%	37.6%
Low Income	16.6%	8.3%	12.0%	8.6%	12.2%
Limited English Proficiency	14.1%	12.1%	8.9%	9.9%	10.2%

The table and maps demonstrate that there is a disproportionate share of all three Title VI populations near the RFS. Therefore, Sound Transit chose the service change alternative that caused the least impact to these communities. Four service alternatives were considered for Routes 550 and 554, with each presenting benefits and tradeoffs for different populations. The alternatives were evaluated primarily according to delay incurred by the Title VI community. Further discussion of the service change alternatives can be later in this section. Less tangible impacts to this community were also considered, such as transfer penalties and the transfer environment.

Commuting characteristics suggest that more users of the RFS live in South Seattle and commute to the Eastside during the day, rather than vice versa. Therefore, service changes affecting this facility would impact residents of this community more than residents of the Eastside.

However, the table shows that Bellevue also has a higher than average share of Limited English Proficient residents. The preferred alternative avoids disproportionately impacting these residents by keeping Route 550 on the I-90 mainline and maintaining as close-to-current frequencies as possible, thereby minimizing travel delay for Bellevue residents traveling to Seattle.

FIGURE 7: ROUTE 550 AND 554 TITLE VI ANALYSIS – MINORITY POPULATION MAP

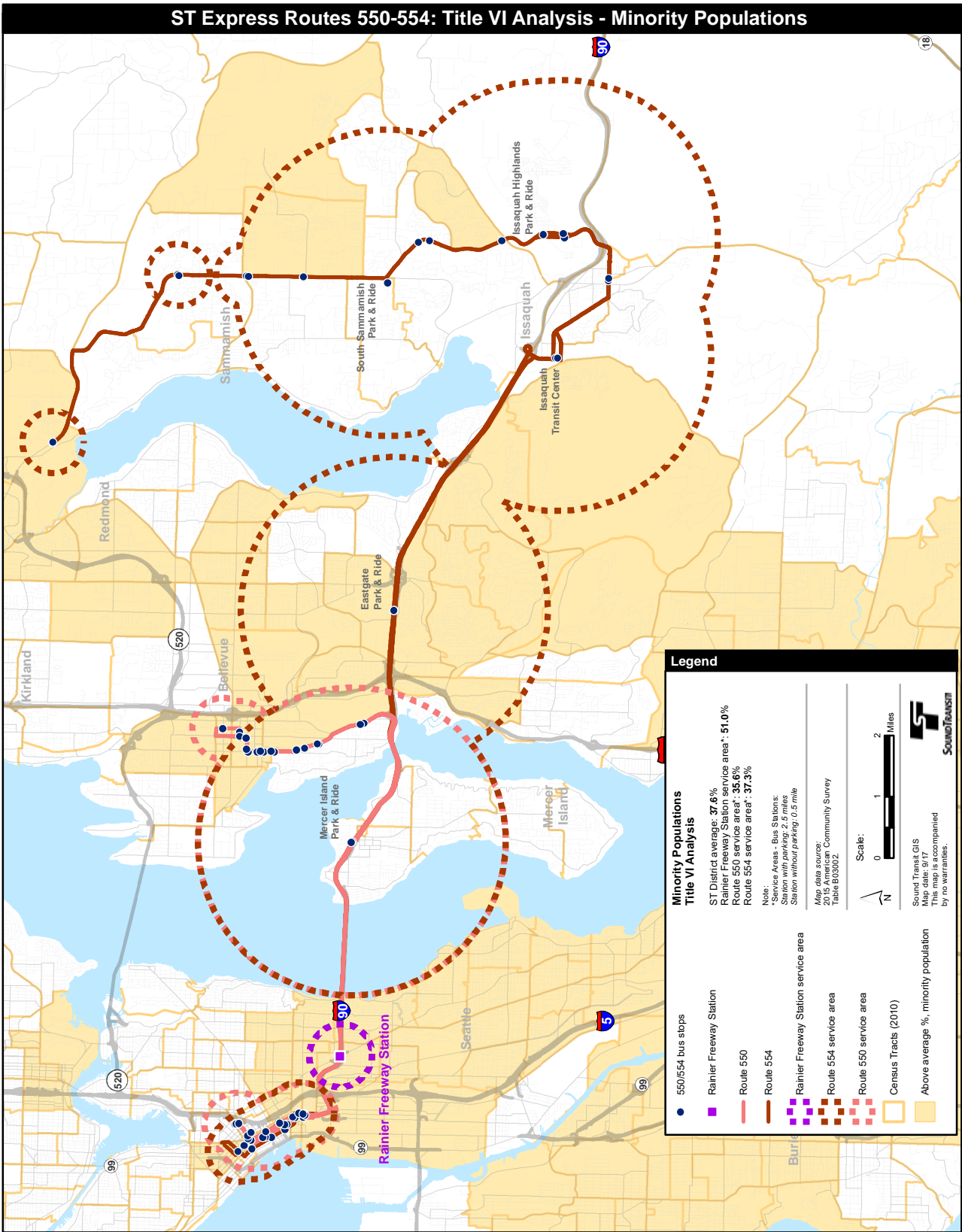


FIGURE 8: ROUTE 550 AND 554 TITLE VI ANALYSIS – LOW INCOME POPULATION MAP

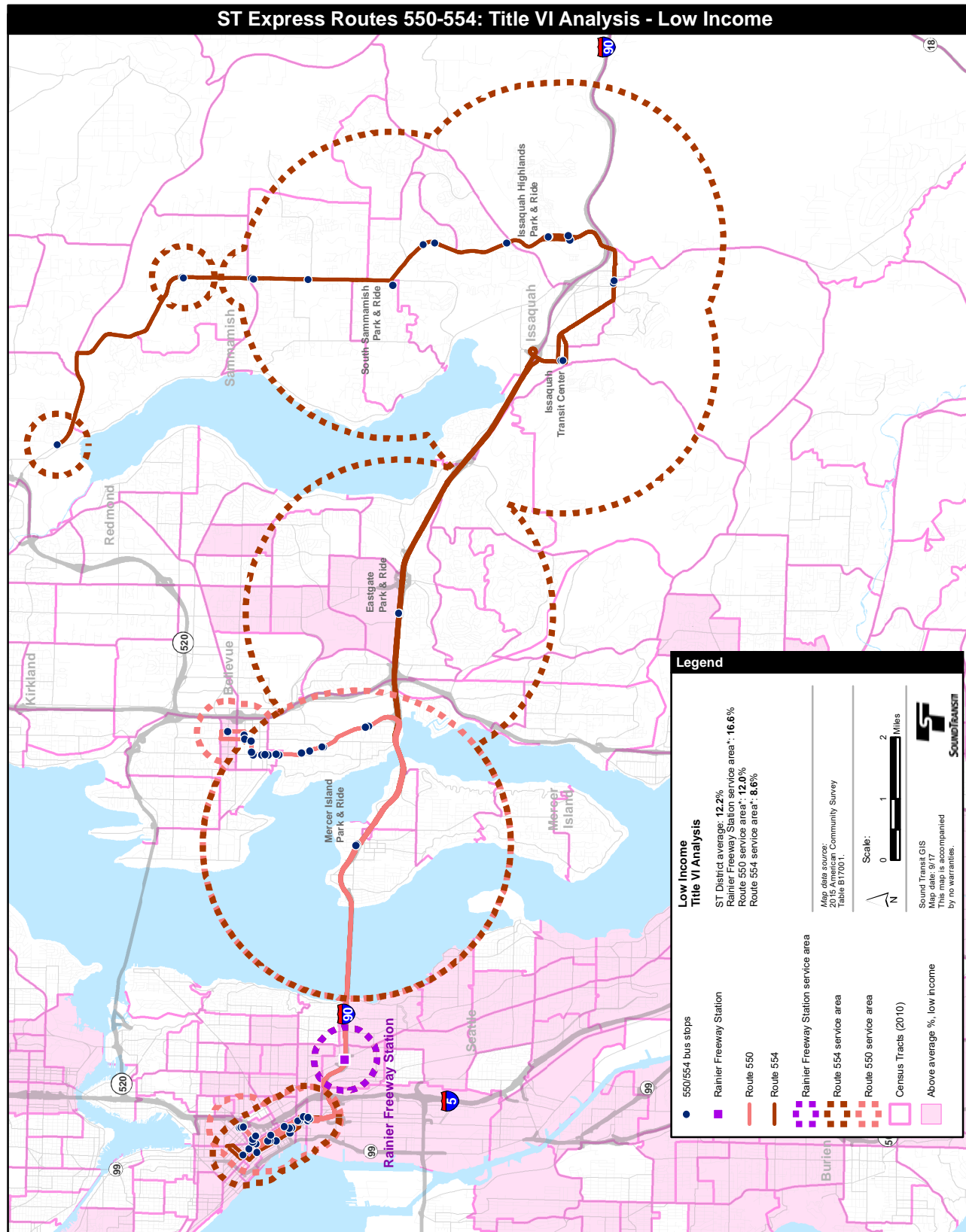
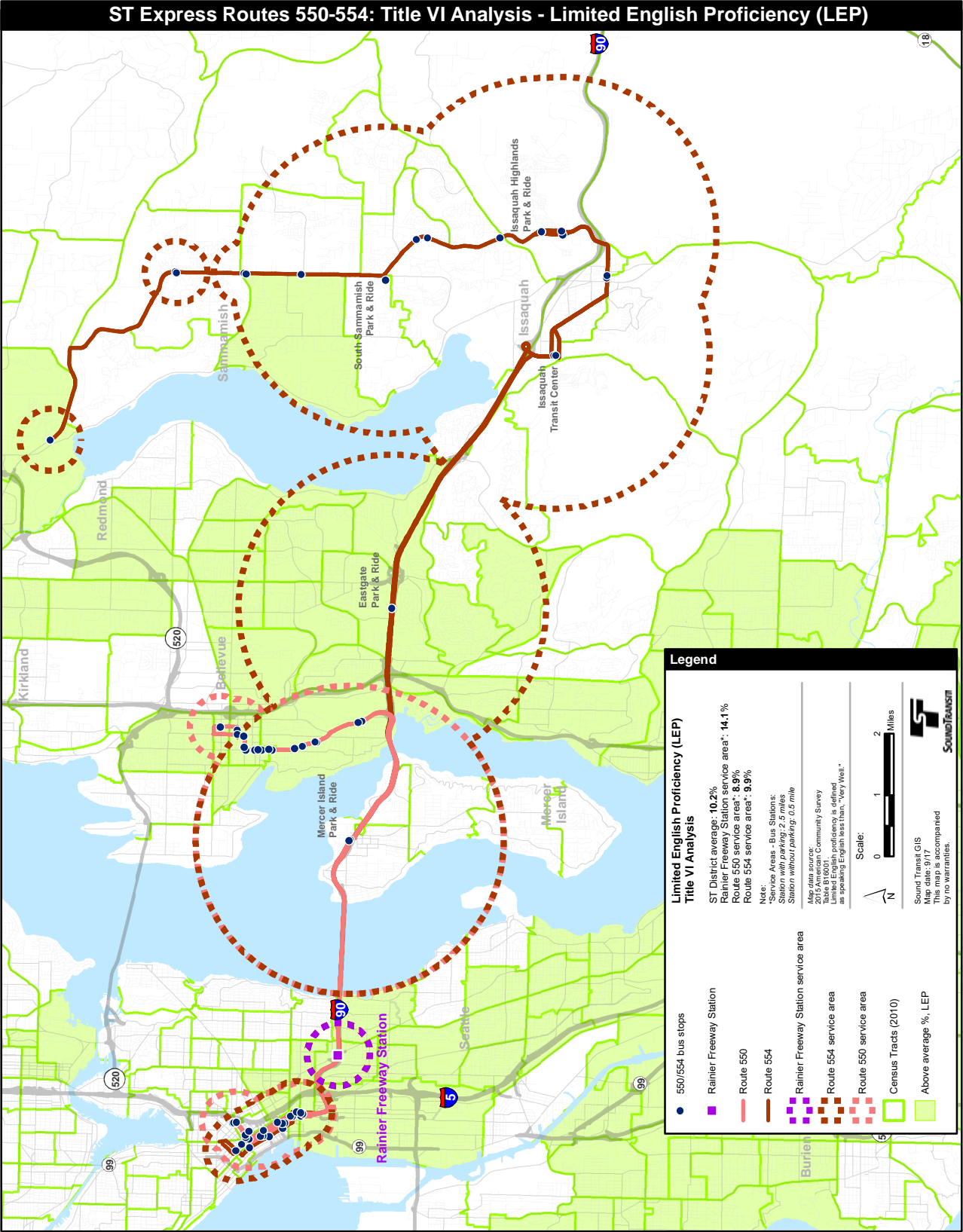


FIGURE 9: ROUTE 550 AND 554 TITLE VI ANALYSIS – LIMITED ENGLISH PROFICIENCY POPULATION MAP



I-90 SERVICE CHANGE ALTERNATIVE ANALYSIS

Service planners conducted an extensive Title VI analysis and determined that this service change will affect a minority, low-income, or Limited English Proficient community. Therefore, service planning carefully considered alternatives to avoid disproportionately impacting this community.

Development Process for Service Changes

In July 2011 Sound Transit published an Environmental Impact Statement for the East Link project. The environmental justice section of the EIS, Appendix C, analyzed whether the East Link Project would result in disproportionately high and adverse effects on minority or low-income populations (pursuant to Executive Order 12898 and Department of Transportation Order 5610.2). The analysis found that impacts were limited in scope or could be mitigated, calling for Sound Transit to coordinate with WSDOT to address impacts to buses that currently use the D-2 Roadway. Furthermore, the EIS concluded that the East Link Project would provide substantial benefits to minority and low-income residents in the areas surrounding light rail stations, such as improved access to transit, transit travel time savings, and improved access to employment.

In 2014, a coalition of area agencies including Sound Transit formed a working group to study how the closure of the D-2 Roadway and RFS would affect traffic and transit and to make recommendations for mitigation of impacts to buses. The group in 2015 published a report that recommended an alternative alignment for Sound Transit and King County Metro bus service in the region. In 2017, a full operations analysis on the affected bus routes was conducted to determine the impact on service frequency, transfer time, and passenger delay. Service planners from Sound Transit, King County Metro, and the Seattle Department of Transportation (SDOT) also collaborated around service change proposals and capital improvements to bus stops and intersections.

Evaluation of Alternatives

Service planning evaluated four alternatives based on several factors, putting special emphasis on the impacts to Title VI communities in the Rainier Valley. The alternatives were evaluated based on impacts to passengers riding between Seattle and the Eastside, rather than within Seattle or within the Eastside. These passengers represent the majority of riders and are more reliant on these specific bus routes whereas riders within Seattle have other options and riders within the Eastside will not see changes to their routing.

Summary of Alternatives Considered

Alternative 1 was the recommendation of the D-2 working group in 2015. This alternative would have Route 550 bypass the Rainier Freeway Station and proceed on the I-90 mainline to Downtown Seattle. Meanwhile, Route 554 would exit I-90 at Rainier Ave S and stop at Rainier Ave & Charles St (0.3 miles north) instead of the RFS. Route 554 would continue express to downtown via Rainier Ave S and S Dearborn Street and make all regular stops downtown in both directions.

Alternatives 2 and 3 would keep both routes on the I-90 mainline, bypassing the RFS. Riders who would normally transfer at the RFS to access the Rainier Valley would instead need to ride to the International District Station and transfer to Link or a Metro route into the Rainier Valley. In Alternative 2, Route 554 would travel on 2nd Avenue when leaving Seattle. That alternative would relocate the outbound 554 stops at 5th & Jackson to 2nd & Jackson to facilitate a faster return to I-90. Alternative 3 would maintain the existing outbound alignment via Washington St and 5th Ave S.

Alternative 4 would keep both routes on the I-90 mainline, similar to Alternatives 2 and 3, but would also offer a special shuttle between the Mt. Baker Transit Center in the Rainier Valley and Downtown Bellevue.

Criteria for Evaluating Alternatives

Cost and Fleet Requirements

Service planning evaluated each alternative with the understanding that no additional buses were available for service, nor could additional operating hours be implemented, due to regional constraints on bus fleet and maintenance capacity described previously. Additional buses are not available, and operating existing buses for more hours per day would require additional maintenance capacity. Therefore, any feasible alternative had to be cost-neutral and fleet-neutral.

Access to Rainier Avenue and Title VI Impacts

Access to the Rainier Freeway Station area and connecting routes was a chief concern for service planners. Because the RFS serves a minority, low-income, and Limited English Proficient community (referred to as a Title VI community) that relies on the facility to access bus service to the Eastside, maintaining access to an Eastside route that would enable people to continue to ride transit was a priority. Additionally, Title VI of the Civil Rights Act requires Sound Transit to choose the most reasonable alternative that does not disproportionately impact this community. Service planners specifically looked at transfer time, travel time, and inconvenience that RFS users would incur under each scenario and compared it to outcomes for other riders in order to ensure that there was not a disproportionate effect that could be reasonably prevented.

Person-Delay Analysis

In order to assess impacts to customers, service planners assessed the total person-delay in minutes that riders would incur under each alternative. Person-delay was calculated by multiplying the delay per person for each route with the number of people who currently travel that route. Sources of delay included additional travel time, as well as additional transfer time on the second or third leg of the journey due to more time in between buses or a relocated stop on the first leg. The model separated commuters traveling to and from the RFS from commuters traveling to and from the Eastside, as each would be impacted differently. This distinction was also important to ensure that the Title VI community near the RFS was not disproportionately impacted. Furthermore, service planners realized that in some scenarios, customers traveling from the RFS to Bellevue would be affected differently than customers traveling from the RFS to Issaquah because they would ride different routes. Therefore, person-delay was calculated separately for both markets and then summed to obtain the total person-delay for each alternative.

Travel time assumptions for the model were developed using a combination of methods. The D-2 working group provided travel time estimations post-D-2 closure for Alternative 1 in their report. Service planners also modeled other scenarios using both current run times and anticipated delays.

Frequency Changes

Service changes were developed under the assumption that no new operating hours or buses could be added to the route. Because travel times were expected to increase, this meant reductions in frequency would be necessary to remain neutral in fleet requirements and operating hours. Proposals were developed with a preference for minimizing peak-hour frequency reductions as much as possible. Peak frequencies were only reduced when it was absolutely necessary due to fleet constraints; otherwise, frequencies were reduced off-peak.

Alternative Evaluation

The four alternatives were fully evaluation according to the criteria listed previously. Results of each alternative's evaluation are described next.

Alternative 1

The person-delay analysis showed that Alternative 1 resulted in the least delay for the Title VI community in the Rainier Valley, while still maintaining frequent service for Eastside commuters and staying within cost constraints. 14 summarizes the impacts to different commuting markets under Alternative 1. The full results of the model for all alternatives are shown in the Appendix.

TABLE 14: IMPACTS TO MARKETS UNDER ALTERNATIVE 1

Market	Impact	Percentage of total daily riders in corridor	Number of daily riders in the market (each direction)
Bellevue to Rainier Freeway Station (550)	Transfer in the International District to a Rainier Ave-bound bus or Link, or transfer to 554 or Metro bus at Mercer Island. Additional travel or transfer time averages 8 min at peak hours and more off-peak, due to transfer time.	4.1%	280
Issaquah to Rainier Freeway Station (554)	Use Rainier Ave & Charles St stop instead of freeway station, cross street to transfer. Extra travel time is negligible.	1.5%	100
Bellevue to Downtown Seattle (550)	Additional 2.5 minutes of travel time at peak due to running on I-90 mainline, and lower frequencies at certain times.	67.6%	4,620
Issaquah to Downtown Seattle (554)	Additional 6 minutes of travel time at peak, and lower frequencies at certain times.	26.8%	1,830

Alternative 1 also maintained access to the Rainier Valley. However, maintaining access to the Rainier Valley would add travel time for Downtown Seattle riders. Additionally, routing the outbound 554 through 5th & Jackson would be unnecessary given the closure of the D-2 Roadway.

Alternatives 2 and 3

Alternative 2 would relocate the Route 554 stop in the International District, which would result in a longer walk for some riders who board there, but would reduce travel time for riders who board further uptown by keeping the bus on the most direct path to the I-90 mainline. Alternative 3 would maintain all current stops downtown but would result in slightly longer travel times for outbound Route 554 trips. These alternatives, compared to Alternative 1, both would have saved some time for Route 554 commuters by staying on I-90, but a person-delay analysis demonstrated that these alternatives would have significantly impacted RFS users by eliminating service to that area and causing longer total journey times. Such an impact would have come under the scrutiny of Title VI laws, while detracting from service for many transit-dependent customers. Planners considered the possibility that Alternative 2 and 3 could result in less person-delay for all riders by maintaining better frequencies on both routes because travel times would not increase by the same amount. While these alternatives indeed would have

maintained better frequencies, the savings in wait time did not offset the extra travel time for RFS customers who would have to go downtown to transfer between Rainier Valley and Eastside buses. The potential to disproportionately impact these customers also reduced the favorability of Alternatives 2 and 3.

Alternative 4

Alternative 4 could have maintained a connection between the Rainier Valley and the Eastside while minimizing travel times for Downtown Seattle passengers. However, there is no way to implement frequent service on this shuttle without additional funding and buses, or making dramatic cuts elsewhere in the system. Without frequent service, the shuttle would likely not be used, as riders would find it more convenient to transfer to more frequent service downtown. In fact, given constraints on bus fleet and maintenance capacity mentioned previously, even infrequent shuttle service was not feasible.

Other Alternatives

Service planners considered alternatives that would have caused Route 550 to travel through Rainier Avenue. Doing so would have increased running times on one of ST's most frequent and highest-ridership routes, negatively affecting many more passengers than it benefited. Additionally, the added run time and lack of additional buses would cause frequency reductions that would have reduced capacity significantly on a frequent route such as Route 550.

In anticipation of the 2019 Downtown Seattle Transit Tunnel closure, service planners also briefly considered truncating both routes at the International District Station and requiring through passengers to transfer to Link in order to save bus travel time through downtown. However, this alternative was also deemed not feasible due to very high ridership through that station, Link capacity, layover constraints, and other operational considerations, so it was not advanced.

Finally, while service planners evaluated the requirements for maintaining current frequency levels on both routes, it was not possible due to longer running times and fleet and operating hour constraints.

Alternative Selection

Ultimately, service planners chose to move forward with a slightly modified Alternative 1 because it resulted in the least delay for RFS customers, a Title VI community, while still remaining cost-neutral. The slight modifications from the D-2 study were primarily to the downtown routing of Route 554 to improve travel time reliability.

Alternatives 2 and 3 were not feasible because they would have disproportionately impacted RFS users in order to improve travel times for other riders. While Alternative 4 addressed this concern, it was not operationally possible due to budget and fleet constraints.

The preferred alternative balances minimal frequency reductions with the need to maintain the coverage area for as many people as possible. Sound Transit has coordinated with Metro to plan these service changes, and will continue to work with them to monitor service after implementation. Because some riders likely switch between Metro and ST routes at peak hours, service plans were coordinated to provide riders with various options when possible.

Table 15 summarizes peak-hour person-delay for Alternative 1.

TABLE 15: PEAK HOUR IMPACTS FOR ALTERNATIVE 1

Alternative 1 – Peak Hour Impacts by Eastside Destination							
Destination	Bellevue			Issaquah			Weekly total delay (minutes)
Population	Riders Affected	Delay Per Person (minutes)	Subtotal	Riders Affected	Delay Per Person (minutes)	Subtotal	
To/from Downtown Seattle	3,385	2.5	8,462	1,110	6	6,884	15,346
To/from RFS	200	8	1,596	58	0	0	1,596
<i>Period subtotal</i>	Bellevue subtotal		10,058	Issaquah subtotal		6,884	16,942

Service Equity Analysis Conclusion

The service equity analysis demonstrated that the I-90 ST Express service changes will have a disparate impact on minority populations and a disproportionate burden on low income populations. While Sound Transit cannot prevent this impact and still bring East Link to these populations, it can and will mitigate the impact and ensure that burdens are spread throughout the service area by continuing to serve Rainier Avenue with one of the impacted routes. Though all riders will notice changes, when the new East Link service opens it will benefit not only new customers but also customers currently riding Routes 550 and 554 from the RFS as well as from the Eastside, opening up faster and more reliable access to education, employment, healthcare, services, and recreation that were either not available or more onerous to reach prior to the segment's opening.

SYSTEM RIDERSHIP & PERFORMANCE ANALYSIS



System Ridership & Performance Analysis

Sound Transit operates two light rail lines, two commuter rail lines, and 28 express bus routes which together carried 42.8 million passengers in 2016. For the year, Sound Transit provided approximately 876,000 annual hours of service and 630,000 annual trips on ST Express, Link light rail, Sounder commuter rail, and Tacoma Link.

Ridership, service performance, and service quality are presented in three sections of the 2018 Service Implementation Plan based on three distinct levels of analysis: system, corridor, and route.

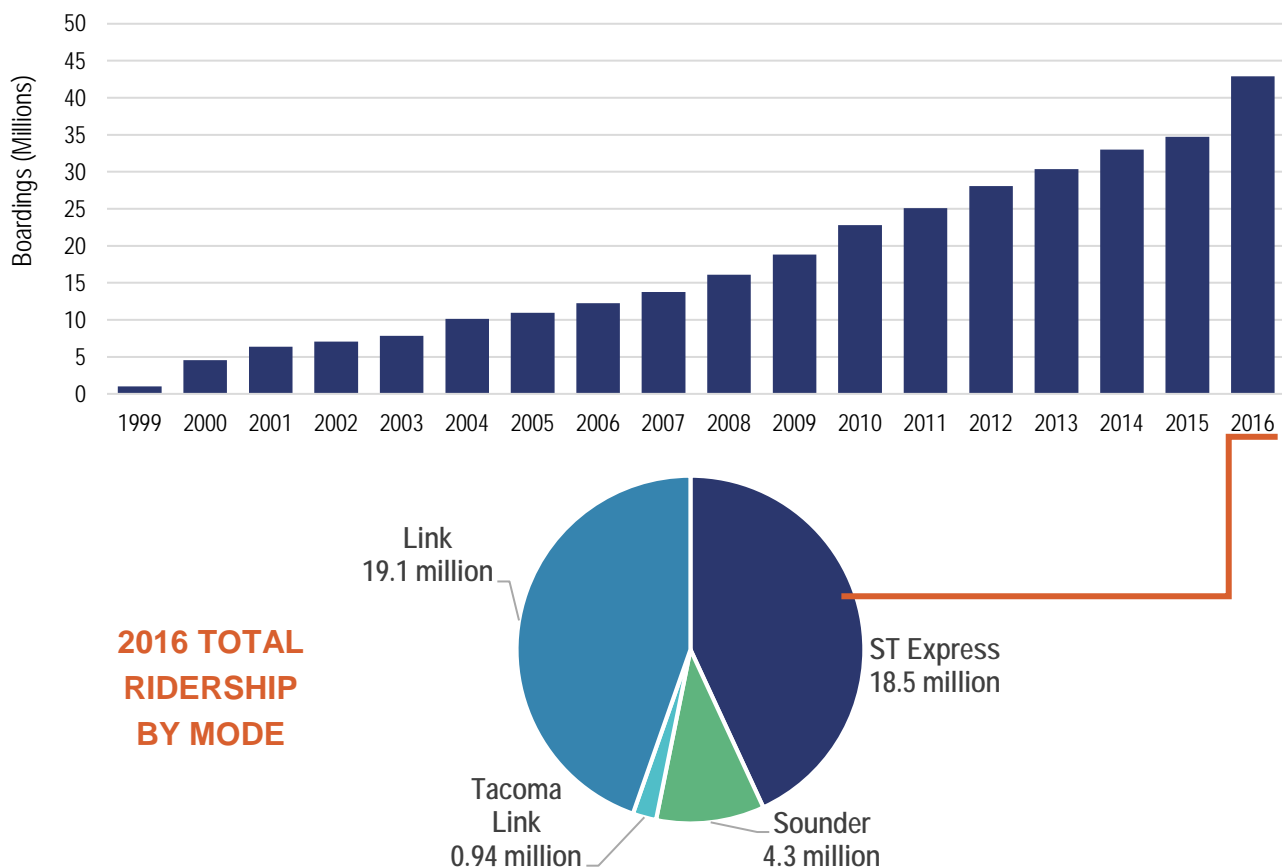
This section includes an assessment of ridership, service effectiveness, and service quality of the overall Sound Transit network by mode.

2016 ANNUAL RIDERSHIP

System

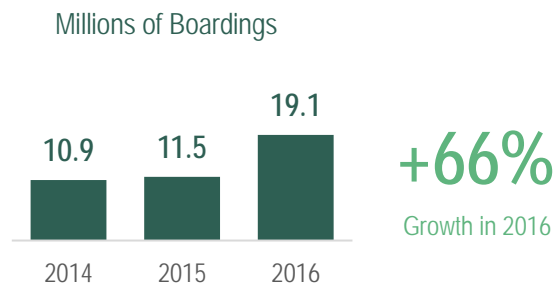
The expansion of Link service to University of Washington and Angle Lake Stations allowed Sound Transit in 2016 to rapidly grow ridership by 23 percent over 2015. Annual boardings on the Sound Transit network of rail and express bus reached 42.8 million in 2016, the 18th consecutive year of annual growth in ridership. Ridership averaged 140,400 on weekdays, 64,000 on Saturdays, and 50,000 on Sundays. By the end of 2016 Sound Transit had carried its 325 millionth passenger since beginning service in 1999. System-wide annual ridership is presented in Figure 10 below.

FIGURE 10: TOTAL ANNUAL ST SYSTEM RIDERSHIP 1999-2016



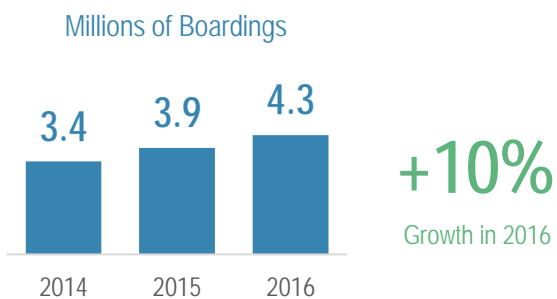
Link

The University Link and Angle Lake extensions have resulted in increased demand for fast, reliable transit in the region. These extensions have led to large ridership increases on Link over the past year, with weekday ridership averaging 65,000 in the second half of 2016.



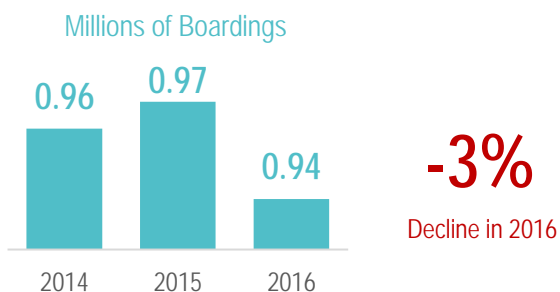
Sounder

Customers seeking an alternative to congested roads increasingly chose Sounder as their commute option with average weekday boardings increasing by 10 percent to over 16,662 by the end of 2016. Ridership grew on both the north line from Everett to Seattle and the south line from Lakewood to Seattle.



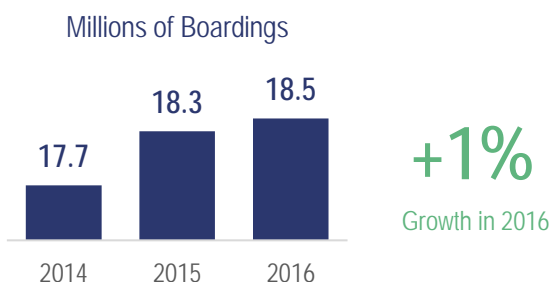
Tacoma Link

Tacoma Link experienced modest declines in total ridership during 2016. Local ridership trends as a whole in downtown Tacoma have suppressed Tacoma Link ridership growth. At the end of 2016, average weekday boardings on Tacoma Link were 3,182.



ST Express

ST Express service continued to add riders to an already productive network. Over 64,000 daily riders use ST Express on an average weekday, with peak trips serving over an average of 50 passengers per trip. On nearly 12 percent of weekday ST Express trips, customers stood for part of the journey.



2017 Service Improvements

Sounder South Line Improvements

Two new Sounder south line round trips were implemented in September 2017 as the final part of the Sounder service expansion under ST2. Additional peak hour trips were added to increase peak capacity and add schedule flexibility for customers between Lakewood and Seattle. These two new trips were strategically timed to increase the span of 20-minute peak service as well as provide relief on trips that currently have standees on the trains. Prior additional trips were added in September 2013 and September 2016.

September 2017 also marked the introduction of additional cars to operate on the existing trains. The additional vehicles will relieve overcrowding on existing trains through longer consists. At the moment trains on the south line can operate up to 7-car trains, with ST3 projects looking to extend platforms to accommodate 10-car trains. The midday train experienced overcrowding due to a shortened consist.

ST Express Reliability and Capacity

Ongoing congestion in the region has resulted in declining on-time performance on ST Express routes. In September 2017, Sound Transit added 15,000 additional annual hours on King County Metro and Pierce Transit operated routes to increase reliability. Trip times were shifted to best accommodate the existing ridership on each corridor.

2017 Service Improvements



Sounder South Line – New Trips, New Cars

The September 2017 service change brought the last of the ST2-funded Sounder service improvements with two new round trips on the south line. These trains were scheduled to provide additional capacity during the period with greatest demand, reduce existing service gaps during the rush hour, and offer improved times to align with work schedules. Additionally, 2017 marked the arrival of nine new cars to add to existing trains to reduce overcrowding.



ST Express Reliability Improvements

Growing congestion around the region has resulted in trips running consistently late on ST Express. Investments were made in September 2017 for King County Metro and Pierce Transit operated routes to address specific corridors with poor on-time performance.

SERVICE PERFORMANCE

Sound Transit monitors service performance and productivity on an on-going basis with detailed mode and route-level results published in each year's Service Implementation Plan. Although ridership grew in 2016, system-wide performance remained similar to 2015 levels as a result of the additional service implemented as a result of region-wide congestion and for construction mitigation.

Measuring Service Performance

Sound Transit manages and measures service performance using the *Service Standards and Performance Measures*. The Board adopted document defines key performance indicators for each mode, establishes standards of performance and productivity, and provides guidelines to inform proposed changes to service to best utilize operating resources.

Key Performance Indicators

- **Boardings per revenue hour** is the number of passengers boarding a vehicle during one hour of scheduled revenue service, not including vehicle deadhead or layover time.
- **Boardings per trip** are the number of passengers boarding each scheduled one-way trip.
- **Subsidy per boarding** is calculated by dividing the net cost of the service (cost minus fare revenue) by the number of passenger boardings for a full year.
- **Passenger miles per platform vehicle mile** is calculated by dividing passenger miles by the number of vehicle platform miles travelled for a full year.

2016 Key Performance Indicators by Mode

The results of the 2016 assessment of productivity and cost effectiveness by mode are presented in Table 16. The data is from 2016, which partially captures Link extensions to University of Washington and Angle Lake.

TABLE 16: KEY PERFORMANCE INDICATORS BY MODE (2016)

	ROUTE	BOARDINGS PER TRIP	BOARDINGS PER REVENUE HOUR	SUBSIDY PER BOARDING	PASSENGER MILES PER PLATFORM MILE
Link					
	Link: Angle Lake – UW	187	212	\$ 2.78	64
Sounder					
	North Line: Everett-Seattle	227	171	\$ 10.79	125
	South Line: Lakewood-Seattle	724	505	\$ 6.73	308
	Sounder Total	586	388	\$ 7.91	266
Tacoma Link					
	Tacoma Link	19	95	\$ 4.10	11
ST Express					
510	Everett-Seattle	46	37	\$ 2.39	24
511	Lynnwood-Seattle	55	52	\$ 1.94	19
512	Everett-Seattle	38	28	\$ 3.35	17
513	Eastmont-Seattle	32	27	\$ 5.47	12
522	Woodinville-Seattle	51	38	\$ 2.16	18
532	Everett-Bellevue	28	25	\$ 4.07	11
535	Lynnwood-Bellevue	47	34	\$ 4.10	16
540	Kirkland-U. District	18	23	\$ 6.87	8
541	Overlake-U. District	16	20	\$ 8.61	11
542	Redmond-U. District	31	31	\$ 4.82	15
545	Redmond-Seattle	50	39	\$ 3.01	24
550	Bellevue-Seattle	56	63	\$ 3.03	29
554	Issaquah-Seattle	40	33	\$ 3.90	18
555	Northgate-Issaquah	48	34	\$ 3.73	17
556	Issaquah-Northgate	47	32	\$ 4.56	15
560	Westwood Village-Bellevue	25	16	\$ 8.01	6
566	Auburn-Overlake	28	18	\$ 8.73	6
567	Kent-Overlake	36	29	\$ 8.07	7
574	Lakewood-SeaTac	29	20	\$ 5.44	13
577	Federal Way-Seattle	37	38	\$ 4.08	14
578	Puyallup-Seattle	33	19	\$ 6.07	14
580	Lakewood-Puyallup	24	29	\$ 5.15	2
586	Tacoma-U. District	28	19	\$ 10.76	9
590	Tacoma-Seattle	34	22	\$ 6.53	14
592	Olympia-Lakewood-Seattle	31	15	\$ 10.62	12
594	Lakewood-Seattle	33	17	\$ 6.04	17
595	Gig Harbor-Seattle	35	17	\$ 8.90	14
596	Bonney Lake-Sumner	29	63	\$ 2.59	6
	ST Express Total	39	30	\$ 4.30	15

ST Express Comparative Evaluation

In order to place the performance of individual ST Express routes in a broader context of the ST Express system as a whole, the *Service Standards and Performance Measures* outline a comparative performance analysis. Using year end ridership and service totals, a rating for each route is developed using the four key performance indicators. In the following section a comparison chart for each individual key performance indicators is shown, as well as an overall summary table displaying a combined ranking for each ST Express route within the network as a whole.

The objective is a quantitative, first level screening process to identify both high performance routes, which may warrant additional investment, and low-performing routes requiring additional monitoring or modification. Route effectiveness ratings represent the initial screening of a detailed service evaluation process. Prior to development of proposed changes to service, planners will conduct more detailed analysis of route ridership and productivity. Additional route-level detail is included in the final section of the 2018 Service Implementation Plan, Corridor Performance & Route Profiles.

Productivity Rankings

ST Express routes are ranked by their performance relative to the system average in each of the four indicators: boardings per revenue hour, boardings per trip, subsidy per boarding, and passenger miles per platform vehicle mile. Each indicator for a route is evaluated based on its relative performance to the system-wide average and given a score based on the relative deviation from the average. These indicator scores are then averaged and ranked to generate the overall route ranking. The 28 routes that were in operation in 2016 receive a ranking of 1-28 based on 2016 year end ridership and service totals. Figures 11 through 14 show the results of each of the key performance metrics, with Table 17 providing an overall ranking by route based on the key performance indicators.

A route's overall ranking determines where it falls in four quartiles:

- First Quartile – top 25%, candidates for service enhancement
- Second Quartile – within normal operational parameters
- Third Quartile – within normal operational parameters
- Fourth Quartile – bottom 25%, candidates for action to improve performance

Routes in the First Quartile, or top 25 percent, are typically high performers and the most crowded. Top performing routes may be candidates for service enhancements if resources are available, particularly if performance has shown a consistent upward trend. Routes in the Fourth Quartile, or bottom 25 percent, are typically the poorest performers and have the lowest ridership. Lower performing routes may be candidates for actions to improve productivity and cost effectiveness. Types of actions that could be considered include marketing/promotion programs, selective deletion of unproductive route segments or trips, complete restructuring or complete discontinuance of the route. Routes falling in the Second or Third Quartile, or 50 percent of the routes, are typically considered to be operating within normal parameters.

TABLE 17: ST EXPRESS PERFORMANCE SUMMARY

		ROUTE	BOARDINGS PER TRIP	BOARDINGS PER REVENUE HOUR	SUBSIDY PER BOARDING	PASSENGER MILES PER PLATFORM MILE
1st Quartile	550	Bellevue-Seattle	56	63	\$3.03	25
	511	Lynnwood-Seattle	55	52	\$1.94	19
	510	Everett-Seattle	46	37	\$2.39	24
	545	Redmond-Seattle	50	39	\$3.01	22
	532	Everett-Bellevue	51	38	\$2.16	18
	555	Northgate-Issaquah	48	34	\$3.73	17
	522	Woodinville-Seattle	47	34	\$4.10	14
2nd Quartile	556	Issaquah-Northgate	47	32	\$4.56	15
	596	Bonney Lake-Sumner	29	63	\$2.59	6
	512	Everett-Seattle	38	28	\$3.36	17
	554	Issaquah-Seattle	40	33	\$3.90	15
	577	Federal Way-Seattle	37	38	\$4.08	14
	542	Redmond-U. District	31	31	\$4.82	15
	513	Evergreen/79th-Seattle	33	27	\$5.38	12
3rd Quartile	594	Lakewood-Seattle	33	17	\$6.04	17
	535	Lynnwood-Bellevue	28	25	\$4.07	11
	590	Tacoma-Seattle	34	22	\$6.53	14
	578	Puyallup-Seattle	33	19	\$6.07	14
	574	Lakewood-SeaTac	29	20	\$5.44	13
	567	Kent-Overlake	36	29	\$8.07	7
	595	Gig Harbor-Seattle	35	17	\$8.90	14
4th Quartile	580	Lakewood-Puyallup	24	29	\$5.15	2
	540	Kirkland-U. District	18	23	\$6.87	8
	592	Olympia-Seattle	31	15	\$10.62	12
	541	Overlake-U. District	16	20	\$8.61	11
	566	Auburn-Overlake	28	18	\$8.73	6
	586	Tacoma-U. District	28	19	\$10.76	9
	560	Westwood Village-Bellevue	25	16	\$8.01	6
ST Express Average			39	30	\$4.30	15

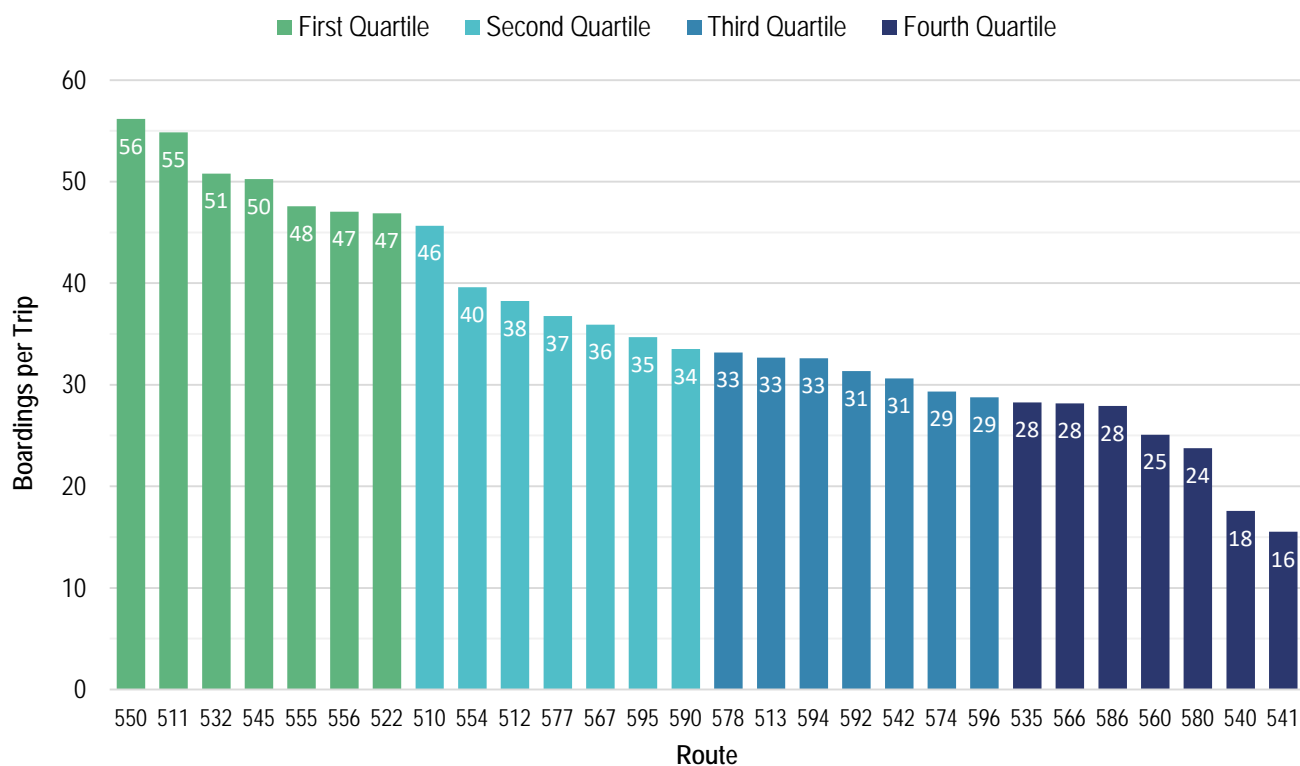
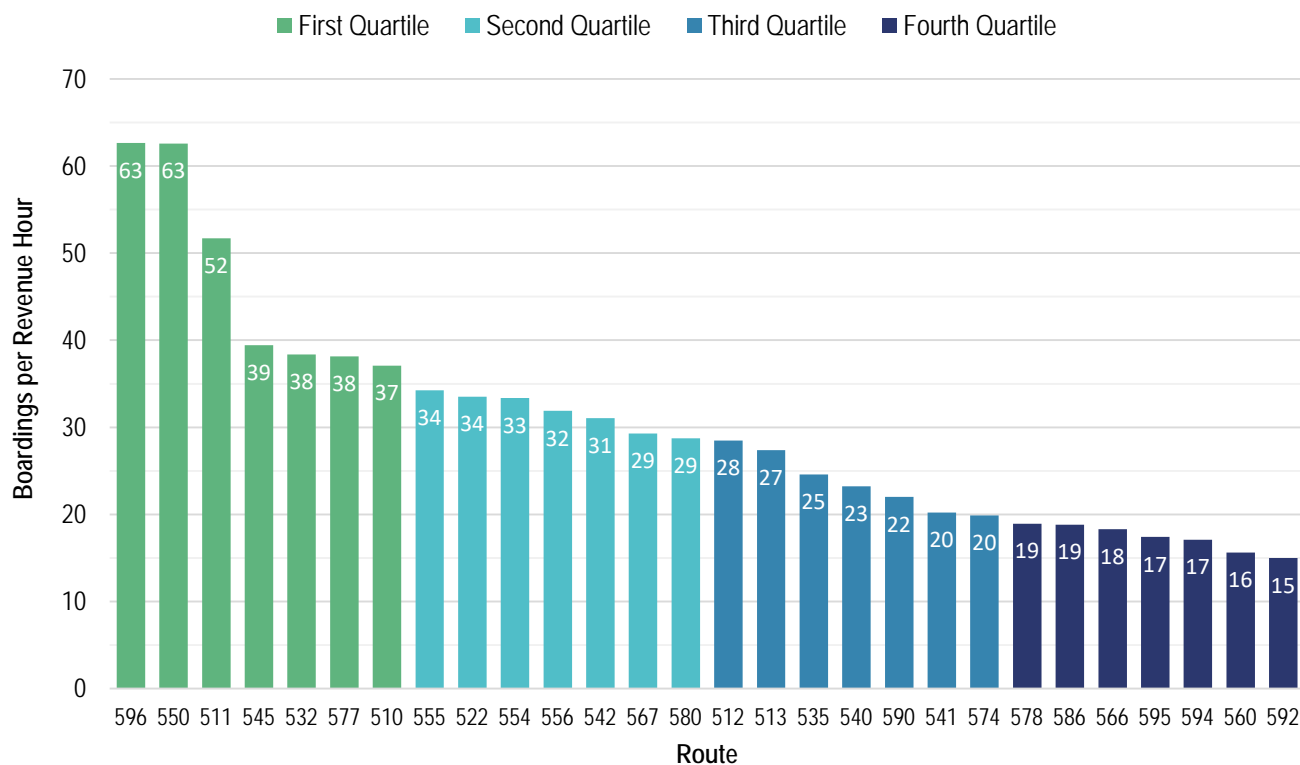
FIGURE 11: ST EXPRESS BOARDINGS PER TRIP (2016)**FIGURE 12: ST EXPRESS BOARDINGS PER REVENUE HOUR (2016)**

FIGURE 13: ST EXPRESS SUBSIDY PER BOARDING (2016)

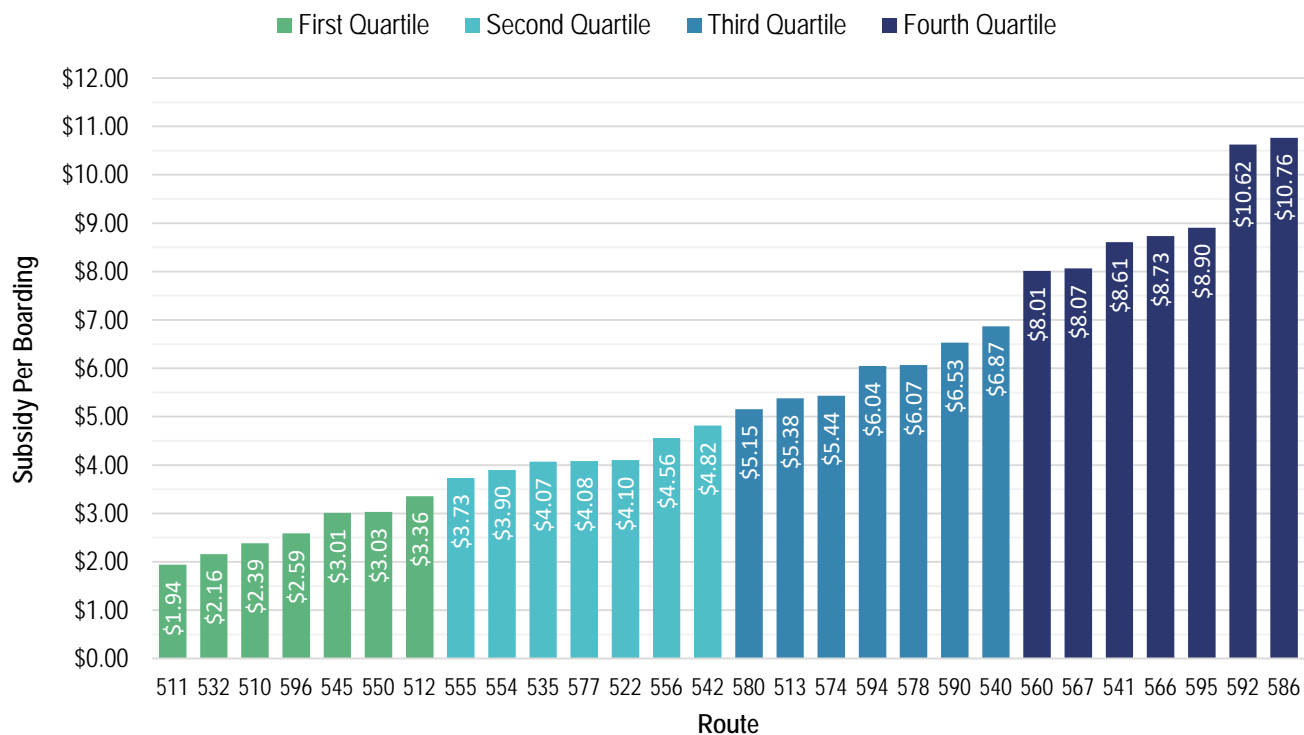
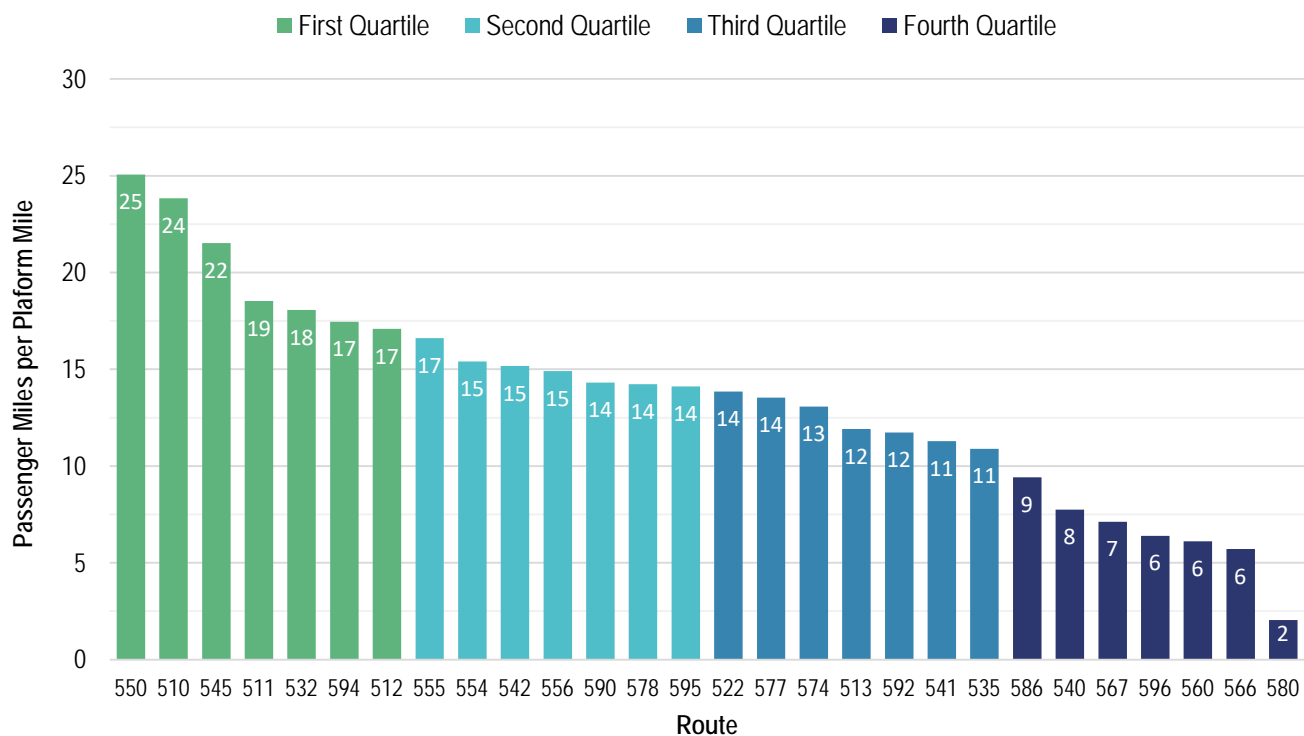


FIGURE 14: ST EXPRESS PASSENGER MILES PER PLATFORM MILE (2016)



SERVICE QUALITY

On the whole, the Sound Transit network of rail and express bus continues to meet service standard guidelines for crowding. On-going monitoring and analysis continues to support responsive service changes to provide adequate capacity while balancing cost and fleet availability. ST Express on-time performance recently has begun to perform below standard due largely to increasing traffic congestion.

Measuring Service Quality

The *Service Standards and Performance Measures* define key indicators for measuring service quality including crowding and on-time performance. The *Service Standards and Performance Measures* provide guidance on when action should be considered to maintain and improve service quality for customers.

During peak demand times, passenger load (number of passengers on a transit vehicle at a specific point) may exceed seating capacity on individual trips. Standing loads are a normal occurrence on a healthy transit system, including Sound Transit, and is not by itself cause for immediate action. Sound Transit continually monitors service and uses the service standards to identify crowding conditions. The agency uses several service management tools to reduce overcrowding as the budget allows, including: schedule adjustments to balance loads, assigning larger buses or longer train consists, and adding additional trips.

On-time performance is measured monthly for each mode against a specific standard designed to reflect the operating characteristics of the service. Performance is measured at time points for ST Express and the end of the line for Link, Tacoma Link, and Sounder. Operations staff manage on-time performance and take action to address performance falling below standard.

Link

Sound Transit currently operates a mix of 2- and 3-car trains during rush hours and 3-car trains at other times. While passenger crowding does occur on some trips, overall passenger loads on-board trains remain below the crowding service standard. On the typical weekday 97 percent of Link trips are below the planning standard of a 2.0 load factor (twice the number of passengers onboard as seats). Only three percent of trips on the typical weekday meet the service standard definition of crowded, within a normal operating range. All individual trips remain below the 2.0 load factor at least 60 percent of the time, the threshold for evaluating corrective action. Operations staff continue to monitor Link loading conditions, headway reliability, and customer feedback on a monthly basis. Figures 16 and 17 present maximum car level load by direction for the first few months following the introduction of 3-car trains during the midday periods, with lines indicating the planning load standard, the target maximum load for Sound Transit Link vehicles, and the “crush load” or maximum number of passengers physically able to occupy a train.

Link on-time performance is measured by the consistency of the interval between train arrivals at each stop. For Link, the time between train arrivals should be no greater than 2 minutes beyond the scheduled headway. By this measurement, Link is below the on-time performance standard, as shown in Figure 15.

FIGURE 15: LINK HEADWAY ON-TIME PERFORMANCE

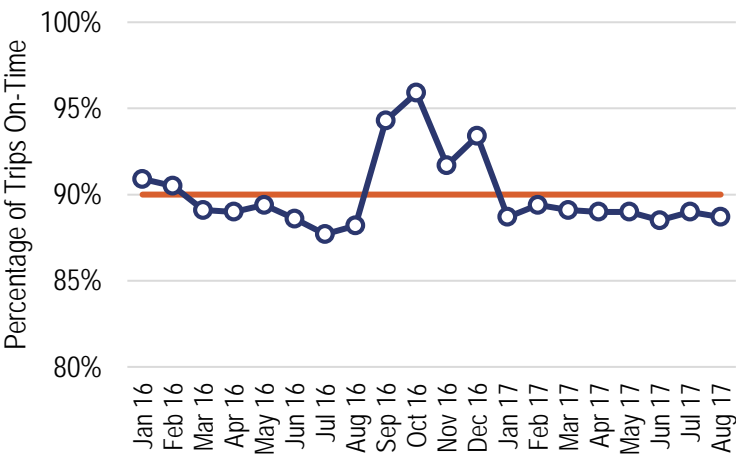


FIGURE 16: LINK SOUTHBOUND MAX CAR LOAD OBSERVATIONS JUNE-AUGUST 2017

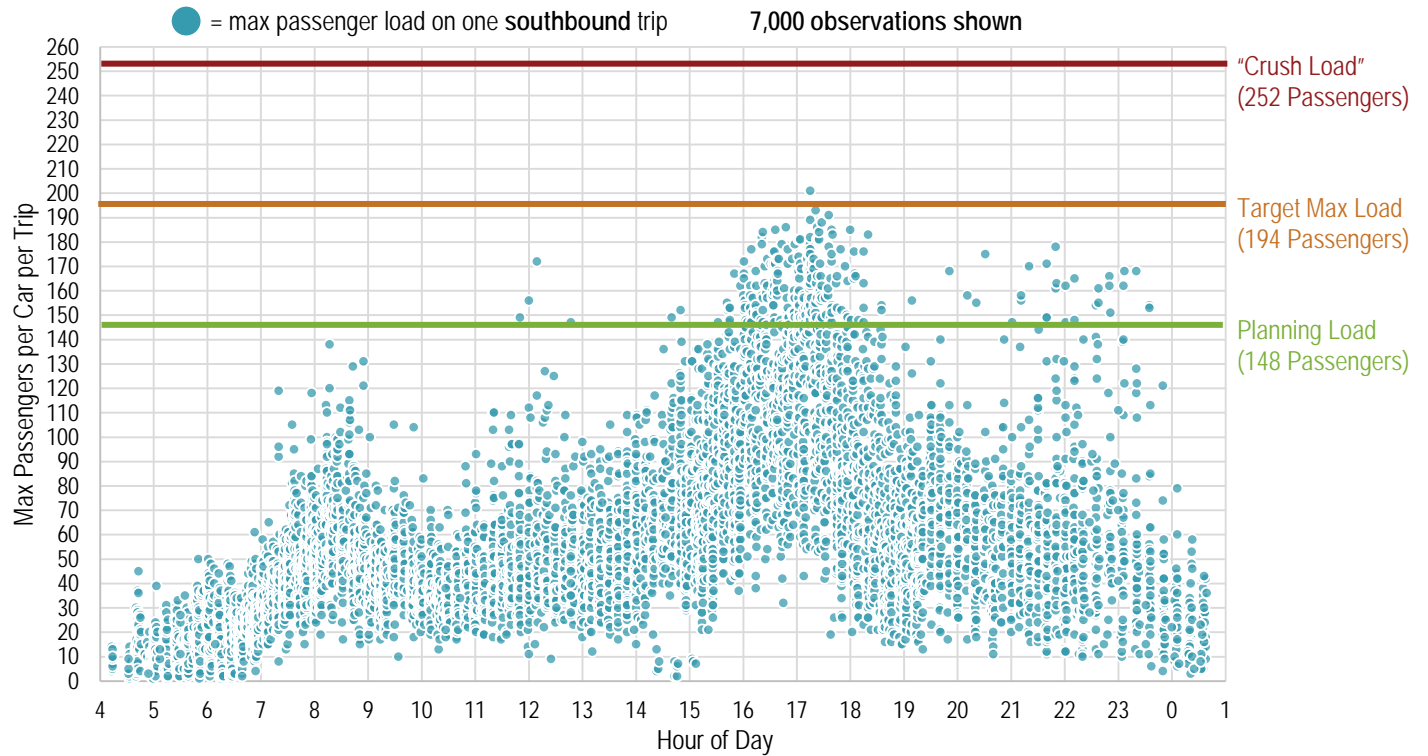
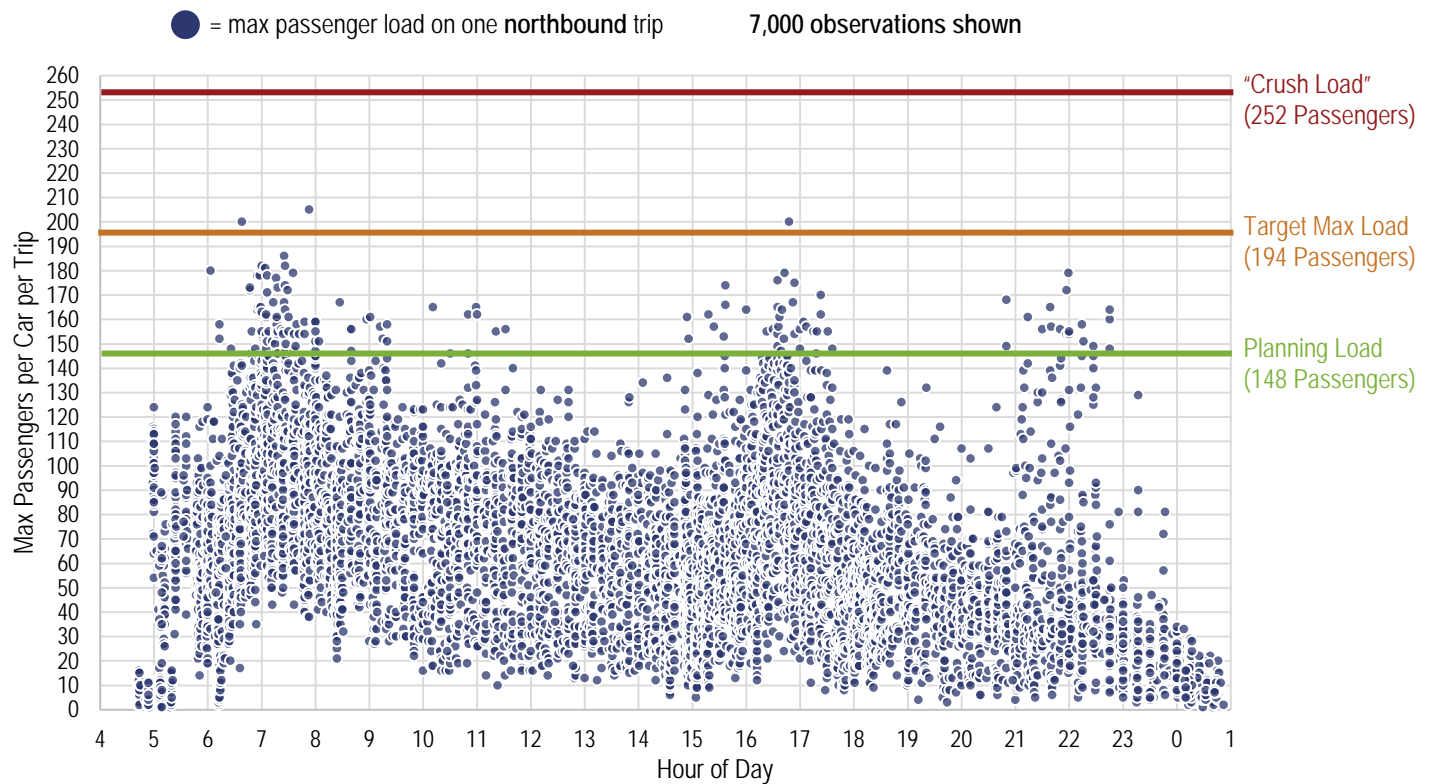


FIGURE 17: LINK NORTHBOUND MAX CAR LOAD OBSERVATIONS JUNE-AUGUST 2017



Souder

Significant growth in Souder ridership has largely been absorbed by existing available capacity on-board trains. For a majority of Souder trips, customers will have the opportunity to sit. However, on some trips passengers do stand for part of the trip. On the south line standing is more likely to occur on individual cars within a train. Often the cars closest to the locomotive or at the rear of the train are more likely to have standing customers, while the middle cars often have available seats. The additional peak round trips and vehicles implemented in September 2017 boosted capacity on the line and aims to reduce the instances of crowding on individual cars. Figure 18 presents average car level max load for both Souder lines.

Souder on-time performance has degraded over the past year, as a result of weather-related incidents as well as construction of corridor upgrades to support the new round trips in 2017. While the on-time performance has recovered somewhat, it still is typically just below the on-time standard of 95 percent.

Figure 19 shows Souder on-time performance statistics since January 2016.

FIGURE 18: SOUNDER AVERAGE MAX LOAD PER CAR

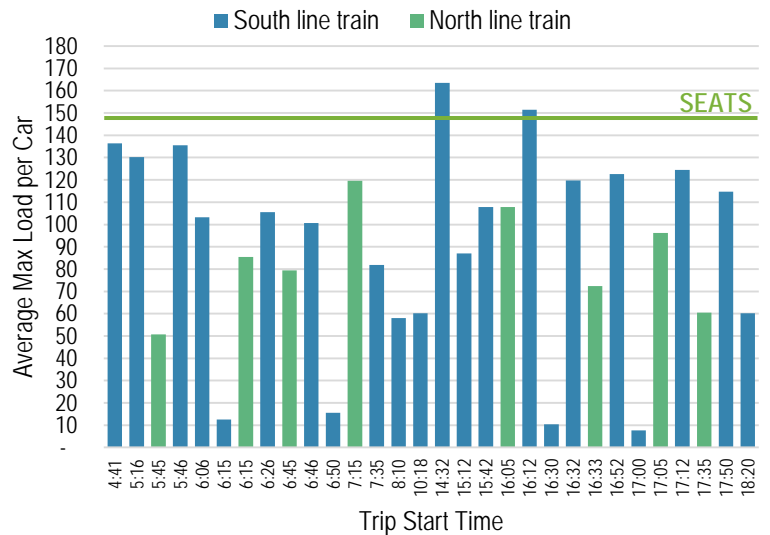
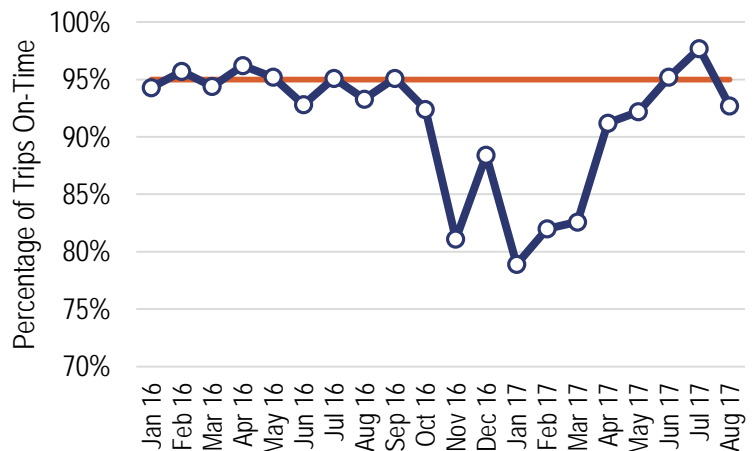


FIGURE 19: SOUNDER ON-TIME PERFORMANCE

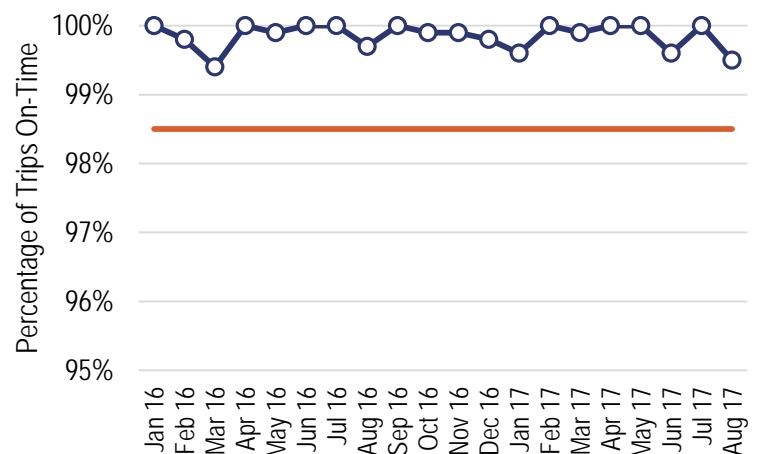


Tacoma Link

Tacoma Link remains within service standards for service quality without crowding concerns and with most months approaching nearly one hundred percent on-time performance.

Figure 20 shows Tacoma Link on-time performance statistics since January 2016.

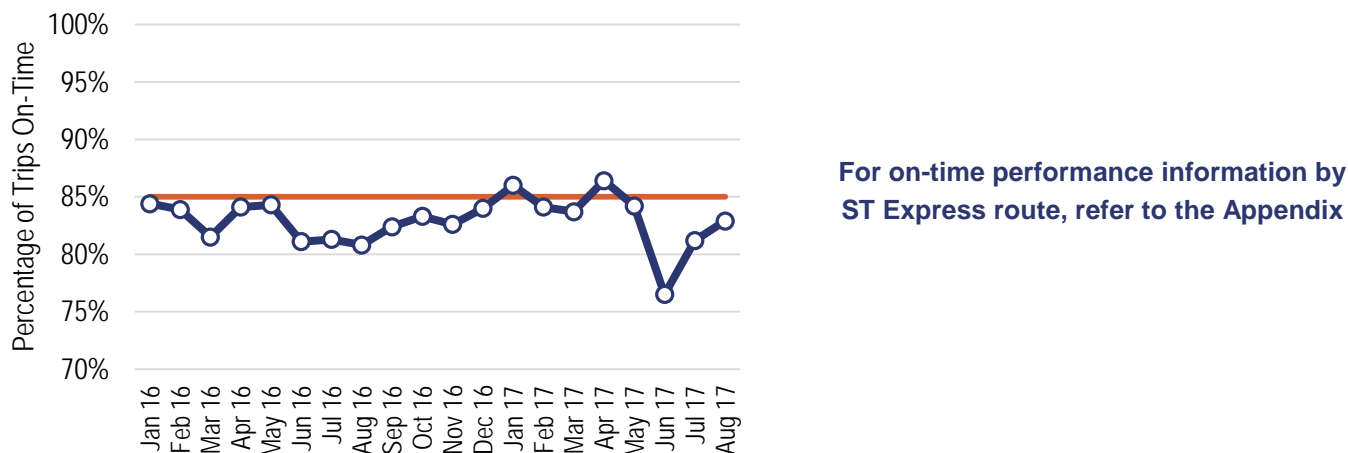
FIGURE 20: TACOMA LINK ON-TIME PERFORMANCE



ST Express

Many ST Express trips continued to experience crowding and schedule reliability challenges into 2017. Adjustments to schedules to reflect increasing congestion region-wide were made in September 2017, with another 15,000 additional annual service hours. Despite improvements, traffic congestion continues to reduce reliability and during the spring of 2017 seventeen routes did not meet on-time performance standard of at least 85 percent of trips arriving at time points within five minutes of schedule. Service will be evaluated system wide as part of the Comprehensive Operational Analysis to increase reliability within our existing vehicle and budget constraints. Figure 21 below shows on-time performance for the ST Express system from January 2016 to August 2017. Construction projects along major freeway arterials over the summer have led to a lower on-time performance.

FIGURE 21: ST EXPRESS ON-TIME PERFORMANCE



For ST Express, two indicators measure the impact of passenger crowding: the load factor (ratio between the total number of passengers on a vehicle and the number of seats) and the time passengers have to stand. These two indicators are used to assign priority for action when conditions exceed their defined thresholds. The *Service Standards and Performance Measures* recognize that standing passengers during peak hours are an ongoing reality and lists priorities for corrective action based on the severity of overcrowding and the amount of time passengers have to stand.

Sound Transit owns and operates five main bus types on its ST Express services: 45-foot MCI, 60-foot articulated, 40-foot low floor, 40-foot high floor, and double decker buses. These different vehicles have different load factors based on the number of seats and amount of available standing space on each vehicle. MCI coaches tend to have less space for standees and double decker buses cannot have standing passengers on the upper floor, resulting in lower load factor standards for these vehicles. Figures 21 through 24 present the average load factor per trip per bus type for each trip in the system. With the exception of one trip, all individual trips remain below the load factors at least 60 percent of the time, the threshold for evaluating corrective action. The one trip is a Route 550 trip that currently exceeds the threshold for crowding, although the closure of South Bellevue Park-and-Ride will likely result in shifting ridership patterns. Sound Transit will continue to monitor loading conditions on the ST Express system.

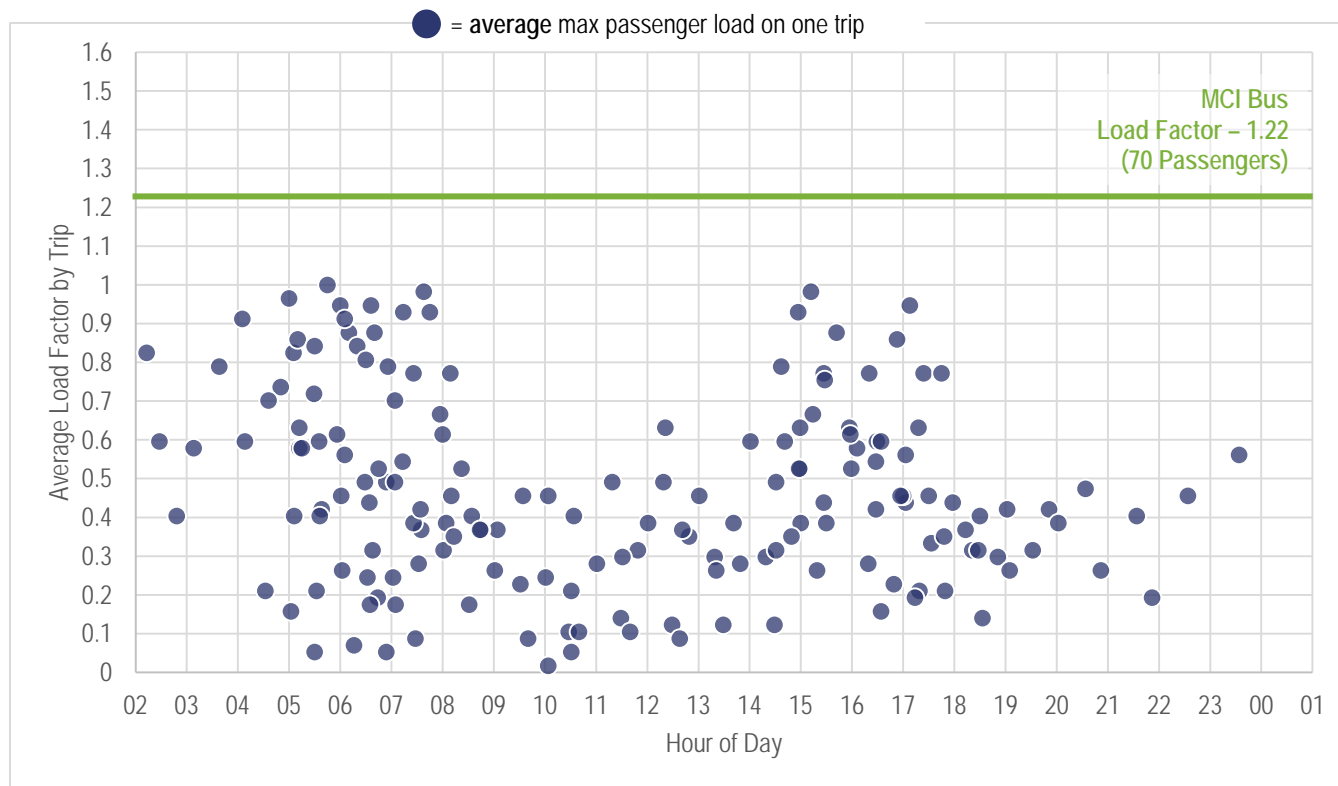
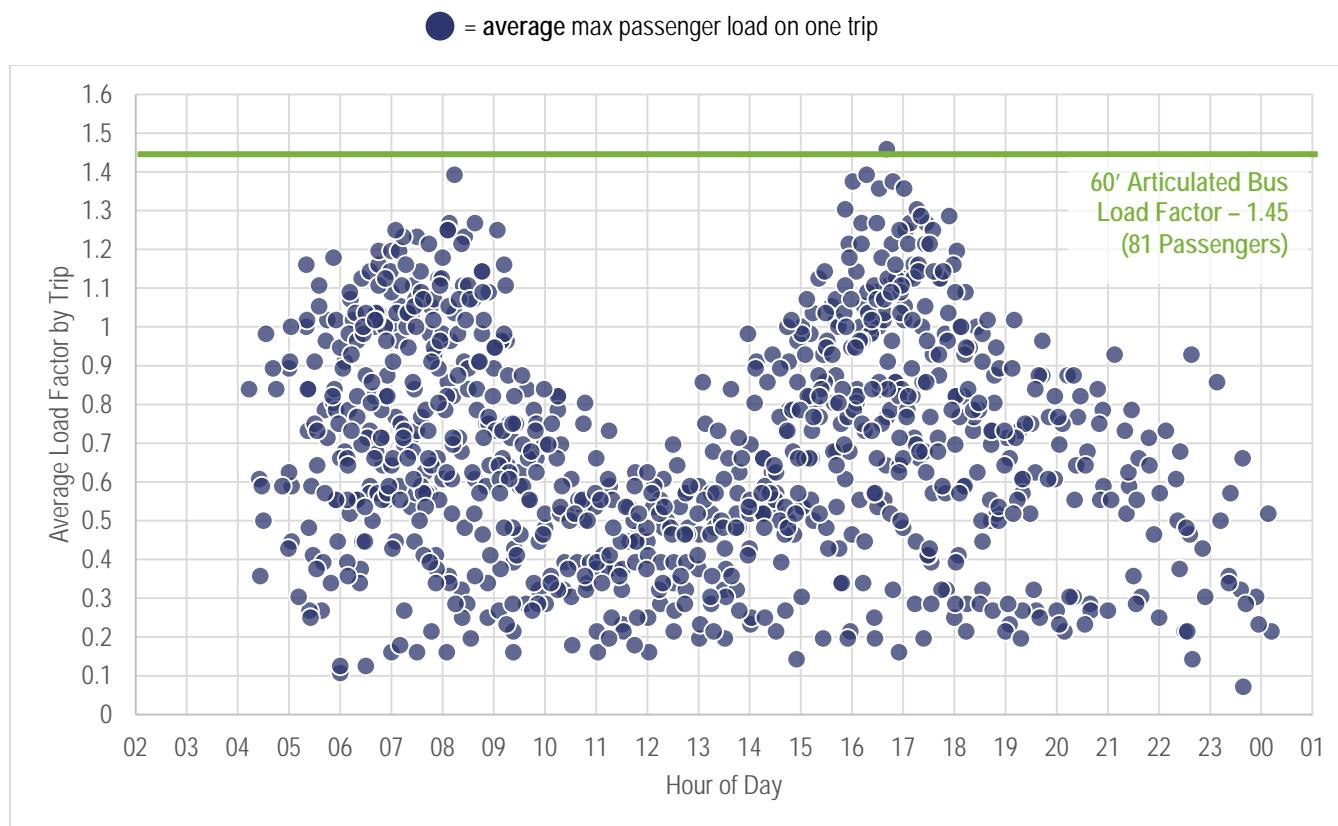
FIGURE 21: ST EXPRESS AVERAGE LOAD FACTOR BY TRIP – SCHEDULED MCI BUS TRIP**FIGURE 22: ST EXPRESS AVERAGE LOAD FACTOR BY TRIP – SCHEDULED 60' ARTICULATED BUS TRIPS**

FIGURE 23: ST EXPRESS AVERAGE LOAD FACTOR BY TRIP – SCHEDULED 40' BUS TRIPS

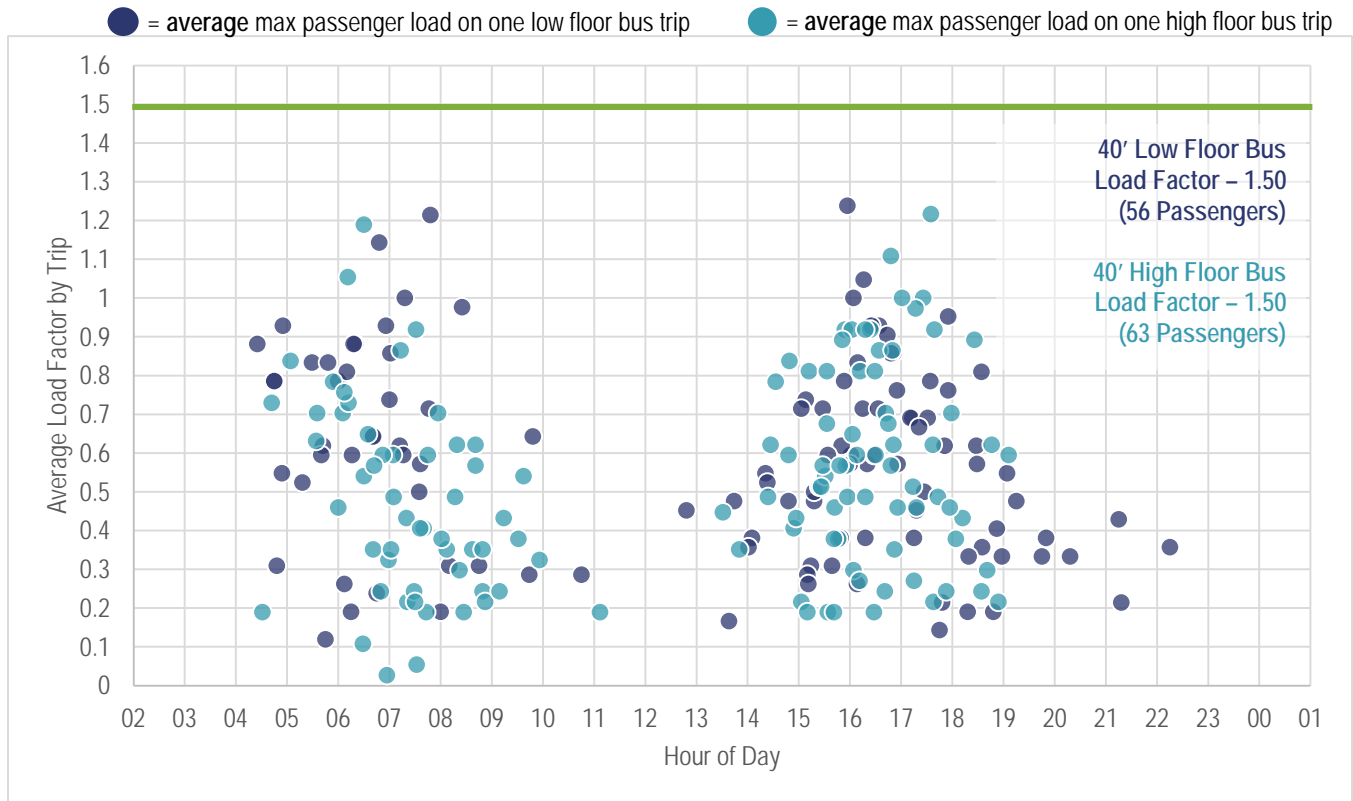
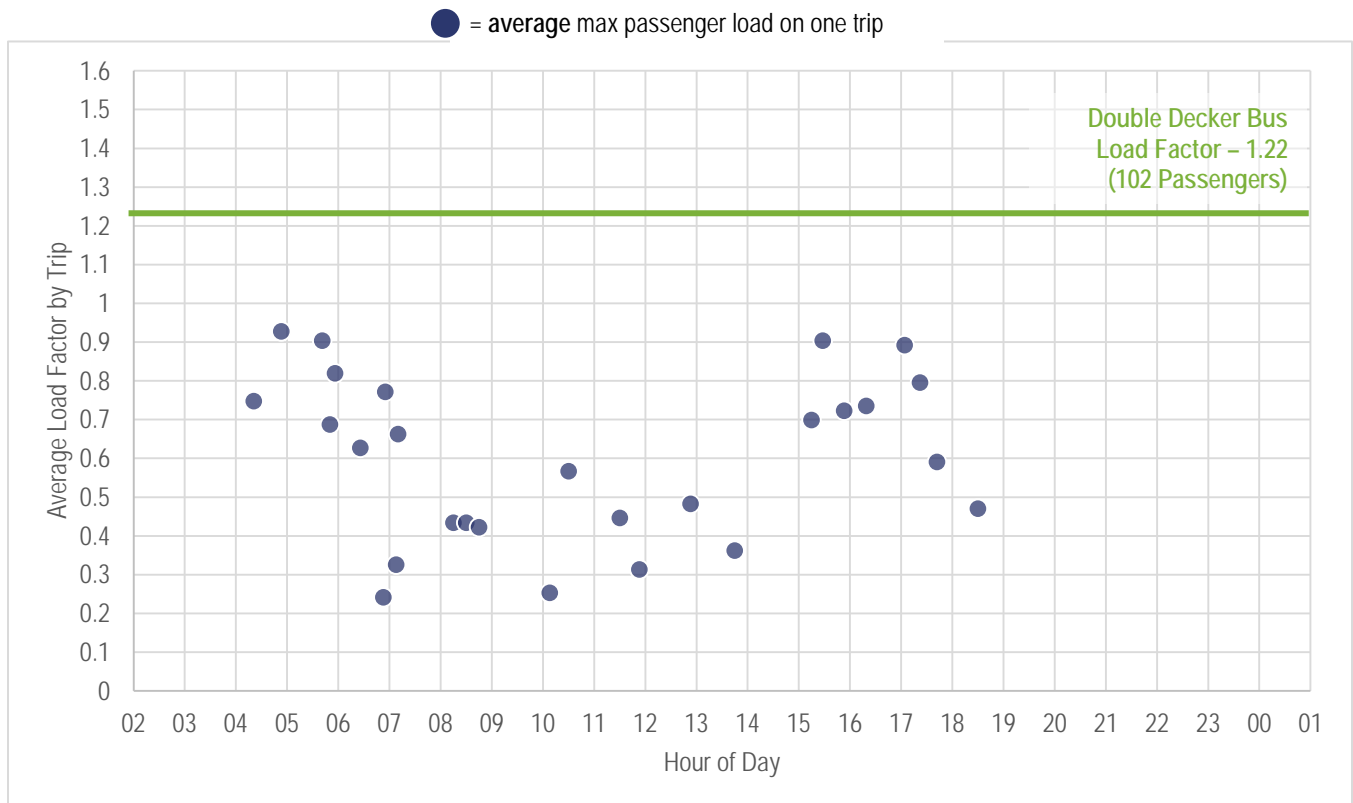


FIGURE 24: ST EXPRESS AVERAGE LOAD FACTOR BY TRIP – SCHEDULED DOUBLE DECKER BUS TRIPS



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FIVE YEAR SERVICE OUTLOOK & PLAN



Five-Year Service Outlook and Plan

INTRODUCTION

Historically, Sound Transit's preliminary service plan described how upcoming modal projects may impact future service. The 2018 Service Implementation Plan also includes more detail about upcoming planning and capital efforts throughout the Puget Sound Region that are likely to impact Sound Transit service.

The Five-Year Service Outlook and Plan is divided into three sections:

- **Estimated annual and average weekday ridership** by mode through 2023.
- **General planning:** Describes key overarching plans and documents, as well as service impact themes that will play a role in planning Sound Transit services over the next five years.
- **Service Impacts:** Identifies projects that will impact service in the coming years.

All elements in the following section are preliminary and subject to revision and refinement in future planning efforts. Any major service change requires a full public engagement and Board adoption process.

ESTIMATED RIDERSHIP

Sound Transit estimates ridership for all its modes on an annual basis for inclusion in the Service Implementation Plan and the annual agency budget. The modeling processes has many inputs that affect anticipated utilization of transit service, including historical ridership data, fuel prices, employment, among other inputs. Key inputs with more weight include projections developed by the Puget Sound Regional Council (PSRC) and the previous year's annual and average weekday boardings. Table 18 shows the projected annual boardings by year for each of the Sound Transit modes and Table 19 shows projected weekday boardings for each of the Sound Transit modes.

By 2023, Sound Transit expects to carry over 75 million passengers on an annual basis, doubling the ridership of 2015. On the average weekday over 252,000 passengers will board trains and express buses. ST Express ridership is projected to grow by nearly 5 percent over 2016 to 19 million annual passengers by 2022. Average weekday boardings for ST Express are estimated at approximately 67,000 by 2023. With the trips added to Sounder, the commuter rail system is projected by 2023 to grow over 27 percent from 2016 levels and carry over 5.5 million passengers. On a typical weekday Sounder is expected to surpass 21,000 boardings. By 2023, Tacoma Link ridership is projected to grow by over 82 percent to carry over 1.7 million passengers annually, driven by the Hilltop extension and PSRC projections for significant growth in Tacoma.

With the maturation of ridership on the 2016 extensions to the University of Washington and Angle Lake, Link ridership is projected to increase by nearly 8 percent to 25.2 million in 2018. By 2023, the extensions to Northgate and Bellevue will increase ridership on Link to over 50 million annual passengers, more than doubling ridership over 2017. In 2023, Link is projected to carry over 157,000 daily riders, accounting for nearly two-thirds of system ridership. Paratransit ridership is estimated to grow in proportion to the new Link service areas to Northgate and Bellevue.

TABLE 18: ANNUAL BOARDINGS 2016-2023

MODE	2016	2017	2018	2019	2020	2021	2022	2023*
	Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
ST Express	18,470,408	18,770,000	18,860,000	18,960,000	19,060,000	19,150,000	19,250,000	19,350,000
Souder	4,312,113	4,500,000	4,650,000	4,810,000	4,970,000	5,140,000	5,310,000	5,490,000
Link	19,121,621	23,400,000	25,200,000	26,400,000	27,300,000	30,500,000	42,900,000	50,500,000
Tacoma Link	938,315	910,000	940,000	970,000	1,020,000	1,060,000	1,240,000	1,720,000
Paratransit	48,243	60,000	60,000	70,000	70,000	80,000	90,000	130,000
System Total	42,890,700	47,640,000	49,710,000	51,210,000	52,420,000	55,930,000	68,790,000	77,190,000

TABLE 19: AVERAGE WEEKDAY BOARDINGS 2016-2023

MODE	2016	2017	2018	2019	2020	2021	2022	2023*
	Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
ST Express	64,130	65,198	65,500	65,800	66,200	66,500	66,800	67,200
Souder	16,662	17,374	18,000	18,600	19,200	19,800	20,500	21,200
Link	59,118	73,000	78,700	82,400	85,200	95,300	134,000	157,800
Tacoma Link	3,182	3,100	3,200	3,300	3,500	3,600	4,200	5,800
Paratransit	158	175	180	190	195	205	225	275
System Total	143,206	158,847	165,600	170,300	174,300	185,400	225,700	252,300

* Ridership estimates will be updated to reflect Lynnwood Link opening in 2024.

PLANS AND DOCUMENTS

In the coming years, Sound Transit will engage its partner agencies, the Board, and the public to develop specific plans and documents, which will be the driving factor for short- and long-term changes in Sound Transit service. The following section includes a more detailed description of each of these plans.

ST 2025 Network Plan & Comprehensive Operational Analysis (COA)

The ST 2025 Network Plan is a project in the upcoming year that will define the long-term vision of the ST Express network after the opening of the Link extensions to Redmond, Lynnwood, and Federal Way over the next several years as well as the opening of bus rapid transit along SR522/523 and I-405. In addition to this long term plan, short term recommendations will be developed to maximize the efficiency and identify key locations for service improvements in the interim as ongoing construction projects and regional congestion impact ST Express service reliability.

A Comprehensive Operational Analysis (COA) is a key part of the network plan that analyzes the existing transit system with the goal of improving the quality of service for customers and increasing the value of the system for the region. The study includes extensive data collection and analysis of demand for transit service, financial and funding needs, operational deficiencies, and how best to address those deficiencies. A COA also includes analysis of ridership patterns and system operations, running time and schedule adherence for the system, in addition to other items. A COA presents recommendations aiming to increase ridership, connectivity, and productivity throughout the system. Although Sound Transit's Service Planning division conducts service assessments described above through the annual Service Implementation Plan, Sound Transit's last major system-wide COA was conducted over

ten years ago. With the recent passage of ST3, conducting this analysis will allow ST Express to evolve to best meet customer needs as Link extensions open across the region.

Service Standards and Performance Measures Update

Service standards and performance measures are a set of guidelines that are used to design, evaluate and modify transit service. Since 1998, Sound Transit has used its Board adopted *Service Standards and Performance Measures* to help plan and manage its service. The document provides guidelines for service evaluation and service modification. The document also describes how Sound Transit service should be designed to reflect the characteristics of a high-speed, limited-stop regional system. The agency has updated the original document three times: in 2006, 2010 and most recently in 2014. Since the 2014 update, the Puget Sound Region has experienced tremendous growth and demand for Sound Transit bus and rail services has grown significantly. In the next year, Sound Transit will update its service standards and performance measures to ensure consistency with the service being provided and ensure the standards and measures are still in line with the goals for service Sound Transit has adopted. Additionally, service standards will be developed for the bus rapid transit service that was approved as part of ST3.

Service and Fare Equity (SAFE) Analysis

Per Federal Transit Administration (FTA) requirement, transit agencies in regions of over 200,000 people and that operate over 50 buses during peak periods are required to conduct a Title VI service and fare equity (SAFE) analysis when implementing a major service change and/or implementing fare changes. An equity analysis assesses the impacts of service and/or fare changes, positive or negative, on minority, low income, and limited English proficiency (LEP) customers. Each SAFE analysis includes a public outreach period to ensure that customers can comment on the impacts and results of the proposed changes.

Sound Transit's adopted policy defines a major service changes as "any single change in service on an individual bus or rail route that would add or eliminate more than 25 percent of the route's weekly platform service hours, and/or move the location of a stop or station by more than a half mile." Sound Transit uses this policy when developing SAFE analysis for a service change. In addition, per FTA Circular 4702.1B, transit agencies that receive FTA funding are required to perform a SAFE analysis for New Starts and Small Starts projects, as well as other New Fixed Guideway and major capital projects. These type of SAFE analyses are required to be conducted six months to a year prior to the project's opening date, whether or not changes to existing service rise to the level of "major service change" as defined by the transit provider.

Table 20 below includes more details on the specific timelines for each of the SAFE analyses that Sound Transit will conduct as part of the Sound Transit 2 (ST2) buildout of the system. The analysis will look at the equity impacts of potential changes to transit service in the respective corridor to be served by the light rail extensions or major facility identified in each SAFE. Sound Transit will engage the public and its partner agencies to develop the respective SAFE analysis. Sound Transit will monitor construction and opening date schedules and work with partner agencies if changes impact the respective SAFE analysis schedule.

TABLE 20: SOUND TRANSIT SAFE TIMELINES

PROJECT	MODE OF SERVICE	PROJECT TYPE	SAFE DEVELOPMENT & PUBLIC ENGAGEMENT PERIOD	SCHEDULED OPENING DATE
OMF: East	Link Light rail	Capital Facility	Summer 2019 to Summer 2020	December 2020
Northgate Link	Link Light rail	Fixed Guideway	Spring 2020 to Spring 2021	Late 2021
OMF Expansion	Tacoma Link	Capital Facility	Spring 2020 to Spring 2021	2021
Tacoma Link Expansion	Tacoma Link	Fixed Guideway	Spring 2021 to Spring 2022	2022
Maintenance Base	Sounder	Capital Facility	Spring 2021 to Spring 2022	2022
East Link	Link Light rail	Fixed Guideway	Spring 2022 to Spring 2023	Late 2023
Lynnwood Link	Link Light rail	Fixed Guideway	Spring 2022 to Spring 2023	Mid 2024
Redmond Link Extension	Link Light rail	Fixed Guideway	Spring 2023 to Spring 2024	Late 2024
Federal Way Link Extension	Link Light rail	Fixed Guideway	Spring 2023 to Spring 2024	Late 2024

PARTNER AGENCY COORDINATION AND TRANSIT INTEGRATION

As Sound Transit continues building-out ST2 and ST3 projects, coordination and transit integration will play an important role in shaping transit service for Puget Sound residents. Transit integration offers opportunities to maximize the efficient use of transit resources in the region, while also improving customer experience. Sound Transit recognizes that coordination with partner agencies provides an effective regional system that customers can utilize any time of the day and week.

Sound Transit's partner agencies, including Community Transit, King County Metro, Pierce Transit, Washington State Department of Transportation (WSDOT) Ferries System, and the City of Seattle, have all adopted updated Long Range Plans (LRPs) that include commitments to future transit integration as more light rail extensions open. As showcased with the U Link Bus-Rail integration process, King County Metro and Sound Transit worked together with key stakeholders in the region to improve reliability and provide new connections to customers with the opening of the Link extension to the University of Washington. Bus-rail transit integration will continue to be an important element of future Link light rail extension openings.

Equally important in the coming years will be transit integration of Sounder, Tacoma Link, and ST Express services with partner agency plans. For Sounder commuter rail, integration with partner agency bus services at each of the Sounder stations, on both the south and north lines, will be critical in the coming years. Coordination continues to be necessary to ensure customers are able to have a smooth experience transferring to and from Sounder to the connecting systems. Continued coordination with the WSDOT Ferries System at the Edmonds and Mukilteo Sounder stations will be needed, as the Ferry System provides a critical connection for customers traveling across the Puget Sound. For Tacoma Link, Sound Transit will work with Pierce Transit to better utilize capacity on the Tacoma Link system and ensure the system complements Pierce Transit service in downtown Tacoma, and vice versa. For ST Express, as partner agencies implement additional service and strategies identified in their respective LRPs, and as ST2 and ST3 projects come online, coordination of bus service improvements will be key to providing seamless connections across modes. This effort will also ensure redundancies in service throughout the region are minimized.

Sound Transit will continue coordinating with partner agencies as new services are implemented or changes are made to existing services. In addition, Sound Transit will work with partner agencies to minimize the impacts of the projects described throughout this plan.

GENERAL PLANNING THEMES

Link Light Rail Extensions

In 2008, voters approved the ST2 plan to expand high-capacity transit and provide Puget Sound residents the ability to move reliably, rapidly, and efficiently throughout the region. The year 2016 added further extensions for the region with the passage of ST3. These plans include a variety of improvements, including the expansion of the Link light rail system by over 80 miles. Extensions are planned to Northgate in 2021, Bellevue and Overlake in 2023, and Lynnwood, Redmond, and Federal Way in 2024. Other extensions which will begin the planning phase shortly include Link to Tacoma, West Seattle, Ballard, Everett, Issaquah, and Kirkland which will be in service over the next 25 years.

Construction for these extensions has ramped up over the past few years, with the tunneling for the Northgate Link project being completed in September 2016. Station and track construction work for the Northgate Link project continues in the coming years. Similarly, initial work for the East Link project has begun along the I-90 express lanes and in downtown Bellevue, with one third of the tunnel through Downtown Bellevue completed. As construction of the Link light rail extensions continues over the next five years, construction will increasingly impact ST Express and local partner agency bus service. In addition, the extensions will be the catalyst for changes in the bus network around the light rail extension and its stations.

In the Mode Specific Planning section, more details will be provided on the specific light rail construction impacts to ST Express bus service and Link light rail service. The section also includes Sound Transit's plans to minimize the construction impacts on customers, if any have been identified at this point in time. Sound Transit will continue to coordinate with partner agencies, key stakeholders, and the public, to minimize the impacts of construction of all Link projects on the adjacent neighborhoods and the connecting bus services.

Congestion

As the Puget Sound Region continues to grow, congestion on major highways and arterials is expected to increase. Over the past several years, traffic and travel times along key corridors served by ST Express have increased significantly. Since September 2015, Sound Transit has invested over 47,000 annual service hours throughout the ST Express system to provide new connections, provide new capacity to meet growing demand, and address congestion. Most recently, another 15,000 annualized service hours were invested in September 2017 system-wide to address on-time performance and reliability.

As congestion continues to increase, Sound Transit will continue to monitor the impacts on ST Express on-time performance and schedule reliability. As funding becomes available, Sound Transit will implement strategies to minimize the impacts of congestion on ST Express service.

Special Event Service Planning

Sound Transit has a rich history of providing service to highly attended events around the region. Sounder has provided special event service for many years to select Seahawks, Sounders FC, and Mariners games in downtown Seattle, in addition to special event service to select weekends of the Washington State Fair in Puyallup in partnership with the Washington State Fair.

Tacoma Link has been providing extended service to concerts and special events in the Tacoma Dome with anticipated high attendance for many years as well.

ST Express operates additional trips after major special events and after Seahawks, Sounders FC, and Mariners games in downtown Seattle.

Link light rail has been serving games and concerts in downtown Seattle since its opening, with the International District/Chinatown and Stadium stations providing easy walking access to the Stadium District. Sound Transit has operated special service Link trains after games or concerts in the Stadium District since Link's inception. With the extension of Link service to the University of Washington, Sound Transit has provided additional service for University of Washington football games to meet increased demand for Link service. In 2017, Sound Transit also expanded service in partnership with the organizers of the Rock 'n' Roll Marathon.

Sound Transit will continue to monitor high-attendance special events in the region and provide special service as it deems necessary, and as budget and personnel capacity allow. Service Planning produces a quarterly Event Service Plan that describes the actions that Sound Transit takes to address passenger loads expected during events.

LINK PLANNING OUTLOOK

Rail-Only Downtown Seattle Transit Tunnel

As part of the ST2 plan, the DSTT was scheduled to become rail only sometime in 2020, prior to the extension of Link service to Northgate, when systems testing needs to be completed. In late 2015, King County reached a deal with the Washington State Convention Center (WSCC) to sell the land where the current Convention Center Tunnel Station sits, for the WSCC expansion plans. The WSCC expansion project will build infrastructure on the current Convention Place Station site and close access to all the buses currently entering and exiting the DSTT at that station. The timing of this change of operations is tentatively set to occur sometime in 2019.

A rail-only DSTT will improve Link's travel times through the DSTT, by reducing the system's complexity and service delays experienced today with joint bus-rail operations. On the other hand, a rail-only DSTT means customers using buses currently in the DSTT will need to use the surface streets in downtown Seattle, where currently significant service delays occur. The One Center City Plan is looking at the impacts of moving buses from the DSTT to the surface streets in downtown Seattle. With increasing congestion over the next several years from additional commuters as well as construction impacts, operating reliable service in downtown Seattle will be a challenge for all operators. Identifying opportunities to minimize impacts to customers will be an important focus prior to the switch to a rail-only DSTT.

Sound Transit will continue to coordinate with SDOT, King County Metro, Downtown Seattle Association (DSA), and Community Transit to develop the best outcomes for customers and minimize the customer impacts of a rail-only DSTT.

Light Rail Expansions

With the ST2 plan, voters approved approximately 36 miles of new light rail. The ST3 plan expands the system by another 50 miles of light rail. By 2024, the system would extend north from the University of Washington to Northgate and Lynnwood, south from Sea-Tac International Airport to the Federal Way Transit Center, and east from Seattle to Bellevue and Redmond. In addition, the ST2 Plan includes funding to locate, design, and construct an additional operations and maintenance facility to accommodate future Link light rail fleet requirements. Below are brief descriptions of the light rail extensions and the new operations & maintenance facility funded as part of the ST2 plan and initial projects funded by ST3. Impacts to existing ST Express services are currently being analyzed as part of ongoing studies for specific construction impacts, while the 2025 Network Plan will analyze long term changes to the network as a result of Link extension openings. Figure 20 provides more details on current service and approved extensions.

Northgate Link

Scheduled for completion in late 2021, Northgate Link extends Link light rail 4.3 miles north from the University of Washington Station to the Northgate Station, adding three stations: U District, Roosevelt, and the Northgate Station. Northgate Link, along with the stations, are currently under construction, with the tunnels connecting Northgate and the University of Washington Stations now complete in both directions. With the extension to Northgate, the Link system is expected to operate four-car trains at all times.

Lynnwood Link

Scheduled for completion in mid-2024, Lynnwood Link extends Link light rail 8.5 miles north from the Northgate Station to the Lynnwood Transit Center, adding four stations and infrastructure for two potential future stations. The stations include Shoreline South/145th, Shoreline North/185th, Mountlake Terrace, and Lynnwood City Center. Lynnwood Link, along with the stations, are currently in final design. With the extension to Lynnwood, Link between Lynnwood and Federal Way will operate as the Red Line with four-car trains at all times.

East Link

Scheduled for completion in late 2023, East Link extends Link light rail 14 miles east from the International District/Chinatown Station to the Overlake Transit Center via downtown Bellevue, adding ten stations and preliminary engineering for a future extension to downtown Redmond. The stations include Judkins Park (Rainier Ave), Mercer Island, South Bellevue, East Main, Bellevue Downtown, Willburton, Spring District/120th, Bel-Red/130th, Overlake Village, and Redmond Technology Center (Overlake Transit Center). East Link, along with some of the stations, are currently in the initial phases of construction. With the extension to Bellevue and Overlake and the opening of Lynnwood Link, Link will operate as the Blue Line between Overlake and Lynnwood with four-car trains at all times.

Redmond Link

The Downtown Redmond Link Extension builds 3.7 miles of new light rail from the Redmond Technology Center Station, opening in 2023, to downtown Redmond by 2024. Light rail will travel along SR 520 with two new stations in southeast Redmond at Marymoor Park and downtown Redmond. This extension is being built concurrently with the East Link project and was funded by the passage of ST3.

Federal Way Link

Scheduled for completion in 2024, Federal Way Link extends Link light rail 7.8 miles south from the Angle Lake Station to the Federal Way Transit Center, with stops at Kent/Des Moines and South 272nd Street. The Federal Way Link Extension is currently in final design. With the extension to Federal Way, the Link line between Lynnwood and Federal Way is expected to operate as the Red Line with four-car trains at all times.

FIGURE 26: CURRENT SERVICE AND APPROVED EXTENSIONS



Link Fleet Expansion

With the extensions of Link light rail service approved under ST2, the fleet requirements will triple, from the current 62 vehicles to 184 vehicles. In the fall of 2016, the Sound Transit Board of Directors approved the purchase of 122 additional light rail vehicles from Siemens Industry, Inc. to meet the needs for the ST2 extensions. This was amended to procure an additional 30 light rail vehicles in spring 2017. Sound Transit continues to work with the vendor on the design of the vehicles to ensure the needs of all transit riders are incorporated. The assigned fleet and peak vehicle requirements are based on current assumptions of needs for upcoming Link extensions, and may not necessarily reflect the delivery schedule of new light rail vehicles.

TABLE 21: LINK FLEET THROUGH 2023

	VEHICLE NUMBER	MANUFACTURER	YEAR IN SERVICE	TYPE	2017	2018	2019	2020	2021	2022	2023
Existing	101-135	Kinkisharyo	2009	95-foot LR	35	35	35	35	35	35	35
Existing	136-162	Kinkisharyo	2011	95-foot LR	27	27	27	27	27	27	27
Planned	TBD	Siemens, Inc.	TBD	TBD	-	-	*	*	*	*	*
Total Assigned Fleet:					62	62	62*	62*	104*	104*	214*
Peak Vehicle Requirements (Including Ready Reserve):					54	54	54*	54*	84*	84*	124*

* Reflects current assumptions of needs for approved Link extensions. Final delivery schedule may be different from shown.

Operations & Maintenance Facility (OMF): East

The current operations and maintenance facility in the SODO district of the City of Seattle, which can store and maintain up to 104 light rail vehicles, will reach full capacity by 2020 when the new vehicles start being delivered. A new satellite facility in Bellevue will maintain, store and deploy the remainder of the expanded fleet and support efficient light rail operations in 2023. In 2015, after many rounds of outreach and public comments, the Sound Transit Board of Directors selected a site located in the City of Bellevue, bound by the Eastside Rail Corridor on the west and 120th Avenue NE on the east, SR 520 to the north, and NE 12th Street to the south. The OMF: East facility, as it's officially named, is under construction and expected to be completed and operational in December 2020.

Sound Transit will continue to coordinate with partner agencies, key stakeholders, and the public, to minimize the impacts of construction of the OMF: East project on the adjacent neighborhoods. In addition, Sound Transit expects to conduct a service and fare equity (SAFE) analysis for the project starting in mid-2019 through mid-2020.

Link Estimated Hours and Miles 2019-2023

Based on the Five-Year Service Outlook, planners worked closely with finance staff to estimate four key service statistics which drive operating costs included in the finance plan:

- **Platform hour:** Any hour a transit vehicle is operating, which includes in-service hours, deadhead hours and layover hours. Typically, this is the total amount of time the transit vehicle is away from the operating base.
- **Revenue hour:** An hour in which a transit vehicle is in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.
- **Platform Mile:** Any mile a transit vehicle operates, which includes in-service miles and deadhead miles. Typically, this is the total distance the transit vehicle travels while away from the operating base.
- **Revenue Mile:** The distance a transit vehicle operates in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.

Link includes both train and vehicle statistics to reflect operation of multiple cars within an individual train. As a reference, values from 2016, 2017, and 2018 are included in the table.

In 2017 Link service statistics will increase as a result of a full year of operation on extensions to the University of Washington and Angle Lake. Additionally, an operation of a mix of 2- and 3-car trains during the peak increases vehicle statistics over the previous year's projections. Link service statistics stabilize between 2018 and 2020 before increasing in 2021 and 2022 with the anticipated opening of Northgate Link in late 2021. Table 22 provides details on Link train and vehicle level service statistics through 2023.

TABLE 22: LINK SERVICE HOURS AND MILES 2016-2023

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES	REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train Statistics				Vehicle Statistics			
2016	Actual	90,019	93,975	1,803,023	1,930,496	204,824	214,003	4,103,169	4,375,289
2017	Estimated	96,926	101,186	1,941,385	2,078,640	251,758	262,822	5,042,572	5,399,080
2018	Estimated	97,017	101,281	1,943,197	2,080,580	263,064	274,625	5,269,034	5,641,552
2019	Estimated	97,000	101,300	1,943,200	2,080,600	263,100	274,600	5,269,000	5,641,600
2020	Estimated	97,000	101,300	1,943,200	2,080,600	263,100	274,600	5,269,000	5,641,600
2021	Estimated	99,700	104,100	1,996,400	2,137,600	263,100	274,600	5,269,000	5,641,600
2022	Estimated	101,300	105,700	2,004,800	2,171,400	405,000	422,800	8,019,200	8,685,400
2023	Estimated	125,800	131,300	2,776,100	3,006,800	503,000	525,100	11,104,500	12,027,100

SOUNDER PLANNING OUTLOOK

The year 2017 saw the addition of the last ST2-funded service improvements to Sounder service, including additional cars, new round trips, and infrastructure improvements. Sound Transit will continue to coordinate internally and externally with partner agencies to minimize the impacts of Sounder projects, including minimizing delay impacts to customers during a project's construction period.

Sounder Maintenance Base

Sound Transit plans to build an operations and maintenance facility to service Sounder commuter trains, a project approved to accommodate existing and future ridership growth on the Sounder commuter rail system. Currently, maintenance for the Sounder commuter rail system is contracted out to Amtrak and completed in Amtrak's Seattle maintenance facility. The new Sounder maintenance facility would be constructed between Steilacoom Boulevard SW and 100th Street SW in the City of Lakewood, adjacent to the Sound Yard Expansion project identified above. The project completed its environmental review in May 2016 and is proposed to be completed by 2023.

Fleet Operations

Currently Sound Transit owns and operates 67 passenger cars for Sounder service, which includes the nine additional cab cars delivered in 2017. Table 23 provides details on existing and planned Sounder fleet through 2023.

TABLE 23: SOUNDER FLEET THROUGH 2023

	VEHICLE NUMBER	MANUFACTURER	YEAR IN SERVICE	TYPE	2017	2018	2019	2020	2021	2022	2023
Existing	901-911	GM	2000-2001	Locomotive	11	11	11	11	11	11	11
Existing	101-111, 301-307	Bombardier	2000-2003	Cab Car	18	18	18	18	18	18	18
Existing	201-240, 401-410	Bombardier	2000-2003	Coach	40	40	40	40	40	40	40
Existing	921-923	Motive Power	2012	Locomotive	3	3	3	3	3	3	3
Planned	321-329	Bombardier	2017	Cab Car	9	9	9	9	9	9	9
Total Locomotives on Property:					14	14	14	14	14	14	14
Peak Vehicle Requirements (Including Ready Reserve):					12	12	12	12	12	12	12
Spares:					2	2	2	2	2	2	2
Spare Ratio (in assigned fleet):					17%	17%	17%	17%	17%	17%	17%
Total Passenger Cars on Property:					67	67	67	67	67	67	67
Peak Vehicle Requirements (Including Ready Reserve):					61	61	61	61	61	61	61
Spares:					6	6	6	6	6	6	6
Spare Ratio (in assigned fleet):					10%	10%	10%	10%	10%	10%	10%

Sounder Estimated Hours and Miles 2019-2023

Based on the Five-Year Service Outlook, planners worked closely with finance staff to estimate four key service statistics which drive operating costs included in the finance plan:

- **Platform hour:** Any hour a transit vehicle is operating, which includes in-service hours, deadhead hours and layover hours. Typically, this is the total amount of time the transit vehicle is away from the operating base.
- **Revenue hour:** An hour in which a transit vehicle is in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.
- **Platform Mile:** Any mile a transit vehicle operates, which includes in-service miles and deadhead miles. Typically, this is the total distance the transit vehicle travels while away from the operating base.
- **Revenue Mile:** The distance a transit vehicle operates in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.

Sounder includes both train and vehicle statistics to reflect operation of multiple cars within an individual train. As a reference, values from 2016, 2017, and 2018 are included in the table.

Sounder statistics increase in 2018 due to a full year of operation of the two new round trips added for September 2017. As a note, 2016 and 2017 vehicle statistics reflect the operation of the new 2016 midday train as a two-car train until mid-2017. When the new cab cars are delivered, the train will become a standard seven-car south line trainset. Hours and miles continue to increase in 2018 to reflect the full year of operation of the new trains planned for September 2017 and operation of the 2016 midday train as a full seven-car trainset. Table 24 provides details on Sounder train and vehicle level service statistics through 2023.

TABLE 24: SOUNDER SERVICE HOURS AND MILES 2016-2023*

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES	REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train Statistics				Vehicle Statistics			
	North Line								
2016	Actual	2,698	2,893	69,699	71,820	7,124	7,627	184,338	189,840
2017	Estimated	2,890	3,073	75,070	76,826	7,225	7,683	187,676	192,066
2018	Estimated	2,890	3,073	75,070	76,826	7,225	7,683	187,676	192,066
2019	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2020	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2021	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2022	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2023	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
	South Line								
2016	Actual	7,618	8,211	235,266	242,628	52,151	56,169	1,610,403	1,660,561
2017	Estimated	8,584	9,245	271,063	278,204	57,415	61,740	1,810,765	1,857,474
2018	Estimated	9,652	10,435	305,734	314,186	67,564	73,042	2,140,136	2,199,301
2019	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2020	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2021	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2022	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2023	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
	Sounder Total								
2016	Actual	10,316	11,104	304,965	314,448	59,275	63,796	1,794,741	1,850,401
2017	Estimated	11,474	12,318	346,133	355,030	64,641	69,423	1,998,441	2,049,540
2018	Estimated	12,542	13,508	380,804	391,012	74,789	80,725	2,327,812	2,391,367
2019	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2020	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2021	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2022	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2023	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400

*Note: Statistics do not reflect the implementation of proposed Sounder Maintenance Base

TACOMA LINK PLANNING OUTLOOK

System Expansion

The ST2 Plan included funding for a project to expand the current Tacoma Link service. In 2013, after extensive community outreach, a preferred alternative for the extension and station locations was selected. The 2.4-mile expansion will extend Tacoma Link service to the Hilltop neighborhood via the Stadium District and Martin Luther King, Jr. Way. The extension will add six additional stations and relocate the current Theater District station one block north. The expansion will also increase frequencies from every 12 minutes to every 10 minutes. In late 2015, the Sound Transit Board of Directors approved the project to be built. The Tacoma Link Expansion is funded through a partnership between Sound Transit and the City of Tacoma, in addition to grants from the U.S. Department of Transportation and the WSDOT. The project is currently in final design, with construction expected to begin in 2018, and scheduled to open in 2022.

Sound Transit will continue to coordinate with partner agencies, key stakeholders, and the public, to minimize the impacts of construction of the Tacoma Link expansion project on the adjacent neighborhoods and the connecting bus services. In addition, Sound Transit expects to conduct a service and fare equity analysis (SAFE) analysis for the project starting in early 2021 through early 2022. The analysis will include the impacts of changes to bus services to Title VI communities as a result of the extension.

Fleet Operations & Maintenance Facility Expansion

With the extension of Tacoma Link service approved in 2015, the fleet requirements for operating service will increase, from the current three vehicles to eight vehicles with the extension. The light rail vehicles are expected to begin being delivered in 2020 through 2021. Sound Transit will be working with the vendor, Brookeville Equipment Corporation, in the coming years to design the new vehicles and ensure the needs of all transit riders are incorporated.

The current operations and maintenance facility in downtown Tacoma, which can store and maintain four light rail vehicles, will reach full capacity by 2020. This facility will be expanded to the east to store, maintain, and deploy the additional vehicles needed for the Tacoma Link Extension.

Sound Transit will continue to coordinate with partner agencies, key stakeholders, and the public, to minimize the impacts of construction of the Tacoma Link OMF Expansion project on the adjacent neighborhoods. In addition, Sound Transit expects to conduct a SAFE analysis for the project in 2020. Table 25 provides details on existing and planned Tacoma Link fleet through 2023.

TABLE 25: TACOMA LINK FLEET THROUGH 2023

	VEHICLE NUMBER	MANUFACTURER	YEAR IN SERVICE	TYPE	2017	2018	2019	2020	2021	2022	2023
Existing	1001-1003	Skoda	2003	66-foot LR	3	3	3	3	3	3	3
Planned	1004-1008	Brookeville	2022	66-foot LR	-	-	-	5	5	5	5
Total Assigned Fleet:					3	3	3	8	8	8	8
Peak Vehicle Requirements (Including Ready Reserve):					2	2	2	2	2	6	6
Spares:					1	1	1	6	6	2	2
Spare Ratio (in assigned fleet)					50%	50%	50%	300%	300%	33%	33%

Tacoma Link Estimated Hours and Miles 2019-2023

Based on the Five-Year Service Outlook, planners worked closely with finance staff to estimate four key service statistics which drive operating costs included in the finance plan:

- **Platform hour:** Any hour a transit vehicle is operating, which includes in-service hours, deadhead hours and layover hours. Typically, this is the total amount of time the transit vehicle is away from the operating base.
- **Revenue hour:** An hour in which a transit vehicle is in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.
- **Platform Mile:** Any mile a transit vehicle operates, which includes in-service miles and deadhead miles. Typically, this is the total distance the transit vehicle travels while away from the operating base.
- **Revenue Mile:** The distance a transit vehicle operates in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.

Since Tacoma Link operates as a one-car train, train and vehicle statistics are identical. As a reference, values from 2016, 2017, and 2018 are included in the table.

Tacoma Link service statistics remain stable through 2021, before increasing in 2022 when the extension is scheduled to open. The estimated service statistics for 2022 are subject to change, as they depend on the final service plan of the Tacoma Link expansion, which are still in development. Table 26 provides details on Tacoma Link train and vehicle level service statistics through 2023.

TABLE 26: TACOMA LINK SERVICE HOURS AND MILES 2016-2023

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
Train & Vehicle Statistics					
2016	Actual	9,868	9,905	75,983	76,262
2017	Estimated	9,809	9,846	75,527	75,805
2018	Estimated	9,900	9,937	76,000	76,500
2019	Estimated	9,900	9,900	76,200	76,500
2020	Estimated	9,900	9,900	76,200	76,500
2021	Estimated	9,900	9,900	76,200	76,500
2022	Estimated	13,800	13,900	105,900	106,800
2023	Estimated	25,600	25,700	238,600	197,600

ST EXPRESS PLANNING OUTLOOK

Sound Transit’s express bus network is structured around key regional travel corridors, typically on freeways or major highways to support the express, limited-stop characteristics of the service. Sound Transit will continue to coordinate with its partner agencies, key stakeholders, and the public, to analyze the best ways to serve the current ST Express markets and provide improved connections to Link light rail and other projects described in this section. The 2025 Network plan and COA described earlier in this section will guide the evolving role of ST Express as Link extensions open in 2021 and 2023. A service and fare equity (SAFE) analysis will be conducted prior to the opening of each Link extension and will include the evaluation of the impacts to Title VI communities of connecting bus service. In addition, Sound Transit will work with partner agencies, key stakeholders, and the public, to fully capture and minimize the construction impacts to local transit service of the projects described below.

ST Express Estimated Hours and Miles 2019-2023

Based on the Five-Year Service Outlook, planners worked closely with finance staff to estimate four key service statistics which drive operating costs included in the finance plan:

- **Platform hour:** Any hour a transit vehicle is operating, which includes in-service hours, deadhead hours and layover hours. Typically, this is the total amount of time the transit vehicle is away from the operating base.
- **Revenue hour:** An hour in which a transit vehicle is in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.
- **Platform Mile:** Any mile a transit vehicle operates, which includes in-service miles and deadhead miles. Typically, this is the total distance the transit vehicle travels while away from the operating base.
- **Revenue Mile:** The distance a transit vehicle operates in revenue service, i.e., picking up, dropping off, and/or carrying passengers. Vehicles are not in revenue service between base and their first stop, between their last stop and base, or when traveling between the last stop on one trip and the first stop on the next trip.

As a reference, values from 2016, 2017, and 2018 are included in the table. Increases in estimated service statistics for ST Express reflect a full year of operation of 2016 service additions. Implementation of additional hours across the system beginning in September 2017 to improve service quality adds a prorated increase of 6,428 service hours to the 2017 estimate. Service hours and miles continue to increase through 2018 as the September 2017 service quality investment operate for a full year. Beyond 2018 service stabilizes to reflect the existing operating and capital funding levels planned for ST Express.

ST Express service statistics are presented on three levels and will total slightly differently. Table 27 includes funded total hours and miles for all ST Express routes including scheduled, special event, extra service, and contingency. Table 28 shows the distribution of only scheduled platform hours, the key cost driver for ST Express, by operating partner. Table 29 lists only scheduled platform hours by subarea. Route level estimates for ST Express are included in the Appendix. It is important to note that the tables below only include funded ST Express service.

TABLE 27: ST EXPRESS TOTAL SERVICE HOURS AND MILES 2016-2023 (FUNDED)

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
2016	Actual	609,563	764,880	11,920,347	16,200,954
2017	Estimated	608,578	783,389	11,942,295	16,314,712
2018	Estimated	617,710	794,780	12,118,429	16,557,882
2019	Estimated	617,710	794,780	12,118,429	16,557,882
2020	Estimated	617,710	794,780	12,118,429	16,557,882
2021	Estimated	617,710	794,780	12,118,429	16,557,882
2022	Estimated	617,710	794,780	12,118,429	16,557,882
2023	Estimated	617,710	794,780	12,118,429	16,557,882

Estimates include scheduled service, special event, and extra service. All estimated hours are subject to change based on end of year actuals

TABLE 28: ST EXPRESS PLATFORM HOURS BY OPERATING PARTNER 2016-2023

YEAR		COMMUNITY TRANSIT	KING COUNTY METRO	PIERCE TRANSIT	TOTAL
2016	Actual	150,285	279,372	331,496	761,153
2017	Estimated	147,945	293,051	337,893	778,889
2018	Estimated	147,214	297,233	345,834	790,280
2019	Estimated	147,214	297,233	345,834	790,280
2020	Estimated	147,214	297,233	345,834	790,280
2021	Estimated	147,214	297,233	345,834	790,280
2022	Estimated	147,214	297,233	345,834	790,280
2023	Estimated	147,214	297,233	345,834	790,280

Estimates only include scheduled service and do not include special event or extra service. All estimated hours are subject to change based on end of year actuals.

TABLE 29: ST EXPRESS SCHEDULED PLATFORM HOURS BY SUBAREA 2016-2023

YEAR		SNOHOMISH COUNTY	EAST KING COUNTY	SOUTH KING COUNTY	PIERCE COUNTY	TOTAL
2016	Actual	126,856	352,397	79,304	202,595	761,153
2017	Estimated	124,379	367,443	80,523	206,545	778,889
2018	Estimated	123,764	371,731	82,059	212,726	790,280
2019	Estimated	123,764	371,731	82,059	212,726	790,280
2020	Estimated	123,764	371,731	82,059	212,726	790,280
2021	Estimated	123,764	371,731	82,059	212,726	790,280
2022	Estimated	123,764	371,731	82,059	212,726	790,280
2023	Estimated	123,764	371,731	82,059	212,726	790,280

Estimates only include scheduled service and do not include special event or extra service. All estimated hours are subject to change based on end of year actuals.

ST Express Fleet Plan

Table 30 shows the ST Express fleet plan through 2023. The fleet plan presents only buses in the current fleet and planned replacements based on the useful life of each bus type. The table doesn't include additional buses that might be needed to implement the service and capacity needs identified earlier in this section, and is subject to change based on operational needs.

TABLE 30: ST EXPRESS FLEET THROUGH 2023

	Make	Year in Service	Type	2017	2018	2019	2020	2021	2022	2023
Existing	New Flyer	2003	40-foot	1	0					
	New Flyer	2004	60-foot	22	0					
	Gillig	2005	40-foot	2	0					
	MCI	2005	45-foot	13	13	13	13	0		
	Gillig	2008	40-foot	30	30	30	30	0		
	New Flyer	2008	60-foot	2	2	2	2	0		
	MCI	2008	45-foot	7	7	7	7	7	7	7
	MCI	2009	45-foot	3	3	3	3	3	3	3
	New Flyer	2010	60-foot	37	37	37	37	37	37	0
	MCI	2010	45-foot	16	16	16	16	16	16	16
	New Flyer	2011	60-foot	35	35	35	35	35	35	35
	Gillig	2012	40-foot	24	24	24	24	24	24	24
	New Flyer	2012	60-foot	19	19	19	19	19	19	19
	New Flyer	2015	60-foot	22	22	22	22	22	22	22
	AD	2015	Double Deck	5	5	5	5	5	5	5
	Gillig	2015	40-foot	20	20	20	20	20	20	20
	Gillig	2016	40-foot	5	5	5	5	5	5	5
	MCI	2016	45-foot	12	12	12	12	12	12	12
Planned	AD	2017	Double Deck	32	32	32	32	32	32	32
		2018	60-foot		25	25	25	25	25	25
		2021	42-foot					13	13	13
		2021	40-foot					30	30	30
		2021	60-foot					2	2	2
		2022	60-foot							37
Fleet Statistics	Total Assigned Fleet			307	307	307	307	307	307	307
	Peak Bus Requirements			258	258	258	258	258	258	258
	Spares			49	49	49	49	49	49	49
	Spare Ratio			19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%

CORRIDOR RIDERSHIP & ROUTE PROFILES



Corridor Ridership & Performance Analysis

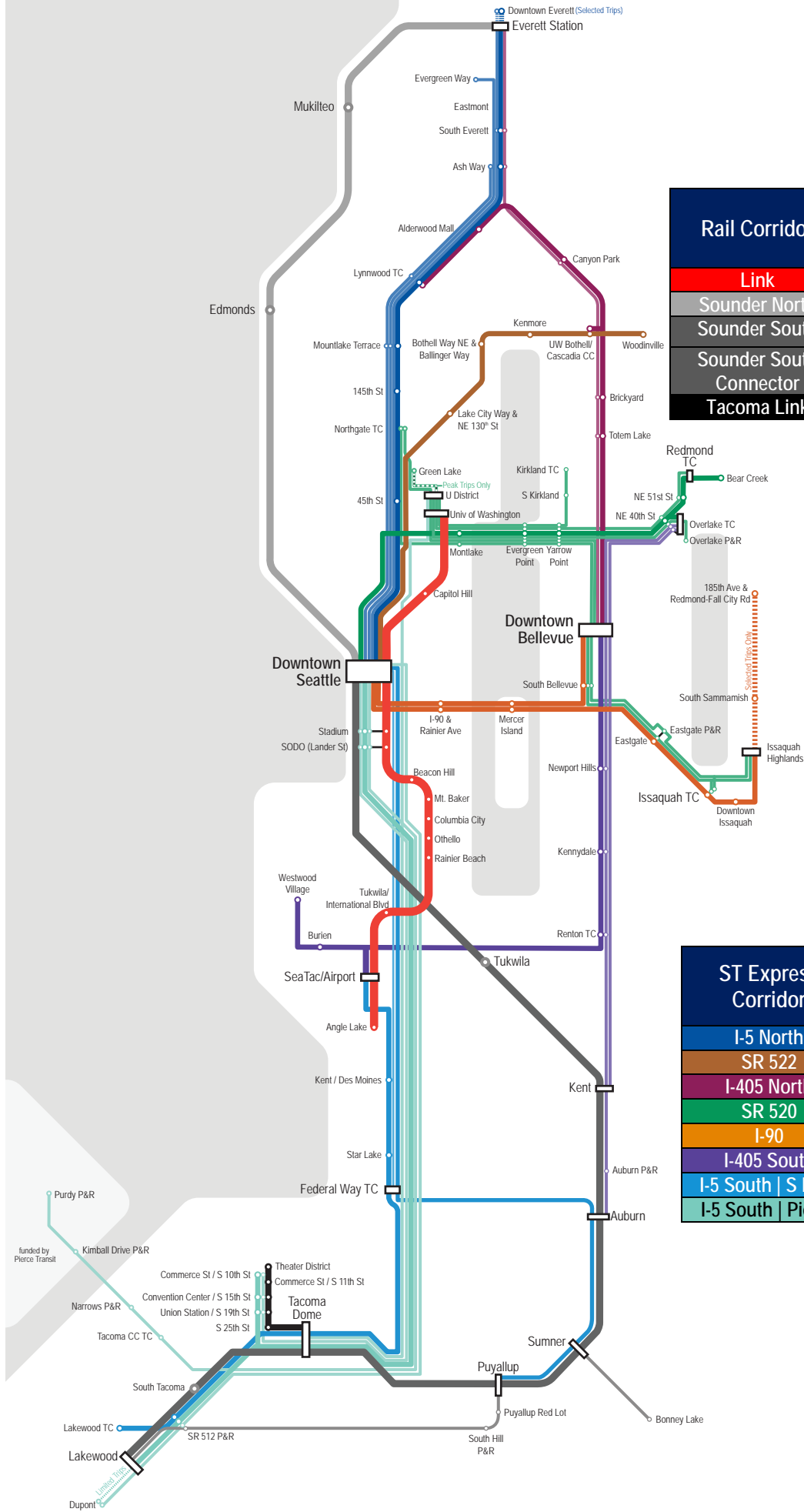
Sound Transit's express bus network is structured around key regional travel corridors, typically on freeways or major highways to support the express, limited-stop characteristics of service. In the 2018 Service Implementation Plan, ST Express routes are grouped into common corridors for analysis. The corridors allow for an easier comparison of routes serving similar geographic areas and markets.

The following section includes analysis at the corridor level, for each major corridor Sound Transit provides service to. For the four major rail lines Sound Transit operates, Link, Sounder north line, Sounder south line and Tacoma Link, each is considered its own corridor, as they serve distinct markets. For ST Express, routes are grouped into distinct corridors: I-5 North, I-405 North, SR-522, SR-520, I-90, I-405 South, I-5 South *South King*, I-5 South *Pierce*, and the Sounder Connectors.

Each corridor profile includes the following information:

- A **schematic map** that provides an overview of the routes and markets served by the corridor.
- A **brief history** of the service in the corridor and how it has evolved over time, including history of the routes that have served the corridor and the major service changes of routes along the corridor.
- A **historical ridership** chart showing trends in average weekday, average Saturday, and average Sunday boardings from June 2014 through June 2017.

The tables on the next page provide an overview of the different corridors presented throughout this section as well as information on spring 2017 average weekday boardings and boardings per trip on the corridor as a whole.

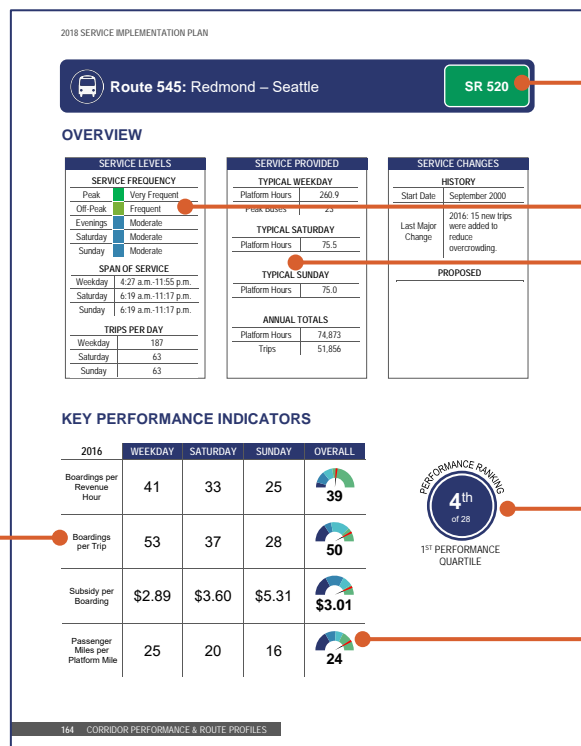


Rail Corridor	Average Weekday Boardings	Passengers per Trip
Link	73,900	195
Sounder North	1,700	217
Sounder South	15,300	729
Sounder South Connector	1,000	26
Tacoma Link	3,400	21

ST Express Corridor	Average Weekday Boardings	Passengers per Trip
I-5 North	8,800	42
SR 522	5,300	50
I-405 North	4,100	37
SR 520	15,000	41
I-90	15,000	54
I-405 South	3,800	28
I-5 South S King	5,900	34
I-5 South Pierce	7,000	33

READING ROUTE PROFILES

OVERVIEW & KEY PERFORMANCE INDICATORS

**Corridor**

Identifies the corridor in which the route operates.

Service Levels

Includes a description by day of the week of how often buses and trains arrive, when the service operates, and many trips run each day.

Service frequency, how often service arrives, is grouped into four categories define in the table below. Generally, the more often transit arrives the more spontaneously customers will use the service without referencing a schedule. Frequent service also reduces wait times for customers.

SERVICE FREQUENCY

Buses and trains arrive every:

Very Frequent	Less than 10 minutes
Frequent	10 to 20 minutes
Moderate	21 to 30 minutes
Minimum	31 to 60 minutes

Service Provided

Sound Transit budgets service based on platform hours operated. A platform hour is any hour a transit vehicle is operating, which includes in-service hours, deadhead hours and layover hours. Typically, this is the total amount of time the transit vehicle is away from the operating base.

Peak buses are the number of vehicles needed to operate the route when service is the most intense.

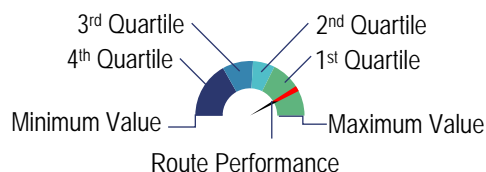
Annual totals for platform hours and trips are provided.

Combined Performance Ranking

ST Express routes are sorted and ranked by their performance in each of the four key performance indicators to assign an overall productivity ranking. See System Ridership & Performance Analysis for more information. Top performing routes may be candidates for service enhancements if resources are available, particularly if performance has shown a consistent upward trend. Lower performing routes may be candidates for actions to improve productivity and cost effectiveness.

Overall Ranking Meters

In the overall column for ST Express routes, a meter indicates how well the route performs relative to other routes in the system, with colors indicating the four quartiles described in Chapter 5.

**Key Performance Indicators**

Sound Transit manages and measures service performance using the Service Standards and Performance Measures. The Board adopted document defines key performance indicators for each mode, establishes standards of performance and productivity, and provides guidelines to inform proposed changes to service to best utilize operating resources.

- **Boardings per revenue hour** is the number of passengers boarding a vehicle during one hour of scheduled revenue service, not including vehicle deadhead or layover time.
- **Boardings per trip** are the number of passengers boarding each operated one-way trip.
- **Subsidy per boarding** is calculated by dividing the net cost of the service (cost minus fare revenue) by the number of passenger boardings for a full year.
- **Passenger miles per platform vehicle mile** is calculated by dividing passenger miles by the number of vehicle platform miles travelled for a full year.

READING ROUTE PROFILES

AVERAGE RIDERSHIP TRENDS



Average Daily Ridership

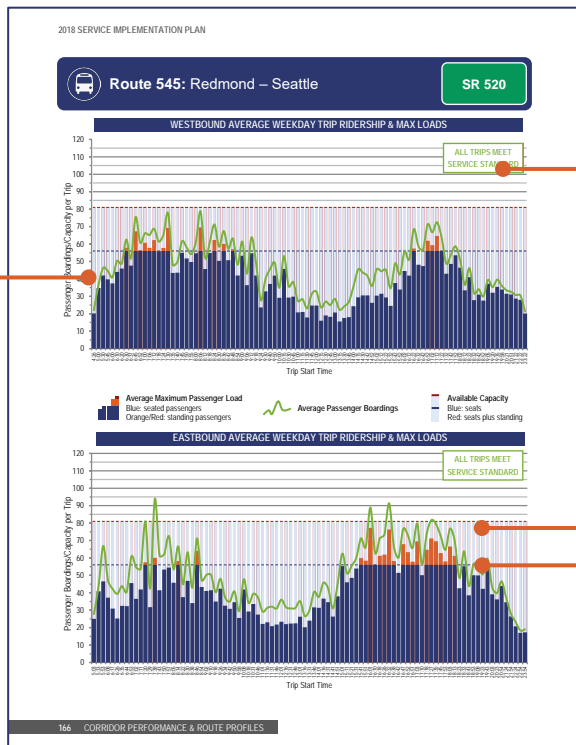
Includes by day of the week how many passengers board each service on average. Calculated by dividing the sum of all boardings by the number of days operated.

Three-Year Ridership Trends

Graphs display average boardings on weekdays, Saturdays, and Sundays for each month of the past three years. The illustration reveals long-term ridership trends resulting from service modifications or changes in demand. Additionally, seasonal fluctuations in ridership appear.

READING ROUTE PROFILES

TRIP LEVEL RIDERSHIP & PASSENGER LOADS



Individual Trip Ridership & Passenger Load Graphs

Each graph illustrates the average ridership and maximum passenger load by trip for both directions of the service.

Service Standards

ALL TRIPS MEET SERVICE STANDARD

The load factor (ratio between seated and standing passengers) of individual trips is used to measure the impact of crowding. The threshold for corrective action is when the maximum load exceeds the standard load factor at least 60 percent of the time for any individual trip. Each graph includes an indication if any trips exceed the service standards.

Average Maximum Passenger Load



Average Maximum Passenger Load
Blue: seated passengers
Orange/Red: standing passengers

Colored bars show the **Average Maximum Passenger Load** for each trip. This is the point in the trip where the number of passengers on the transit vehicle at a specific point was the highest. Blue are seated passengers, while orange and red show standing passengers.

Standing loads are a normal occurrence on a healthy transit system, including Sound Transit, and are not a sole cause for immediate action. Sound Transit continually monitors service and uses the service standards to identify crowding conditions. The agency uses several service management tools to reduce overcrowding as the budget allows, including: schedule adjustments to balance loads, assigning larger buses or longer train consists, and adding additional trips.

Available Capacity

Available Capacity
Blue: seats
Red: seats plus standing

The light blue bars show total available capacity for each trip, both seated and standing passengers. The capacity shown is based on the vehicle time scheduled to operate the individual trip and the number of standing passengers is defined based on the service standards.

Average Ridership by Trip



Average Passenger Boardings

The green line shows the **Average Passenger Boardings** for each trip. This is the total number of passengers who boarded the bus during the entire trip and may be higher than the maximum passenger load.

STOP LEVEL RIDERSHIP



Illustrates the primary alignment of the route and calls out timepoint stops. Many routes have more stops, although for clarity only timepoints are shown.

Stop-Level Ridership

For each direction of the route average weekday boardings and alightings are shown for each stop. Timepoint stops are in bold and correspond with the stops shown on the route map above.

LINK CORRIDOR

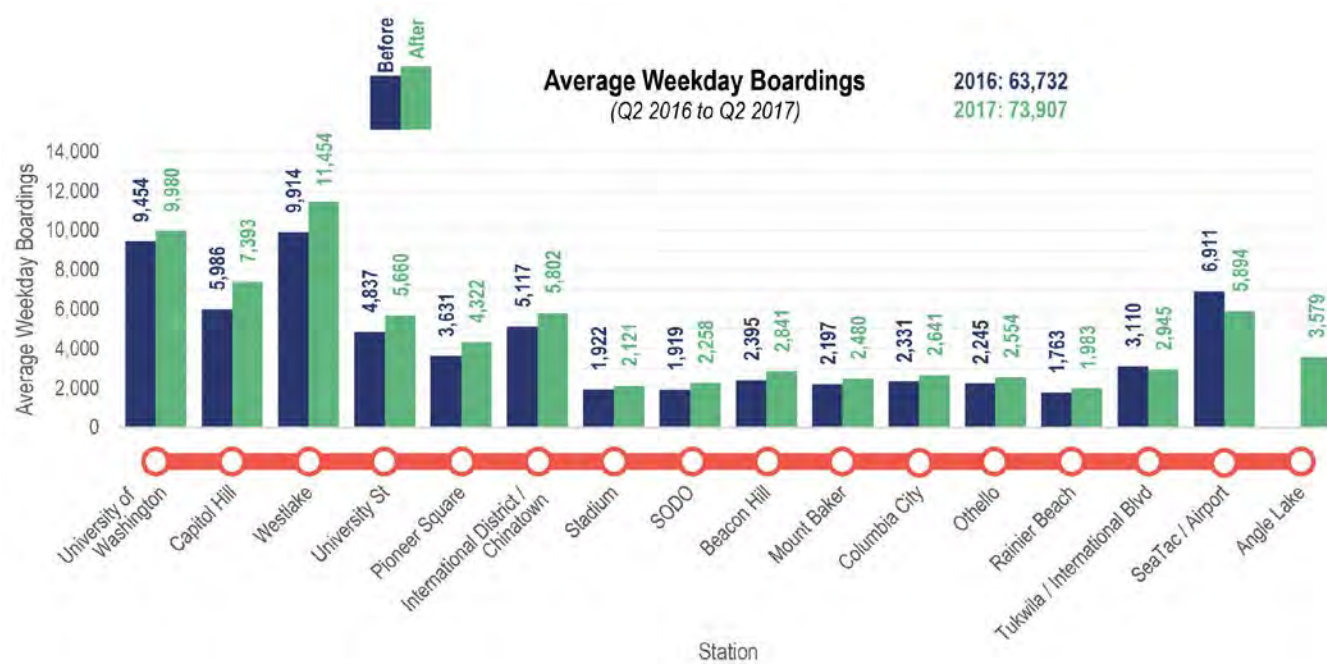


LINK CORRIDOR

The initial 13.9 mile segment opened in July 2009 operating in passenger service between Westlake Station and Tukwila International Boulevard Station. The following December, the 1.4-mile long segment to SeaTac/Airport Station opened. This line operated between SeaTac/Airport and Westlake Station until March 2016, when the 3.5-mile long extension opened to Capitol Hill and University of Washington. Finally, the latest 1.6-mile extension to Angle Lake Station opened in September 2016. This brought the total length of the alignment to 20 miles with 16 stations.

Figure 27 below shows the station level comparison between 2nd Quarter 2016 and 2nd Quarter 2017, which shows the growth of Link service even after a full year of operation on the University Link extension and the opening of the Angle Lake Station in September 2016. Ridership increased by 16 percent in the 2nd Quarter of 2017 over 2016, and continues to grow. Nearly a quarter of riders now begin their trip at University of Washington and Capitol Hill stations, and ridership along all stations except Tukwila/International Blvd and SeaTac/Airport stations experienced ridership growth. The opening of Angle Lake station resulted in people using that station as a park-and-ride alternative to Tukwila / International Blvd and as a transfer station from King County Metro RapidRide Line A.

FIGURE 27: LINK CORRIDOR AVERAGE WEEKDAY BOARDINGS BY STATION




Link Light Rail
LINK

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Very Frequent
Off-Peak	Frequent
Evenings	Frequent
Saturday	Frequent
Sunday	Frequent
SPAN OF SERVICE	
Weekday	4:15AM-12:45AM
Saturday	4:15AM-12:45AM
Sunday	5:15AM-11:45PM
TRIPS PER DAY	
Weekday	302
Saturday	233
Sunday	214

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	277.5
Peak Trains	19
TYPICAL SATURDAY	
Platform Hours	178.85
Peak Trains	12
TYPICAL SUNDAY	
Platform Hours	165.58
Peak Trains	12
ANNUAL TOTALS	
Platform Hours	93,975
Trips	102,312

SERVICE CHANGES	
HISTORY	
Start Date	July 2009
Last Major Change	2016: Capitol Hill and UW Stations open in March. Angle Lake Station open in September.
PROPOSED	

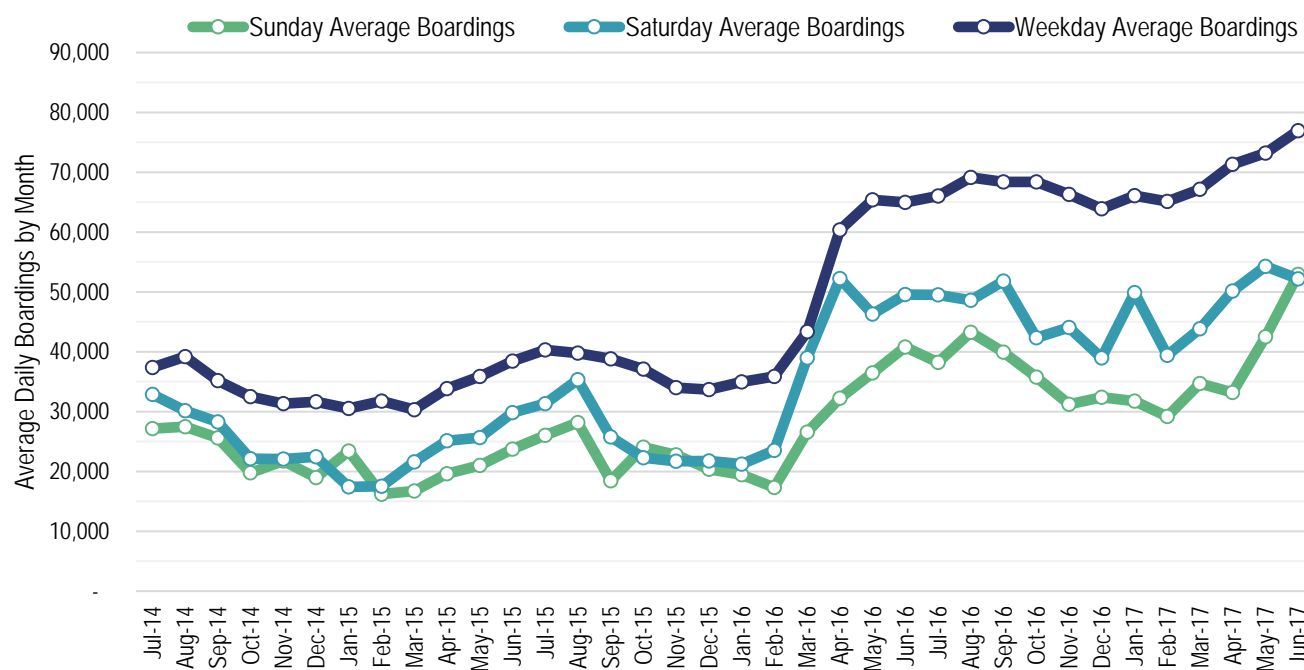
KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	223	195	167	212
Boardings per Trip	195	176	152	187
Subsidy per Boarding	\$2.58	\$3.12	\$3.91	\$2.78
Passenger Miles per Platform Mile	64	67	62	64



RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	33,043	35,394	59,005	73,908
Average Saturday Boardings	25,218	24,649	42,358	52,293
Average Sunday Boardings	21,020	21,749	32,896	43,178

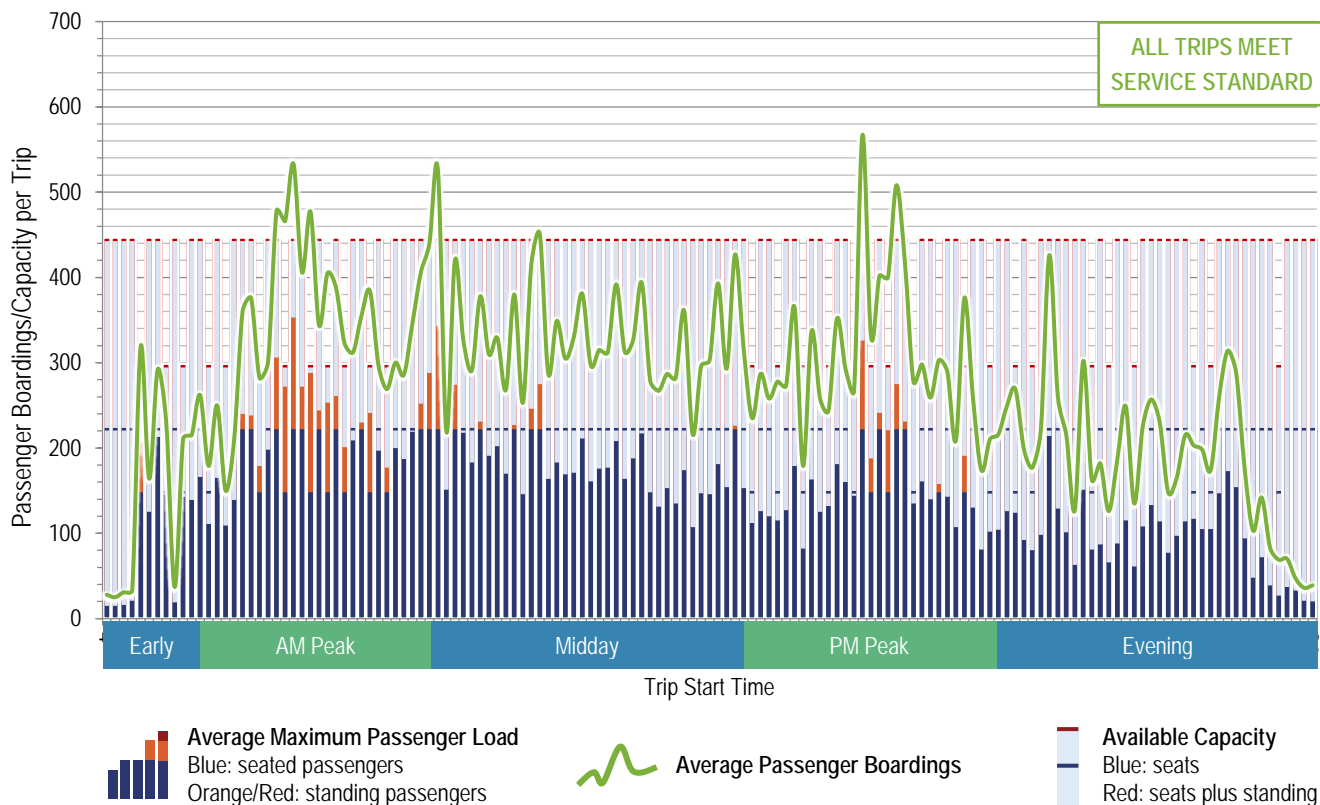




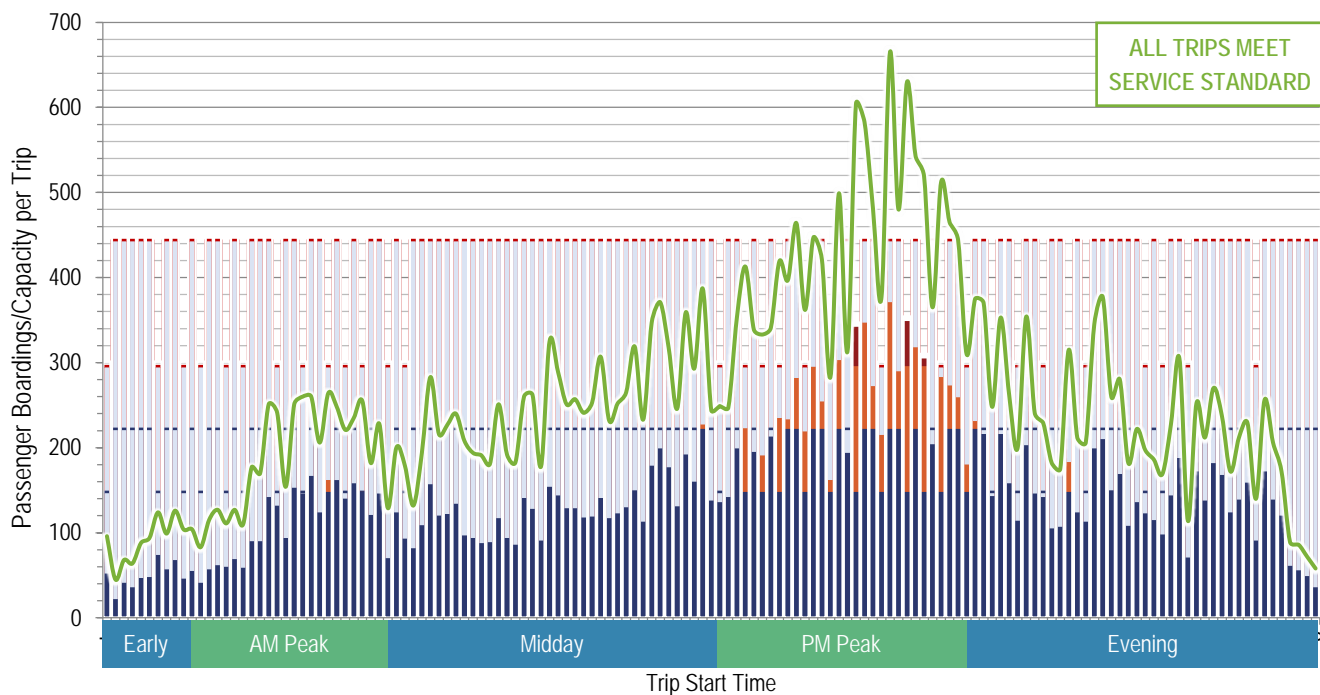
Link Light Rail

LINK

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





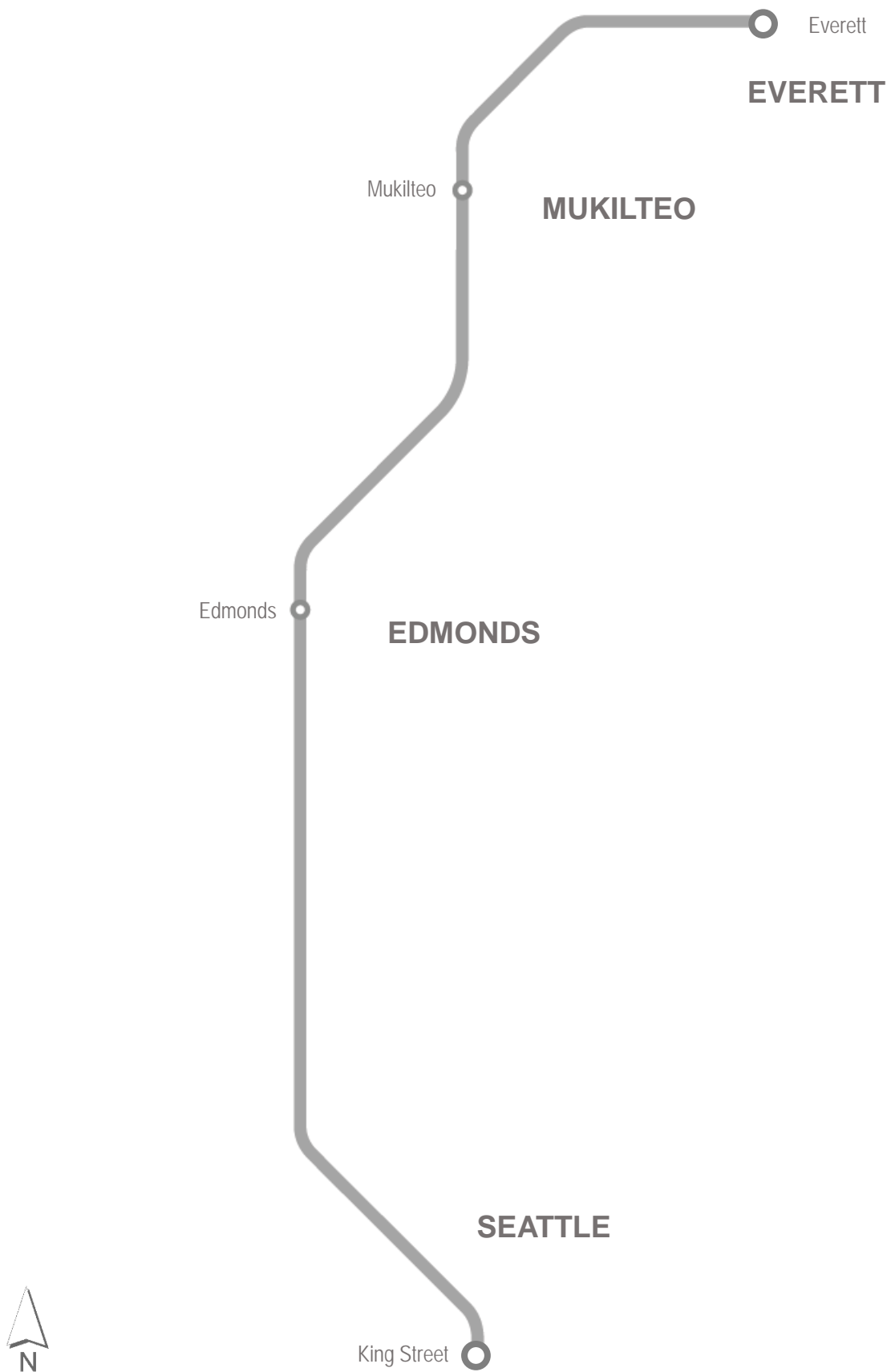
Link Light Rail

LINK



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Angle Lake	3,568	0
SeaTac / Airport	5,434	487
Tukwila / International Blvd	2,506	438
Rainier Beach	1,623	397
Othello	2,027	500
Columbia City	2,111	461
Mount Baker	1,553	788
Beacon Hill	2,026	828
SODO	1,431	728
Stadium	1,197	1,000
International District / Chinatown	3,404	2,447
Pioneer Square	2,093	2,543
University Street	2,396	3,392
Westlake	4,097	6,949
Capitol Hill	1,861	6,852
University of Washington	0	9,516
Northbound Total	37,326	37,326
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
University of Washington	10,013	0
Capitol Hill	5,545	2,195
Westlake	7,368	3,600
University Street	3,267	2,037
Pioneer Square	2,229	1,862
International District/Chinatown	2,395	3,601
Stadium	923	1,356
SODO	826	1,280
Beacon Hill	811	2,314
Mount Baker	925	1,482
Columbia City	525	2,075
Othello	522	2,062
Rainier Beach	356	1,519
Tukwila / International Blvd	433	2,674
SeaTac / Airport	444	5,016
Angle Lake	0	3,511
Southbound Total	36,582	36,582
Total	73,908	73,908

SOUNDER NORTH CORRIDOR

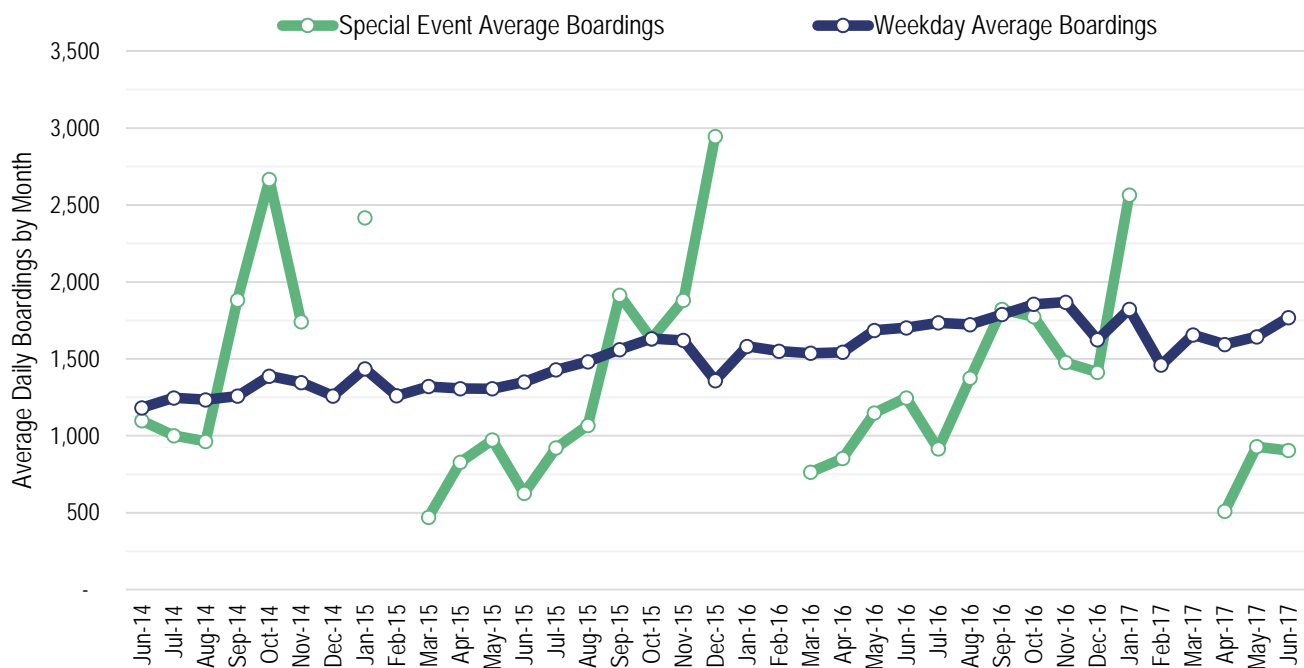


SOUNDER NORTH CORRIDOR

Service on the north line began in December 2003 with one peak period round trip between Everett and Seattle with an intermediate stop in Edmonds. By the opening of Mukilteo Station in May 2008 service had increased to three peak period round trips each weekday. A fourth peak period round trip was added in September 2008.

Average weekday boardings increased by nearly 46 percent from 2014 to 2016. As of spring 2017, the north line is carrying approximately 1,670 passengers per day. Productivity on the line has improved in 2017 with north line trains averaging 217 passengers per trip, but overall ridership declined slightly in early 2017 due to mudslides impacting service availability and reliability. Special event service for sporting events in the fall generates ridership above average weekday levels. Figure 28 shows average boardings by day type by month for the Sounder North corridor from mid-2014 through mid-2017.

FIGURE 28: CORRIDOR AVERAGE WEEKDAY & SPECIAL EVENT BOARDINGS BY MONTH 2014-2017





Sounder Commuter Rail: North Line

SOUNDER

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	5:45 a.m.-5:35 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	8
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	11.20
ANNUAL TOTALS	
Platform Hours	2,874
Trips	2,029

SERVICE CHANGES	
HISTORY	
Start Date	December 2003
Last Major Change	2008: Fourth round trip added.
PROPOSED	

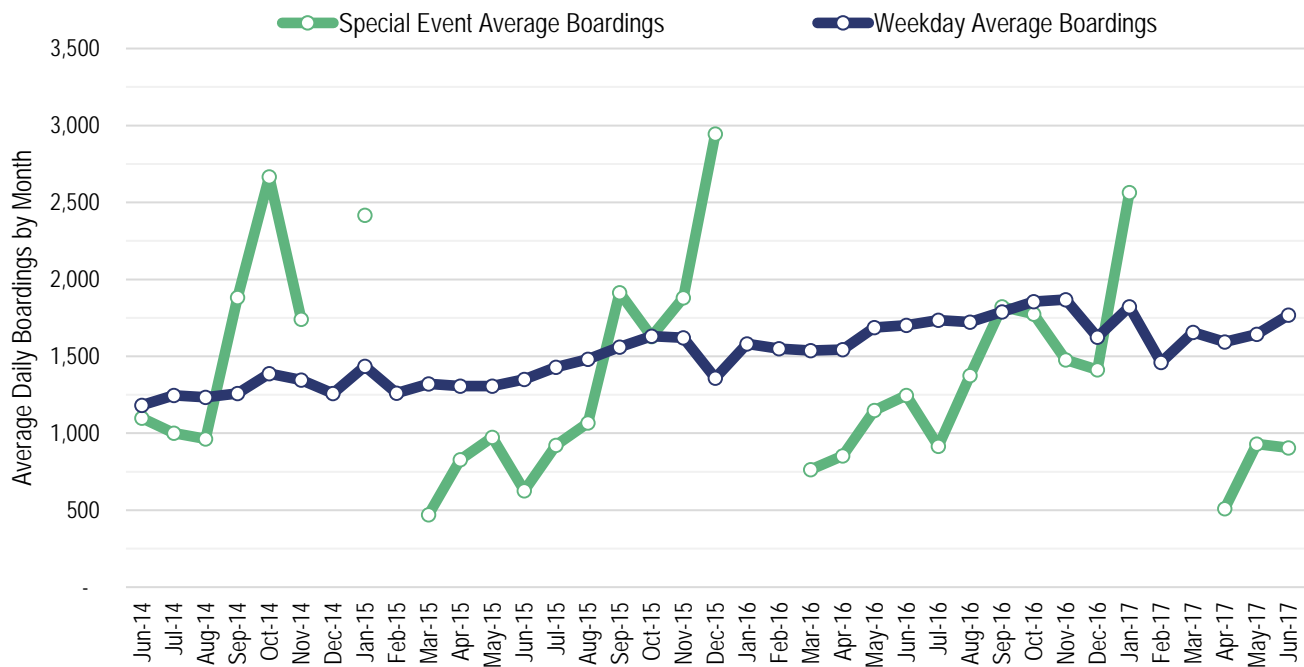
KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	163	No Regularly Scheduled Weekend Service		163
Boardings per Trip	217			217
Subsidy per Boarding	\$11.45			\$11.45
Passenger Miles per Platform Mile	125			125



RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,148	1,377	1,648	1,676
Average Saturday Boardings	No Scheduled Weekend Service			
Average Sunday Boardings				

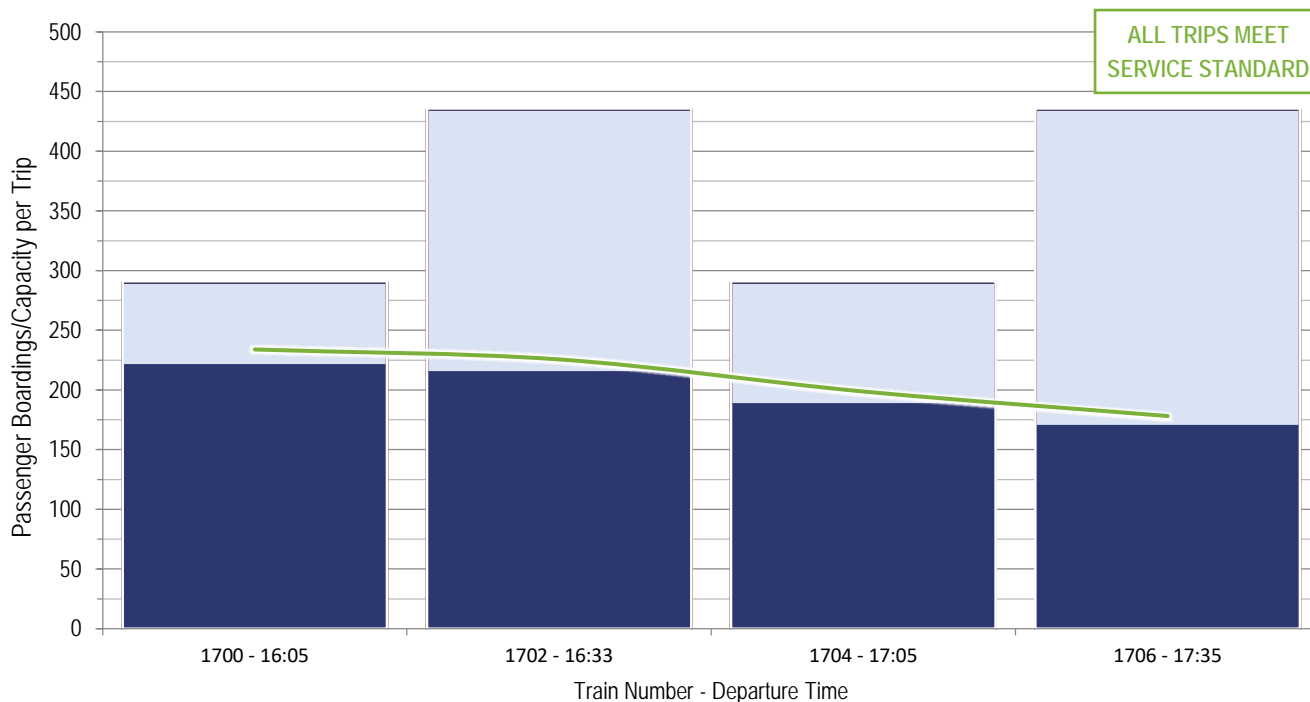




Sounder Commuter Rail: North Line

SOUNDER

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

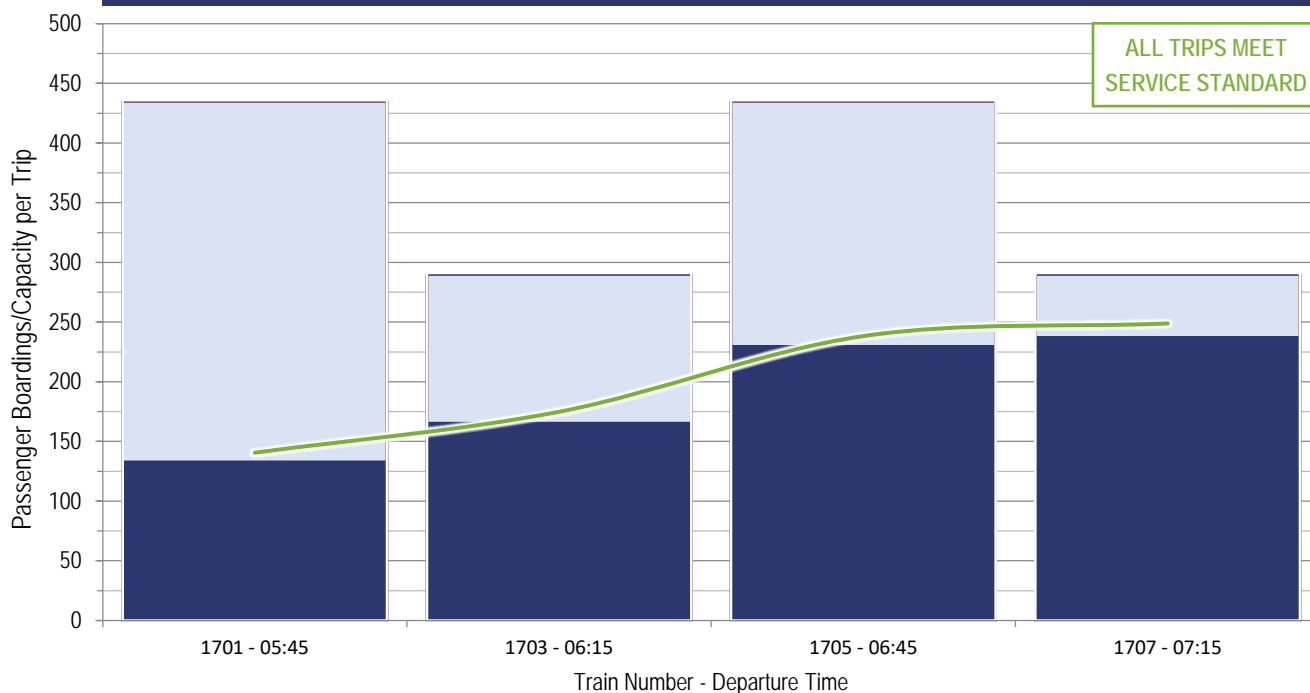


Average Maximum Passenger Load
 Blue: seated passengers
 Red: standing passengers

Average Passenger Boardings

Available Capacity
 Blue: seated capacity

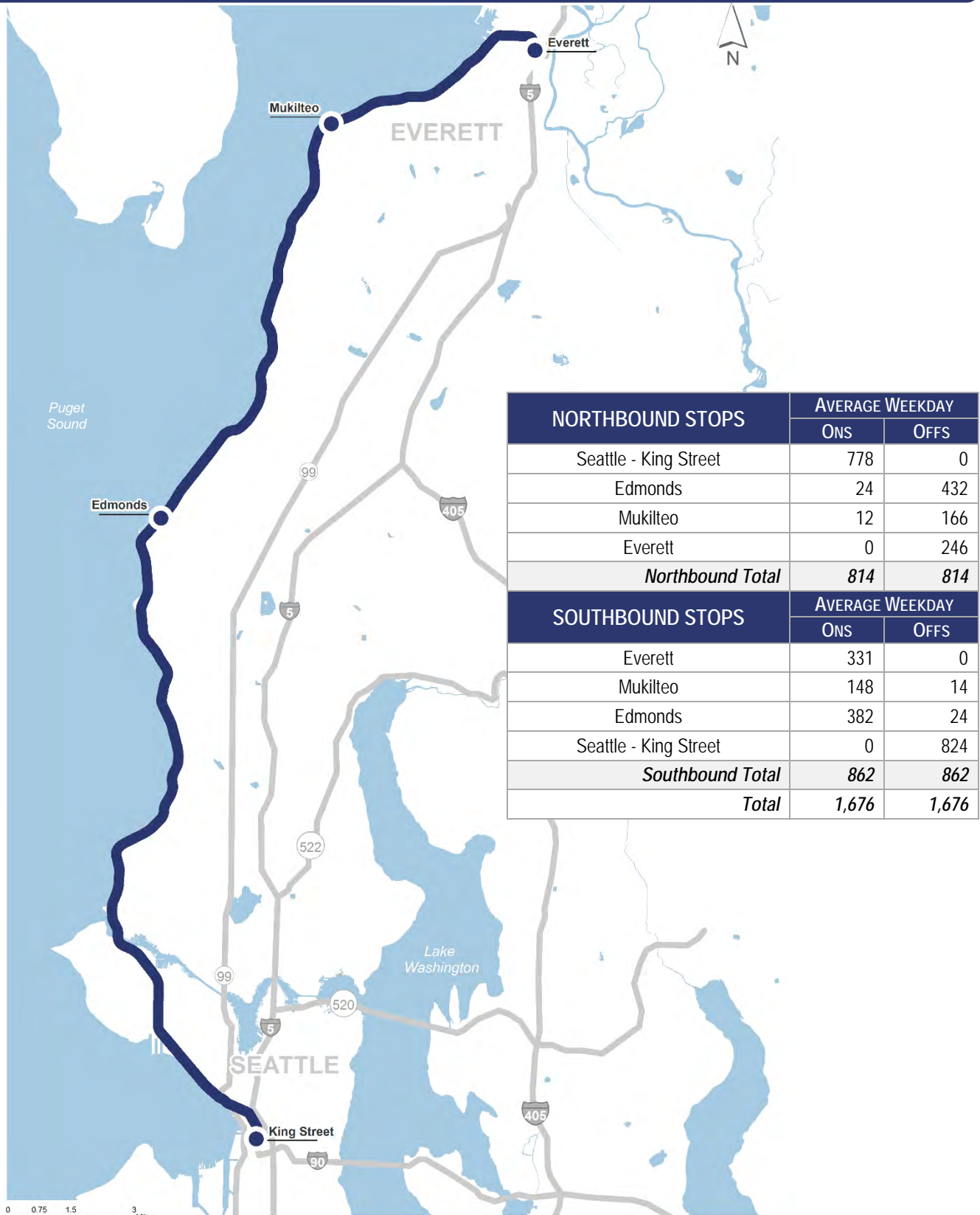
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



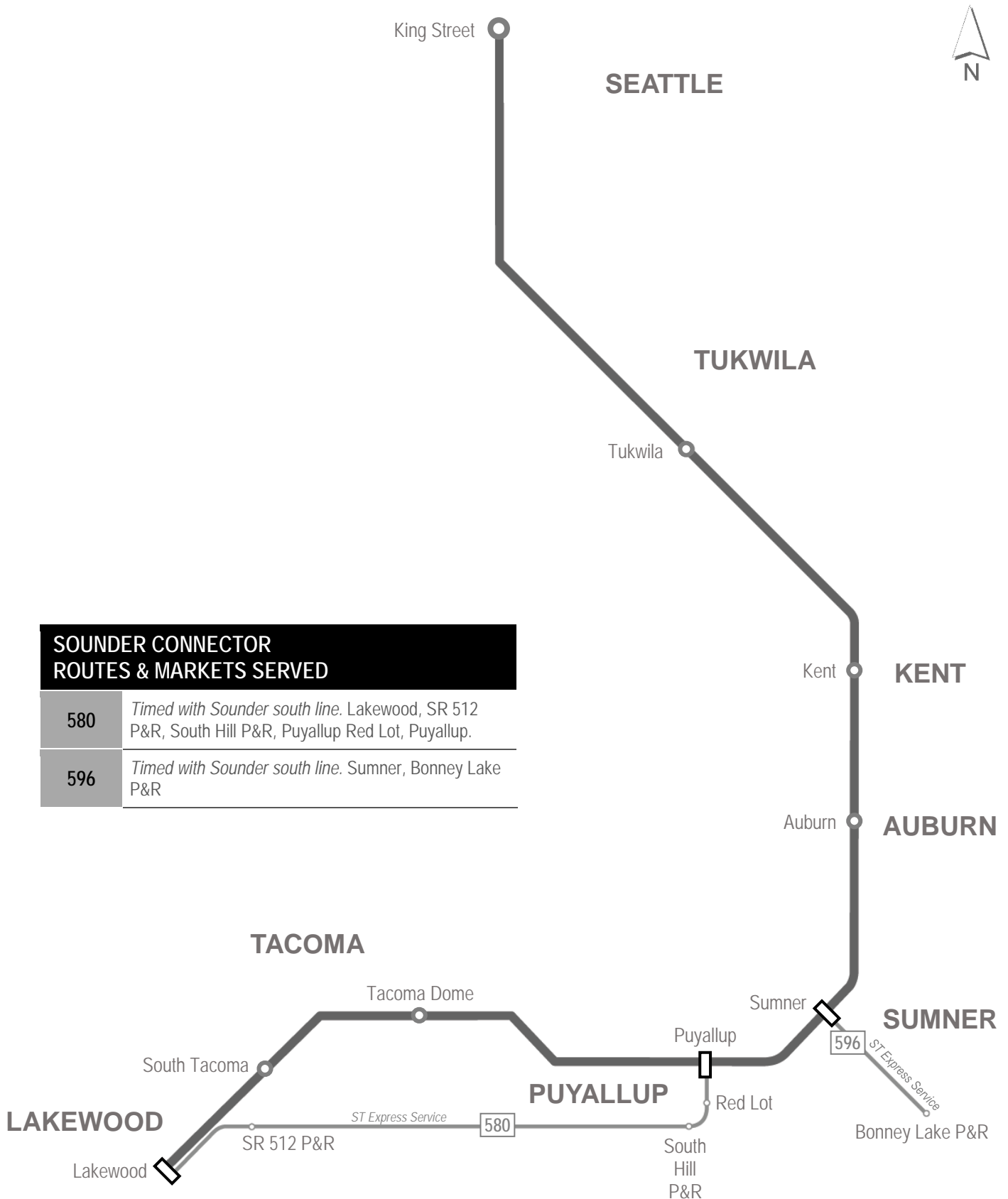


Sounder Commuter Rail: North Line

SOUNDER



SOUNDER SOUTH LINE CORRIDOR



SOUNDER SOUTH LINE CORRIDOR

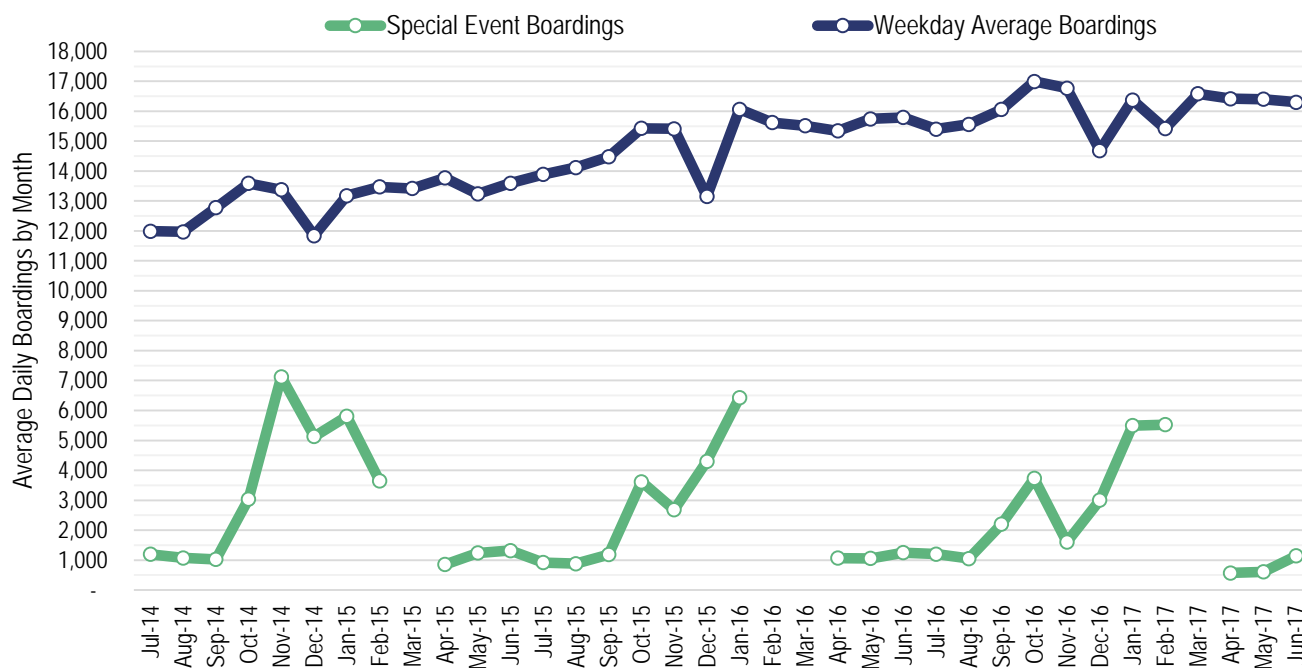
Service on the south line began in September 2000 with two peak period round trips between Tacoma and Seattle with intermediate stops in Sumner and Auburn. Within the next year, the stations in Puyallup, Kent and Tukwila had opened. Sound Transit closely worked with BNSF on service implementation and by June 2009, the ninth round trip approved by Sound Move was implemented. In October 2012, the south line was extended to South Tacoma and Lakewood. At the same time of the extension to Lakewood, the first of four round trips funded by ST2 was implemented. The second ST2 funded round trip was implemented during the midday in September 2016, and the remaining two roundtrips were implemented in September 2017.

South line ridership grew by 29 percent from 2014 to 2016. The positive ridership trend on the south line has continued into 2017 as average weekday boardings grew by 21 percent over 2015 to over 15,300 passengers each weekday. In spring 2017, an average south line peak direction train carried 875 passengers.

Two ST Express routes provide timed connections to the Sounder south line. Sound Transit added trips to both routes to meet the new midday trains added to Sounder in 2016 as well as the new peak trains in 2017. These routes that connect park-and-ride lots to Sounder in Puyallup and Sumner add approximately 475 to 500 passengers to the trains each morning. Figure 29 shows average boardings by day type by month for the Sounder south corridor (including the Sounder connectors) from mid-2014 through mid-2017.

ST Express Route 580, implemented in September 2015, connects Lakewood Station and Puyallup Station providing connections to Lakewood for Sounder trains beginning or ending at Tacoma Dome Station. The route also provides service between the South Hill Park-and-Ride and the Puyallup Fairgrounds Red Lot. In 2016, ridership averaged 490 boardings per weekday on ST Express Route 580. Most passengers travel between South Hill Park-and-Ride lot, Red Lot, and Puyallup Station. ST Express Route 596 began service in June 2012 connecting the Bonney Lake Park-and-Ride to the Sumner Station. Route 596 ridership averaged 478 boardings per weekday, which is up 13 percent from 2014. Route 596 averages approximately 29 passengers per trip.

FIGURE 29: CORRIDOR AVERAGE WEEKDAY & SPECIAL EVENT BOARDINGS BY MONTH 2014-2017





Sounder Commuter Rail: South Line

SOUNDER

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:41 a.m.-6:20 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	22
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	30.20
ANNUAL TOTALS	
Platform Hours	7,941
Trips	5,171

SERVICE CHANGES	
HISTORY	
Start Date	September 2000
Last Major Change	2017: Two south line peak-period round trips are added.
PROPOSED	

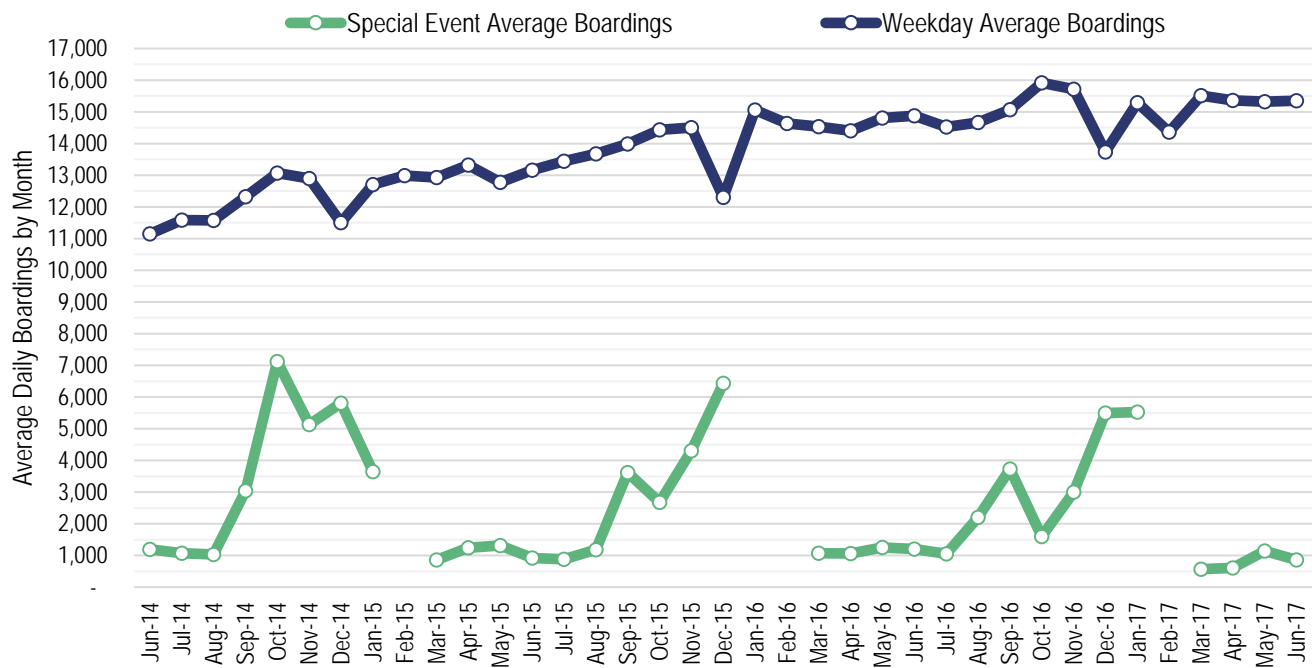
KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	507	No Regularly Scheduled Weekend Service		507
Boardings per Trip	729			729
Subsidy per Boarding	\$6.67			\$6.67
Passenger Miles per Platform Mile	312			312



RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	11,599	13,349	14,827	15,395
Average Saturday Boardings	No Scheduled Weekend Service			
Average Sunday Boardings				

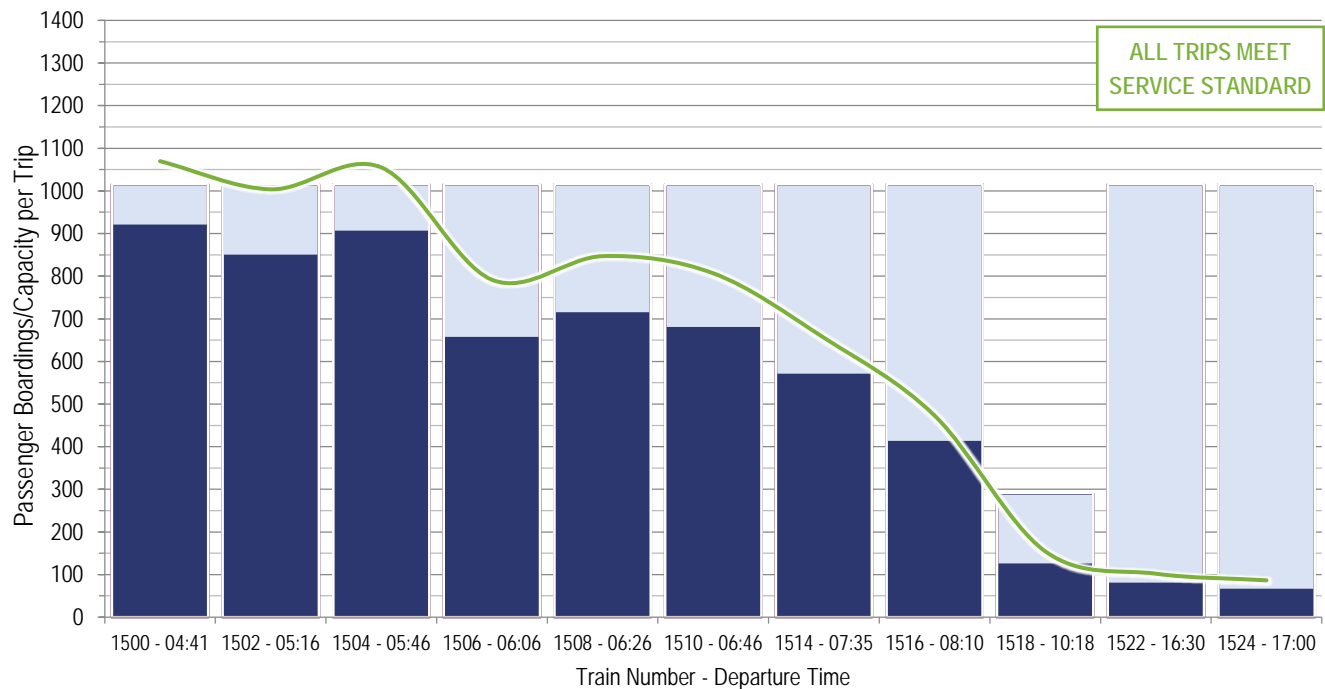




Sounder Commuter Rail: South Line

SOUNDER

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

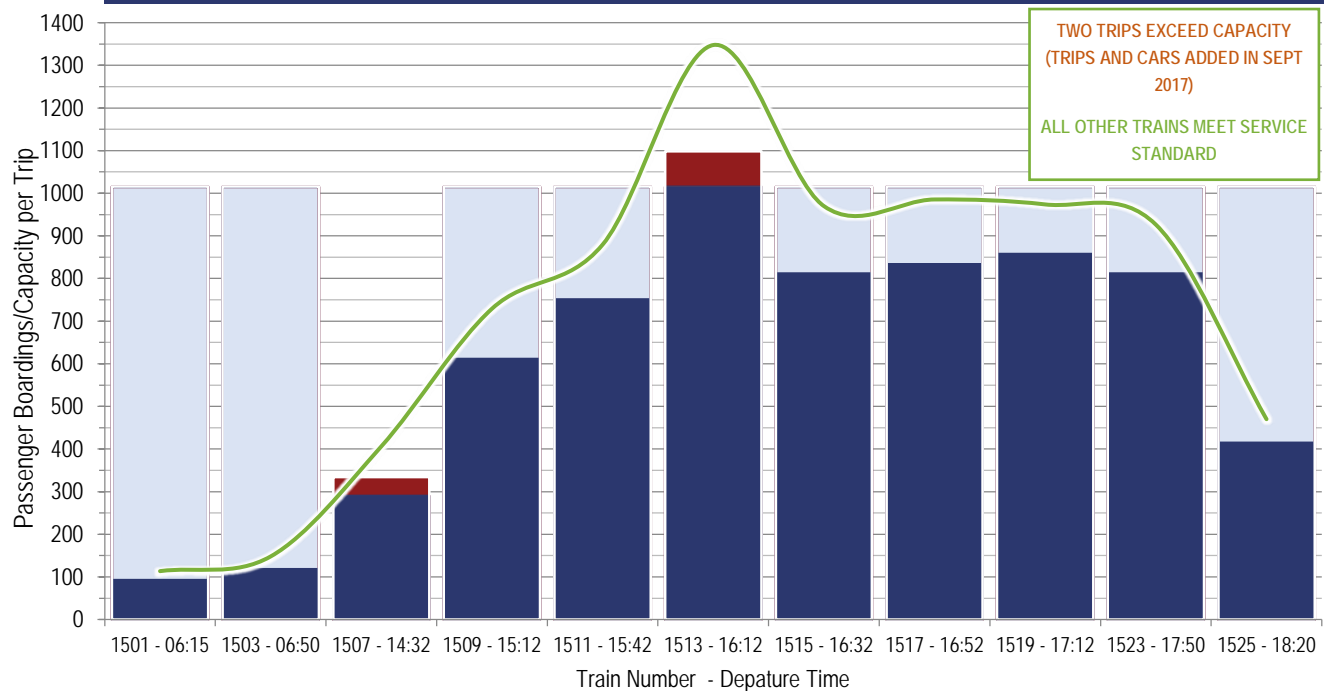


Average Maximum Passenger Load
 Blue: seated passengers
 Red: standing passengers

Average Passenger Boardings

Available Capacity
 Blue: seated capacity

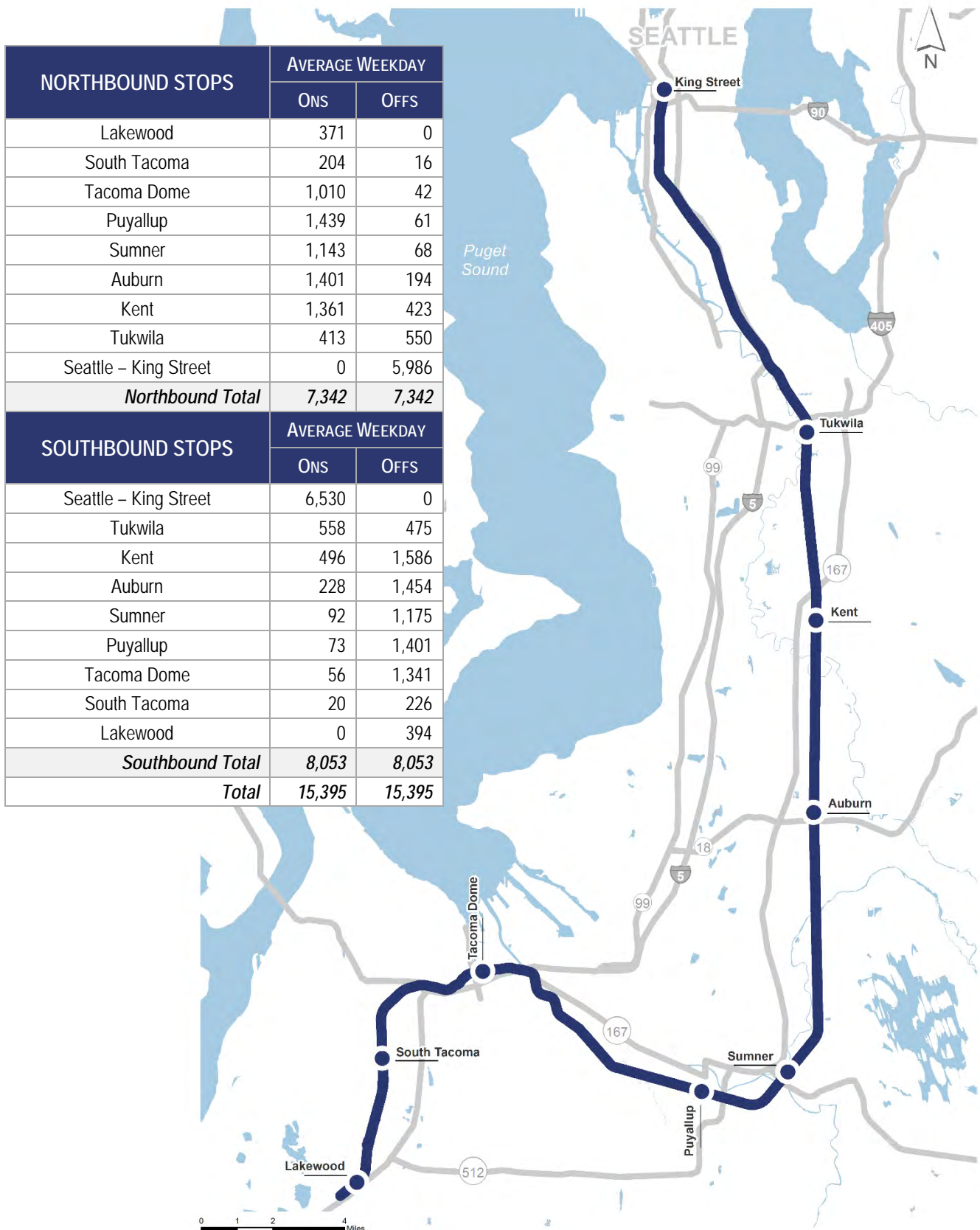
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Sounder Commuter Rail: South Line

SOUNDER





Route 580: Lakewood – Puyallup

**SOUNDER
CONNECTOR**

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Minimum
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:31 a.m.-7:04 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	22
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	23.0
Peak Buses	5
ANNUAL TOTALS	
Platform Hours	5,875
Trips	5,246

SERVICE CHANGES	
HISTORY	
Start Date	September 2015
Last Major Change	2017: Four new trips were added in September.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	29	No Weekend Service		29
Boardings per Trip	24			24
Subsidy per Boarding	\$5.15			\$5.15
Passenger Miles per Platform Mile	2			2



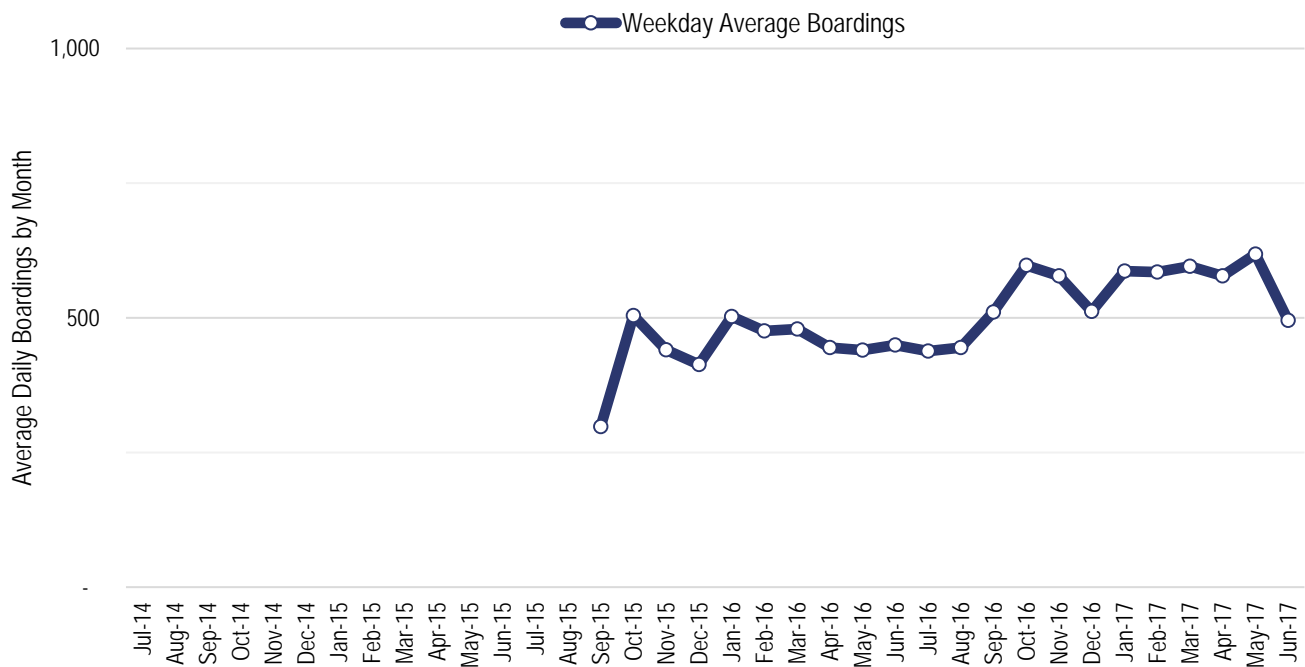


Route 580: Lakewood – Puyallup

SOUNDER
CONNECTOR

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	-	446	490	565
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

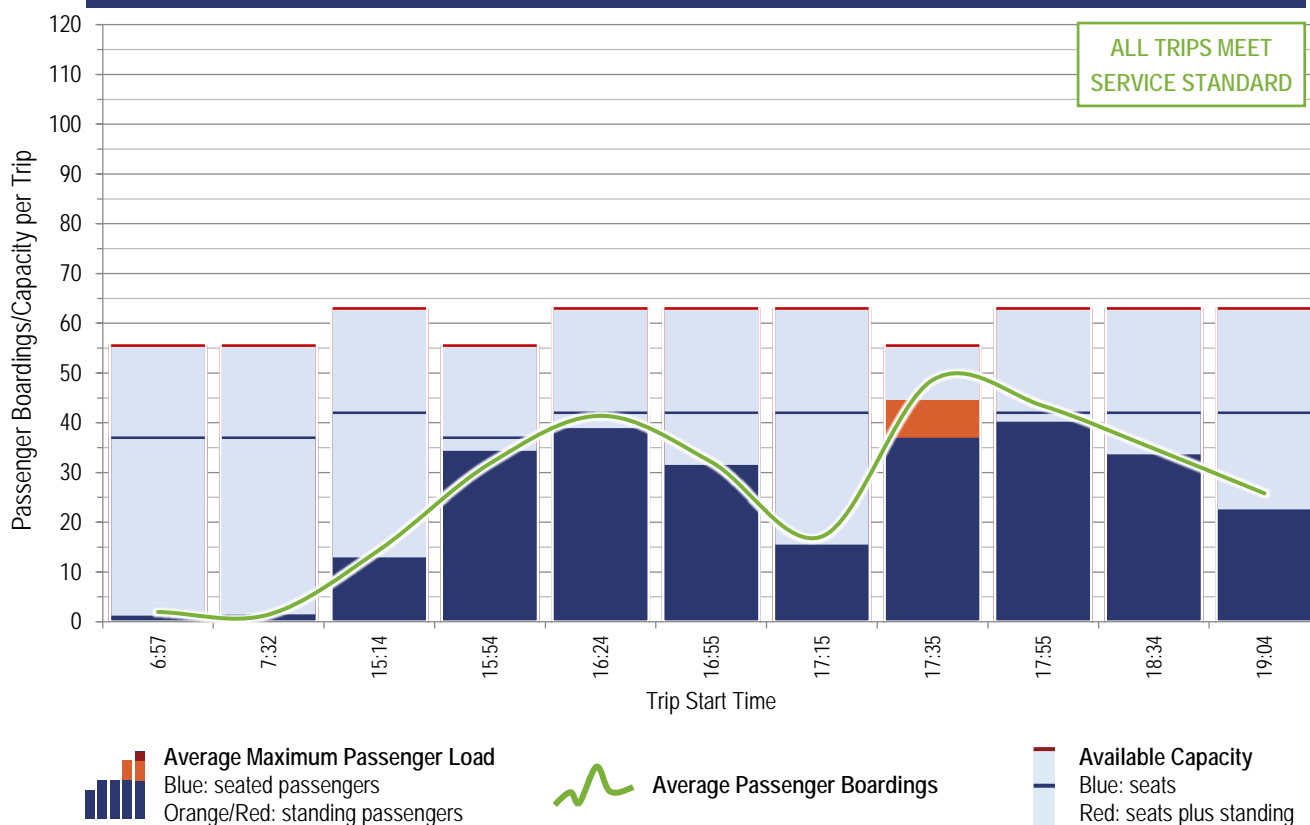




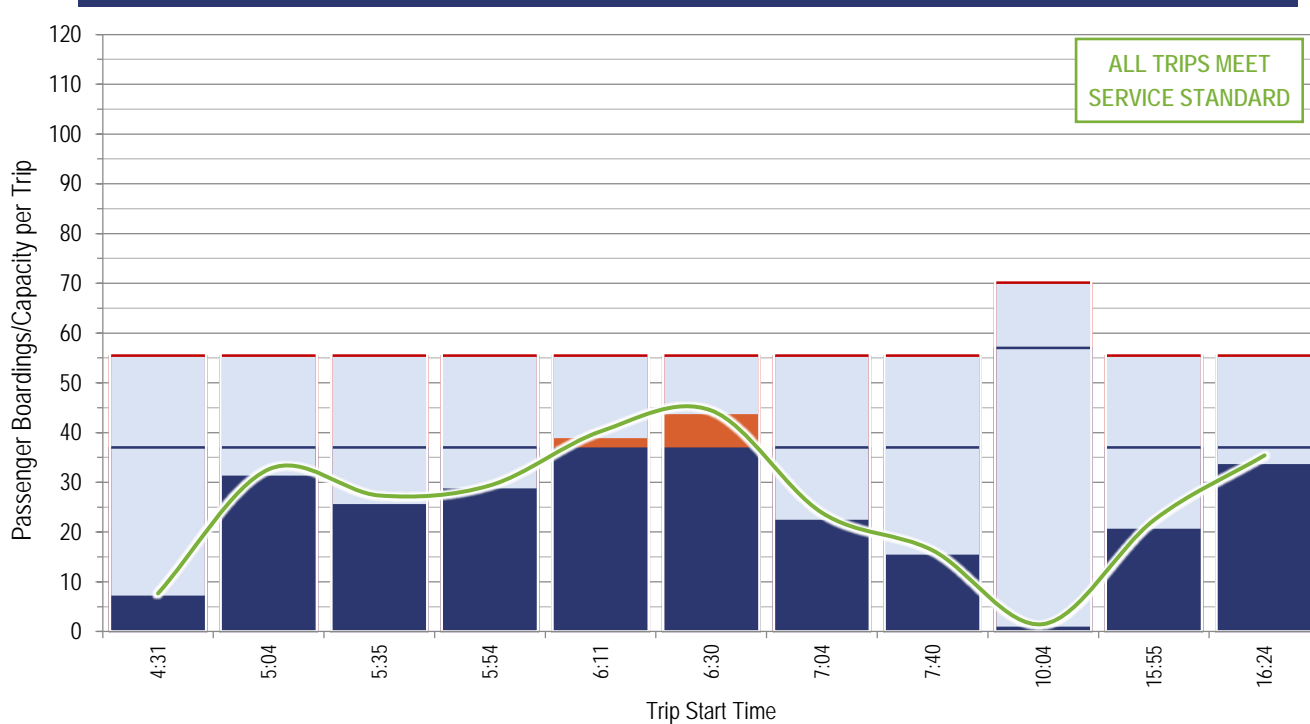
Route 580: Lakewood – Puyallup

**SOUNDER
CONNECTOR**

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



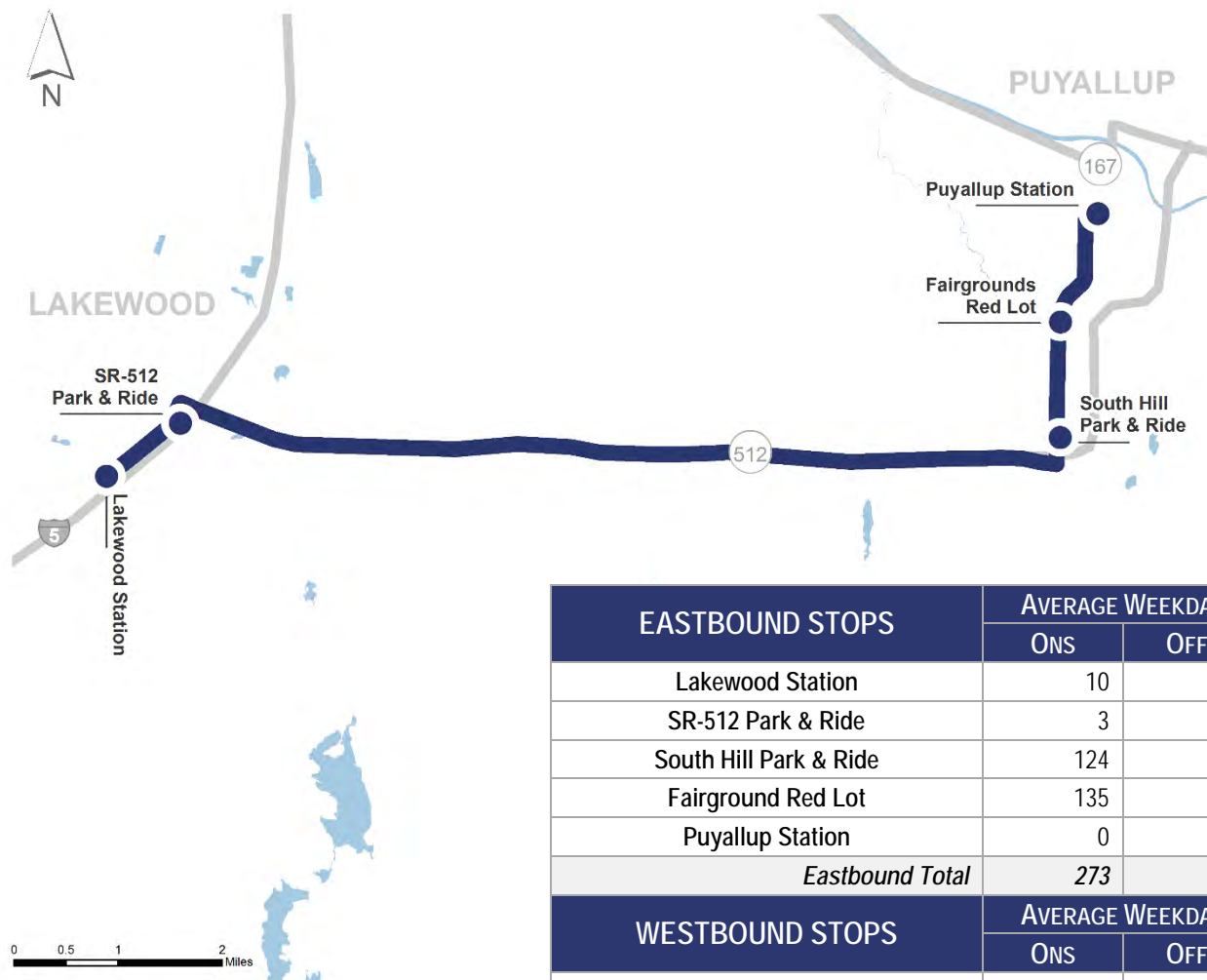
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 580: Lakewood – Puyallup

SOUNDER
CONNECTOR



EASTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Lakewood Station	10	0
SR-512 Park & Ride	3	1
South Hill Park & Ride	124	2
Fairground Red Lot	135	2
Puyallup Station	0	268
<i>Eastbound Total</i>	273	273
WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Puyallup Station	282	0
Fairground Red Lot	5	81
South Hill Park & Ride	2	171
SR-512 Park & Ride	1	7
Lakewood Station	0	31
<i>Westbound Total</i>	291	291
<i>Total</i>	563	563

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 596: Bonney Lake – Sumner

**SOUNDER
CONNECTOR**

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Minimum
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:54 a.m.-6:58 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	18
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	14.6
Peak Buses	2
ANNUAL TOTALS	
Platform Hours	3,724
Trips	4,235

SERVICE CHANGES	
HISTORY	
Start Date	June 2012
Last Major Change	2017: Two new trips to meet the new Sounder south line round trips.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	63	No Weekend Service		 63
Boardings per Trip	29			 29
Subsidy per Boarding	\$2.59			 \$2.59
Passenger Miles per Platform Mile	6			 6



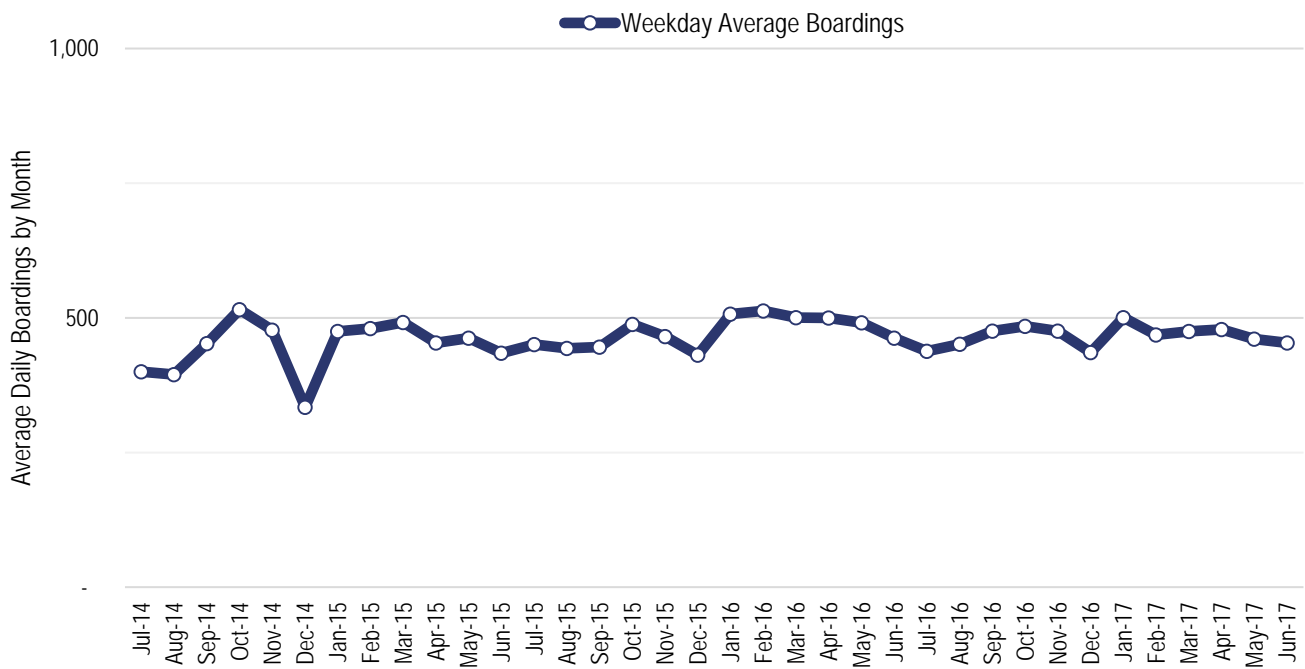


Route 596: Bonney Lake – Sumner

SOUNDER
CONNECTOR

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	424	460	478	464
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

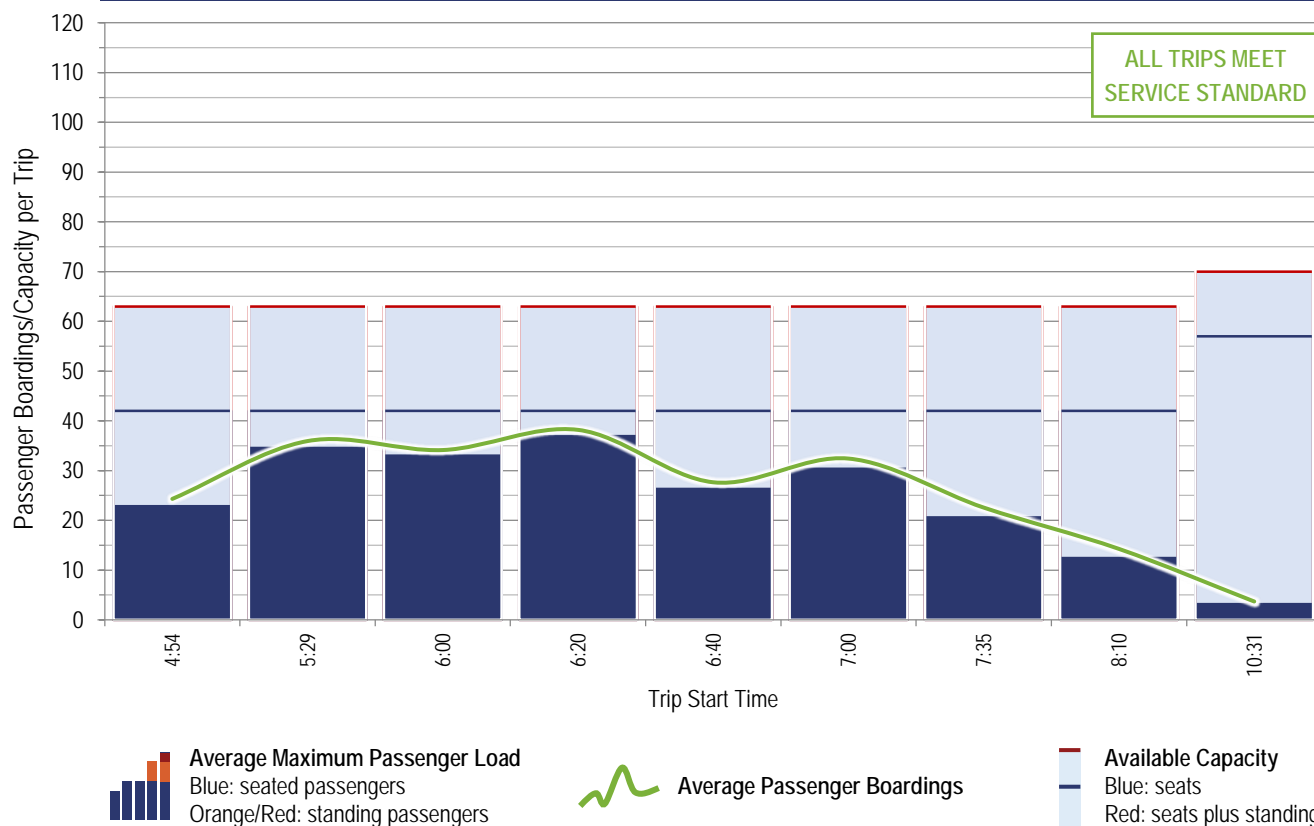




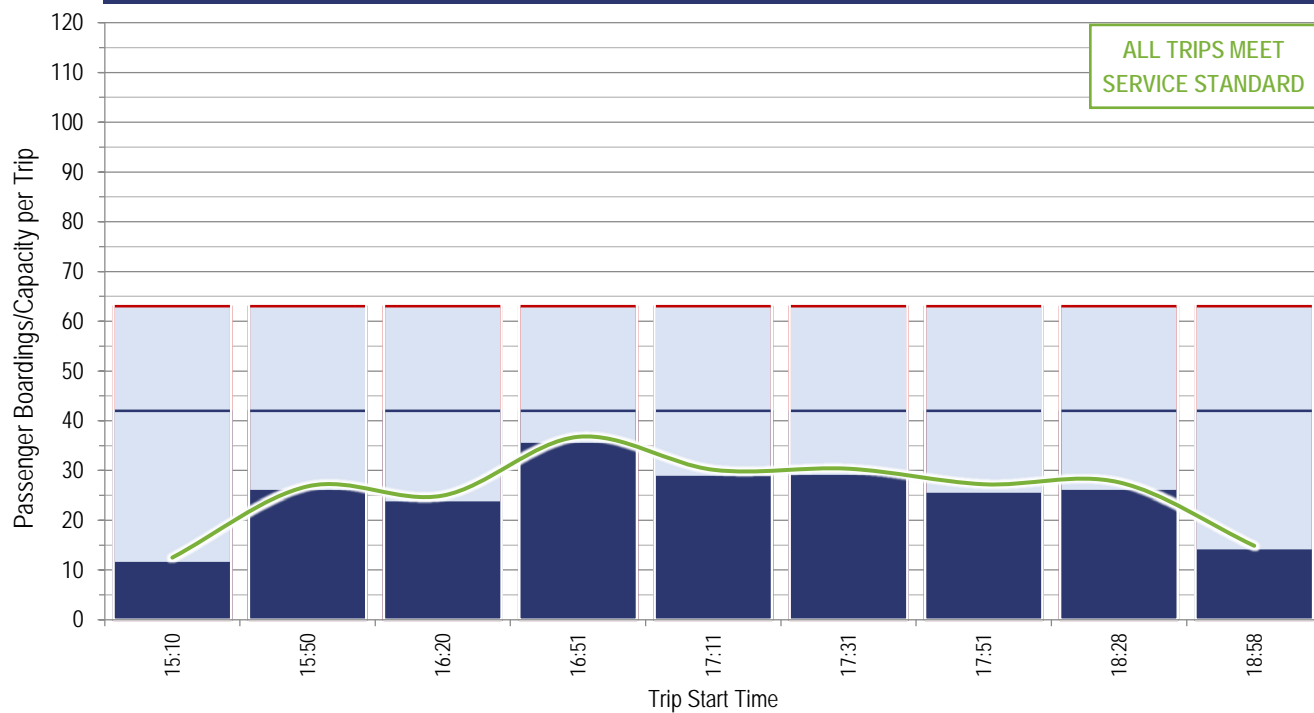
Route 596: Bonney Lake – Sumner

**SOUNDER
CONNECTOR**

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



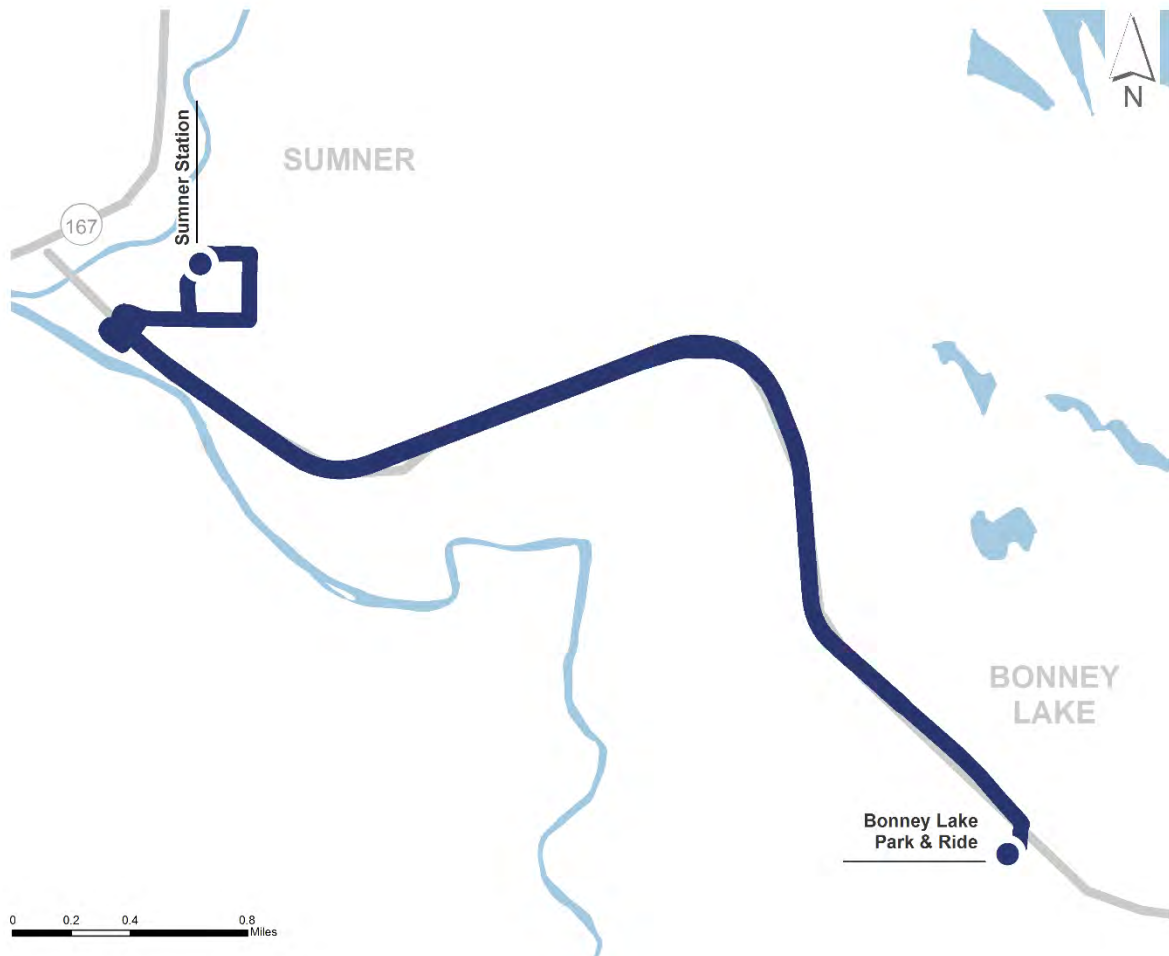
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 596: Bonney Lake – Sumner

SOUNDER
CONNECTOR

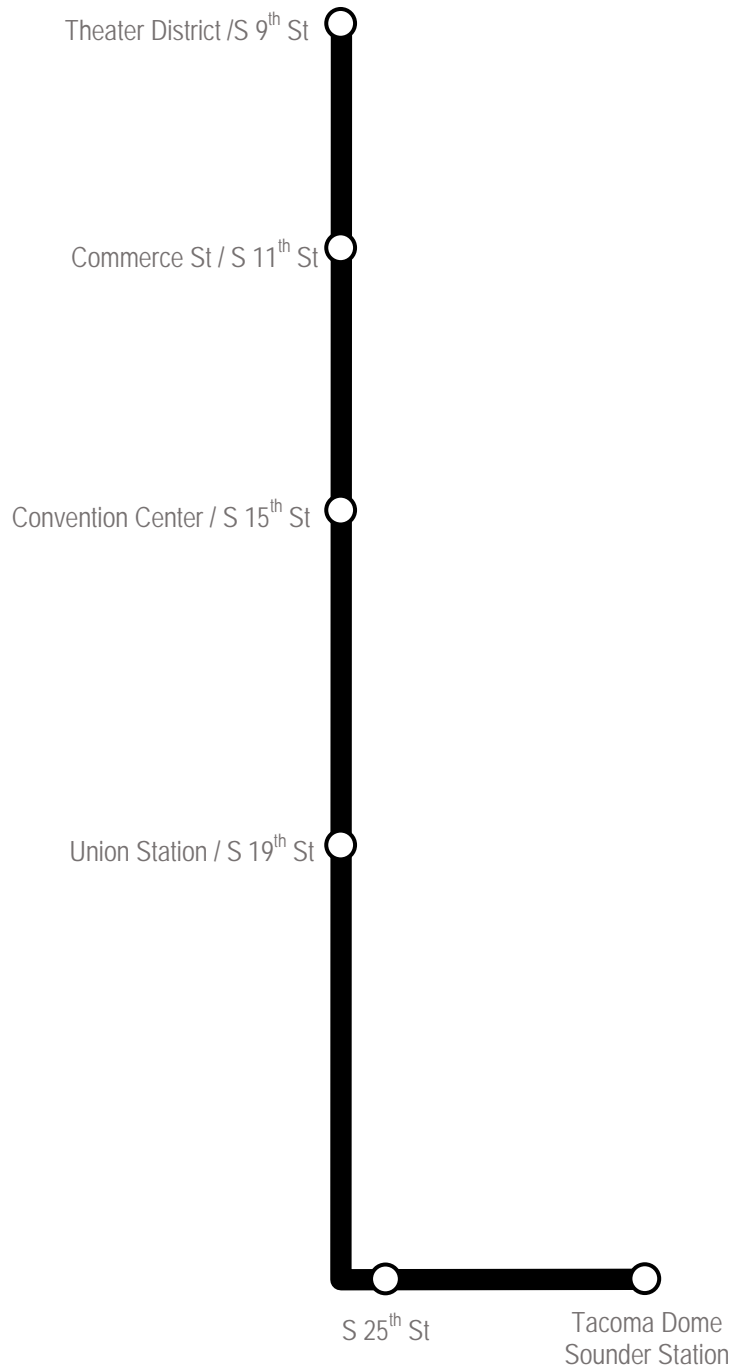


EASTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Sumner Station	240	0
Bonney Lake Park & Ride	0	240
Eastbound Total	240	240
WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Bonney Lake Park & Ride	224	0
Sumner Station	0	224
Eastbound Total	224	224
Total	464	464

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

TACOMA LINK

DOWNTOWN TACOMA



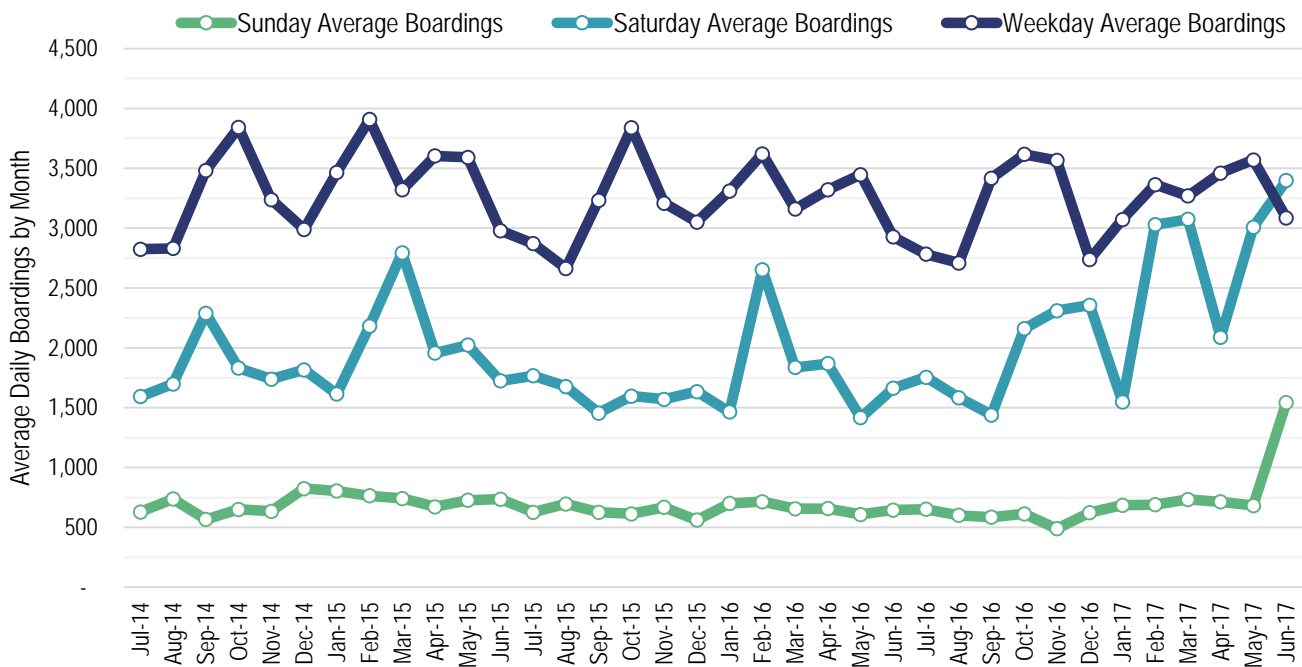
TACOMA LINK

Tacoma Link opened in August 2003 connecting the Tacoma Dome and Theater District in downtown Tacoma with four intermediate stations at S 25th Street, Union Station/S 19th Street, Convention Center/S 15th Street, and Commerce St. Initial service levels operated with 10-minute base frequency with 20-minute service during periods of reduced service. In September 2011, Commerce Street Station was opened and frequency adjusted from 10 minutes base/20 minutes reduced to 12 minutes base/24 minutes reduced.

Prior to the opening of Tacoma Link, Sound Transit operated a Downtown Connector that operated from Tacoma Dome Station and then looped through downtown Tacoma during peak periods at a 12 to 15 minute frequency. Pierce Transit had received a grant to operate this service and Sound Transit took over operation of the Downtown Connector in 2000 when grant funding was used up.

Total boardings on Tacoma Link between 2014 and 2016 declined by three percent. Average weekday boardings also decreased by three percent between 2014 and 2016. Daily boardings in 2017 have increased by three percent over 2016 levels, and productivity has tracked similar to ridership. Additional service is added to serve large events such as the Festival of Sail or concerts at the Tacoma Dome and typically result in much higher ridership (shown in June 2017 numbers). Figure 29 shows average boardings by day type by month for Tacoma Link from mid-2013 through mid-2016.

FIGURE 29: TACOMA LINK AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Tacoma Link Light Rail

[LINK](#)

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	Frequent
Evenings	Moderate
Saturday	Frequent
Sunday	Moderate
SPAN OF SERVICE	
Weekday	5:00 a.m.-10:12 p.m.
Saturday	7:48 a.m.-10:12 p.m.
Sunday	9:48 a.m.-6:00 p.m.
TRIPS PER DAY	
Weekday	154
Saturday	144
Sunday	42

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	30.90
Peak Trains	2
TYPICAL SATURDAY	
Platform Hours	28.90
Peak Trains	2
TYPICAL SUNDAY	
Platform Hours	8.45
Peak Trains	1
ANNUAL TOTALS	
Platform Hours	9,848
Trips	49,073

SERVICE CHANGES	
HISTORY	
Start Date	August 2003
Last Major Change	2011: Commerce Street Station opens and frequency of service adjusted.
PROPOSED	

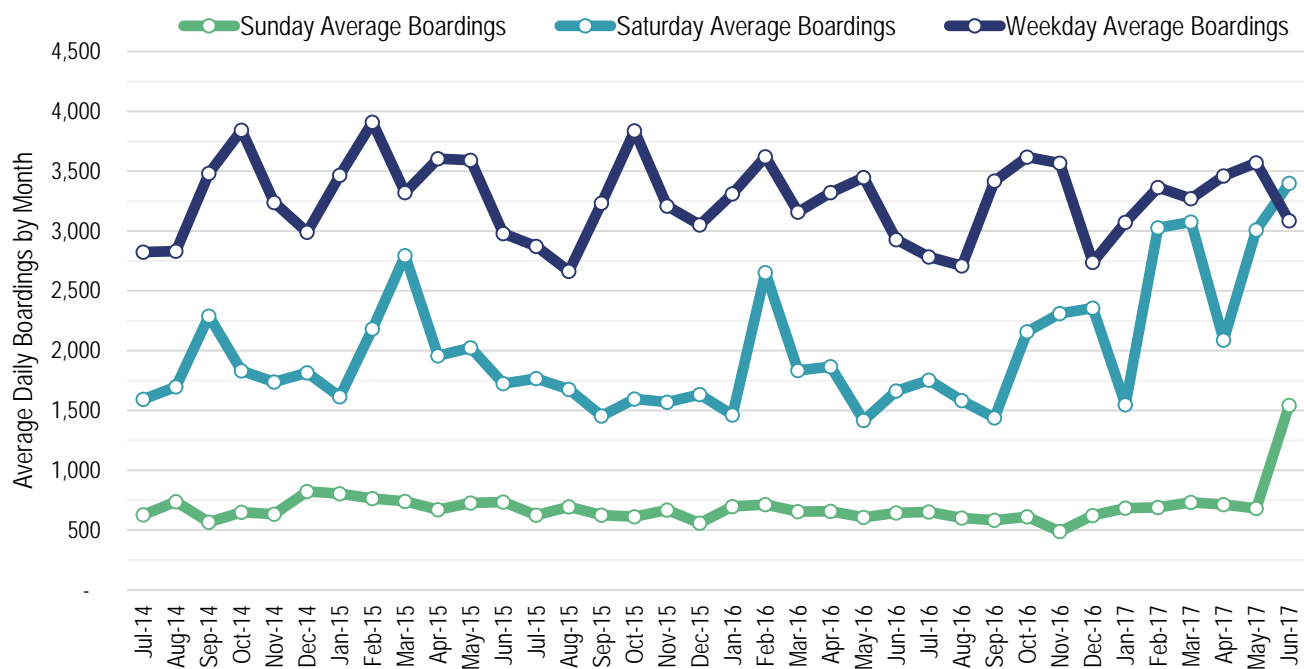
KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	103	60	75	95
Boardings per Trip	21	12	15	19
Subsidy per Boarding	\$3.72	\$6.88	\$5.38	\$4.10
Passenger Miles per Platform Mile	12	8	9	11



RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	3,287	3,306	3,214	3,369
Average Saturday Boardings	1,830	1,831	1,872	2,858
Average Sunday Boardings	669	686	629	984

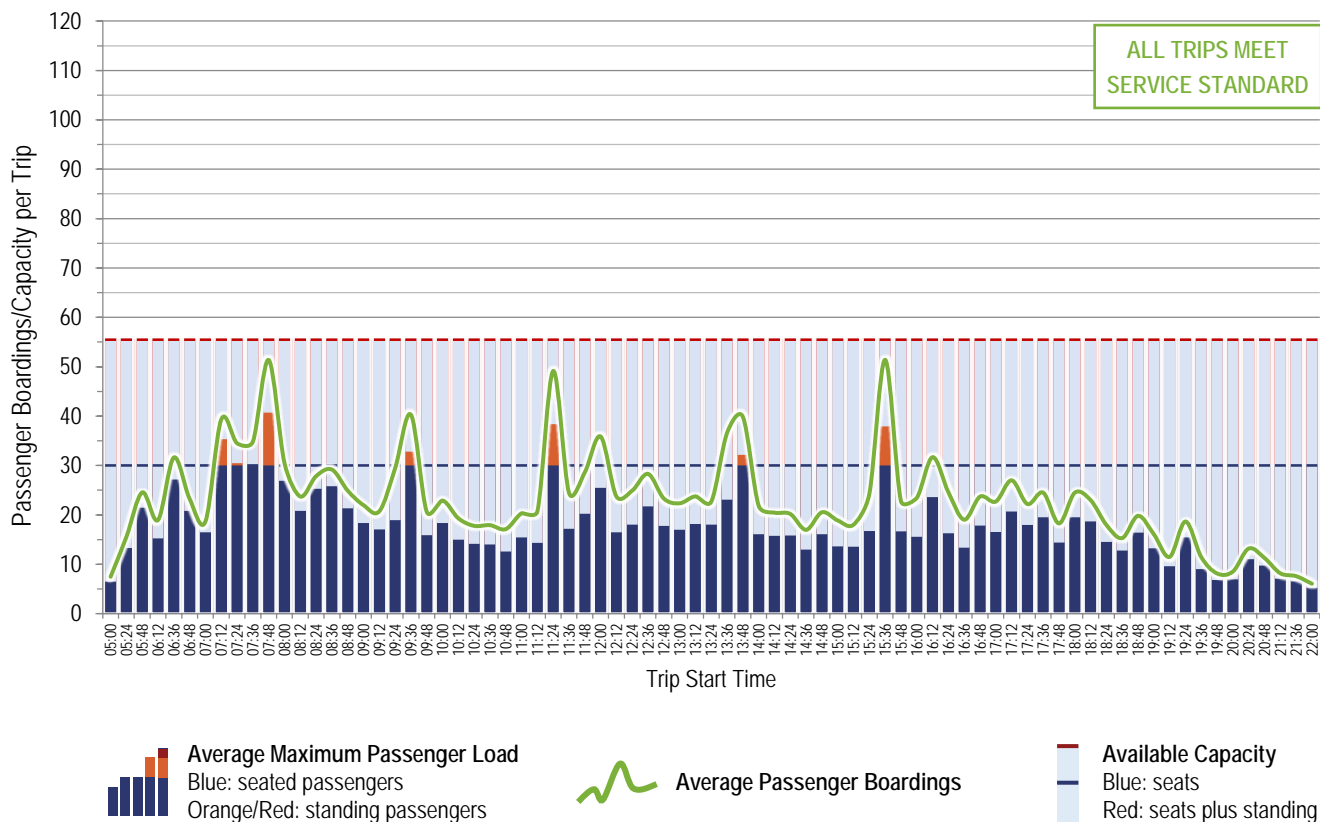




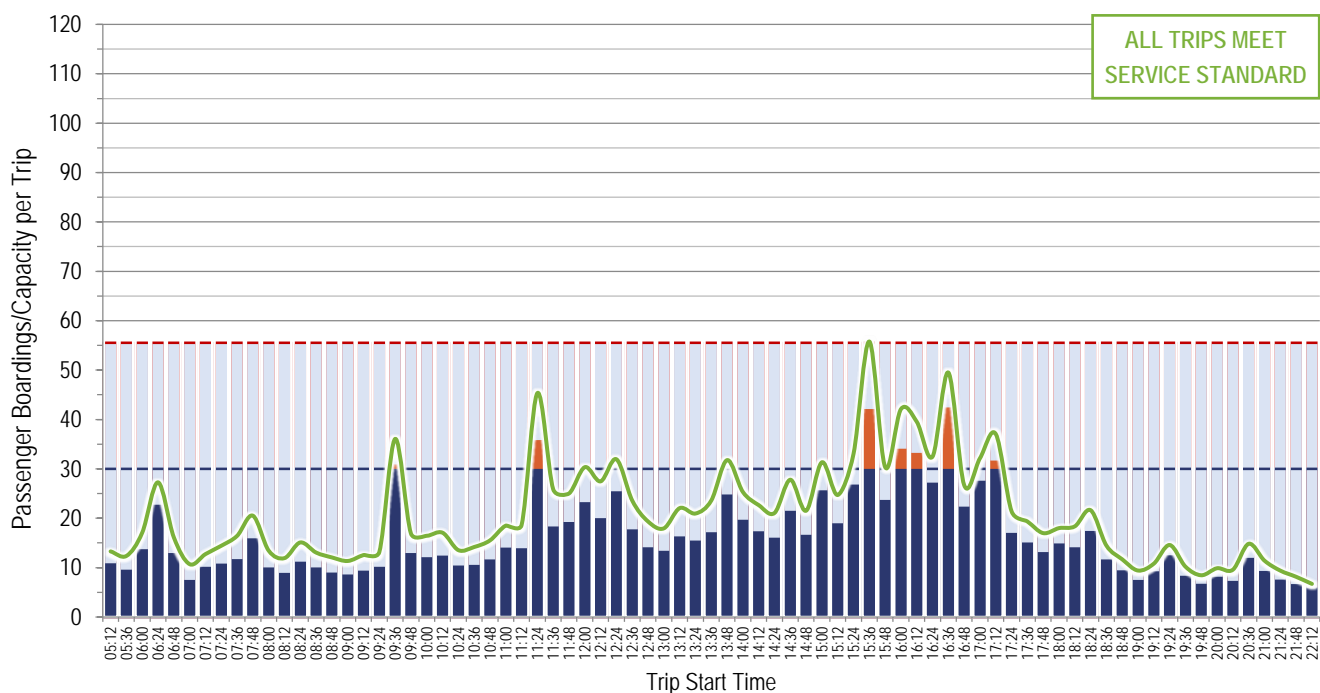
Tacoma Link Light Rail

LINK

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





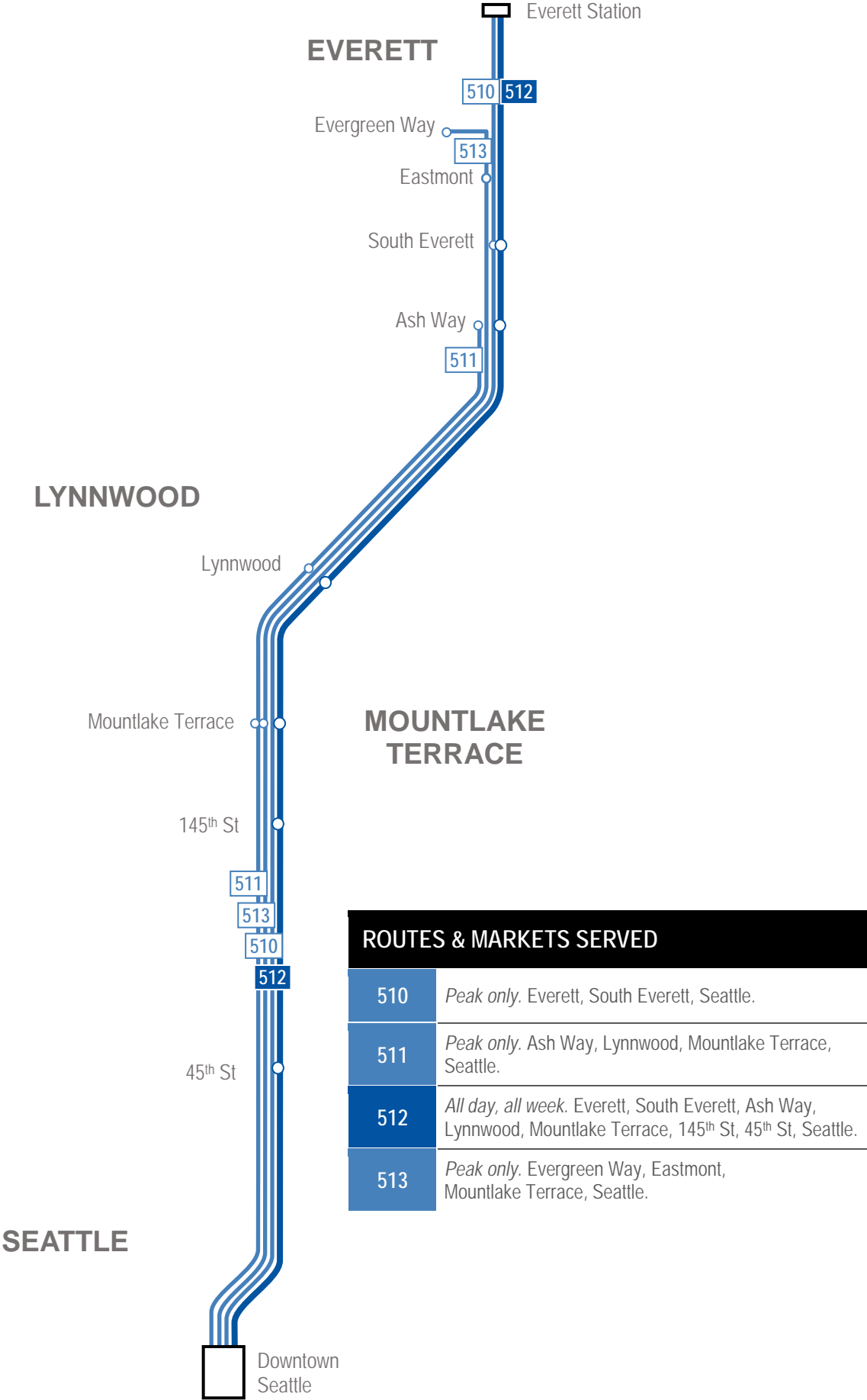
Tacoma Link Light Rail

LINK



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Tacoma Dome	956	0
South 25th	303	90
Union Station	311	348
Convention Center	64	245
Commerce Street	111	526
Theater District	0	537
Northbound Total	1,745	1,745
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Theater District	465	0
Commerce Street	374	28
Convention Center	239	36
Union Station	345	286
South 25th	201	397
Tacoma Dome	0	878
Southbound Total	1,625	1,625
Total	3,369	3,369

I-5 NORTH CORRIDOR

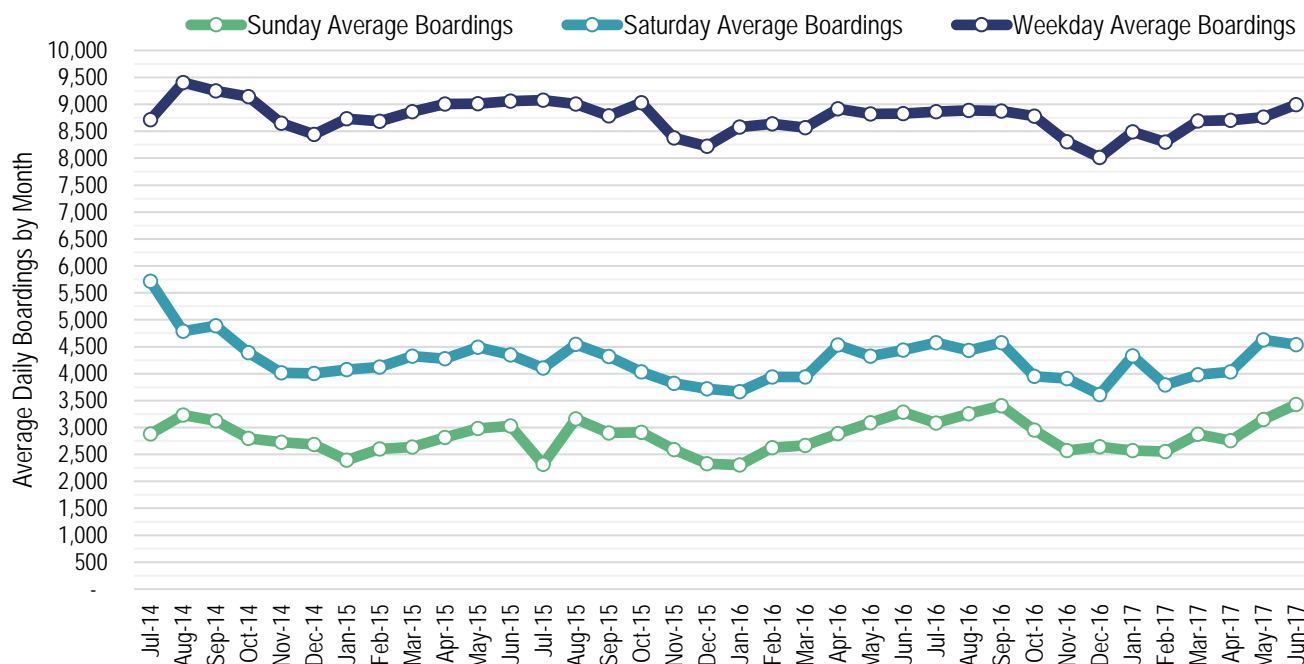


I-5 NORTH CORRIDOR

Service on this corridor began in 1999 and has continued to improve in response to demand. For a majority of the day, service operates every 15 minutes or better with very frequent service provided during rush hours as peak-only overlay routes. The last major restructure on the corridor was in September 2013. The primary reason for the change was that peak hour ridership on Sound Transit services between Seattle and Snohomish County had increased significantly prior to the restructure to the point that all the trips in the peak hour, peak direction operated at or above seated capacity. In September 2013, off-peak service on Route 510 and 511 were combined to operate as Route 512 trips. The savings from these changes funded additional trips on Route 510 and 513 during the morning and afternoon peak periods. The additional trips on Route 513 provided increased opportunities for people to use Eastmont Park-and-Ride lot as an alternative to the at-capacity South Everett Freeway Station.

Total boardings on the corridor have remained relatively flat over the past three years. Weekday ridership fell by 3 percent. Saturday boardings on the corridor was down 4 percent, while Sunday boardings on the corridor increased by 5 percent. Figure 31 shows average boardings by day type by month for the I-5 North corridor from mid-2014 through mid-2017. Sound Transit most recently invested additional hours and one additional peak bus to maintain schedule reliability in this corridor in September 2015, but has not made substantial changes to the corridor since the September 2013 restructure.

FIGURE 31: I-5 NORTH CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 510: Everett - Seattle

I-5 N

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:13 a.m.-6:50 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	42
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	76.1
Peak Buses	11
ANNUAL TOTALS	
Platform Hours	19,393
Trips	10,696

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2013: Service on I-5 restructured to current operation
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	37	No Weekend Service		37
Boardings per Trip	46			46
Subsidy per Boarding	\$2.39			\$2.39
Passenger Miles per Platform Mile	24			24



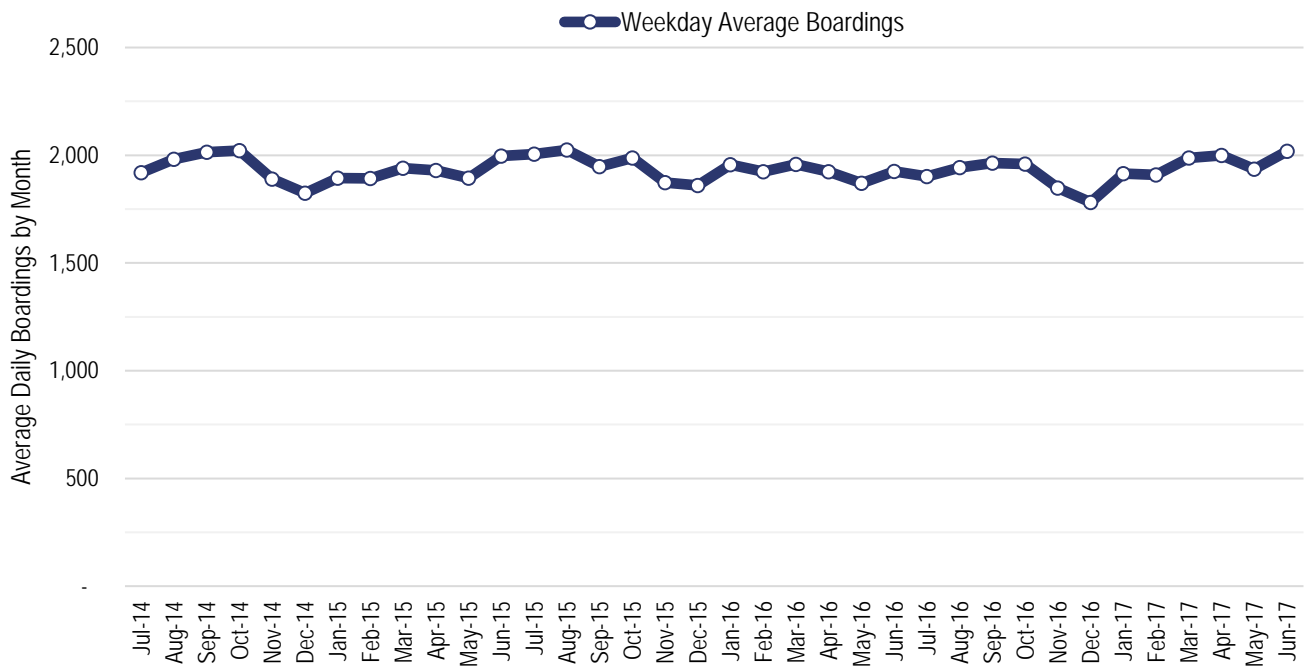


Route 510: Everett – Seattle

I-5 N

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,986	1,938	1,913	1,984
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

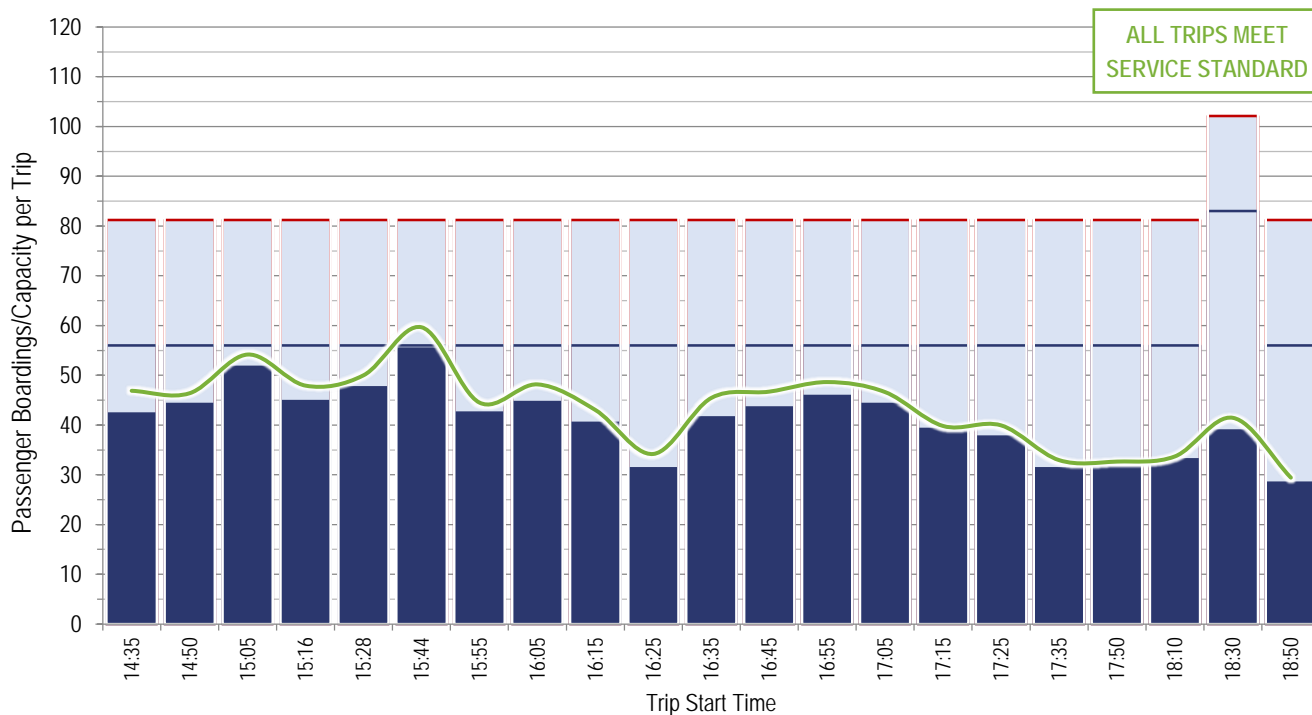




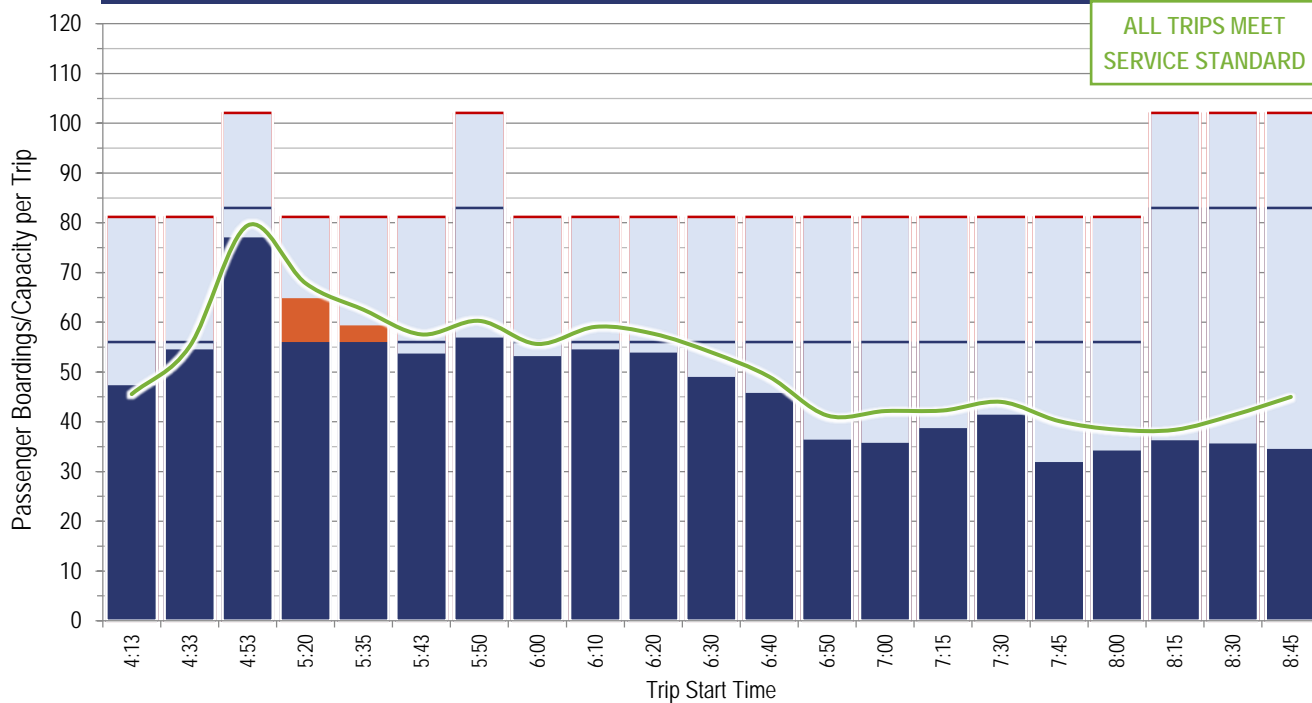
Route 510: Everett – Seattle

I-5 N

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 510: Everett - Seattle

I-5 N



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
4th Ave & S Jackson St	129	0
4th Ave & Washington St	24	1
4th Ave & Cherry St	127	3
4th Ave & Seneca St	172	6
4th Ave & Pike St	217	18
Olive Way & 6th Ave	127	6
Howell St & 9th Ave	101	5
South Everett Freeway Station	20	373
Broadway Ave & 34th St	1	57
Everett Station	0	448
Northbound Total	917	917
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Hewitt Ave & Fulton St	9	0
Hewitt Ave & Lombard Ave	2	0
Wetmore Ave & Wall St	6	0
Pacific Ave & Rockefeller Ave	3	0
Everett Station	618	1
Broadway & 34th St	39	0
South Everett Freeway Station	328	6
Stewart St & 9th Ave	11	226
Stewart St & 7th Ave	9	120
5th Ave & Pine St	14	243
5th Ave & Seneca St	19	198
5th Ave & Cherry St	2	108
5th Ave & Jefferson St	10	55
5th Ave & S Jackson St	0	110
Southbound Total	1,067	1,067
Total	1,984	1,984

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 511: Lynnwood - Seattle

I-5 N

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:21 a.m.-7:02 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	37
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	72.8
Peak Buses	9
ANNUAL TOTALS	
Platform Hours	18,572
Trips	9,411

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2013: Service on I-5 restructured to current operation
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	52	No Weekend Service		52
Boardings per Trip	55			55
Subsidy per Boarding	\$1.94			\$1.94
Passenger Miles per Platform Mile	19			19



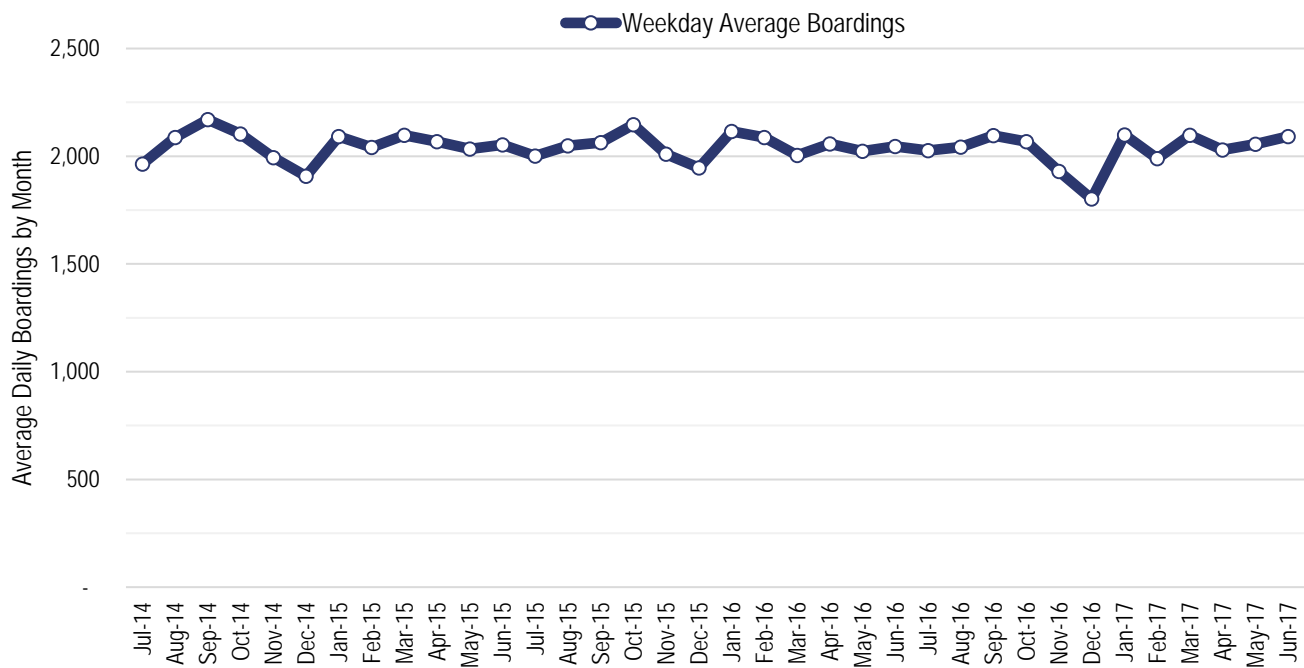


Route 511: Lynnwood - Seattle

I-5 N

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	2,038	2,050	2,024	2,060
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

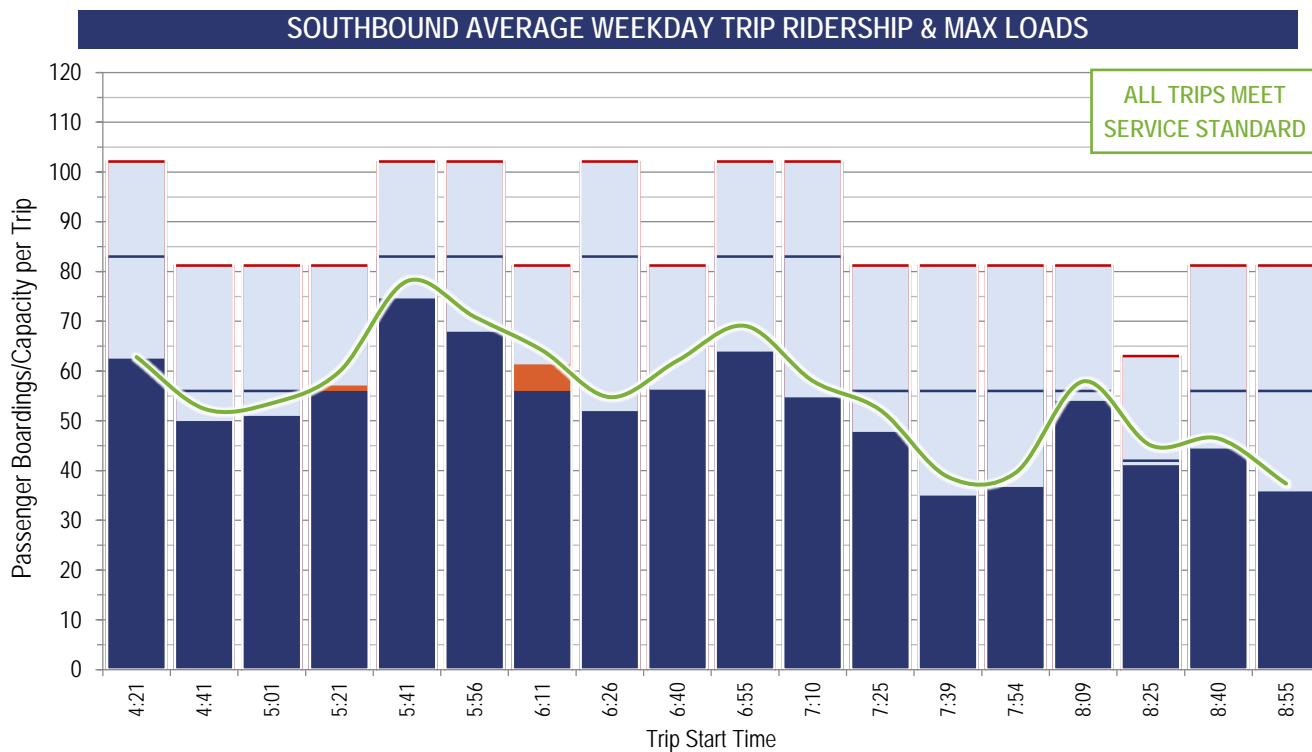
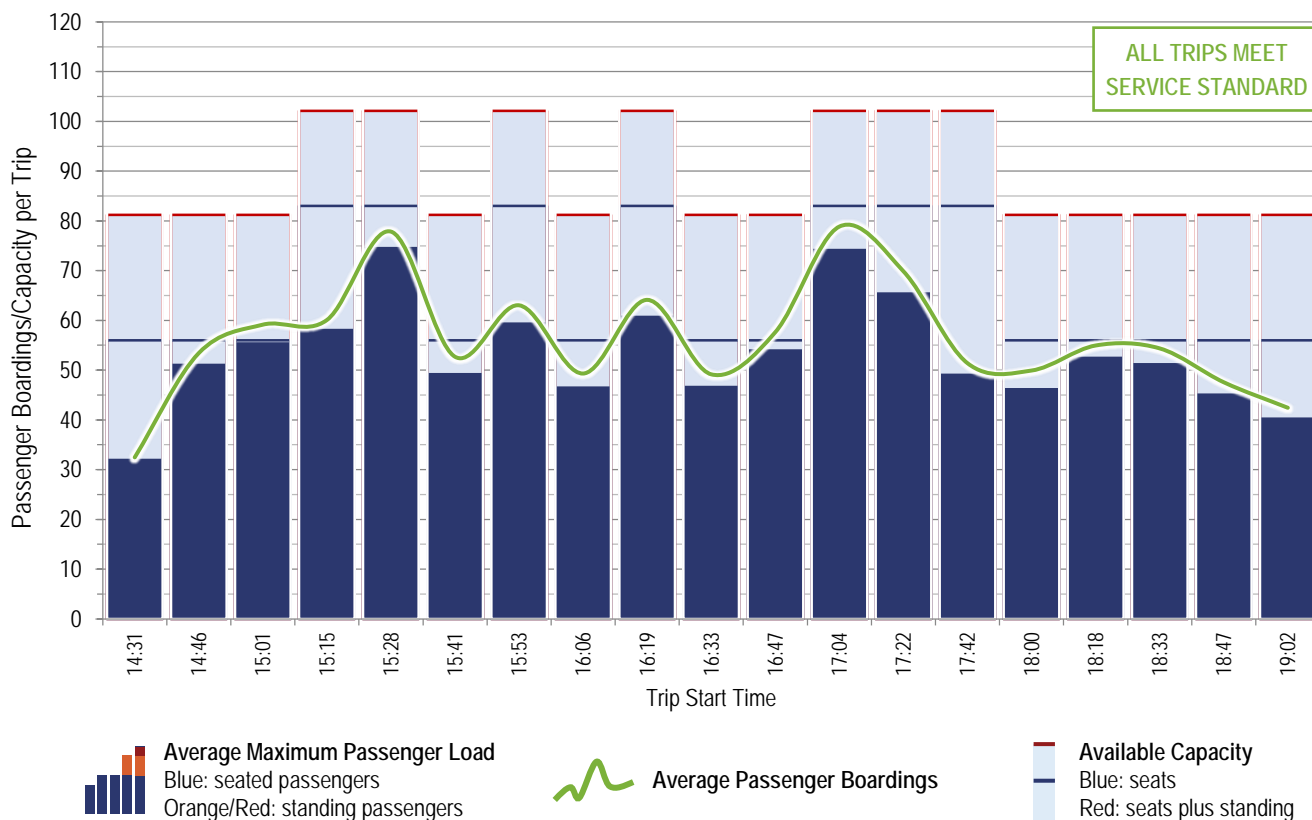




Route 511: Lynnwood - Seattle

I-5 N

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 511: Lynnwood - Seattle

I-5 N



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
4th Ave & S Jackson St	116	0
4th Ave & Washington St	10	0
4th Ave & Cherry St	106	2
4th Ave & Seneca St	215	4
4th Ave & Pike St	243	10
Olive Way & 6th Ave	204	5
Howell St & 9th Ave	129	5
Mountlake Terrace Freeway Station	18	239
Lynnwood Transit Center	14	477
Ash Way Park & Ride	0	313
Northbound Total	1,055	1,055
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Ash Way Park & Ride	335	0
Lynnwood Transit Center	392	5
Mountlake Terrace Freeway Station	228	8
Stewart St & 9th Ave	9	223
Stewart St & 7th Ave	4	128
5th Ave & Pine St	11	227
5th Ave & Seneca St	17	195
5th Ave & Cherry St	2	90
5th Ave & Jefferson St	7	34
5th Ave & S Jackson St	0	96
Southbound Total	1,005	1,005
Total	2,060	2,060

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 512: Everett - Seattle

I-5 N

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	Frequent
Evenings	Frequent
Saturday	Frequent
Sunday	Moderate
SPAN OF SERVICE	
Weekday	5:23 a.m.-12:08 a.m.
Saturday	5:00 a.m.-12:08 a.m.
Sunday	5:30 a.m.-12:08 a.m.
TRIPS PER DAY	
Weekday	107
Saturday	106
Sunday	73

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	173.5
Peak Buses	7
TYPICAL SATURDAY	
Platform Hours	158.1
TYPICAL SUNDAY	
Platform Hours	107.0
ANNUAL TOTALS	
Platform Hours	58,473
Trips	37,146

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2013: Service on I-5 restructured to current operation
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	28	30	301	29
Boardings per Trip	38	39	40	38
Subsidy per Boarding	\$3.53	\$2.93	\$2.79	\$3.35
Passenger Miles per Platform Mile	16	19	19	17



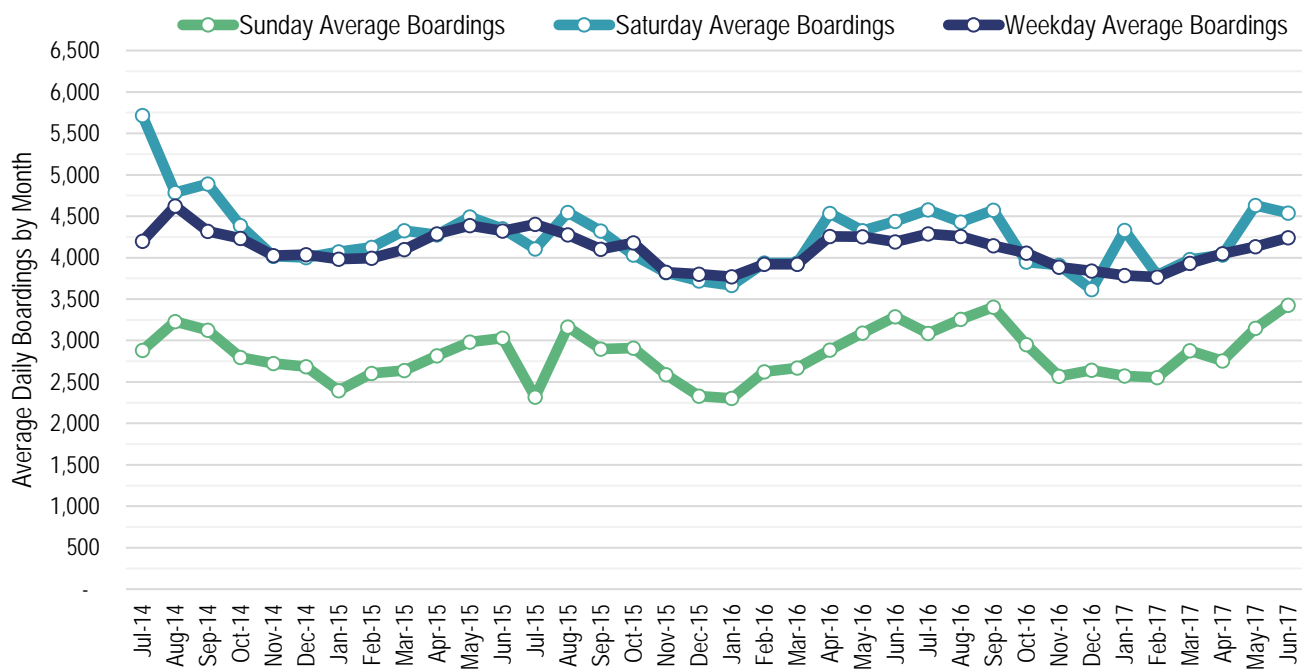


Route 512: Everett - Seattle

I-5 N

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	4,184	4,139	4,066	4,143
Average Saturday Boardings	4,394	4,180	4,159	4,416
Average Sunday Boardings	2,715	2,719	2,901	3,123

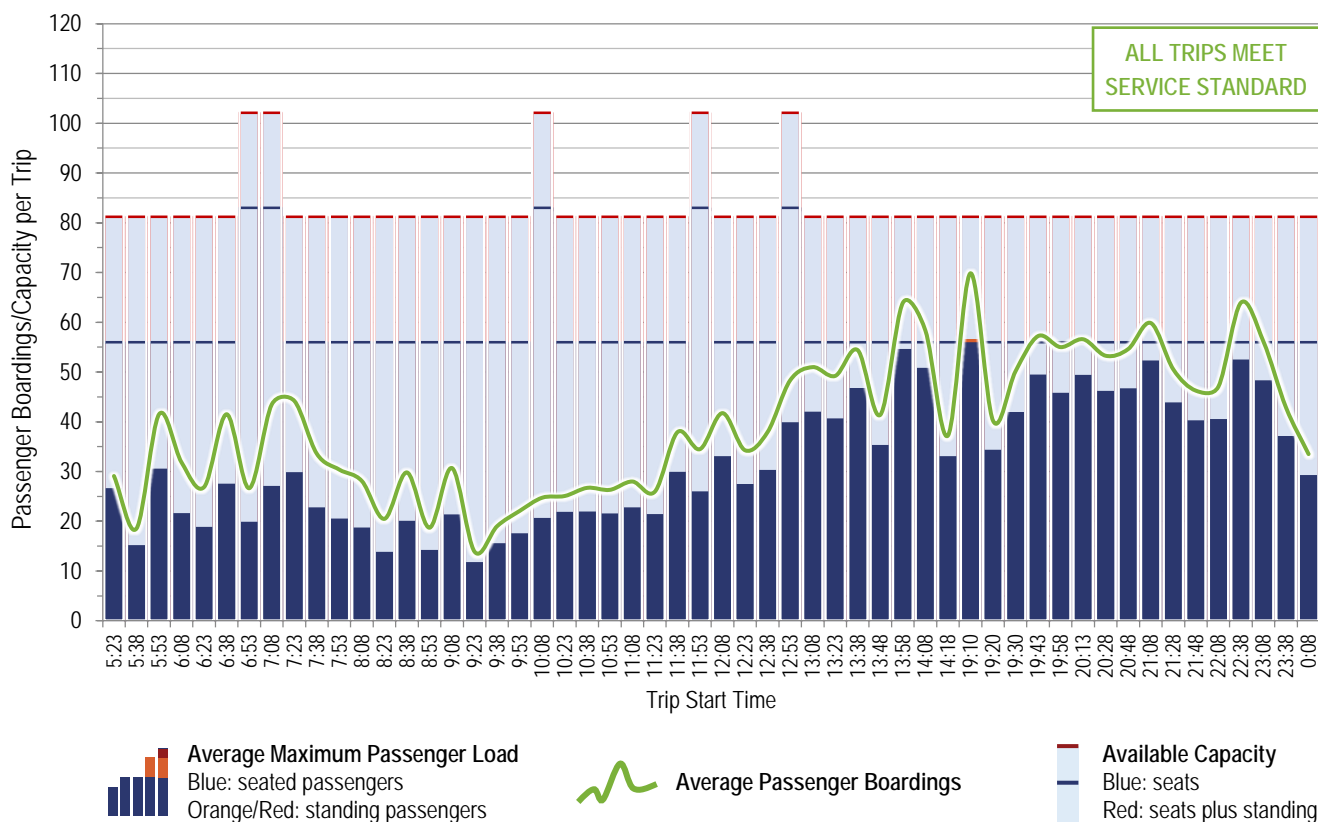




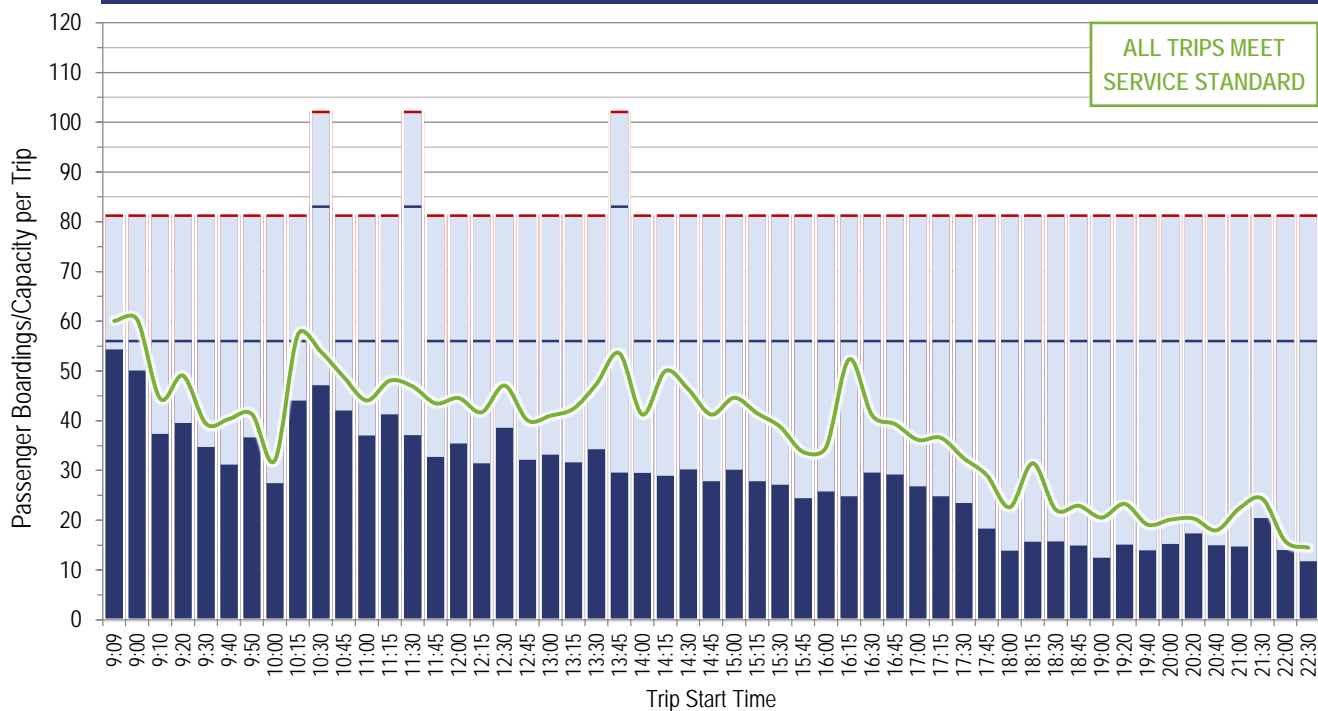
Route 512: Everett - Seattle

I-5 N

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



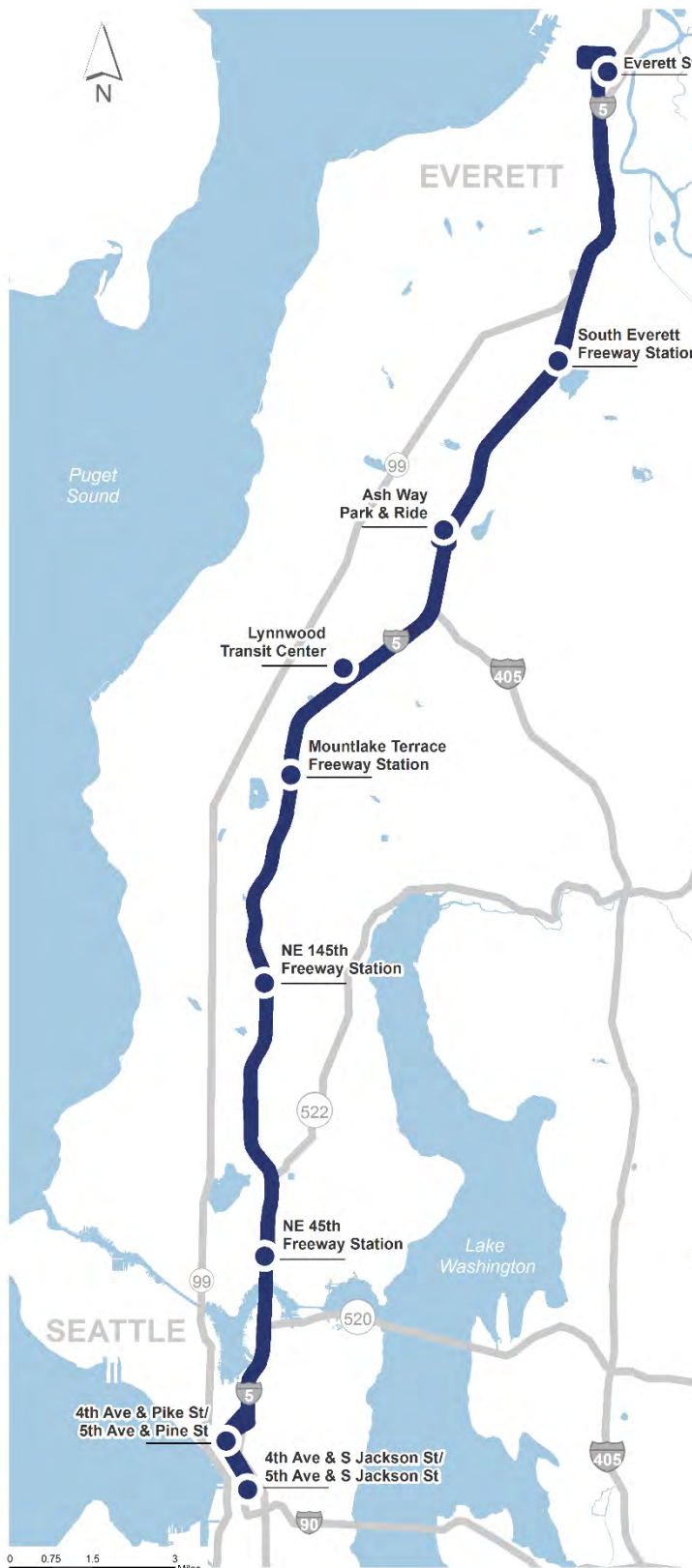
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 512: Everett - Seattle

I-5 N



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
4th Ave & S Jackson St	467	0
4th Ave & Washington St	37	1
4th Ave & Cherry St	178	75
4th Ave & Seneca St	212	34
4th Ave & Pike St	465	38
Olive Way & 6th Ave	250	19
Howell St & 9th Ave	169	18
I-5 & NE 45th St Freeway Station	242	155
I-5 & NE 145th St Freeway Station	37	42
Mountlake Terrace Freeway Station	23	180
Lynnwood Transit Center	66	572
Ash Way Park & Ride	32	347
South Everett Freeway Station	14	162
Broadway Ave & 34th St	1	65
Everett Station	3	479
Pacific Ave & Rockefeller Ave	0	0
Wetmore Ave & Wall St	0	3
Hewitt Ave & Lombard Ave	1	3
Hewitt Ave & Virginia Ave	0	4
Northbound Total	2,197	2,197
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Everett Station	506	0
Broadway & 34th St	46	2
South Everett Freeway Station	148	20
Ash Way Park & Ride	309	35
Lynnwood Transit Center	531	69
Mountlake Terrace Freeway Station	135	32
I-5 & NE 145th St Freeway Station	32	39
I-5 & NE 45th St Freeway Station	74	257
Stewart St & 9th Ave	21	221
Stewart St & 7th Ave	14	113
5th Ave & Pine St	44	550
5th Ave & Seneca St	29	145
5th Ave & Cherry St	39	95
5th Ave & Jefferson St	19	45
5th Ave & S Jackson St	0	323
Southbound Total	1,946	1,946
Total	4,143	4,143

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 513: Everett – Seattle

I-5 N





OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	5:03 a.m.-6:35 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	21
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	43.5
Peak Buses	5
ANNUAL TOTALS	
Platform Hours	11,459
One-Way Trips	5,345

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2013: Service on I-5 restructured to current operation
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	27	No Weekend Service		 27
Boardings per Trip	32			 32
Subsidy per Boarding	\$5.47			 \$5.47
Passenger Miles per Platform Mile	12			 12



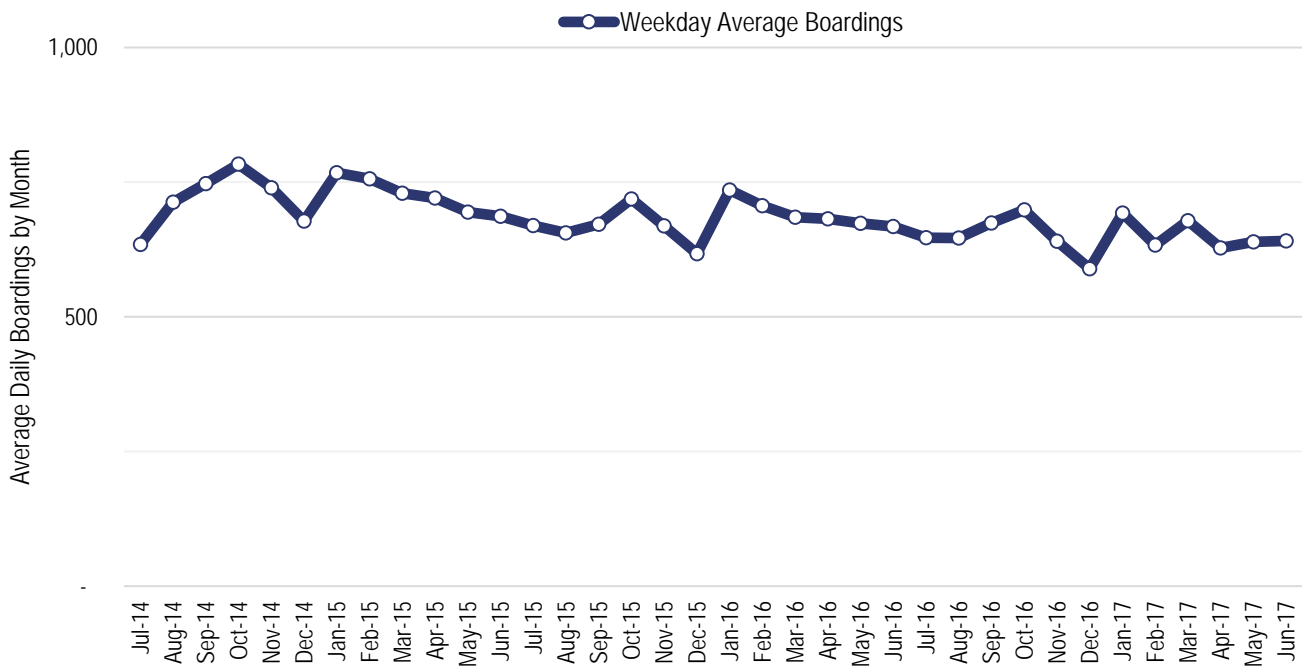


Route 513: Everett – Seattle

I-5 N

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	692	696	671	636
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

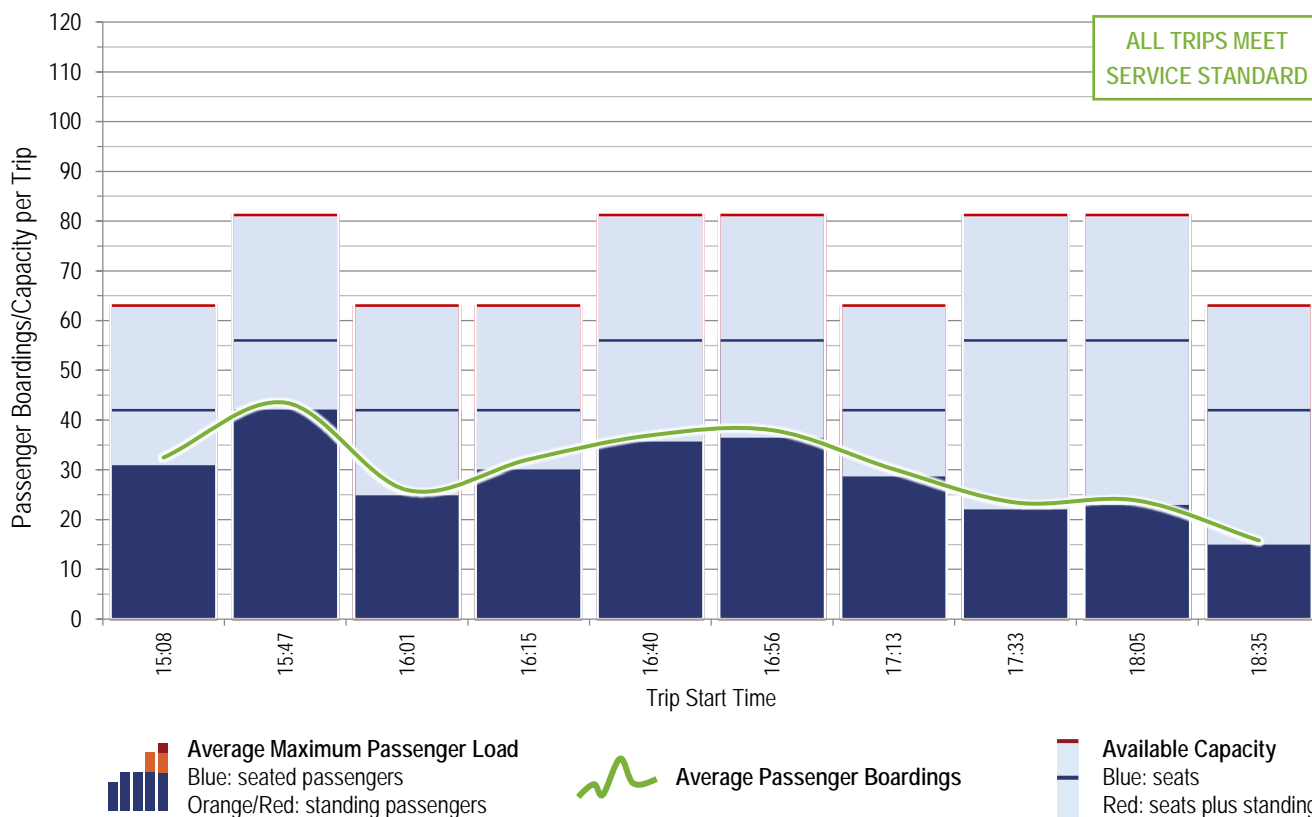




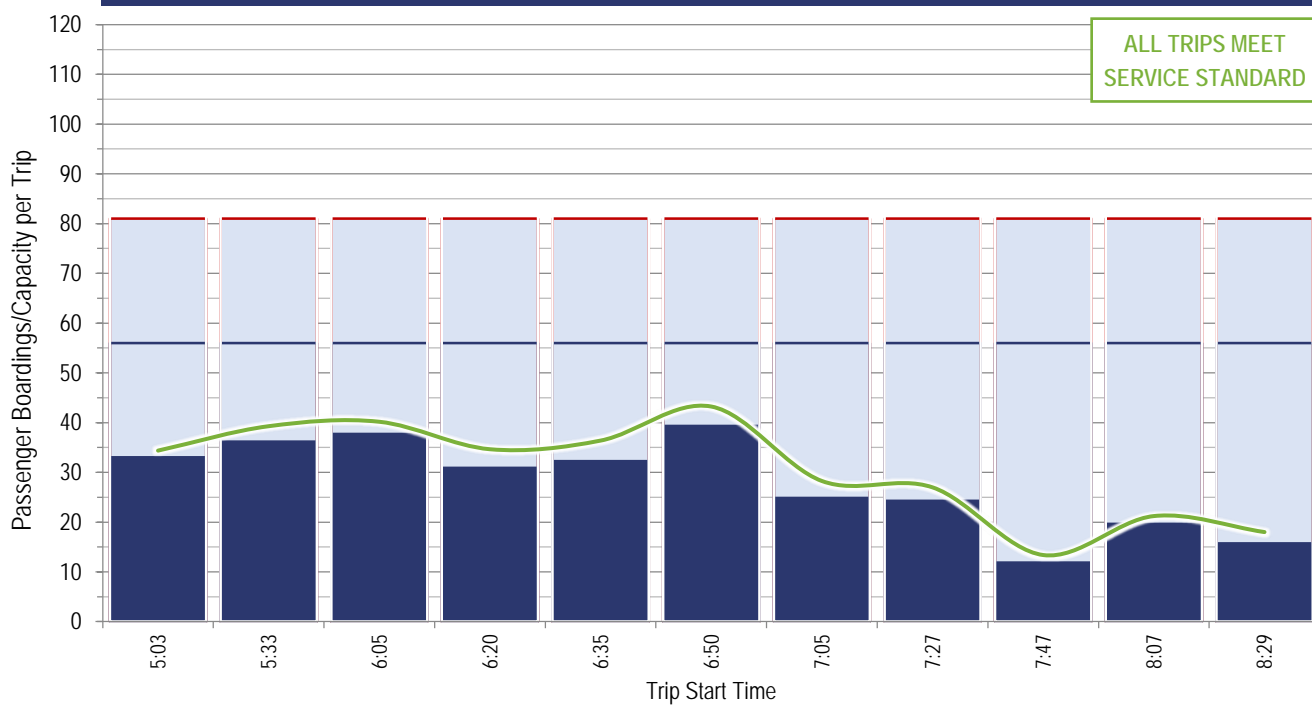
Route 513: Everett – Seattle

I-5 N

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



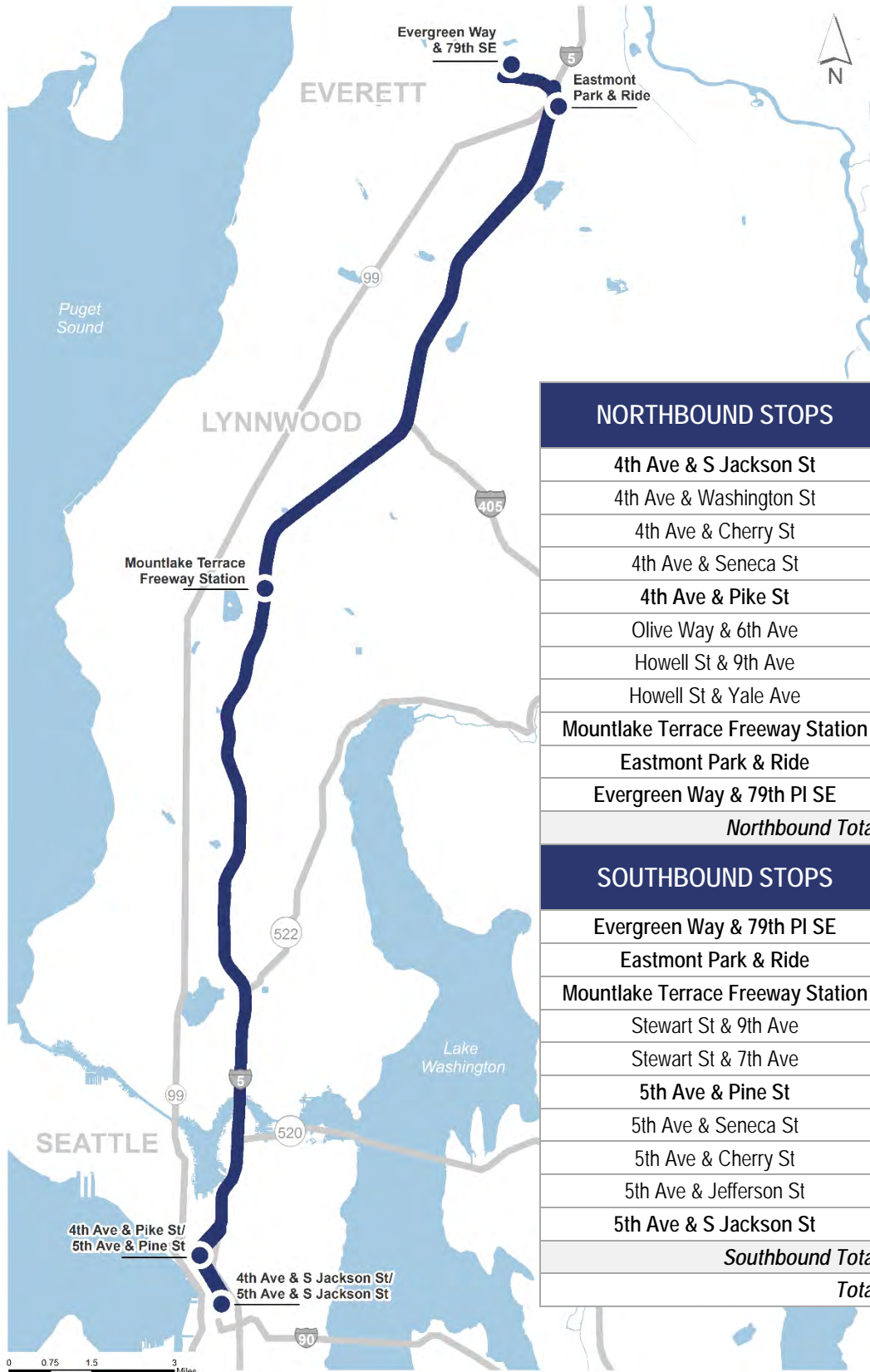
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 513: Everett - Seattle

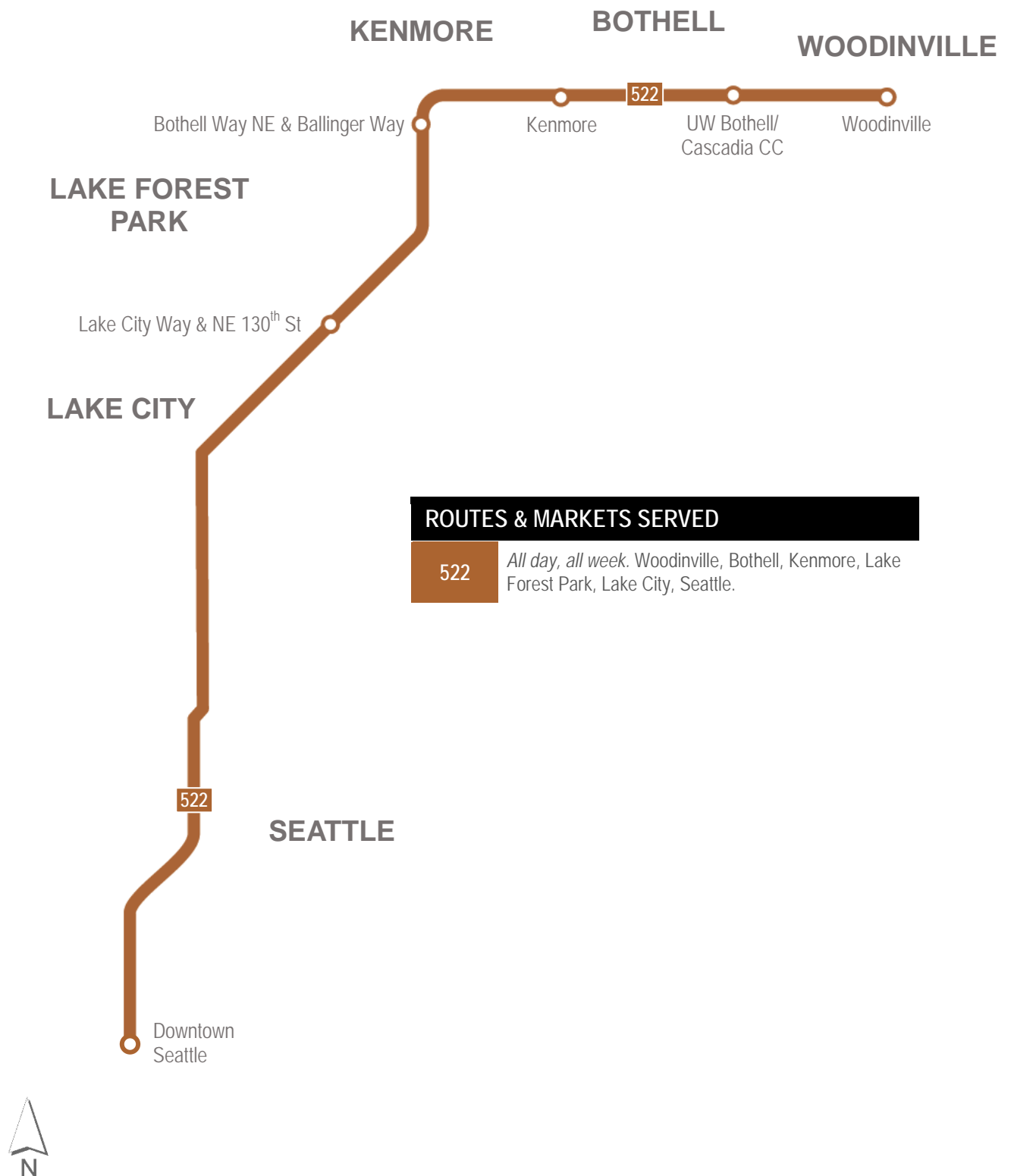
I-5 N



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
4th Ave & S Jackson St	21	0
4th Ave & Washington St	3	0
4th Ave & Cherry St	34	1
4th Ave & Seneca St	56	1
4th Ave & Pike St	57	4
Olive Way & 6th Ave	59	1
Howell St & 9th Ave	42	1
Howell St & Yale Ave	22	1
Mountlake Terrace Freeway Station	4	137
Eastmont Park & Ride	1	118
Evergreen Way & 79th PI SE	0	34
Northbound Total	299	299
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Evergreen Way & 79th PI SE	32	0
Eastmont Park & Ride	133	1
Mountlake Terrace Freeway Station	145	2
Stewart St & 9th Ave	4	88
Stewart St & 7th Ave	3	45
5th Ave & Pine St	7	65
5th Ave & Seneca St	9	66
5th Ave & Cherry St	1	36
5th Ave & Jefferson St	4	11
5th Ave & S Jackson St	0	23
Southbound Total	337	337
Total	636	636

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

SR 522 CORRIDOR



SR 522 CORRIDOR

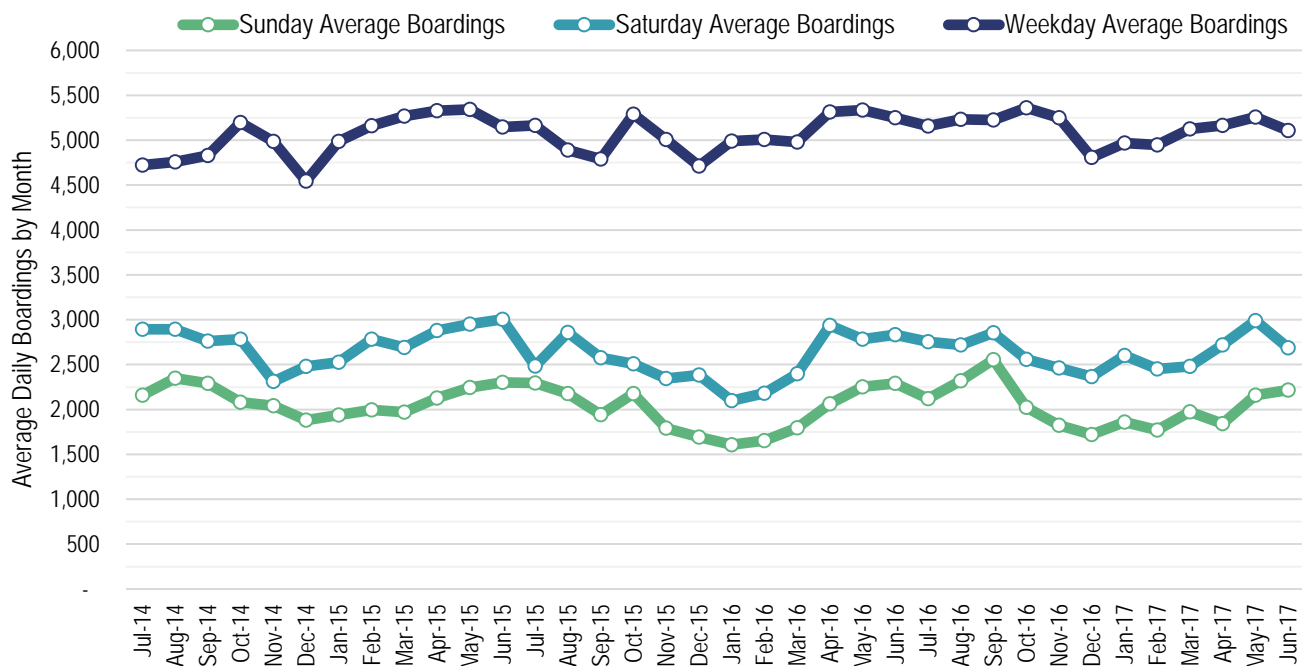
Service on this corridor began in September 2002 when Sound Transit implemented ST Express Route 522 replacing King County Metro Route 307. Prior to implementation of the service, Sound Transit and King County Metro conducted an extensive public outreach process to develop a coordinated service on the corridor. Service on Route 41 was expanded to operate seven days a week and the route extended to the Lake City business district where connections would be made with ST Express Route 522. Service on Route 372 was expanded to operate in both directions all day on weekdays and was revised to serve the UW Bothell/Cascadia Community College campus, and the North Creek area of Bothell.

In September 2015, Sound Transit, in partnership with King County Metro, applied for Regional Mobility Grant funding for the addition of three trips on ST Express Route 522 to relieve overcrowding. Likewise, King County Metro added trips on their service along the SR-522 corridor.

In March 2016, King County Metro significantly enhanced Route 372 to operate every 15 minutes between the University District and UW Bothell/Cascadia Community College on weekdays as a part of the Link light rail extension to University of Washington Station. A new stop was added to ST Express Route 522 in the Maple Leaf neighborhood to replace local service that was removed as a part of the service restructure. Minor service adjustments took place in September 2017 to reflect increased congestion along the corridor.

Total boardings were up 9 percent in 2016 over total boardings in 2014 on the corridor, with all the growth occurring from an 11 percent increase in weekday boardings. Saturday and Sunday boardings on the corridor remained flat. During the peak hour on weekdays the average trip carries 60 passengers. Figure 32 shows average boardings by day type by month for the SR-522 corridor from mid-2014 through mid-2017.

FIGURE 32: SR 522 CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 522: Woodinville - Seattle

SR 522

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	Moderate
Evenings	Minimum
Saturday	Moderate
Sunday	Moderate
SPAN OF SERVICE	
Weekday	4:45 a.m.-11:39 p.m.
Saturday	5:39 a.m.-11:33 p.m.
Sunday	5:39 a.m.-11:33 p.m.
TRIPS PER DAY	
Weekday	103
Saturday	66
Sunday	66

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	171.8
Peak Buses	19
TYPICAL SATURDAY	
Platform Hours	99.6
TYPICAL SUNDAY	
Platform Hours	98.5
ANNUAL TOTALS	
Platform Hours	54,809
Trips	33,468

SERVICE CHANGES	
HISTORY	
Start Date	September 2002
Last Major Change	2012: Service shifted from 3rd Avenue to 4th Avenue in downtown Seattle
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	36	27	22	34
Boardings per Trip	50	39	31	47
Subsidy per Boarding	\$3.83	\$4.72	\$6.40	\$4.10
Passenger Miles per Platform Mile	17	13	10	16



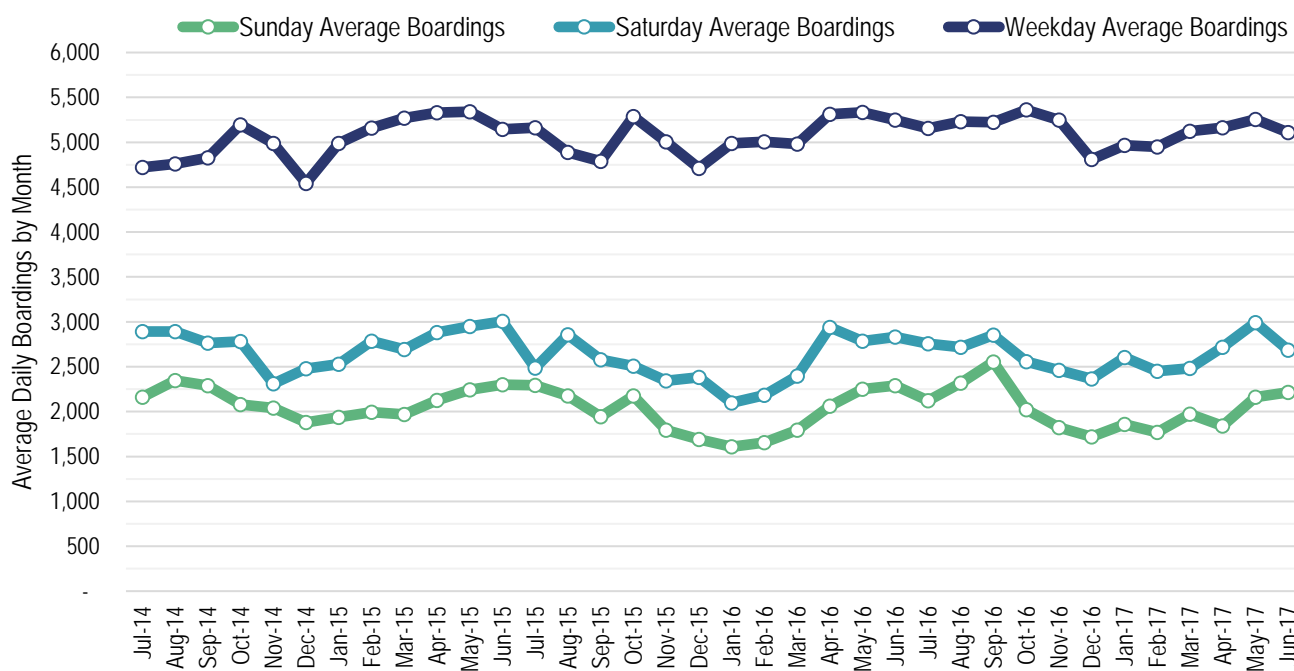


Route 522: Woodinville - Seattle

SR 522

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	4,650	5,089	5,158	5,177
Average Saturday Boardings	2,619	2,663	2,580	2,804
Average Sunday Boardings	2,031	2,054	2,021	2,082

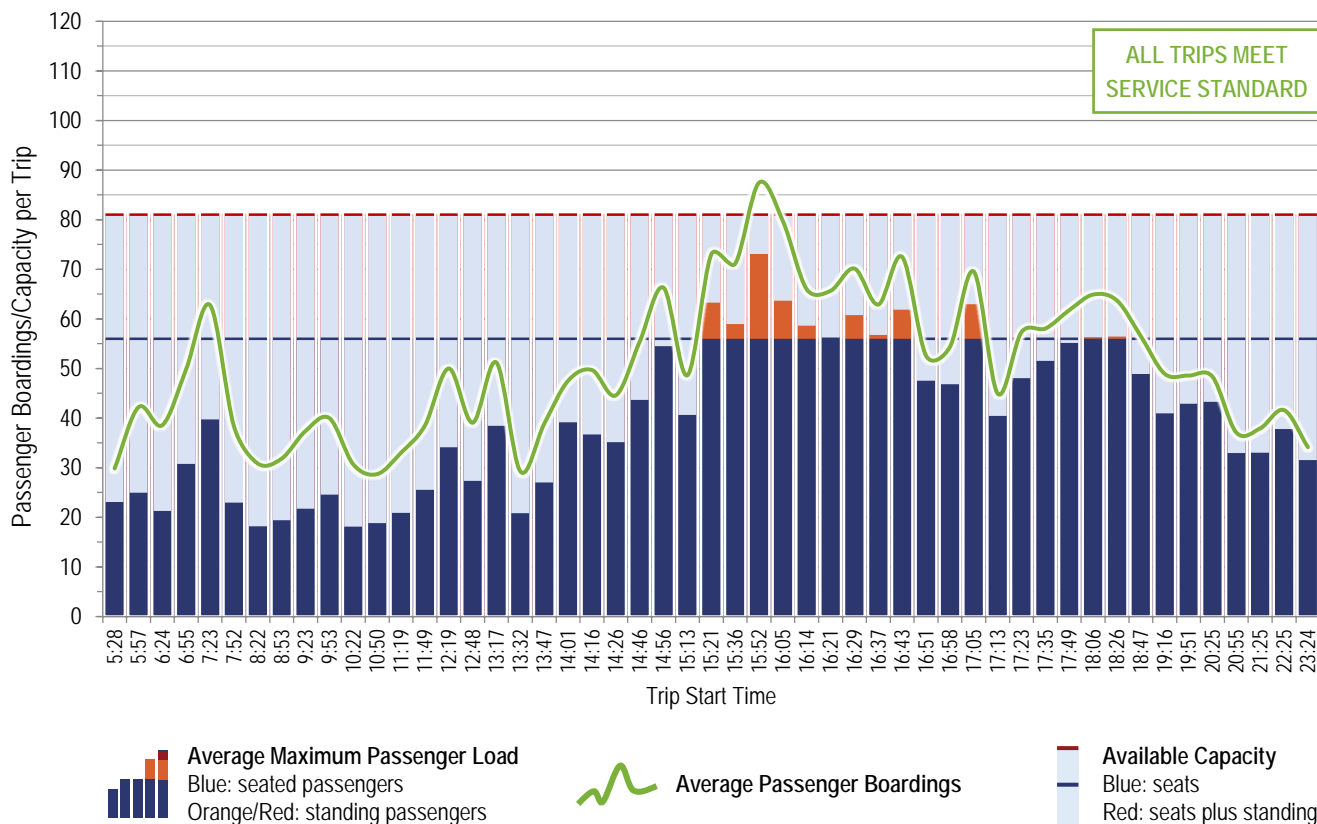




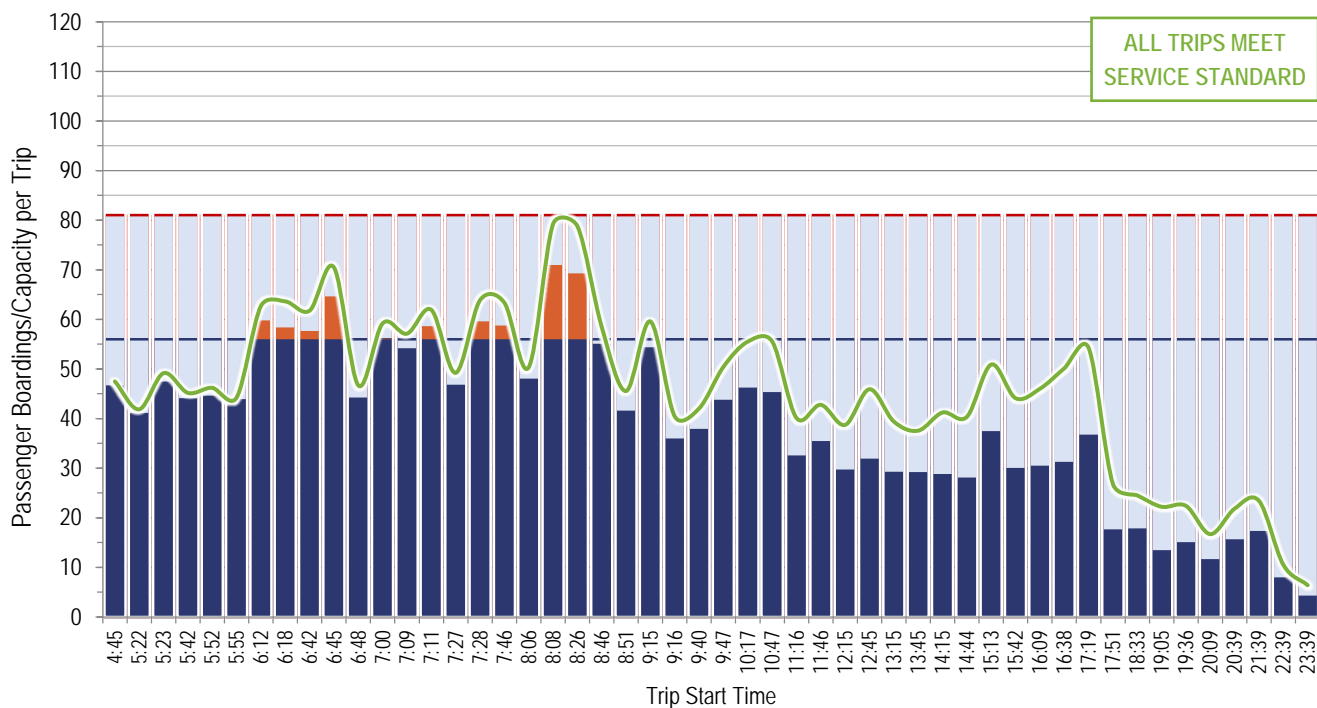
Route 522: Woodinville - Seattle

SR 522

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



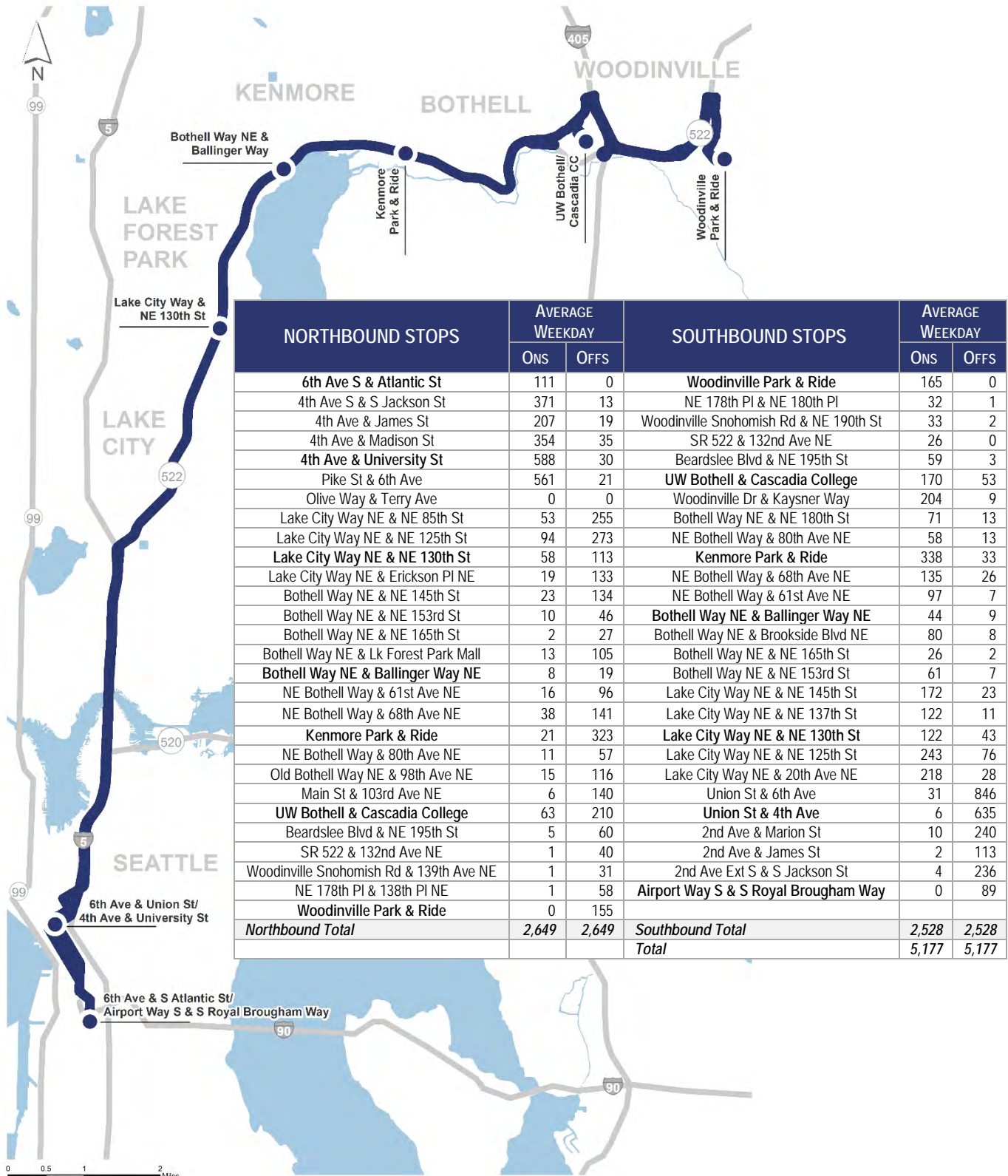
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





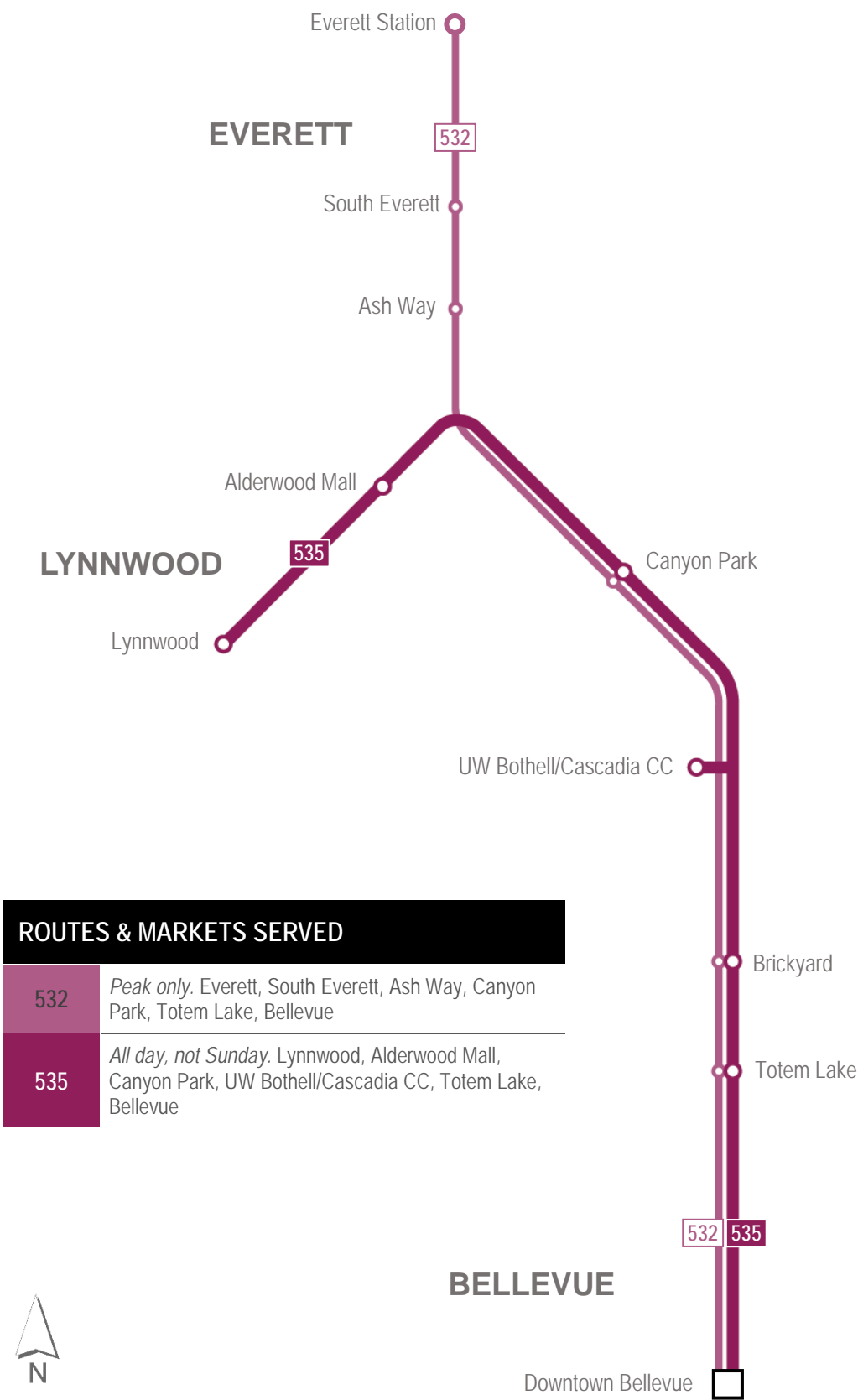
Route 522: Woodinville - Seattle

SR 522



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

I-405 NORTH CORRIDOR



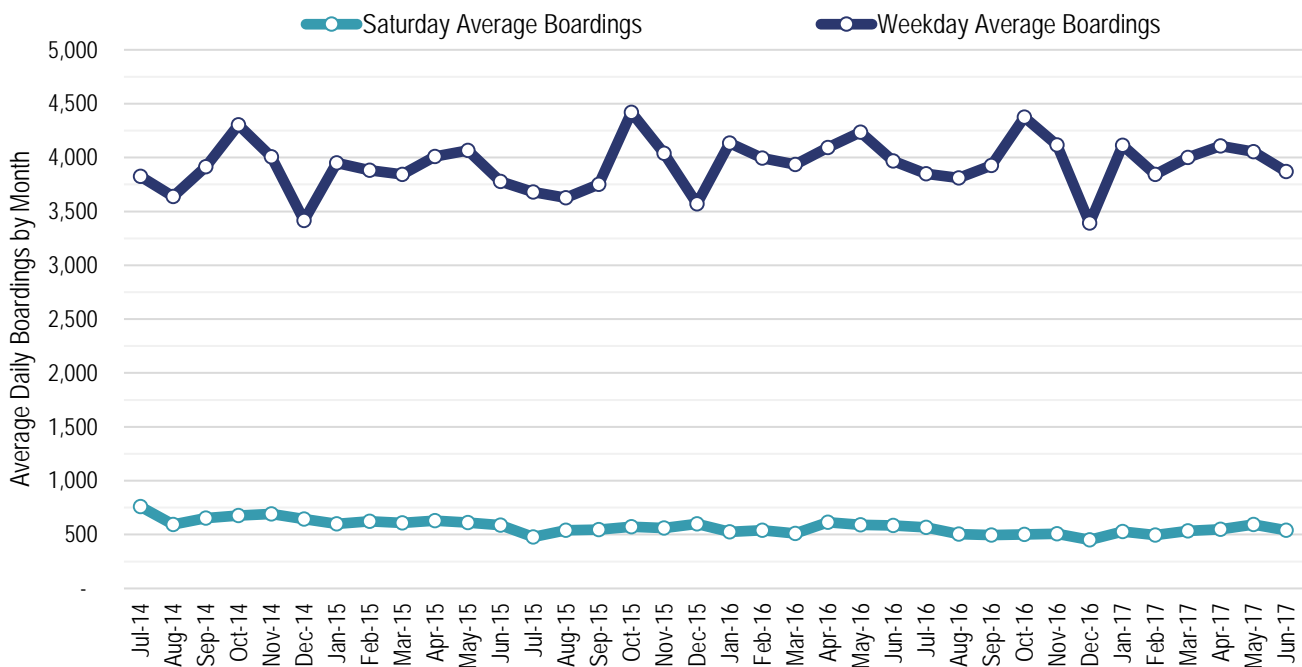
I-405 NORTH CORRIDOR

Service on this corridor began in September 1999 with all-day weekday service from Lynnwood to Bellevue and Everett to Bellevue. Due to low ridership, night and weekend service between Everett and Bellevue was replaced with service between Lynnwood and Bellevue in 2001. The last major route restructure on the corridor was in September 2006 when weekday midday service between Everett and Bellevue was replaced with 30-minute service between Lynnwood and Bellevue. Prior to this date, midday service was operated hourly on Route 530 (operating between Everett and Bellevue) and Route 535, with a 30-minute combined frequency between Canyon Park and downtown Bellevue. In 2007, the Canyon Park and Totem Lake freeway stations opened, which allowed some streamlining on the corridor. The last major schedule change was in June 2011 when Sunday service was discontinued as a part of the 2011 SIP efficiency initiative.

Total boardings on the corridor were up three percent between 2014 and 2016. Weekday ridership on Route 535 (Lynnwood-Bellevue) was up one percent while ridership on Route 532 (Everett-Bellevue) was up five percent for the same time period. Saturday boardings on Route 535 were down 12 percent. Figure 33 shows average boardings by day type by month for the I-405 North corridor from mid-2014 through mid-2017.

Ridership is highly directional in nature, with ridership heading to Bellevue in the morning and to Lynnwood and Everett in the afternoon. Most trips on the Everett-Bellevue service are near or above the seated capacity of an articulated coach. In the peak hour, peak direction of travel the average trip carries 60 passengers. In the reverse-peak direction, ridership is lower averaging 19 passengers per trip.

FIGURE 33: I-405 NORTH CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 532: Everett – Bellevue

I-405 N

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:30 a.m.-6:43 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	41
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	73.2
Peak Buses	12
ANNUAL TOTALS	
Platform Hours	18,675
Trips	10,459

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2008: Route restructured to serve South Everett Freeway Station
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	38	No Weekend Service		38
Boardings per Trip	51			51
Subsidy per Boarding	\$2.16			\$2.16
Passenger Miles per Platform Mile	18			18



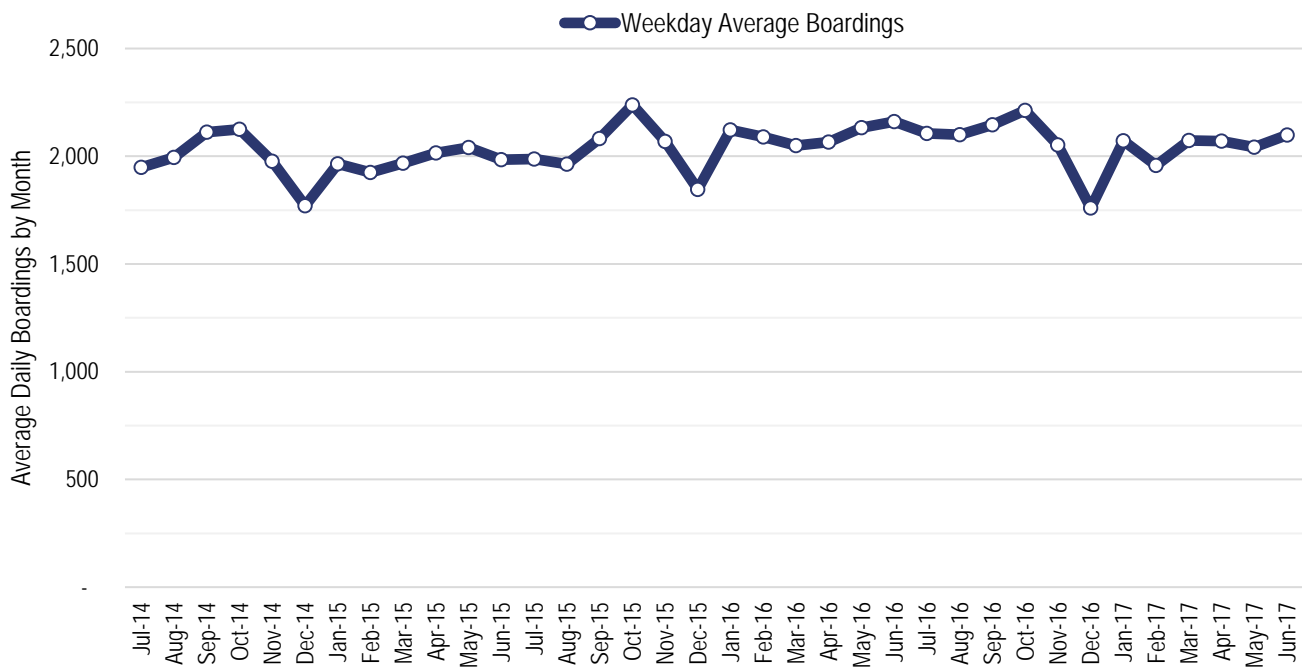


Route 532: Everett – Bellevue

I-405 N

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,980	2,007	2,083	2,071
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

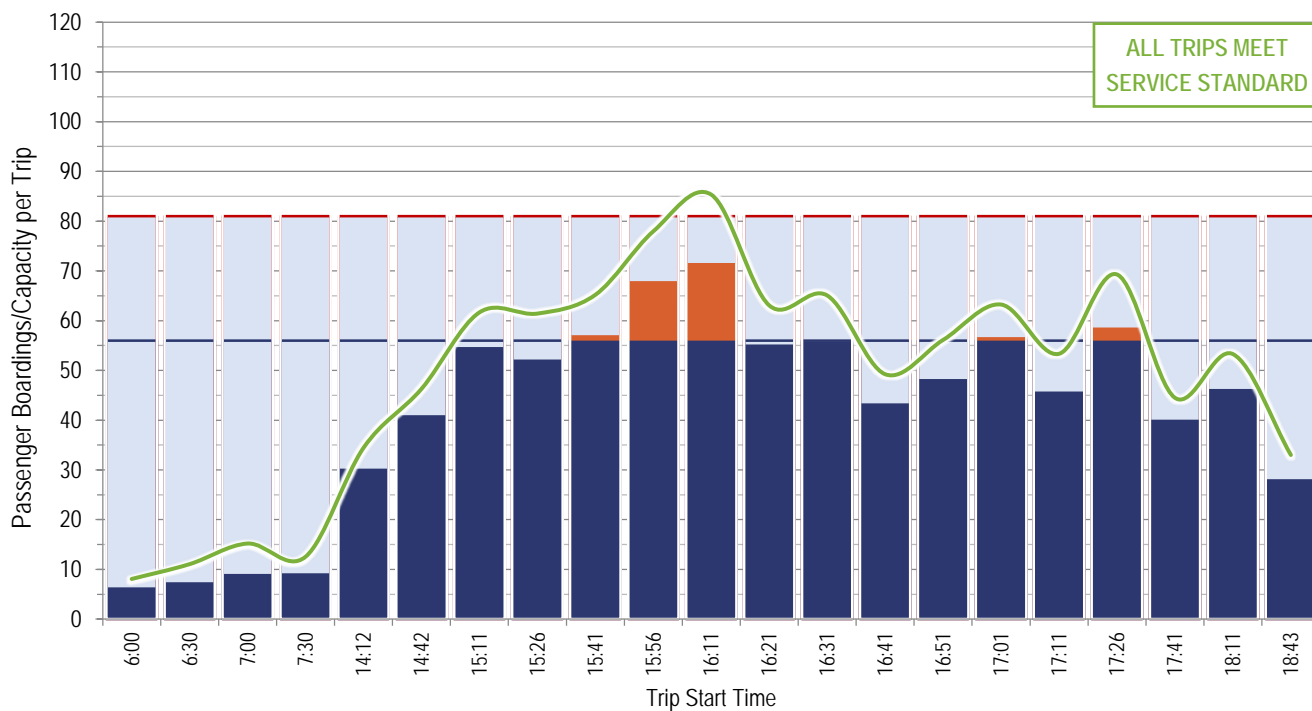




Route 532: Everett - Bellevue

I-405 N

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

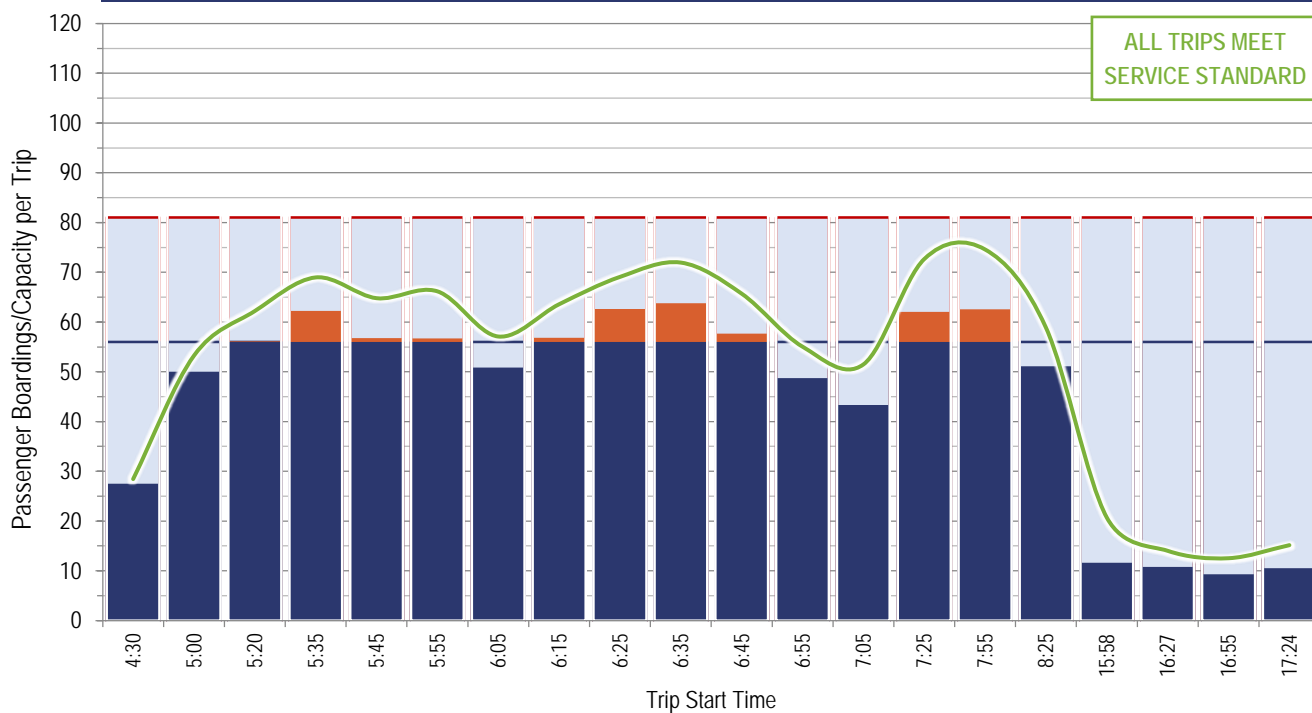


Average Maximum Passenger Load
 Blue: seated passengers
 Orange/Red: standing passengers

Average Passenger Boardings

Available Capacity
 Blue: seats
 Red: seats plus standing

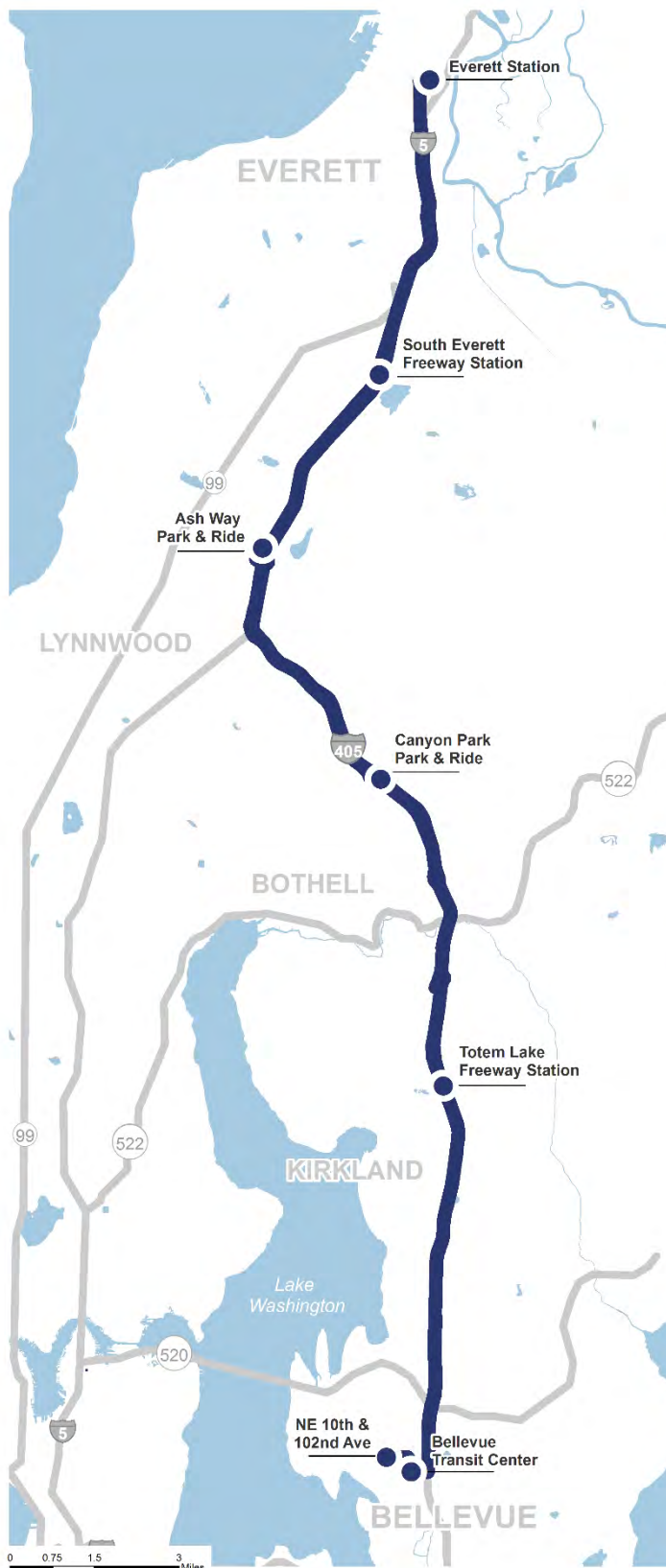
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 532: Everett - Bellevue

I-405 N



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
NE 10th St & 102nd Ave NE	51	0
NE 10th St & 108th Ave NE	45	0
Bellevue Transit Center	768	5
Totem Lake Freeway Station	94	172
Brickyard Freeway Station	2	0
NE 195th St Flyer Stop	1	4
Canyon Park Park & Ride	37	295
Ash Way Park & Ride	29	298
South Everett Freeway Station	4	113
Broadway & 34th St	0	18
Everett Station	0	125
Northbound Total	1,031	1,031
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Everett Station	157	0
Broadway & 34th St	18	0
South Everett Freeway Station	120	4
Ash Way Park & Ride	318	20
Canyon Park Freeway Station	274	30
NE 195th St Flyer Stop	3	2
Brickyard Freeway Station	2	1
Totem Lake Freeway Station	146	99
Bellevue Transit Center	3	809
NE 8th St & 106th Ave NE	0	40
NE 8th St & 102nd Ave NE	0	11
NE 10th St & 102nd Ave NE	0	23
Southbound Total	1,040	1,040
Total	2,071	2,071

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 535: Lynnwood – Bellevue

I-405 N





OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Moderate
Evenings	Minimum
Saturday	Minimum
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:48 a.m.-10:15 p.m.
Saturday	7:18 a.m.-10:14 p.m.
Sunday	-
TRIPS PER DAY	
Weekday	65
Saturday	30
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	86.8
Peak Buses	6
TYPICAL SATURDAY	
Platform Hours	37.8
ANNUAL TOTALS	
Platform Hours	24,145
Trips	18,142

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2011: Sunday service discontinued as part of the 2011 SIP efficiency initiative.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	25	16	No Sunday Service	 25
Boardings per Trip	29	18		 28
Subsidy per Boarding	\$3.89	\$7.25		 \$4.07
Passenger Miles per Platform Mile	11	8		 11



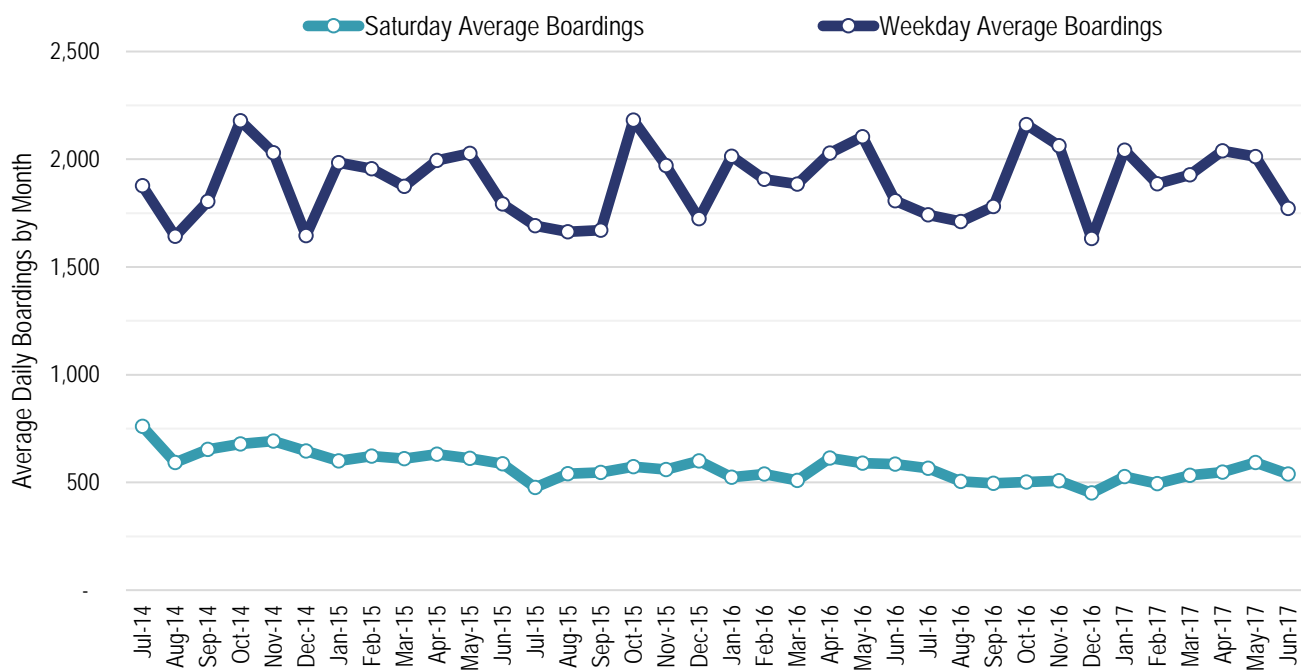


Route 535: Lynnwood – Bellevue

I-405 N

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,863	1,876	1,901	1,938
Average Saturday Boardings	622	580	532	561
Average Sunday Boardings	No Sunday Service			

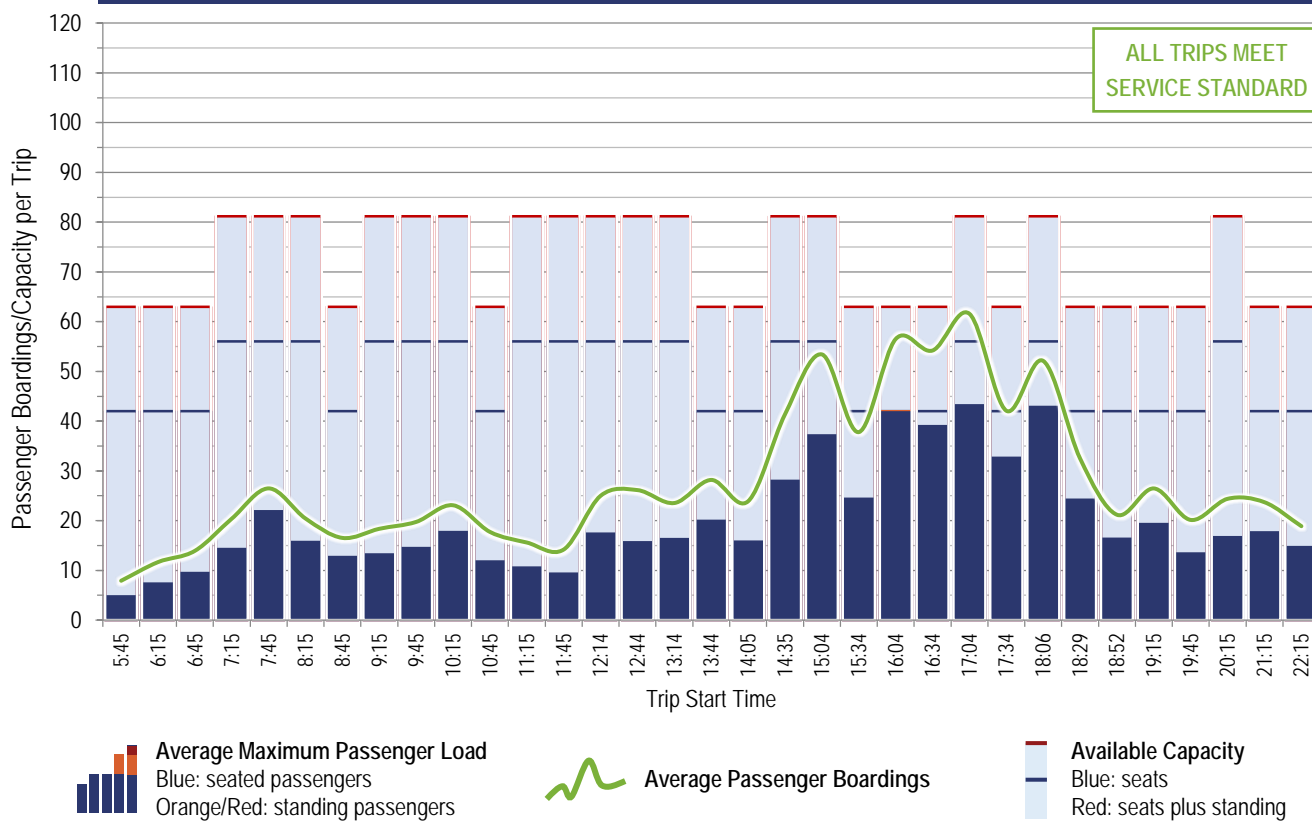




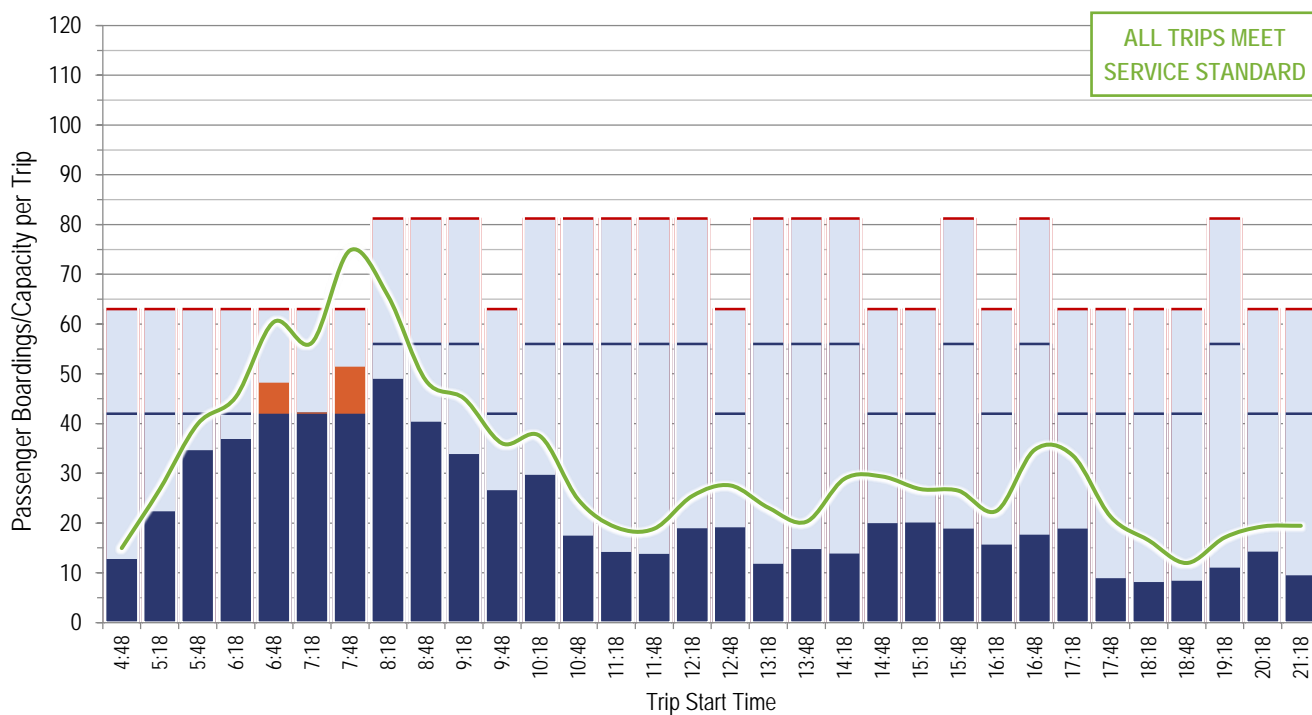
Route 535: Lynnwood - Bellevue

I-405 N

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



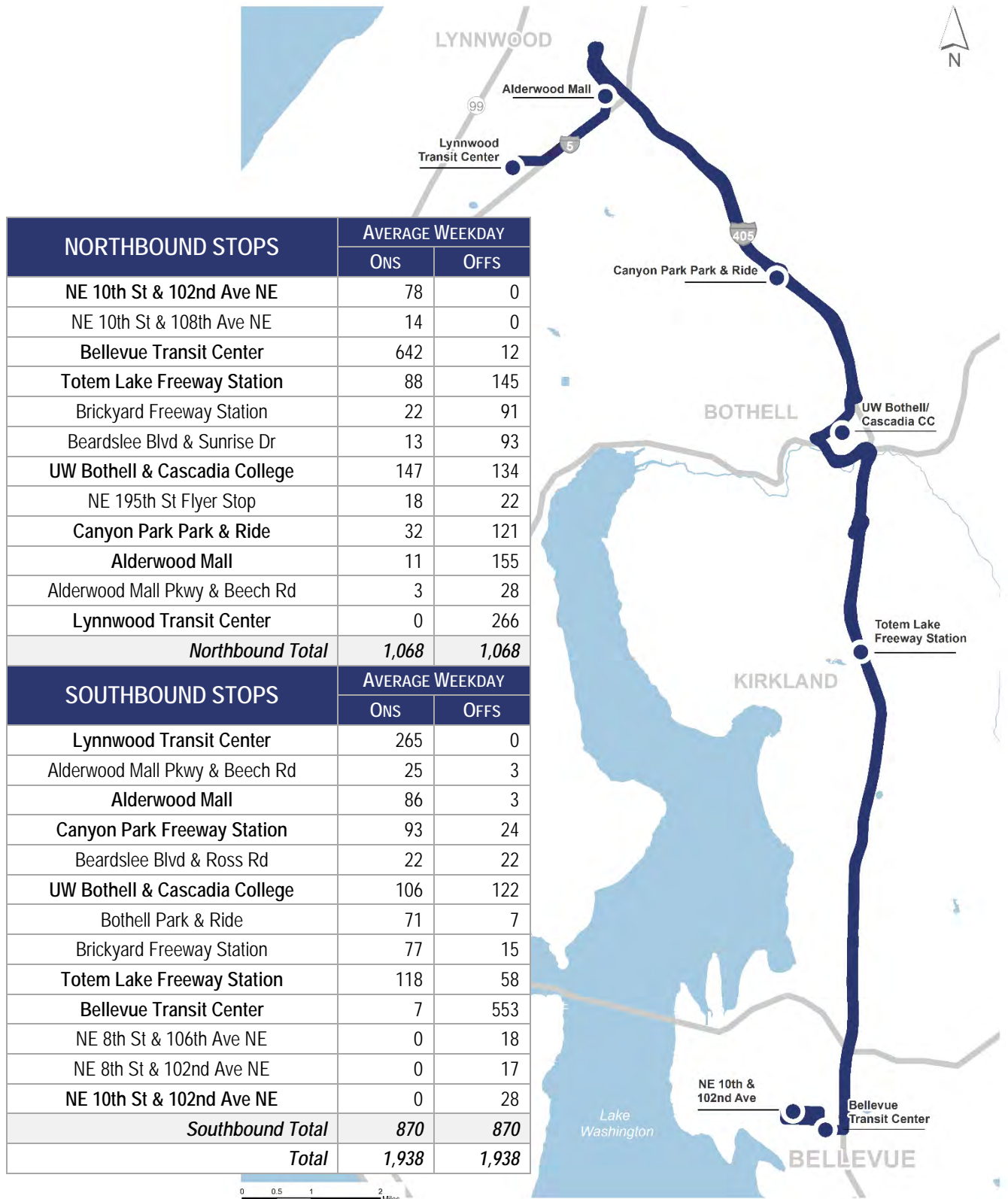
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





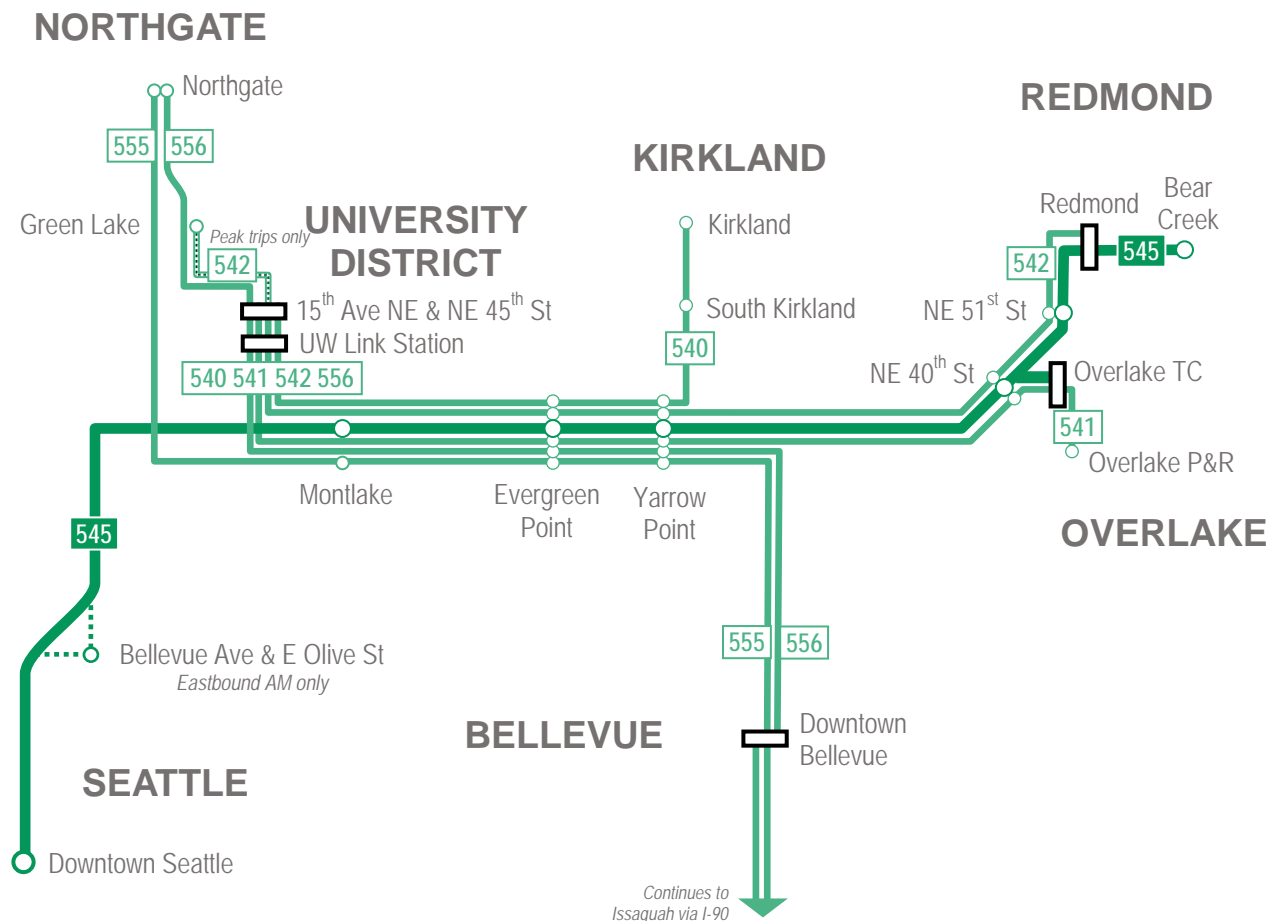
Route 535: Lynnwood – Bellevue

I-405 N



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

SR 520 CORRIDOR



ROUTES & MARKETS SERVED

540	<i>Peak only.</i> Kirkland, South Kirkland, UW Link Station, University District.
541	<i>Peak only.</i> Overlake Park & Ride, Overlake Transit Center, Yarrow Point, Evergreen Point, Montlake, UW Link Station, University District.
542	<i>Peak & midday only.</i> Redmond, NE 51 st , NE 40 th , Overlake Transit Center, Yarrow Point, Evergreen Point, Montlake, UW Link Station, University District, Green Lake.
545	<i>All day, all week.</i> Bear Creek, Redmond, NE 51 st , NE 40 th , Overlake Transit Center, Yarrow Point, Evergreen Point, Montlake, Downtown Seattle.
555	<i>Peak only.</i> Northgate, Montlake, Evergreen Point, Yarrow Point, Bellevue, Issaquah.
556	<i>Peak only.</i> Northgate, University District, UW Link Station, Evergreen Point, Yarrow Point, Bellevue, Issaquah.



SR 520 CORRIDOR

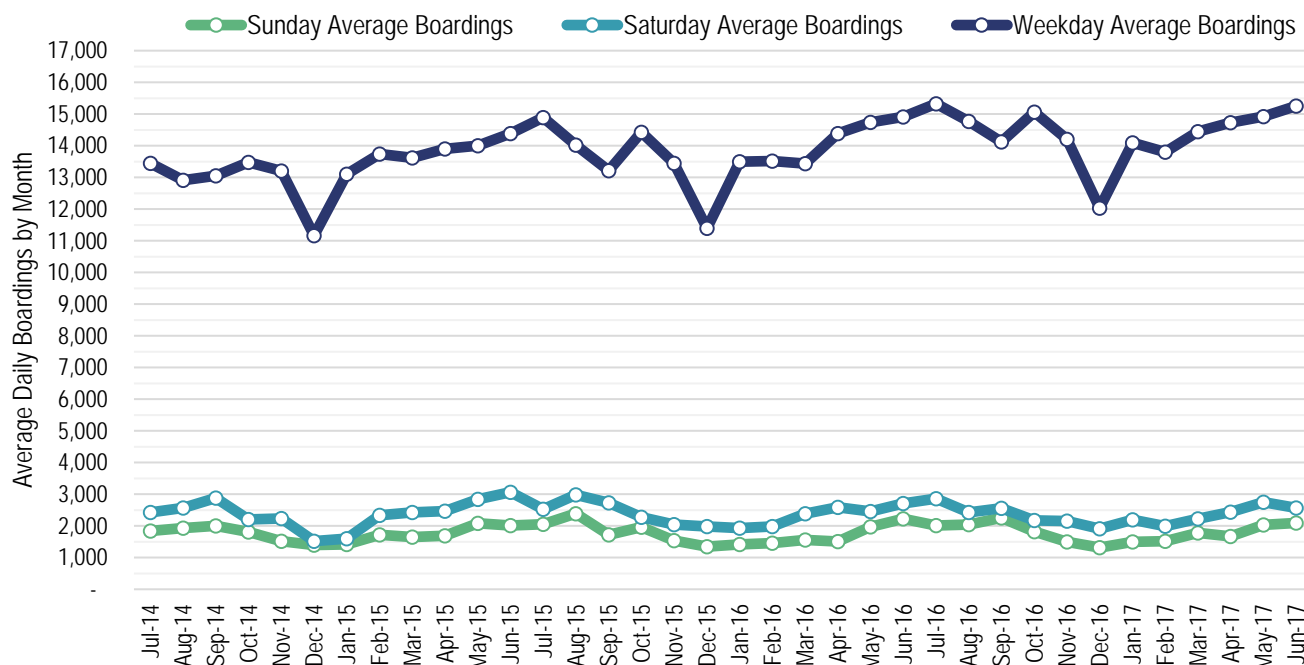
Service on this corridor began in September 2000 when Sound Transit implemented Routes 540, 545 and 546. Route 546 was discontinued when the Overlake Transit Center opened in February 2002.

Saturday service was added to Route 545 in September 2003 and Sunday service began in September 2004. The following year, peak period service was enhanced to every 10 minutes and the stop on the west slope of Capitol Hill was added. Demand for service on the route has remained high since then. In February 2008, Route 545 began operating 15 minute midday service. The last major service enhancement for Route 545 happened in September 2016, as 15 peak hour trips were added to provide additional capacity and reduce overcrowding on the route.

Meanwhile, 540 ridership had been declining, especially since King County Metro made significant enhancements to Route 255 that operates between Kirkland and downtown Seattle. In February 2008, the portion of Route 540 between Redmond and Kirkland was discontinued. Midday service was discontinued in June 2011 to address budget concerns with the recession. Direct service between Redmond and the University District was reinstated on weekdays during the peak periods in October 2010 as Route 542. In March 2016, with the opening of University Link, midday service on Route 542 was added to provide a connection between the University District and Evergreen Point Freeway Station and a new Route 541 offers a bidirectional, peak-hour service between Overlake and the University District. Future changes to the 520 corridor will occur as part of the SR 520 restructure, with proposed service changes finalized as part of the 2019 Service Implementation Plan.

Between 2014 and 2016, average weekday boardings on the SR-520 corridor increased by 11 percent. During peak travel times buses remain crowded on Route 545 to and from Downtown Seattle, but the additional service introduced in March 2016 results in available seating to accommodate future growth across SR 520 on routes serving the University of Washington Link station and the University District. Figure 34 shows average boardings by day type by month for the SR-520 corridor from mid-2014 through mid-2017.

FIGURE 34: SR 520 CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 540: Kirkland – University District

SR 520

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	6:04 a.m.-6:34 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	36
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	33.1
Peak Buses	4
ANNUAL TOTALS	
Platform Hours	8,429
Trips	9,154

SERVICE CHANGES	
HISTORY	
Start Date	September 2000
Last Major Change	2011: Midday Service discontinued.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	23	No Weekend Service		23
Boardings per Trip	18			18
Subsidy per Boarding	\$6.87			\$6.87
Passenger Miles per Platform Mile	8			8



4TH PERFORMANCE QUARTILE

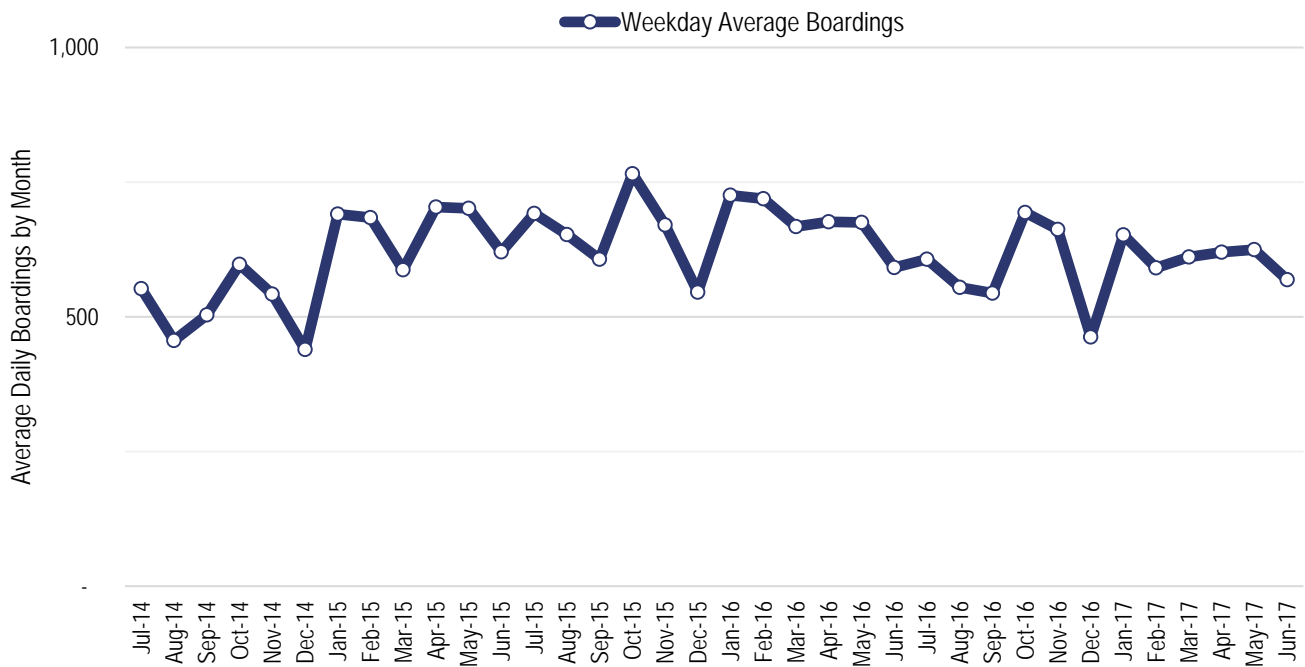


Route 540: Kirkland – University District

SR 520

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	515	660	631	604
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

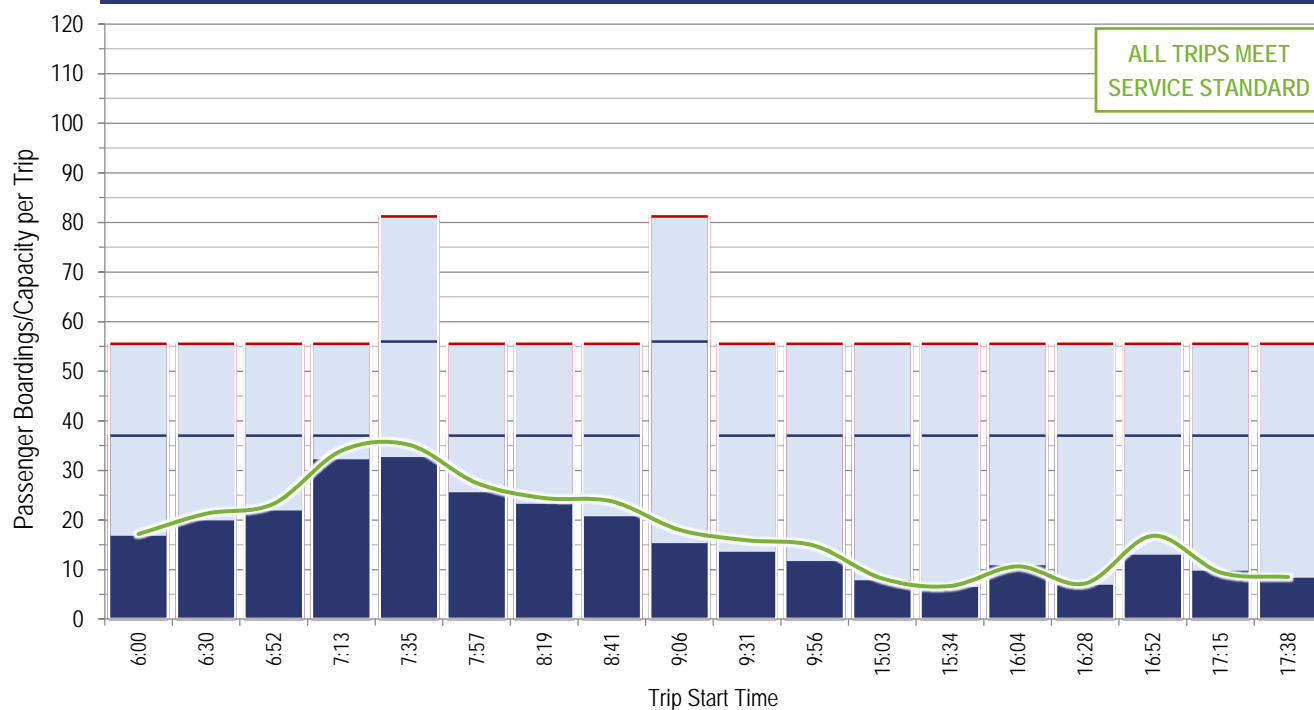




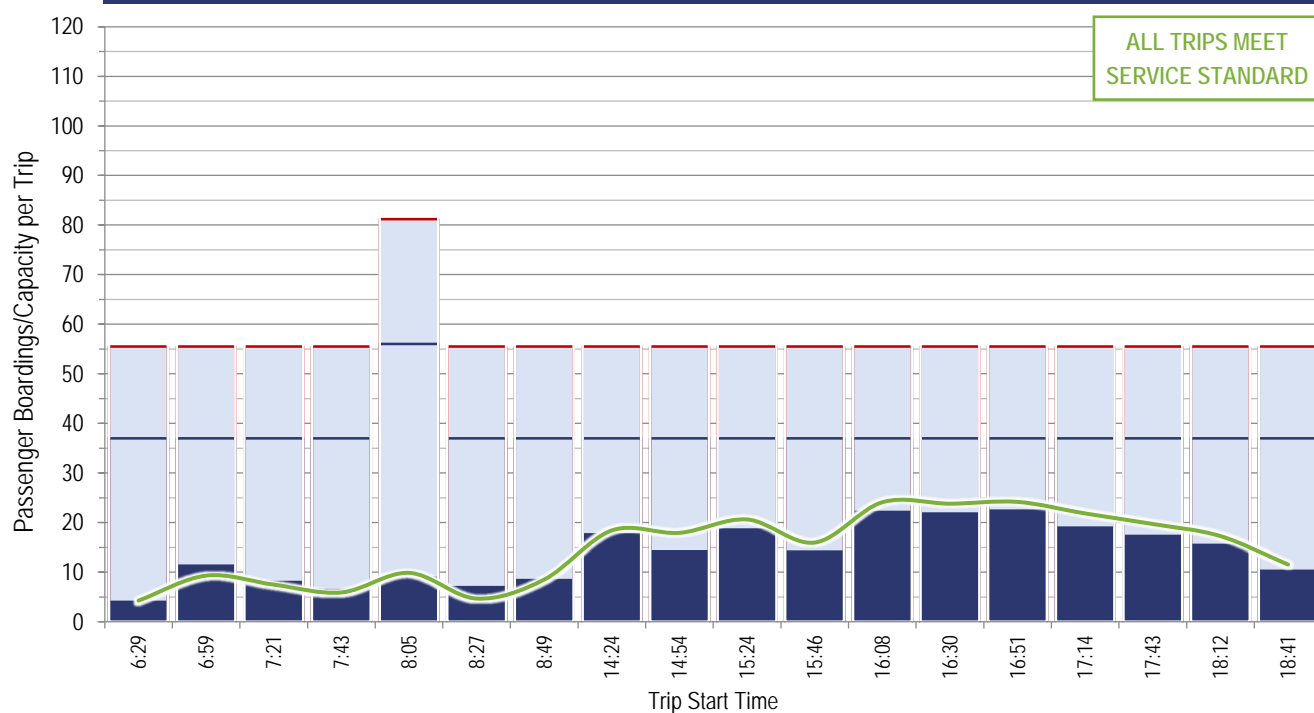
Route 540: Kirkland – University District

SR 520

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



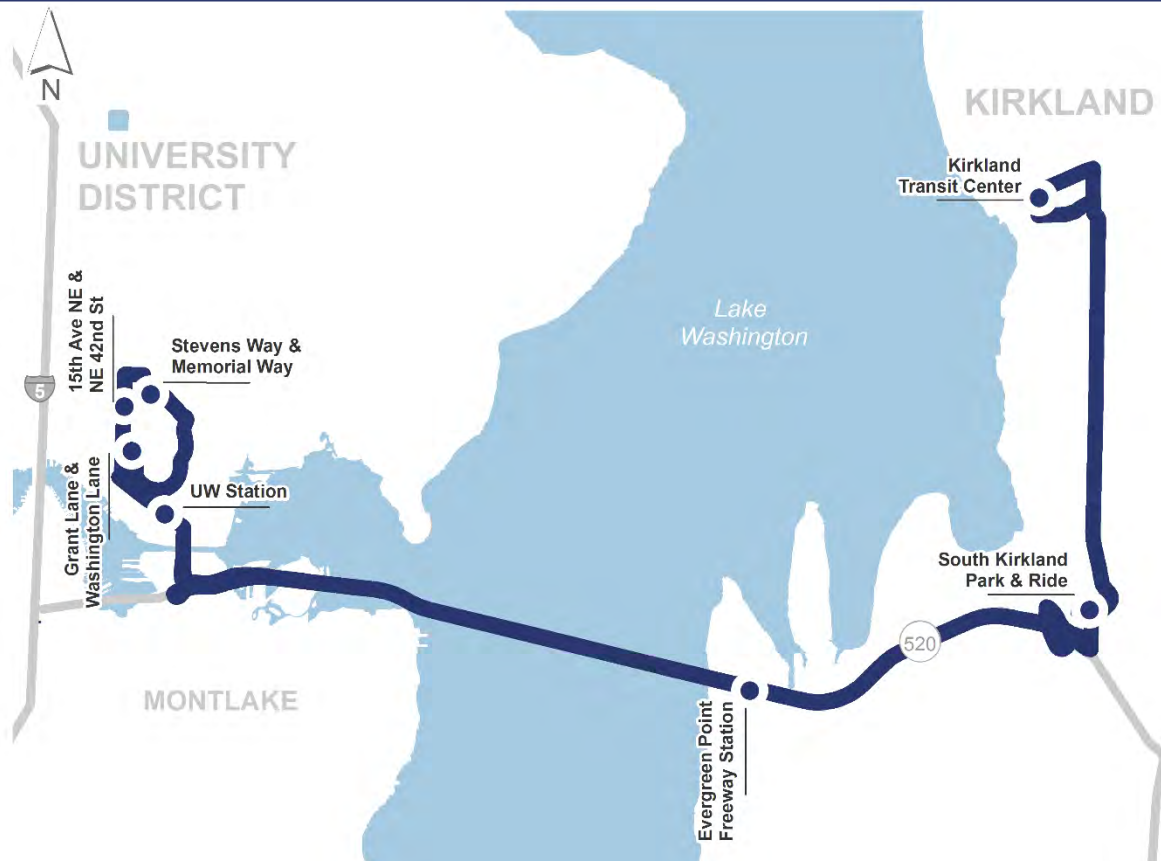
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 540: Kirkland – University District

SR 520



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
15th Ave NE & NE 42nd St	1	0	Kirkland Transit Center	57	0
Stevens Way & Memorial Way	18	9	6th St S & 9th Ave S	35	0
Stevens Way & Pend Oreille Rd	19	6	108th Ave NE & NE 58th St	4	0
Stevens Way & Benton Ln	27	7	South Kirkland Park & Ride	155	2
Stevens Way & Rainier Vista	5	2	Yarrow Point Freeway Station	15	9
Stevens Way & Garfield Ln	8	1	Evergreen Point Freeway Station	6	2
Grant Ln & Washington Ln	27	5	Montlake Blvd E & E Shelby St	2	10
15th Ave NE & NE 40th St	53	3	University of Washington Link Station	23	129
NE Pacific St & 15th Ave NE	35	1	15th Ave NE & NE Pacific St	2	25
University of Washington Link Station	78	5	15th Ave NE & NE Campus Pkwy	2	59
Montlake Blvd E & E Lake Washington Bl	8	3	15th Ave NE & NE 42nd St	1	53
Evergreen Point Freeway Station	10	7	Stevens Way & Memorial Way	1	4
Yarrow Point Freeway Station	6	5	Stevens Way & Pend Oreille Rd	2	3
South Kirkland Park & Ride	4	146	Stevens Way & Benton Ln	0	4
108th Ave NE & NE 58th St	0	6	Stevens Way & Rainier Vista	0	1
6th St S & NE 68th St	1	29	Stevens Way & Garfield Ln	0	2
Kirkland Transit Center	0	66	Grant Ln & Washington Ln	0	1
Eastbound Total	300	300	Westbound Total	304	304
			Total	604	604

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 541: Overlake – University District

SR 520

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	6:41 a.m.- 6:57 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	44
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	31.6
Peak Buses	7
ANNUAL TOTALS	
Platform Hours	8,066
Trips	8,559

SERVICE CHANGES	
HISTORY	
Start Date	March 2016
Last Major Change	
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	20	No Weekend Service		20
Boardings per Trip	16			16
Subsidy per Boarding	\$8.61			\$8.61
Passenger Miles per Platform Mile	11			11



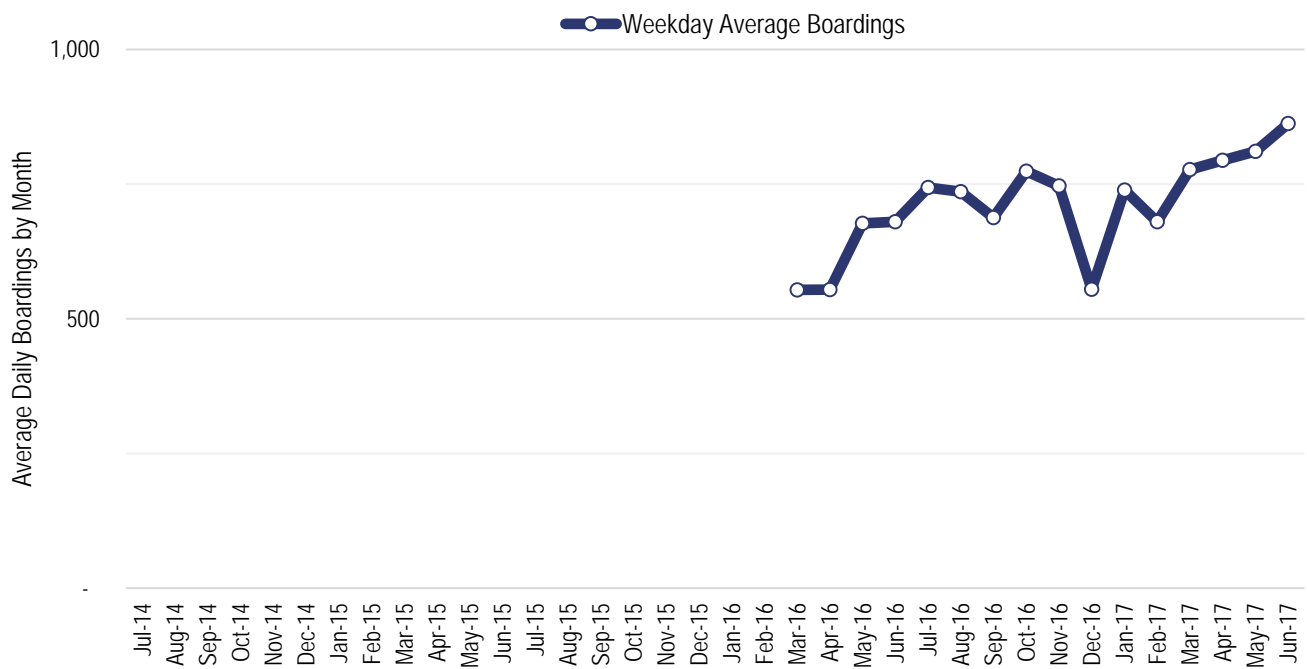


Route 541: Overlake – University District

SR 520

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	-	-	684	823
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

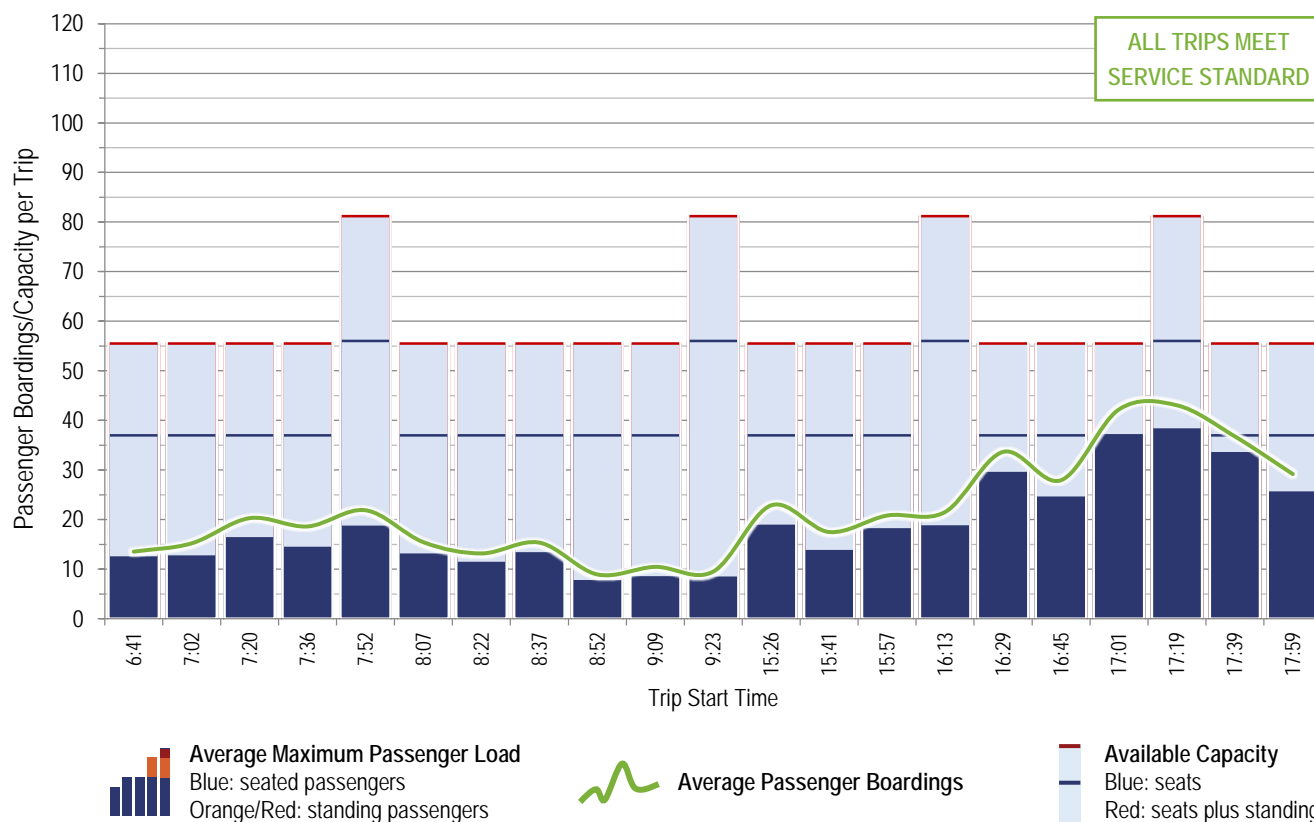




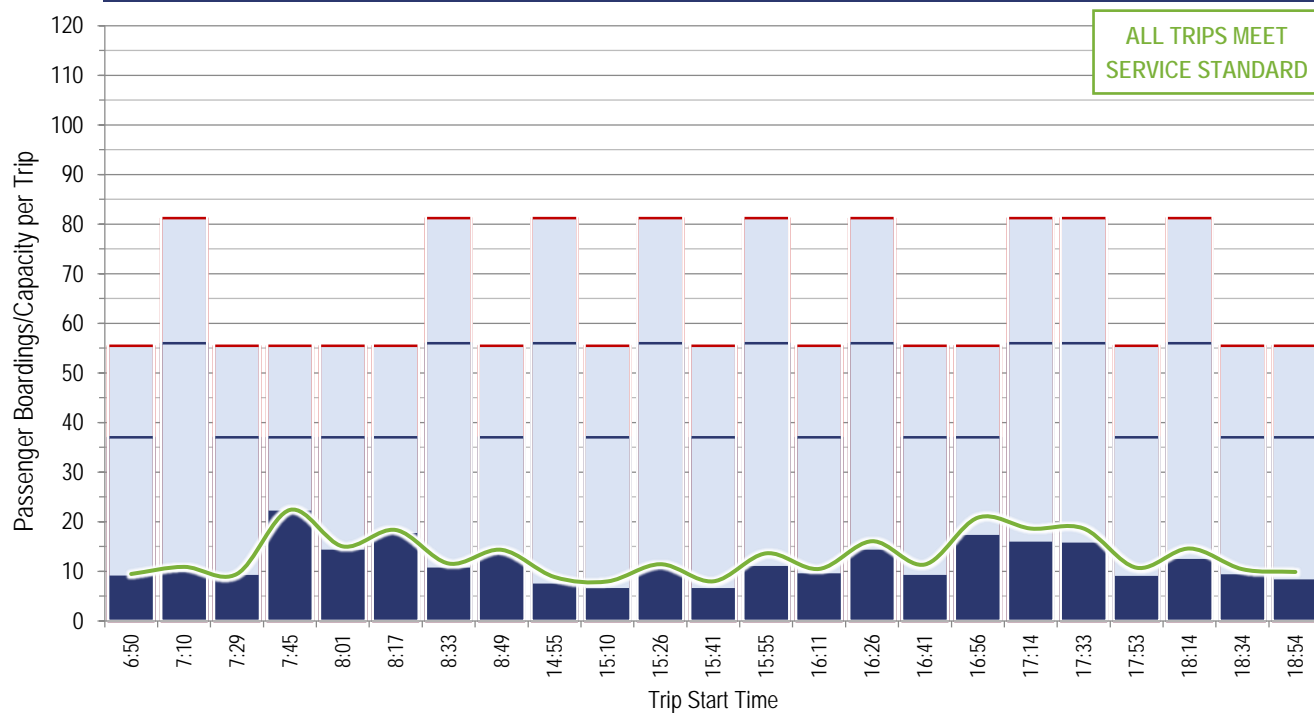
Route 541: Overlake – University District

SR 520

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



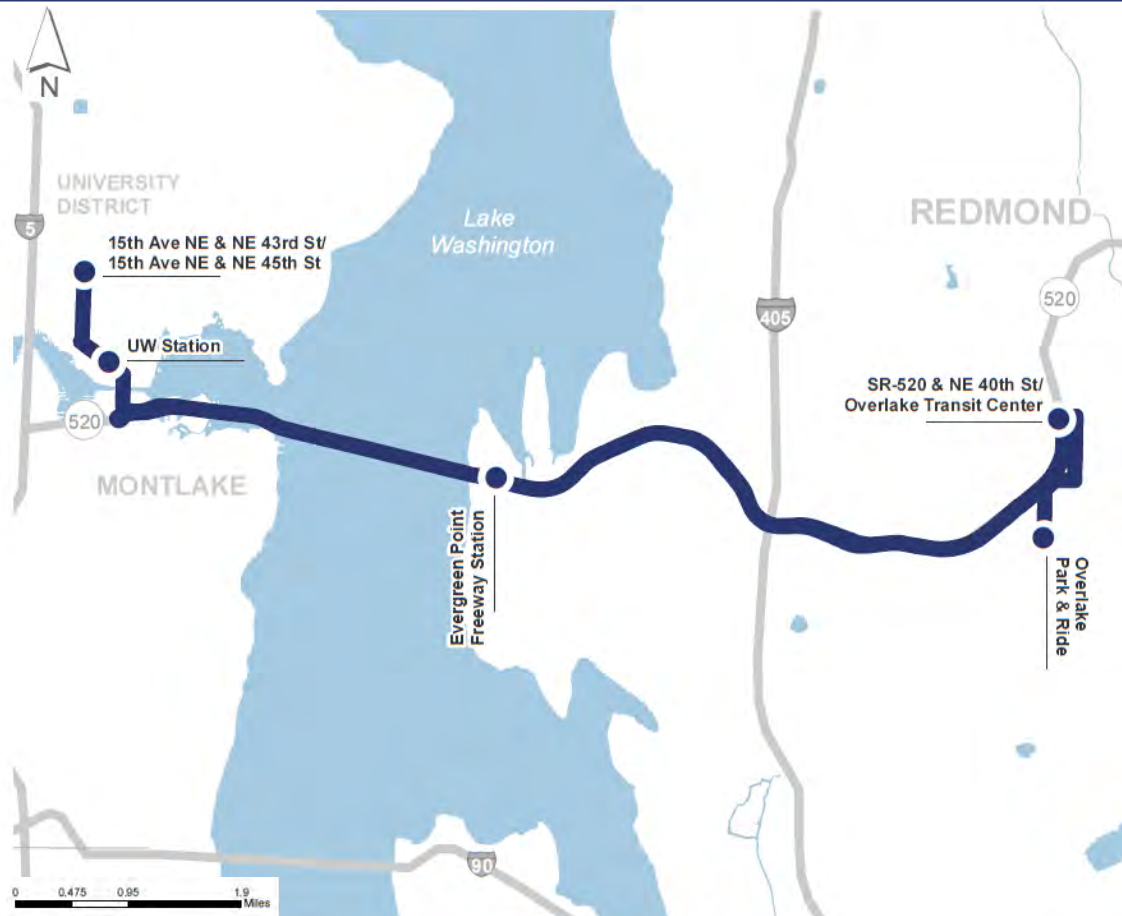
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 541: Overlake – University District

SR 520



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
15th Ave NE & NE 43rd St	53	0	Overlake Park & Ride	86	0
15th Ave NE & NE Campus Pkwy	39	0	Overlake Transit Center	157	5
15th Ave NE & NE 40th St	49	1	SR 520 & NE 40th St	159	5
NE Pacific St & 15th Ave NE	31	2	Yarrow Point Freeway Station	23	7
University of Washington Link Station	102	21	Evergreen Point Freeway Station	10	5
Montlake Blvd E & E Lake Washington Blvd	29	6	Montlake Blvd E & E Shelby St	4	33
Evergreen Point Freeway Station	12	29	University of Washington Link Station	36	213
Yarrow Point Freeway Station	4	9	15th Ave NE & NE Pacific St	6	21
SR 520 & NE 40th St	2	182	15th Ave NE & NE 40th St	9	74
156th Ave NE & NE 40th St	7	5	15th Ave NE & NE 42nd St	4	43
Overlake Park & Ride	0	73	15th Ave NE & NE 45th St	1	32
			NE 50th St & University Way NE	0	57
Eastbound Total	328	328	Westbound Total	495	495
			Total	823	823

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 542: Redmond – University District

SR 520

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	Moderate
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	5:25 a.m.-7:07 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	74
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	84.2
Peak Buses	9
ANNUAL TOTALS	
Platform Hours	21,472
Trips	17,628

SERVICE CHANGES	
HISTORY	
Start Date	October 2010
Last Major Change	2016: Added 30min frequency during the midday.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	31	No Weekend Service		31
Boardings per Trip	31			31
Subsidy per Boarding	\$4.82			\$4.82
Passenger Miles per Platform Mile	15			15



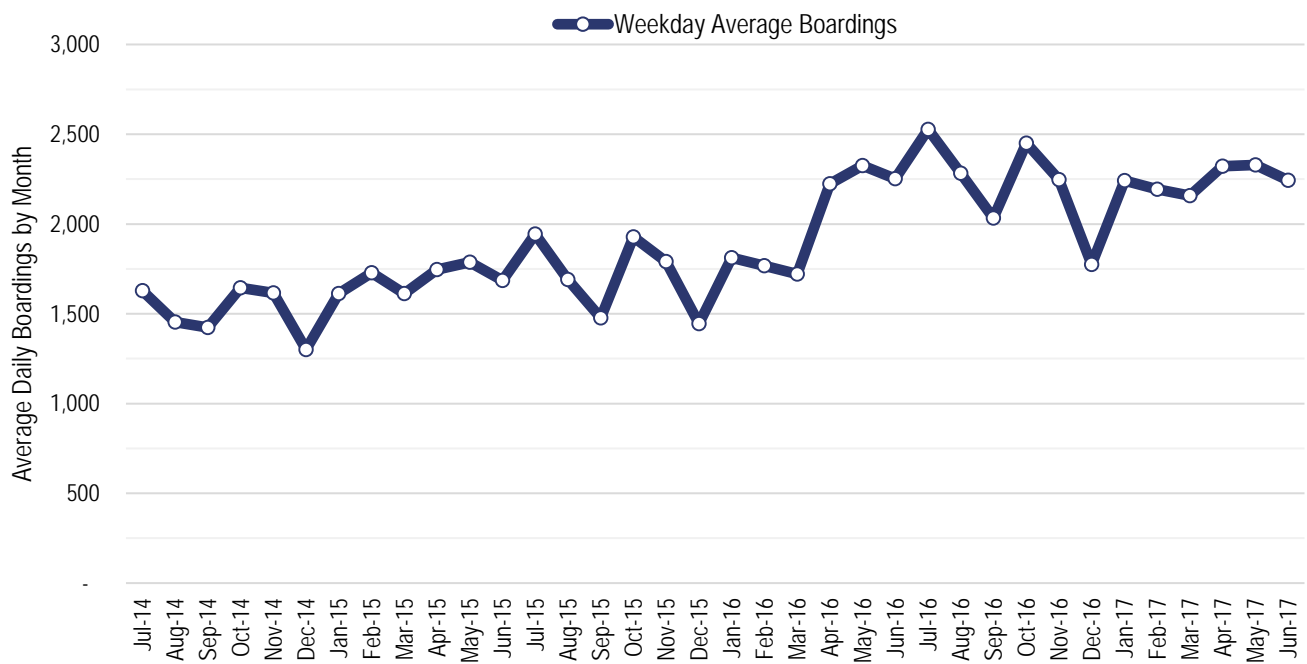


Route 542: Redmond – University District

SR 520

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,542	1,704	2,117	2,297
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

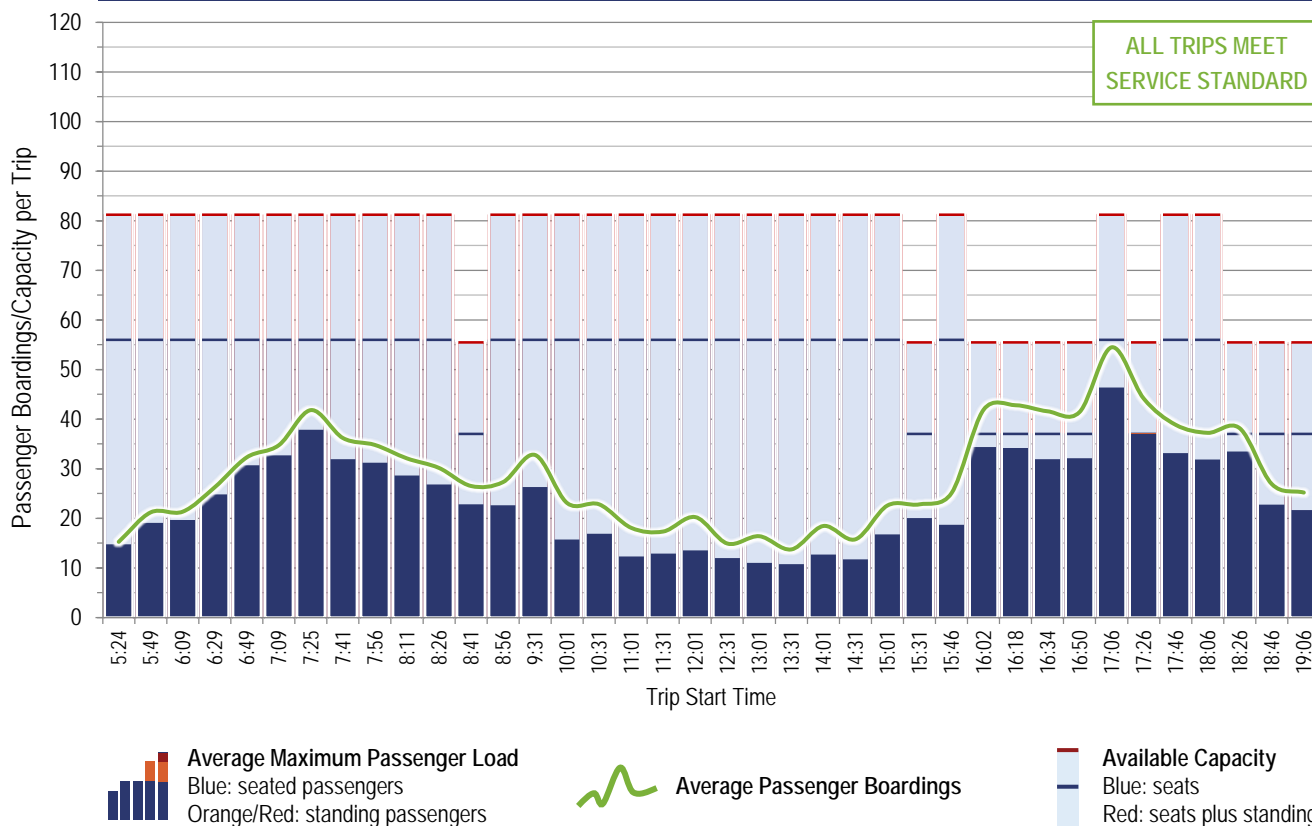




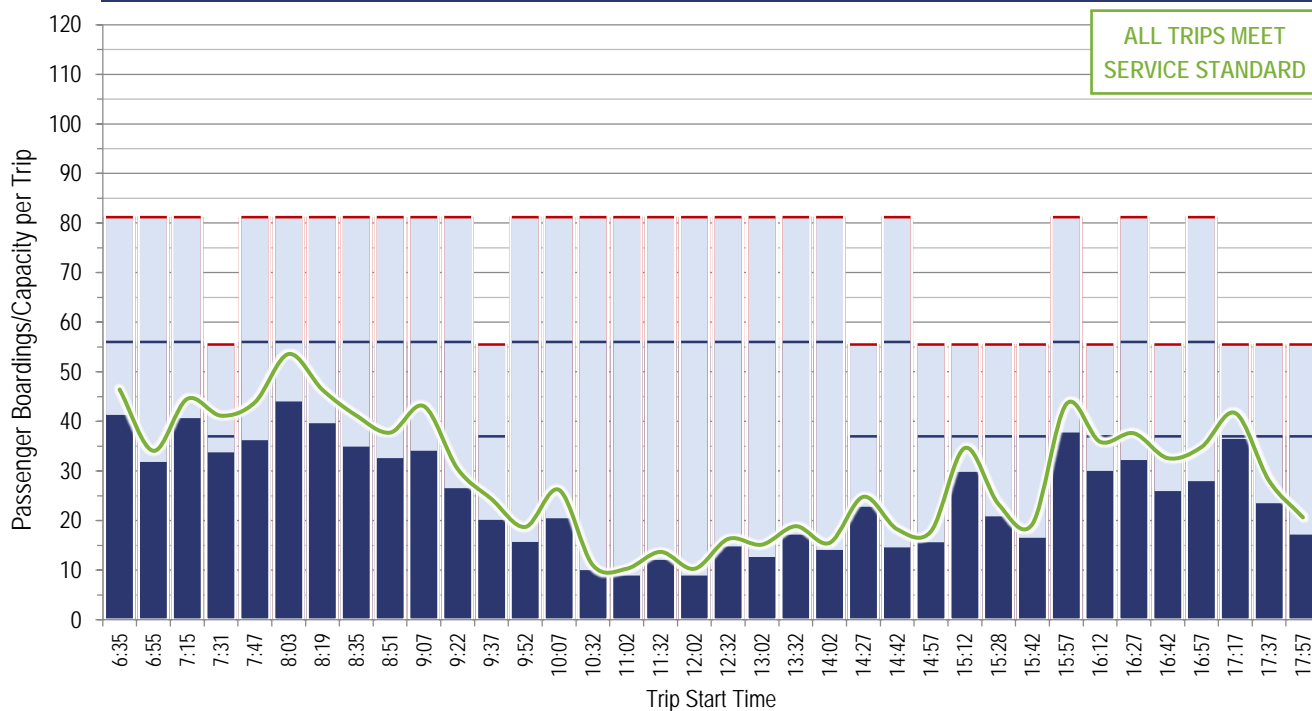
Route 542: Redmond – University District

SR 520

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



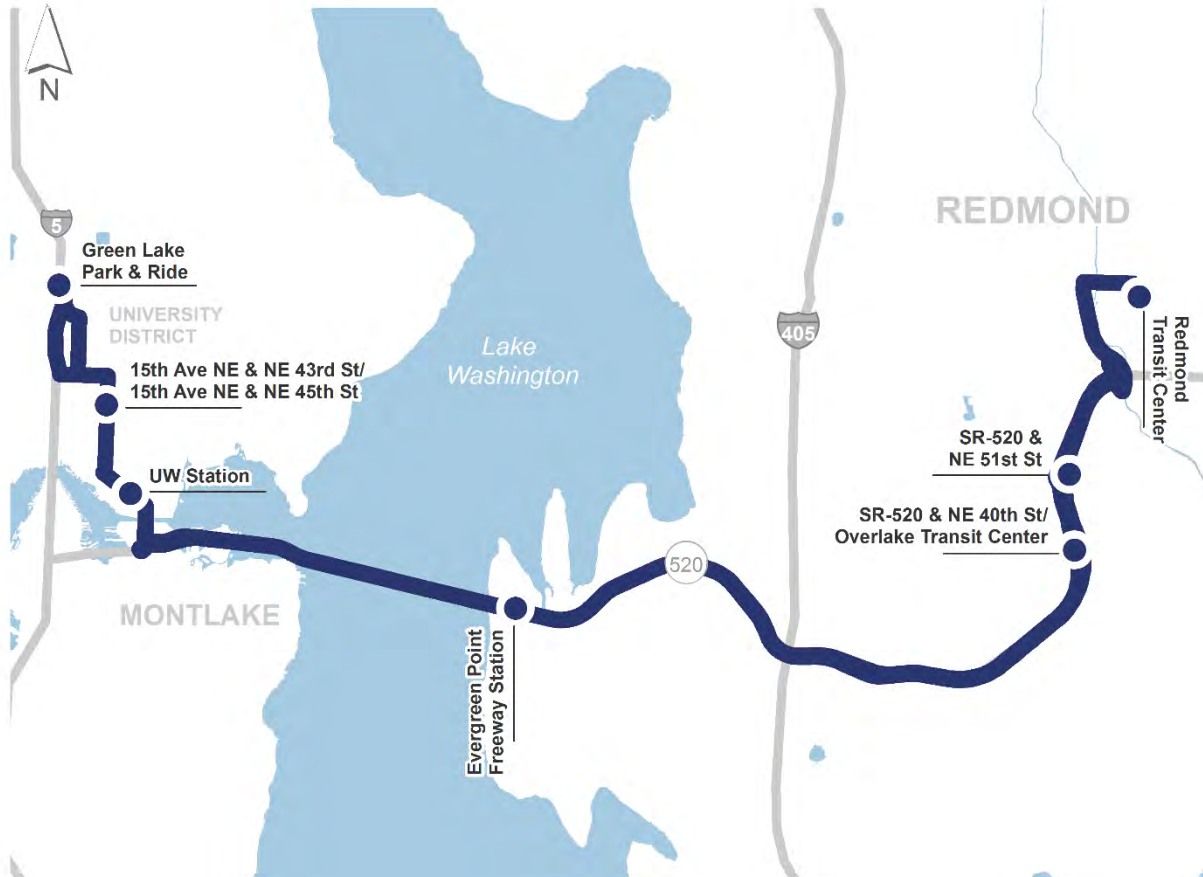
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 542: Redmond – University District

SR 520



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
Green Lake Park & Ride	200	0	Redmond Transit Center	225	0
NE 50th St & University Way NE	89	1	NE 85th St & 160th Ave NE	104	8
15th Ave NE & NE 45th St	60	3	154th Ave NE & NE 85th St	43	3
15th Ave NE & NE 43rd St	119	14	West Lake Sammamish & Leary Way	48	4
15th Ave NE & NE Campus Pkwy	136	14	SR 520 & NE 51st St	172	15
15th Ave NE & NE 40th St	104	8	SR 520 & NE 40th St	305	43
NE Pacific St & 15th Ave NE	75	30	Yarrow Point Freeway Station	49	12
University of Washington Link Station	204	63	Evergreen Point Freeway Station	32	8
Montlake Blvd E & E Lake Washington Bl	61	12	Montlake Blvd E & E Shelby St	10	47
Evergreen Point Freeway Station	16	51	University of Washington Link Station	92	325
Yarrow Point Freeway Station	10	21	15th Ave NE & NE Pacific St	37	61
SR 520 & NE 40th St	33	422	15th Ave NE & NE 40th St	31	205
SR 520 & NE 51st St	6	120	15th Ave NE & NE 42nd St	17	100
West Lake Sammamish & Leary Way	1	35	15th Ave NE & NE 45th St	3	88
NE 85th St & 154th Ave NE	0	44	NE 50th St & University Way NE	14	116
NE 85th St & 161st Ave NE	1	91	Green Lake Park & Ride	0	147
Redmond Transit Center	0	186			
Eastbound Total	1,115	1,115	Westbound Total	1,182	1,182
			Total	2,297	2,297

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 545: Redmond – Seattle

SR 520

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Very Frequent
Off-Peak	Frequent
Evenings	Moderate
Saturday	Moderate
Sunday	Moderate
SPAN OF SERVICE	
Weekday	4:27 a.m.-11:55 p.m.
Saturday	6:19 a.m.-11:17 p.m.
Sunday	6:19 a.m.-11:17 p.m.
TRIPS PER DAY	
Weekday	187
Saturday	63
Sunday	63

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	260.9
Peak Buses	23
TYPICAL SATURDAY	
Platform Hours	75.5
TYPICAL SUNDAY	
Platform Hours	75.0
ANNUAL TOTALS	
Platform Hours	74,873
Trips	51,856

SERVICE CHANGES	
HISTORY	
Start Date	September 2000
Last Major Change	2016: 15 new trips were added to reduce overcrowding.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	41	33	25	39
Boardings per Trip	53	37	28	50
Subsidy per Boarding	\$2.89	\$3.60	\$5.31	\$3.01
Passenger Miles per Platform Mile	25	20	16	24



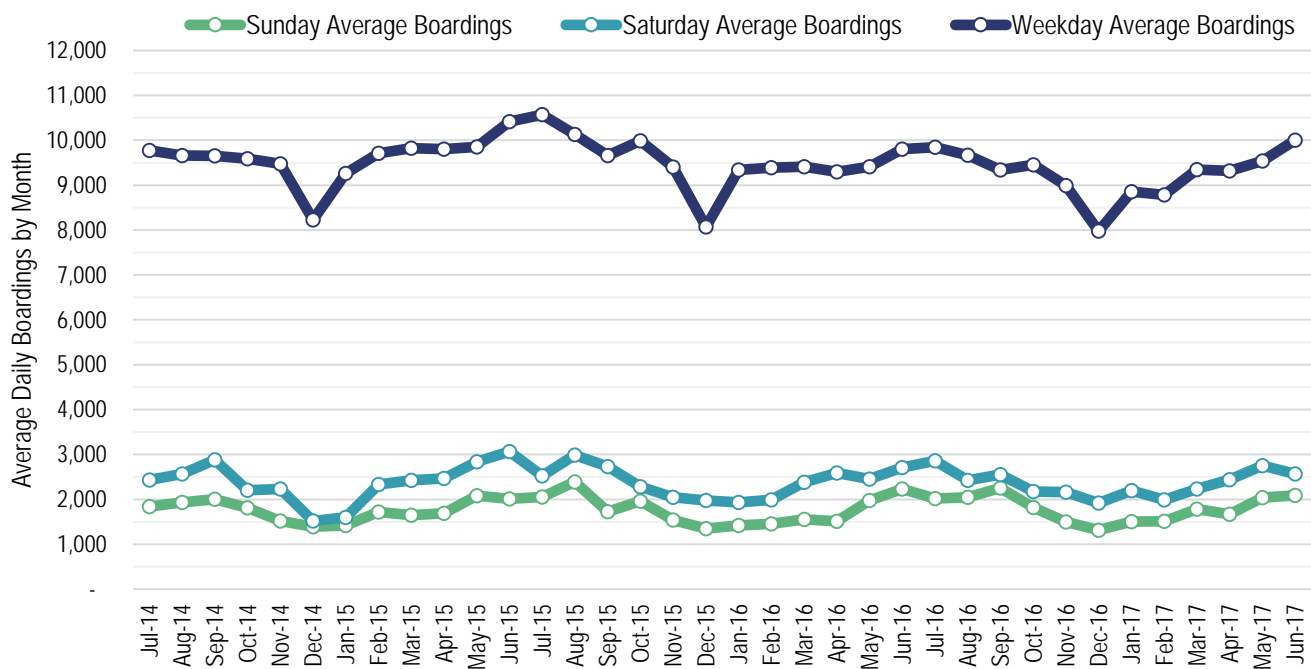


Route 545: Redmond – Seattle

SR 520

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	9,208	9,721	9,326	9,632
Average Saturday Boardings	2,227	2,437	2,346	2,593
Average Sunday Boardings	1,647	1,797	1,762	1,943

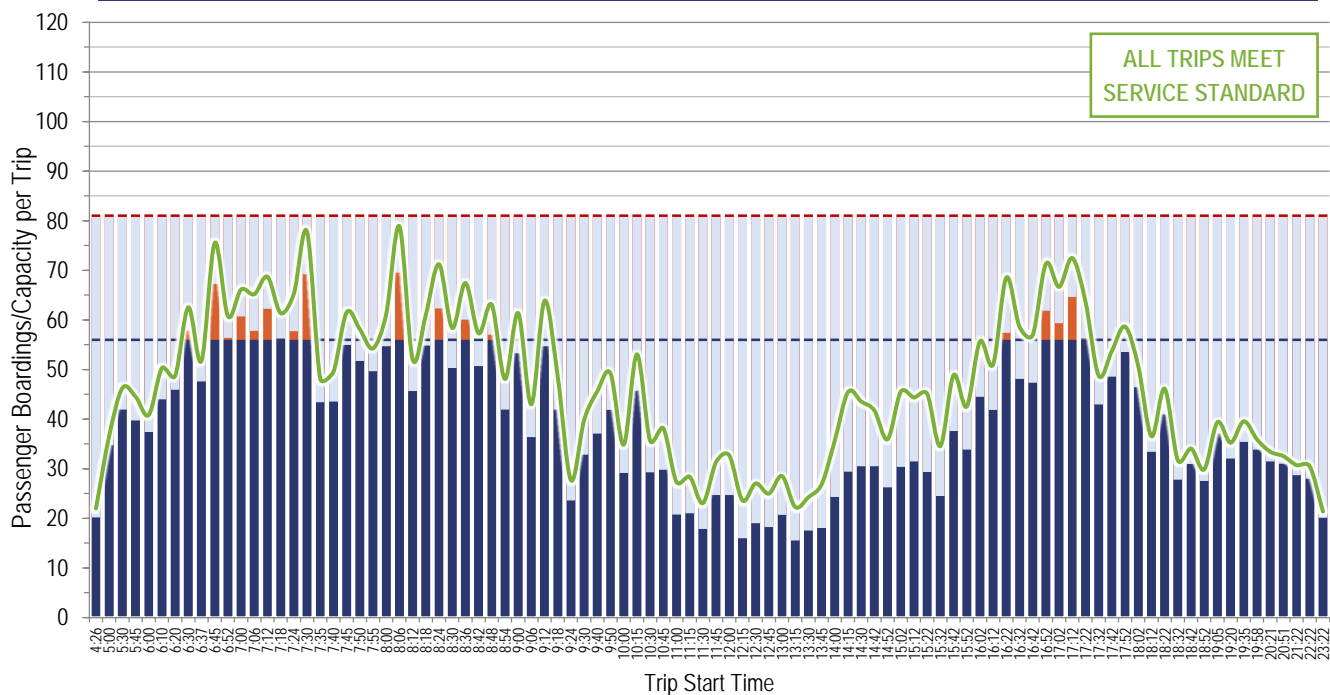




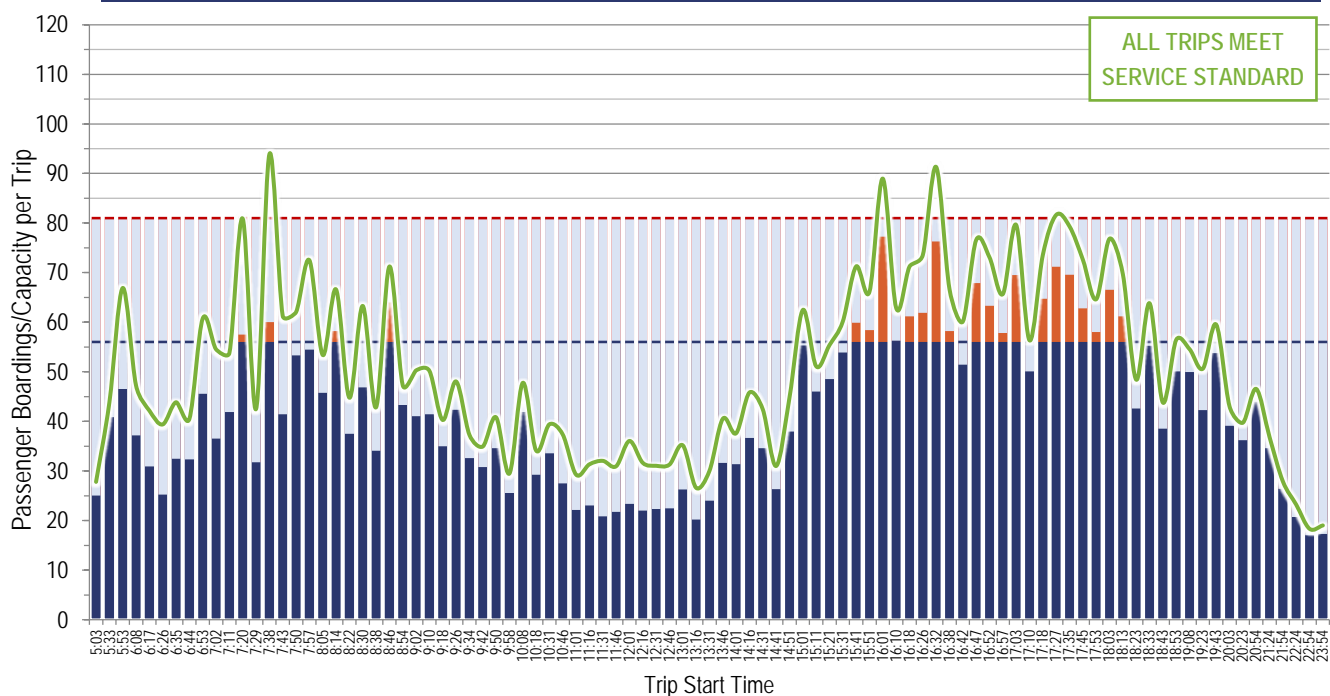
Route 545: Redmond – Seattle

SR 520

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 545: Redmond – Seattle

SR 520



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
6th Ave & Atlantic St	182	0	Bear Creek Park & Ride	469	0
4th Ave & S Jackson St	633	37	NE 76th St & 177th PI NE	205	5
4th Ave & James St	240	78	NE Redmond Way & NE 79th St	146	9
4th Ave & Madison St	400	110	Redmond Transit Center	702	57
4th Ave & University St	547	82	NE 85th St & 160th Ave NE	335	21
4th Ave & Pike St	851	80	154th Ave NE & NE 85th St	70	4
Olive Way & 8th Ave	651	65	West Lake Sammamish & Leary Way	209	12
Olive Way & Terry Ave	353	45	SR 520 Ramp & NE 51st St	396	30
Bellevue Ave & Olive St	468	10	Overlake Transit Center	585	50
Montlake Freeway Station	274	59	SR 520 & NE 40th St	933	123
Evergreen Point Freeway Station	38	72	Yarrow Point Freeway Station	62	33
Yarrow Pt Freeway Station	28	49	Evergreen Point Freeway Station	54	14
SR-520 & NE 40th St	205	1,869	Montlake Freeway Station	43	327
SR-520 & NE 51st St	29	347	Stewart St & Yale Ave	62	756
W. Lake Sammamish Pkwy & Leary Way	6	201	Stewart St & 9th Ave	53	444
NE 85th St & 154th Ave	3	128	Stewart St & 7th Ave	42	515
NE 85th St & 161st Ave	18	345	5th Ave & Pine St	68	876
Redmond Transit Center	71	624	5th Ave & Seneca St	73	522
Cleveland St & 166th Ave	10	160	5th Ave & Cherry St	61	258
NE 76th St & 177th PI	4	237	5th Ave & Jefferson St	38	101
Bear Creek Park & Ride	0	412	5th Ave S & S Jackson St	16	423
			Airport Way S & S Royal Brougham Way	0	43
Eastbound Total	5,011	5,011	Westbound Total	4,621	4,621
			Total	9,632	9,632

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 555: Northgate – Issaquah

SR 520





OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	5:34 a.m.-6:02 p.m.
Saturday	-
Sunday	-
ONE-WAY TRIPS PER DAY	
Weekday	17
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	25.5
Peak Buses	3
ANNUAL TOTALS	
Platform Hours	6,498
Trips	3,981

SERVICE CHANGES	
HISTORY	
Start Date	September 2001
Last Major Change	2016: Re-route from 112 th to Bellevue Way SE and NE 4 th to/from the Bellevue Transit Center.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	34	No Weekend Service		 34
Boardings per Trip	48			 48
Subsidy per Boarding	\$3.73			 \$3.73
Passenger Miles per Platform Mile	17			 17



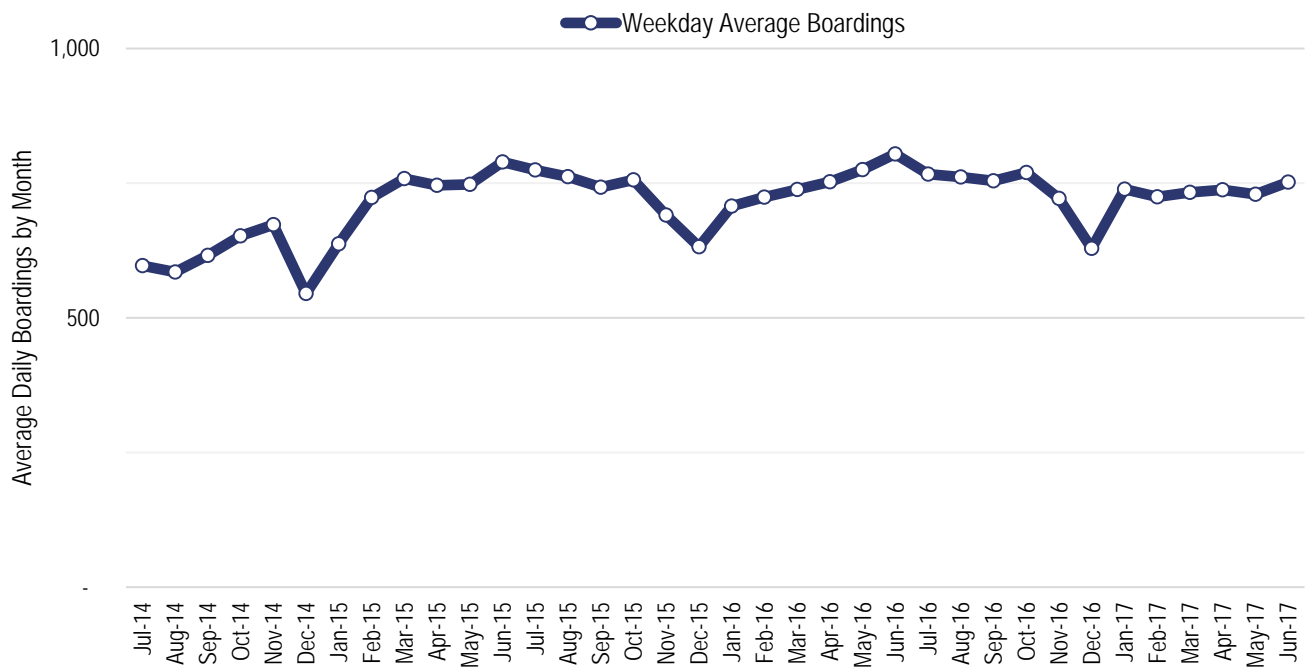


Route 555: Northgate – Issaquah

SR 520

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	613	730	743	740
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

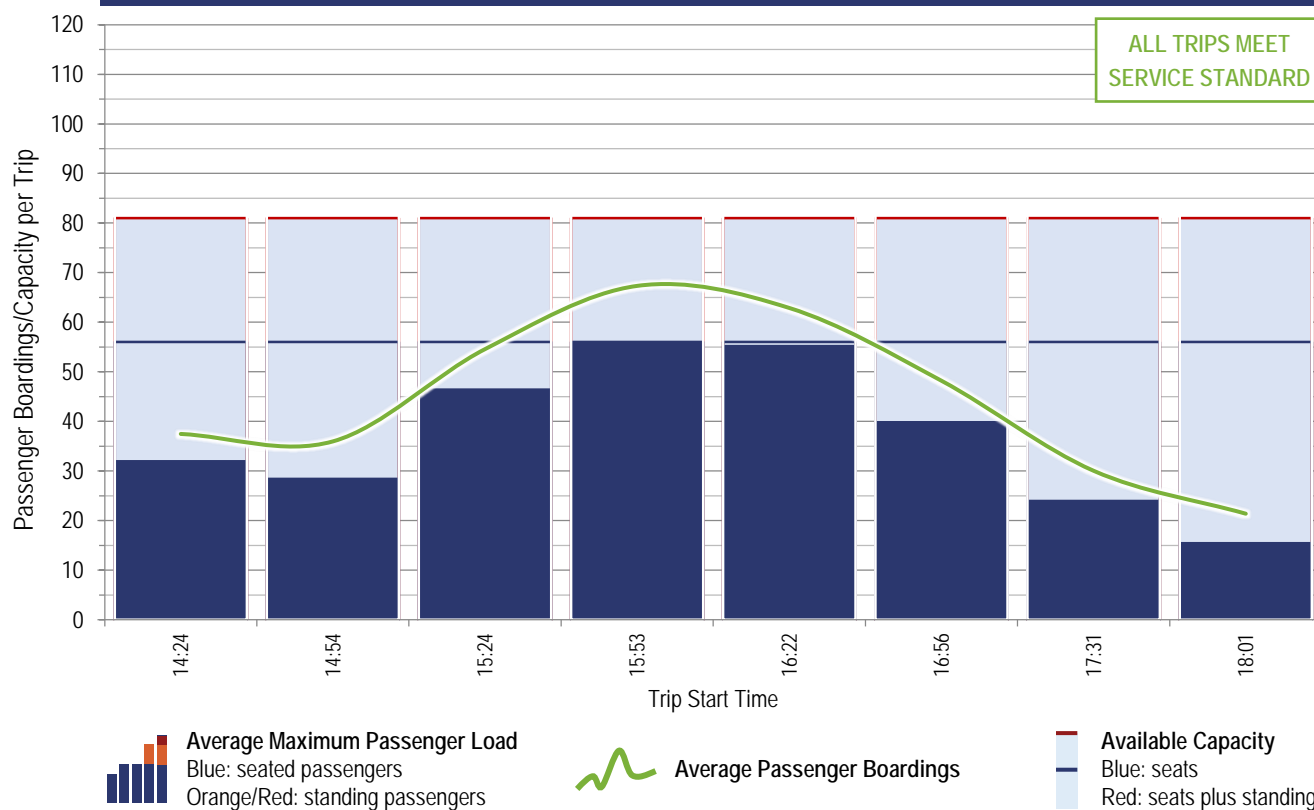




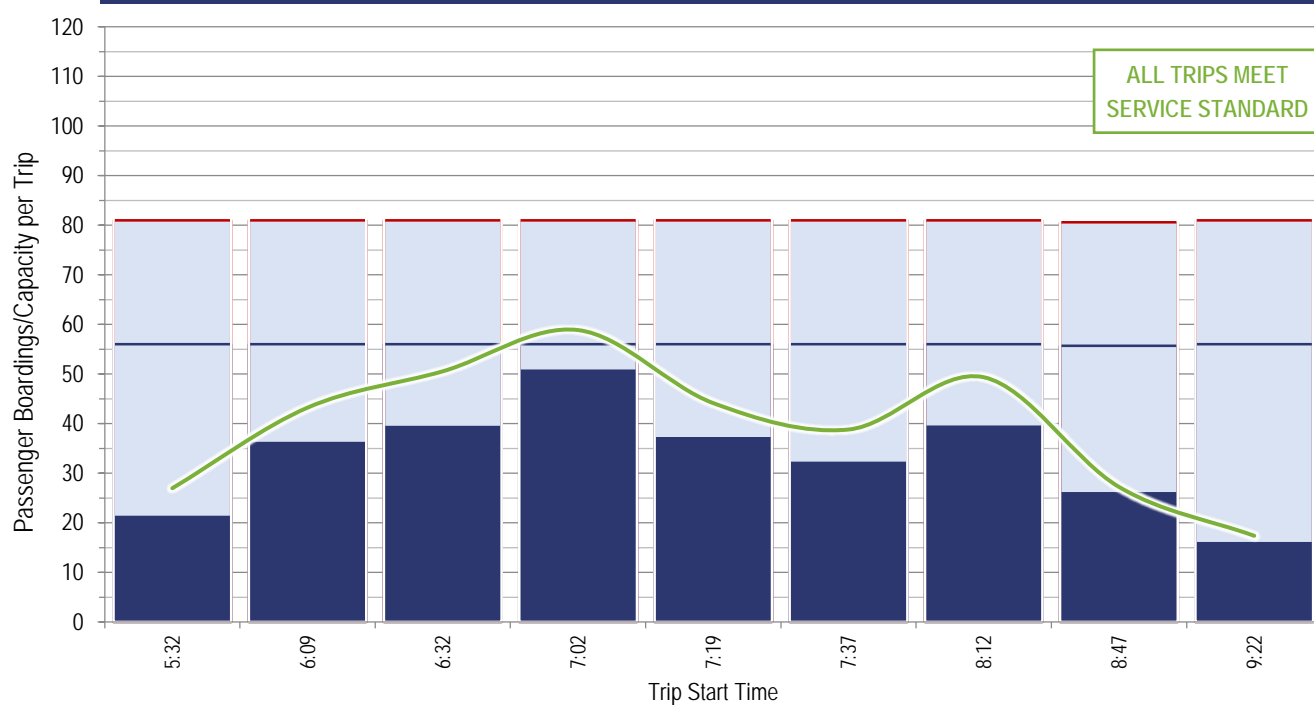
Route 555: Northgate – Issaquah

SR 520

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



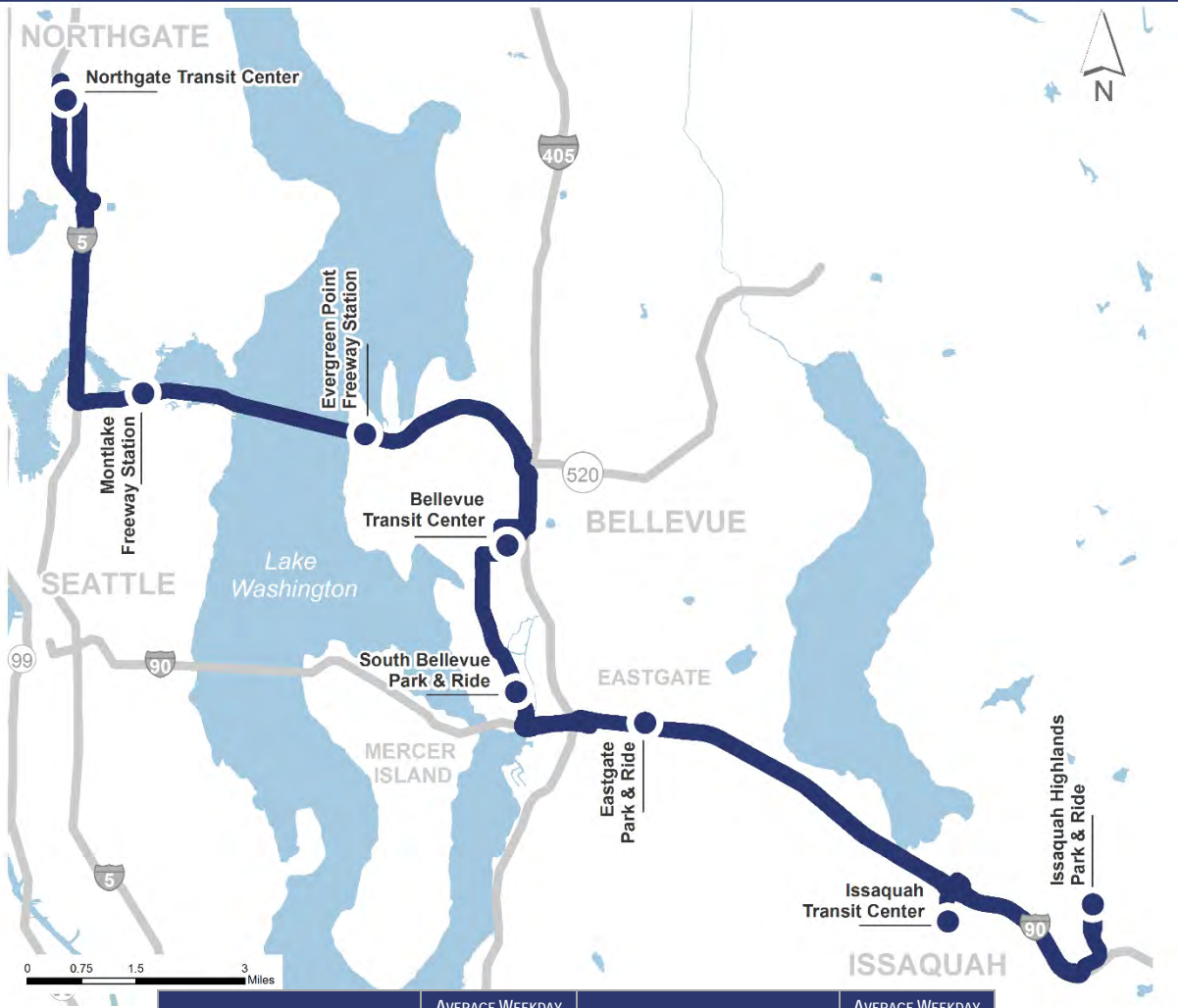
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 555: Northgate – Issaquah

SR 520



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
Northgate Transit Center	277	0	Issaquah Highlands Park & Ride	10	0
Montlake Freeway Station	36	13	9th Ave & NE Ellis Dr	5	1
Evergreen Point Freeway Station	4	10	Issaquah Transit Center	17	2
Yarrow Pt Freeway Station	4	5	142nd Pl & SE 32nd St	3	3
Bellevue Transit Center	18	257	Eastgate Park & Ride	19	6
108th Ave NE & NE 2nd St	1	10	I-90 & Richards Rd	20	2
108th Ave NE & Main St	2	1	South Bellevue Park & Ride	2	2
Bellevue Way SE & Main St	8	1	Bellevue Way SE & SE 16th St	1	1
Bellevue Way SE & SE 3rd St	3	1	Bellevue Way SE & SE 10th St	0	1
Bellevue Way SE & SE 11th St	1	0	Bellevue Way SE & SE 3rd St	4	3
Bellevue Way SE & SE 16th St	1	0	Bellevue Way NE & Main St	3	4
South Bellevue Park & Ride	3	1	NE 4th St & 105th Ave NE	4	4
Eastgate Way & Richards Rd	2	17	Bellevue Transit Center	250	26
Eastgate Park & Ride	7	19	Yarrow Pt Freeway Station	19	4
142nd Pl & SE 32nd St	1	3	Evergreen Point Freeway Station	6	2
Issaquah Transit Center	2	14	Montlake Freeway Station	7	40
Highlands Dr & NE Ellis Dr	1	9	Northgate Transit Center	0	269
Issaquah Highlands Park & Ride	0	11			
Eastbound Total	370	370	Westbound Total	369	369
			Total	740	740

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 556: Issaquah – Northgate

SR 520




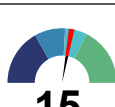
OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	5:13 a.m.-6:04 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	19
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	32.4
Peak Buses	4
ANNUAL TOTALS	
Platform Hours	8,272
Trips	4,474

SERVICE CHANGES	
HISTORY	
Start Date	September 2001
Last Major Change	2016: Re-route from 112 th to Bellevue Way SE and NE 4 th to/from the Bellevue Transit Center.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	32	No Weekend Service		 32
Boardings per Trip	47			 47
Subsidy per Boarding	\$4.56			 \$4.56
Passenger Miles per Platform Mile	15			 15



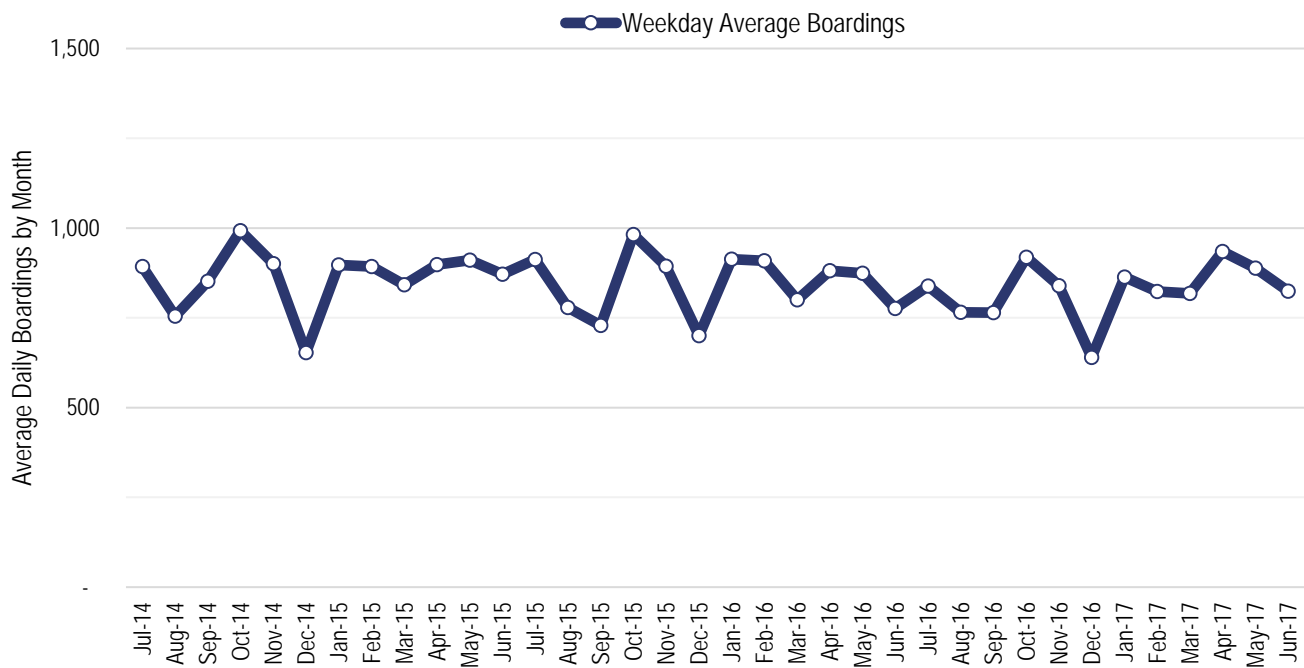


Route 556: Issaquah – Northgate

SR 520

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	854	859	826	881
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

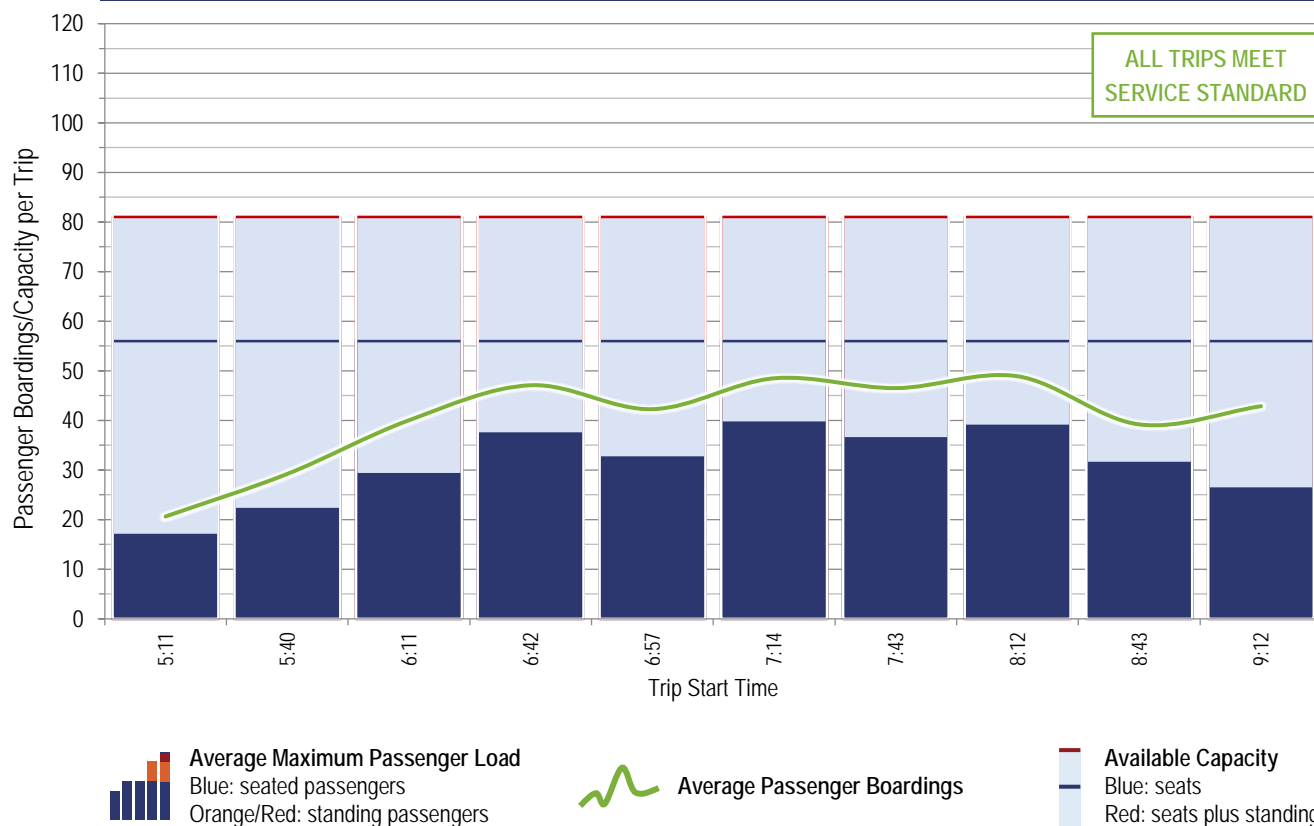




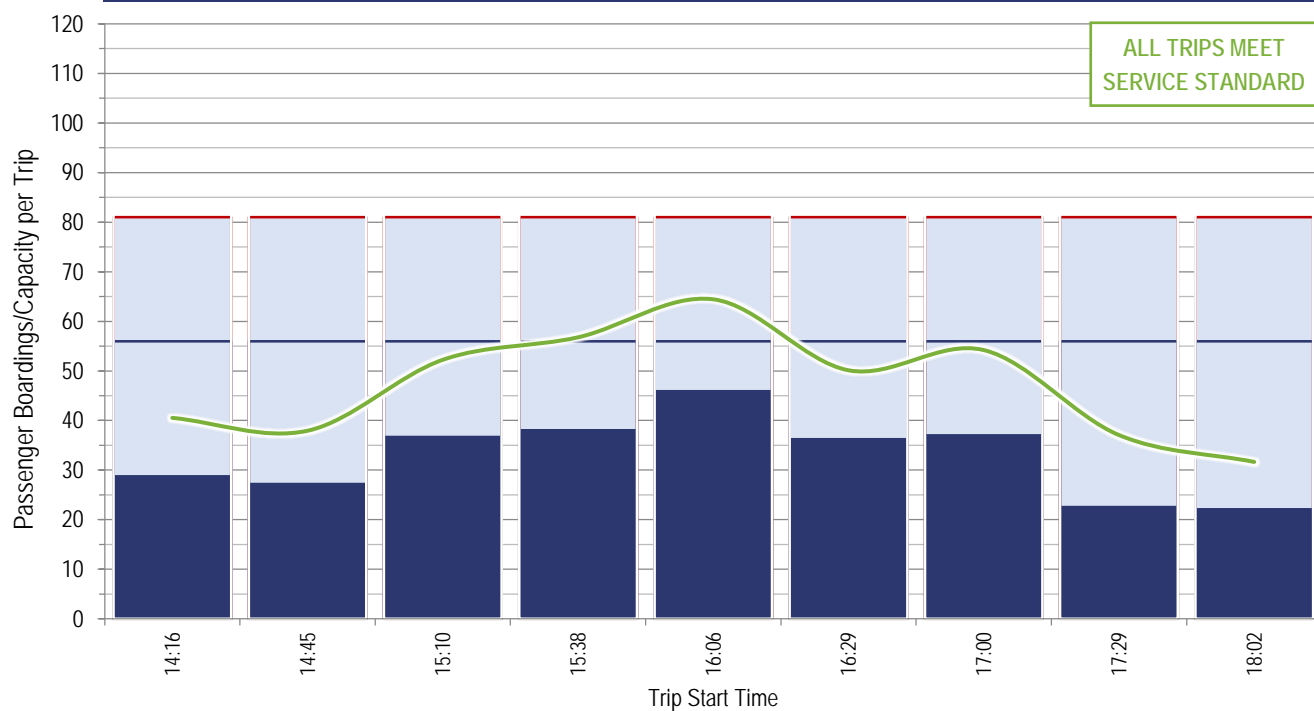
Route 556: Issaquah – Northgate

SR 520

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



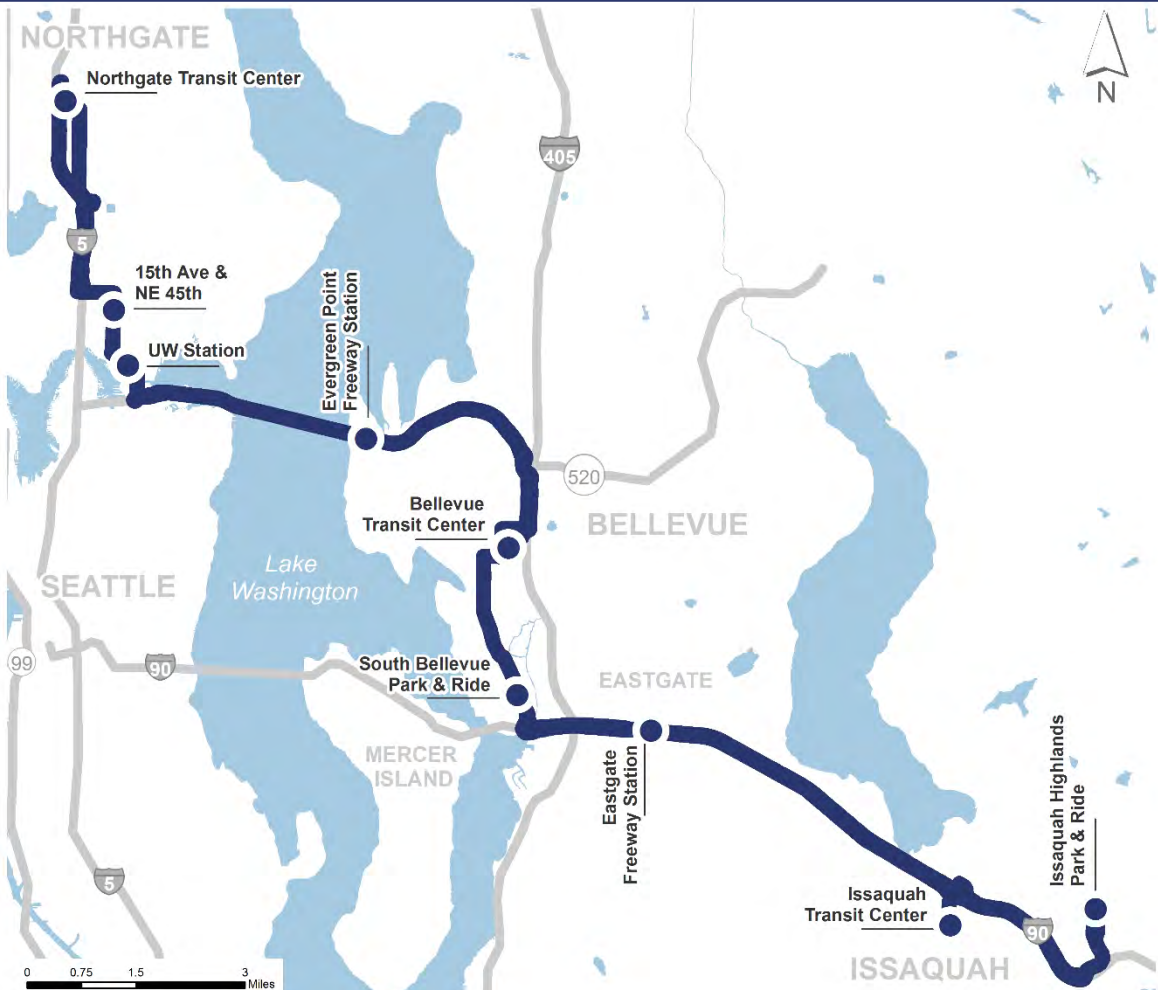
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 556: Issaquah – Northgate

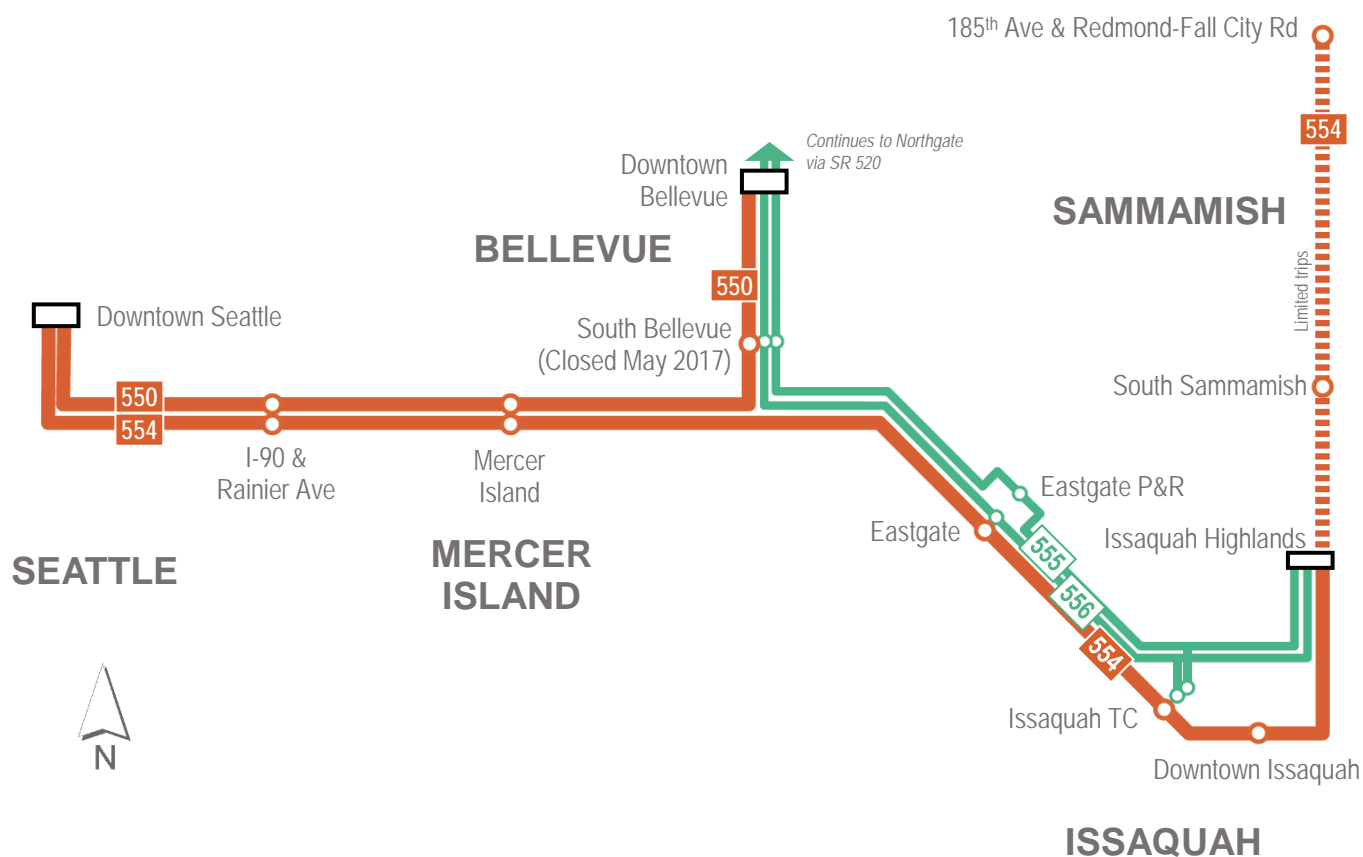
SR 520



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
Northgate Transit Center	35	0	Issaquah Highlands Park & Ride	103	0
NE 50th St & University Way	8	2	9th Ave & NE Ellis Dr	14	0
15th Ave & NE 45th St	18	2	Issaquah Transit Center	122	3
15th Ave & NE 43rd St	30	3	Eastgate Freeway Station	56	7
15th Ave & NE Campus Pkwy	46	2	South Bellevue Park & Ride	23	1
15th Ave & NE 40th St	23	1	Bellevue Way SE & SE 16th St	3	0
Pacific St & 15th Ave	28	2	Bellevue Way SE & SE 10th St	1	0
University of Washington Link Station	63	21	Bellevue Way SE & SE 3rd St	6	1
Montlake Freeway Station	4	3	Bellevue Way NE & Main St	6	3
Evergreen Point Freeway Station	2	16	NE 4th St & 105th Ave NE	3	44
Yarrow Point Freeway Station	2	5	Bellevue Transit Center	42	132
Bellevue Transit Center	129	52	Yarrow Point Freeway Station	12	2
108th Ave NE & NE 2nd St	26	2	Evergreen Point Freeway Station	6	0
108th Ave NE & Main St	2	2	Montlake Blvd & Shelby St	2	3
Bellevue Way SE & Main St	5	4	University of Washington Link Station	13	70
Bellevue Way SE & SE 3rd St	3	3	Pacific St & 15th Ave	1	24
Bellevue Way SE & SE 11th St	0	1	15th Ave & NE 40th St	3	56
Bellevue Way SE & SE 16th St	1	2	15th Ave & NE 42nd St	1	26
South Bellevue Park & Ride	1	13	15th Ave & NE 45th St	7	22
Eastgate Freeway Station	19	51	NE 50th St & University Way	6	9
Issaquah Transit Center	4	122	Northgate Transit Center	0	26
Highlands Dr & NE Ellis Dr	1	32			
Issaquah Highlands Park & Ride	0	110			
Eastbound Total	451	451	Westbound Total	430	430
			Ridership Totals:	881	881

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

I-90 CORRIDOR



ROUTES & MARKETS SERVED

See SR 520 Section	550	All day, all week. Downtown Seattle, Rainer Ave, Mercer Island, South Bellevue, Bellevue.
	554	All day, all week. Downtown Seattle, Rainer Ave, Mercer Island, Eastgate, Issaquah TC, Issaquah Highlands, South Sammamish.
	555	Peak only. Northgate, Montlake, Evergreen Point, Yarrow Point, Bellevue, South Bellevue, Eastgate P&R, Issaquah TC, Issaquah Highlands.
	556	Peak only. Northgate, University District, UW Link Station, Evergreen Point, Yarrow Point, Bellevue, South Bellevue, Eastgate, Issaquah TC, Issaquah Highlands.

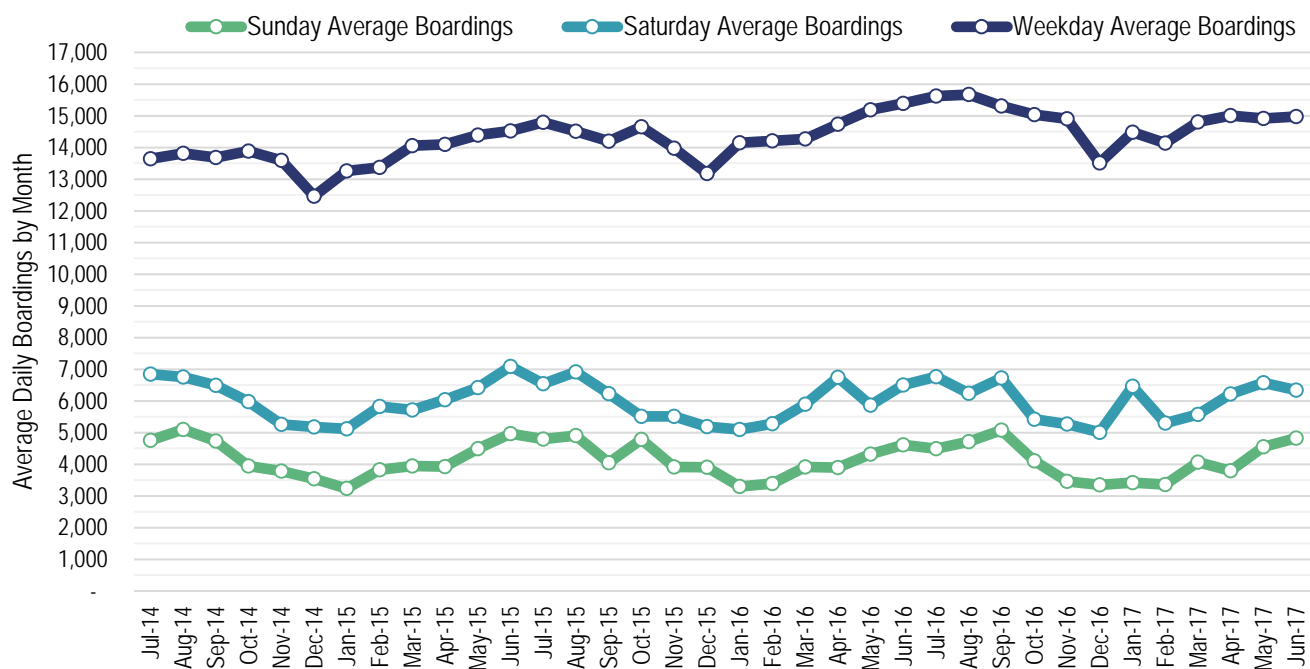
I-90 CORRIDOR

Service on this corridor began in 1999 when Sound Transit implemented Route 550 replacing King County Metro Route 226. Significant improvements to this route were made in September 2009 when 15-minute service on Route 550 was implemented on Saturdays. In September 2013, peak period, peak direction service on Route 550 was improved to operate every five minutes.

Service on I-90 between downtown Seattle and Issaquah was not included in the original *Sound Move* plan. The 554 proposal came about as a result of discussions with King County Metro and local jurisdictions in the East King County subarea. Based on overwhelming public support for a Sound Transit route to operate from Issaquah to downtown Seattle, the 2001 Service Implementation Plan called for starting Route 554 as an all-day service that operated seven days a week, replacing King County Metro service on the corridor. The public outreach effort also resulted in the addition of a two-way peak-hour service in September 2001 on Route 555 between Northgate and Issaquah. Service was extended to Issaquah Highlands on Route 554 in September 2003 to serve major employment and commercial centers are north of I-90. In June 2011, midday service was reduced on Route 554 due to the recession.

Total boardings on Routes 550 and 554 were up 10 percent in 2016 over total boardings in 2014. Weekday ridership grew by 12 percent, while weekend ridership remained relatively stable. Route 550 now regularly averages over 10,700 boardings per day. Ridership in the corridor has remained stable even with the closure of the South Bellevue Park-and-Ride lot in May 2017. Ridership data for Routes 555 and 556 are included in the SR-520 corridor since the peak load point is on the SR-520 Bridge. Figure 35 shows average boardings by day type by month for the I-90 corridor from mid-2014 through mid-2017.

FIGURE 35: I-90 CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 550: Bellevue – Seattle

I-90

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Very Frequent
Off-Peak	Frequent
Evenings	Moderate
Saturday	Frequent
Sunday	Moderate
SPAN OF SERVICE	
Weekday	4:52 a.m.-12:12 a.m.
Saturday	6:01 a.m.-12:12 a.m.
Sunday	6:07 a.m.-12:12 a.m.
TRIPS PER DAY	
Weekday	181
Saturday	114
Sunday	72

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	187.6
Peak Buses	22
TYPICAL SATURDAY	
Platform Hours	101.9
TYPICAL SUNDAY	
Platform Hours	67.5
ANNUAL TOTALS	
Platform Hours	57,154
Trips	56,127

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2013: Weekday peak period service improved to every five minutes
PROPOSED	
<ul style="list-style-type: none"> Discontinue service to Rainier Freeway Station for East Link construction; transfer to Route 554 at Mercer Island for access to Rainier Valley 	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	66	45	45	62.6
Boardings per Trip	60	38	39	56.2
Subsidy per Boarding	\$2.83	\$4.40	\$4.50	\$3.03
Passenger Miles per Platform Mile	30	22	24	28.9



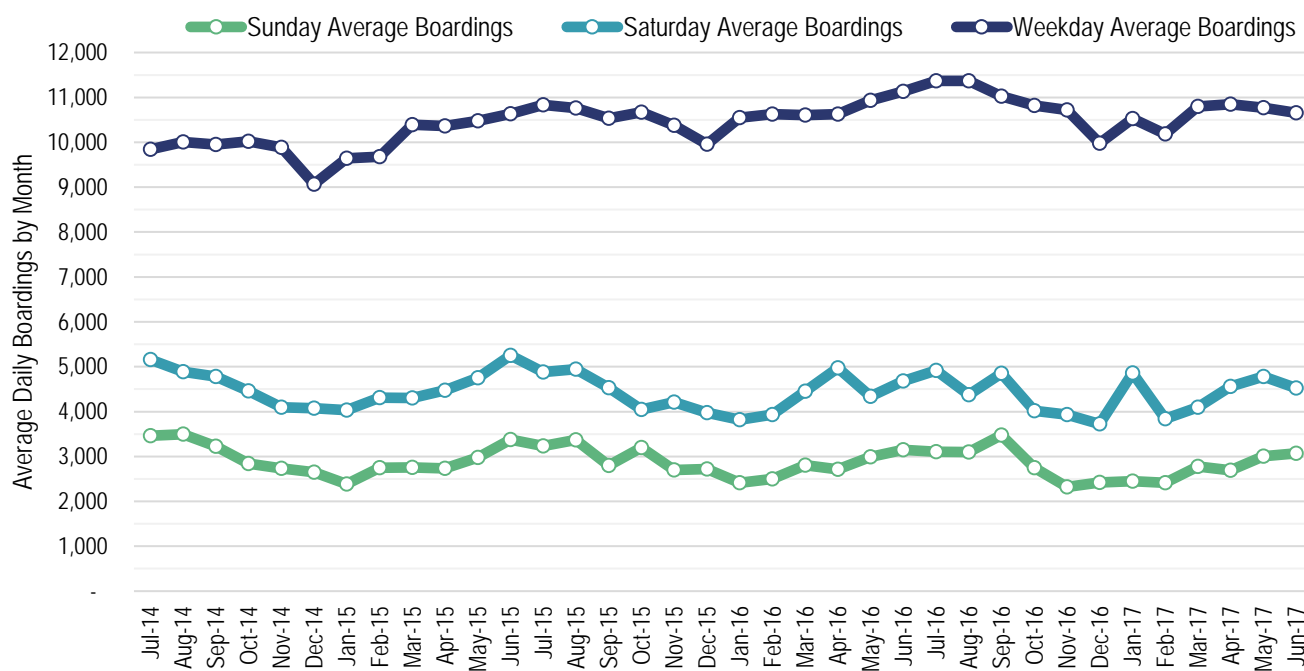


Route 550: Bellevue – Seattle

I-90

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	9,647	10,364	10,815	10,754
Average Saturday Boardings	4,513	4,475	4,336	4,628
Average Sunday Boardings	2,914	2,918	2,815	2,933

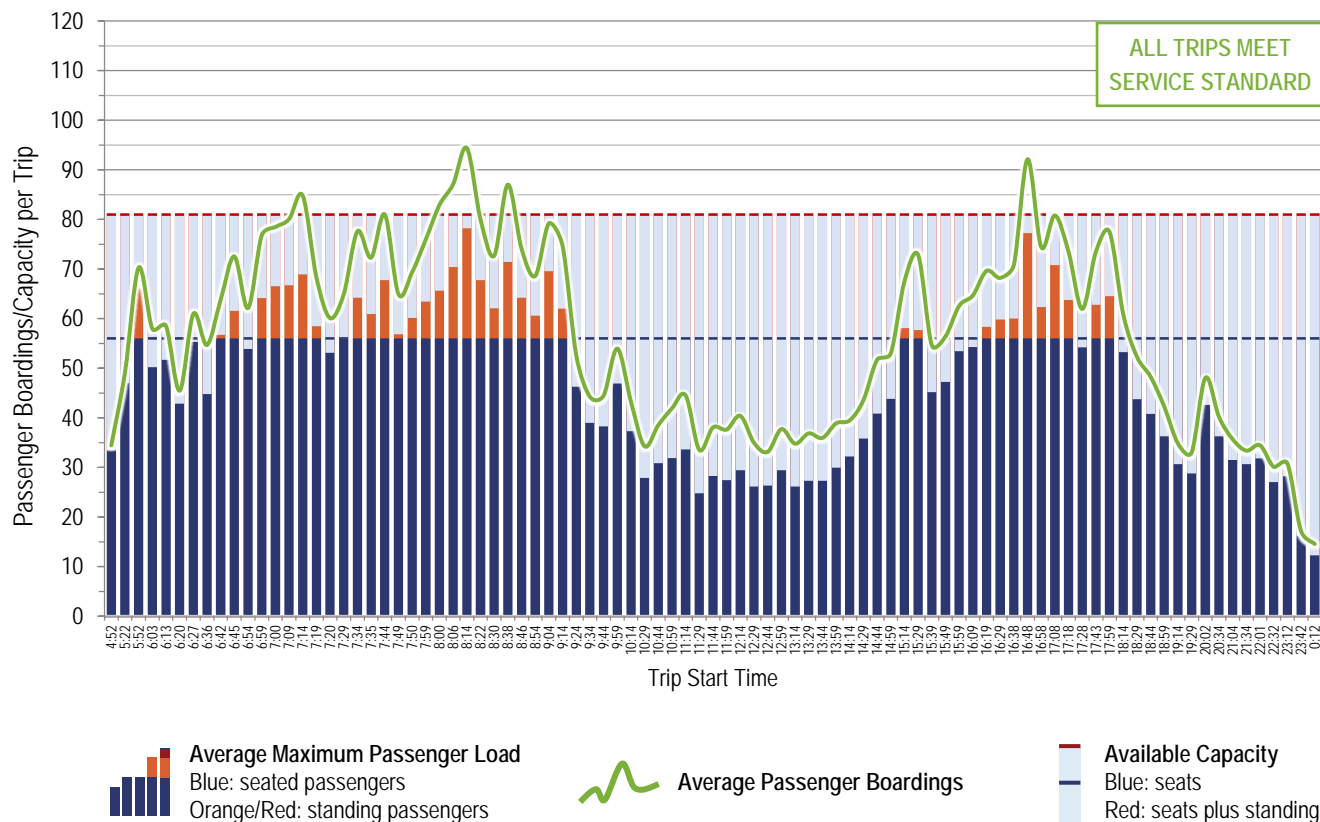




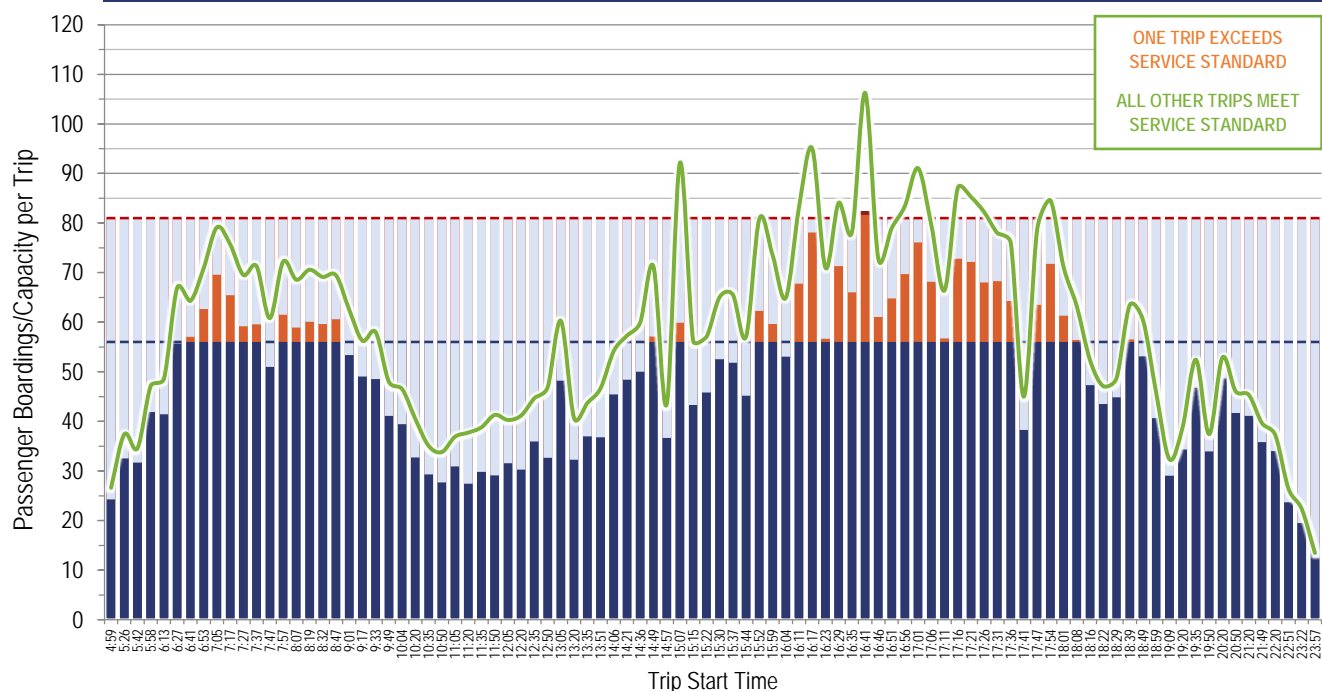
Route 550: Bellevue – Seattle

I-90

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



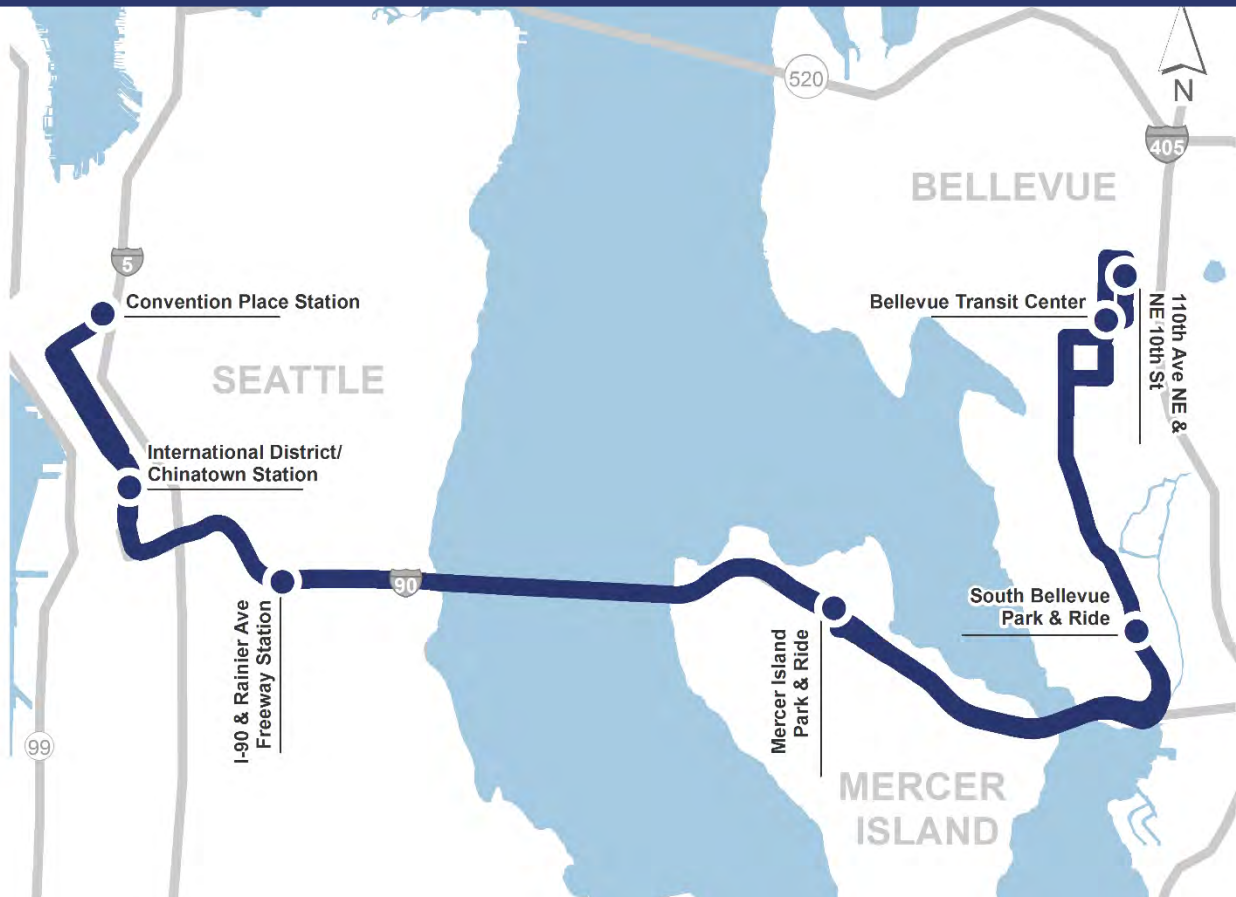
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 550: Bellevue – Seattle

I-90



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
Convention Place Station	830	0	110th Ave & NE 10th St	467	0
Westlake Station	1,567	41	Bellevue Transit Center	1,637	66
University St Station	1,069	51	NE 4th St & 108th Ave	234	12
Pioneer Square Station	538	72	Bellevue Way & NE 4th St	82	14
International District/Chinatown Station	832	412	Bellevue Way & Main St	372	43
Rainier Avenue Freeway Station	230	145	Bellevue Way & SE 3rd St	109	37
Mercer Island Park & Ride	208	1,169	Bellevue Way & SE 11th St	36	11
South Bellevue Park & Ride*	67	512	Bellevue Way & SE 16th St	87	19
Bellevue Way & SE 16th St	20	101	South Bellevue Park & Ride*	522	64
Bellevue Way & SE 10th St	9	56	Mercer Island Park & Ride	991	158
Bellevue Way & SE 3rd St	81	137	Rainier Avenue Freeway Station	87	224
Bellevue Way & Main St	36	302	International District/Chinatown Station	357	990
NE 4th St & 105th Ave	38	625	Pioneer Square Station	115	656
Bellevue Transit Center	35	1,492	University St Station	63	1,059
110th Ave & NE 10th St	0	446	Westlake Station	36	1,280
			Convention Place Station	0	559
Eastbound Total	5,560	5,560	Westbound Total	5,194	5,194
			Total	10,754	10,754

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

*Note: South Bellevue Park & Ride closed May 30, 2017; data is from prior to closure.



Route 554: Issaquah – Seattle

I-90

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Frequent
Evenings	Minimum
Saturday	Minimum
Sunday	Minimum
SPAN OF SERVICE	
Weekday	4:26 a.m.-11:38 p.m.
Saturday	6:24 a.m.-11:26 p.m.
Sunday	6:24 a.m.-11:26 p.m.
TRIPS PER DAY	
Weekday	85
Saturday	53
Sunday	53

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	127.9
Peak Buses	10
TYPICAL SATURDAY	
Platform Hours	66.7
TYPICAL SUNDAY	
Platform Hours	66.0
ANNUAL TOTALS	
Platform Hours	39,982
Trips	29,796

SERVICE CHANGES	
HISTORY	
Start Date	September 2001
Last Major Change	2016: 15-minute peak-service added between Issaquah and Seattle.
PROPOSED	
<ul style="list-style-type: none"> Discontinue service to Rainier Freeway Station for East Link construction; uses Rainier Ave S and Dearborn Street to maintain access to Rainier Valley with new S Charles St stop. Minor frequency reductions from increased runtime on new alignment 	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	36	26	21	33
Boardings per Trip	43	30	23	40
Subsidy per Boarding	\$3.55	\$5.36	\$7.12	\$3.90
Passenger Miles per Platform Mile	19	14	11	18



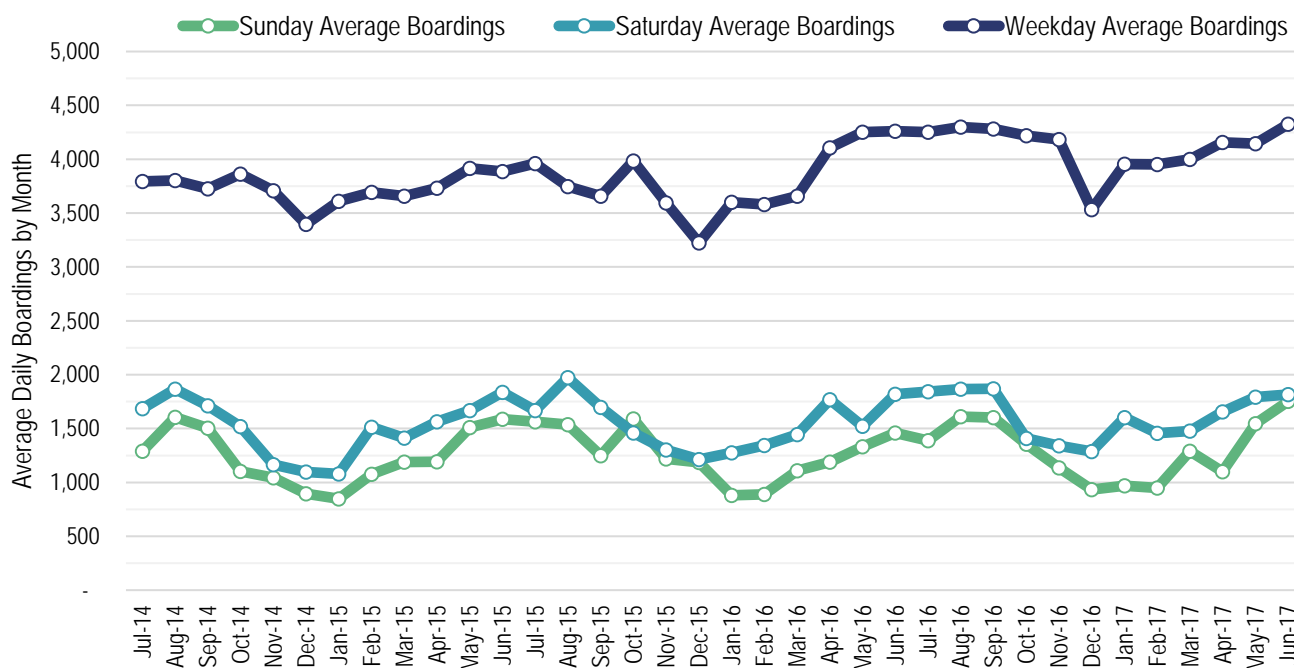


Route 554: Issaquah – Seattle

I-90

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	3,656	3,721	4,020	4,210
Average Saturday Boardings	1,483	1,530	1,568	1,759
Average Sunday Boardings	1,147	1,314	1,243	1,479

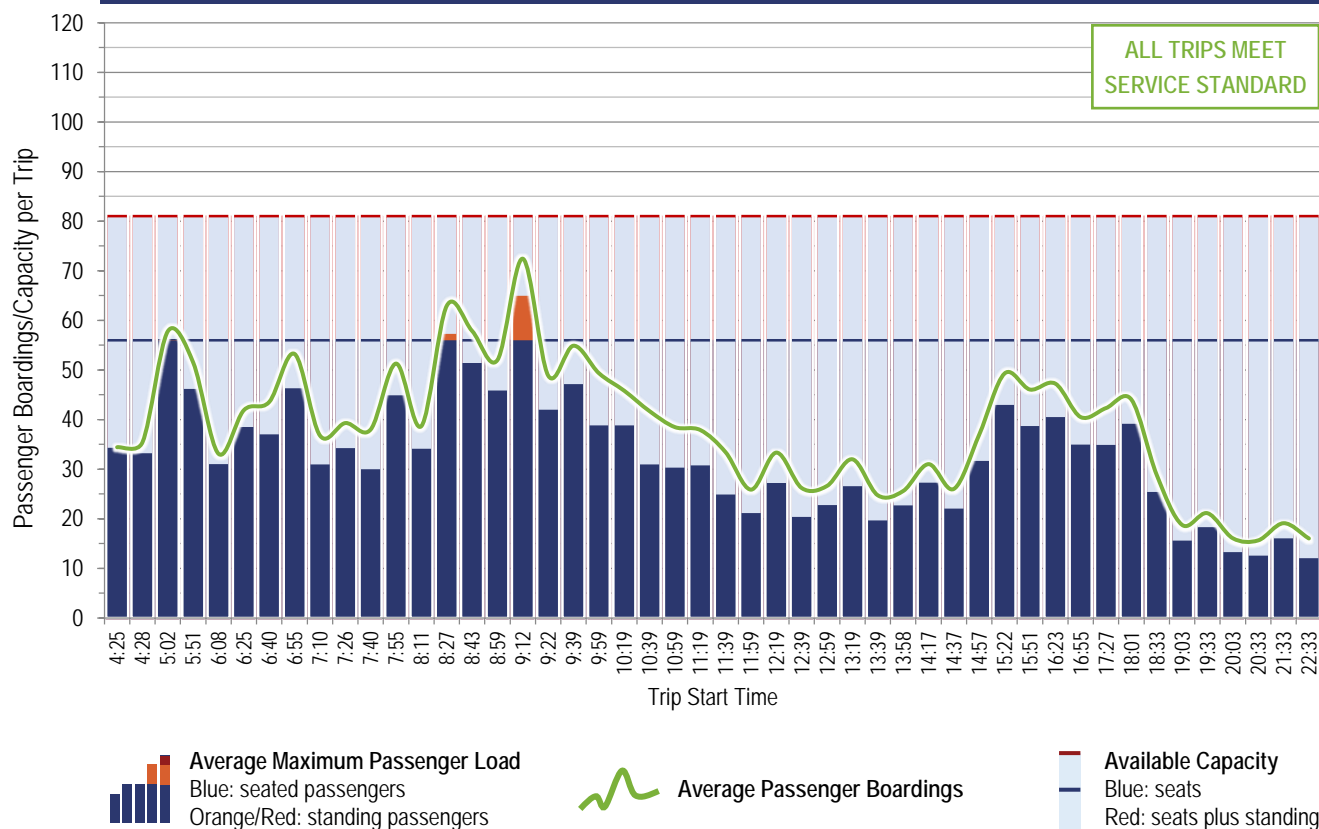




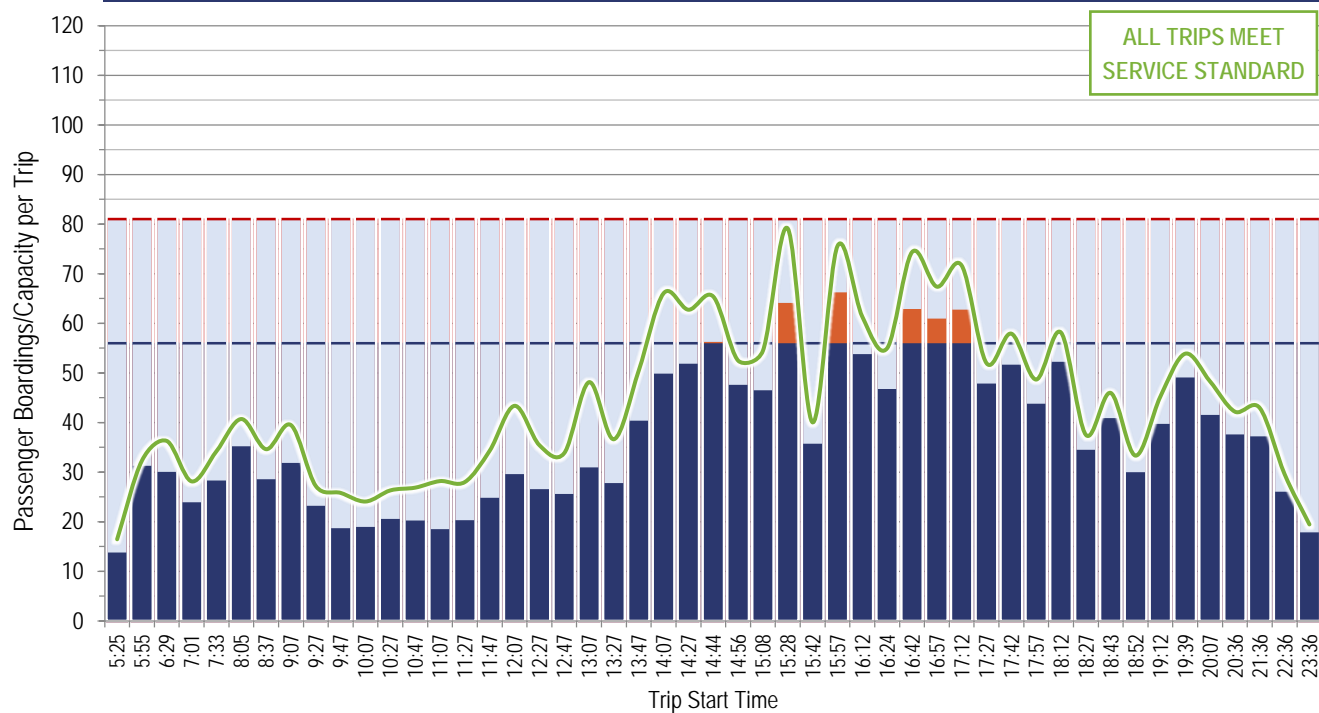
Route 554: Issaquah – Seattle

I-90

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



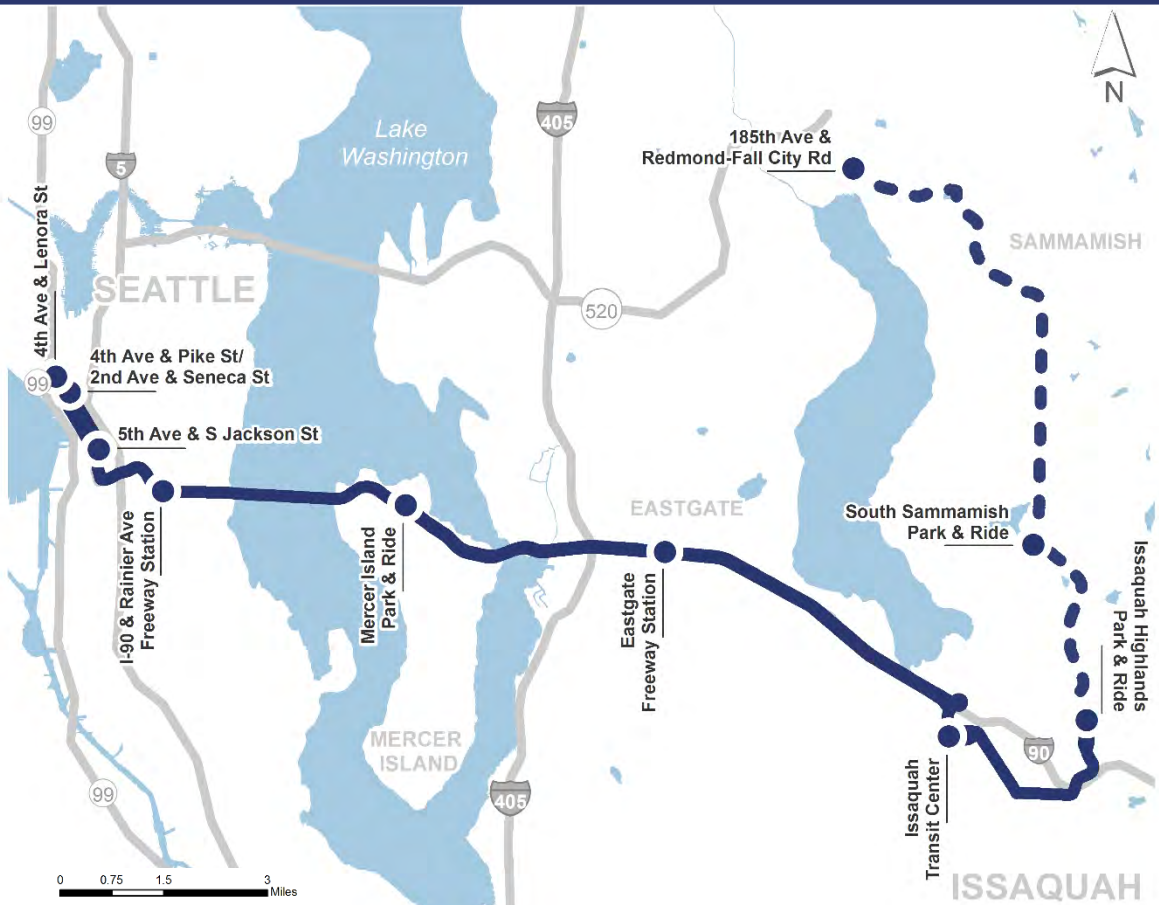
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 554: Issaquah – Seattle

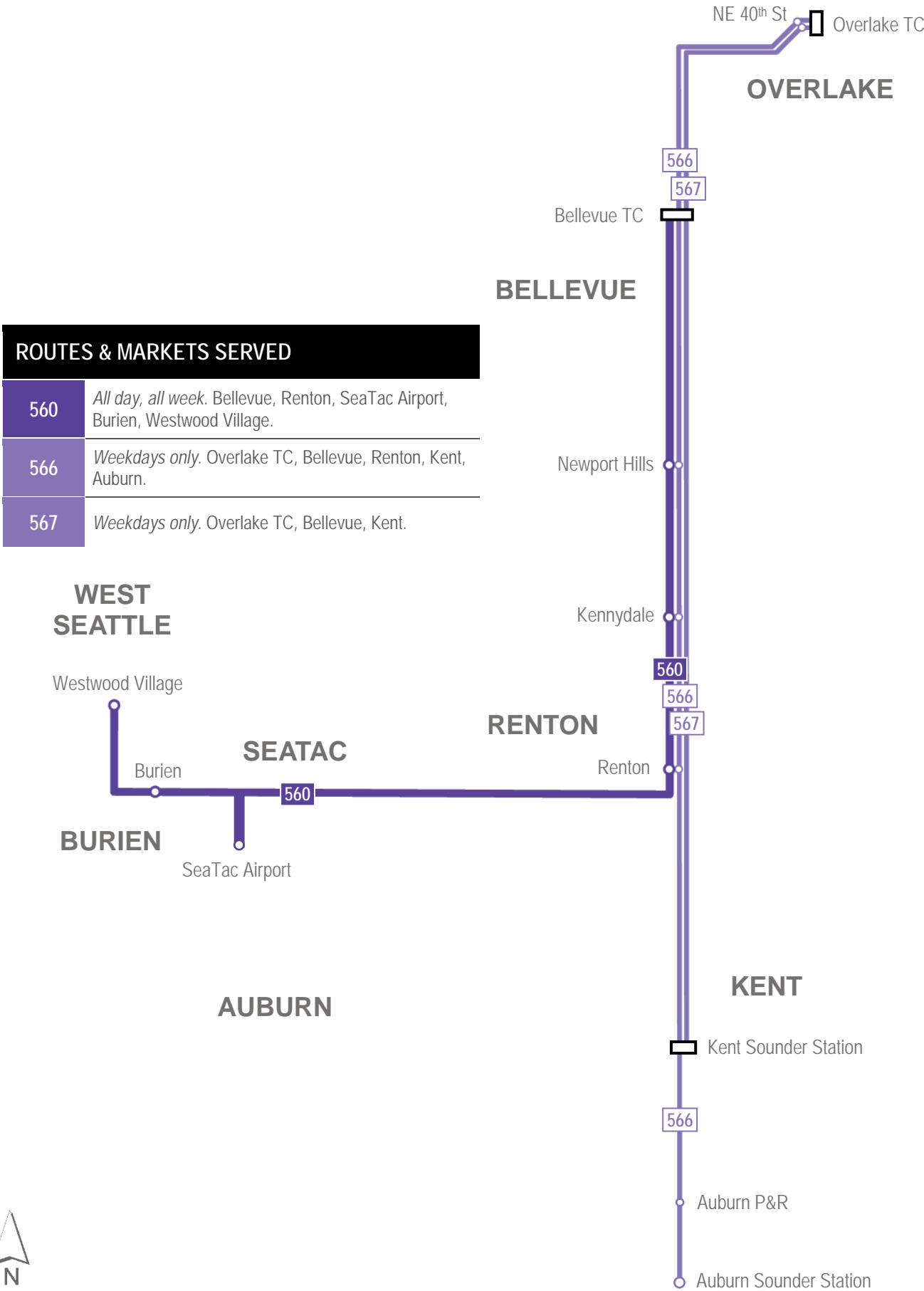
I-90



EASTBOUND STOPS	AVERAGE WEEKDAY		WESTBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS		ONS	OFFS
Lenora St & 4th Ave	285	0	Redmond Way & 185th Ave	0	0
2nd Ave & Stewart St	314	5	229th Ave & NE 25th Way	2	0
2nd Ave & Seneca St	456	4	228th Ave & NE 8th St	2	0
2nd Ave & Cherry St	250	8	228th Ave & SE 8th St	0	0
S Washington St & 4th Ave S	73	5	South Sammamish Park & Ride	3	0
5th Ave S & S Jackson St	463	14	Issaquah Pine Lake Rd & SE 37th Pl	0	0
Rainier Avenue Freeway Station	81	10	Issaquah Highlands Park & Ride	253	3
Mercer Island Park & Ride	85	132	9th Ave & NE Ellis Dr	65	1
Eastgate Freeway Station	174	876	Sunset Way & 1st Ave	186	22
Issaquah Transit Center	37	614	Issaquah Transit Center	505	32
Sunset Way & Rainier Blvd	25	190	Eastgate Freeway Station	643	131
Highlands Dr & NE Ellis Dr	2	109	Mercer Island Park & Ride	222	68
Issaquah Highlands Park & Ride	5	267	Rainier Avenue Freeway Station	16	65
Issaquah Pine Lake Rd & Issaquah Fall City Rd	0	1	5th Ave & S Jackson St	13	465
Issaquah Pine Lake Rd & SE 40th Pl	0	1	4th Ave & Washington St	7	41
Issaquah Pine Lake Rd & SE 37th Pl	0	6	4th Ave & Cherry St	13	261
South Sammamish Park & Ride	0	2	4th Ave & Seneca St	3	305
228th Ave NE & NE 8th St	0	1	4th Ave & Pike St	3	332
228th Ave NE & NE 25th Way	0	2	4th Ave & Stewart St	23	199
NE Redmond Fall City & 185th Ave NE	0	3	4th Ave & Lenora St	0	36
Eastbound Total	2,250	2,250	Westbound Total	1,960	1,960
			Total	4,210	4,210

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

I-405 SOUTH CORRIDOR



I-405 SOUTH CORRIDOR

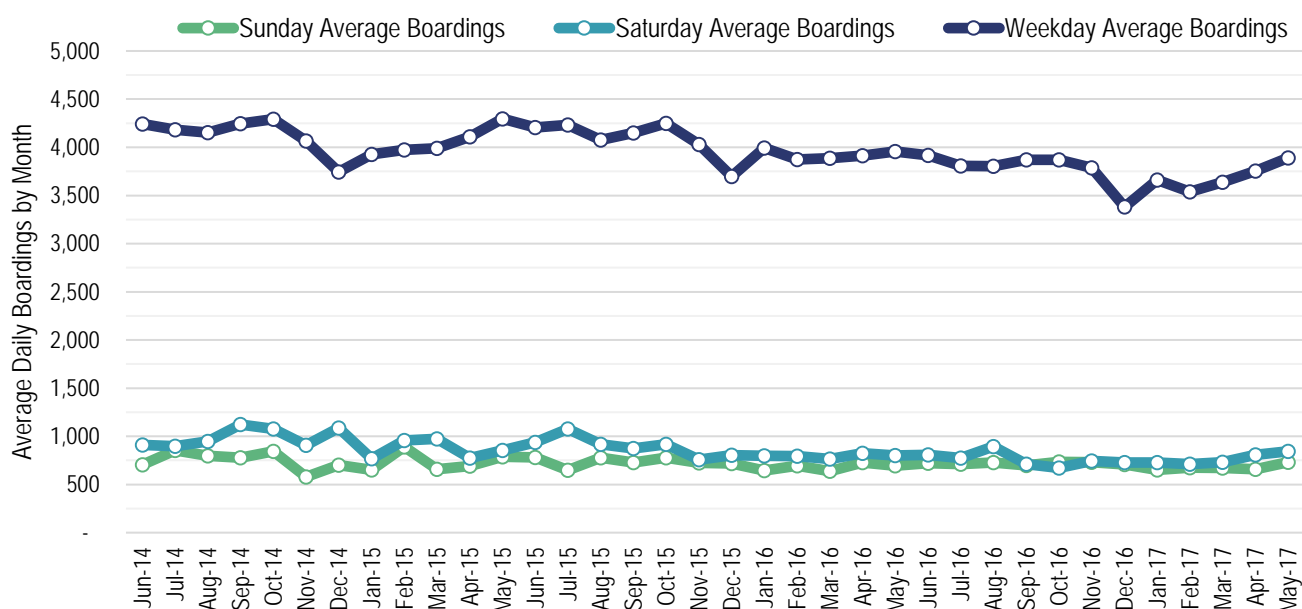
Service on this corridor began in September 1999 with the implementation of Route 565 between Federal Way and Bellevue with intermediate stops in Auburn, Kent and Renton. Peak hour demand exceeded the capacity of the service in September 2003, leading to the implementation of Route 564 between Auburn and Bellevue providing 15-minute service on the corridor. Service was extended to the Overlake Transit Center two years later in 2005. Four years later, in February 2010, service along the corridor was consolidated into ST Express Route 566. In June 2013, select trips on Route 566 were converted to operate as Route 567 connecting with Sounder commuter rail at Kent Station. In June 2015, weekday evening service was discontinued on Route 566 to reallocate resources to address on-time performance on Routes 566 and 567. Additional trips were added to Route 567 in September 2017 to meet the new Sounder south line trains.

Service on Route 560 began in September 2000, which replaced King County Metro Route 340 that operated from Aurora Village to Burien by way of SR-104, SR-522, I-405, Renton, Tukwila and SeaTac. The portion of Route 560 that operates west of Sea-Tac Airport began service in September 1999 with the implementation of the Route 570. In September 2003, the two routes were merged to operate as one route between Bellevue and West Seattle.

Route 560 has changed several times to minimize duplication of services and respond to new transit options. Midday service between Burien and Alaska Junction was reduced to every 60 minutes in February 2010 and discontinued altogether in June 2011. In 2013 as part of the restructure around the new RapidRide C line, Westwood Village became a major transit hub in southwest Seattle. As a result, Route 560 was adjusted to provide an all-day, all week connection at Westwood Village, with service to Alaska Junction discontinued and provided by King County Metro on Routes 21, 120, and RapidRide C. Additionally Route 566 midday service was discontinued between Renton and Bellevue, replaced by timed connecting service on Route 560.

Total boardings on the corridor decreased by six percent between 2014 and 2016. Ridership on Route 567 increased by 11 percent as a response to continued increases in Sounder ridership, but service on Routes 560 and 566 decreased by approximately ten percent over the same time period. Figure 36 shows average boardings by day type by month for the I-405 South corridor from mid-2014 through mid-2017.

FIGURE 36: I-405 SOUTH CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 560: Westwood Village – Bellevue

I-405 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Moderate
Evenings	Minimum
Saturday	Minimum
Sunday	Minimum
SPAN OF SERVICE	
Weekday	4:37 a.m.-11:08 p.m.
Saturday	5:19 a.m.-10:52 p.m.
Sunday	5:19 a.m.-10:52 p.m.
TRIPS PER DAY	
Weekday	56
Saturday	36
Sunday	36

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	126.4
Peak Buses	7
TYPICAL SATURDAY	
Platform Hours	56.8
TYPICAL SUNDAY	
Platform Hours	59.2
ANNUAL TOTALS	
Platform Hours	38,849
Trips	20,808

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2016: Route restructured to exit NE 6 th St. to access the Bellevue Transit Center.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	16	15	13	16
Boardings per Trip	26	22	19	25
Subsidy per Boarding	\$7.86	\$8.30	\$9.40	\$8.01
Passenger Miles per Platform Mile	6	6	5	6



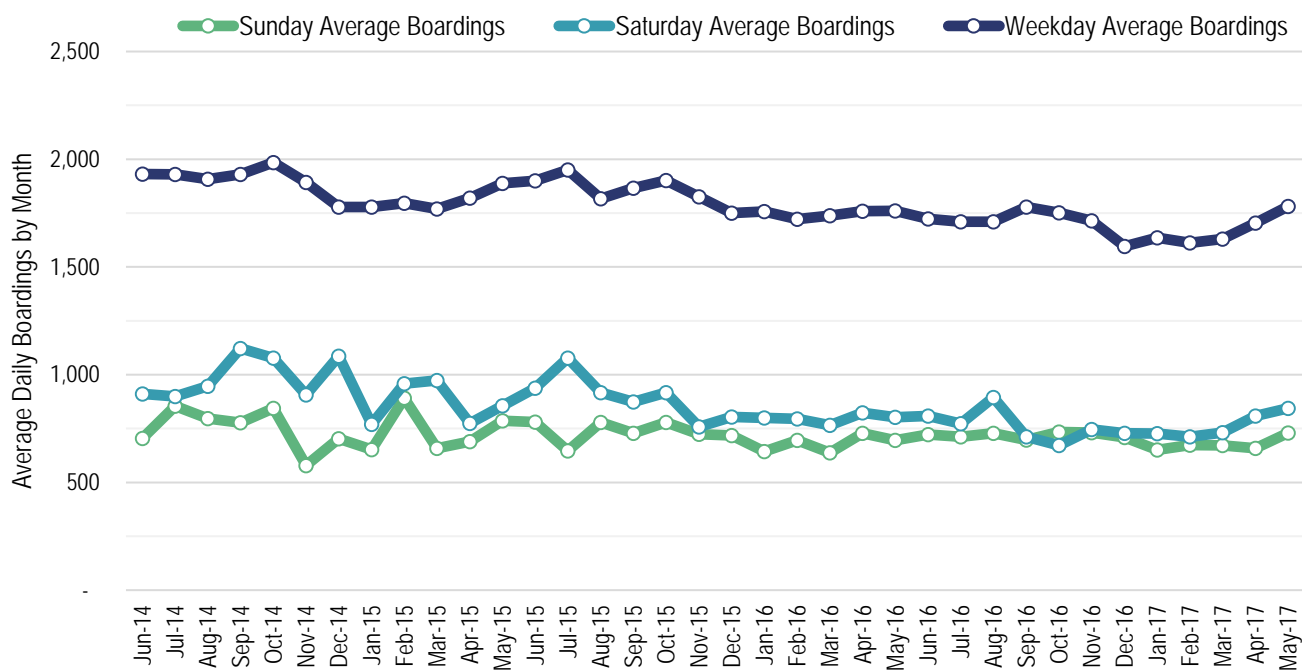


Route 560: Westwood Village – Bellevue

I-405 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,883	1,840	1,727	1,729
Average Saturday Boardings	920	885	778	715
Average Sunday Boardings	744	735	703	637

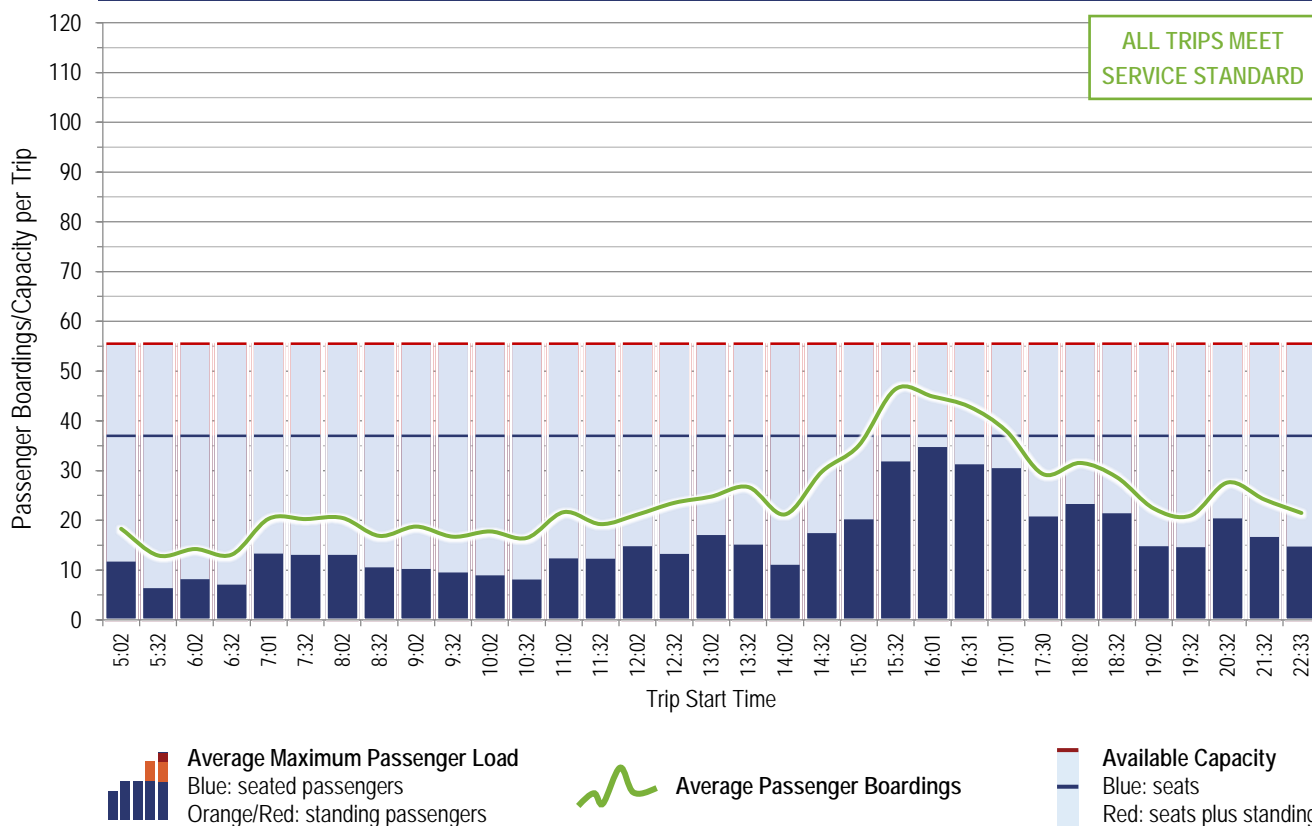




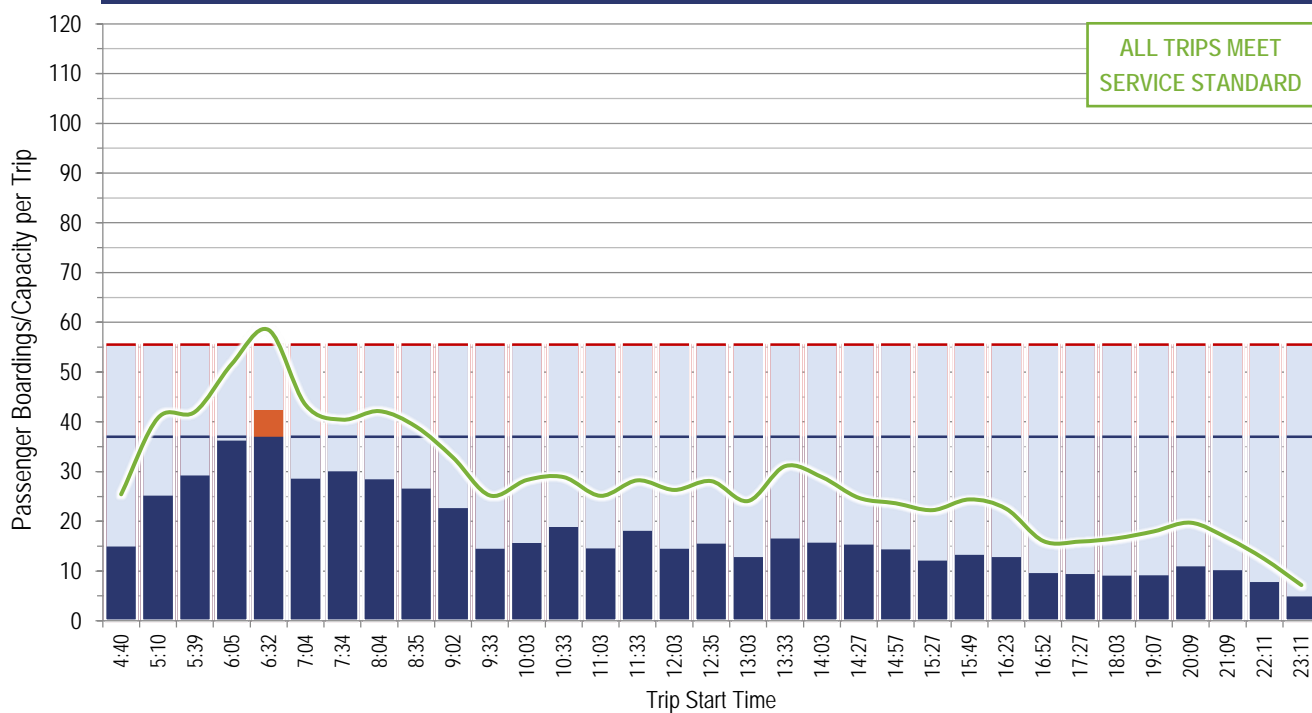
Route 560: Westwood Village – Bellevue

I-405 S

WESTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



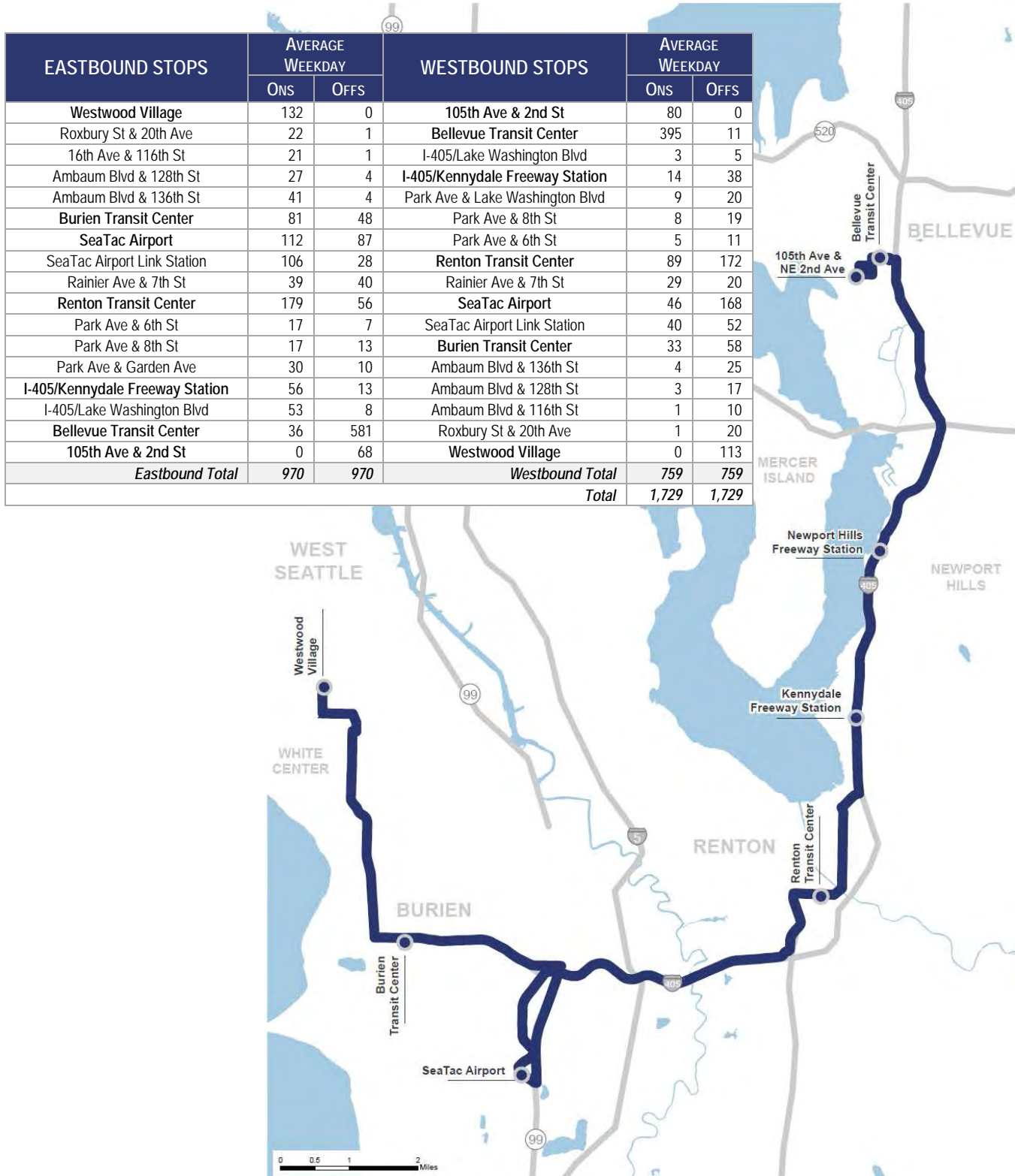
EASTBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 560: Westwood Village – Bellevue

I-405 S



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 566: Auburn – Overlake

I-405 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	Minimum
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:45 a.m.-7:50 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	54
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	123.5
Peak Buses	12
ANNUAL TOTALS	
Platform Hours	31,483
Trips	13,728

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2015: Travel time analysis completed and evening trips discontinued
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	18	No Weekend Service		18
Boardings per Trip	28			28
Subsidy per Boarding	\$8.73			\$8.73
Passenger Miles per Platform Mile	6			6



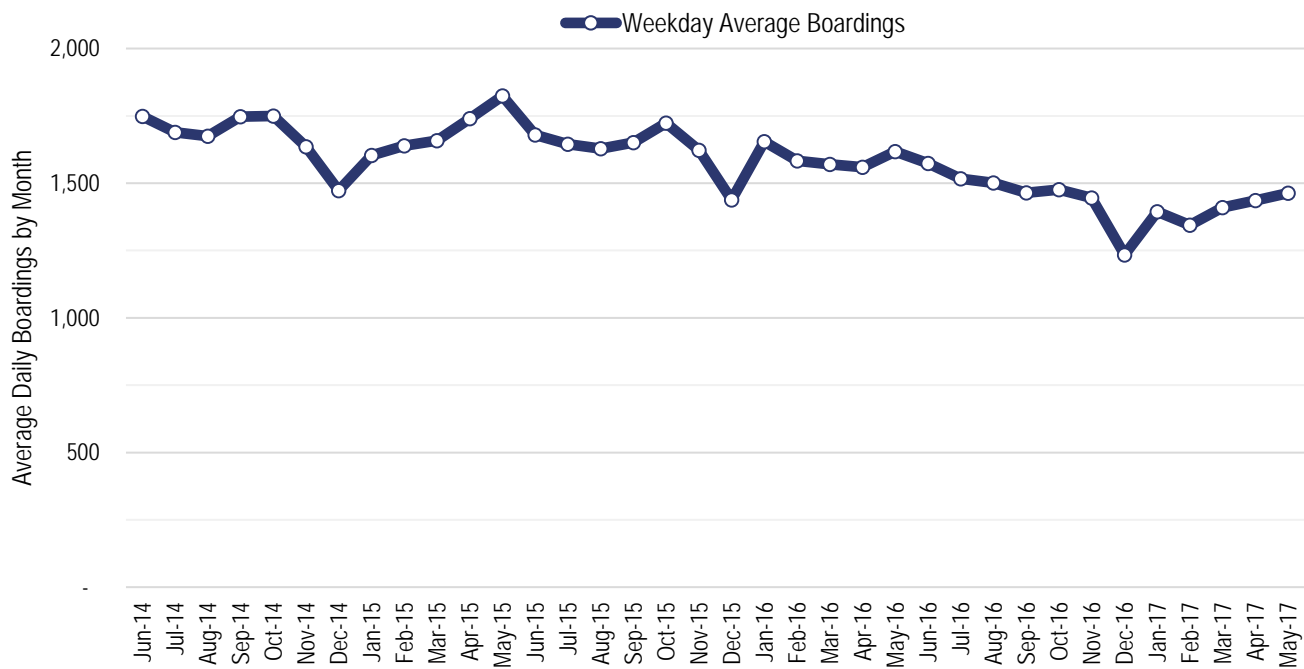


Route 566: Auburn – Overlake

I-405 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,650	1,653	1,516	1,444
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

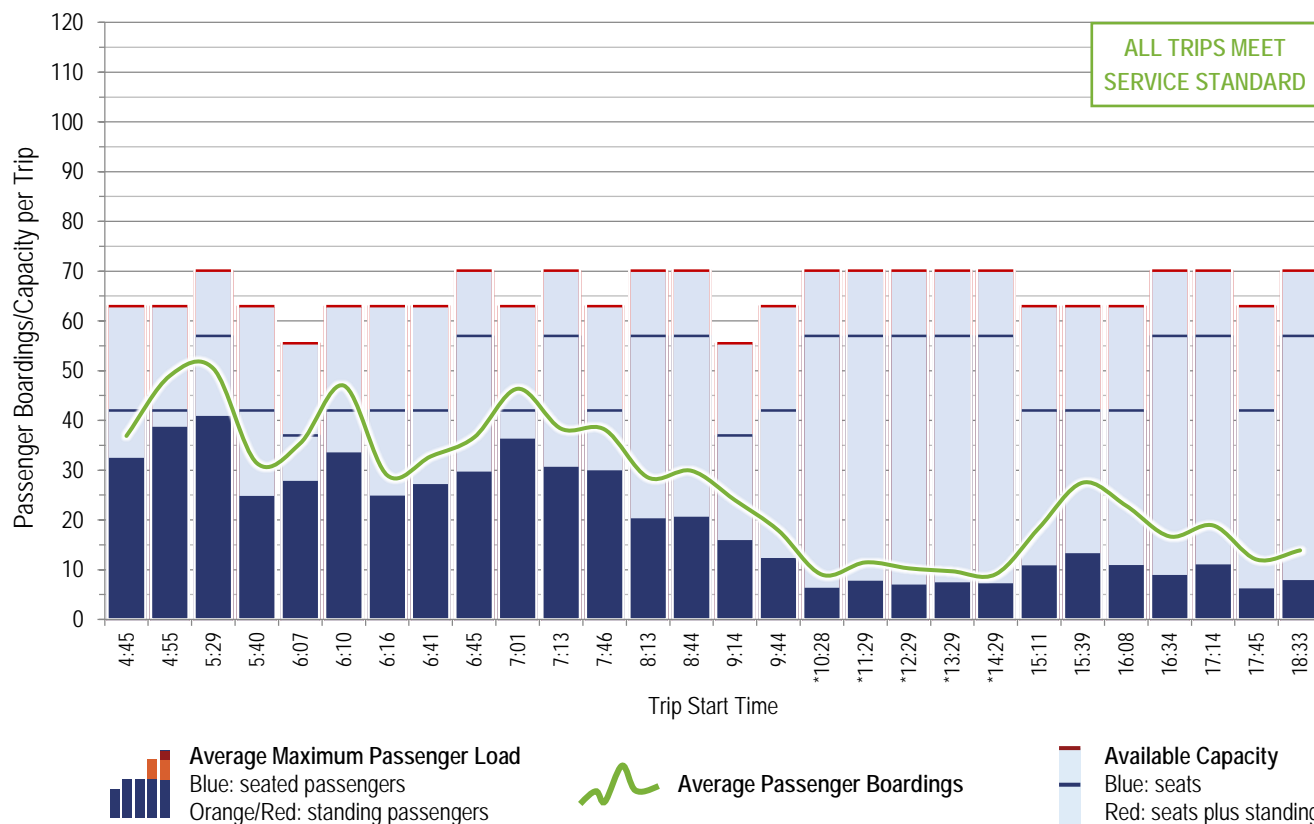




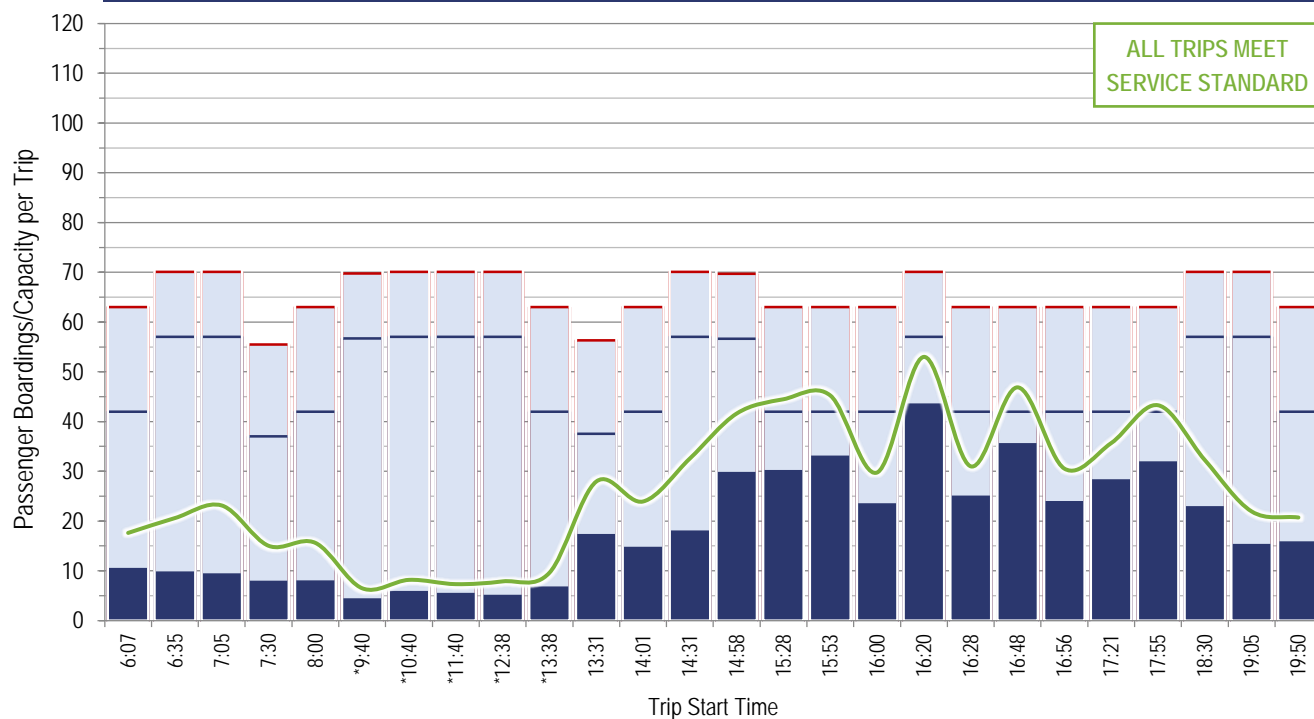
Route 566: Auburn – Overlake

I-405 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



* Service between Auburn Station and Renton Transit Center only.



Route 566: Auburn – Overlake

I-405 S



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Auburn Station	106	0
Auburn Park & Ride	44	8
Smith St & 4th Ave	4	7
Kent Station	192	25
Central Ave & 228th St	26	15
Rainier Ave & 7th St	50	26
Renton Transit Center	192	79
Park Ave & 6th St	20	11
Park Ave & 8th St	17	9
Park Ave & Garden Ave	30	5
Kennydale Freeway Station	5	3
Newport Hills Freeway Station	5	1
Bellevue Transit Center	48	398
SR 520 & 40th St	0	154
Northbound Total	740	740
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Overlake Transit Center	86	0
SR 520 & 40th St	51	1
Bellevue Transit Center	378	43
Newport Hills Freeway Station	0	0
Kennydale Freeway Station	2	7
Park Ave & Lake Washington Blvd	4	34
Park Ave & 8th St	10	26
Park Ave & 6th St	8	14
Renton Transit Center	88	220
Rainier Ave & 7th St	24	27
Central Ave & 228th St	14	21
Kent Station	27	158
Smith St & 4th Ave	2	6
Auburn Park & Ride	9	46
Auburn Station	0	100
Southbound Total	704	704
Total	1,444	1,444

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 567: Kent – Overlake

I-405 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	5:30 a.m.-5:19 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	18
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	45.4
Peak Buses	6
ANNUAL TOTALS	
Platform Hours	11,570
Trips	4,230

SERVICE CHANGES	
HISTORY	
Start Date	June 2013
Last Major Change	2017: Two new Sounder connector trips are added.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	29	No Weekend Service		 29
Boardings per Trip	36			 36
Subsidy per Boarding	\$8.07			 \$8.07
Passenger Miles per Platform Mile	7			 7



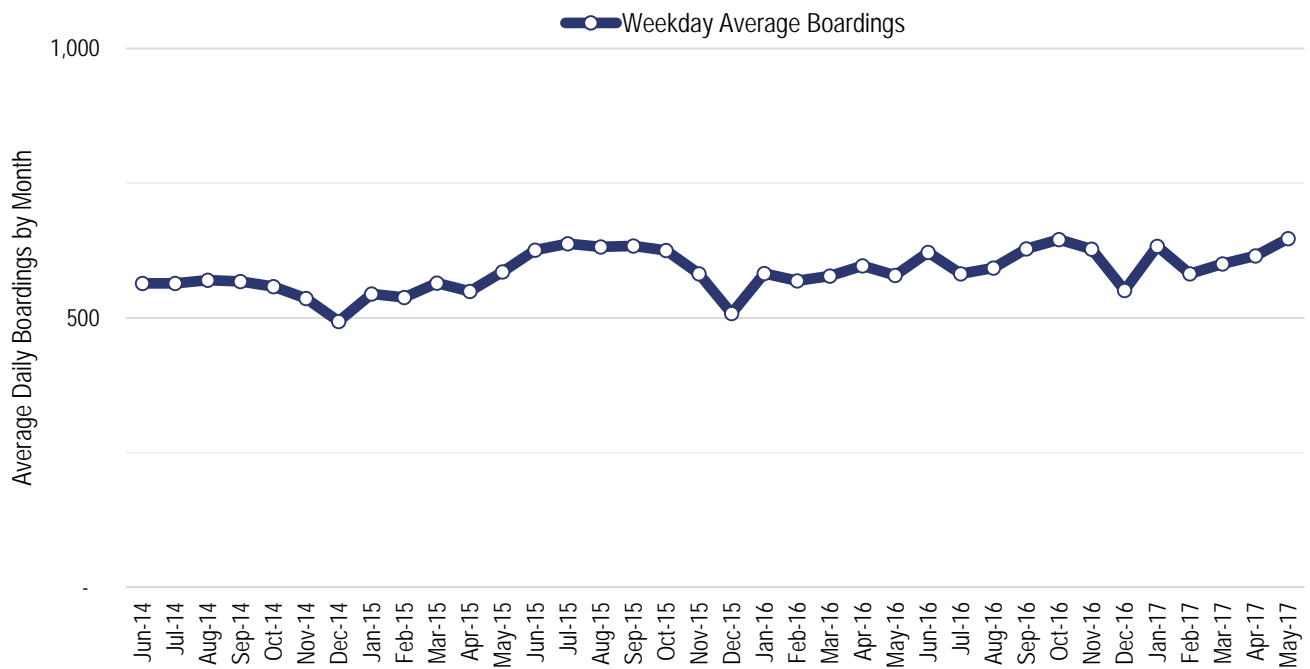


Route 567: Kent – Overlake

I-405 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	540	586	596	622
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

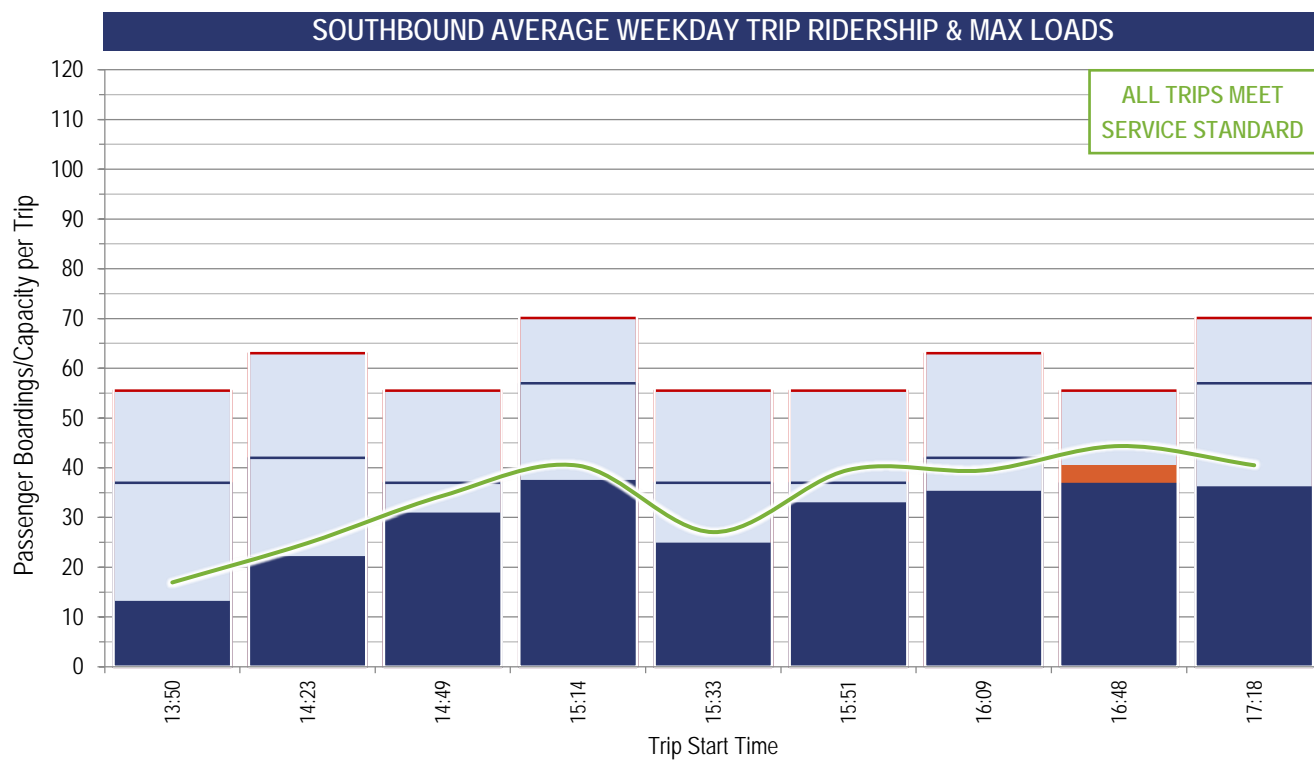
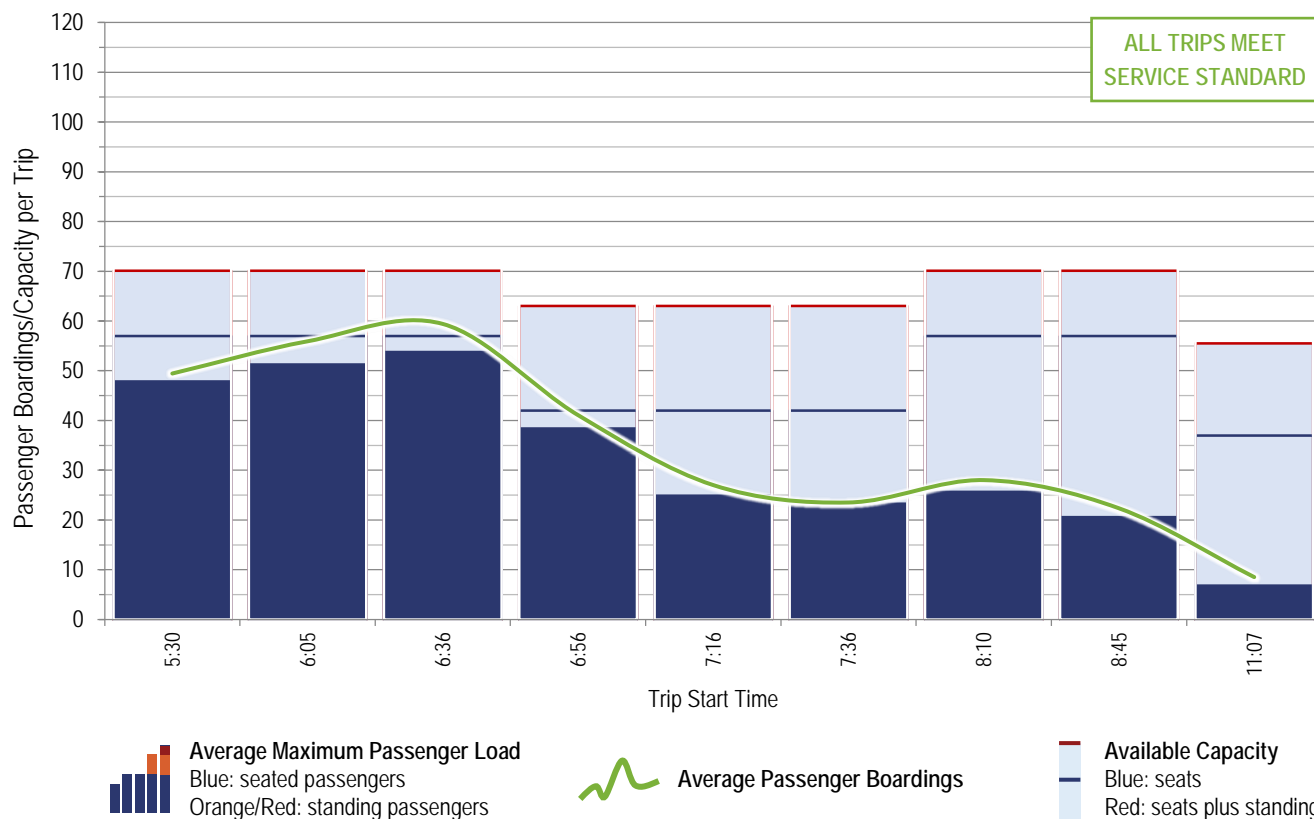




Route 567: Kent – Overlake

I-405 S

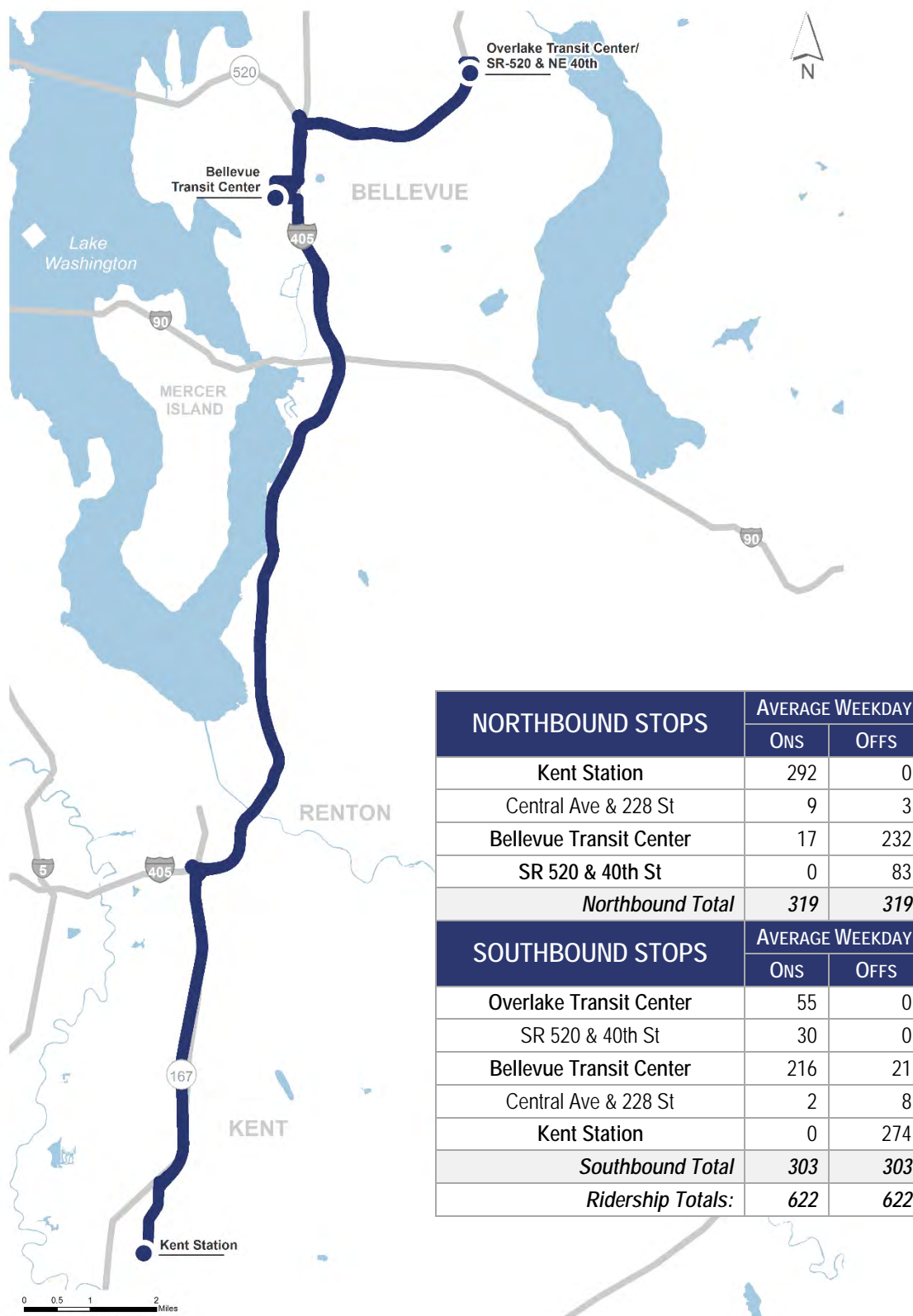
NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



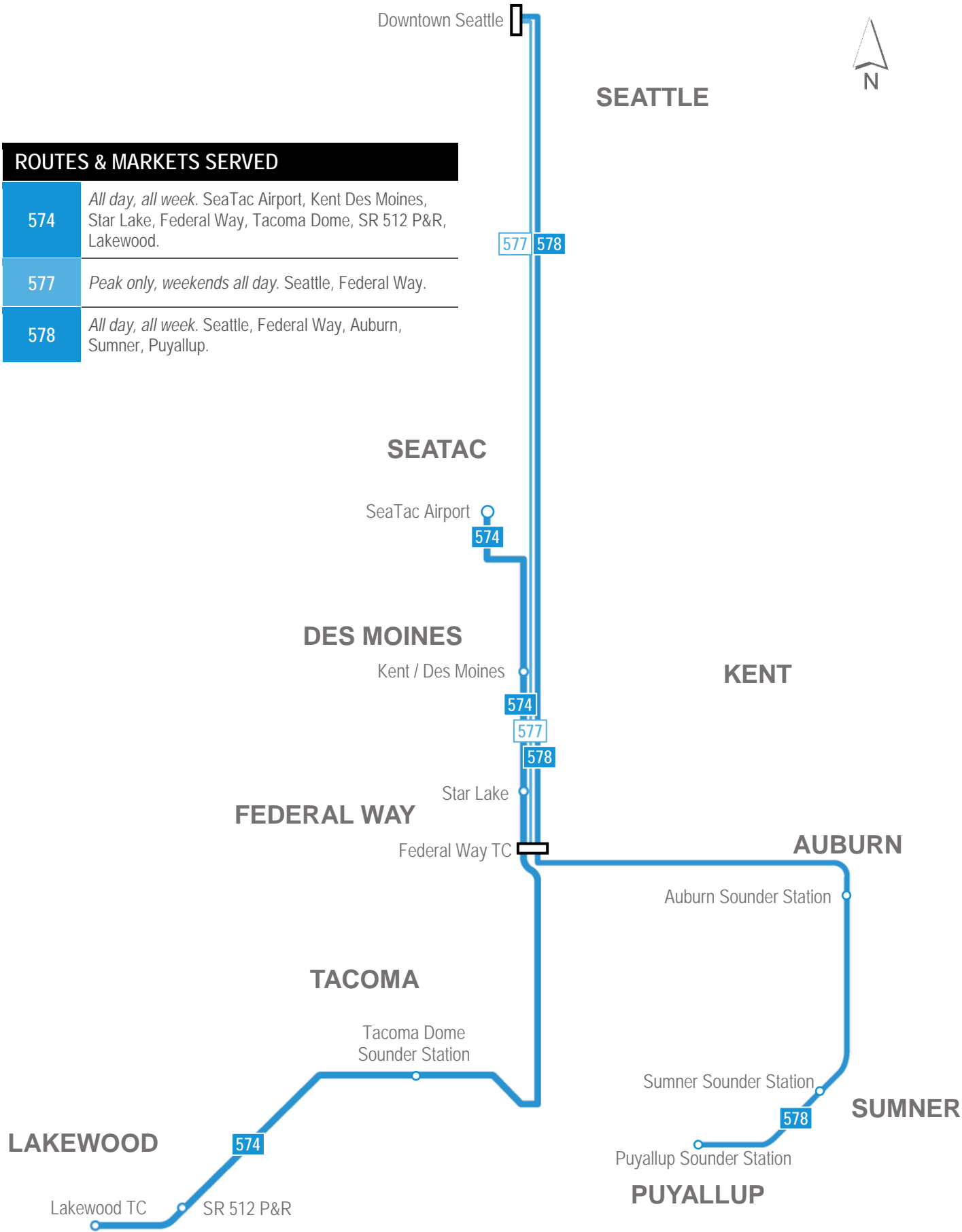


Route 567: Kent – Overlake

I-405 S



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



I-5 SOUTH CORRIDOR | South King County Service

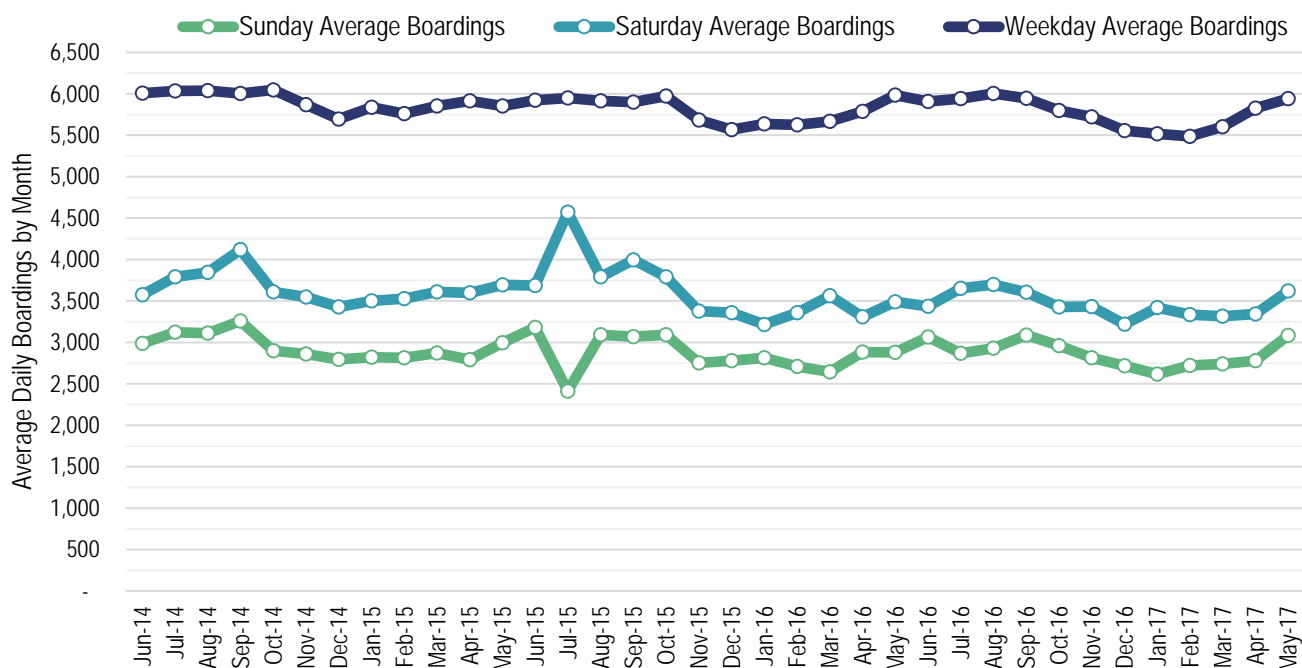
Service on this corridor began in 2006 with the opening of Federal Way Transit Center with peak-hour, peak-directional service as Route 577. In June 2009, the Sounder schedule was adjusted and one Route 578 trip was implemented to provide service to Auburn, Sumner and Puyallup stations to replace the Sounder commuter rail trip that was shifted from 6:45 p.m. to 6:15 p.m.

The next significant change involved a service restructure with King County Metro in February 2010. Prior to February 2010, King County Metro operated Route 194 between downtown Seattle, Sea-Tac Airport and Federal Way. The extension of Link light rail to SeaTac/Airport Station in December 2009 allowed a coordinated restructure with King County Metro redeploying Route 194. In doing so, Sound Transit began full-time service between Federal Way and Seattle on routes 577 and 578. Also as a part of the February 2010 restructure, Route 574 was revised to make connections to Link light rail for passengers who boarded the buses at Star Lake and Kent-Des Moines freeway stations.

Since September 2015, ten one-way trips have been added to the corridor with three trips added to Route 577 in September 2015; then four trips added to Route 578 in March 2016; and finally, three additional trips added to Route 577 in September 2016. The trips added in September 2015 were part of a joint regional mobility grant with King County Metro that provided for a total of 15 additional trips on the corridor.

Total boardings on the corridor were down one percent in 2016 over total boardings in 2014. Weekday ridership fell by one percent, while weekend ridership was down by two percent. Trips operating in the peak direction during peak periods carry 47 passengers each. Figure 37 shows average boardings by day type by month for the I-5 South South King corridor from mid-2014 through mid-2017.

FIGURE 37: I-5 SOUTH | SOUTH KING CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 574: Lakewood – SeaTac

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Moderate
Evenings	Minimum
Saturday	Moderate
Sunday	Moderate
SPAN OF SERVICE	
Weekday	2:13 a.m.-11:34 p.m.
Saturday	2:13 a.m.-11:33 p.m.
Sunday	2:13 a.m.-11:33 p.m.
TRIPS PER DAY	
Weekday	77
Saturday	59
Sunday	59

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	131.2
Peak Buses	7
TYPICAL SATURDAY	
Platform Hours	94.5
TYPICAL SUNDAY	
Platform Hours	95.6
ANNUAL TOTALS	
Platform Hours	44,022
Trips	26,134

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2010: Route serves the Airport Station and gains 30 min frequency on weekdays.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	20	20	18	20
Boardings per Trip	30	29	26	29
Subsidy per Boarding	\$5.35	\$5.24	\$6.20	\$5.44
Passenger Miles per Platform Mile	13	13	12	13



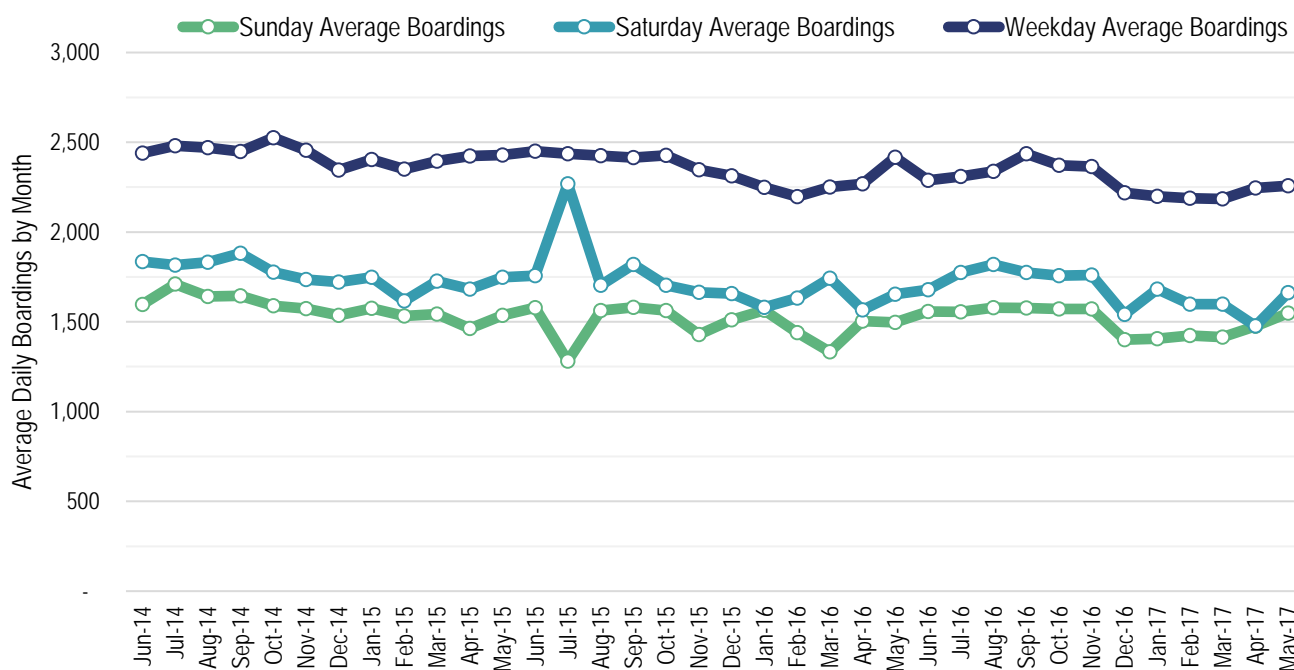


Route 574: Lakewood – SeaTac

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	2,397	2,402	2,310	2,243
Average Saturday Boardings	1,745	1,762	1,692	1,503
Average Sunday Boardings	1,570	1,513	1,512	1,299

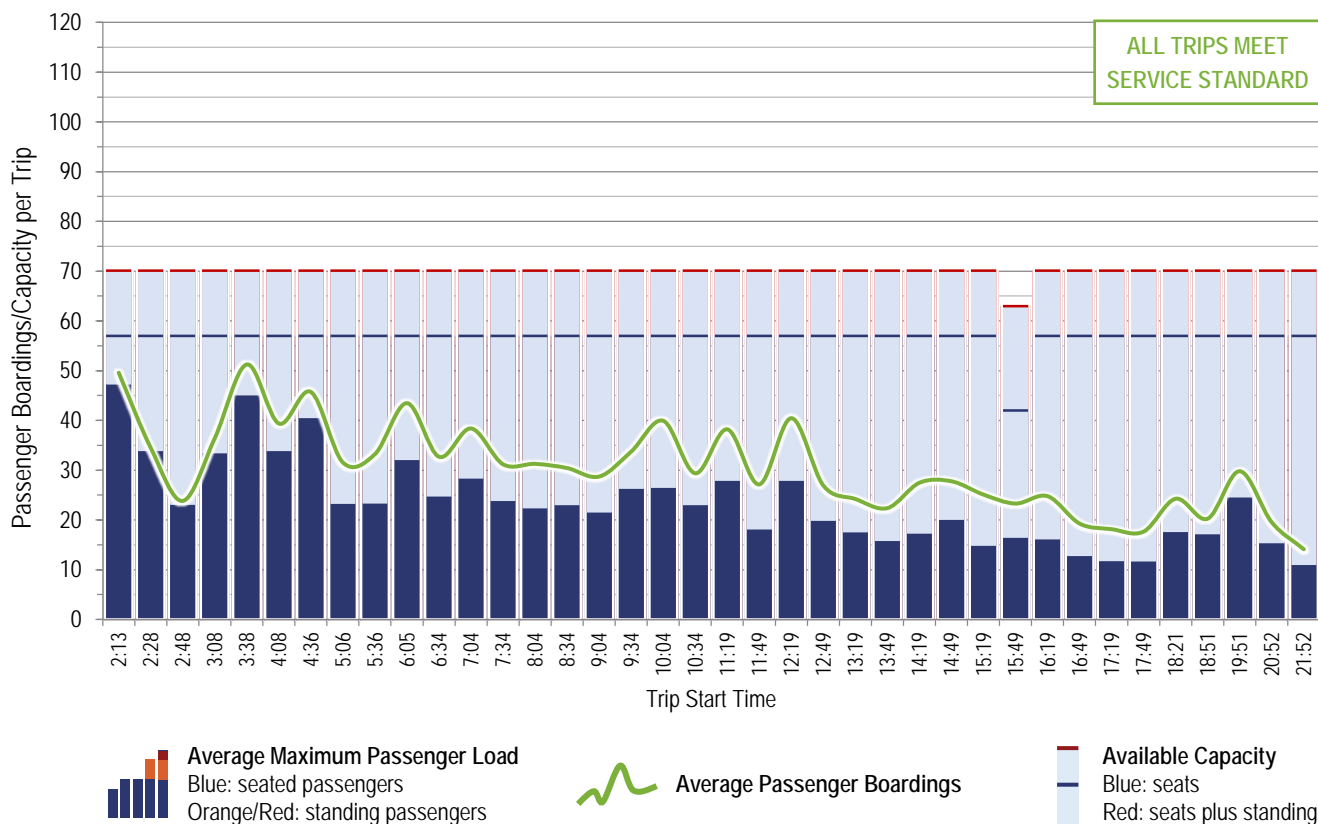




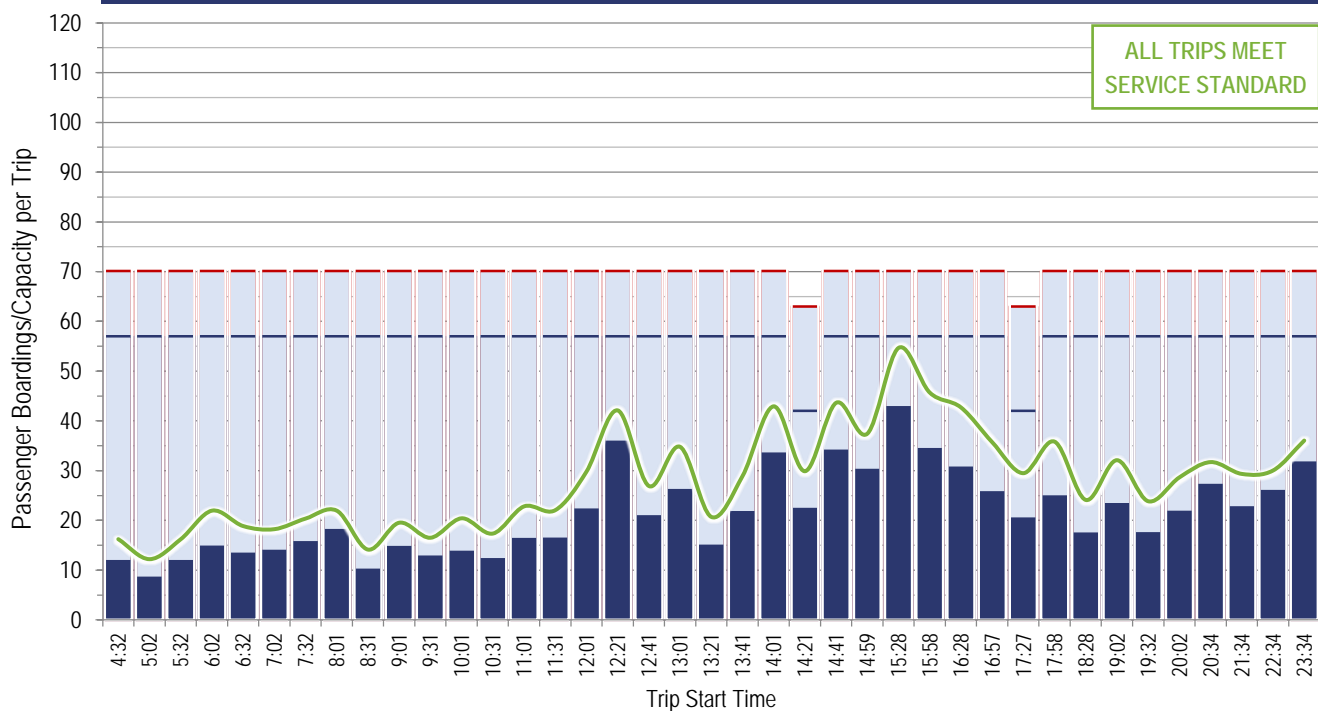
Route 574: Lakewood – SeaTac

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

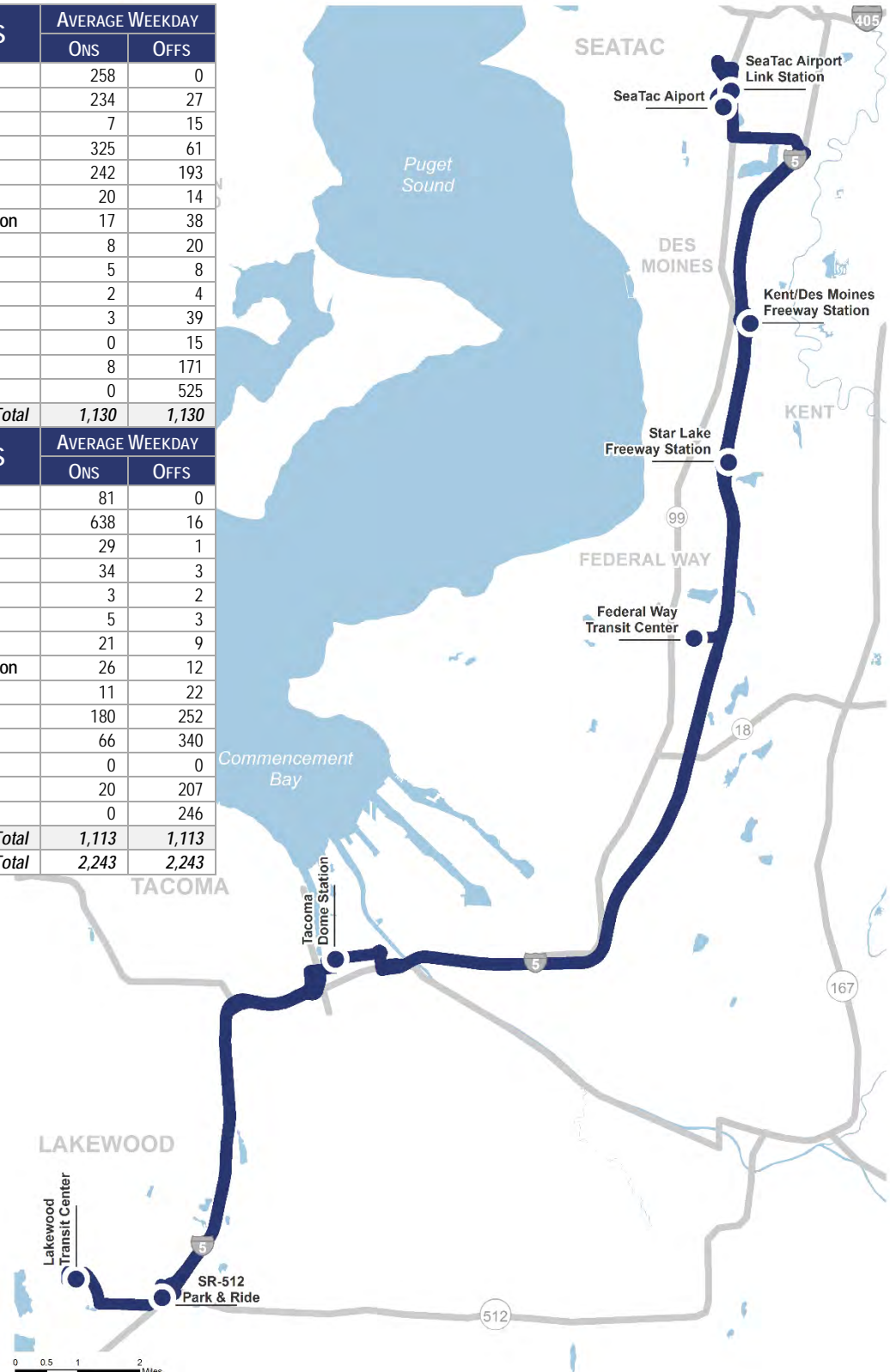




Route 574: Lakewood – SeaTac

I-5 S

NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Lakewood Transit Center	258	0
SR-512 Park & Ride	234	27
D St E & E 25th St	7	15
Tacoma Dome Station	325	61
Federal Way Transit Center	242	193
Star Lake Freeway Station	20	14
Kent / Des Moines Freeway Station	17	38
S 188th St & Military Rd	8	20
S 188th St & 42nd Ave	5	8
S 188th St & 36th Ave	2	4
International Blvd & S 188th St	3	39
International Blvd & S 180th St	0	15
SeaTac Airport Link Station	8	171
SeaTac Airport	0	525
Northbound Total	1,130	1,130
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
SeaTac Airport Link Station	81	0
SeaTac Airport	638	16
International Blvd & S 182nd St	29	1
International Blvd & S 188th St	34	3
S 188th St & 36th Ave	3	2
S 188th St & 42nd Ave	5	3
S 188th St & 46th Ave	21	9
Kent / Des Moines Freeway Station	26	12
Star Lake Freeway Station	11	22
Federal Way Transit Center	180	252
Tacoma Dome Station	66	340
E 26th St & D St E	0	0
SR-512 Park & Ride	20	207
Lakewood Transit Center	0	246
Southbound Total	1,113	1,113
Total	2,243	2,243



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 577: Federal Way – Seattle

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	Minimum
Sunday	Minimum
SPAN OF SERVICE	
Weekday	5:00 a.m.-5:49 p.m.
Saturday	6:15 a.m.-9:43 p.m.
Sunday	6:15 a.m.-7:43 p.m.
TRIPS PER DAY	
Weekday	41
Saturday	32
Sunday	28

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	78.1
Peak Buses	10
TYPICAL SATURDAY	
Platform Hours	32.1
TYPICAL SUNDAY	
Platform Hours	27.7
ANNUAL TOTALS	
Platform Hours	23,227
Trips	13,237

SERVICE CHANGES	
HISTORY	
Start Date	February 2006
Last Major Change	2016: Additional trips were added.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	44	22	17	38
Boardings per Trip	44	18	15	37
Subsidy per Boarding	\$3.87	\$4.96	\$6.74	\$4.08
Passenger Miles per Platform Mile	14	11	9	14



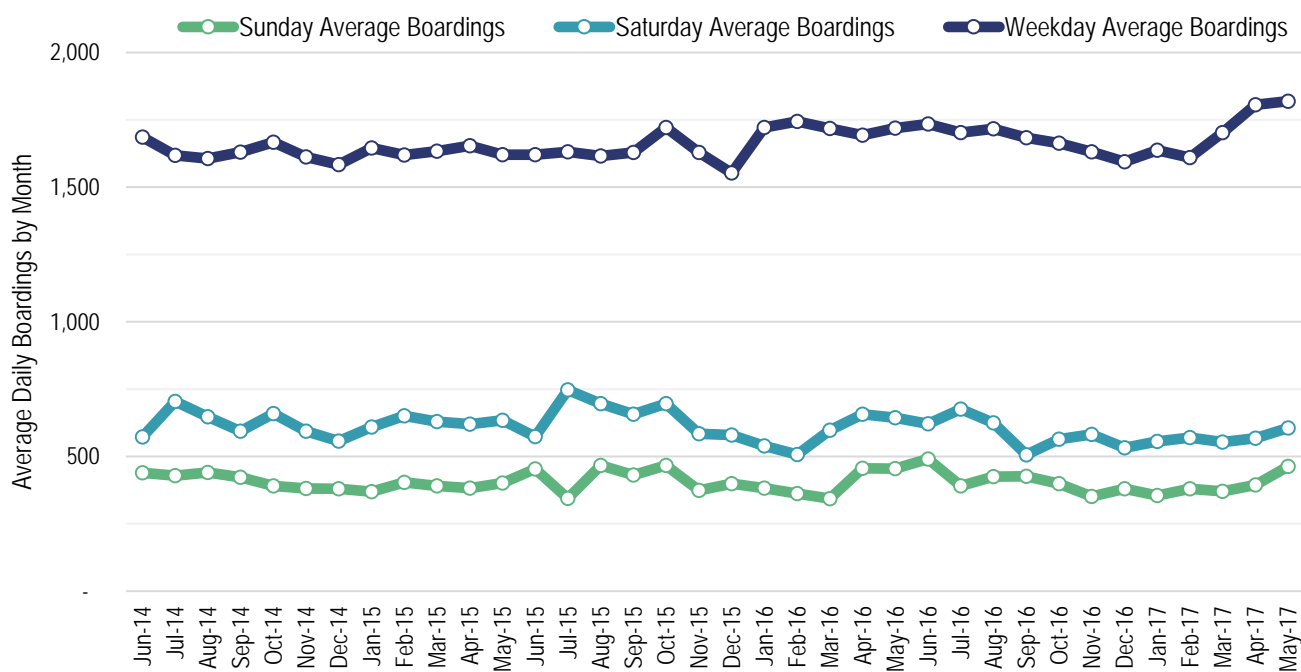


Route 577: Federal Way – Seattle

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,623	1,631	1,694	1,796
Average Saturday Boardings	610	640	588	481
Average Sunday Boardings	401	407	406	342

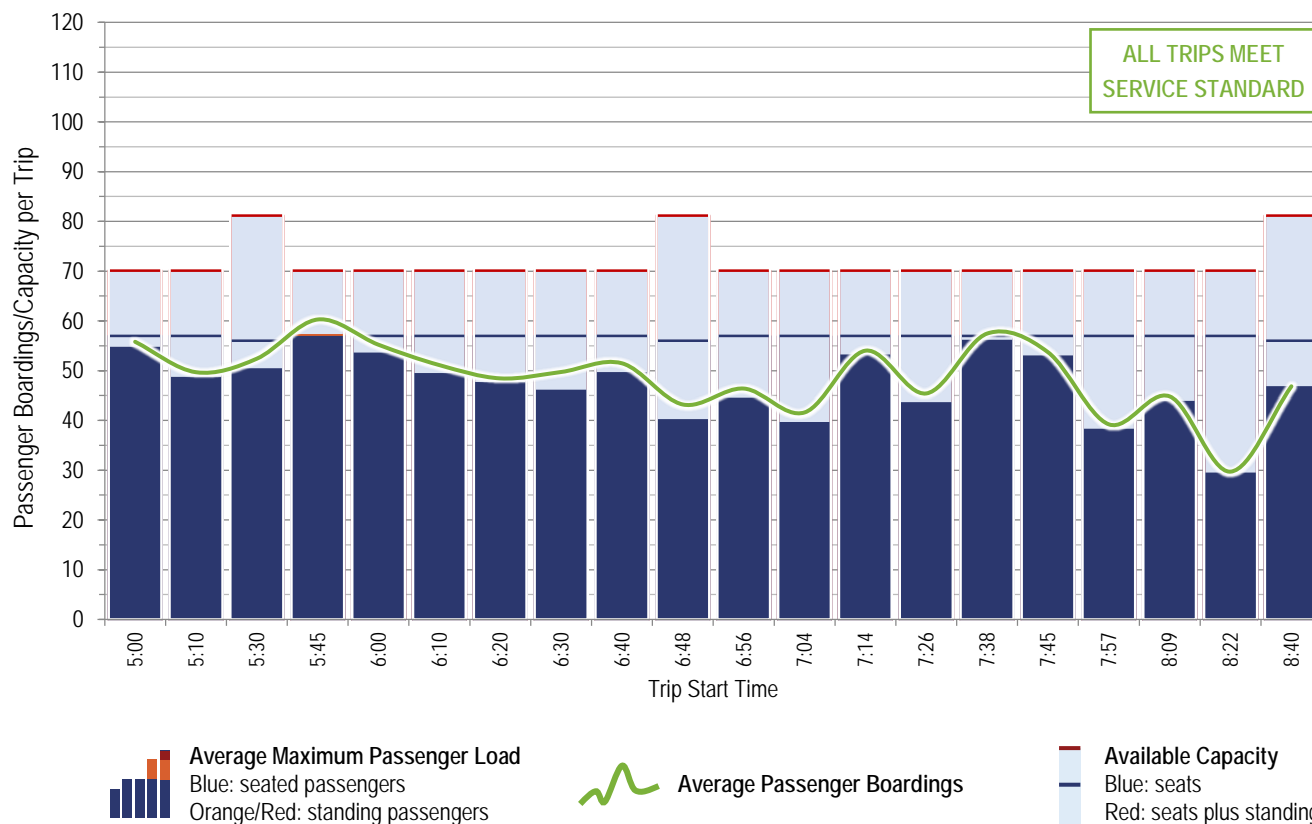




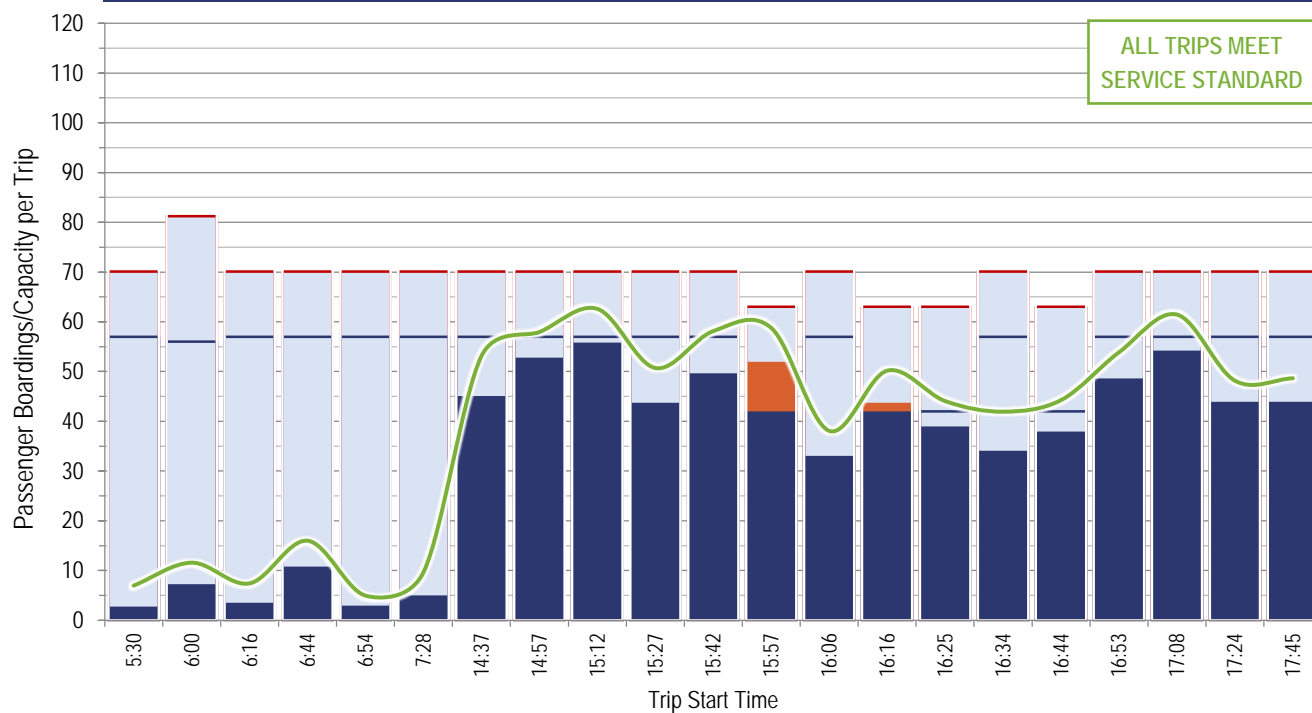
Route 577: Federal Way – Seattle

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



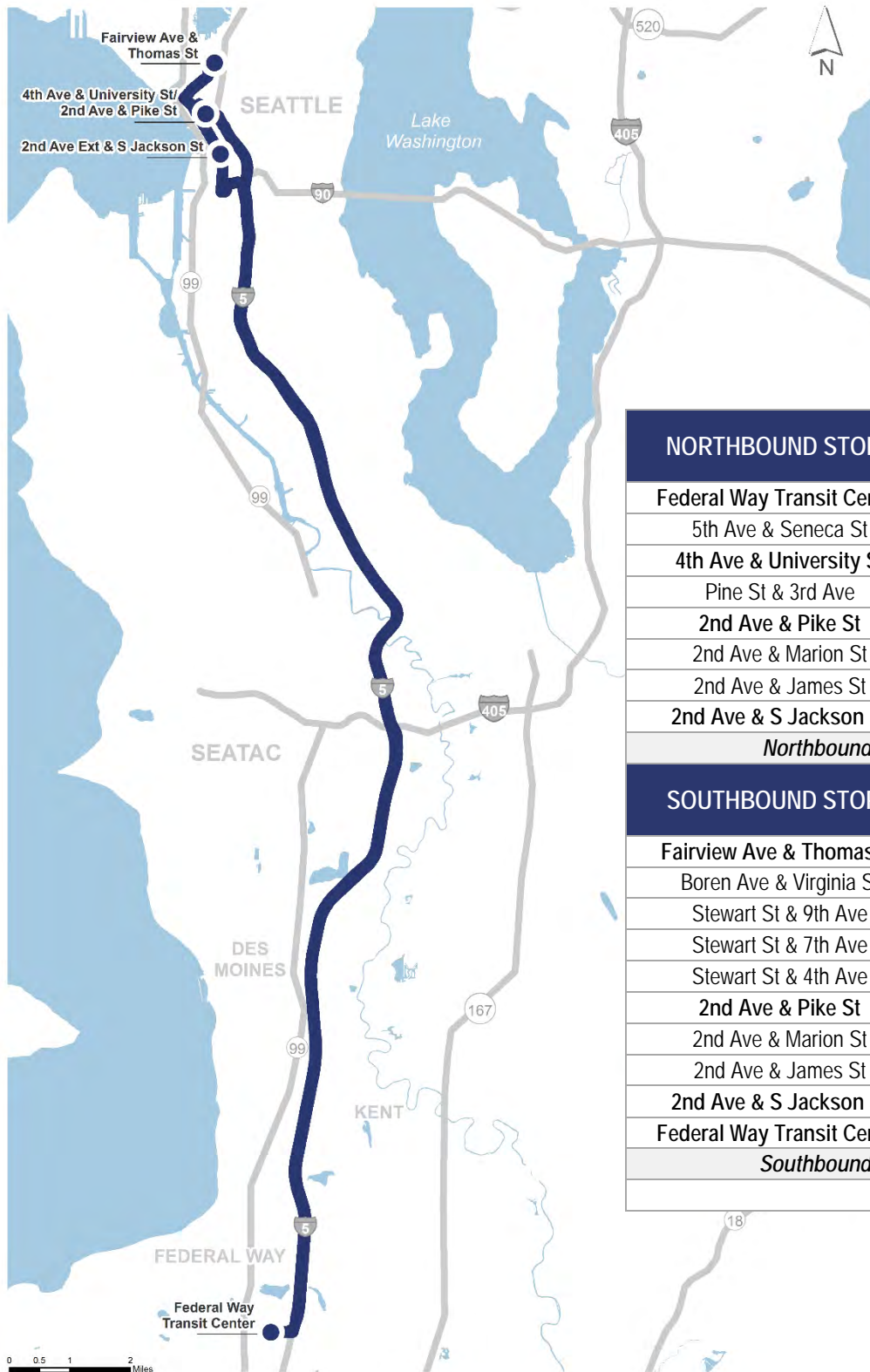
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 577: Federal Way – Seattle

I-5 S



NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Federal Way Transit Center	927	0
5th Ave & Seneca St	2	390
4th Ave & University St	1	164
Pine St & 3rd Ave	1	289
2nd Ave & Pike St	2	32
2nd Ave & Marion St	1	31
2nd Ave & James St	1	12
2nd Ave & S Jackson St	0	16
Northbound Total	934	934
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Fairview Ave & Thomas St	99	0
Boren Ave & Virginia St	17	0
Stewart St & 9th Ave	76	4
Stewart St & 7th Ave	106	3
Stewart St & 4th Ave	84	12
2nd Ave & Pike St	225	13
2nd Ave & Marion St	133	29
2nd Ave & James St	58	14
2nd Ave & S Jackson St	63	54
Federal Way Transit Center	0	731
Southbound Total	862	862
Total	1,796	1,796

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 578: Puyallup – Seattle

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Moderate
Evenings	Moderate
Saturday	Minimum
Sunday	Minimum
SPAN OF SERVICE	
Weekday	4:56 a.m.-10:50 p.m.
Saturday	6:01 a.m.-10:03 p.m.
Sunday	6:01 a.m.-10:03 p.m.
TRIPS PER DAY	
Weekday	56
Saturday	30
Sunday	30

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	107.0
Peak Buses	4
TYPICAL SATURDAY	
Platform Hours	56.8
TYPICAL SUNDAY	
Platform Hours	59.2
ANNUAL TOTALS	
Platform Hours	33,723
Trips	17,327

SERVICE CHANGES	
HISTORY	
Start Date	June 2009
Last Major Change	2016: Four new trips are added.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	19	23	17	19
Boardings per Trip	33	39	32	33
Subsidy per Boarding	\$6.19	\$4.70	\$6.61	\$6.07
Passenger Miles per Platform Mile	14	18	15	14



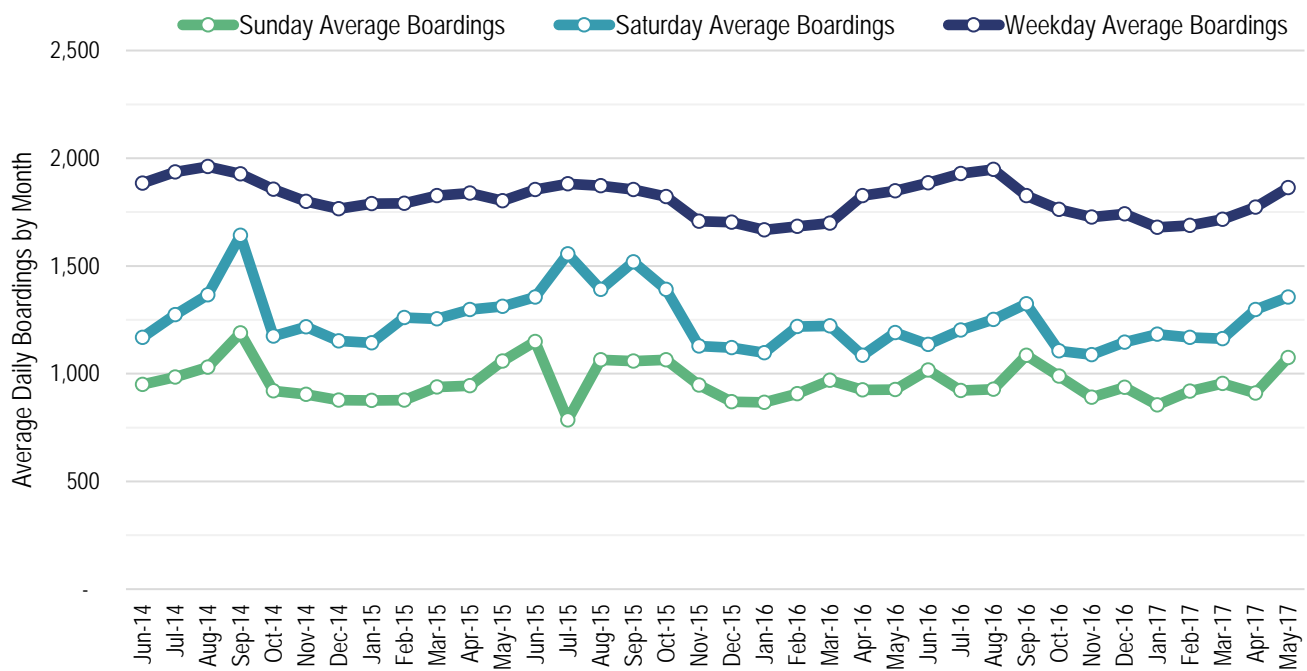


Route 578: Puyallup – Seattle

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,817	1,813	1,797	1,872
Average Saturday Boardings	1,244	1,312	1,174	1,227
Average Sunday Boardings	932	969	948	955

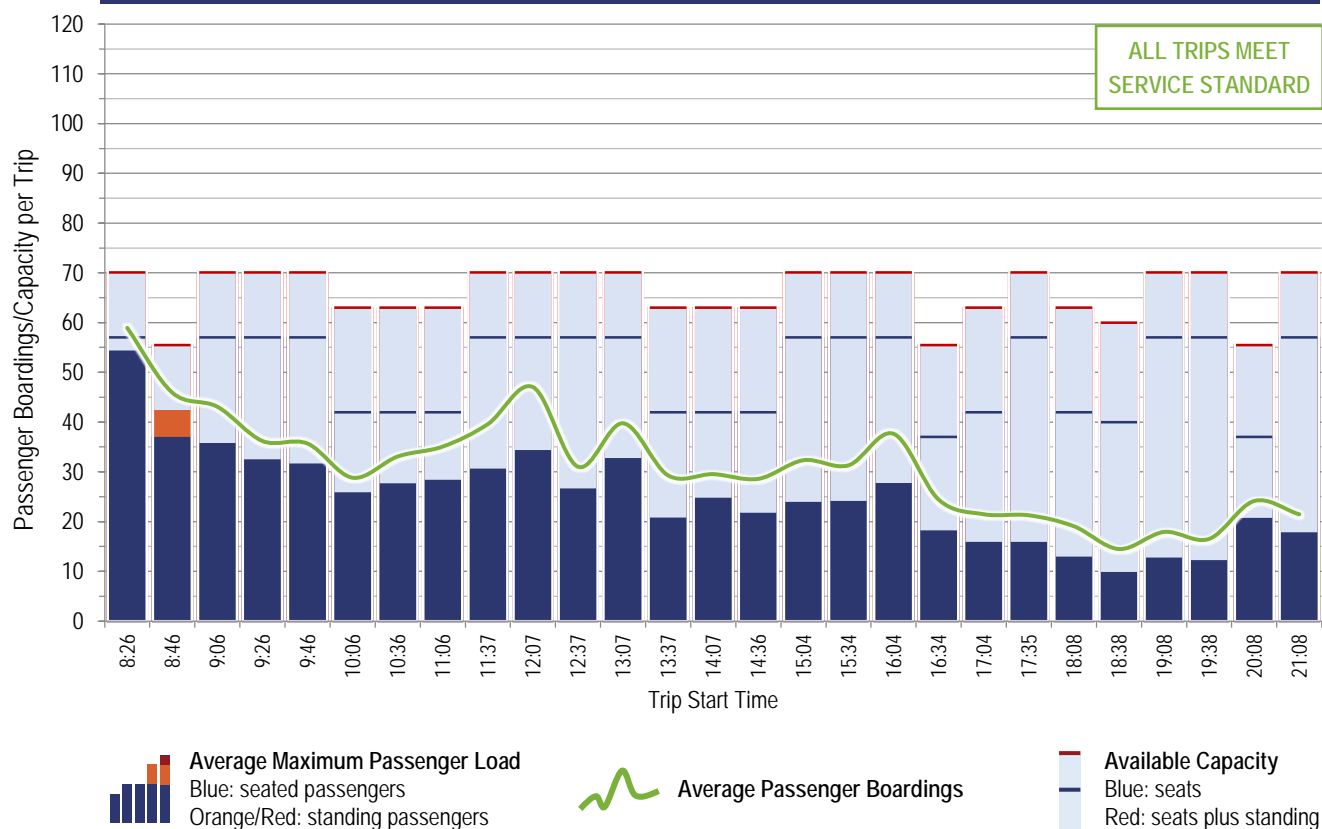




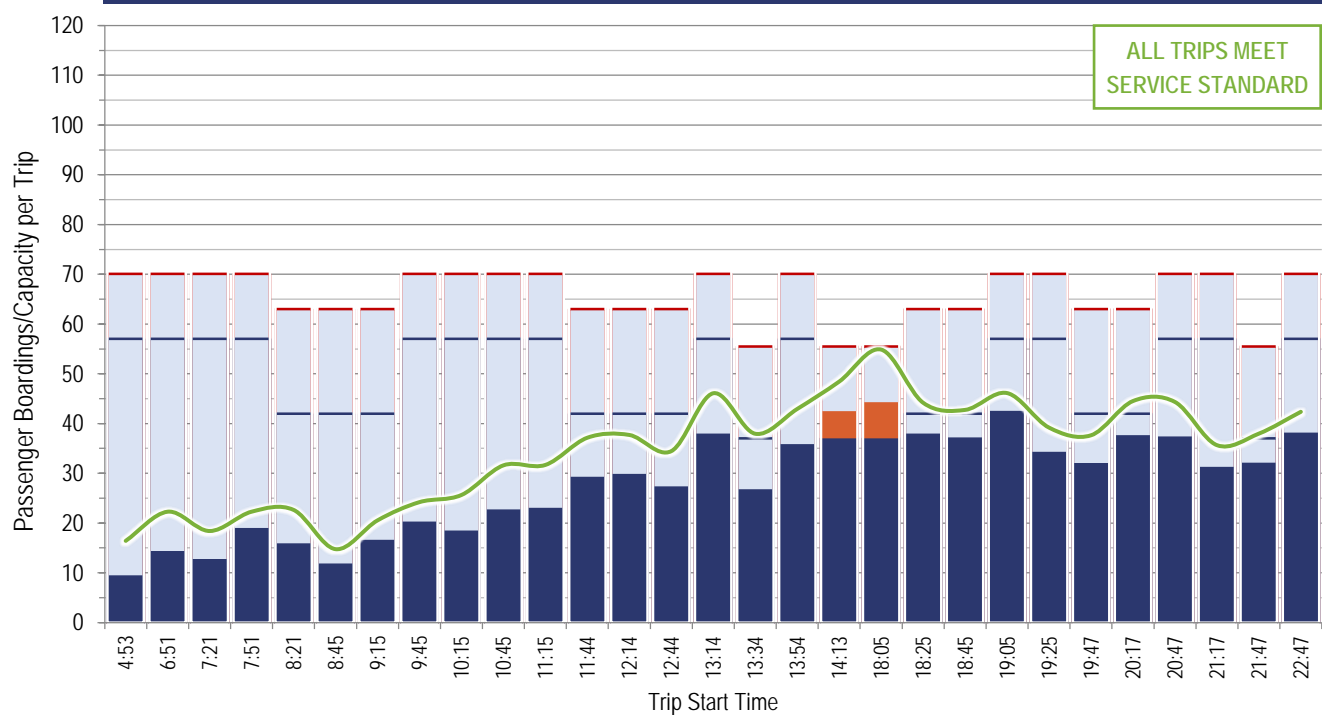
Route 578: Puyallup – Seattle

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



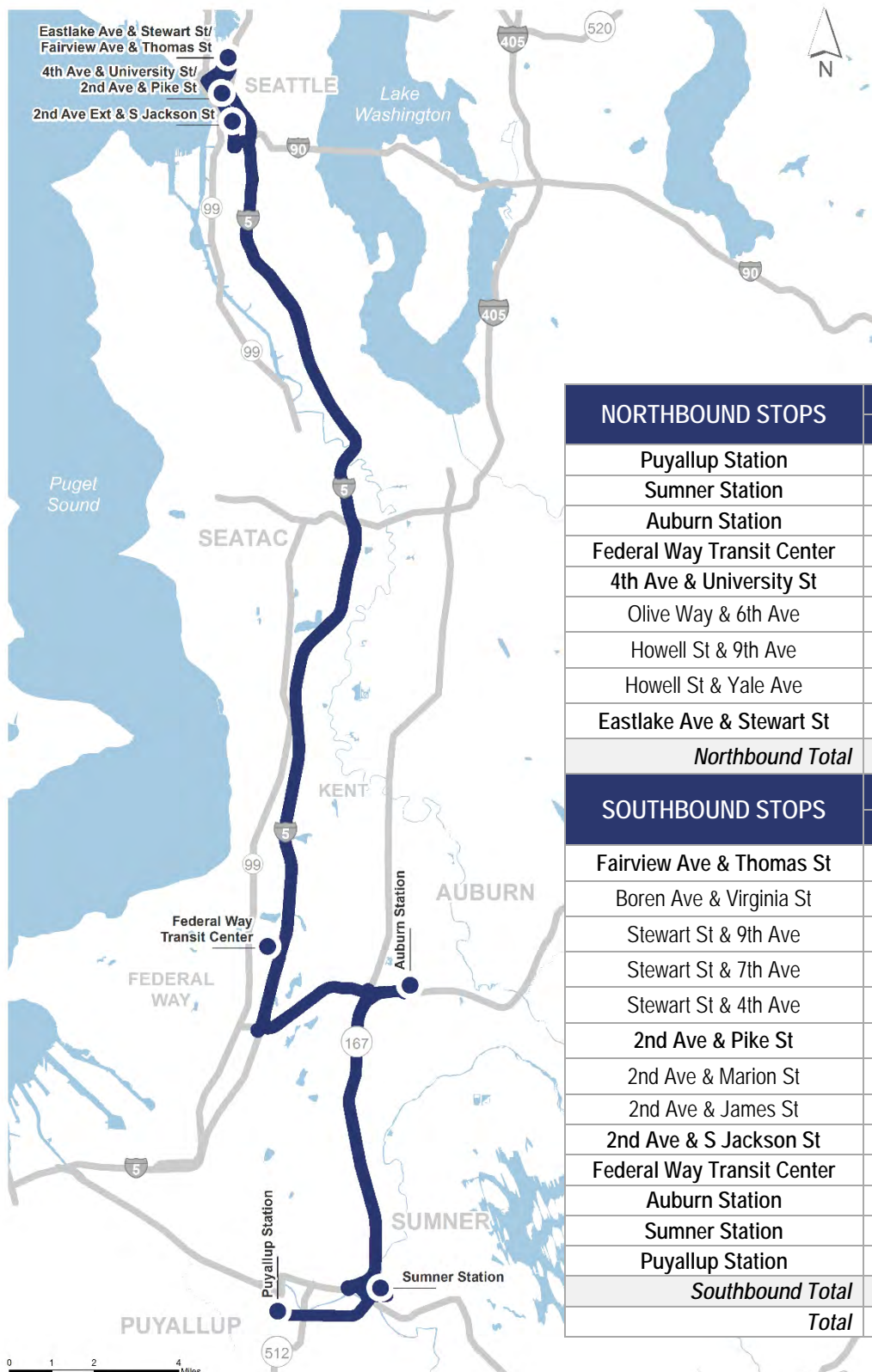
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 578: Puyallup – Seattle

I-5 S



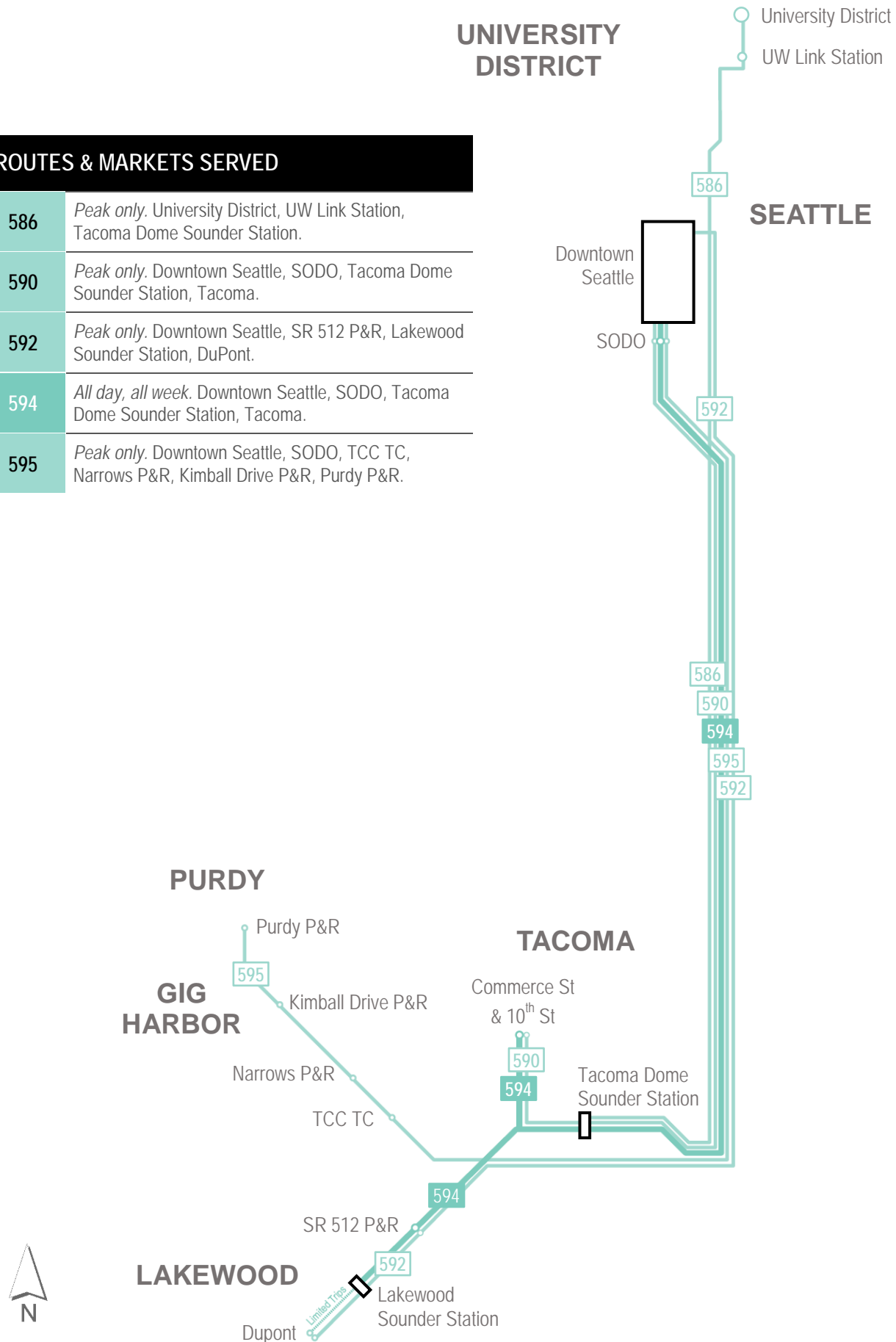
NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Puyallup Station	130	0
Sumner Station	47	18
Auburn Station	186	44
Federal Way Transit Center	477	79
4th Ave & University St	11	550
Olive Way & 6th Ave	3	94
Howell St & 9th Ave	1	18
Howell St & Yale Ave	0	10
Eastlake Ave & Stewart St	0	41
Northbound Total	854	854
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Fairview Ave & Thomas St	77	0
Boren Ave & Virginia St	11	0
Stewart St & 9th Ave	66	2
Stewart St & 7th Ave	65	2
Stewart St & 4th Ave	85	5
2nd Ave & Pike St	274	9
2nd Ave & Marion St	102	6
2nd Ave & James St	60	4
2nd Ave & S Jackson St	145	11
Federal Way Transit Center	73	581
Auburn Station	40	189
Sumner Station	19	67
Puyallup Station	0	141
Southbound Total	1,018	1,018
Total	1,872	1,872

Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

I-5 SOUTH CORRIDOR | Pierce County Service

ROUTES & MARKETS SERVED

586	<i>Peak only.</i> University District, UW Link Station, Tacoma Dome Sounder Station.
590	<i>Peak only.</i> Downtown Seattle, SODO, Tacoma Dome Sounder Station, Tacoma.
592	<i>Peak only.</i> Downtown Seattle, SR 512 P&R, Lakewood Sounder Station, DuPont.
594	<i>All day, all week.</i> Downtown Seattle, SODO, Tacoma Dome Sounder Station, Tacoma.
595	<i>Peak only.</i> Downtown Seattle, SODO, TCC TC, Narrows P&R, Kimball Drive P&R, Purdy P&R.



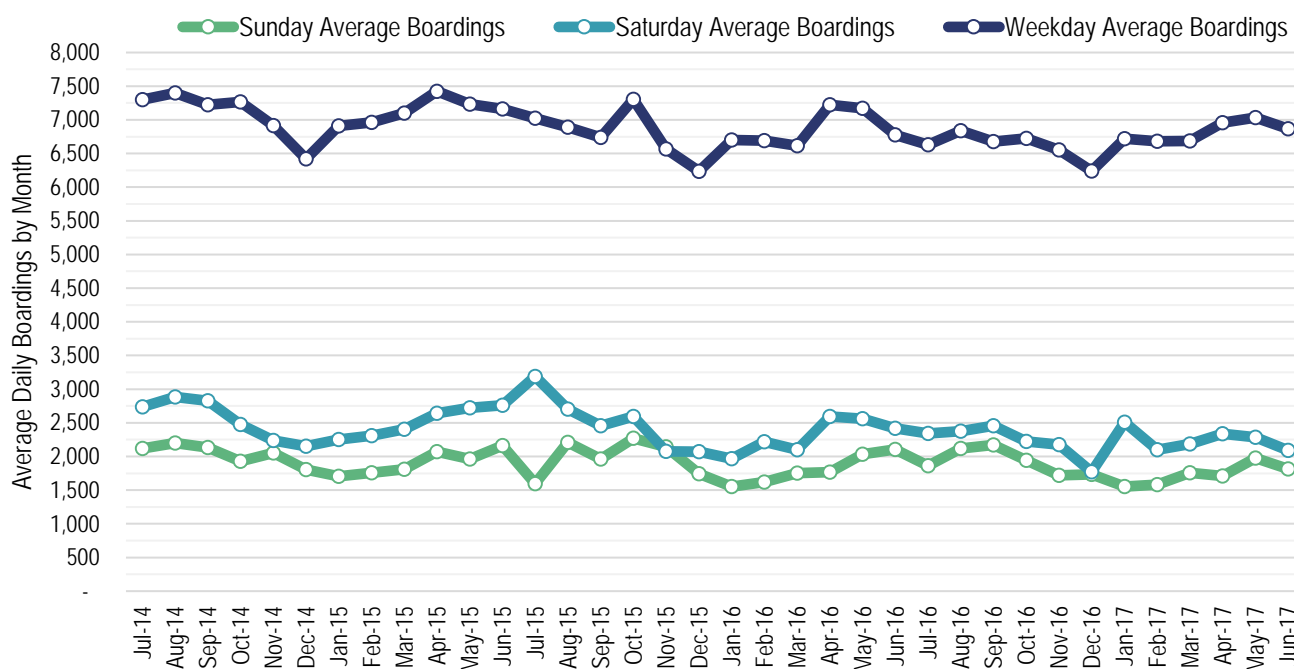
I-5 SOUTH CORRIDOR | Pierce County Service

Sound Transit assumed operation of service in this corridor from Pierce Transit in September 1999. Most changes in this corridor were made when new facilities opened. The following is a brief summary of major service changes that have occurred on this corridor:

- **September 1999:** Sound Transit assumes operation of Route 590 (Tacoma – Seattle), Routes 591/592 (Lakewood – Seattle), Route 594 (Lakewood – Tacoma – Seattle), and Route 595 (Gig Harbor – Seattle).
- **February 2002:** Route 592 was extended south to serve the new DuPont Park-and-Ride.
- **September 2002:** Route 586 started as a demonstration route between Tacoma and the U District.
- **September 2008:** Lakewood station opens; Routes 592 and 594 modified to serve Lakewood station.
- **October 2012:** Sounder south line service extended to Lakewood; Route 591 replaced with trips on Routes 590 and 592.
- **September 2013:** WSDOT Regional Mobility Grant funds a service extension of Route 592 to Olympia and Lacey; this service ended in June 2017.

Total boardings in the corridor decreased by five percent between 2014 and 2016 as a result of increasing congestion on I-5 and expanded Sounder service. Weekday boardings by four percent. Saturday and Sunday ridership decreased by seven percent and four percent, respectively. Morning peak trips have 37 boardings per trip while afternoon peak trips carry 27 passengers each. Figure 38 shows average boardings by day type by month for the I-5 South Pierce County corridor from mid-2014 through mid-2017.

FIGURE 38: I-5 SOUTH | PIERCE CORRIDOR AVERAGE DAILY BOARDINGS BY MONTH 2014-2017





Route 586: Tacoma – U. District

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	5:46 a.m.-6:20 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	16
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	44.5
Peak Buses	6
ANNUAL TOTALS	
Platform Hours	11,338
Trips	4,080

SERVICE CHANGES	
HISTORY	
Start Date	September 2002
Last Major Change	2015: Midday trips discontinued.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	19	No Weekend Service		19
Boardings per Trip	28			28
Subsidy per Boarding	\$10.76			\$10.76
Passenger Miles per Platform Mile	9			9



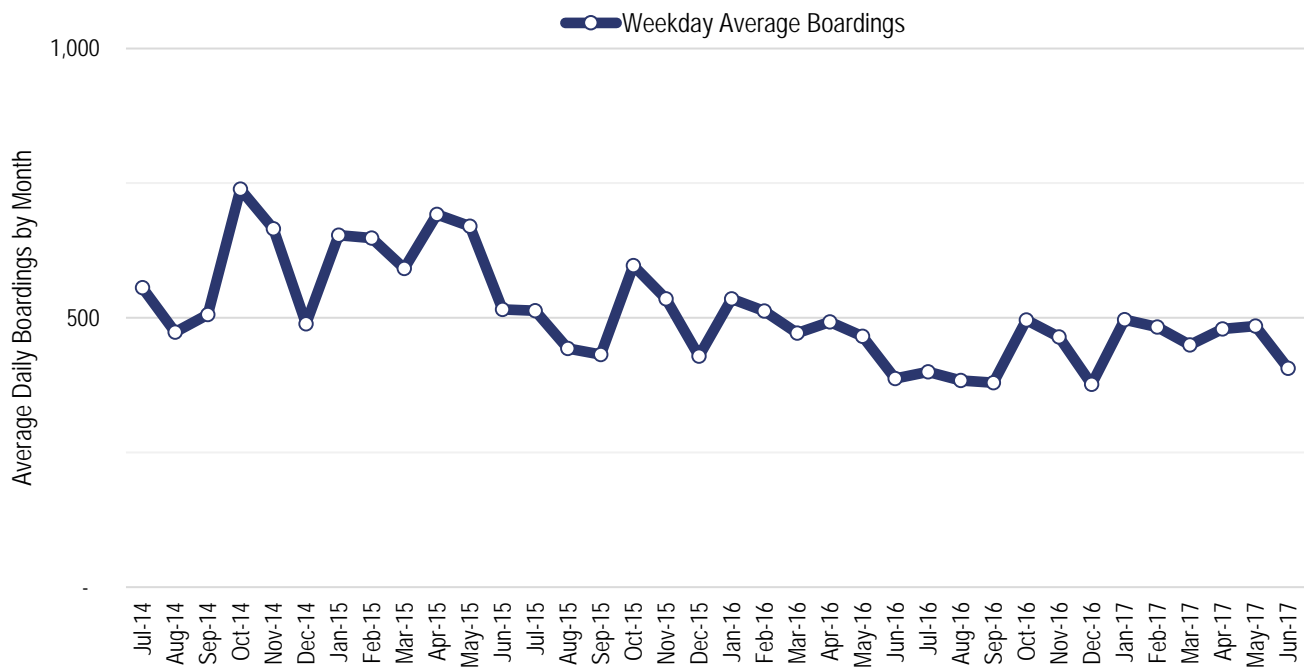


Route 586: Tacoma – U. District

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	607	559	447	457
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

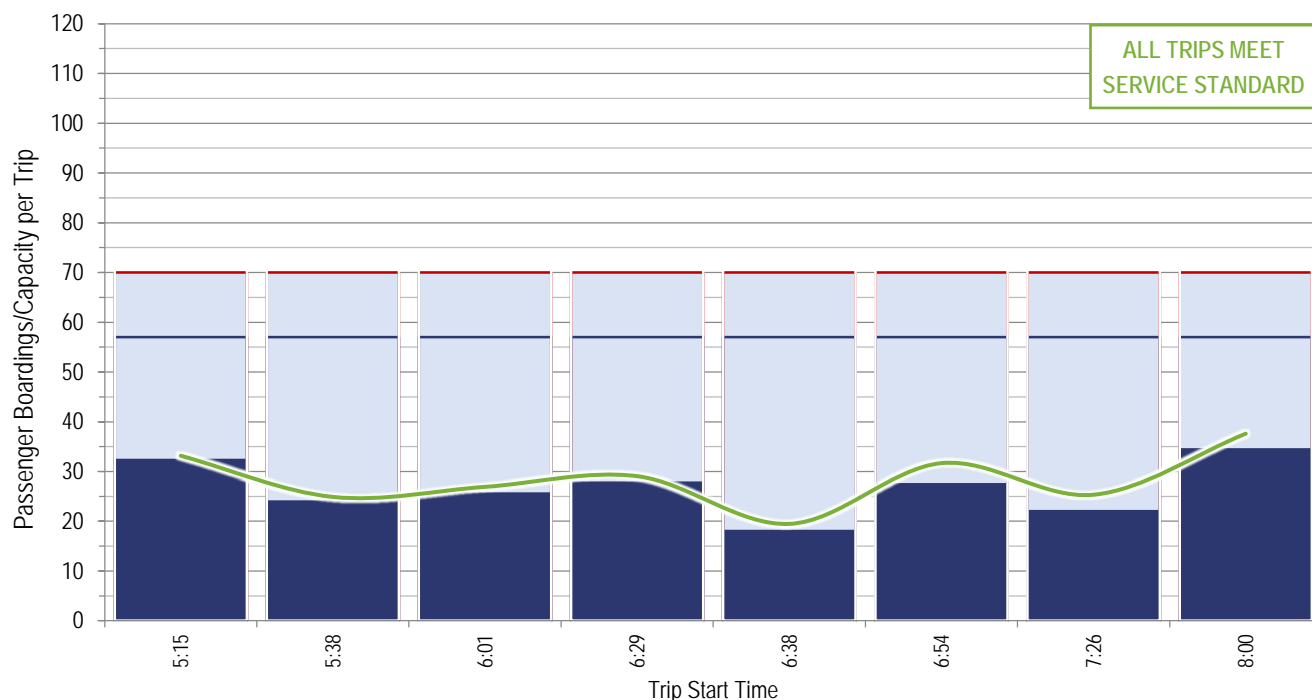




Route 586: Tacoma – U. District

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

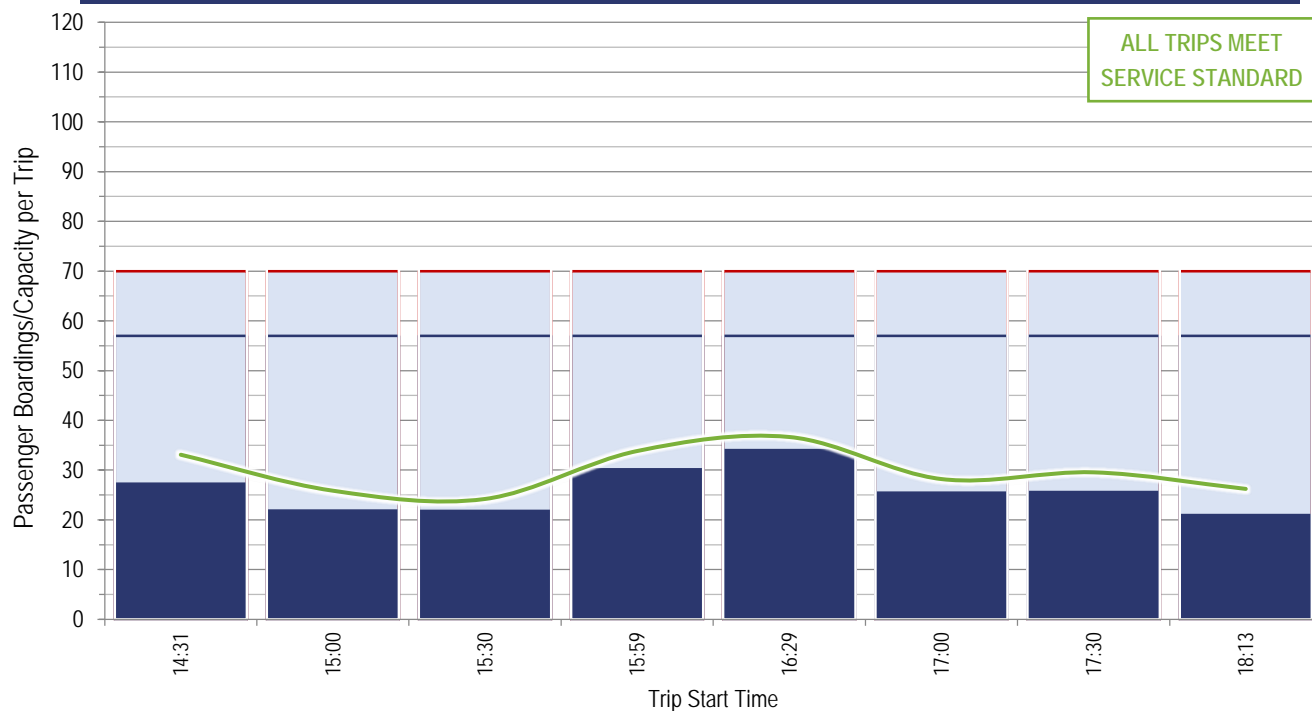


Average Maximum Passenger Load
 Blue: seated passengers
 Orange/Red: standing passengers

Average Passenger Boardings

Available Capacity
 Blue: seats
 Red: seats plus standing

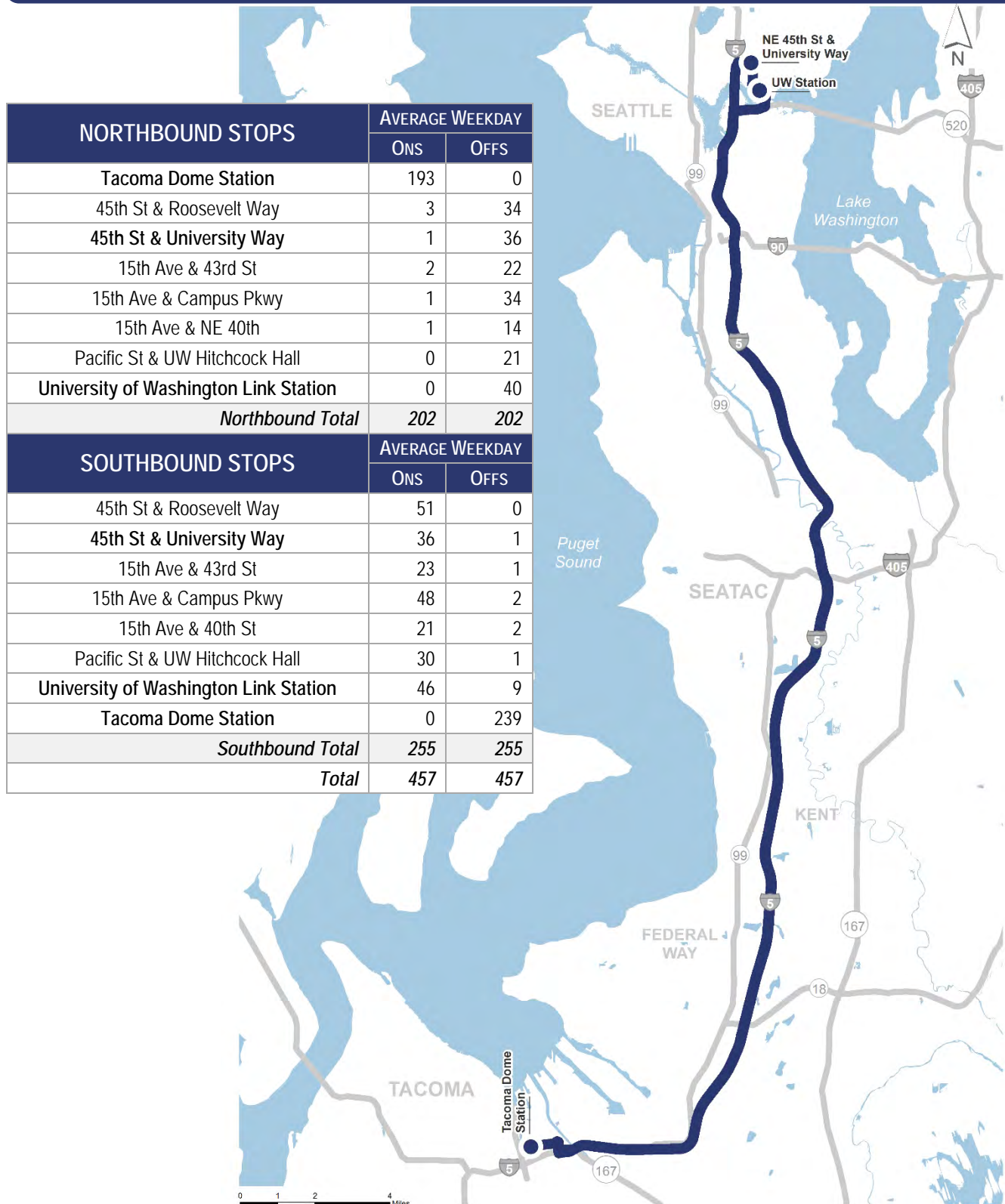
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 586: Tacoma – U. District

I-5 S



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 590: Tacoma – Seattle

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Very Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:08 a.m.-6:24 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	84
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	187.8
Peak Buses	23
ANNUAL TOTALS	
Platform Hours	47,888
Trips	21,209

SERVICE CHANGES	
HISTORY	
Start Date	September 1991
Last Major Change	2016: Two trips added to address overcrowding.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	22	No Weekend Service		22
Boardings per Trip	34			34
Subsidy per Boarding	\$6.53			\$6.53
Passenger Miles per Platform Mile	14			14



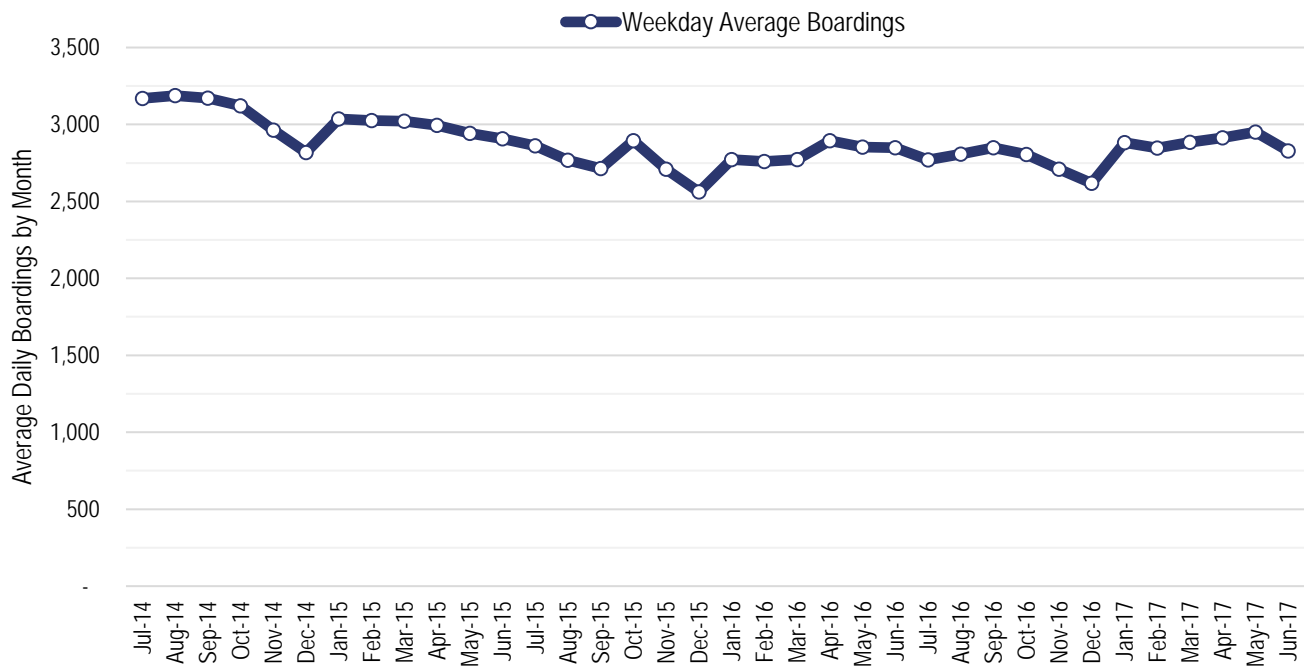


Route 590: Tacoma – Seattle

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	3,108	2,869	2,789	2,897
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

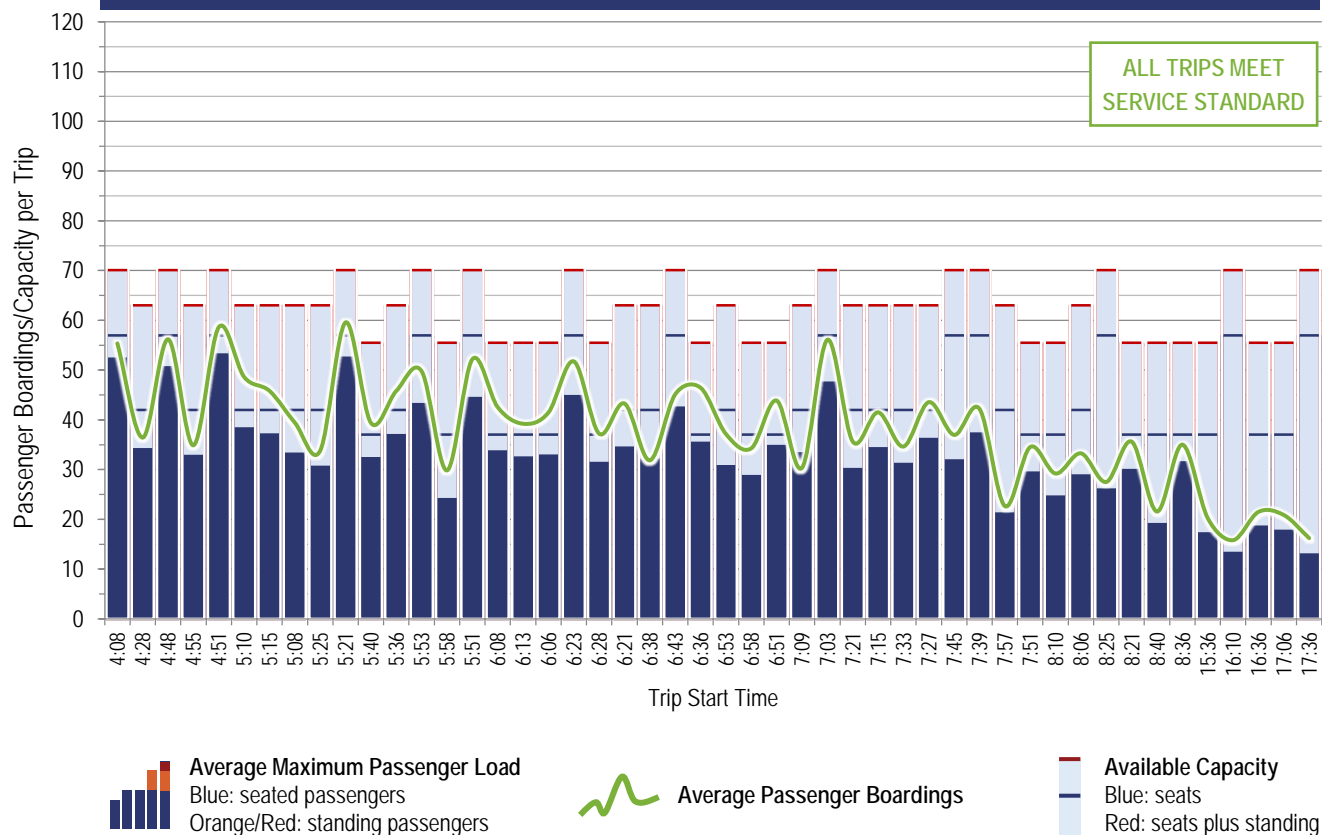




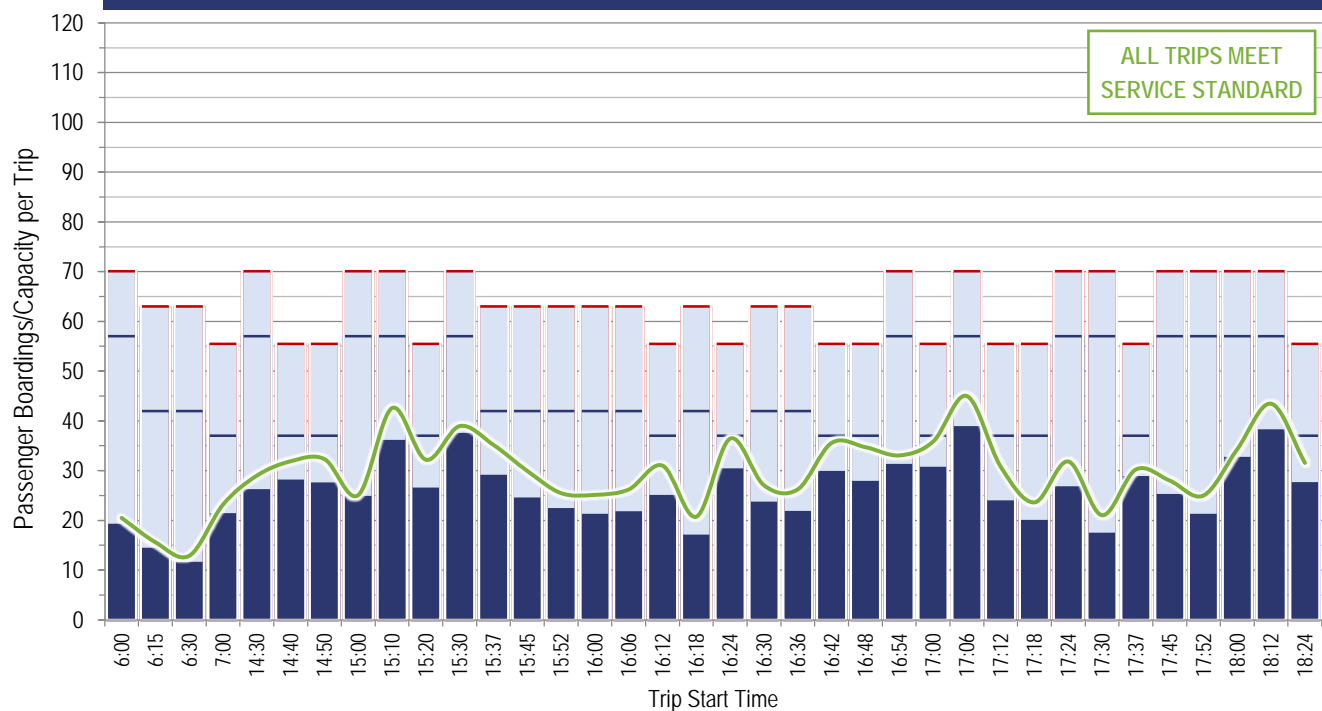
Route 590: Tacoma – Seattle

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

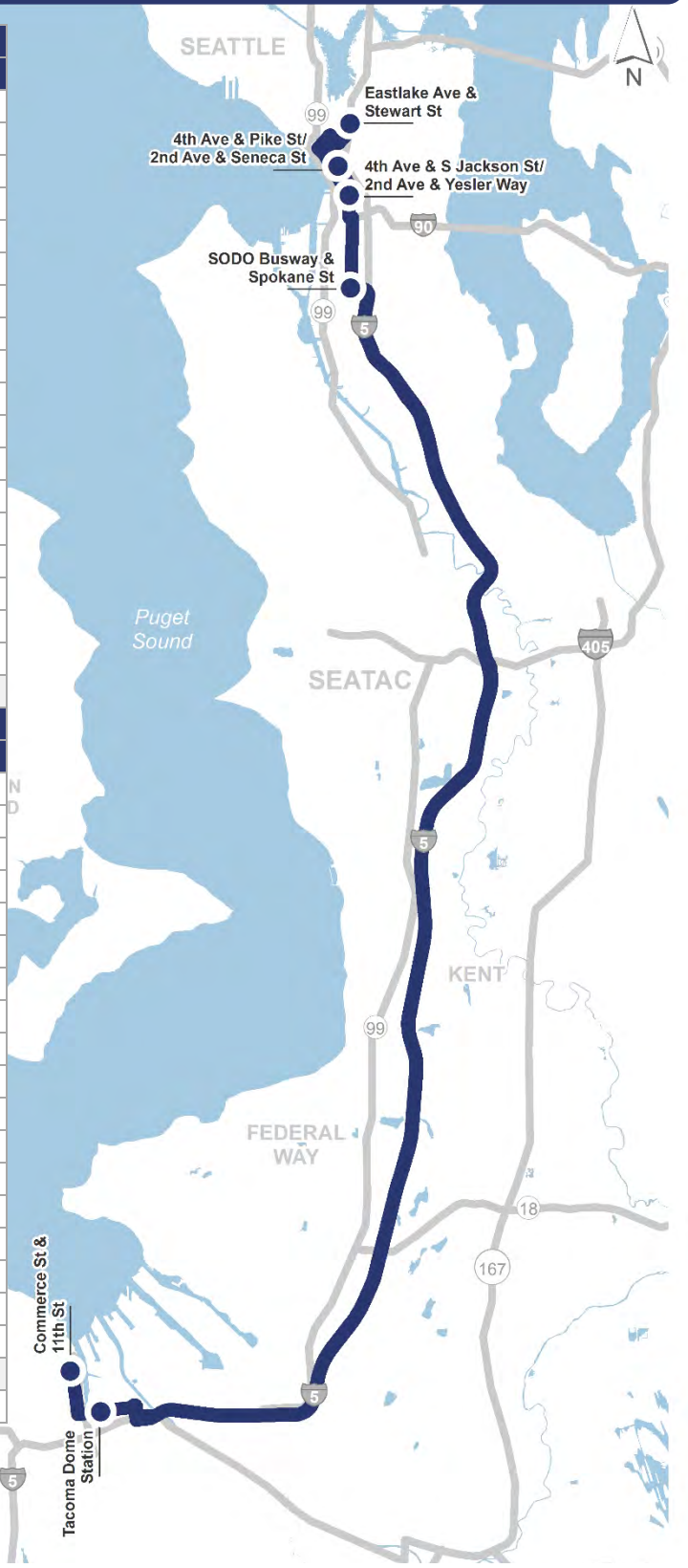




Route 590: Tacoma – Seattle

I-5 S

NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Commerce St & 10th St	154	0
Pacific Ave & 14th St	38	1
Pacific Ave & 19th St	64	1
Pacific Ave & 24th St	0	0
Tacoma Dome Station	1,312	51
SODO Busway & Spokane St	19	63
SODO Busway & Lander St	25	108
SODO Busway & Holgate St	9	21
SODO Busway & Royal Brougham Way	6	44
4th Ave & S Jackson St	191	216
4th Ave & Washington St	9	52
4th Ave & Cherry St	16	396
4th Ave & Seneca St	14	282
4th Ave & Pike St	16	241
Olive Way & 6th Ave	9	130
Howell St & 9th Ave	1	82
Howell St & Yale Ave	1	44
Eastlake Ave & Stewart St	0	151
Northbound Total	1,883	1,883
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Eastlake Ave & Stewart St	98	0
Stewart St & Yale Ave	14	0
Stewart St & 9th Ave	101	3
Stewart St & 7th Ave	83	2
Stewart St & 4th Ave	78	10
2nd Ave & Stewart St	96	17
2nd Ave & Seneca St	190	11
2nd Ave & Cherry St	91	7
2nd Ave & Yesler Way	65	14
SODO Busway & Royal Brougham Way	41	7
SODO Busway & Holgate St	19	5
SODO Busway & Lander St	54	7
SODO Busway & Spokane St	44	7
Tacoma Dome Station	37	762
Pacific Ave & 24th St	1	17
Pacific Ave & 19th St	1	33
Pacific Ave & 14th St	1	25
Commerce St & 10th St	0	85
Southbound Total	1,014	1,014
Total	2,897	2,897



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 592: DuPont – Lakewood – Seattle

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Frequent
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:05 a.m.-6:22 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	31
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	92.7
Peak Buses	11
ANNUAL TOTALS	
Platform Hours	23,647
Trips	7,898

SERVICE CHANGES	
HISTORY	
Start Date	September 1991
Last Major Change	2017: Service discontinued to Lacey and Olympia
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	15	No Weekend Service		15
Boardings per Trip	31			31
Subsidy per Boarding	\$10.62			\$10.62
Passenger Miles per Platform Mile	12			12



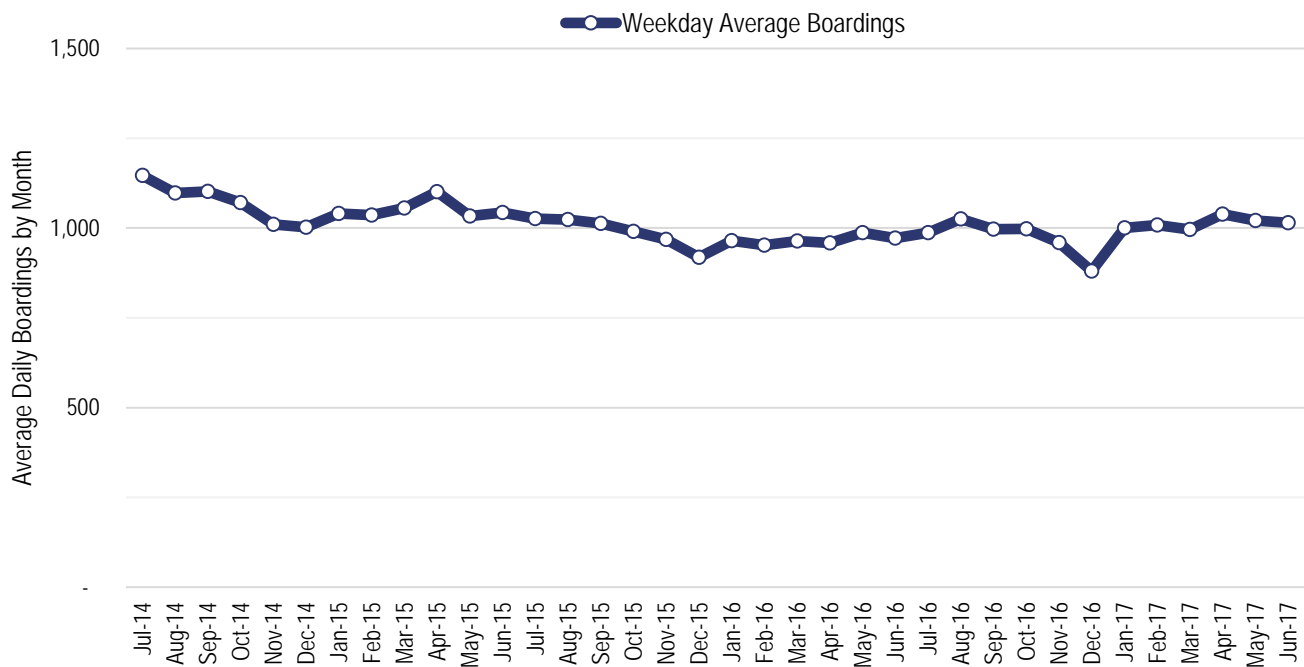


Route 592: DuPont – Lakewood – Seattle

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,006	1,021	971	1,024
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

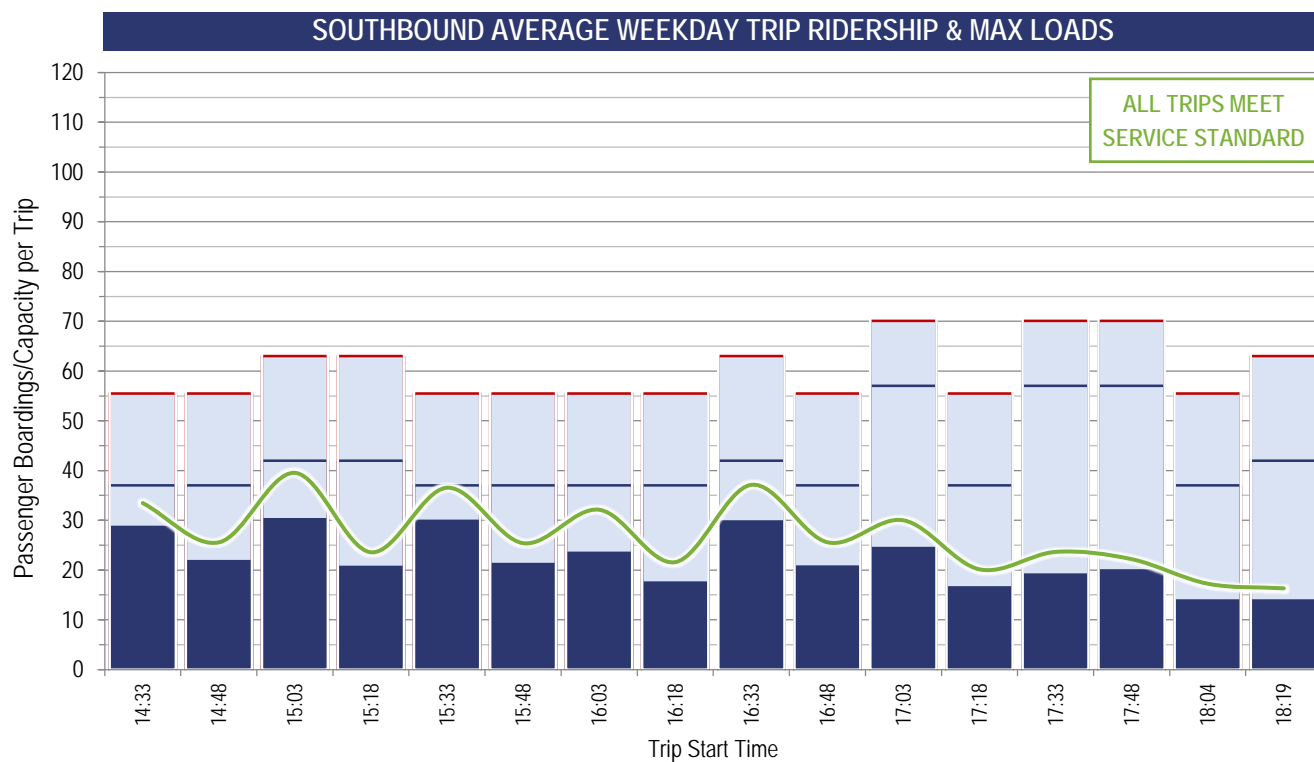
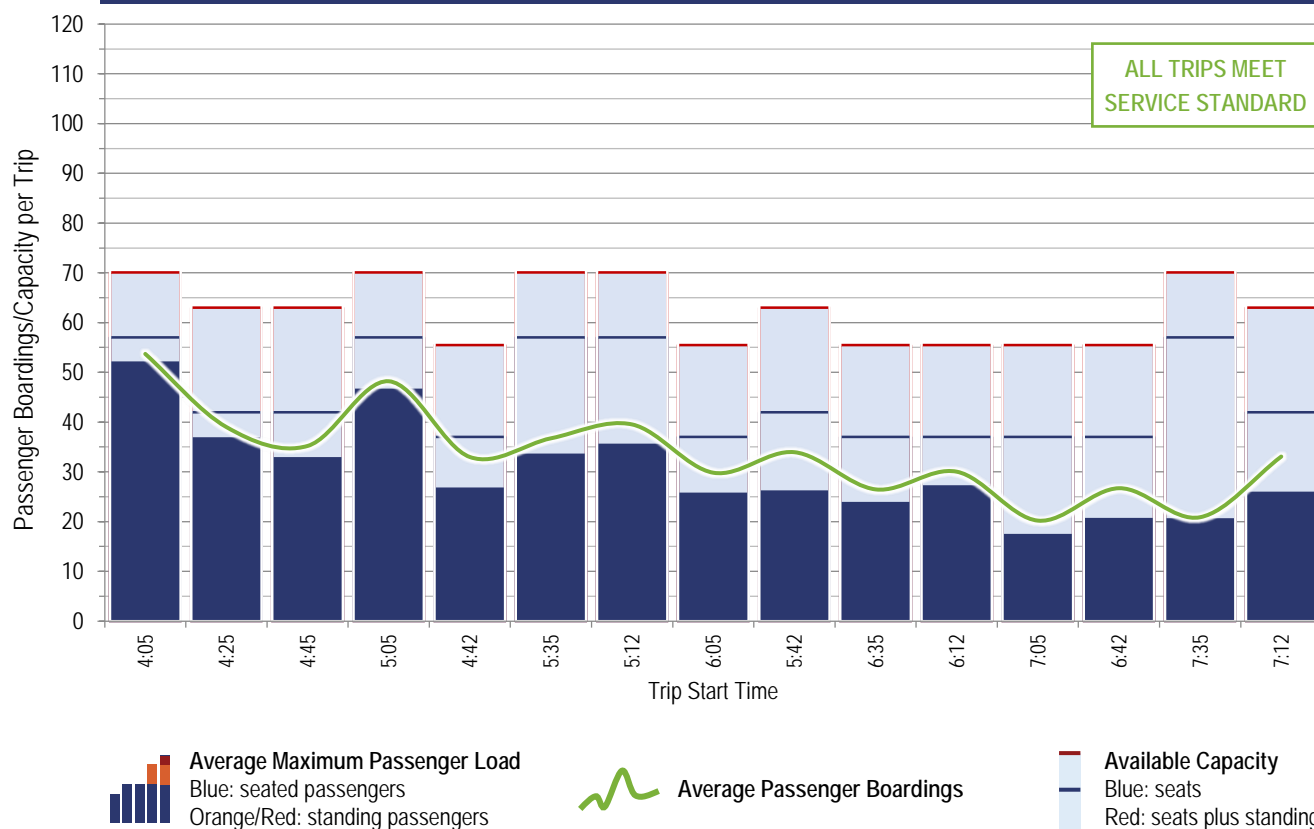




Route 592: DuPont – Lakewood – Seattle

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

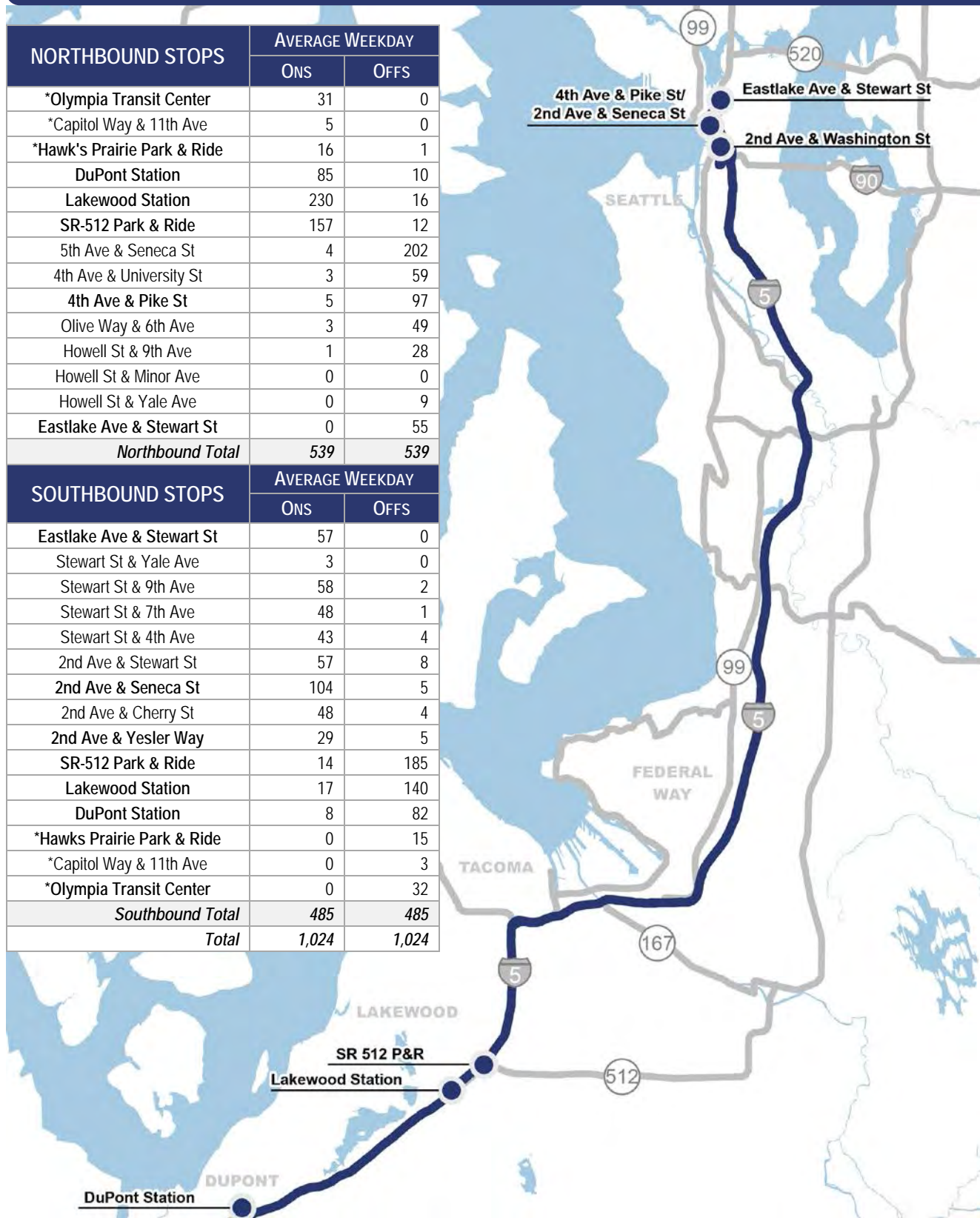




Route 592: DuPont – Lakewood – Seattle

I-5 S

NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
*Olympia Transit Center	31	0
*Capitol Way & 11th Ave	5	0
*Hawk's Prairie Park & Ride	16	1
DuPont Station	85	10
Lakewood Station	230	16
SR-512 Park & Ride	157	12
5th Ave & Seneca St	4	202
4th Ave & University St	3	59
4th Ave & Pike St	5	97
Olive Way & 6th Ave	3	49
Howell St & 9th Ave	1	28
Howell St & Minor Ave	0	0
Howell St & Yale Ave	0	9
Eastlake Ave & Stewart St	0	55
Northbound Total	539	539
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Eastlake Ave & Stewart St	57	0
Stewart St & Yale Ave	3	0
Stewart St & 9th Ave	58	2
Stewart St & 7th Ave	48	1
Stewart St & 4th Ave	43	4
2nd Ave & Stewart St	57	8
2nd Ave & Seneca St	104	5
2nd Ave & Cherry St	48	4
2nd Ave & Yesler Way	29	5
SR-512 Park & Ride	14	185
Lakewood Station	17	140
DuPont Station	8	82
*Hawks Prairie Park & Ride	0	15
*Capitol Way & 11th Ave	0	3
*Olympia Transit Center	0	32
Southbound Total	485	485
Total	1,024	1,024



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

*Service to Thurston County discontinued June 30, 2017



Route 594: Lakewood – Seattle

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	Moderate
Evenings	Moderate
Saturday	Moderate
Sunday	Moderate
SPAN OF SERVICE	
Weekday	5:30 a.m.-11:45 p.m.
Saturday	5:00 a.m.-11:42 p.m.
Sunday	5:00 a.m.-11:42 p.m.
TRIPS PER DAY	
Weekday	65
Saturday	68
Sunday	68

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	142.3
Peak Buses	7
TYPICAL SATURDAY	
Platform Hours	133.2
TYPICAL SUNDAY	
Platform Hours	133.8
ANNUAL TOTALS	
Platform Hours	51,116
Trips	24,077

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	2015: Shoulder peak service improved to every 20 minutes.
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	17	19	15	17
Boardings per Trip	34	33	27	33
Subsidy per Boarding	\$6.05	\$5.25	\$6.92	\$6.04
Passenger Miles per Platform Mile	17	20	16	17



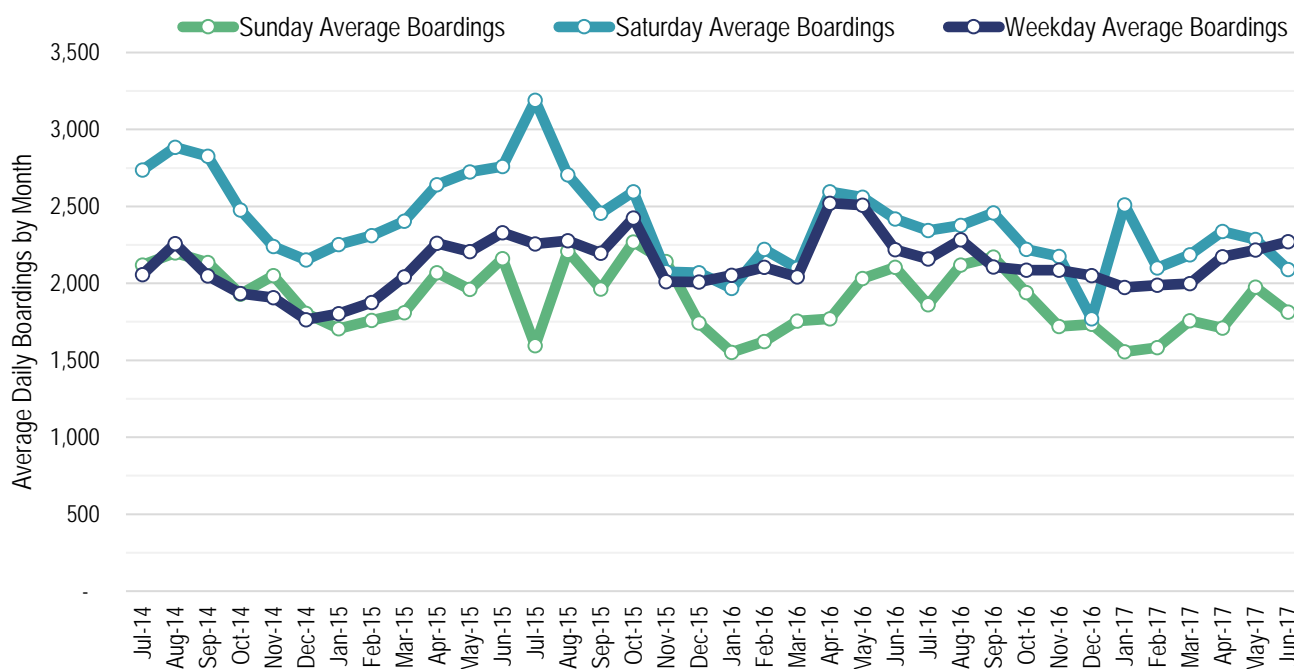


Route 594: Lakewood – Seattle

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	1,952	2,143	2,185	2,169
Average Saturday Boardings	2,501	2,518	2,267	2,236
Average Sunday Boardings	1,930	1,947	1,868	1,839

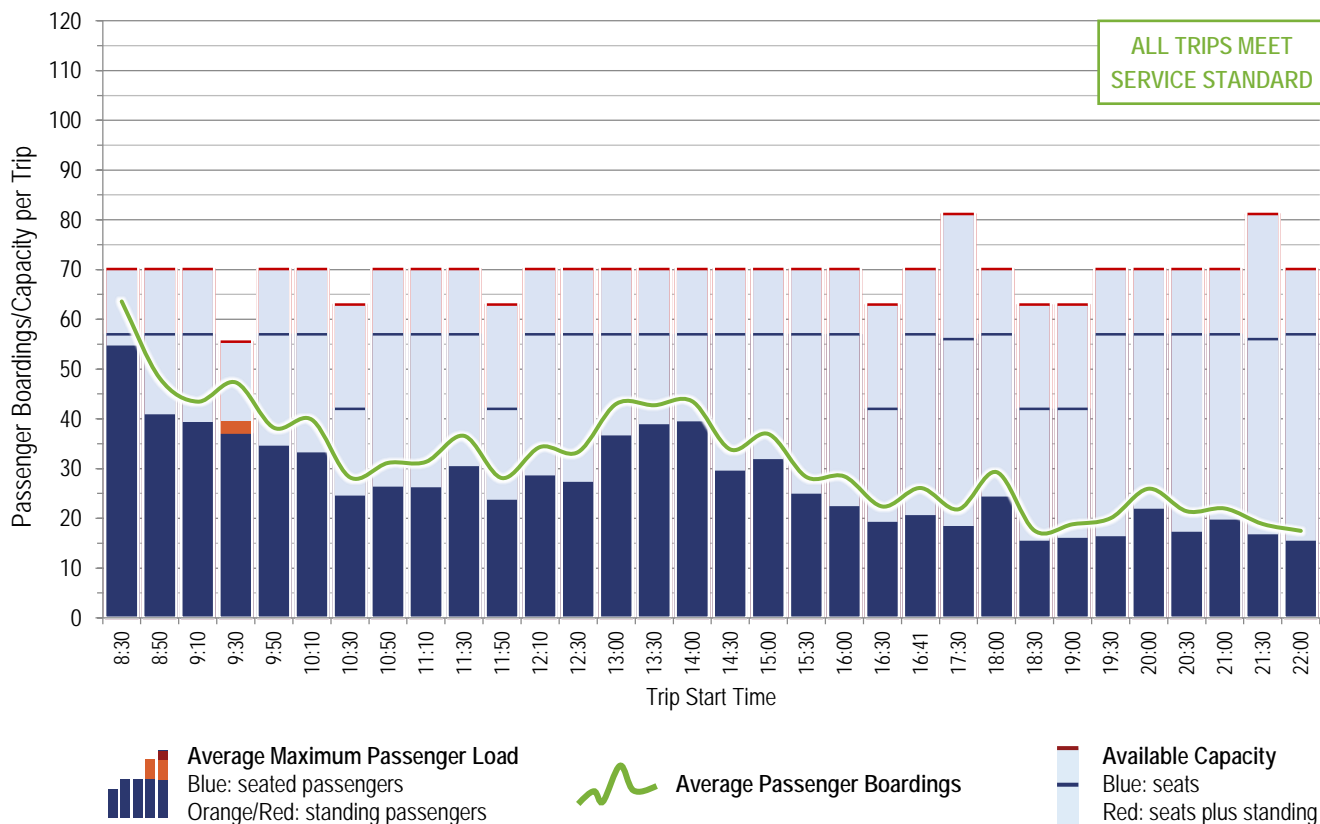




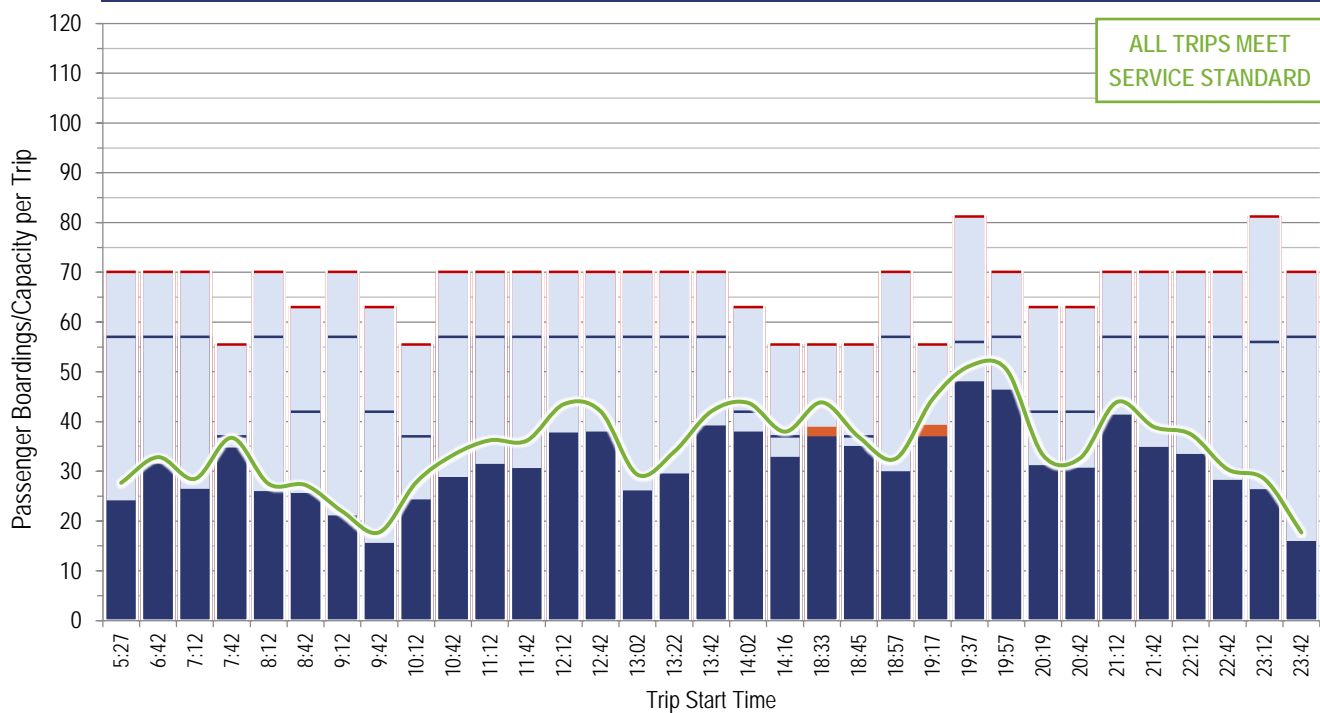
Route 594: Lakewood – Seattle

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS

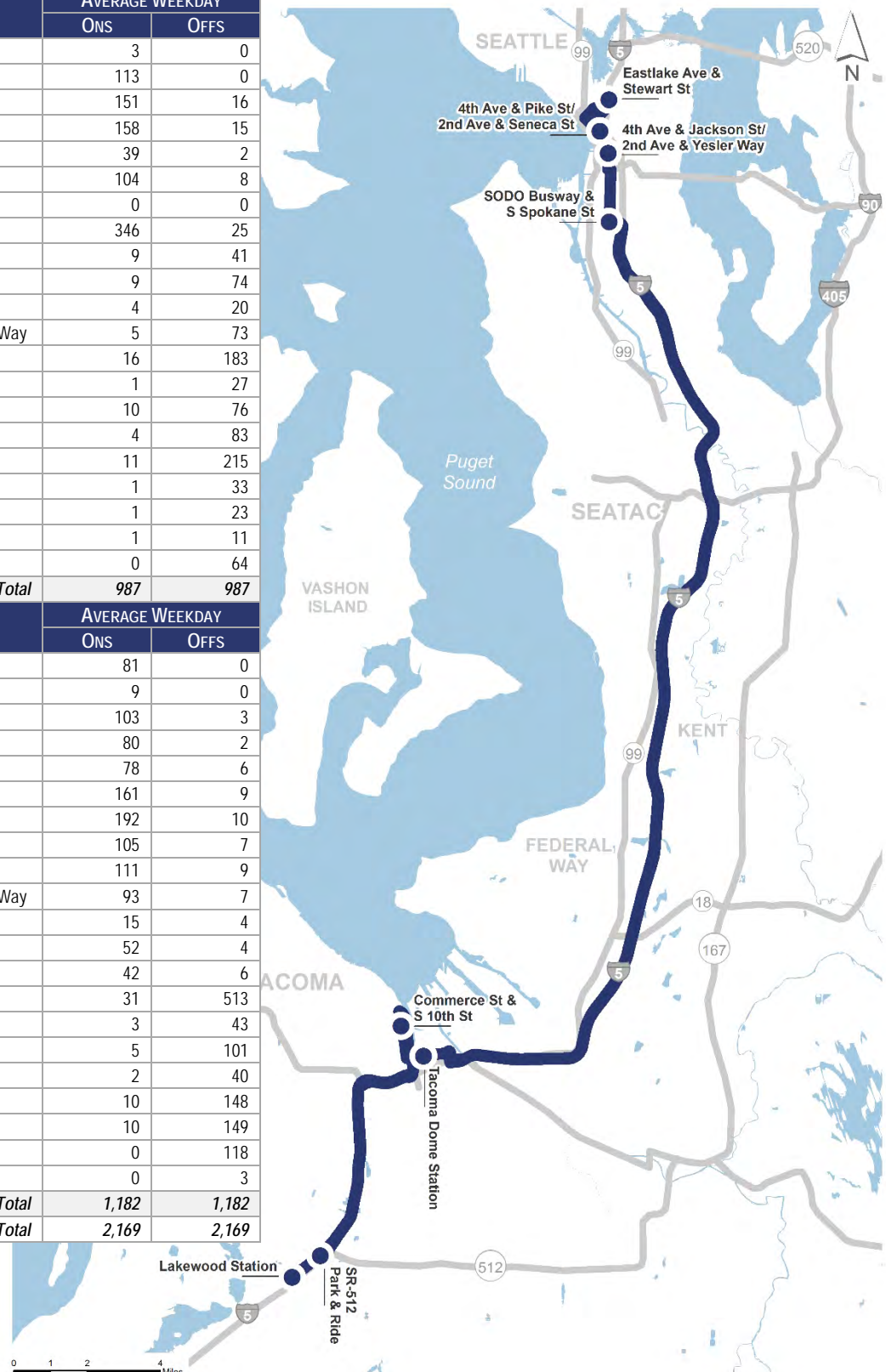




Route 594: Lakewood – Seattle

I-5 S

NORTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
DuPont Station	3	0
Lakewood Station	113	0
SR-512 Park & Ride	151	16
Commerce St & 10th St	158	15
Pacific Ave & 14th St	39	2
Pacific Ave & 19th St	104	8
24th St & Pacific Ave	0	0
Tacoma Dome Station	346	25
SODO Busway & Spokane St	9	41
SODO Busway & Lander St	9	74
SODO Busway & Holgate St	4	20
SODO Busway & Royal Brougham Way	5	73
4th Ave & S Jackson St	16	183
4th Ave & Washington St	1	27
4th Ave & Cherry St	10	76
4th Ave & Seneca St	4	83
4th Ave & Pike St	11	215
Olive Way & 6th Ave	1	33
Howell St & 9th Ave	1	23
Howell St & Yale Ave	1	11
Eastlake Ave & Stewart St	0	64
Northbound Total	987	987
SOUTHBOUND STOPS	AVERAGE WEEKDAY	
	ONS	OFFS
Eastlake Ave & Stewart St	81	0
Stewart St & Yale Ave	9	0
Stewart St & 9th Ave	103	3
Stewart St & 7th Ave	80	2
Stewart St & 4th Ave	78	6
2nd Ave & Stewart St	161	9
2nd Ave & Seneca St	192	10
2nd Ave & Cherry St	105	7
2nd Ave & Yesler Way	111	9
SODO Busway & Royal Brougham Way	93	7
SODO Busway & Holgate St	15	4
SODO Busway & Lander St	52	4
SODO Busway & Spokane St	42	6
Tacoma Dome Station	31	513
Pacific Ave & 24th St	3	43
Pacific Ave & 19th St	5	101
Pacific Ave & 14th St	2	40
Commerce St & 10th St	10	148
SR-512 Park & Ride	10	149
Lakewood Station	0	118
DuPont Station	0	3
Southbound Total	1,182	1,182
Total	2,169	2,169



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.



Route 595: Gig Harbor – Seattle

I-5 S

OVERVIEW

SERVICE LEVELS	
SERVICE FREQUENCY	
Peak	Moderate
Off-Peak	No Service
Evenings	No Service
Saturday	No Service
Sunday	No Service
SPAN OF SERVICE	
Weekday	4:50 a.m.-5:06 p.m.
Saturday	-
Sunday	-
TRIPS PER DAY	
Weekday	10
Saturday	-
Sunday	-

SERVICE PROVIDED	
TYPICAL WEEKDAY	
Platform Hours	29.6
Peak Buses	5
ANNUAL TOTALS	
Platform Hours	7,540
One-Way Trips	2,544

SERVICE CHANGES	
HISTORY	
Start Date	September 1999
Last Major Change	N/A
PROPOSED	

KEY PERFORMANCE INDICATORS

2016	WEEKDAY	SATURDAY	SUNDAY	OVERALL
Boardings per Revenue Hour	17	No Weekend Service		17
Boardings per Trip	35			35
Subsidy per Boarding	\$8.90			\$8.90
Passenger Miles per Platform Mile	14			14



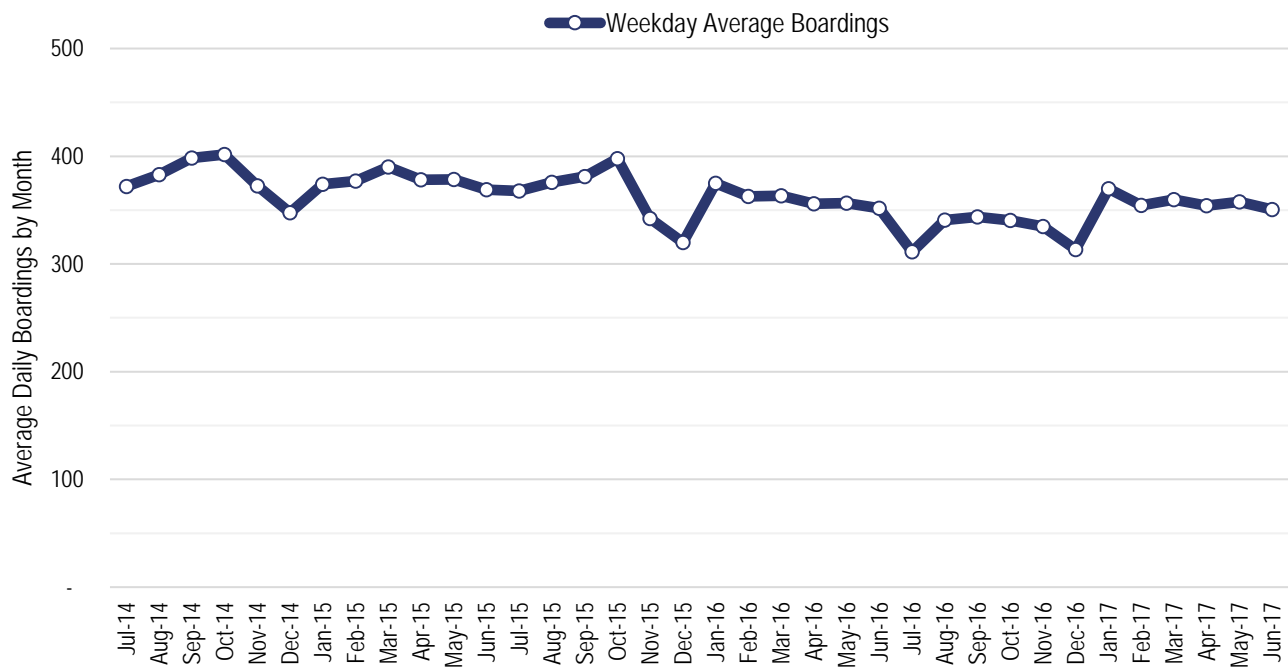


Route 595: Gig Harbor – Seattle

I-5 S

RIDERSHIP

	2014	2015	2016	SPRING 2017
Average Weekday Boardings	393	371	346	354
Average Saturday Boardings	No Weekend Service			
Average Sunday Boardings				

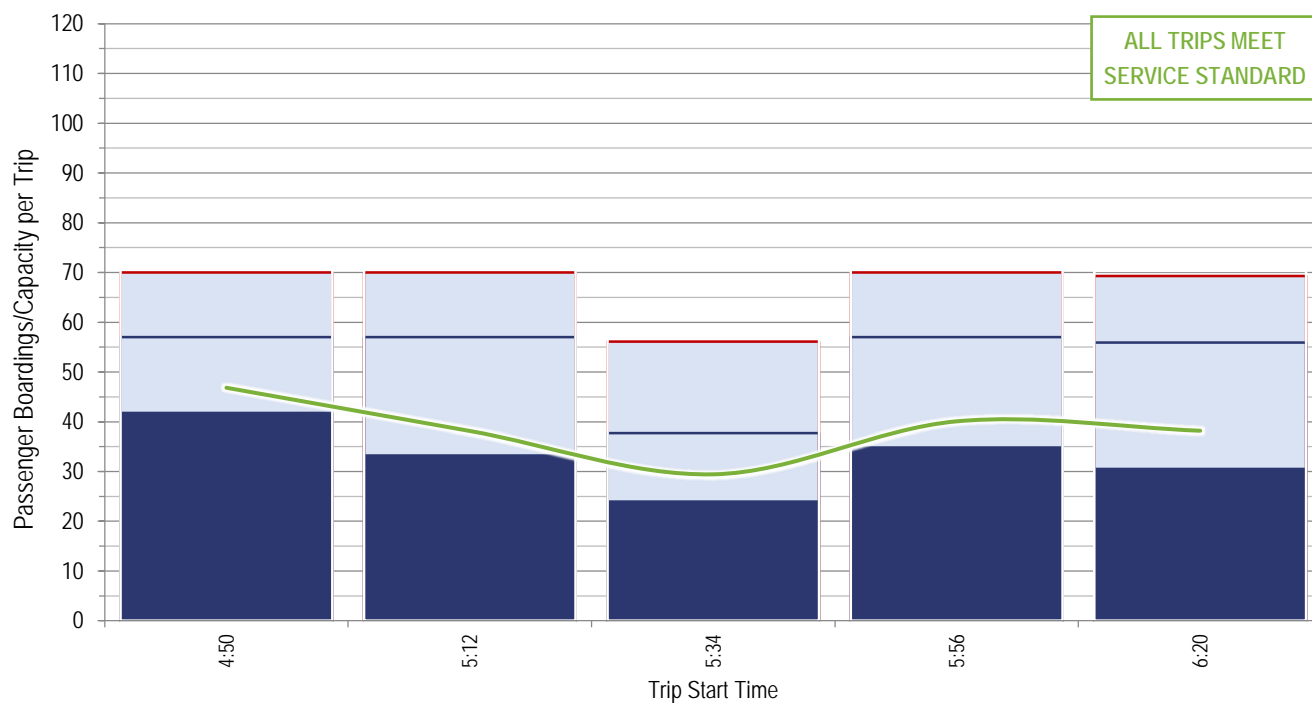




Route 595: Gig Harbor – Seattle

I-5 S

NORTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS



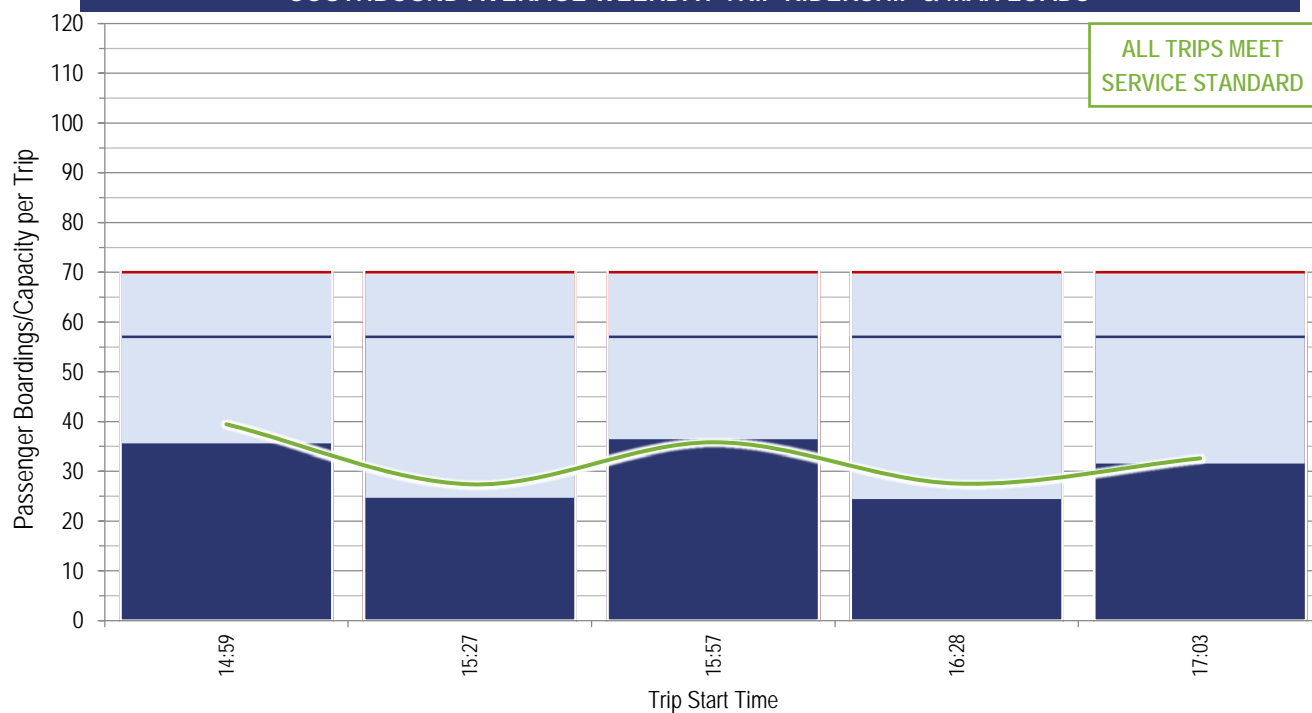
Average Maximum Passenger Load
 Blue: seated passengers
 Orange/Red: standing passengers



Average Passenger Boardings

Available Capacity
 Blue: seats
 Red: seats plus standing

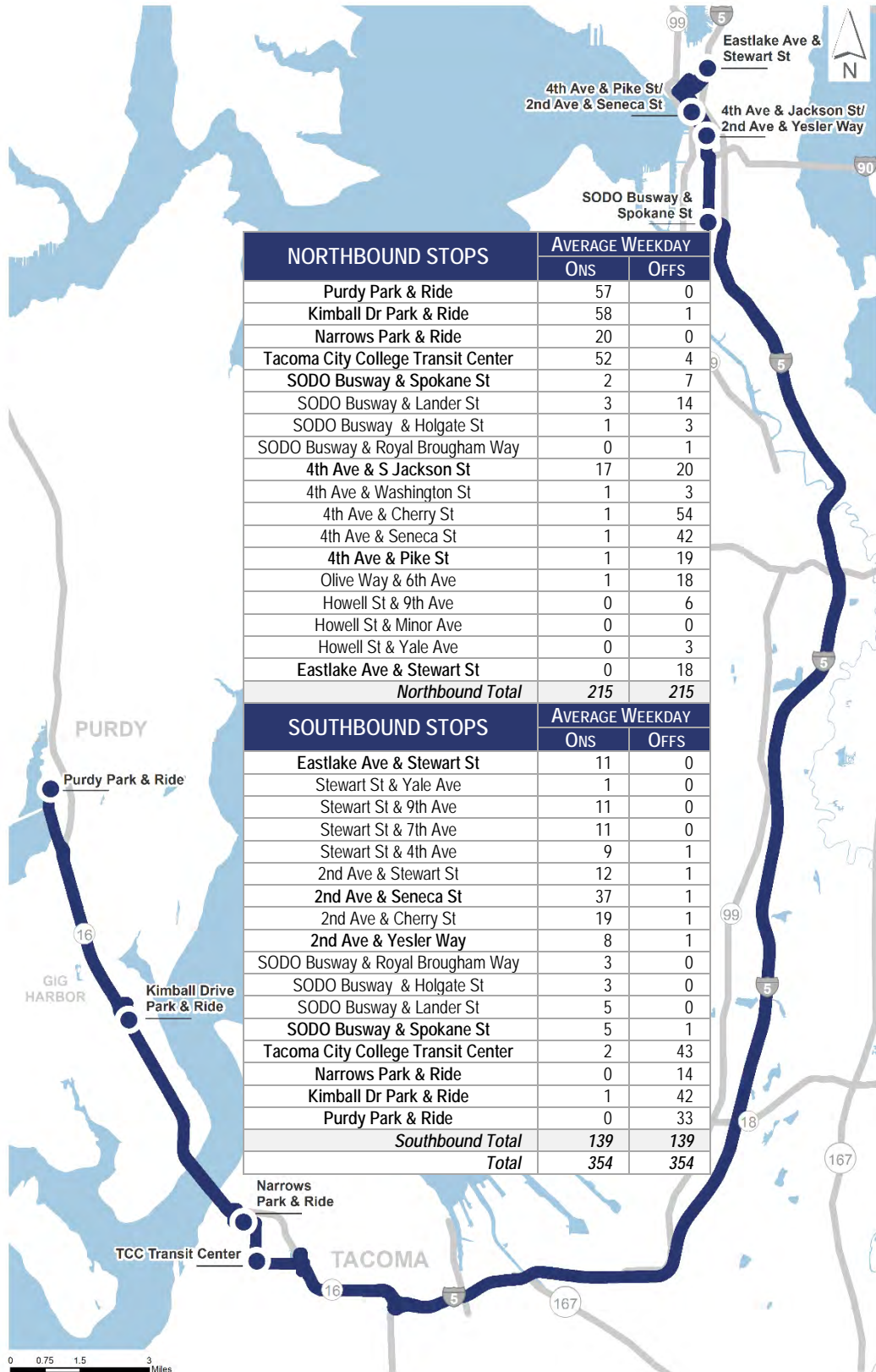
SOUTHBOUND AVERAGE WEEKDAY TRIP RIDERSHIP & MAX LOADS





Route 595: Gig Harbor – Seattle

I-5 S



Map only includes timepoint stops; table includes full list of stops with timepoints in bold.

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APPENDIX



Appendix

ST EXPRESS ON-TIME PERFORMANCE BY ROUTE

TABLE 31: ST EXPRESS ON TIME PERFORMANCE BY ROUTE – WEEKDAYS (2017)

Bold: Performance below budget standard of >85%.

ROUTE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
510	91%	89%	89%	92%	92%	80%	80%	83%	87%	89%	82%	86%
511	89%	88%	87%	91%	87%	76%	75%	82%	85%	87%	79%	82%
512	94%	91%	90%	94%	92%	88%	87%	89%	93%	92%	87%	90%
513	90%	88%	87%	86%	85%	73%	77%	83%	88%	88%	78%	87%
532	98%	94%	96%	96%	96%	92%	94%	93%	97%	95%	92%	92%
535	98%	97%	98%	98%	98%	98%	97%	96%	97%	97%	95%	96%
522	82%	83%	84%	86%	84%	84%	85%	85%	86%	Data Unavailable		
540	76%	75%	76%	75%	73%	68%	63%	67%	75%			
541	84%	84%	84%	86%	83%	79%	77%	84%	84%			
542	90%	88%	87%	89%	87%	84%	82%	86%	84%			
545	88%	86%	88%	90%	88%	87%	88%	89%	83%			
550	89%	87%	88%	89%	88%	88%	87%	88%	89%			
554	87%	87%	86%	89%	86%	80%	82%	81%	86%			
555	72%	72%	77%	75%	75%	73%	75%	74%	77%			
556	79%	76%	73%	83%	75%	72%	69%	73%	76%			
560	80%	75%	80%	88%	88%	75%	78%	79%	82%	83%	81%	81%
566	79%	77%	78%	81%	83%	73%	77%	78%	77%	75%	70%	72%
567	84%	81%	80%	95%	94%	87%	92%	92%	90%	85%	80%	84%
574	80%	79%	71%	72%	70%	60%	68%	68%	67%	68%	67%	72%
577	73%	77%	68%	79%	78%	69%	75%	80%	74%	73%	68%	76%
578	77%	74%	72%	79%	76%	63%	68%	69%	69%	75%	76%	76%
580	61%	61%	70%	74%	72%	71%	80%	78%	71%	77%	77%	75%
586	85%	87%	80%	84%	80%	69%	72%	77%	78%	70%	77%	86%
590	72%	75%	69%	78%	75%	61%	66%	70%	69%	80%	77%	80%
592	65%	70%	66%	73%	70%	59%	68%	72%	70%	76%	73%	75%
594	84%	81%	78%	81%	79%	71%	77%	77%	75%	80%	78%	80%
595	73%	78%	71%	81%	77%	71%	66%	71%	69%	78%	77%	78%
596	63%	66%	79%	88%	83%	88%	91%	87%	83%	88%	87%	86%

SYSTEM-WIDE ESTIMATED RIDERSHIP 2016-2023

TABLE 32: ESTIMATED ANNUAL BOARDINGS BY MODE 2016-2023

MODE	2016	2017	2018	2019	2020	2021	2022	2023
	Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
ST Express	18,470,408	18,770,000	18,860,000	18,960,000	19,060,000	19,150,000	19,250,000	19,350,000
Souder	4,312,113	4,500,000	4,650,000	4,810,000	4,970,000	5,140,000	5,310,000	5,490,000
Link	19,121,621	23,400,000	25,200,000	26,400,000	27,300,000	30,500,000	42,900,000	50,500,000
Tacoma Link	938,315	910,000	940,000	970,000	1,020,000	1,060,000	1,240,000	1,720,000
Paratransit	48,243	60,000	60,000	70,000	70,000	80,000	90,000	130,000
System Total	42,890,700	47,640,000	49,710,000	51,210,000	52,420,000	55,930,000	68,790,000	77,190,000

TABLE 33: ESTIMATED AVERAGE WEEKDAY BOARDINGS BY MODE 2016-2023

MODE	2016	2017	2018	2019	2020	2021	2022	2023
	Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
ST Express	64,130	65,198	65,500	65,800	66,200	66,500	66,800	67,200
Souder	16,662	17,374	18,000	18,600	19,200	19,800	20,500	21,200
Link	59,118	73,000	78,700	82,400	85,200	95,300	134,000	157,800
Tacoma Link	3,182	3,100	3,200	3,300	3,500	3,600	4,200	5,800
Paratransit	158	175	180	190	195	205	225	275
System Total	143,206	158,847	165,600	170,300	174,300	185,400	225,700	252,300

ESTIMATED HOURS AND MILES BY MODE 2016-2023

Link Estimated Hours and Miles 2016-2023

Link includes both train and vehicle statistics to reflect operation of multiple cars within an individual train. As a reference, values from 2016, 2017, and 2018 are included in the table. In 2017 Link service statistics increase as a result of a full year of operation on extensions to the University of Washington and Angle Lake. Additionally, in 2017 the switch to operating 3-car trains during the midday and a mix of 2- and 3-car trains during the peak increases vehicle statistics over previous year's projections. Link service statistics stabilize between 2018 and 2020 before increasing in 2021, 2022, and 2023 with the anticipated opening of Northgate Link in late 2021 and East Link in late 2023.

TABLE 34: LINK SERVICE HOURS AND MILES 2016-2023

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES	REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train Statistics				Vehicle Statistics			
2016	Actual	90,019	93,975	1,803,023	1,930,496	204,824	214,003	4,103,169	4,375,289
2017	Estimated	96,926	101,186	1,941,385	2,078,640	251,758	262,822	5,042,572	5,399,080
2018	Estimated	97,017	101,281	1,943,197	2,080,580	263,064	274,625	5,269,034	5,641,552
2019	Estimated	97,000	101,300	1,943,200	2,080,600	263,100	274,600	5,269,000	5,641,600
2020	Estimated	97,000	101,300	1,943,200	2,080,600	263,100	274,600	5,269,000	5,641,600
2021	Estimated	99,700	104,100	1,996,400	2,137,600	263,100	274,600	5,269,000	5,641,600
2022	Estimated	101,300	105,700	2,004,800	2,171,400	405,000	422,800	8,019,200	8,685,400
2023	Estimated	125,800	131,300	2,776,100	3,006,800	503,000	525,100	11,104,500	12,027,100

Tacoma Link Estimated Hours and Miles by Route 2016-2023

Since Tacoma Link operates as a one-car train, train and vehicle statistics are identical. As a reference, values from 2016, 2017, and 2018 are included in the table. Tacoma Link service statistics remain stable through 2021, before increasing in 2022 when the Hilltop extension is scheduled to open. The estimated service statistics for 2022 are subject to change, as they depend on the project timeline and service plan of the Tacoma Link expansion, which are still in development.

TABLE 35: TACOMA LINK SERVICE HOURS AND MILES 2016-2023

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train & Vehicle Statistics			
2016	Actual	9,868	9,905	75,983	76,262
2017	Estimated	9,809	9,846	75,527	75,805
2018	Estimated	9,900	9,937	76,000	76,500
2019	Estimated	9,900	9,900	76,200	76,500
2020	Estimated	9,900	9,900	76,200	76,500
2021	Estimated	9,900	9,900	76,200	76,500
2022	Estimated	13,800	13,900	105,900	106,800
2023	Estimated	25,600	25,700	238,600	197,600

Sounder Estimated Hours and Miles by Route 2016-2023

Sounder statistics increased in 2018 due to a full year of operation of the two roundtrips added in September 2017. As a note, 2016 and 2017 vehicle statistics reflect the operation of the midday train implemented in September 2016 as a two-car train until September-2017. When the new cab cars were delivered, the train became a standard seven-car south line trainset.

TABLE 36: SOUNDER SERVICE HOURS AND MILES 2016-2023

YEAR		REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES	REVENUE HOURS	PLATFORM HOURS	REVENUE MILES	PLATFORM MILES
		Train Statistics				Vehicle Statistics			
	North line								
2016	Actual	2,698	2,893	69,699	71,820	7,124	7,627	184,338	189,840
2017	Estimated	2,890	3,073	75,070	76,826	7,225	7,683	187,676	192,066
2018	Estimated	2,890	3,073	75,070	76,826	7,225	7,683	187,676	192,066
2019	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2020	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2021	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2022	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
2023	Estimated	2,900	3,100	75,100	76,800	7,200	7,700	187,700	192,100
	South Line								
2016	Actual	7,618	8,211	235,266	242,628	52,151	56,169	1,610,403	1,660,561
2017	Estimated	8,584	9,245	271,063	278,204	57,415	61,740	1,810,765	1,857,474
2018	Estimated	9,652	10,435	305,734	314,186	67,564	73,042	2,140,136	2,199,301
2019	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2020	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2021	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2022	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
2023	Estimated	9,700	10,400	305,700	314,200	67,600	73,000	2,140,100	2,199,300
	Sounder Total								
2016	Actual	10,316	11,104	304,965	314,448	59,275	63,796	1,794,741	1,850,401
2017	Estimated	11,474	12,318	346,133	355,030	64,641	69,423	1,998,441	2,049,540
2018	Estimated	12,542	13,508	380,804	391,012	74,789	80,725	2,327,812	2,391,367
2019	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2020	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2021	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2022	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400
2023	Estimated	12,600	13,500	380,800	391,000	74,800	80,700	2,327,800	2,391,400

ST Express Estimated Hours and Miles by Route 2016-2023

Increases in estimated service statistics for ST Express reflect a full year of operation of 2017 service additions. Beyond 2018 service stabilizes to reflect the existing operating and capital funding levels planned for ST Express.

TABLE 37: ST EXPRESS PLATFORM HOURS 2016-2023

ROUTE		2016	2017	2018	2019	2020	2021	2022	2023
		Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
510	Everett-Seattle	19,361	19,535	19,296	19,300	19,300	19,300	19,300	19,300
511	Lynnwood-Seattle	18,572	18,127	17,794	17,800	17,800	17,800	17,800	17,800
512	Everett-Lynnwood-Seattle	58,473	56,840	57,099	57,100	57,100	57,100	57,100	57,100
513	Eastmont-Seattle	11,059	10,544	10,325	10,300	10,300	10,300	10,300	10,300
522	Woodinville-Seattle	54,809	55,717	57,153	57,200	57,200	57,200	57,200	57,200
532	Everett-Bellevue	18,675	18,210	18,163	18,200	18,200	18,200	18,200	18,200
535	Lynnwood-Bellevue	24,145	24,689	24,536	24,500	24,500	24,500	24,500	24,500
540	Kirkland-U District	8,429	8,605	8,567	8,600	8,600	8,600	8,600	8,600
541	Overlake-U District	8,066	10,907	11,098	11,100	11,100	11,100	11,100	11,100
542	Redmond-U District	21,472	22,688	22,559	22,600	22,600	22,600	22,600	22,600
545	Redmond-Seattle	74,873	79,885	81,095	81,100	81,100	81,100	81,100	81,100
550	Bellevue-Seattle	56,999	57,439	58,213	58,200	58,200	58,200	58,200	58,200
554	Issaquah-Seattle	39,954	41,353	41,909	41,900	41,900	41,900	41,900	41,900
555	Northgate-Issaquah	6,498	7,151	7,076	7,100	7,100	7,100	7,100	7,100
556	Issaquah-Northgate	8,272	9,306	9,563	9,600	9,600	9,600	9,600	9,600
560	Westwood Village-Bellevue	38,849	38,583	38,572	38,600	38,600	38,600	38,600	38,600
566	Auburn-Overlake	31,483	32,427	32,332	32,300	32,300	32,300	32,300	32,300
567	Kent-Overlake	11,570	12,526	12,878	12,900	12,900	12,900	12,900	12,900
574	Lakewood-SeaTac	44,022	44,120	45,122	45,100	45,100	45,100	45,100	45,100
577	Federal Way-Seattle	23,227	23,987	24,960	25,000	25,000	25,000	25,000	25,000
578	Puyallup-Seattle	33,723	34,747	36,293	36,300	36,300	36,300	36,300	36,300
580	Lakewood-Puyallup	5,875	6,716	7,268	7,300	7,300	7,300	7,300	7,300
586	Tacoma-U District	11,338	11,551	11,995	12,000	12,000	12,000	12,000	12,000
590	Tacoma-Seattle	47,888	49,202	52,300	52,300	52,300	52,300	52,300	52,300
592	DuPont-Lakewood-Seattle	23,647	23,707	22,557	22,600	22,600	22,600	22,600	22,600
594	Lakewood-Tacoma-Seattle	48,612	48,752	50,083	50,100	50,100	50,100	50,100	50,100
595	Gig Harbor-Seattle	7,540	7,470	7,395	7,400	7,400	7,400	7,400	7,400
596	Bonney Lake-Sumner	3,724	4,105	4,080	4,100	4,100	4,100	4,100	4,100
Regular Service Total		761,153	778,889	790,280	790,300	790,300	790,300	790,300	790,300
Schedule Maintenance & Extra		3,727	4,500	4,500	4,500	4,500	4,500	4,500	4,500
Total Budgeted		764,880	783,389	794,780	794,800	794,800	794,800	794,800	794,800

TABLE 38: ST EXPRESS REVENUE HOURS 2016-2023

ROUTE		2016	2017	2018	2019	2020	2021	2022	2023
		Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
510	Everett-Seattle	13,158	12,134	11,986	12,000	12,000	12,000	12,000	12,000
511	Lynnwood-Seattle	9,985	8,657	8,498	8,500	8,500	8,500	8,500	8,500
512	Everett-Lynnwood-Seattle	49,897	42,328	42,521	42,500	42,500	42,500	42,500	42,500
513	Eastmont-Seattle	6,279	6,353	6,221	6,200	6,200	6,200	6,200	6,200
522	Woodinville-Seattle	46,797	46,476	47,674	47,700	47,700	47,700	47,700	47,700
532	Everett-Bellevue	13,849	12,293	12,261	12,300	12,300	12,300	12,300	12,300
535	Lynnwood-Bellevue	20,878	17,324	17,217	17,200	17,200	17,200	17,200	17,200
540	Kirkland-U District	6,933	7,105	7,075	7,100	7,100	7,100	7,100	7,100
541	Overlake-U District	6,578	8,919	9,075	9,100	9,100	9,100	9,100	9,100
542	Redmond-U District	17,391	18,738	18,632	18,600	18,600	18,600	18,600	18,600
545	Redmond-Seattle	66,078	69,658	70,712	70,700	70,700	70,700	70,700	70,700
550	Bellevue-Seattle	50,326	50,133	50,808	50,800	50,800	50,800	50,800	50,800
554	Issaquah-Seattle	35,390	35,725	36,205	36,200	36,200	36,200	36,200	36,200
555	Northgate-Issaquah	5,530	6,009	5,947	5,900	5,900	5,900	5,900	5,900
556	Issaquah-Northgate	6,603	7,458	7,663	7,700	7,700	7,700	7,700	7,700
560	Westwood Village-Bellevue	33,444	32,918	32,909	32,900	32,900	32,900	32,900	32,900
566	Auburn-Overlake	21,141	21,873	21,809	21,800	21,800	21,800	21,800	21,800
567	Kent-Overlake	5,190	5,906	6,072	6,100	6,100	6,100	6,100	6,100
574	Lakewood-SeaTac	38,528	38,705	39,584	39,600	39,600	39,600	39,600	39,600
577	Federal Way-Seattle	12,758	12,236	12,732	12,700	12,700	12,700	12,700	12,700
578	Puyallup-Seattle	30,367	31,122	32,506	32,500	32,500	32,500	32,500	32,500
580	Lakewood-Puyallup	4,339	5,061	5,477	5,500	5,500	5,500	5,500	5,500
586	Tacoma-U District	6,049	6,277	6,518	6,500	6,500	6,500	6,500	6,500
590	Tacoma-Seattle	32,303	33,009	35,087	35,100	35,100	35,100	35,100	35,100
592	DuPont-Lakewood-Seattle	16,510	16,561	15,758	15,800	15,800	15,800	15,800	15,800
594	Lakewood-Tacoma-Seattle	45,637	44,957	46,184	46,200	46,200	46,200	46,200	46,200
595	Gig Harbor-Seattle	5,064	5,096	5,045	5,000	5,000	5,000	5,000	5,000
596	Bonney Lake-Sumner	1,944	2,086	2,073	2,100	2,100	2,100	2,100	2,100
Regular Service Total		608,948	605,118	614,250	614,300	614,300	614,300	614,300	614,300
Schedule Maintenance & Extra		616	3,459	3,459	3,500	3,500	3,500	3,500	3,500
Total Budgeted		609,563	608,578	617,710	617,700	617,700	617,700	617,700	617,700

TABLE 39: ST EXPRESS PLATFORM MILES 2016-2023

ROUTE		2016	2017	2018	2019	2020	2021	2022	2023
		Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
510	Everett-Seattle	488,602	496,714	490,639	490,600	490,600	490,600	490,600	490,600
511	Lynnwood-Seattle	423,238	442,920	434,794	434,800	434,800	434,800	434,800	434,800
512	Everett-Lynnwood-Seattle	1,329,822	1,353,830	1,360,003	1,360,000	1,360,000	1,360,000	1,360,000	1,360,000
513	Eastmont-Seattle	247,275	255,552	250,230	250,200	250,200	250,200	250,200	250,200
522	Woodinville-Seattle	938,089	953,902	978,491	978,500	978,500	978,500	978,500	978,500
532	Everett-Bellevue	464,190	311,765	310,960	311,000	311,000	311,000	311,000	311,000
535	Lynnwood-Bellevue	518,430	422,684	420,072	420,100	420,100	420,100	420,100	420,100
540	Kirkland-U District	134,370	137,280	136,687	136,700	136,700	136,700	136,700	136,700
541	Overlake-U District	132,746	179,567	182,713	182,700	182,700	182,700	182,700	182,700
542	Redmond-U District	344,180	362,820	360,763	360,800	360,800	360,800	360,800	360,800
545	Redmond-Seattle	1,225,303	1,295,071	1,314,676	1,314,700	1,314,700	1,314,700	1,314,700	1,314,700
550	Bellevue-Seattle	823,424	816,352	827,348	827,300	827,300	827,300	827,300	827,300
554	Issaquah-Seattle	744,208	775,106	785,520	785,500	785,500	785,500	785,500	785,500
555	Northgate-Issaquah	128,683	144,666	143,160	143,200	143,200	143,200	143,200	143,200
556	Issaquah-Northgate	167,953	186,851	191,995	192,000	192,000	192,000	192,000	192,000
560	Westwood Village-Bellevue	768,661	759,911	759,692	759,700	759,700	759,700	759,700	759,700
566	Auburn-Overlake	734,461	746,871	744,675	744,700	744,700	744,700	744,700	744,700
567	Kent-Overlake	322,397	344,455	354,119	354,100	354,100	354,100	354,100	354,100
574	Lakewood-SeaTac	977,347	950,386	971,968	972,000	972,000	972,000	972,000	972,000
577	Federal Way-Seattle	647,925	671,426	698,658	698,700	698,700	698,700	698,700	698,700
578	Puyallup-Seattle	844,722	863,637	902,068	902,100	902,100	902,100	902,100	902,100
580	Lakewood-Puyallup	104,718	114,730	124,153	124,200	124,200	124,200	124,200	124,200
586	Tacoma-U District	345,836	348,043	361,413	361,400	361,400	361,400	361,400	361,400
590	Tacoma-Seattle	1,187,002	1,204,521	1,280,369	1,280,400	1,280,400	1,280,400	1,280,400	1,280,400
592	DuPont-Lakewood-Seattle	652,560	649,543	618,036	618,000	618,000	618,000	618,000	618,000
594	Lakewood-Tacoma-Seattle	1,171,958	1,141,028	1,172,177	1,172,200	1,172,200	1,172,200	1,172,200	1,172,200
595	Gig Harbor-Seattle	211,576	208,336	206,257	206,300	206,300	206,300	206,300	206,300
596	Bonney Lake-Sumner	73,521	81,348	80,845	80,800	80,800	80,800	80,800	80,800
Regular Service Total		16,153,199	16,219,312	16,462,482	16,462,500	16,462,500	16,462,500	16,462,500	16,462,500
Schedule Maintenance & Extra		47,755	95,400	95,400	95,400	95,400	95,400	95,400	95,400
Total Budgeted		16,200,954	16,314,712	16,557,882	16,557,900	16,557,900	16,557,900	16,557,900	16,557,900

TABLE 40: ST EXPRESS REVENUE MILES 2016-2023

ROUTE		2016	2017	2018	2019	2020	2021	2022	2023
		Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
510	Everett-Seattle	311,906	314,863	311,012	311,000	311,000	311,000	311,000	311,000
511	Lynnwood-Seattle	193,246	195,211	191,630	191,600	191,600	191,600	191,600	191,600
512	Everett-Lynnwood-Seattle	1,145,491	1,108,461	1,113,515	1,113,500	1,113,500	1,113,500	1,113,500	1,113,500
513	Eastmont-Seattle	145,204	147,747	144,670	144,700	144,700	144,700	144,700	144,700
522	Woodinville-Seattle	721,067	710,311	728,621	728,600	728,600	728,600	728,600	728,600
532	Everett-Bellevue	313,874	312,389	311,583	311,600	311,600	311,600	311,600	311,600
535	Lynnwood-Bellevue	410,986	410,187	407,653	407,700	407,700	407,700	407,700	407,700
540	Kirkland-U District	103,035	105,506	105,051	105,100	105,100	105,100	105,100	105,100
541	Overlake-U District	107,759	145,694	148,247	148,200	148,200	148,200	148,200	148,200
542	Redmond-U District	270,708	290,742	289,094	289,100	289,100	289,100	289,100	289,100
545	Redmond-Seattle	1,018,037	1,046,352	1,062,191	1,062,200	1,062,200	1,062,200	1,062,200	1,062,200
550	Bellevue-Seattle	693,964	678,188	687,323	687,300	687,300	687,300	687,300	687,300
554	Issaquah-Seattle	623,709	628,283	636,724	636,700	636,700	636,700	636,700	636,700
555	Northgate-Issaquah	105,709	116,544	115,331	115,300	115,300	115,300	115,300	115,300
556	Issaquah-Northgate	123,764	137,129	140,904	140,900	140,900	140,900	140,900	140,900
560	Westwood Village-Bellevue	570,959	548,155	547,997	548,000	548,000	548,000	548,000	548,000
566	Auburn-Overlake	373,337	376,555	375,448	375,400	375,400	375,400	375,400	375,400
567	Kent-Overlake	96,612	107,509	110,526	110,500	110,500	110,500	110,500	110,500
574	Lakewood-SeaTac	855,853	844,801	863,986	864,000	864,000	864,000	864,000	864,000
577	Federal Way-Seattle	307,675	282,934	294,409	294,400	294,400	294,400	294,400	294,400
578	Puyallup-Seattle	763,919	768,408	802,602	802,600	802,600	802,600	802,600	802,600
580	Lakewood-Puyallup	65,723	72,837	78,819	78,800	78,800	78,800	78,800	78,800
586	Tacoma-U District	151,056	151,880	157,715	157,700	157,700	157,700	157,700	157,700
590	Tacoma-Seattle	725,265	735,120	781,410	781,400	781,400	781,400	781,400	781,400
592	DuPont-Lakewood-Seattle	449,597	442,997	421,509	421,500	421,500	421,500	421,500	421,500
594	Lakewood-Tacoma-Seattle	1,093,087	1,041,189	1,069,612	1,069,600	1,069,600	1,069,600	1,069,600	1,069,600
595	Gig Harbor-Seattle	133,244	131,601	130,288	130,300	130,300	130,300	130,300	130,300
596	Bonney Lake-Sumner	21,418	22,922	22,780	22,800	22,800	22,800	22,800	22,800
Regular Service Total		11,896,204	11,874,516	12,050,650	12,050,700	12,050,700	12,050,700	12,050,700	12,050,700
Schedule Maintenance & Extra		24,144	67,779	67,779	67,800	67,800	67,800	67,800	67,800
Total Budgeted		11,920,347	11,942,295	12,118,429	12,118,400	12,118,400	12,118,400	12,118,400	12,118,400

FLEET TABLES BY MODE

Link Fleet 2017-2023

TABLE 41: LINK FLEET THROUGH 2023

	VEHICLE NUMBER	MANUFACTURER	YEAR IN SERVICE	TYPE	2017	2018	2019	2020	2021	2022	2023
Existing	101-135	Kinkisharyo	2009	95-foot LR	35	35	35	35	35	35	35
Existing	136-162	Kinkisharyo	2011	95-foot LR	27	27	27	27	27	27	27
Planned	TBD	Siemens, Inc.	TBD	TBD	-	-	*	*	*	*	*
Total Assigned Fleet:					62	62	62*	62*	104*	104*	214*
Peak Vehicle Requirements (Including Ready Reserve):					54	54	54*	54*	84*	84*	124*

* Reflects current assumptions of needs for approved Link extensions. Final delivery schedule may be different from shown.

Sounder Fleet 2017-2023

Fleet requirements for operating service increased with the addition of two new roundtrips in September 2017. In 2014, the Sound Transit Board of Directors approved the purchase of nine additional cab cars. Sound Transit worked with the vendor to design the new vehicles to ensure the needs of all transit riders were incorporated. Delivery of the new cab-cars occurred in mid-2017, in time for the implementation of the additional south line round trips.

TABLE 42: SOUNDER FLEET THROUGH 2023

	VEHICLE NUMBER	MANUFACTURER	YEAR IN SERVICE	TYPE	2017	2018	2019	2020	2021	2022	2023
Existing	901-911	GM	2000-2001	Locomotive	11	11	11	11	11	11	11
Existing	101-111, 301-307	Bombardier	2000-2003	Cab Car	18	18	18	18	18	18	18
Existing	201-240, 401-410	Bombardier	2000-2003	Coach	40	40	40	40	40	40	40
Existing	921-923	Motive Power	2012	Locomotive	3	3	3	3	3	3	3
Planned	321-329	Bombardier	2017	Cab Car	9	9	9	9	9	9	9
Total Locomotives on Property:					14	14	14	14	14	14	14
Peak Vehicle Requirements (Including Ready Reserve):					12	12	12	12	12	12	12
Spares:					2	2	2	2	2	2	2
Spare Ratio (in assigned fleet):					17%	17%	17%	17%	17%	17%	17%
Total Passenger Cars on Property:					67	67	67	67	67	67	67
Peak Vehicle Requirements (Including Ready Reserve):					61	61	61	61	61	61	61
Spares:					6	6	6	6	6	6	6
Spare Ratio (in assigned fleet):					10%	10%	10%	10%	10%	10%	10%

Tacoma Link Fleet 2017-2023

With the extension of Tacoma Link service approved in 2015, the fleet requirements for operating service will increase, from the current three vehicles to eight vehicles with the extension. The light rail vehicles are expected to begin being delivered in 2020 through 2021. Sound Transit will be working with the vendor, once selected, in the coming years to design the new vehicles and ensure the needs of all transit riders are incorporated.

TABLE 43: TACOMA LINK FLEET THROUGH 2023

	VEHICLE NUMBER	MANUFACTURER	YEAR IN SERVICE	TYPE	2017	2018	2019	2020	2021	2022	2023
Existing	1001-1003	Skoda	2003	66-foot LR	3	3	3	3	3	3	3
Planned	1004-1008	TBD	2022	66-foot LR	-	-	-	5	5	5	5
Total Assigned Fleet:					3	3	3	8	8	8	8
Peak Vehicle Requirements (Including Ready Reserve):					2	2	2	2	2	6	6
Spares:					1	1	1	6	6	2	2
Spare Ratio (in assigned fleet)					50%	50%	50%	300%	300%	33%	33%

ST Express Fleet 2017-2023

Table 44 shows the ST Express fleet plan through 2023. The fleet plan below only presents buses in the current fleet and planned replacements based on the useful life of each bus type. The table does not include additional buses that might be needed to implement the service and capacity needs identified earlier in this section. The table below is subject to change based on operational needs.

TABLE 44: ST EXPRESS FLEET THROUGH 2023

	Make	Year in Service	Type	2017	2018	2019	2020	2021	2022	2023
Existing	New Flyer	2003	40-foot	1	0					
	New Flyer	2004	60-foot	22	0					
	Gillig	2005	40-foot	2	0					
	MCI	2005	45-foot	13	13	13	13	0		
	Gillig	2008	40-foot	30	30	30	30	0		
	New Flyer	2008	60-foot	2	2	2	2	0		
	MCI	2008	45-foot	7	7	7	7	7	7	7
	MCI	2009	45-foot	3	3	3	3	3	3	3
	New Flyer	2010	60-foot	37	37	37	37	37	37	0
	MCI	2010	45-foot	16	16	16	16	16	16	16
	New Flyer	2011	60-foot	35	35	35	35	35	35	35
	Gillig	2012	40-foot	24	24	24	24	24	24	24
	New Flyer	2012	60-foot	19	19	19	19	19	19	19
	New Flyer	2015	60-foot	22	22	22	22	22	22	22
	AD	2015	Double Deck	5	5	5	5	5	5	5
	Gillig	2015	40-foot	20	20	20	20	20	20	20
	Gillig	2016	40-foot	5	5	5	5	5	5	5
	MCI	2016	45-foot	12	12	12	12	12	12	12
Planned	AD	2017	Double Deck	32	32	32	32	32	32	32
		2018	60-foot		25	25	25	25	25	25
		2021	42-foot					13	13	13
		2021	40-foot					30	30	30
		2021	60-foot					2	2	2
		2022	60-foot							37
Fleet Statistics	Total Assigned Fleet			307	307	307	307	307	307	307
	Peak Bus Requirements			258	258	258	258	258	258	258
	Spares			49	49	49	49	49	49	49
	Spare Ratio			19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%

MAJOR FACILITY ROUTE LEVEL RIDERSHIP

ROUTES		WEEKDAY BOARDINGS	WEEKDAY ALIGHTINGS
Ash Way Park-and-Ride			
511	Lynnwood-Seattle	335	313
512	Everett-Lynnwood-Seattle	341	382
532	Everett-Bellevue	347	318
	Total	1,023	1,013
Auburn Station			
566	Auburn-Overlake	106	100
578	Puyallup-Seattle	226	233
	Sounder South Line	1,624	1,643
	Total	1,956	1,976
Bellevue Transit Center			
532	Everett-Bellevue	771	815
535	Lynnwood-Bellevue	649	566
550	Bellevue-Seattle	1,672	1,557
555	Northgate-Issaquah	268	283
556	Issaquah-Northgate	170	184
560	Westwood Village-Bellevue	431	592
566	Auburn-Overlake	426	440
567	Kent-Overlake	234	254
	Total	4,620	4,690
Bothell Park-and-Ride			
522	Woodinville-Seattle	174	192
535	Lynnwood-Bellevue	84	100
	Total	258	292
Brickyard Park-and-Ride			
532	Everett-Bellevue	3	2
535	Lynnwood-Bellevue	99	106
	Total	102	108
Canyon Park Freeway Station			
532	Everett-Bellevue	311	325
535	Lynnwood-Bellevue	126	145
	Total	437	470
Eastgate Freeway Station/Eastgate Park-and-Ride			
554	Issaquah-Seattle	817	1,007
555	Northgate-Issaquah	26	25
556	Issaquah-Northgate	75	58
	Total	917	1,090

ROUTES		WEEKDAY BOARDINGS	WEEKDAY ALIGHTINGS
Everett Station			
510	Everett-Seattle	618	448
512	Everett-Lynnwood-Seattle	510	479
532	Everett-Bellevue	157	125
	Sounder North Line	331	246
	Total	1,616	1,298
Evergreen Point Freeway Station			
540	Kirkland-U District	16	9
541	Overlake-U District	21	34
542	Redmond-U District	49	58
545	Redmond-Seattle	92	52
555	Northgate-Issaquah	11	12
556	Issaquah-Northgate	8	17
	Total	197	181
Federal Way Transit Center			
574	Lakewood-SeaTac	422	445
577	Federal Way-Seattle	927	731
578	Puyallup-Seattle	550	660
	Total	1,899	1,837
I-90/Rainier Ave Freeway Station			
550	Bellevue-Seattle	317	369
554	Issaquah-Seattle	97	75
	Total	415	444
Issaquah Highlands Park-and-Ride			
554	Issaquah-Seattle	258	270
555	Northgate-Issaquah	10	11
556	Issaquah-Northgate	103	110
	Total	372	391
Issaquah Transit Center			
554	Issaquah-Seattle	543	647
555	Northgate-Issaquah	19	16
556	Issaquah-Northgate	126	125
	Total	687	787
Kent Station			
566	Auburn-Overlake	218	183
567	Kent-Overlake	292	274
	Sounder South Line	1,857	2,009
	Total	2,368	2,466

	ROUTES	WEEKDAY BOARDINGS	WEEKDAY ALIGHTINGS
King Street/International District Hub			
510	Everett-Seattle	129	110
511	Lynnwood-Seattle	116	96
512	Everett-Lynnwood-Seattle	467	323
513	Eastmont-Seattle	21	23
522	Woodinville-Seattle	372	126
545	Redmond-Seattle	649	460
550	Bellevue-Seattle	1,189	1,402
554	Issaquah-Seattle	476	480
577	Federal Way-Seattle	63	70
578	Puyallup-Seattle	145	11
590	Tacoma-Seattle	256	230
592	DuPont-Lakewood-Seattle	29	5
594	Lakewood-Tacoma-Seattle	126	192
595	Gig Harbor-Seattle	25	21
	Link	5,799	6,047
	Sounder North Line	778	824
	Sounder South Line	6,530	5,986
	Total	17,172	16,406
Lakewood Station			
580	Lakewood-Puyallup	10	31
592	DuPont-Lakewood-Seattle	246	156
594	Lakewood-Tacoma-Seattle	113	118
	Sounder South Line	371	394
	Total	740	699
Lynnwood Transit Center			
511	Lynnwood-Seattle	406	482
512	Everett-Lynnwood-Seattle	598	641
535	Lynnwood-Bellevue	265	266
	Total	1,269	1,389
Mercer Island Park-and-Ride			
550	Bellevue-Seattle	1,199	1,327
554	Issaquah-Seattle	308	200
	Total	1,506	1,527

ROUTES		WEEKDAY BOARDINGS	WEEKDAY ALIGHTINGS
Montlake Freeway Station			
540	Kirkland-U District	10	13
541	Overlake-U District	33	39
542	Redmond-U District	71	59
545	Redmond-Seattle	318	387
555	Northgate-Issaquah	42	53
556	Issaquah-Northgate	5	6
Total		479	557
Mountlake Terrace Freeway Station			
511	Lynnwood-Seattle	247	247
512	Everett-Lynnwood-Seattle	158	212
513	Eastmont-Seattle	149	138
Total		553	597
Overlake Transit Center			
541	Overlake-U District	319	192
542	Redmond-U District	339	465
545	Redmond-Seattle	1,723	2,042
566	Auburn-Overlake	137	155
567	Kent-Overlake	55	83
Total		2,572	2,938
Pioneer Square Station			
550	Bellevue-Seattle	653	728
	Link	4,323	4,405
Total		4,976	5,134
Puyallup Station			
578	Puyallup-Seattle	130	141
580	Lakewood-Puyallup	282	268
	Sounder South Line	1,512	1,462
Total		1,923	1,871
Renton Transit Center			
560	Westwood Village-Bellevue	268	228
566	Auburn-Overlake	281	298
Total		549	527
SeaTac/Airport Station			
560	Westwood Village-Bellevue	146	80
574	Lakewood-SeaTac	89	171
	Link	5,878	5,503
Total		6,113	5,754

ROUTES		WEEKDAY BOARDINGS	WEEKDAY ALIGHTINGS
SeaTac Airport Terminal			
560	Westwood Village-Bellevue	158	255
574	Lakewood-SeaTac	638	541
	Total	796	797
SODO Station			
590	Tacoma-Seattle	80	115
594	Lakewood-Tacoma-Seattle	60	78
595	Gig Harbor-Seattle	8	14
	Link	2,257	2,008
	Total	2,404	2,214
South Bellevue Park-and-Ride			
550	Bellevue-Seattle	589	576
555	Northgate-Issaquah	5	3
556	Issaquah-Northgate	25	14
	Total	619	593
South Everett Freeway Station			
510	Everett-Seattle	347	380
512	Everett-Lynnwood-Seattle	162	182
532	Everett-Bellevue	124	118
	Total	633	679
SR-512 Park-and-Ride			
574	Lakewood-SeaTac	254	234
580	Lakewood-Puyallup	4	8
592	DuPont-Lakewood-Seattle	171	197
594	Lakewood-Tacoma-Seattle	161	165
	Total	590	604
Stadium Station			
522	Woodinville-Seattle	110	90
545	Redmond-Seattle	182	43
590	Tacoma-Seattle	46	51
594	Lakewood-Tacoma-Seattle	98	80
595	Gig Harbor-Seattle	3	1
	Link	2,120	2,356
	Total	2,563	2,623

ROUTES		WEEKDAY BOARDINGS	WEEKDAY ALIGHTINGS
University of Washington Station			
540	Kirkland-U District	100	134
541	Overlake-U District	138	235
542	Redmond-U District	295	388
556	Issaquah-Northgate	76	91
586	Tacoma-U District	46	50
	Link	10,013	9,516
	Total	10,669	10,413
University Street Station			
550	Bellevue-Seattle	1,132	1,110
	Link	5,663	5,429
	Total	6,795	6,539
Sumner Station			
578	Puyallup-Seattle	66	85
596	Bonney Lake-Sumner	240	224
	Souder South Line	1,235	1,244
	Total	1,541	1,553
Tacoma Dome Station			
574	Lakewood-SeaTac	391	401
586	Tacoma-U District	193	239
590	Tacoma-Seattle	1,349	813
594	Lakewood-Tacoma-Seattle	376	538
	Souder South Line	1,066	1,383
	Tacoma Link	956	878
	Total	4,331	4,251
Union Station/S 19th St (UW-Tacoma)			
590	Tacoma-Seattle	65	35
594	Lakewood-Tacoma-Seattle	109	109
	Tacoma Link	656	633
	Total	831	777
UW-Bothell/Cascadia Community College			
522	Woodinville-Seattle	121	213
535	Lynnwood-Bellevue	252	256
	Total	373	469

	ROUTES	WEEKDAY BOARDINGS	WEEKDAY ALIGHTINGS
Westlake Hub			
510	Everett-Seattle	230	261
511	Lynnwood-Seattle	254	237
512	Everett-Lynnwood-Seattle	509	588
513	Eastmont-Seattle	64	69
522	Woodinville-Seattle	805	898
545	Redmond-Seattle	919	956
550	Bellevue-Seattle	1,602	1,321
554	Issaquah-Seattle	317	336
577	Federal Way-Seattle	312	346
578	Puyallup-Seattle	286	559
590	Tacoma-Seattle	191	268
592	DuPont-Lakewood-Seattle	105	109
594	Lakewood-Tacoma-Seattle	249	229
595	Gig Harbor-Seattle	22	21
	Link	11,465	10,548
	Total	17,328	16,746
Yarrow Point/Clyde Hill Freeway Station			
540	Kirkland-U District	20	14
541	Overlake-U District	27	16
542	Redmond-U District	59	32
545	Redmond-Seattle	90	82
555	Northgate-Issaquah	22	9
556	Issaquah-Northgate	14	7
	Total	234	160

I-90 PUBLIC OUTREACH SUMMARY REPORT

This section describes the variety of joint outreach efforts that were undertaken by Sound Transit and King County Metro at different stages of the I-90 service change project. Outreach and public involvement was prevalent through the planning, service change, and launch phases of the project.

In addition to the outreach described below, a public hearing was scheduled for March 1 at noon at Union Station.

Service change outreach background

To help riders plan for changes to ST Express service, the Sound Transit customer outreach and service planning teams collaborated with King County Metro for a “plan ahead” outreach effort that included drop-in sessions, notifications at transit stops and centers in the corridor, and a comprehensive online information center/open house. Through numerous notification methods, thousands of people across the corridor were notified of opportunities to engage. Over 5,500 people actively engaged with outreach staff during this time both in person or online.

Outreach opportunities: In person and online

In total ten in-person events were held at eleven different transit centers between Seattle and Issaquah. Three of these in-person events were drop-in sessions held from 3:30 to 7:00 p.m. and the other seven events were street team events held between 2:30 and 6:00 p.m. to distribute flyers to bus riders who will experience service changes in September.

The drop-in sessions consisted of a pop-up booth at key transit centers with generalized project information and detailed maps showing bus routes that will experience service changes. Attendees were encouraged to share feedback and ask questions. During street team outreach, informational flyers were distributed to notify riders of the changes they can expect. A key effort both in-person and online was having translated content available.



Drop-in session dates and locations

Date	Venue
Thursday, January 18	Issaquah Transit Center
Tuesday, January 23	Bellevue Transit Center
Thursday, January 25	Rainier Freeway Station

Street team outreach dates and locations

Date	Venue
Tuesday, January 9	Eastgate Freeway Station
Wednesday, January 10	Issaquah Transit Center
Thursday, January 11	Mercer Island Transit Center
Tuesday, January 16	Rainier Freeway Station
Wednesday, January 17	Bellevue Transit Center
Wednesday, January 24	Downtown Seattle Transit Tunnel – All stops
Tuesday, January 30	Issaquah Highlands Park and Ride

Online open house

Riders and stakeholders could visit an online open house on their own time 24/7 to learn more information about service changes and what to expect when the Rainier Freeway Station closes. The Online Open House accepted comments from January 8 – February 16, 2018. The website will remain open through September in order to continue to provide customers with information about the service change and help them plan their journeys. The Online Open House is at <https://i90servicechanges.participate.online/>.

Summary of comments received

A total of 77 narrative comments were received during the online open house and 25 narrative comments were received in response to Facebook advertisements. Staff also took note of questions and comments they received during in-person events. Overall, themes heard across the corridor included:

Recognition of the project

- During outreach riders commented that they'd already heard about bus service changes.
- Appreciation for having information well in advance of September changes and understanding of service changes coming.

Bus frequency

- Request for increase in the number of buses traveling from the Rainier Valley to the Eastside during peak hours.
- Concern that there are not enough 554 buses.
- Concern about the increase in travel time for surface street buses.
- Expressed need to prioritize access for buses entering and exiting I-90.
- Appreciation for not making too many drastic changes to the 212 or the 550.



Outreach and information availability

- Confusion about how the 550 bus route will access the I-90 tunnel.
- Call for Sound Transit to send out more information.
- Appreciation for having information about upcoming changes well in advance of September changes.
- Interest in how the project will impact the I-90 bike trail.

Access to Rainier Freeway Station

- Expressed need to clarify the length of the RFS closure.
- Concern that the 550 will no longer stop in the Rainier Valley, the perspective being that most people who catch the bus at the RFS ride the 550 bus.
- Concern about access to bus stops at Rainier Avenue S and S Charles St. due to steep hills, uneven sidewalks and dangerous crosswalks.

Origin of comments

- Over half of all written feedback came from bus route 550 and 554 riders.
- Additional written feedback came from King County Metro route 111, 114, 212, 214, 216, 217, 218 and 219 riders.
- Most feedback came from people who ride a bus impacted by service changes and/or who are interested in the East Link project.
- The majority of people who submitted feedback understood how their bus route will change based on the materials provided in the online open house.



Next Steps

All comments gathered from the public were shared with Service Planning and Customer Outreach in order to continue planning for the September 2018 service change. Additional direct outreach and rider alerts are expected in the month prior to the service change.

In the meantime, there are multiple ways for the public to stay informed:

Email the project: servicechanges@soundtransit.org

Visit the project website: soundtransit.org/i90buschanges

Sign up to receive updates: soundtransit.org/subscribe

Rider outreach goals

To ensure minimal impact to the public as a result of major changes, it is crucial to inform them early of upcoming changes, so that both awareness and support are fostered. Early notification also allows time for messages to be shared and for people to plan alternatives to their normal routine. Strategic public outreach was planned and completed to ensure an equitable and effective engagement process and to set community expectations.

Outreach goals during work for I-90 service changes included:

- Meet riders “where they are” to increase awareness and participation.
- Create culturally competent and demographic-sensitive outreach opportunities.
- Focus efforts on the RFS closure to build awareness in potentially transit-dependent community.
- Inform existing customers of the reasons for changes, timeline, and constraints for options.

Key audiences

The outreach effort for I-90 service changes was bus focused, targeting riders who take Sound Transit and King County Metro buses that currently stop at the RFS. This effort also prioritized riders who initiate travel from the Rainier Valley. This area is demographically diverse, including a higher minority make-up (51%) than the state (29%) and national (37%) averages. It is also more linguistically isolated (14%) than the state (4%) and national (5%) averages.

Key audiences for this outreach effort include, but are not limited to:

- Route 550 riders
- Route 554 riders
- Other riders boarding at the RFS: Route 7, 111, 114, 212, 214, 216, 217 and 219
- Traditionally under-represented populations (especially in connection to RFS and SE Seattle travel shed)
- Traveling public
- Neighborhood and community groups

Outreach methods and tools

The project outreach team used several public outreach and notification methods to maximize awareness of the project and invite the public to attend drop-in sessions and visit the online open house. The outreach methods included:

- Project website
- Social media notifications and posts
- Email updates
- Display, online, and print advertisements
- Press release and earned media
- Community organization phone calls and tool kits
- In-person drop-in sessions and street team outreach
- Online open house

Project website

Public announcement of the service changes coming to buses that travel on I-90 and the invitation to the in-person drop-in sessions and online open house were posted on the project website (soundtransit.org/i90buschanges) eleven days prior to the first drop-in session.

Social media notifications and posts

Social media announcements on Sound Transit's Facebook and Twitter pages publicized the upcoming I-90 service changes and public engagement activities. Posts on January 8, 2018 informed followers of upcoming bus changes and directed them to the online open house for more information. The notifications received 3,256 clicks and engagements from nearly 108,400 impressions and reached interested stakeholders who might not receive notifications by email. The feeds also included direct links to the online open house, where online visitors can review information about service changes and provide their feedback. They were also provided the opportunity to sign up for an email subscription for future project updates.

Email updates

An electronic East Link Extension project update was sent to the project listserv of approximately 3,445 recipients on January 9, 2018 to notify interested stakeholders about the in-person drop-in sessions and online open house. An announcement about bus changes was also included in Sound Transit's All Aboard Commute Trip Reduction Newsletter which was sent to a listserv of approximately 104 recipients on January 18, 2018. Lastly, an announcement about this SIP amendment being published online was sent to the service planning listserv of approximately 2,800 recipients on February 16th, 2018.

Display, online and print advertisements

Display ads advertising in-person drop-in sessions and the online open house were published in eight daily, weekly or monthly print publications from early January to early February 2018. Online advertisements linking to the online open house also appeared in thirteen online newspapers from January to February 2018. Many of the print and online ads were translated in the primary language of the publications to better communicate the project information and public engagement opportunities.

Press release and earned media

Sound Transit issued a news release, "Bus routes using I-90 to change in September due to East Link construction; riders encouraged to plan ahead," on January 8, 2018 to announce bus service changes beginning in September 2018.

The project earned media attention from three sources. Media outlets that reported on or directly referenced the project and the online open house included local news television and community blogs focused on transportation and urban planning.

Community stakeholder phone calls and tool kit

Sound Transit targeted 69 stakeholder representatives and organizations to reach out to about I-90 service changes. Stakeholders were contacted by phone and through email during November 2017. They were also sent a tool kit with resources to help them distribute information about service changes to the communities they serve.

In-person drop-in sessions and street team outreach

Street team outreach events were held between 2:30 p.m. – 6:00 p.m. but exact times varied depending on the transit station. During street team outreach staff distributed fact sheet flyers to riders disembarking buses that will be impacted by September service changes and advertised upcoming drop-in sessions. Street team events were held at:

- Eastgate Freeway Station
- Issaquah Transit Center
- Mercer Island Transit Center
- Rainier Freeway Station
- Bellevue Transit Center
- Downtown Seattle Transit Tunnel – all stations
- Issaquah Highlands Park & Ride



Drop-in sessions were held from 3:30 p.m. to 7:00 p.m. at Issaquah Transit Center, Bellevue Transit Center, and the Rainier Freeway Station and showcased information about bus service changes due to the closure of the D-2 Roadway and RFS in September 2018. Materials also directed people to the online open house for more information. Sound Transit and King County Metro staff were available to help answer questions and a project flyer was distributed to riders disembarking impacted buses.

During in-person outreach events staff speaking Spanish and Amharic were available to communicate with riders who speak English as a second language. Staff also carried the fact sheet flyer in eight different languages including: Amharic, Arabic, Korean, Russian, Somali, Spanish, Traditional Chinese and Vietnamese.

Online open house

An online open house regarding I-90 service changes was available from January 9 – February 16, 2018. Included in the online open house were a project overview video, information on in-person events, information on project goals, maps of bus route changes, a route by route matrix, and information for riders on how to plan ahead for service changes. Visitors could share feedback on the online open house and request additional information. They could also provide information about themselves, including their interest in the project and what bus route(s) they take. More than 3,390 visits were recorded on the online open house between January 9 and February 5. Of all respondents to the Online Open House survey, 77% reported that they understood how their route was changing. Another 13% needed clarification and were provided more information. Most of the respondents rode Route 550 (55%), followed by Route 554 (52%), a Metro reverse-peak route (27%), or other Metro I-90 routes (30%). As the numbers indicate, many riders use more than one route. About 77% of the respondents were interested in the project because they rode a bus affected by service changes.

It was important to Sound Transit to make information in the online open house translatable since the area surrounding the Rainier Freeway Station is demographically diverse and experiencing multiple construction projects and neighborhood changes. The online open house website therefore used Google Translate, so that visitors could

translate information into over 100 languages. Language pop-ups on the Welcome page and Thank you page directed visitors to the google translate box in the upper right corner. The project overview video also had subtitles available in eight different languages.

CONCLUSION AND NEXT STEPS

This 2018 Service Implementation Plan amendment summarized the four alternatives that were considered for I-90 service. Alternative 1, with slight modifications, was the preferred alternative due to many factors, especially its mitigation for Title VI communities.

Though robust public outreach is already underway, rider communication efforts will continue as the implementation date nears. In the coming months, the focus will shift towards rider alerts at stops and helping riders be ready for changes and plan new travel patterns.

APPENDIX: PERSON-DELAY ANALYSIS TABLES

Alternative 1: Bellevue Riders										
	Peak			Midday			Evening			Weekly total
Population	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	
To/from Downtown Seattle	3,385	2.5	8,462	805	4.5	3,622	426	0	0	66,506
To/from RFS	200	8	1,596	68	17.5	1,186	9	30	283	21,037
Period subtotal	Peak subtotal		10,058	Midday subtotal		4,808	Evening subtotal		283	87,542
							Weekend subtotal		5,898	

Alternative 1: Issaquah Riders										
	Peak			Midday			Evening			Weekly total
Population	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	
To/from Downtown Seattle	1110	6	6,884	479	11.2	5,369	242	6.2	1,501	85,141
To/from RFS	58	0	0	38	5	191	9	0	0	955
Period subtotal	Peak subtotal		6,884	Midday subtotal		5,560	Evening subtotal		1,501	86,095
							Weekend subtotal		8,188	

Alternative 2: Issaquah Riders													
Peak				Midday			Evening			Weekend			Weekly total
Population	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	
To/from Intl District	313	3	938	167	3	500	67	3	201	394	3	1,183	10,563
To/from Downtown Seattle	1110	3	3,331	479	5	2,397	242	3	726	1321	2	2,641	37,551
To/from RFS	58	16	924	38	15	573	9	13	115	75	14	1,045	10,152
Period subtotal	Peak subtotal		5,193	Midday subtotal		3,470	Evening subtotal		1,042	Weekend subtotal		4,869	58,266

Alternative 3: Bellevue Riders										
Population	Peak			Midday			Evening			Weekly total
	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	
To/from Downtown Seattle	3,385	2.5	8,462	805	4.5	3,622	426	0	0	66,506
To/from RFS	200	15.5	3,093	68	15.5	1,050	9	11	104	26,184
Totals	Peak subtotal		11,555	Midday subtotal		4,672	Evening subtotal		104	92,690
							Weekend subtotal		5,517	

Alternative 3: Issaquah Riders										
Population	Peak			Midday			Evening			Weekly total
	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	
To/from Downtown Seattle	1,110	9	9,992	479	13	6,231	242	7	1,694	105,438
To/from RFS	58	22	1,271	38	23	878	9	17	151	14,187
Totals	Peak subtotal		11,263	Midday subtotal		7,110	Evening subtotal		1,845	119,625
							Weekend subtotal		9,268	

Alternative 4: Issaquah Riders													
	Peak			Midday			Evening			Weekend			Weekly total
Population	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	# Affected	Delay Per Person (min)	Subtotal	
To/from Int'l District	313	3	938	167	3	500	67	3	201	394	3	1,183	10,563
To/from Downtown Seattle	1,110	3	3,331	479	5	2,397	242	3	726	1,321	2	2,641	37,551
To/from RFS	58	8	462	38	28	1,069	9	13	115	75	14	1,045	10,324
Period subtotal	Peak subtotal		4,731	Midday subtotal		3,966	Evening subtotal		1,042	Weekend subtotal		4,869	58,438



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Sound Transit plans, builds and operates regional transit systems and services to improve mobility for Central Puget Sound.