

# *Title VI Service Monitoring Report*



**2022**

# TITLE VI SERVICE MONITORING REPORT

## Executive Summary

Sound Transit is required by the Federal Transit Administration (FTA) to measure the quality of service delivered to communities and to demonstrate that resources are distributed in a way that does not discriminate on the basis of race, color, or national origin. The FTA is responsible for ensuring the distribution of federally supported transit services and related benefits by applicants and recipients of FTA assistance in a manner consistent with Title VI, Section 601 of the Civil Rights Act of 1964. While not originally required by Title VI of the Civil Rights Act of 1964, protections were extended to low-income communities under the Executive Order 12898—*Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*<sup>1</sup>, which is why this report includes an assessment of disproportionate burden on low-income populations as well as a disparate impact assessment for minority populations.

The Title VI Service Monitoring Report documents Sound Transit's compliance with FTA Circulars 4702.1B by reporting results of performance monitoring and distribution of amenities across all modes of service (ST Express, Link light rail, Tacoma Link, and Sounder commuter rail)<sup>2</sup>. The purpose of the Title VI service monitoring requirement is to ensure that prior decisions related to the distribution of fixed route transit service and facilities have not resulted in a disparate impact or disproportion burden on protected populations. The report provides an overview of Title VI requirements as well as context for Title VI in Sound Transit's service area, details the methodology for analysis of demography, corridor descriptions, standards, and policy, and offers proposed next steps for Sound Transit to take. This document fulfills FTA's Title VI Program requirements for service quality monitoring of Sound Transit's published standards and policies.

This analysis includes all regular fixed routes and uses data from the winter 2020 to winter 2021, which is the most recent and representative data of transit demand and typical service levels. It is important to note that while long-term ridership impacts of COVID-19 pandemic are still unknown, the short-term effects have been significant. Sound Transit modified service levels and schedules in response to the pandemic.

Sound Transit monitors the service standards and service policies shown in the following table to evaluate results for minority or low-income populations compared to non-minority and non-low-income populations.

Service Standards Monitoring	Service Policy Monitoring
<ul style="list-style-type: none"><li>• <b>Passenger Load (Crowding)</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Escalator and Elevator Conveyance</b></li></ul>
<ul style="list-style-type: none"><li>• <b>On-Time Performance</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Bike Rack Distribution</b></li></ul>
<ul style="list-style-type: none"><li>• <b>Customer Complaints</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Bike Cage/Lockers Distribution</b></li></ul>
<ul style="list-style-type: none"><li>• <b>Trips Operated as Scheduled</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Shelter Distribution</b></li></ul>
<ul style="list-style-type: none"><li>• <b>Span of Service</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Seating/Bench Distribution</b></li></ul>
<ul style="list-style-type: none"><li>• <b>Frequency</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Vehicle Assignment</b></li></ul>
<ul style="list-style-type: none"><li>• <b>Service Availability</b></li></ul>	

Table 1: Service Standards and Measures

<sup>1</sup> Summary of Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations | US EPA. (2013, February 22). Retrieved June 21, 2022, from US EPA website: <https://www.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice>

<sup>2</sup> Title VI Requirements and Guidelines for Federal Transit Administration Recipients | FTA. (2012). Retrieved June 21, 2022, from Dot.gov website: <https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/title-vi-requirements-and-guidelines-federal-transit>

## FINDINGS

The Title VI Service Monitoring Report identifies areas of lower service and policy performance impacting Title VI protected populations. Table 2 provides an overview of each policy and standard and summarizes the results. Based on analysis of a variety of data sources, it was determined that ST Express routes or stops/stations serving minority and low-income populations had the greatest number of disparate impacts or disproportionate burdens and instances where routes were not meeting service standards. This is a result of impacts from the pandemic, operator shortages, and the structure of the Sound Transit system compared to the requirements of FTA circulars 4702.1B. The circular requires each route to be classified as minority or non-minority and low-income or non-low-income and then compared across mode and to the service standard to determine disparate impacts or disproportionate burdens among minority and low-income populations. Sound Transit only operates one light rail route (Link Light Rail) and one streetcar route (Tacoma Link); therefore, a comparison cannot be made between routes within the same mode. Because only one route exists for each of these two modes, it can only be compared to the service standard. Additionally, it should be recognized there are geographical and operating constraints on Sounder commuter rail as the line is shared among several operators and not owned by Sound Transit.

Standard/ Policy	What does it address?	What are the results?
<b>Passenger Load</b>	Sound Transit's standards for "overloaded" accounts for seated and standing passengers, differing by route type and vehicle type.	There was no overcrowding on any of the four modes (potentially due to the COVID-19 pandemic), thus no difference in crowding on minority/low-income routes.
<b>On-Time Performance</b>	Sound Transit measures whether a bus or train was on time by comparing the schedule to the arrival/departure time. Bus service is "on-time" if it departs no more than 3 minutes after its schedule and arrives no more than 7 minutes late. Sounder is "on-time" if it arrives within 6 minutes of the scheduled time. Tacoma Link is "on-time" if it arrives within 3 minutes of scheduled time and departs no later than 3 minutes after its scheduled time. Link is "on-time" when it departs as scheduled and arrives within 3 minutes of scheduled time.	On-time performance was lower for minority routes on ST Express by 9.1% and lower for low-income routes by 5.8%, resulting in a disparate impact and disproportionate burden.
<b>Customer Complaints</b>	Sound Transit measures the complaints per 100,000 boardings.	ST Express had higher complaints on minority and low-income routes, resulting in disparate impact and disproportionate burden.
<b>Trips Operated as Scheduled</b>	Sound Transit tracks the percentage of scheduled trips that are actually operated and things such as traffic conditions, labor shortages, emergencies, and mechanical breakdowns can account for trip cancellation.	ST Express and Link light rail operated a lower number of trips as scheduled for minority routes and low-income routes--resulting in a disparate impact and disproportionate burden.
<b>Span of Service</b>	Sound Transit measures the hours of operations for routes and span is determined by demand.	No disparate impact or disproportionate burden determined.
<b>Frequency</b>	Sound Transit measures headways and the intervals in minutes between scheduled trips for a given direction of travel to keep wait times reasonable for passengers.	ST Express average wait times for a minority route were longer, resulting in a disparate impact, and headways for low-income routes during Peak and Base time periods were longer, resulting in disproportionate burden.
<b>Service Availability</b>	Sound Transit measures the amount of service available and its distribution in the service area.	For all modes, service availability was greater for minority than non-minority routes as well as for low-income than non-low-income routes.

Standard/ Policy	What does it address?	What are the results?
<b>Escalator and Elevator Conveyance</b>	Sound Transit measures conveyance uptime targets for elevators and escalators, setting the target for elevators at 97% and escalators at 95%.	Disparate impact was determined for ST Express elevators, and a disproportionate burden was observed at low-income and minority light rail stations.
<b>Bike Rack Distribution</b>	The <i>Design Criteria Manual</i> states that bike racks must be provided to the extent possible for short-term bike parking.	Bike racks occur 50% more frequently at non-minority commuter rail stations and 41% more frequently at non-low-income stations for ST Express and commuter rail, resulting in disparate impact and disproportionate burden.
<b>Bike Lockers</b>	Bike lockers/cages are to be provided to the extent possible for long-term (all day or overnight) bike parking.	Bike cages/lockers occur 33% more frequently at non-minority commuter rail stations and 6% more at ST Express stations, resulting in disparate impact. They also occur 47% more frequently at non-low-income light rail stations, resulting in disproportionate burden.
<b>Shelter</b>	Bus stops with higher number of boardings per hour must have shelters/weather protection amenities.	Shelters that meet the standard occur 11% more frequently at non-low-income ST Express and 6% more at non-low-income rail stations, and 7% more at non-minority rail stations, resulting in disproportionate burden for both modes and disparate impact for commuter rail.
<b>Seating</b>	Light rail seating is detailed by the <i>Design Criteria Manual</i>	Seating that meets standard occurs 39% more at non-minority light rail stations and 22% more at non-low-income ST Express stops, resulting in a disparate impact for light rail and disproportionate burden for ST Express.
<b>Vehicle Assignment</b>	Sound Transit contracts with partners that replace vehicles at the end of their useful life. Providers assign buses by rotating newer vehicles across all routes--essentially a random bus assignment with the only limitations being that some vehicles are not permitted on routes with clearance restrictions, double-deckers are only used on high ridership routes, and express coach buses must be used for longer routes.	No disparate impact or disproportionate burden determined.

Table 2: Service Monitoring Report Summary Results

### Pandemic Impacts Driving Lower Performance

The last two years have been extremely challenging for riders and transit operators. Transit agencies across the country and region, including Sound Transit, have had to reduce service during the pandemic. Last year, as part of the [2022 Service Plan](#), Sound Transit adopted plans to restore and increase service on a number of key routes. However, the additional challenges of the prolonged pandemic have delayed implementing planned service improvements. Many challenges, such as additional COVID-19 variants and larger employment trends resulted in a severe shortage in transit operators.

Sound Transit's goal is to eventually deliver the service improvements as outlined in the 2022 Service Plan, however, the road to restoring and adding service will be far longer than originally anticipated. Operator shortages required emergency reductions in service in the last year, including on routes originally planned for service improvements. Given the long-term nature of the operator shortage, Sound Transit will formalize the current service level reductions as part of the 2023 Service Plan until operator availability improves. As staffing levels improve, Sound Transit will work to restore service and implement planned service improvements, however full recovery may take several years due to the severity of this nationwide shortage of transit operators.



## Addressing Previous Findings Delayed by Operator Shortages

Sound Transit contracts with three local transit agencies to operate ST Express service: Community Transit in Snohomish County, King County Metro in King County and Pierce Transit in Pierce County. In effect, the ST Express routes operated by each local transit agency operate as a separate system, similar to the way a single agency may operate service out of multiple maintenance bases.

Many of the findings in this 2022 Title VI Service Monitoring Report are consistent with the findings identified in the 2019 Title VI Service Monitoring Report. Sound Transit's adopted 2022 Service Plan prioritized equity by restoring service and addressing findings from the 2019 Title VI Service Monitoring Report. However, beginning in Fall 2021, transit operator shortages led to emergency service reductions on ST Express. Consistent with national workforce trends, the operator shortages are long-term and by spring 2022 resulted in scheduled service reductions of approximately 10% system-wide, with higher levels of reduction on routes serving the South Sound region. While formalizing trip cancelations gave riders better schedule predictability, as schedules reflected the trips that actually could be operated, the reductions impacted many of the routes with planned service improvements. As a result of operator shortages, all adopted service improvements to ST Express in the 2022 Service Plan were deferred until operator availability improves.

## Adding Service Policy Findings Following 2019 Title VI Program Update

In the 2019 Title VI Program Update, Service Policy Monitoring was not considered. Therefore, Sound Transit's data systems were not set up to seamlessly collect, organize, and analyze amenity data consistent with the reporting requirements. Relatedly, the [Design Criteria Manual](#), the guiding standards document used for Service Policy Monitoring, was also not setup to seamlessly inform the analysis, and only covers one mode of service operated by Sound Transit (light rail). As part of the 2022 Title VI Program Update, Sound Transit identified the necessary data, completed the analyses, and consulted the Design Criteria Manual for standards. However, the data had to be collected from several different departments and summarized and the standards intended to inform the analysis were not in alignment with the modes or Service Policy Monitoring. Sound Transit will revisit the data systems and Design Criteria Manual after the submission of this document to identify a path forward for Service Policy Monitoring.

## MITIGATION

To mitigate the findings, Sound Transit has implemented initial responses and is planning near-, medium-, and long-term mitigation strategies. Planning will be supported by a commitment to on-going monitoring.

### Service Mitigations In Progress

Sound Transit continues to work closely with other agencies in the region to develop mitigation strategies, including coordinating services on shared corridors between transit agencies. Sound Transit transferred operations of ST Express Route 566 Auburn-Redmond from Pierce Transit to King County Metro. The transfer was completed as part of the March 2022 service change and helped avoid further reductions on already impacted routes. The agency has also restored some Sounder S Line trips earlier than originally planned to provide additional options due to canceled service on parallel ST Express routes. Initial mitigation strategies for ensuring equitable transit service, while recognizing the constraints of regional workforce, focus on making strategic cuts to service to ensure a predictable service delivery for passengers.

### Service Reduction Approach

Sound Transit worked closely with operating partners to cut unproductive trips, while working to preserve span and frequency of service. Sound Transit also worked with partners to ensure that Title VI priority populations were least affected while making strategic service reductions. Because workforce impacts were highest for partners serving South King and Pierce Counties, both areas with high Title VI priority populations, planning future service restorations with regional service parity was further emphasized.

## **Near-Term Mitigations**

Sound Transit will continue to work towards implementing service restorations and improvements adopted in the 2022 Service Plan. Partner transit agencies are working hard to recruit and train new operators. The Puget Sound's Chief Business and Labor Compliance Officer's office initiated a project to coordinate with partner agencies to collaborate and engage with disadvantaged communities and expand the applicant pool as part of Sound Transit's mitigation effort. As new operators join the workforce, the agency will continue to assess staffing levels and restore service at its scheduled March and September service changes over the next few years. Upcoming planning documents will layout a phased service restoration approach to guide how to bring back service as operators start to return. Once Sound Transit can provide the current service levels reliably without cancellations, the agency will begin to add service.

## **Medium Term Mitigations**

Sound Transit has planned long-term investment in high-capacity transit through a series of high-capacity transit projects over the next 10 years that will deliver better service to more places. New stations opening every few years will increase access to frequent and reliable service in low-income and minority communities. The East Link extension project in East King County, Federal Way Link extension in South King County, and Lynnwood Link Extension in North King and Snohomish counties will improve service reliability through the regional adoption of rail service. In addition, the new Bus Rapid Transit service will begin operation to provide faster and more reliable service in the I-405 and SR 522 corridors. In the process, HCT will upgrade and replace the existing ST Express bus network.

## **Commitment to On-Going Monitoring**

As part of the agency's regular internal data review processes, the agency will monitor performance measures included in this Title VI Service Monitoring Report. This step is to keep the agency informed and to nimbly make changes to address disparate impacts and disproportionate burdens on minority and low-income communities. As new high-capacity transit lines are implemented, Service and Fare Equity Analyses<sup>3</sup> will be performed to understand how the network will evolve and the benefit of enhanced reliability. Additionally, through the annual Service Plan and budget process, Sound Transit will evaluate service performance and propose changes to improve performance as well as respond to ridership trends and on-going operating conditions.

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<sup>3</sup> Pursuant to FTA circular C 4702.1B, transit providers that have implemented or will implement a New Start, Small Start, or other new fixed guideway capital project shall conduct a service and fare equity analysis. Service and fare equity analyses are conducted prior to implementing service and/or fare changes to determine whether the planned changes will have a disparate impact on the basis of race, color, or national origin. Low-income populations are not a protected class under Title VI. However, recognizing the inherent overlap of environmental justice principles in this area, and because it is important to evaluate the impacts of service and fare changes on passengers who are transit-dependent, FTA requires transit providers to evaluate proposed service and fare changes to determine whether low-income populations will bear a disproportionate burden of the changes.

# Introduction to Title VI Service Monitoring

The Federal Transit Administration (FTA) requires Sound Transit to measure the quality of service delivered to communities and to demonstrate the distribution of resources in an equitable manner. This document fulfills FTA's Title VI Program reporting requirements for service quality monitoring. The FTA is responsible for ensuring applicants and recipients of FTA assistance distribute federally supported transit services and related benefits 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.*

Sound Transit generates its own data and gathers data from operating partners monthly to understand the degree to which service aligns with targets outlined in the Board-adopted [Sound Transit Service Standards and Performance Measures](#) document. Pursuant to rules established by the FTA, this data must be analyzed, presented to, and approved by Sound Transit's Board of Directors at least every three years to demonstrate the degree to which there is equitable distribution of services. Due to changing demographics, economic developments, transit expansions, and numerous other factors, this analysis provides the agency the insight needed to make meaningful adjustments.

## FTA CIRCULAR 4702.1B REQUIREMENTS

- Transit providers shall assess the performance of each minority and non-minority route in the sample for each of the transit provider's service standards and service policies.
- Transit providers shall compare the transit service observed in the assessment to the transit provider's established service policies and standards.
- For cases in which the observed service for any route exceeds or fails to meet the standard or policy, depending on the metric measured, the transit provider shall analyze why the discrepancies exist, and take steps to reduce the potential effects.
- Transit providers shall evaluate their transit amenities policy to ensure the equitable distribution of amenities throughout the transit system.
- Transit providers shall develop a policy or procedure to determine whether disparate impacts exist on the basis of race, color, or national origin, and apply that policy or procedure to the results of the monitoring activities
- Transit providers shall brief and obtain approval from the transit providers' policymaking officials, generally the board of directors or appropriate governing entity responsible for policy decisions regarding the results of the monitoring program.
- Submit the results of the monitoring program as well as documentation (e.g., a resolution, copy of meeting minutes, or similar documentation) to verify the board's or governing entity or official(s)'s consideration, awareness, and approval of the monitoring results to FTA every three years as part of the Title VI Program.

## **SERVICE STANDARDS**

The FTA requires all fixed route providers to establish quantitative service standards for each mode operated. At a minimum, the standards must include passenger load, headway/frequency, on-time performance, and service availability.

First, the following analysis distinguishes routes where minority and low-income service area populations exceed the Sound Transit District average. These route classifications then receive evaluation by standards included in the Board-adopted *Service Standards and Performance Measures* document.

### **Standards:**

- Passenger load
- On-time performance
- Customer complaints
- Trips operated as scheduled
- Span of service
- Frequency
- Service availability

Where service metrics on routes serving minority or low-income populations perform lower than non-minority or non-low-income routes or do not meet standards, the agency identifies strategies for improving performance. The section titled “Standards” details, in depth, what each of the service standards means, the results of assessments, and mitigation strategies.

## **SERVICE POLICY**

The FTA requires all fixed route providers to establish policies for how transit amenities are distributed for each mode and how vehicle assignment is conducted. Unlike the service standards, which analyze service at the route level, the service policies are analyzed at the modal level. The section titled “Service Policy” details, in depth, what each of the service standards means, the results of assessments, and mitigation strategies. The policies analyzed are derived from the Design Criteria Manual for amenities and operational policies and practices for vehicle assignment. The Design Criteria Manual focuses on the light rail mode only, which leaves a gap for the other modes.

### **Policies:**

- Escalator and Elevator Conveyance
- Bike Rack Distribution
- Bike Cage/Lockers Distribution
- Shelter Distribution
- Seating/Bench Distribution
- Vehicle Assignment

## **REGIONAL CONTEXT**

The landscape of the Central Puget Sound region's demographics has been changing rapidly. Among the 15 most populated metropolitan areas in the nation, the Seattle-Tacoma-Bellevue region is growing, which is contrary to the overarching trend of reduction in the country's largest metropolitan areas, gaining 68,740 people over the last year. The region's total population is now 4.3 million. Since 2010, the region has gained more than 640,000 new residents. By 2050 the region is expected to grow by an additional 1.6 million people. Since 2015, the region has added 43,400 new jobs, with the strongest job growth in King County. Forecasts show that by 2050 there will be an additional 1.2 million jobs in the region.



Before the COVID-19 pandemic, Sound Transit ridership was growing, despite nationwide trends of stagnant or declining ridership experienced by other systems. In April 2020, the first full month of the COVID-19 pandemic, ridership declined by 83 percent across the system. Transit ridership nationally across all modes decreased 73 percent in the same period. Ridership decline came primarily during the peak periods; midday ridership retained a larger share of riders. While ridership has begun to rebound for Sound Transit, it is still only at 64 percent of pre-pandemic levels as of December 2021, with rates of recovery varying based on mode or service and area served. Weekend ridership is returning faster than weekdays, driven by event attendance and a wider variety of transit trip-making beyond commuting. Beginning in September 2021, ridership on both Saturdays and Sundays had returned to or was above pre-pandemic levels. It is important to note that ridership in October and November 2021 increased because of the opening of the Northgate extension, but it dropped in December 2021 to below pre-pandemic levels.

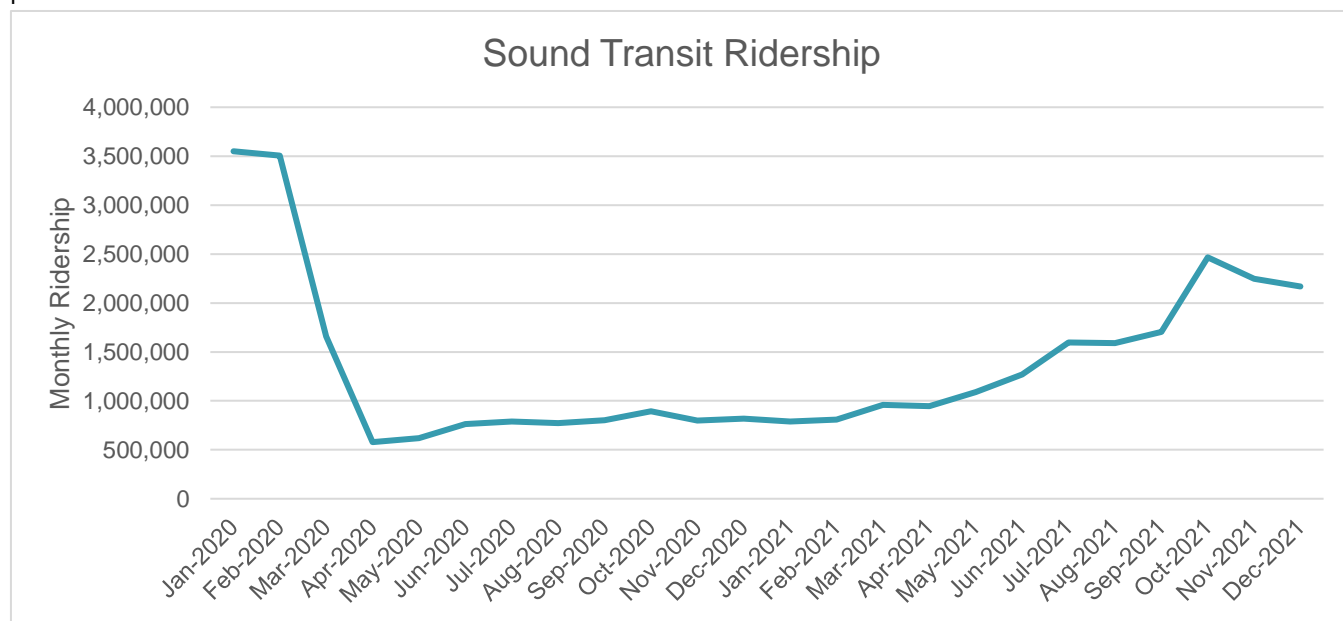


Figure 1: Sound Transit Monthly Ridership Trends

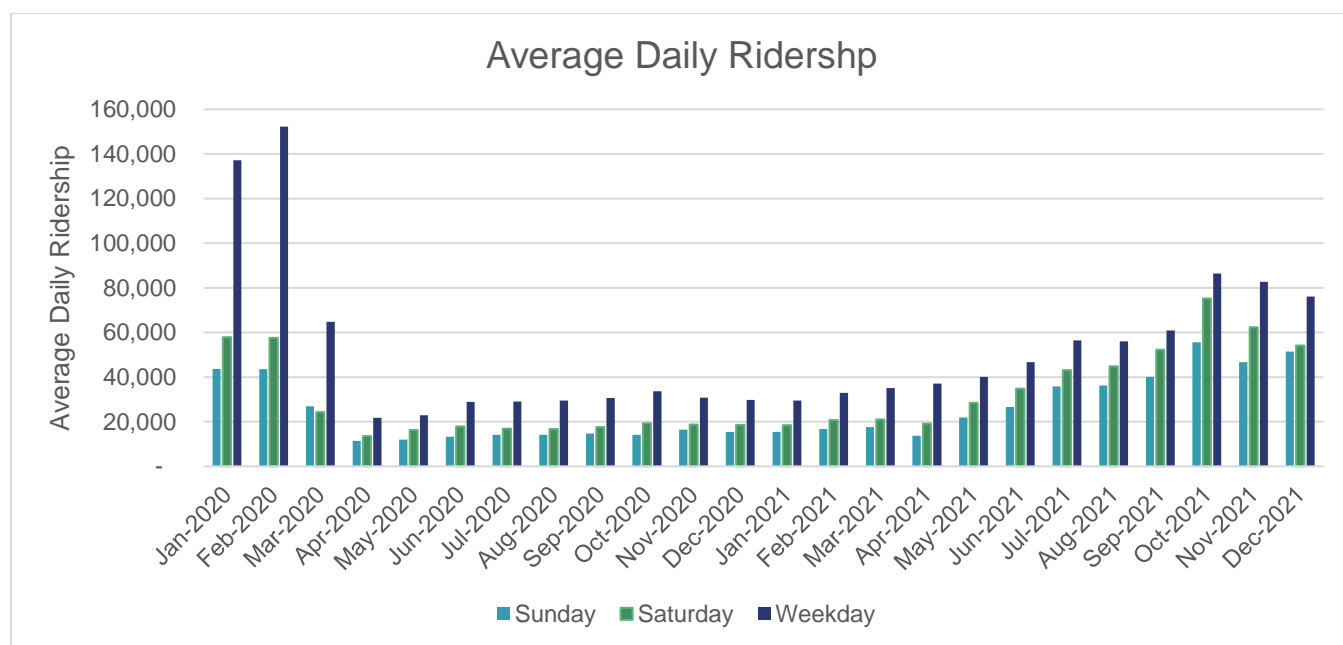


Figure 2: Sound Transit Average Daily Ridership

## **ONGOING CHALLENGES WITH WORKFORCE STAFFING**

In October 2021, Pierce Transit, the operator of several South Sound ST Express bus routes, notified Sound Transit that an emergency reduction in services would be required due to severe staffing shortages. Over the course of summer 2021 and into fall 2021, the number of trips canceled due to operator shortage had slowly been increasing. This led to unpredictable service for passengers as cancellations changed day-to-day. Sound Transit worked with Pierce Transit to identify which trips to remove from the schedules, coordinating on shared corridors, and developing strategies to impact the smallest number of passengers. While formalizing the cancellations would allow passengers for better predictability in the schedule, the reductions impacted many of the routes that had proposed investments in the 2022 Service Plan. Overall, Sound Transit reduced service by approximately 20% on Pierce Transit-operated routes. Taking into consideration the level of investment proposed in the 2022 Service Plan, the level of reduction is closer to 30%.

Sound Transit's other operating partners were also affected by operator shortages. Community Transit's (CT) lack of operators resulted in a 10% reduction in service, while King County Metro operated routes were reduced by 5%. Like with Pierce Transit, Sound Transit worked with Community Transit and King County Metro to minimize the impact of the cuts and the burden placed on ST Express passengers.

The Puget Sound region's workforce constraints reflect a national crisis affecting transit agencies around the United States. Sound Transit completed a peer transit agency evaluation to understand both the extent of the problem and possible mitigation strategies, which indicated that most peer agencies described similar staffing challenges. Sound Transit spoke to LA Metro, MTA-NYCT, RTD, AC Transit, VTA, and WMATA. For most peer agencies interviewed, staffing constraints are estimated to persist for another 12-16 months. Additionally, peers described developing forecasting models to monitor churn rates, working with partner government agencies to simplify operator licensing, and optimizing training periods to get new operators in the field more efficiently. A memorandum and summary of the findings was developed to be shared with Sound Transit's operating partners. The Puget Sound's Chief Business and Labor Compliance Officer's office initiated a project to coordinate with partner agencies to collaborate and engage with disadvantaged communities and expand the applicant pool as part of Sound Transit's mitigation effort. This effort is based on past successful efforts to recruit within disadvantaged communities for construction trades during a similar, previous workforce shortage.

## **PLANNING FOR FUTURE SYSTEM EXPANSION**

While there are uncertainties surrounding the pandemic, and the constraints posed by operator shortages, it is important for Sound Transit to move forward with the voter-approved Sound Transit 3 ballot measure that provides the next phase of high-capacity transit improvements for Central Puget Sound. With this plan, the light rail system will more than quadruple to 116 miles, with more than 80 stations by 2041. Light rail will expand north to Everett, south to Federal Way and Tacoma, east to downtown Redmond, South Kirkland, Issaquah, and west to Ballard and West Seattle. Sound Transit 3 will also invest in Bus Rapid Transit (BRT) in the I-405 and SR-522 corridors. The plan also includes a program to improve bus speed and reliability in specific corridors. Finally, the plan will expand Sounder trains to serve Joint Base Lewis-McChord and DuPont.

### **Summary of Adopted 2022 Service Plan**

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Sound Transit's adopted 2022 Service Plan prioritized equity as the agency moved to restore service following the COVID-19 pandemic and address findings from the 2019 Title VI Service Monitoring Report. As a result of operator shortages, all adopted changes to ST Express were deferred until operator availability improves.

A focal part of the agency's strategy was to respond to the findings of the 2019 Service Monitoring Report. The report identified that over time routes in South King and Pierce counties received a lower level of investment in additional service as compared to the rest of the service area. As Sound Transit continued to monitor ridership during the pandemic, these were also routes where more passengers continued to utilize transit. As such, the 2022 Service Plan provided the first opportunity, following pandemic-mandated service reductions, to restore service and address regional service parity predominantly affecting protected Title VI populations.

Below is a graphic that provides pre-pandemic service levels versus the proposed and adopted 2022 service changes. The new network provides improvements in frequency and span for South King and Pierce County ST Express routes. More broadly, the changes adopted in the 2022 Service Plan would provide more all-day and weekend service at higher frequencies than the pre-pandemic network provided.

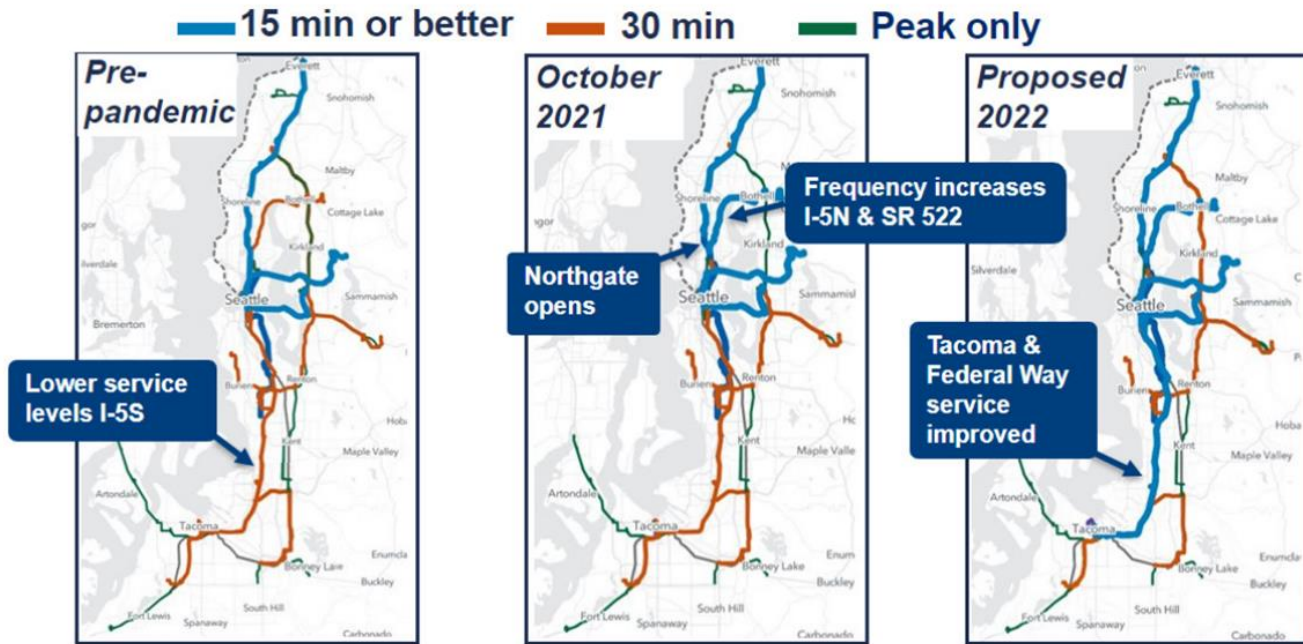


Figure 3: Proposed Frequency Changes in the 2022 Service Plan

Table 3 summarizes the changes adopted in the 2022 Service Plan. Most of the changes are frequency and span improvements on either minority or low-income routes.

Route	Adopted Change	Title VI Priority Route
<b>535 Lynnwood-Bellevue</b>	Increase service to every 30 min. on Saturdays and introduce Sunday service.	No.
<b>550 Bellevue-Seattle</b>	Increase service to every 15 minutes on Sundays by reallocating some weekday trips.	Yes, minority route.
<b>560 West Seattle-SeaTac-Bellevue</b>	Increase weekend service to every 30 minutes during daytime hours.	Yes, minority route and low-income route
<b>574 Lakewood-SeaTac</b>	Expand span of service by adding additional early morning and late-night trips.	Yes, minority route and low-income route
<b>577 Federal Way-Seattle</b>	Increase service to every 15 min between Federal Way and Seattle during daytime hours on both weekends and weekdays.	Yes, minority route and low-income route
<b>578 Puyallup-Seattle</b>	Increase weekend service to every 30 minutes between Puyallup and Seattle.	Yes, minority route and low-income route
<b>590 Tacoma-Seattle</b>	Increase service to every 15 minutes between Tacoma and Seattle during	Yes, minority route and low-income route

Route	Adopted Change	Title VI Priority Route
	daytime hours on both weekdays and weekends.	
<b>S Line</b>	Restore service to 13 roundtrips by September 2022.	Yes, minority route and low- income route
<b>T Line</b>	Open T Line Hilltop Extension and increase service to every 10 minutes on weekdays and Saturdays and every 20 minutes on Sundays.  <i>*Though opening of HTLE was adopted as part of 2022 service plan, construction delays forced Sound Transit to delay the opening of the extension. HTLE is currently scheduled to open in Q3 of 2023.</i>	Yes, minority route and low-income route.

Table 3: Changes Adopted From the 2022 Service Plan

Table 4 summarizes the changes adopted as part of the 2022 Service Plan shown by platform hours by route group (minority, non-minority, low-income, non-low-income) and compares the share of each route group to the district population average in order to evaluate for potential adverse effects. A platform hour is any hour a transit vehicle is operating, which includes in-service hours, deadhead hours and layover hours. The share of service hour increases accrues at a higher percentage from minority and low-income populations than the district average. All service additions were to be funded with additional budget, avoiding service reductions on other routes. As of mid-2022, all adopted service improvements were postponed until operator availability allows for implementation.

Route Group	Existing Platform Hours	Proposed 2022 Platform Hours	Change	Percentage Change in Platform Hours	Percentage Share of Change in Platform Hours	District Population Average
<b>Major Service Changes</b>						
Minority	1,363	1,936	573	42%	83%	40.4%
Low-income	1,363	1,936	573	42%	83%	15.3%
Non-Minority	389	503	114	29%	17%	
Non-Low-income	389	503	114	29%	17%	
System Total	1,752	2,439	687	39%		
<b>Minor Service Changes</b>						
Minority	5,240	5,423	183	3%	100%	40.4%
Low-income	4,096	4,279	183	4%	100%	15.3%
Non-Minority	-	-	-	0%	0%	
Non-Low-income	1,144	1,144	-	0%	0%	
System Total	5,240	5,423	183	3%		
<b>All Service Changes</b>						
Minority	6,603	7,359	756	11%	87%	40.4%
Low-income	5,459	6,215	756	14%	87%	15.3%
Non-Minority	389	503	114	29%	13%	
Non-Low-income	1,533	1,647	114	7%	13%	
System Total	6,992	7,862	870	12%		

System total only for routes with service changes, does not include platform hours for routes without service changes in 2022.

Table 4: 2022 Service Plan Changes Platform Hours

# Methodology

## DEMOGRAPHIC ANALYSIS METHODOLOGY AND DATA DEFINITIONS

Sound Transit uses demographic data to identify minority, low-income, and limited English proficiency (LEP) communities for service monitoring from the US Census Bureau. The agency calculates communities' systemwide or mode-specific average representation within the general population. The agency only uses minority or low-income status classifications to determine if it is necessary to mitigate and analyze a disparate impact or disproportionate burden. However, identifying LEP residents helps Sound Transit to ensure that outreach efforts reach diverse customers. Sound Transit uses the Census 2010-designated tracts as the geographic basis for assessing the populations.

Sound Transit uses the most recent five-year demographic estimates available from the American Community Survey (ACS). The ACS dataset identifies minority, low-income, and 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 household income is at or below 150% of the federal poverty line.
- **Limited English Proficiency (LEP):** Persons who identify a language other than English as their primary language and are not fluent in English.
- **Minority and low-income routes:** FTA Circular 4702.1B generally defines a minority transit route as one in which at least one-third of the revenue miles are located in a census block, census block group, or traffic analysis zone where the percentage of minority population exceeds the percentage minority population in the service area. FTA allows for flexibility in this designation, for example, in the case of commuter-type service there is no explicit guidance concerning the designation of low-income routes. Given the unique service characteristics of Sound Transit service – limited stops connecting regional urban and employment centers – Sound Transit defines minority and low-income routes as having a service area concentration that exceeds the district average. Calculation of the service area is by a radial distance from each stop; the distance varies depending on the nature of the facility served. Table 5 provides details on Sound Transit's service area by stop type.

STOP 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	5.5

Table 5: Service Area by Stop Type

- **Disparate impact, disproportionate burden:** FTA defines "disparate impacts" as facially neutral policies or practices that disproportionately affect members of a group identified by race, color, or national origin, and the recipient's policy or practice lacks a substantial legitimate justification. If the analysis results indicate a potential for disparate impacts, further investigation is required. Currently, Sound Transit has no explicit definition for disparate impact/disproportionate burden in the context of service monitoring. Rather the agency applies the Board-approved [2013 Sound Transit Policies for Major Service Changes and Fare Changes](#) (Appendix O), which states:

-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.

In other words, any adverse effect above 0.0% on populations that exceed the Sound Transit service area average will result in a determination of disparate impact or disproportionate burden. In 2022 Sound Transit is in the process of developing and adopting a Disparate Impact/Disproportionate Burden (DIDB) policy more reflective of the agency's service area and operations. The following sections describe the methodology for identifying each of the populations for the purposes of this analysis.

Unless otherwise noted, all of the following measures apply to the calendar year 2021.

### Sound Transit Population Estimates

Using the demographic analysis and Title VI definitions previously outlined in this section, percentages for minority, low-income, and LEP populations analyzed for the Sound Transit service area are identified by Census tract and the district overall.

To calculate the population representation for any Census tract, the percentage of area that falls within the district or route's service area is used to estimate the specific number of people that fall within each of the populations analyzed. For example, if a Census tract total is 10 acres and three acres are in the service area, then 30 percent of the tract's total population/respective populations are analyzed to be within the service area. This methodology assumes an even distribution of population throughout the Census tract.

POPULATIONS ANALYZED	PERCENTAGE OF DISTRICT POPULATION
Minority	43.5%
Low-Income	14.4%
Limited English Proficiency	10.3%

Table 6: Minority, Low-Income, and LEP District Percentages

Table 6 shows the minority, income, and LEP averages for the Sound Transit district using the 2016 – 2020 American Community Survey dataset. While the FTA does not require consideration of LEP populations, understanding their distribution helps advise outreach strategies.

### CORRIDOR DESCRIPTIONS

Due to the impacts of the pandemic, service continues to be reduced, with some routes completely suspended. The Sound Transit system map with transit services by mode is shown in Figure 4. Routes by mode are described below.

#### ST Express Bus

- I-5 North Corridor: Includes Routes 510, 511, 512, and 513, which provide service between Snohomish County and Downtown Seattle. In September 2021, Routes 511, 512, and 513 were shortened to connect with the new Link service at Northgate Station. Riders traveling between Snohomish County and Downtown Seattle transfer between bus and rail at Northgate station. Route 510 continues to connect Everett to Downtown Seattle during rush hour.
- I-405 North Corridor: Includes Routes 532 and 535, which provide service between Snohomish County and Downtown Bellevue.
- SR-522 Corridor: Includes Route 522, which provides service along SR-522 between Woodinville and Downtown Seattle. In September 2021, Route 522 was shortened to connect with the new Northgate Link service. Riders traveling along the SR-522 corridor to Downtown Seattle transfer between bus and rail at Roosevelt station.
- SR-520 Corridor: Includes Routes 541, 542, 544, 545, 555, and 556, which provide service between East King County communities and Downtown Seattle along SR-520. In March 2020, Route 540 was replaced with new Route 544. Due to the impacts of COVID-19, Routes 541 & 544 are suspended.



- I-90 Corridor: Includes Routes 550 and 554, which provide service between East King County communities and Downtown Seattle along I-90.
- I-405 South Corridor: Includes Routes 560, 566, and 567, which provide service between South King County and East King County, including Bellevue. Due to the impacts of COVID-19, Route 567 is suspended.
- I-5 South Corridor: Includes Routes 574, 577, 578, 586, 590, 592, 594, and 595, which provide service between South King County, Pierce County, and Downtown Seattle.
- Sounder Connectors: Includes Routes 580 and 596, which provide service between Sounder commuter rail stations and Pierce County communities.

### Sounder Commuter Rail

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- Sounder North: Provides service between Snohomish County and downtown Seattle.
- Sounder South: Provides service between Pierce County and downtown Seattle.

### Link Light Rail

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- Link: Operates in a 25-mile, mostly grade-separated corridor between Angle Lake in SeaTac and Northgate Station in Seattle.

### Tacoma Link

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- Tacoma Link: Operates in a 1.6-mile at-grade corridor connecting Tacoma Dome Station within downtown Tacoma.

Figure 5 through Figure 7 identify Census tracts with minority, low-income, and LEP populations above the district average.

# Sound Transit Current Service



Figure 4: Sound Transit System Map

## Minority Routes

There are 14 ST Express routes identified as serving a larger minority population than the district average. The routes serving minority populations generally are serving southern or eastern regions in the district.

Both the Link Light Rail and Tacoma Link routes have service areas that exceed the Sound Transit district minority population. Commuter rail to the south serves areas that exceed the district's average; the northern route does not.

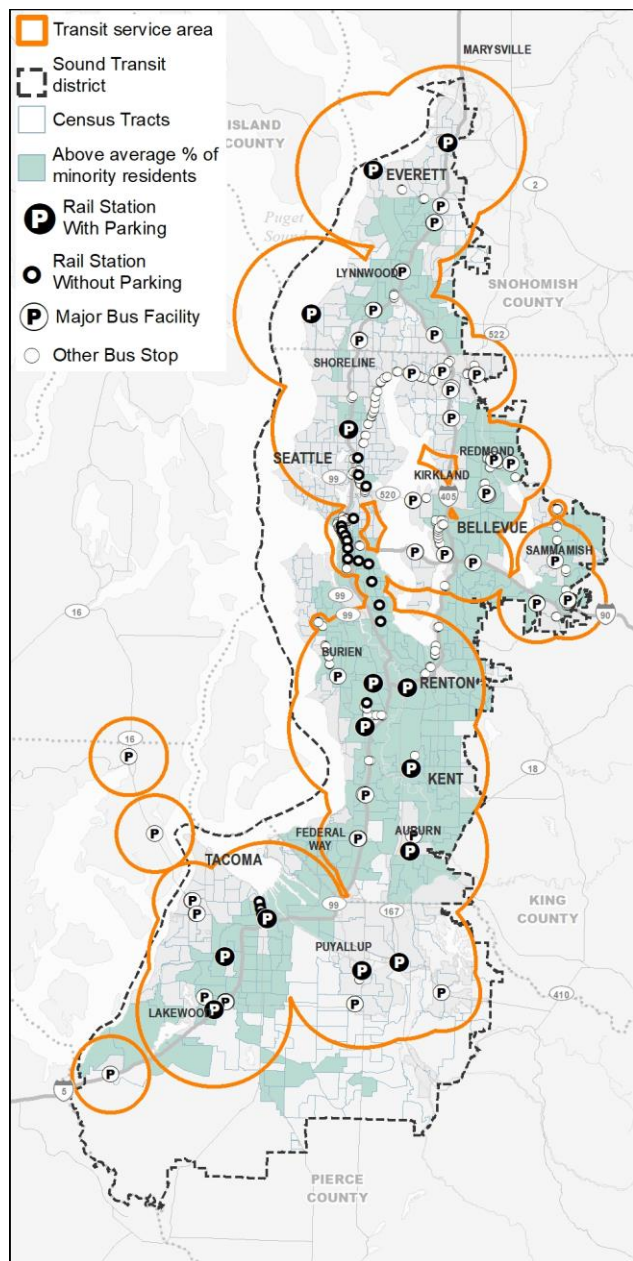


Figure 5: Minority Populations Facilities Served by ST

Mode	% Minority	Minority Route
<b>ST District Average</b>	<b>43.5%</b>	<b>17</b>
<b>Express Bus</b>		
510	41.1%	
511	38.9%	
512	39.0%	
513	39.5%	
522	34.2%	
532	43.4%	
535	41.2%	
542	51.0%	Yes
545	49.6%	Yes
550	49.1%	Yes
554	48.8%	Yes
556	47.0%	Yes
560	55.3%	Yes
566	55.8%	Yes
574	54.2%	Yes
577	52.3%	Yes
578	45.3%	Yes
580	42.0%	
586	51.4%	Yes
590	46.2%	Yes
592	49.9%	Yes
594	49.4%	Yes
595	37.9%	
596	23.5%	
<b>Commuter Rail</b>		
Souder - North	37.6%	
Souder - South	48.7%	Yes
<b>Light Rail</b>		
Link Line 1	46.0%	Yes
<b>Streetcar</b>		
Tacoma Link	44.2%	Yes

Table 7: Minority Population Percentage by Route

## Low-Income Routes

Two ST Express bus routes serving Snohomish County (510 and 512) and nearly all routes serving South King and Pierce counties (560 through 596) fall under the definition of low-income. No routes serving East King County (522 through 556) are classified as low-income.

All Sound Transit rail modes have service areas that exceed the Sound Transit district's low-income population average.

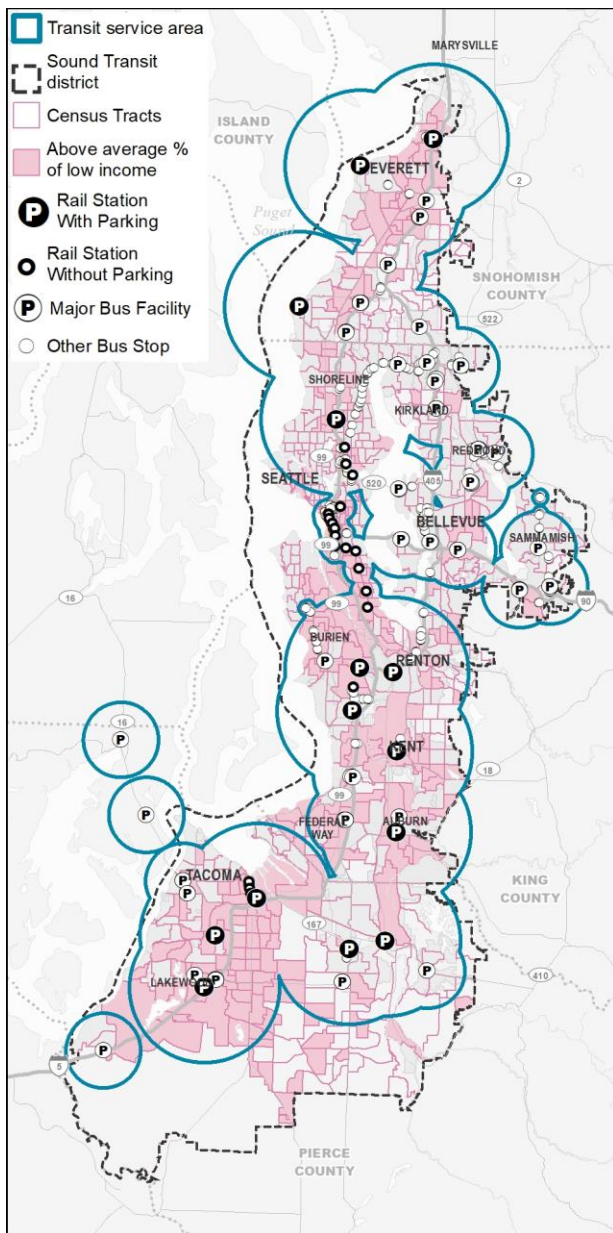


Figure 6: Low-Income Populations for Facilities Served by ST

Mode	% Low Income	Low-Income Route
<b>ST District Average</b>	<b>14.4%</b>	<b>17</b>
<b>Express Bus</b>		
510	16.1%	Yes
511	13.4%	
512	14.4%	Yes
513	14.1%	
522	9.7%	
532	13.5%	
535	10.3%	
542	11.5%	
545	11.1%	
550	12.7%	
554	12.1%	
556	11.4%	
560	17.9%	Yes
566	16.4%	Yes
574	22.4%	Yes
577	18.2%	Yes
578	16.4%	Yes
580	18.4%	Yes
586	24.0%	Yes
590	22.4%	Yes
592	22.5%	Yes
594	23.7%	Yes
595	17.7%	Yes
596	8.9%	
<b>Commuter Rail</b>		
Souder - North	15.5%	Yes
Souder - South	17.8%	Yes
<b>Light Rail</b>		
Link Line 1	16.6%	Yes
<b>Streetcar</b>		
Tacoma Link	20.1%	Yes

Table 8: Low-Income Population Percentage by Route



## Limited English Proficiency

Limited English proficiency is shown in Figure 7 and Table 9 for the purpose of understanding outreach approaches, but LEP populations are not included in the upcoming analysis.

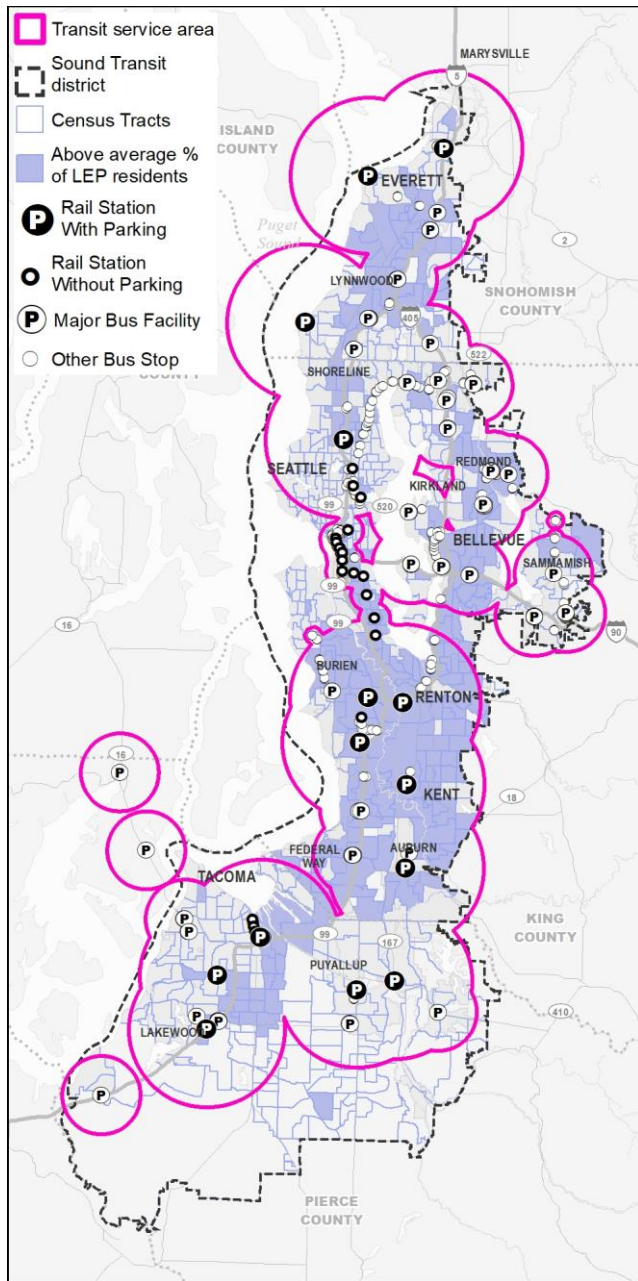


Figure 7: LEP Populations for Facilities Served by ST

Mode	% LEP
<b>ST District Average</b>	<b>10.3%</b>
<b>Express Bus</b>	
510	11.4%
511	10.2%
512	10.8%
513	11.1%
522	7.9%
532	12.5%
535	10.7%
542	12.0%
545	10.9%
550	11.2%
554	11.2%
556	11.0%
560	18.2%
566	15.7%
574	14.0%
577	13.2%
578	10.9%
580	7.8%
586	12.8%
590	8.0%
592	8.8%
594	9.2%
595	6.1%
596	2.4%
<b>Commuter Rail</b>	
Souder - North	10.7%
Souder - South	12.3%
<b>Light Rail</b>	
Link Line 1	11.8%
<b>Streetcar</b>	
Tacoma Link	8.6%

Table 9: LEP Percentage by Route

# Service Standards Monitoring Results

The section below describes monitoring results from Sound Transit's Board-approved *Service Standards and Performance Measures*. The document sets standards to measure the performance and quality of service delivered to customers and is used for assessing impacts on populations. In order to evaluate the degree to which investments were distributed equitably, 2021 service quality indicators were compared for minority and low-income routes. Where adverse effects (which are quantified as anything above the averages for the district) led to a determination of disparate impact or disproportionate burden, mitigation strategies are identified. For the combined summary of the impact results, refer to Appendix A: Disparate Impact Analysis and Appendix B: Disproportionate Burden Analysis.

## RECENT CHANGES TO SERVICE

Between 2018 and 2021, all modes except light rail saw decreases in resource allocations because of reductions in service due to the COVID-19 pandemic and operator shortages. In November 2021 the Northgate Link extension opened, resulting in an increase in resources allocated to light rail. Table 10 and Table 11 summarize the changes in platform hours by mode, and Appendix C: Changes in Service Delivery further details the changes implemented over recent years. For all rail modes, platform hours reflect multiple cars in operation.

ROUTE	ACTUAL ANNUAL PLATFORM HOURS		DIFFERENCE 2018-2021	MINORITY	NON-MINORITY
	2018	2021			
ST Express	780,900	682,899	-98,001	-28,647	-69,354
Commuter Rail	79,141	55,893	-23,248	-19,651	-3,597
Light Rail	281,813	314,418	23,153	22,757	396
Tacoma Link	9,848	9,452	-396	-396	0

Table 10: Change in Minority Route Platform Hours, 2015-2018

ROUTE	ACTUAL ANNUAL PLATFORM HOURS		DIFFERENCE 2018-2021	LOW-INCOME	NON-LOW-INCOME
	2018	2021			
ST Express	780,900	682,899	-98,001	-22,086	-75,915
Commuter Rail	79,141	55,893	-23,248	22,757	-46,005
Light Rail	281,813	314,418	23,153	-19,651	42,804
Tacoma Link	9,848	9,452	-396	23,153	-23,549

Table 11: Change in Low-Income Route Platform Hours, 2015-2018

## STANDARDS

Sound Transit's *Service Standards and Performance Measures* document outlines a set of measures that are used to design, evaluate, and modify transit service. The document was last adopted by the Sound Transit Board of Directors in 2014. In 2018, formatting and other clarity improvements were published and presented to the Board of Directors in a briefing. Planning and day-to-day management of transit service is based on the established service standards and performance measures in order to obtain efficient and effective service delivered with quality. 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. Figure 8 summarizes service standards and performance measures by mode.

The *Service Standards and Performance Measures* document 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 region.

Because standards vary by mode, a determination of disparate impact/disproportionate burden is made for routes within the mode rather than between modes.



	Productivity				Service Quality			
	Boardings per Trip	Boardings per Revenue Hour	Subsidy per Boarding	Passenger Miles per Platform Mile	Passenger Load	On-Time Performance	Customer Complaints	Operated as Scheduled
<b>ST Express</b> FAST, FREQUENT REGIONAL BUS SERVICE (SEE PAGE 15)	<ul style="list-style-type: none"> <li>Monitored regularly and reported annually with a comparative analysis of each route's performance and a peer comparison analysis</li> <li>Annual targets are adjusted accordingly</li> </ul>				Standing passengers not to exceed 1.23 - 1.5 times total seats and limit standing time to 30 minutes	85% of trips arrive within five minutes of schedule, never early	Less than 15 complaints per 100,000 boardings	99.8% of scheduled trips operated
<b>Sounder</b> HIGH CAPACITY COMMUTER RAIL (SEE PAGE 19)	<ul style="list-style-type: none"> <li>Monitored regularly and reported annually with a peer comparison analysis</li> <li>Annual targets are adjusted accordingly</li> </ul>				Most riders have a seat, otherwise limit standing time to 30 minutes	95% of trips arrive at route terminals within seven minutes of schedule	Less than 15 complaints per 100,000 boardings	99.5% of scheduled trips operated
<b>Tacoma Link</b> LIGHT RAIL WITH MULTI-MODAL CONNECTIONS (SEE PAGE 21)	<ul style="list-style-type: none"> <li>Monitored regularly and reported annually with a comparative analysis by time of day and a peer comparison analysis</li> <li>Annual targets are adjusted accordingly</li> </ul>				Standing passengers permitted up to 1.86 times number of seats	98.5% of trips depart/arrive route terminals within three minutes of schedule	Less than 15 complaints per 100,000 boardings	98.5% of scheduled trips operated
<b>Link</b> FREQUENT, RELIABLE HIGH-CAPACITY LIGHT RAIL (SEE PAGE 24)	<ul style="list-style-type: none"> <li>Monitored regularly and reported annually with a comparative analysis by time of day and a peer comparison analysis</li> <li>Annual targets are adjusted accordingly</li> </ul>				Standing passengers not to exceed two times number of seats and limit standing time to 30 minutes	90% of headways within two minutes of schedule	Less than 15 complaints per 100,000 boardings	98.5% of scheduled trips operated

Figure 8: Sound Transit Service Standards and Performance Measures

### Passenger Load

Maximum load factor is defined as the ratio as the maximum number of passengers observed on a transit vehicle trip relative to the number of seats. A maximum load factor greater than 1.0 means some passengers will be standing. The threshold for overcrowding varies by mode. Because ST Express, Sounder, and Link are regional services with long trip durations, a limit of 30 minutes of standing load is imposed on trips in addition to peak load factor limits of 1.23-1.5, 2.0, and 2.0, respectively. ST Express peak load factor limits vary according to the vehicle type, with 45-foot high floor and double decker buses having less space for standing room. Tacoma Link's load factor limit is 1.86, and typically only experiences overcrowding during special events.

Bus Type	Number of Seats	Max. Passenger Load	Load Factor
40-foot high floor	42	63	1.50
40-foot low floor	37	55	1.50
45-foot high floor	57	70	1.23
60-foot low floor	56	81	1.45
42-foot double deck	82	101	1.23

Figure 9: ST Express Load Factor by Vehicle Size

One aspect of rider behavior that load factor metrics do not fully account for is self-balancing: during periods of high demand and frequent service, it is common to observe riders decline boarding the first available bus in the expectation that later buses will be less crowded. In this situation, the passenger chooses a longer wait in order to have a seat for the trip.

Systematic passenger overcrowding conditions can occur when the frequency of service supplied is insufficient to meet demand, when poor schedule reliability leads to vehicle bunching, and/or vehicle passenger capacities are insufficient for a scheduled

PASSENGER OVERCROWDING RATE			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	0.00%	0.00%	0.00%
Commuter Rail	0.00%	0.00%	0.00%
Light Rail	0.00%	N/A	N/A
Tacoma Link	0.00%	N/A	N/A

Table 12: Passenger Overcrowding Rate for Minority Routes

PASSENGER OVERCROWDING RATE			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	0.00%	0.00%	0.00%
Commuter Rail	0.00%	N/A	N/A
Light Rail	0.00%	N/A	N/A
Tacoma Link	0.00%	N/A	N/A

Table 13: Passenger Overcrowding Rate for Low-Income

trip. Acute overcrowding can occur during periods of atypical demand (parades, weather events) or during disruptions to regular service.

**Findings**

- All modes experienced no overcrowding (due to lower ridership levels because of the COVID-19 pandemic), thus there is no difference in crowding on minority routes or low-income routes.

For a more detailed representation of findings please refer to Appendix D: 2021 Passenger Overcrowding Rate by Route.

**Mitigation**

- No mitigation is necessary for this measure.

**On-Time performance**

The calculation for on-time performance varies by mode:

- Among ST Express bus routes, "on-time" is defined as arriving no later than five minutes of each fixed mid-point timepoint's scheduled time, departing no more than 3 minutes late from the start, and arriving no more than 7 minutes late to the route terminus. Early departures are not permitted for fixed timepoints. In addition, many ST Express timetables include "estimated" timepoints primarily for situations in which a stop is drop-off only. Estimated timepoints are not included in on-time performance (OTP) reporting. The standard is 85% on-time for mid-point timepoints and 90% on-time for the start and terminus of routes.
- For Sounder "on-time" is defined as arriving at the final station of the route within six even minutes of the scheduled time. The standard is 95% on-time.
- For Tacoma Link "on-time" is defined as arriving at the final station within three minutes of the scheduled time and departing no later than three minutes of the scheduled time from the first station. The standard is 98.5% on-time.
- For Link light rail "on-time" is defined as departing a station within two minutes of the scheduled time. The standard is 90% on-time.

ON-TIME PERFORMANCE			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	82.6%	91.7%	-9.1%
Commuter Rail	96.4%	96.8%	-0.4%
Light Rail	88.4%	N/A	N/A
Tacoma Link	99.9%	N/A	N/A

Table 14: On-Time Performance for Minority Routes

ON-TIME PERFORMANCE			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	83.7%	89.5%	-5.8%
Commuter Rail	96.6%	N/A	N/A
Light Rail	88.4%	N/A	N/A
Tacoma Link	99.9%	N/A	N/A

Table 15: On-Time Performance for Low-Income Routes

**Findings**

- On-time performance was lower for minority routes on ST Express by 9.1%, resulting in a determination of a disparate impact for this mode.
- On-time performance was lower for low-income routes on ST Express by 5.8%, resulting in a determination of a disproportionate burden for this mode.
- On-time performance was slightly lower (by 0.4%) on commuter rail for minority routes.
- There is only one route each for Tacoma Link and Link light rail, and both are classified as low-income and minority. The Tacoma Link route is meeting the target of 98.5% on-time, the Link light rail route is not meeting its target of 90%.

- In total, 10 of the 24 ST Express routes did not meet the standard of 85% for on-time performance. Of those that fell below the standard, one is considered minority but not low-income (556), one is considered low-income-only (595), and eight are considered both minority and low-income (560, 566, 574, 578, 586, 590, 592, 594). All routes that do not serve low-income or minority areas are meeting the standard.
- The King County Metro (KCM) and Community Transit (CT) operating divisions calculate OTP based on fixed and estimated timepoints, whereas Pierce Transit (PT) only calculates it based on fixed timepoints. Because of this calculation/methodology difference, it results in routes operating out of PT having artificially lower OTP. Many of the routes out of the PT garage serve areas in the south that have higher percentages of minority and low-income populations.

For a more detailed graph of on-time performance findings for all routes refer to Appendix E: 2021 On-Time Performance by Route.

### Mitigation

- To ensure consistent comparison of performance across operating partners, implement a process change so that the Pierce Transit garage can begin reporting OTP values based on fixed and estimated timepoints.
- As traffic congestion increases in the region following the end of the pandemic, run time allotments by route will be monitored regularly
- In January 2022 running time was added to the Link 1 light rail route to improve OTP, headway adherence, and schedule reliability. Four minutes were added in each direction. Time was added after the opening of the Northgate Link Extension in October 2021 indicated scheduled runtimes were longer than initially planned.

### Customer Complaints

The customer complaints standard is the same across all modes: no more than 15 complaints submitted to Sound Transit customer service representatives per 100,000 boardings. Complaints can relate to on-time performance, overcrowding and amenities, among other things.

COMPLAINTS PER 100K BOARDINGS			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	19.5	18.8	0.7
Commuter Rail	24.9	123.2	-98.3
Light Rail	6.0	N/A	N/A
Tacoma Link	1.3	N/A	N/A

Table 16: Complaints per 100,000 Boardings, Minority Routes

### Findings

- Customer complaints were higher for minority routes on ST Express by 0.7 complaints per 100,000 boardings, resulting in a determination of a disparate impact for this mode.
- Customer complaints were higher for low-income routes on ST Express by 6.1 complaints per 100,000 boardings, resulting in a determination of a disproportionate burden for this mode.
- On commuter rail, minority routes had fewer complaints per 100,000 boardings. Neither route is meeting the target of no more than 15 complaints per 100,000 boardings.
- There is only one route each for Tacoma Link and Link light rail, and both are classified as low-income and minority. Both are meeting the target of no more than 15 complaints per 100,000 boardings.
- Seventeen of the 24 ST Express routes are not meeting the targets. Nine are both low-income and minority, 2 are minority only, 2 are low-income only, and 4 are neither. Of the 17 routes not meeting the target, five have complaint rates that are two times higher than the standard

CUSTOMER COMPLAINTS PER 100K BOARDINGS			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	22.3	16.2	6.1
Commuter Rail	29.3	N/A	N/A
Light Rail	6.0	N/A	N/A
Tacoma Link	1.3	N/A	N/A

Table 17: Complaints per 100,000 Boardings, Low-Income Routes

- The top ST Express complaint was “operator attitude or demeanor” followed by “the bus didn’t show up” and “the bus was late”.
- An analysis of complaints of minority routes to non-minority routes where 12 or more complaint types (equivalent to at least one instance monthly) were recorded for ST Express was conducted. Minority routes had a higher prevalence than non-minority routes for complaints related to on-time performance, disagreement over agency policy, missed trips or stops, operator attitude/demeanor, dangerous driving, or overcrowding. Non-minority routes had a higher rate of complaints due to changes in routing, level of service or stop locations. A similar analysis was conducted to compare low-income to non-low-income routes and similar results were found with the exception of dangerous driving and early trips, these had a greater rate among non-low-income individuals than low-income.

For a more detailed graph of on-time performance findings for all routes refer to Appendix F: 2021 Customer Complaints by Route.

### Mitigation

- Sound Transit reviews customer complaints with all partners at the monthly Operations Business Review meetings. The agency will more proactively look at trends between route types and modes moving forward.
- Sound Transit will consider further refining the methodology for tracking complaints to more easily identify valid versus invalid complaints.
- Challenges that the agency is working to address, as noted in other mitigation strategies, should contribute to a reduction in the overall number of complaints received. Complaints received previously have informed the agency of issues needing attention, which has helped the agency to identify priorities for improvement.

### Trips Operated as Scheduled

This metric tracks the percent of scheduled trips that are actually operated. The standard for ST Express is 99.8% and 99.5% for rail modes. Traffic conditions, labor shortages, medical emergencies, and mechanical breakdowns can all contribute to the cancellation of a trip.

TRIPS OPERATED AS SCHEDULED			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	99.1%	99.8%	-0.7%
Commuter Rail	99.6%	97.7%	1.9%
Light Rail	99.3%	N/A	N/A
Tacoma Link	99.9%	N/A	N/A

Table 18: Trips that Operated as Scheduled, Minority Routes

### Findings

- Trips operated as scheduled were lower for minority routes on ST Express by 0.7%, resulting in a determination of a disparate impact for this mode.
- Trips operated as scheduled were lower for low-income routes on ST Express by 0.9%, resulting in a determination of a disproportionate burden for this mode.
- On commuter rail, minority routes were more likely to operate as scheduled. The Sounder North route is not meeting the target of 99.5% but the South route is.
- There is only one route each for Tacoma Link and Link light rail, and both are classified as low-income and minority. The Tacoma Link route is meeting the target of 99.5% trips operated, the Link light rail route is not.

TRIPS OPERATED AS SCHEDULED			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	98.8%	99.7%	-0.9%
Commuter Rail	99.2%	N/A	N/A
Light Rail	99.3%	N/A	N/A
Tacoma Link	99.9%	N/A	N/A

Table 19: Trips that Operated as Scheduled, Low-Income Routes

- Only 5 of the 24 ST Express routes are meeting the target of 99.8%. Of the five routes meeting the target, four are neither low-income or minority routes and one is low-income. None of the routes serving minority areas are meeting the target.

Note that recent service reductions scheduled in response to operator shortages are not reflected in the trips operated as scheduled data. For a more detailed graph of trips-operated findings for all routes refer to Appendix G: 2021 Trips Operated as Scheduled by Route.

### Mitigation

- Sound Transit will continue to work with peers and partners to identify strategies to hire and retain operators.

Sound Transit will work with partners to better distribute missed assignments equitably in the short-term as the operator shortage is anticipated to continue.

### Span of Service

The service span, or the hours of operation of an individual route, should be based on demand and relate to the operating times of the activity centers being served and the service span of the connecting local transit system as well as other Sound Transit modes. ST Express service span may vary between routes based on passenger demand and route performance.

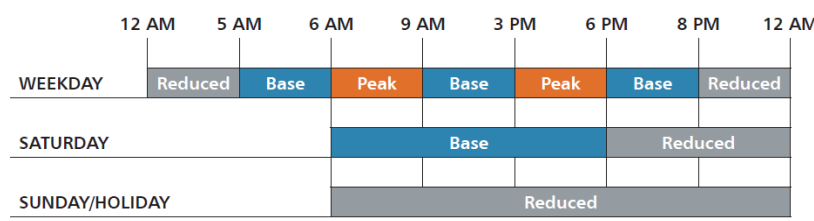


Figure 10: Sound Transit Service Span Guidelines

Once service is in place, headways may be improved to provide more frequent service if route productivity consistently exceeds the system average or if passenger loads exceed Sound Transit's service standards.

Some routes may operate only during weekday peak periods while others may operate all day, seven days a week. Other routes may operate all day on weekdays but provide no weekend service. As a general guide, three levels of service are defined for different operating time periods.

- Peak service is generally between the hours of 6:00 a.m. and 9:00 a.m., and between 3:00 p.m. and 6:00 p.m.
- Base service is provided in the early morning from 5:00 a.m. and 6:00 a.m., in the mid-day period between 9:00 a.m. and 3:00 p.m., and in the early evening period between 6:00 p.m. and 8:00 p.m. on weekdays, and between 6:00 a.m. and 6:00 p.m. on Saturdays.
- Reduced service is between 8:00 p.m. and midnight on weekdays, from 6:00 p.m. to midnight on Saturdays and from 6:00 a.m. to midnight on Sundays. Reduced service is also operated on some holidays.

AVERAGE HOURS OF SERVICE PER DAY				
	DAY TYPE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	Weekday	15.8	11.7	4.1
	Saturday	18.6	19.3	-0.6
	Sunday	18.4	19.8	-1.4
Commuter Rail	Weekday	9.5	3.60	5.9
Light Rail	Weekday	21.8	N/A	N/A
	Saturday	21.8	N/A	N/A
	Sunday	19.8	N/A	N/A
Tacoma Link	Weekday	22.4	N/A	N/A
	Saturday	14.6	N/A	N/A
	Sunday	8.4	N/A	N/A

Table 20: Avg. Hours of Service by Day Type, Minority Routes

Some routes only operate during the peak period, while others only operate during off-peak times. For the purpose of this analysis, span was defined as the first trip start time to the time the last trip pulls in. Routes in which no trips started between 11 a.m. and 1 p.m. were considered peak-only; daily total span was calculated as the sum of spans within each peak period.

## Findings

- The average span of service was greater for minority routes compared to non-minority on weekdays then weekends. No disparate impact is seen on weekdays, but it does exist on weekend ST Express service.
- The average span for minority routes was shorter on Saturdays by 36 minutes and Sundays by 1 hour 12 minutes compared to non-minority routes.
- The average span of service for low-income routes compared to non-low-income routes was shorter on Weekdays by 1.5 hours. This resulted in a disproportionate burden. On weekends the average span was longer on low-income routes compared to non-low-income routes, resulting in no disproportionate burden
- For the commuter rail, the minority route has a longer span than the non-minority route, resulting in no disparate impact. Given that both routes are low-income routes, it is not possible to compare the spans on low-income to non-low-income.
- Rail modes do not have service span guidelines and there is only one route each for Tacoma Link and Link light rail. Therefore, a comparison or analysis of findings is not feasible for these two modes.
- Eight (Routes 510, 566, 577, 580, 586, 590, 592, and 595) of the 13 low-income routes operate mainly during peak periods, driving down the average span length overall. Most of these routes operate in corridors with a complementary all-day route to cover a larger span of service.
- All of the all-day low-income routes have weekday service spans exceeding 18 hours. ST Express Route 574, which services Sea-Tac International Airport, has the longest span due to the 24-hour operational nature of this important regional employment center.

AVERAGE HOURS OF SERVICE PER DAY				
MODE	DAY TYPE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	Weekday	13.4	14.9	-1.5
	Saturday	19.6	18.0	1.6
	Sunday	19.0	17.8	1.2
Commuter Rail	Weekday	6.5	N/A	N/A
Light Rail	Weekday	21.8	N/A	N/A
	Saturday	21.8	N/A	N/A
	Sunday	19.8	N/A	N/A
Tacoma Link	Weekday	22.4	N/A	N/A
	Saturday	14.6	N/A	N/A
	Sunday	8.4	N/A	N/A

Table 21: Avg. Hours of Service by Day Type, Minority Routes

Refer to Appendix H: 2021 Span of Service by Day Type by Route for a more detailed look at hours of service provided by route.

## Mitigation

- The 2022 Service Plan's strategy focused broadly on increasing frequency and span on Title VI priority routes. The service plan focused predominately on delivering frequent all-day/all week service to respond to changing travel patterns that surfaced during the peak of the COVID-19 pandemic. The plan was adopted but its implementation has been paused due to regional workforce constraints. The full implementation of the plan should help mitigate the differences in span identified above. For example, as part of the 2022 Service Plan, Sound Transit intends to increase the span of service on the Route 574, a minority and low-income route.



## Frequency

Headways are the time intervals in minutes between scheduled trips for a given direction of travel. Shorter intervals result in better frequencies of service for customers. Sound Transit schedules ST Express headways based on demand, clock-face scheduling and the maximum headway guideline, which is 30 minutes during peak periods and 60 minutes during off-peak periods for ST Express. The guideline is designed to keep wait times reasonable for passengers who require a transfer. Once service is in place, headways may be improved to provide more frequent service if route productivity consistently exceeds the system average or if passenger loads exceed Sound Transit's service standards. There are no service guidelines for rail headways.

### Findings

- Average headways for Base and Reduced time periods on minority routes were longer than their non-minority counterparts on ST Express by five minutes and nine minutes, respectively. This means that average wait time for a passenger randomly arriving at a stop for a minority route would be longer, resulting in a disparate impact.
- Average headway of service was longer for low-income ST Express routes than non-low-income routes during Peak and Base time periods by about 5 minutes and 6 and a half minutes, respectively. This results in a disproportionate burden.
- For commuter rail, the minority route has a shorter headway than non-minority during the peak resulting in no disparate impact. During the base period the non-minority route does not operate, and thus there is no comparison possible. Given that both routes are low-income routes, it is not possible to compare the headways on low-income routes to non-low-income routes.
- Rail modes do not have headway guidelines and there is only one route each for Tacoma Link and Link light rail. Therefore, a comparison or analysis of findings is not feasible for these two modes.
- Routes 586 and 595 do not meet the service guidelines for minimum headway during the Peak period for ST Express routes. Both routes are low-income routes and Route 586 is also a minority route. These routes are scheduled as trip-based, highly targeted peak-only service for very specific travel markets and not based on minimum headways.
- All routes meet the Base headway requirement for the off-peak period of no greater than 60-minute headways.
- Sound Transit contracts with three local transit agencies to operate ST Express service, Community Transit in Snohomish County, King Country Metro in King County and Pierce Transit in Pierce County. In effect, the ST Express routes, operated by each local transit agency, operates as a separate system similar to the way a single agency may operate service out of multiple maintenance bases.
- Sound Transit had to reduce service in November 2021 due to a driver shortage on Pierce Transit operated ST Express service. At the time the Pierce Transit operated routes 566 through 596, of which 8 of the 11

AVERAGE HEADWAY				
MODE	TIME PERIOD	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	Peak	18.4	18.7	-0.3
	Base	31.1	26.1	5.0
	Reduced	33.5	24.5	9.0
Commuter Rail	Peak	22.8	60.0	-37.2
	Base	49.2	N/A	N/A
Light Rail	Peak	7.6	N/A	N/A
	Base	10.4	N/A	N/A
	Reduced	11.9	N/A	N/A
Tacoma Link	Peak	12.0	N/A	N/A
	Base	12.4	N/A	N/A
	Reduced	24.1	N/A	N/A

Table 22: Average Headway by Time Period, Minority Routes

AVERAGE HEADWAY				
MODE	TIME PERIOD	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	Peak	21.1	16.2	4.9
	Base	32.2	25.6	6.6
	Reduced	27.5	31.0	-3.6
Commuter Rail	Peak	41.4	N/A	N/A
	Base	24.6	N/A	N/A
Light Rail	Peak	7.6	N/A	N/A
	Base	10.4	N/A	N/A
	Reduced	11.9	N/A	N/A
Tacoma Link	Peak	12.0	N/A	N/A
	Base	12.4	N/A	N/A
	Reduced	24.1	N/A	N/A

Table 23: Average Headway by Time Period, Low-Income Routes

routes are minority routes and 10 are low-income. Service frequency was reduced during peak times on the 566, 577, 578, 580, 590, 592, 594 and during the base on the 577, 578, and 594. These routes are all minority and/or low-income routes.

Appendix I: 2021 Average Headway by Route compares the average headway of minority and/or low-income routes for the three time periods.

### Mitigation

- The Board-adopted 2022 Service Plan authorized equity-focused service increases in South King and Pierce counties, areas with routes serving high minority and low-income populations. The plan approved increased weekday frequency on the 577 and 590, two minority and low-income routes. On weekends frequency would be improved on six routes, four of which are low-income and five minority. Improving weekend frequency would create shorter headways on minority routes during the base and reduced periods, closing the gap in service levels between minority and non-minority and low-income and non-low-income routes. These changes will be implemented as operator staffing improves.
- In the March 2022 service change Sound Transit transferred the operation of Route 566 to King County Metro, which has allowed the agency to avoid additional trip reductions on minority and low-income routes 577, 578, 590, 592, and 594 operated by Pierce Transit in the South Sound region. When operator availability improves, service will be restored based on the Board-adopted 2022 Service Plan.
- Demand has changed with the COVID-19 pandemic and some routes may no longer need shorter headways to prevent overcrowding.

### Service availability

This metric tracks the amount of service available and distribution in the service area across modes. ST Express service offers higher capacity, higher speed, frequent bus service using HOV lanes, and priority infrastructure to connect regional population and employment centers. Stops are limited to transit centers, major transfer points, major origins/destinations, and park-and-ride lots where at least 25 daily boardings or alightings occur if the service span is 12 hours or greater and 15 boardings or alightings if less than 12 hours. Given the limited stop nature of ST Express and rail modes, the service area is defined by a radial distance from each stop, and the distance varies based on the nature of each facility. To calculate service availability for each mode, the total population served by each mode was calculated followed by the percent of each that was minority and non-minority. The percent minority and non-minority for each mode were then each divided by the systemwide minority average. The same methodology was used for low-income routes.

SERVICE AVAILABILITY			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	1.01	0.99	0.02
Commuter Rail	1.06	0.96	0.10
Light Rail	1.06	0.95	0.11
Tacoma Link	1.02	0.99	0.03

Table 24: Service Availability, Minority Routes

SERVICE AVAILABILITY			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	1.04	0.99	0.05
Commuter Rail	1.19	0.97	0.22
Light Rail	1.16	0.97	0.19
Tacoma Link	1.40	0.93	0.47

Table 25: Service Availability, Low-Income Routes

### Findings

- For all modes, service availability was greater for minority than non-minority.
- For all modes, service availability was greater for low-income than non-low-income.

### Mitigation

- No mitigation is necessary for this measure.

## SERVICE POLICY

Sound Transit's *Service Standards and Performance Measures* and *Design Criteria Manual* document amenity requirements. These requirements were used to determine if the distribution of amenities is equitable. Per FTA Circular 4702.1B, Sound Transit is only responsible for setting and monitoring the policy for which they have the decision-making authority over the provision of amenities. Different policies can be set for different modes. The first step is determining which stops/stations Sound Transit has decision-making authority over. Table 26 lists the number of stops by mode that meet this requirement. Overall, there are 52 locations for which this occurs, as some locations are served by more than one mode.

MODE	NUMBER OF STOPS WITH DECISION MAKING AUTHORITY
ST Express	21
Commuter Rail	12
Light Rail	19
Tacoma Link	6

Table 26: Number of Stops by Mode Where ST has Decision Making Authority

The next step is to determine if a stop is a low-income or minority stop. If a stop is located in a low-income Census tract it is considered low-income and if in a minority Census tract it is a considered minority. Table 27 outlines the breakdown of the number of stops by mode and minority and low-income status. It should be noted that all Tacoma Link stops are classified as Low-Income and as such a comparison between low-income and non-low-income is not feasible for this mode.

See Appendix J: Sound Transit Stops for maps showing the stops Sound Transit has decision-making authority over and which are located in minority and low-income areas.

NUMBER OF STOPS				
MODE	MINORITY	NON-MINORITY	LOW-INCOME	NON-LOW-INCOME
ST Express	11	10	9	12
Commuter Rail	6	6	8	4
Light Rail	14	5	17	2
Tacoma Link	1	5	6	0

Table 27: Breakdown by Mode and Minority or Low-income Status for Stops Where ST has Decision Making Authority

## Escalator and Elevator Conveyance

CONVEYANCE UPTIME			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
Light Rail - Elevator	98.5%	96.0%	2.5%
Light Rail - Escalator	91.3%	82.6%	8.7%
Commuter Rail - Elevator	99.7%	98.9%	0.8%
ST Express - Elevator	99.2%	99.4%	-0.2%

Table 28: Station and Garage Conveyance Uptime, Minority Stop

CONVEYANCE UPTIME			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
Light Rail - Elevator	97.5%	98.8%	-1.3%
Light Rail - Escalator	84.1%	97.8%	-13.7%
Commuter Rail - Elevator	99.5%	98.0%	1.5%
ST Express - Elevator	99.4%	99.1%	0.3%

Table 29: Station and Garage Conveyance Uptime, Low-income Stop

Sound Transit has established conveyance uptime targets for elevators and escalators. Elevators are located at Link Stations and parking garages for commuter rail, Link light rail and ST Express. Escalators are only located at Link Stations. The target for elevators is 97 percent uptime and for escalators 95 percent.

### Findings

- Conveyance uptime was lower for minority stations on ST Express elevators by 0.2%, resulting in a determination of a disparate impact for this mode.

- For Link light rail and commuter rail, conveyance uptime was greater for minority than non-minority stations. There is no disparate impact for these modes
- Conveyance uptime was lower for low-income stations on light rail by 1.3% for elevators and 13.7% for escalators, resulting in a determination of a disproportionate burden for this mode.
- For ST Express and commuter rail, conveyance uptime was greater for low-income than non-low-income stations. There is no disproportionate burdens for these modes
- Five of the 13 stations with Escalators were not meeting the target of 95%, all of these stations are low-income and three of the five are also minority stations. The escalators in the downtown tunnel overall performed the worst. Three of the four locations with escalators, Westlake, Pioneer Square, and international district had conveyance uptimes of less than 70% and this heavily contributed to the 13.7% disproportionate burden. Very little (less than 1%) was scheduled outage for maintenance.
- Despite the disproportionate burden for light rail elevators, the overall average uptime for low-income and non-low-income individuals was greater than the target of 97%. The same is true for ST express and the disparate impact found. Only four locations (Beacon Hill, Roosevelt, Pioneer Square and Westlake) were not meeting the target of 97%. All four serve light rail only and are located in low-income areas, additionally Beacon Hill is also a minority station. Pioneer Square had the lowest uptime at 85.55%, while the other three ranged from 95.76% to 96.83%.

Refer to Appendix K: 2021 Conveyance Report for a more detailed look at uptime by location.

### **Mitigation**

- When a conveyance goes down, Sound Transit has a system-wide process for responding as quickly as possible to get the conveyances back up. All conveyance issues are called into Sound Transit's vendor for service. The type of outage is categorized by cause, issue, impact, and day of week/time of day. The vendor's contracted response rate is a tiered approach as follows:
  - 24/7: immediate response if there is a case of entrapment.
  - 5 AM – 7 PM on weekdays: contracted business hours, response time is within one hour.
  - After 7 PM or before 5 AM on weekdays, and on weekends: response time is within two hours.
- Sound Transit is currently piloting sensor technology on 20 conveyance assets. The sensor technology immediately notifies Sound Transit when there is an issue, so response time is improved. Currently Sound Transit is only aware of outages if a passenger calls about it or is staff observes it. Depending on the results of the pilot, the sensor technology could be rolled out system-wide in 2023-2024.

## Bike Rack Distribution

The *Design Criteria Manual* states that either bike cages or bike racks must be provided at all facility locations to the extent possible. Bicycle parking facilities are not to be located on a rail platform. Bike racks are considered class 2 bicycle parking and used for short-term bike parking.

BIKE RACK DISTRIBUTION			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	64.0%	60.0%	4.0%
Commuter Rail	50.0%	100.0%	-50.0%
Light Rail	79.0%	20.0%	59.0%
Tacoma Link	0.0%	0.0%	0.0%

Table 30: Bike Rack Distribution, Minority Stop

### Findings

- Bike racks occur more frequently at minority stations than non-minority stations for ST Express and Link light rail. There is no disparate impact for these modes
- Bike racks occur 50% more frequently at non-minority commuter rail stations than at minority ones, resulting in a disparate impact.
- The Tacoma Link stations do not have bike racks because these locations are simple at-grade platforms and the guidelines state that bike facilities are not allowed on platforms.
- Bike racks occur more frequently at low-income stations than non-low-income stations for ST Express and commuter Rail. There is no disproportionate burden for these modes
- Bike racks occur 41% more frequently at non-low-income light rail stations than at low-income ones, resulting in a disproportionate burden.
- Three commuter stations: King Street Station, Lakewood Station, and South Freighthouse Square Concourse, do not have bicycle racks at the stations, however all do have on-street bike parking nearby. All three are minority and low-income stations.
- All seven of the light rail stations without bike racks are low-income stations. Five of the seven locations are underground fixed guideway, one is an exclusive platform and another is an elevated fixed guideway station. The underground stations all have bike racks on-street outside the station. Northgate Station is the elevated guideway station without bike racks, but there are bike cages, thus meeting the requirement for bicycle facilities. Additionally, Northgate Station includes just the elevated station and plaza, the adjacent transit center has bicycle racks, but is owned by King County. Stadium Station is an exclusive platform, Sound Transit only has amenity jurisdiction over the platform and per their policy, bicycle facilities are not to be placed on rail platforms. There are free bicycle racks on street outside the station.
- The *Design Criteria Manual* is constantly being updated, many of the stations missing bike racks were constructed before the guidelines included standards for bike parking and, at the time of their construction, were compliant with the manual.

BIKE RACK DISTRIBUTION			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	78.0%	50.0%	28.0%
Commuter Rail	83.0%	67.0%	16.0%
Light Rail	56.0%	100.0%	-41.0%
Tacoma Link	0.0%	N/A	N/A

Table 31: Bike Rack Distribution, Low-Income Stop

Refer to Appendix L: 2021 Bike Rack and Cage Distribution Tables

### Mitigation

- As Sound Transit develops its long-term maintenance and state of good repair strategy, it will evaluate opportunities to update amenities at its existing stations in an equitable manner. Bike parking will be programmed into the update as outlined in the *Design Criteria Manual*.

## Bike Cage/Lockers Distribution

The *Design Criteria Manual* states that either bike cages or bike racks must be provided at all facility locations to the extent possible. Bicycle parking facilities are not to be located on a rail platform. Bike cages and lockers are considered class 1 bicycle parking and used for long-term (all-day or overnight) bicycle parking because they are secured and weather-protected. Bike cages can house multiple bikes, whereas lockers are intended for individual bikes.

### Findings

- Link light rail minority stations have a higher instance of having bicycle cages/lockers, resulting in no disparate impact.
- Bike cages/lockers occur 33% more frequently at non-minority commuter rail stations and 6% more at ST Express stations than at minority ones, resulting in a disparate impact for both modes.
- The Tacoma Link stations do not have bike cages, this is because these locations are simple at-grade platforms and the guidelines state bike facilities are not allowed on platforms.
- ST Express low-income and commuter rail stations have a greater percentage with bicycle cages/lockers than non-low-income stations. There is no disproportionate burden for these modes.
- Bike cages/lockers occur 47% more frequently at non-low-income Link light rail stations than at low-income ones, resulting in a disproportionate burden.
- Two commuter stations: King Street Station and South Freighthouse Square Concourse, do not have bicycle racks at the stations, however all do have on-street bike parking nearby.
- All eight of the Link light rail stations without bike racks are low-income stations. Seven of the eight locations are underground fixed guideway and one is an exclusive platform. At the underground stations, bike parking is available at bike racks on-street outside the station. Stadium Station is an exclusive platform, Sound Transit only has amenity jurisdiction over the platform and per their policy, bicycle facilities are not to be placed on rail platforms. There are free bicycle racks on-street outside the station.
- Six ST Express locations have neither bike racks nor bike cages/lockers, three are minority-only stations, one low-income only, and two are neither low-income nor minority. Two locations (Kirkland and Lakewood) have cages/lockers but not bike racks. Kirkland Transit Center is neither minority nor low-income, but Lakewood Station is both. There is only one station, Lynnwood Transit Center, which has bike racks but not bike cages/lockers; it is not a minority and low-income station.
- The *Design Criteria Manual* is constantly being updated, many of the stations missing bike racks were constructed before the guidelines stated standards for bike parking and, at the time of their construction, were compliant with the manual.

Refer to Appendix L: 2021 Bike Rack and Cage Distribution Tables

BIKE CAGE DISTRIBUTION			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	64.0%	70.0%	-6.0%
Commuter Rail	67.0%	100.0%	-33.0%
Light Rail	71.0%	20.0%	51.0%
Tacoma Link	0.0%	0.0%	0.0%

Table 32: Bike Cage Distribution, Minority Stop

BIKE CAGE DISTRIBUTION			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	78.0%	58.0%	20.0%
Commuter Rail	83.0%	67.0%	16.0%
Light Rail	53.0%	100.0%	-47.0%
Tacoma Link	0.0%	N/A	N/A

Table 33: Bike Cage Distribution, Low-income Stop



**Mitigation**

- As Sound Transit develops its long-term maintenance and state of good repair strategy, it will evaluate opportunities to update amenities at its existing stations in an equitable manner. Bike parking will be programmed into the update as outlined in the *Design Criteria Manual*.

**Shelter Distribution**

Per Sound Transit's *Service Standards and Performance Measures* document, bus stops with a high number of boardings per hour should have bus shelters or other weather-protection amenities. The *Design Criteria Manual* states that for rail a minimum of 30 percent of the platform area should have a canopy for at-grade stations and 65 percent for elevated stations. Bus stops are to have weather protection in the form of canopies and windscreens.

SHELTER DISTRIBUTION			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	100%	90%	10%
Commuter Rail	50%	17%	33%
Light Rail	93%	100%	-7%
Tacoma Link	100%	100%	0%

Table 34: Shelter Distribution, Minority Stop

**Findings**

- Commuter rail and ST Express minority stations have a higher instance of having shelters that meet the standard, resulting in no disparate impact.
- 100% of Tacoma Link stations have shelters meeting the standard, thus there is no disparate impact or disproportionate burden.
- Shelters meeting the standard occur 7% more frequently at non-minority Link Light rail stations resulting in a disparate impact.
- Commuter rail low-income stations have a higher instance of having shelters meeting the standard, resulting in no disproportionate burden.
- Shelters meeting the standard occur 11% more frequently at non-low-income ST Express and 6% more at light rail stations than at low-income ones, resulting in a disproportionate burden for both modes.
- All Sound Transit facilities have a shelter, but do not all meet the standard for the amount of shelter required. There are nine locations that do not meet the standard; the majority (seven) are commuter rail stations, one serves both commuter rail and ST Express, and one serves light rail. All but Mount Baker (light rail) are at-grade stations and have 8% to 12% canopy coverage; Mt. Baker has 57%.
- The *Design Criteria Manual* is constantly being updated, many of the stations with insufficient shelter were constructed under different guidelines and, at the time of their construction, were compliant with the manual.

SHELTER DISTRIBUTION			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	89%	100%	-11%
Commuter Rail	50%	17%	33%
Light Rail	94%	100%	-6%
Tacoma Link	100%	N/A	N/A

Table 35: Shelter Distribution, Low-income Stop

Refer to Appendix M: 2021 Shelter Distribution Maps for more details on locations

**Mitigation**

- As Sound Transit develops its long-term maintenance and state of good repair strategy, it will evaluate opportunities to update amenities at its existing stations in an equitable manner.

## Seating/Bench Distribution

The *Design Criteria Manual* for light rail states that a minimum of 20 seats must be provided on each side of the platform and 30 seats for center platforms. At least 60 percent of seating should be under the canopy. Seating at on-site bus stops must have at least one 3 lineal feet per bus stall.

BENCH/SEATING DISTRIBUTION			
MODE	MINORITY	NON-MINORITY	DIFFERENCE
ST Express	91%	90%	1%
Commuter Rail	33%	33%	0%
Light Rail	21%	60%	-39%
Streetcar	100%	100%	0%

Table 36: Seating Distribution, Minority Stop

### Findings

- Commuter rail and ST Express minority stations have a higher instance of having seating that meet the standard, resulting in no disparate impact.
- 100% of Tacoma Link stations have seating meeting the standard, thus there is no disparate impact or disproportionate burden.
- Seating meeting the standard occurs 39% more frequently at non-minority light rail stations, resulting in a disparate impact.
- Commuter rail and light rail low-income stations have a higher instance of having shelters meeting the standard, resulting in no disproportionate burden.
- Shelters meeting the standard occur 22% more frequently at non-low-income ST Express stops than at low-income ones, resulting in a disproportionate burden.
- All light rail stations have seating but 20 locations do not meet the standard. Fourteen of these locations are low-income and minority stations, two are only low-income, one is only minority, and four are neither.
- Stations not meeting the standards are primarily rail (light rail or commuter rail), but two are served by ST Express as well, and both are low-income stations.
- Many of the commuter rail stations not meeting the standard have side platforms and, on the inbound side towards Seattle, the platform meets the standard but the outbound does not. The inbound stations are primarily used for those boarding heading towards Seattle, while the outbound is primarily used by those alighting.
- Many of the stations not meeting the standard for seating are located in downtown Seattle or Pierce County.
- The *Design Criteria Manual* is constantly being updated, many of the stations with insufficient seating were constructed under different guidelines and, at the time of their construction, were compliant with the manual.

BENCH/SEATING DISTRIBUTION			
MODE	LOW-INCOME	NON-LOW-INCOME	DIFFERENCE
ST Express	78%	100%	-22%
Commuter Rail	50%	17%	33%
Light Rail	35%	0%	35%
Tacoma Link	100%	N/A	N/A

Table 37: Seating Distribution, Low-Income Stop

Refer to Appendix N: 2021 Bench/Seating Distribution Maps for more details on locations and if they meet the standard.

### Mitigation

- As Sound Transit develops its long-term maintenance and state of good repair strategy, it will evaluate opportunities to update amenities at its existing stations in an equitable manner.

## Vehicle Assignment

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### ST Express

Vehicle assignment is the process by which vehicles are placed into service throughout the system. Sound Transit contracts with Community Transit, King County Metro, and Pierce Transit to operate bus service. Each of the three facilities is assigned vehicles that are replaced when they reach the useful life benchmark. There are garage limitations to consider such as bay door and ceiling heights that may prevent a service provider from being able to store double-decker buses, and other considerations such as fuel type availability at a facility. Providers assign buses to service by rotating newer vehicles across all routes operated out of the facility. Vehicles are parked in line, front-to-back on pull-in, and assigned by pull-out time, according to the vehicle characteristics. This practice provides for a random bus assignment. Bus assignment does consider the operating characteristics of buses of various lengths and heights, which are matched to the operating characteristics of the route (ridership volumes, turn restrictions, height restrictions, type of service, and platform/curb levels). Some of these considerations are: hybrid and double-decker vehicles are not permitted on routes with clearance restrictions, express coach buses are specifically designed for routes that cover longer distances per trip, articulated and double-decker buses are deployed exclusively on routes with supportive ridership volumes.

### Sounder Commuter Rail

The Sounder Commuter Rail operates Bombardier Bi-level cab cars (27) and coaches (40), pulled by EMD and MPI locomotives. Locomotives range in age from 10 to 23 years, and all have been rebuilt to meet EPA Tier 3 emissions standards. The 40 coaches are all 19 to 22 years old, and cab cars are 5 to 23. All are eligible to run on both commuter rail routes, and there are no constraints as to which locomotives can be combined with which coaches and cab cars. All passenger cars are equipped with power outlets and bathrooms. All passenger cars purchased beginning in 2015 are Crash Energy Management (CEM) cars; these are the only passenger cars with wheelchair lifts. Each trainset is assigned a CEM car at the end, as it has the latest crash energy absorption technology. Due to platform lengths, the S Line consists of 1 locomotive and 7 passenger cars, and the north has 1 locomotive and up to 3 cars. Sound Transit's rail yard is located in Lakewood. In addition, there is an outlying storage yard in Everett. The Lakewood yard can hold up to 72 vehicles, and Everett can store 16 vehicles to the north. Locomotives and cab cars are not assigned to a specific yard but are rotated daily based on availability and maintenance.

### Link Light Rail

Each day vehicle maintenance assesses the readiness of each light rail vehicle and provides the list to operations. Operations assign a vehicle to each block based on available ready vehicles. Currently, Sound Transit is in the process of procuring new light rail vehicles for expansion. Four new vehicles have been delivered, and no restrictions are preventing them from operating on the Link Line 1, alongside the 49 Kinkisharyo light rail vehicles and 48 Siemens in service (purchased 2006-2008 and 2011). Currently, there is only one light rail line, and it is classified as both a minority and low-income route. As such, it is not possible to compare vehicles assigned to minority or low-income to those assigned to non-minority or non-low-income routes.

### Tacoma Link

Each day vehicle maintenance assesses the readiness of each vehicle and provides the list to operations. Operations assigns a vehicle based on available ready vehicles. The fleet consists of three 2001 Skoda vehicles, all with the same specifications and amenities. Sound Transit is in the process of procuring five new vehicles from Brookeville Equipment Corporation for the extension of the line. These new vehicles have yet to be placed in service, but there are no restrictions preventing them from operating over the entire Tacoma Link line. Currently there is only one streetcar line (Tacoma Link), and it is classified as both a minority and low-income route. As such, it is not possible to compare vehicles assigned to minority or low-income to those assigned to non-minority or non-low-income routes.

# Conclusion & Next Steps

This analysis has highlighted areas of Sound Transit service where scheduled service levels and service performance exhibited a disparate impact or disproportionate burden in 2021. Through the disparate impact analysis process, it was determined that routes serving minority populations greater than the district average did not perform as well in the following categories:

<u>Express Bus</u>	<u>Commuter Rail</u>	<u>Light Rail</u>	<u>Tacoma Link</u>
<ul style="list-style-type: none"> <li>▪ On-time performance</li> <li>▪ Percent of trips operated</li> <li>▪ Complaints</li> <li>▪ Saturday and Sunday span</li> <li>▪ Base and reduced frequency</li> <li>▪ Elevator uptime</li> <li>▪ Bike cage/locker distribution</li> </ul>	<ul style="list-style-type: none"> <li>▪ Bike rack distribution</li> <li>▪ Bike cage/locker distribution</li> <li>▪ Seating distribution</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shelter distribution</li> <li>▪ Seating distribution</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>

Additionally, the disproportionate burden analysis determined routes serving low-income populations greater than the district average did not perform as well in the following categories:

<u>Express Bus</u>	<u>Commuter Rail</u>	<u>Light Rail</u>	<u>Tacoma Link</u>
<ul style="list-style-type: none"> <li>▪ On-time performance</li> <li>▪ Percent of trips operated</li> <li>▪ Complaints</li> <li>▪ Weekday span</li> <li>▪ Peak and base frequency</li> <li>▪ Shelter distribution</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>	<ul style="list-style-type: none"> <li>▪ Elevator uptime</li> <li>▪ Escalator uptime</li> <li>▪ Bike Cage/locker distribution</li> <li>▪ Shelter distribution</li> <li>▪ Seating distribution</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>

Mitigation strategies will focus on near-future improvements (schedule adjustments, changes in vehicle allocation, trip additions, bus assignments) as well as medium term capital projects. As new high-capacity transit lines are implemented, dedicated rights-of-way will provide some relief around the region's congested highway system. The ST Express network will evolve to connect to new high-capacity transit stations, increasing access to the benefits of enhanced reliability.

Sound Transit adopts an updated Service Plan annually, which sets service levels and approves changes to service consistent with the agency's annual budget. Changes to service occur in March and September each year, with a six-month lead-time required to finalize schedules in order to provide operating partners sufficient time to plan staffing assignments and publish printed materials. The next opportunity to make changes to scheduled service will occur with the March 2023 service change. The 2023 Service Plan is currently in development in coordination with the agency's 2023

Budget. The plan will establish priorities for service restoration and improvements to mitigate findings in this report when operator staffing level allow additional service.

Beyond the short-term, Sound Transit is in the midst of a \$54B bus rapid transit and rail expansion program which will greatly enhance the capacity, speed and reliability of regional transit options. Link light rail will reach Federal Way in South King County around 2024 and Tacoma in Pierce County around 2032. BRT in South King County will also be implemented around 2026. Reliable service in a dedicated right-of-way will help address the lower performance of service in South King and Pierce counties identified in this report and improve access to high-capacity transit in low-income and minority communities.

With the anticipated expansion of service, Sound Transit is developing and implementing protocols to ensure ongoing monitoring and mitigations as part of the agency's normal course of business. The Office of Civil Rights, Equity & Inclusion is responsible for Title VI oversight, the Operations team is responsible for operational oversight and data collection, and the Service Planning team is responsible for the agency's service planning and analysis. These three groups work together on a frequent basis to ensure the agency is assessing service monitoring frequently.

Sound Transit will make a good faith effort to mitigate or reduce the adverse effects of any disparate impact on minorities or a disproportionate burden on low-income individuals through the following actions:

- Inclusion of Title VI service monitoring and mitigation discussion to regularly scheduled partner Operations Business Review meetings.
- Development of a plan to restore service and implement service improvements adopted in the 2022 Service Plan.
- Continued expansion of high-capacity transit to low-income and minority communities in the service area.

Sound Transit will also advance specific tasks associated with how the data and information that informs service monitoring is collected, analyzed, tracked, and reported through:

- Adopting a Disparate Impact/Disproportionate Burden (DIDB) policy more appropriate for Sound Transit's service area and better reflecting the agency's growth since the policies were first adopted in 2013.
- Standardizing definitions, data collection, and data collection methodology across partners and operators.
- Refining guidelines across modes, partners, and the service area.
- Expanding amenity database and condition tracking.
- Restoring service at March and September service changes as new operators are added.

## Appendix A: Disparate Impact Analysis

Disparate Impact Analysis	Target	Minority Routes	Non-Minority Routes	Difference	Disp. Impact
<b>Express Bus</b>					
On-Time Performance	85.0%	82.6%	91.7%	<b>-9.1%</b>	<b>Yes</b>
Trips Operated	99.8%	99.0%	100%	<b>-0.7%</b>	<b>Yes</b>
Customer Complaints per 100k ons	15	19.5	18.8	<b>0.7</b>	<b>Yes</b>
Passenger Overcrowding Rate	0.0%	0.0%	0.0%	<b>0.0%</b>	<b>No</b>
Weekday Span (hours)	Variable	15.8	11.7	<b>4.0</b>	<b>No</b>
Saturday Span (hours)	Variable	18.6	19.3	<b>-0.6</b>	<b>Yes</b>
Sunday Span (hours)	Variable	18.4	19.8	<b>-1.4</b>	<b>Yes</b>
Peak Headway (minutes)	30	18.4	18.7	<b>-0.3</b>	<b>No</b>
Base Headway (minutes)	60	31.1	26.1	<b>5.0</b>	<b>Yes</b>
Reduced Headway (minutes)	60	33.46	24.45	<b>9.0</b>	<b>Yes</b>
Service Availability	N/A	1.01	0.99	<b>0.02</b>	<b>No</b>
Elevator Uptime	97%	99.24%	99.38%	<b>-0.1%</b>	<b>Yes</b>
Bike Rack Distribution	N/A	64%	60%	<b>4%</b>	<b>No</b>
Bike Cage/locker Distribution	N/A	64%	70%	<b>-6%</b>	<b>Yes</b>
Shelter Distribution	1 per bay 3 ft per pay	100%	90%	<b>10%</b>	<b>No</b>
Seating Distribution		91%	90%	<b>1%</b>	<b>No</b>
<b>Commuter Rail</b>					
On-Time Performance	95.0%	96.4%	96.8%	<b>0.4%</b>	<b>No</b>
Trips Operated	99.5%	99.6%	97.7%	<b>1.9%</b>	<b>No</b>
Customer Complaints per 100k ons	15.0	24.9	123.2	<b>-98.3</b>	<b>No</b>
Passenger Overcrowding Rate	0.0%	0.0%	0.0%	<b>0.0%</b>	<b>No</b>
Weekday Span (hours)	N/A	9.5	3.6	<b>5.9</b>	<b>No</b>
Saturday Span (hours)	N/A	N/A	N/A	<b>N/A</b>	<b>N/A</b>
Sunday Span (hours)	N/A	N/A	N/A	<b>N/A</b>	<b>N/A</b>
Peak Headway (minutes)	N/A	22.8	60.0	<b>-37.2</b>	<b>No</b>
Base Headway (minutes)	N/A	49.2	N/A	<b>N/A</b>	<b>N/A</b>
Reduced Headway (minutes)	N/A	N/A	N/A	<b>N/A</b>	<b>N/A</b>
Service Availability	N/A	1.06	0.96	<b>0.10</b>	<b>No</b>
Elevator Uptime	97%	99.67%	98.91%	<b>0.76%</b>	<b>No</b>
Bike Rack Distribution	N/A	50%	100%	<b>-50%</b>	<b>Yes</b>
Bike Cage/locker Distribution	N/A	67%	100%	<b>-33%</b>	<b>Yes</b>
Shelter Distribution	Varies	50%	17%	<b>33%</b>	<b>No</b>
Seating Distribution	Varies	33%	33%	<b>0%</b>	<b>No</b>



Disparate Impact Analysis	Target	Minority Routes	Non-Minority Routes	Difference	Disp. Impact
<b>Light Rail</b>					
On-Time Performance	90.0%	88.4%	N/A	N/A	N/A
Trips Operated	99.8%	99.3%	N/A	N/A	N/A
Customer Complaints per 100k ons	15	6.0	N/A	N/A	N/A
Passenger Overcrowding Rate	0.0%	0.0%	N/A	N/A	N/A
Weekday Span (hours)	N/A	21.8	N/A	N/A	N/A
Saturday Span (hours)	N/A	21.8	N/A	N/A	N/A
Sunday Span (hours)	N/A	19.8	N/A	N/A	N/A
Peak Headway (minutes)	N/A	7.6	N/A	N/A	N/A
Base Headway (minutes)	N/A	10.4	N/A	N/A	N/A
Reduced Headway (minutes)	N/A	11.9	N/A	N/A	N/A
Service Availability	N/A	1.06	0.95	0.11	No
Elevator Uptime	97%	98.49%	96.01%	2.48%	No
Escalator Uptime	95%	91.27%	82.58%	8.70%	No
Bike Rack Distribution	N/A	79%	20%	59%	No
Bike Cage/locker Distribution	N/A	71%	20%	51%	No
Shelter Distribution	Varies	93%	100%	-7%	Yes
Seating Distribution	Varies	21%	60%	-39%	Yes
<b>Tacoma Link</b>					
On-Time Performance	98.5%	99.9%	N/A	N/A	N/A
Trips Operated	99.8%	99.9%	N/A	N/A	N/A
Customer Complaints per 100k ons	15.0	1.3	N/A	N/A	N/A
Passenger Overcrowding Rate	0.0%	0.0%	N/A	N/A	N/A
Weekday Span (hours)	N/A	22.4	N/A	N/A	N/A
Saturday Span (hours)	N/A	14.6	N/A	N/A	N/A
Sunday Span (hours)	N/A	8.4	N/A	N/A	N/A
Peak Headway (minutes)	N/A	12.0	N/A	N/A	N/A
Base Headway (minutes)	N/A	12.4	N/A	N/A	N/A
Reduced Headway (minutes)	N/A	24.1	N/A	N/A	N/A
Service Availability	N/A	1.02	0.99	0.03	No
Bike Rack Distribution	N/A	0%	0%	0%	No
Bike Cage/locker Distribution	N/A	0%	0%	0%	No
Shelter Distribution	Varies	100%	100%	0%	No
Seating Distribution	Varies	100%	100%	0%	No

Table 38: Disparate Impact Analysis Summary

## Appendix B: Disproportionate Burden Analysis

Disproportionate Burden Analysis	Target	Low Income Routes	Non-Low Income Routes	Difference	Disp. Impact
<b>Express Bus</b>					
On-Time Performance	85.0%	83.7%	89.5%	<b>-5.8%</b>	<b>Yes</b>
Trips Operated	99.8%	98.8%	99.7%	<b>-0.9%</b>	<b>Yes</b>
Customer Complaints per 100k ons	15	22.3	16.2	<b>6.1</b>	<b>Yes</b>
Passenger Overcrowding Rate	0.0%	0.0%	0.0%	<b>0.0%</b>	<b>No</b>
Weekday Span (hours)	Variable	13.4	14.9	<b>-1.5</b>	<b>Yes</b>
Saturday Span (hours)	Variable	19.6	18.0	<b>1.6</b>	<b>No</b>
Sunday Span (hours)	Variable	19.0	17.8	<b>1.2</b>	<b>No</b>
Peak Headway (minutes)	30	21.1	16.2	<b>4.9</b>	<b>Yes</b>
Base Headway (minutes)	60	32.2	25.6	<b>6.6</b>	<b>Yes</b>
Reduced Headway (minutes)	60	27.5	31.0	<b>-3.6</b>	<b>No</b>
Service Availability	N/A	1.04	0.99	<b>0.05</b>	<b>No</b>
Elevator Uptime	97%	99.4%	99.1%	<b>0.3%</b>	<b>No</b>
Bike Rack Distribution	N/A	78%	50%	<b>28%</b>	<b>No</b>
Bike Cage/locker Distribution	N/A	78%	58%	<b>20%</b>	<b>No</b>
Shelter Distribution	1 per bay	89%	100%	<b>-11%</b>	<b>Yes</b>
Seating Distribution	3 ft per pay	78%	100%	<b>-22%</b>	<b>Yes</b>
<b>Commuter Rail</b>					
On-Time Performance	95.0%	96.6%	N/A	<b>N/A</b>	<b>N/A</b>
Trips Operated	99.5%	99.2%	N/A	<b>N/A</b>	<b>N/A</b>
Customer Complaints per 100k ons	15.0	29.3	N/A	<b>N/A</b>	<b>N/A</b>
Passenger Overcrowding Rate	0.0%	0.0%	N/A	<b>N/A</b>	<b>N/A</b>
Weekday Span (hours)	N/A	6.5	N/A	<b>N/A</b>	<b>N/A</b>
Saturday Span (hours)	N/A	N/A	N/A	<b>N/A</b>	<b>N/A</b>
Sunday Span (hours)	N/A	N/A	N/A	<b>N/A</b>	<b>N/A</b>
Peak Headway (minutes)	N/A	41.4	N/A	<b>N/A</b>	<b>N/A</b>
Base Headway (minutes)	N/A	24.6	N/A	<b>N/A</b>	<b>N/A</b>
Reduced Headway (minutes)	N/A	N/A	N/A	<b>N/A</b>	<b>N/A</b>
Service Availability	N/A	1.19	0.97	<b>0.22</b>	<b>No</b>
Elevator Uptime	97%	99.5%	98.0%	<b>1.5%</b>	<b>No</b>
Bike Rack Distribution	N/A	83%	67%	<b>16%</b>	<b>No</b>
Bike Cage/locker Distribution	N/A	100%	67%	<b>33%</b>	<b>No</b>
Shelter Distribution	Varies	50%	17%	<b>33%</b>	<b>No</b>
Seating Distribution	Varies	50%	17%	<b>33%</b>	<b>No</b>

Disproportionate Burden Analysis	Target	Low Income Routes	Non-Low Income Routes	Difference	Disp. Impact
<b>Light Rail</b>					
On-Time Performance	90.0%	88.4%	N/A	N/A	N/A
Trips Operated	99.8%	99.3%	N/A	N/A	N/A
Customer Complaints per 100k ons	15	6.0	N/A	N/A	N/A
Passenger Overcrowding Rate	0.0%	0.0%	N/A	N/A	N/A
Weekday Span (hours)	N/A	21.8	N/A	N/A	N/A
Saturday Span (hours)	N/A	21.8	N/A	N/A	N/A
Sunday Span (hours)	N/A	19.8	N/A	N/A	N/A
Peak Headway (minutes)	N/A	7.6	N/A	N/A	N/A
Base Headway (minutes)	N/A	10.4	N/A	N/A	N/A
Reduced Headway (minutes)	N/A	11.9	N/A	N/A	N/A
Service Availability	N/A	1.16	0.97	0.19	No
Elevator Uptime	97%	97.5%	98.8%	-1.3%	Yes
Escalator Uptime	95%	84.1%	97.8%	-14%	Yes
Bike Rack Distribution	N/A	59%	100%	-41%	Yes
Bike Cage/locker Distribution	N/A	53%	100%	-47%	Yes
Shelter Distribution	Varies	94%	100%	-6%	Yes
Seating Distribution	Varies	35%	0%	35%	No
<b>Tacoma Link</b>					
On-Time Performance	98.5%	99.9%	N/A	N/A	N/A
Trips Operated	99.8%	99.9%	N/A	N/A	N/A
Customer Complaints per 100k ons	15.0	1.3	N/A	N/A	N/A
Passenger Overcrowding Rate	0.0%	0.0%	N/A	N/A	N/A
Weekday Span (hours)	N/A	22.4	N/A	N/A	N/A
Saturday Span (hours)	N/A	14.6	N/A	N/A	N/A
Sunday Span (hours)	N/A	8.4	N/A	N/A	N/A
Peak Headway (minutes)	N/A	12.0	N/A	N/A	N/A
Base Headway (minutes)	N/A	12.4	N/A	N/A	N/A
Reduced Headway (minutes)	N/A	24.1	N/A	N/A	N/A
Service Availability	N/A	1.40	0.93	0.47	No
Bike Rack Distribution	N/A	0%	N/A	N/A	N/A
Bike Cage/locker Distribution	N/A	0%	N/A	N/A	N/A
Shelter Distribution	Varies	100%	N/A	N/A	N/A
Seating Distribution	Varies	100%	N/A	N/A	N/A

Table 39: Disproportionate Burden Analysis Summary

## Appendix C: Changes in Service Delivery

Changes in service delivery between 2018 and 2021 are described in this section.

Route	Actual Annual Platform Hours		Difference 2018-2021	Minority	Low Income
	2018	2021			
<b>Express Bus</b>	<b>780,900</b>	<b>682,899</b>	<b>-98,001</b>		
510	19,600	15,376	-4,224		Yes
511	18,660	12,137	-6,523		
512	58,444	63,883	5,439		Yes
513	10,851	5,593	-5,258		
522	56,213	57,614	1,401		
532	17,433	10,456	-6,977		
535	25,029	18,418	-6,611		
540	8,556	0	-8,556	---	---
541	10,876	0	-10,876	---	---
542	22,527	27,180	4,653	Yes	
545	80,285	69,948	-10,337	Yes	
550	57,597	57,194	-403	Yes	
554	41,503	42,650	1,147	Yes	
555	7,232	0	-7,232	---	---
556	9,268	1,977	-7,291	Yes	
560	38,479	41,932	3,453	Yes	Yes
566	32,183	24,731	-7,452	Yes	Yes
567	12,627	0	-12,627	---	---
574	44,007	47,905	3,898	Yes	Yes
577	23,750	22,534	-1,216	Yes	Yes
578	34,663	41,672	7,009	Yes	Yes
580	6,685	3,025	-3,660		Yes
586	11,437	9,409	-2,028	Yes	Yes
590	49,223	33,818	-15,405	Yes	Yes
592	23,440	16,305	-7,135	Yes	Yes
594	48,744	51,204	2,460	Yes	Yes
595	7,470	4,245	-3,225		Yes
596	4,118	3,694	-424		
<b>Commuter Rail</b>	<b>79,141</b>	<b>55,893</b>	<b>-23,248</b>		
Sounder - North	7,109	3,512	-3,597		Yes
Sounder - South	72,032	52,381	-19,651	Yes	Yes
<b>Light Rail</b>	<b>281,813</b>	<b>314,418</b>	<b>23,153</b>		
Link Line 1	281,813	304,966	23,153	Yes	Yes
<b>Streetcar</b>	<b>9,848</b>	<b>9,452</b>	<b>-396</b>		
Tacoma Link	9,848	9,452	-396	Yes	Yes

Table 40: Changes in Service Delivery

The following are observations about changes in service delivery from 2018 to 2021 based on Table 40 on the previous page:

- Sounder-North saw a decrease 3,600 annual vehicle platform hours due to service reductions associated with the COVID-19 pandemic
- Sounder South saw an increase of 19,651 annual vehicle platform hours with the addition of new trips and vehicles added in 2017. However, the number of hours was reduced in 2020 and continued to decrease in 2021 as a result of the COVID-19 pandemic service reductions and continued related challenges.
- The Northgate Link extension opened in late 2021, resulting in an increase in 23,000 vehicle platform hours for the light rail in 2021.
- Tacoma Link growth was flat.

2019			2020			2021			2022 Proposed			2022 Actual Forecast		
KCM	CT	PT	KCM	CT	PT	KCM	CT	PT	KCM	CT	PT	KCM	CT	PT
305,097	157,291	352,143	258,667	146,335	309,624	256,562	125,926	300,610	266,269	115,920	333,747	277,918	134,963	265,071

Table 41: ST Express Changes in Platform Hours 2020-2022

Table 41 above summarizes platform hour distribution from 2020 to 2022 for ST Express. The reduction in platform hours is largely attributed to the Covid-19 pandemic and regional workforce constraints that impeded the delivery of predictable service to Sound Transit passengers.

- 98,000 platform hours were removed from ST Express service. These hours were removed due to service level reductions associated with the COVID-19 pandemic and the ongoing challenge with workforce staffing.
  - 63,000 platform hours were removed from Snohomish County routes (510, 511, 512, 513, 532, 535) because of service reductions associated with the COVID-19 pandemic.
  - 39,000 platform hours were removed from east King County routes (540, 541, 542, 545, 550, 554, 555, 556) because of service reductions associated with the COVID-19 pandemic.
  - 18,000 platform hours were removed from South King County routes (560, 566, 567, 577) because of service reductions associated with the COVID-19 pandemic.
  - 42,519 platform hours removed Pierce County routes (574, 578, 580, 586, 590, 592, 594, 595, and 596) because of service reductions associated with the COVID-19 pandemic.
  - 35,539 platform hours removed Pierce County routes (574, 578, 580, 586, 590, 592, 594, 595, and 596) because of service reductions associated with the workforce shortage

# Appendix D: 2021 Passenger Overcrowding Rate by Route

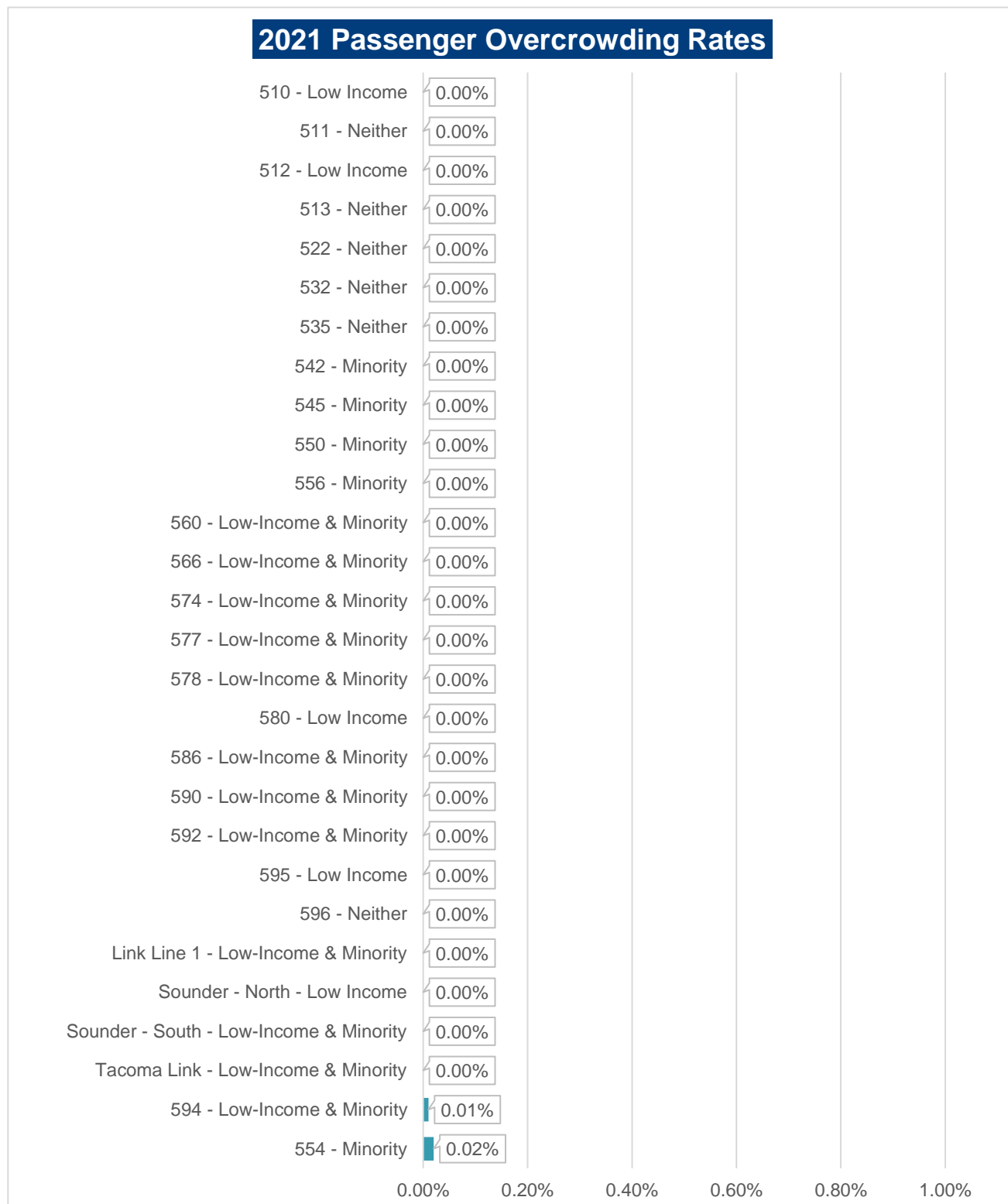


Figure 11: Passenger Overcrowding Rate for all Routes



# Appendix E: 2021 On-Time Performance by Route

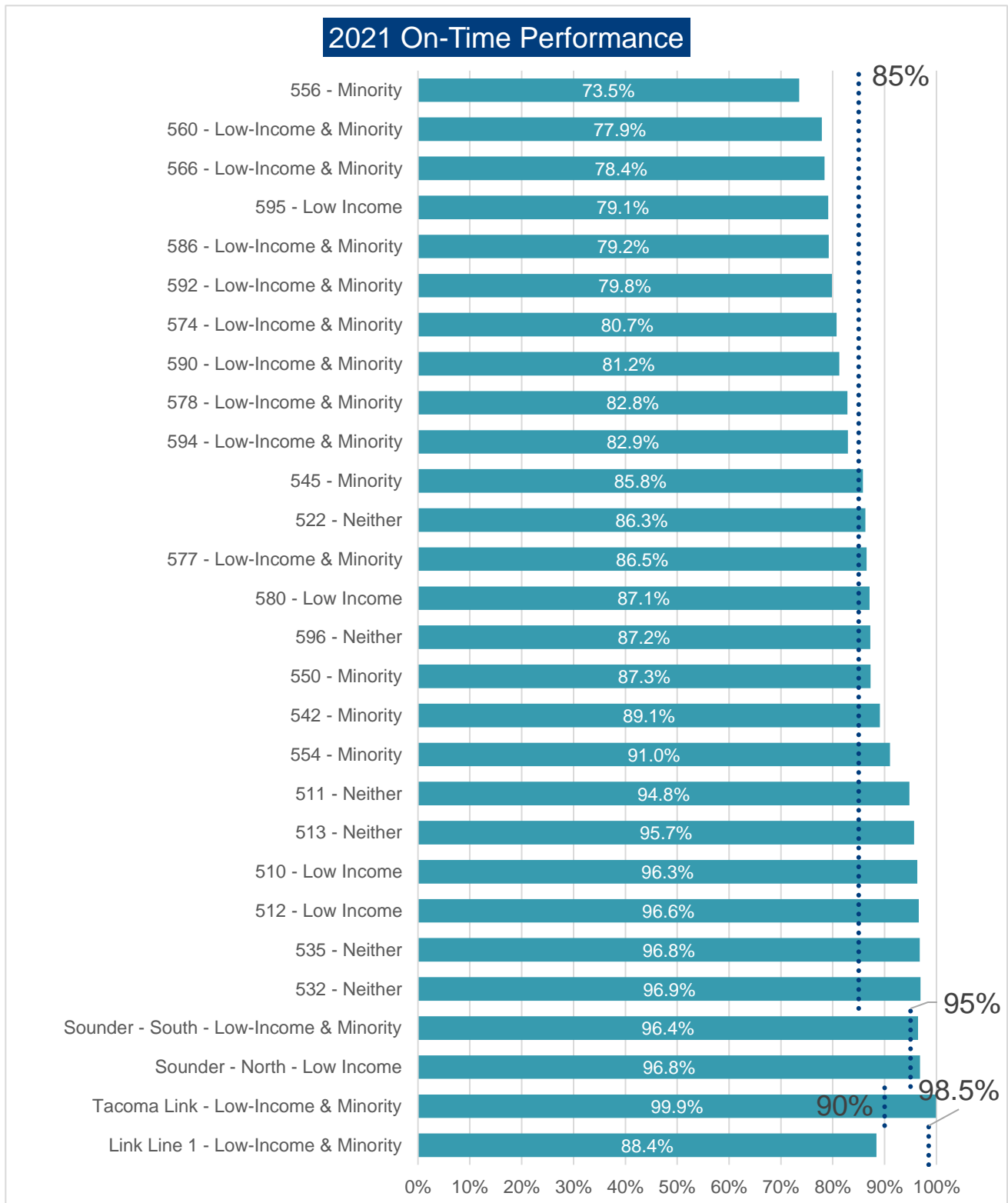


Figure 12: On-Time Performance for all Routes

## Appendix F: 2021 Customer Complaints by Route

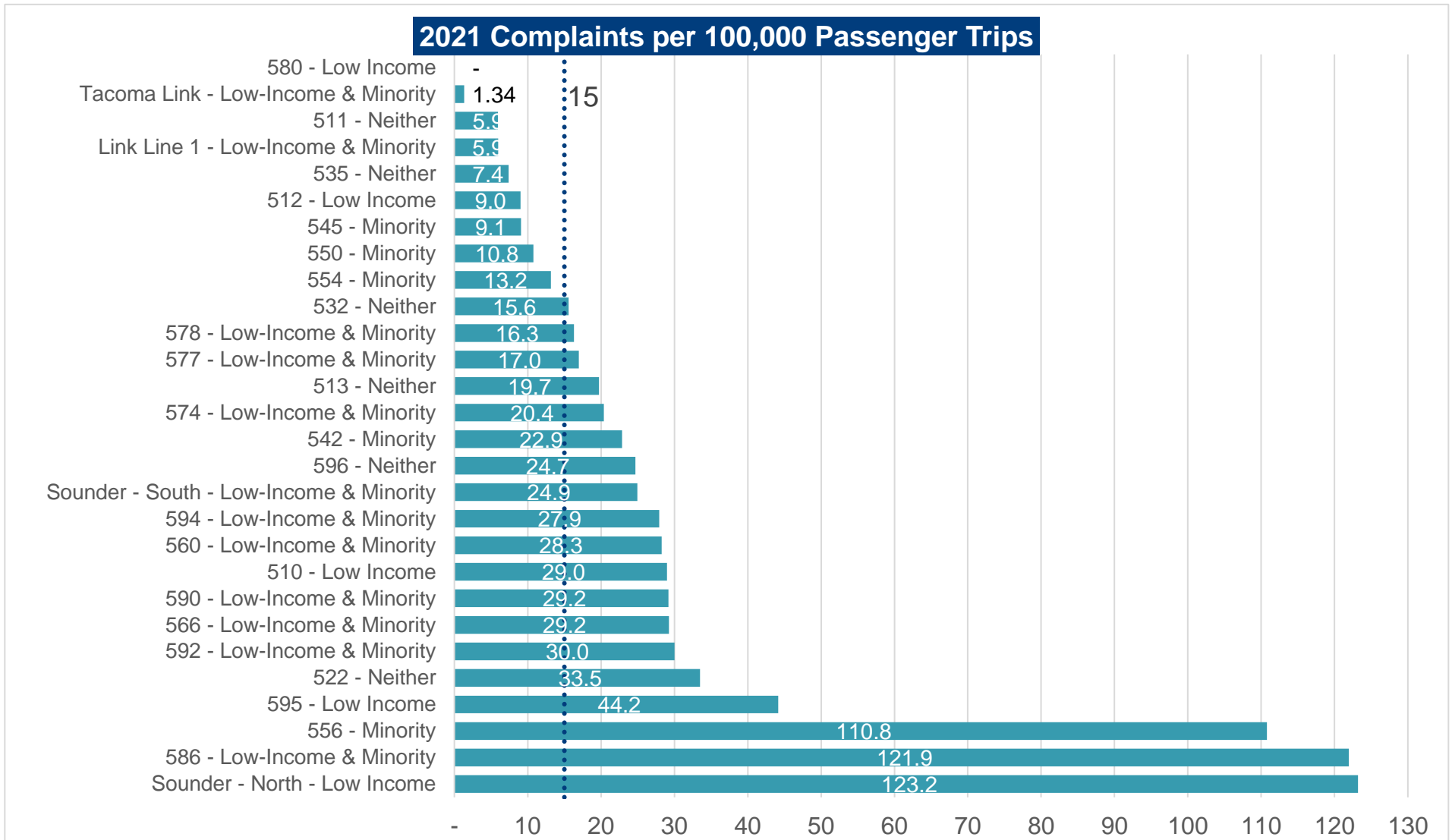


Figure 13: Customer Complaints by Route

# Appendix G: 2021 Trips Operated as Scheduled by Route

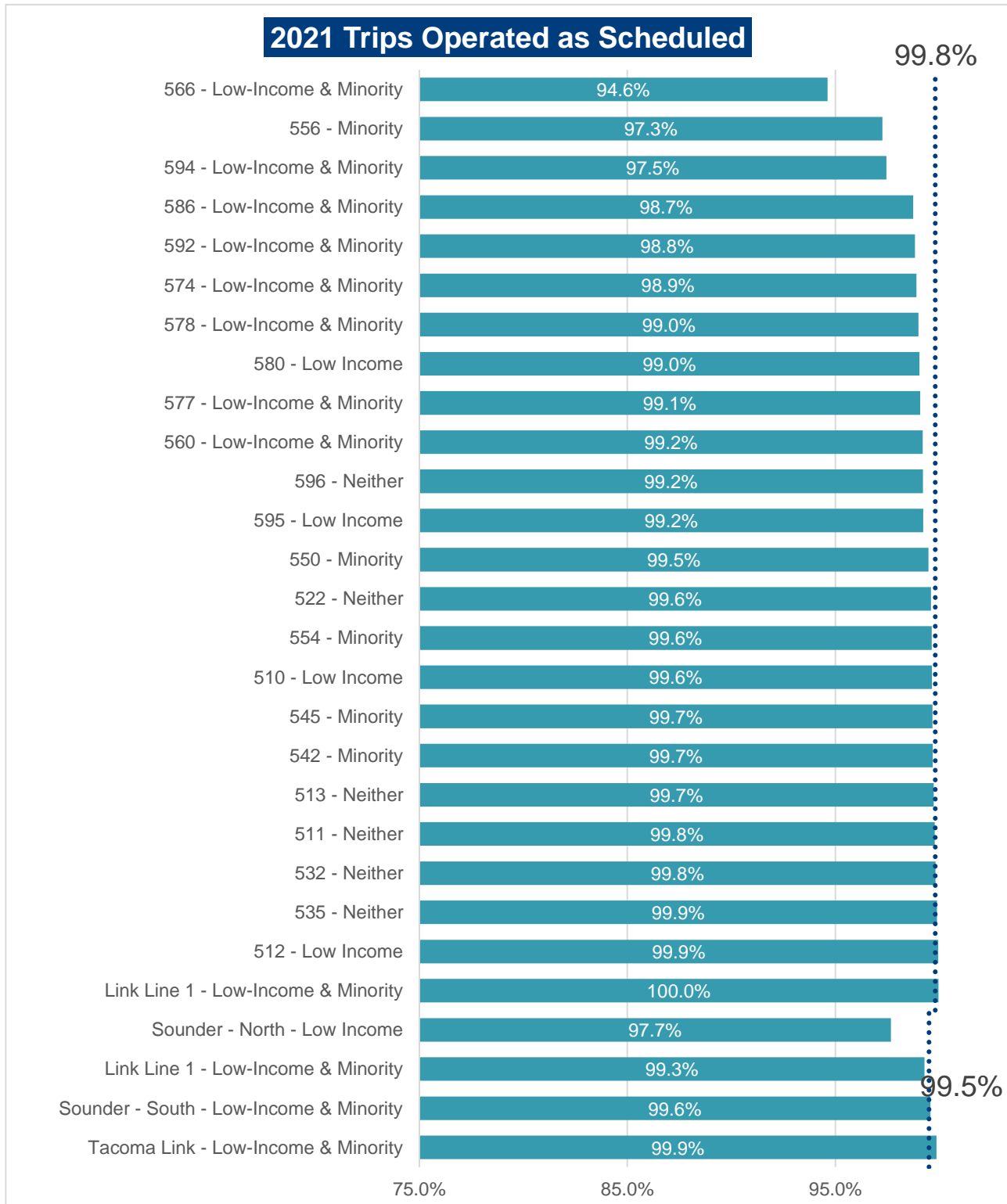


Figure 14: Trips Operated as Scheduled by Route

# Appendix H: 2021 Span of Service by Day Type by Route

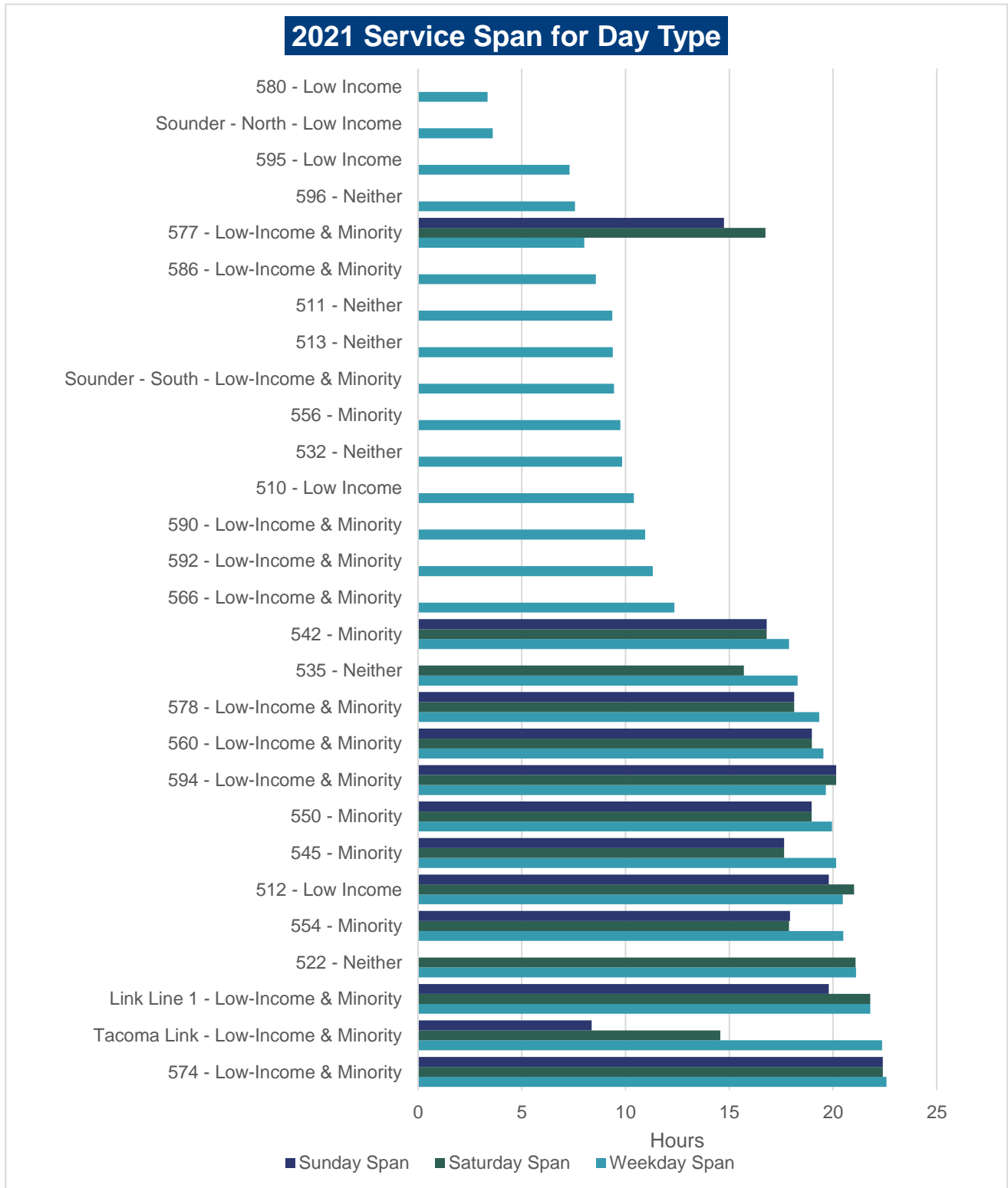


Figure 15: Service Hours by Day Type

# Appendix I: 2021 Average Headway by Route

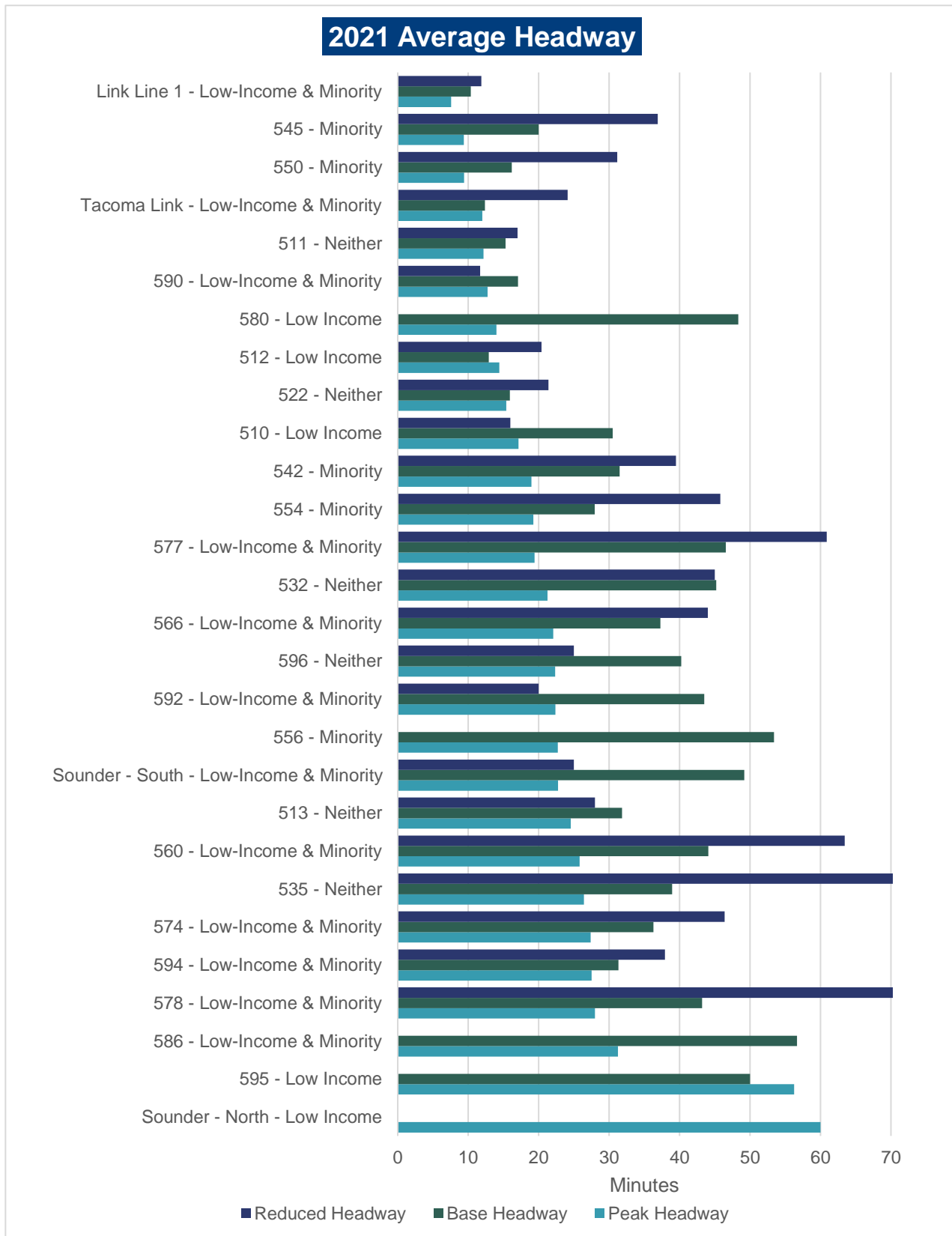


Figure 16: Average Headway by Route

# Appendix J: Sound Transit Stops

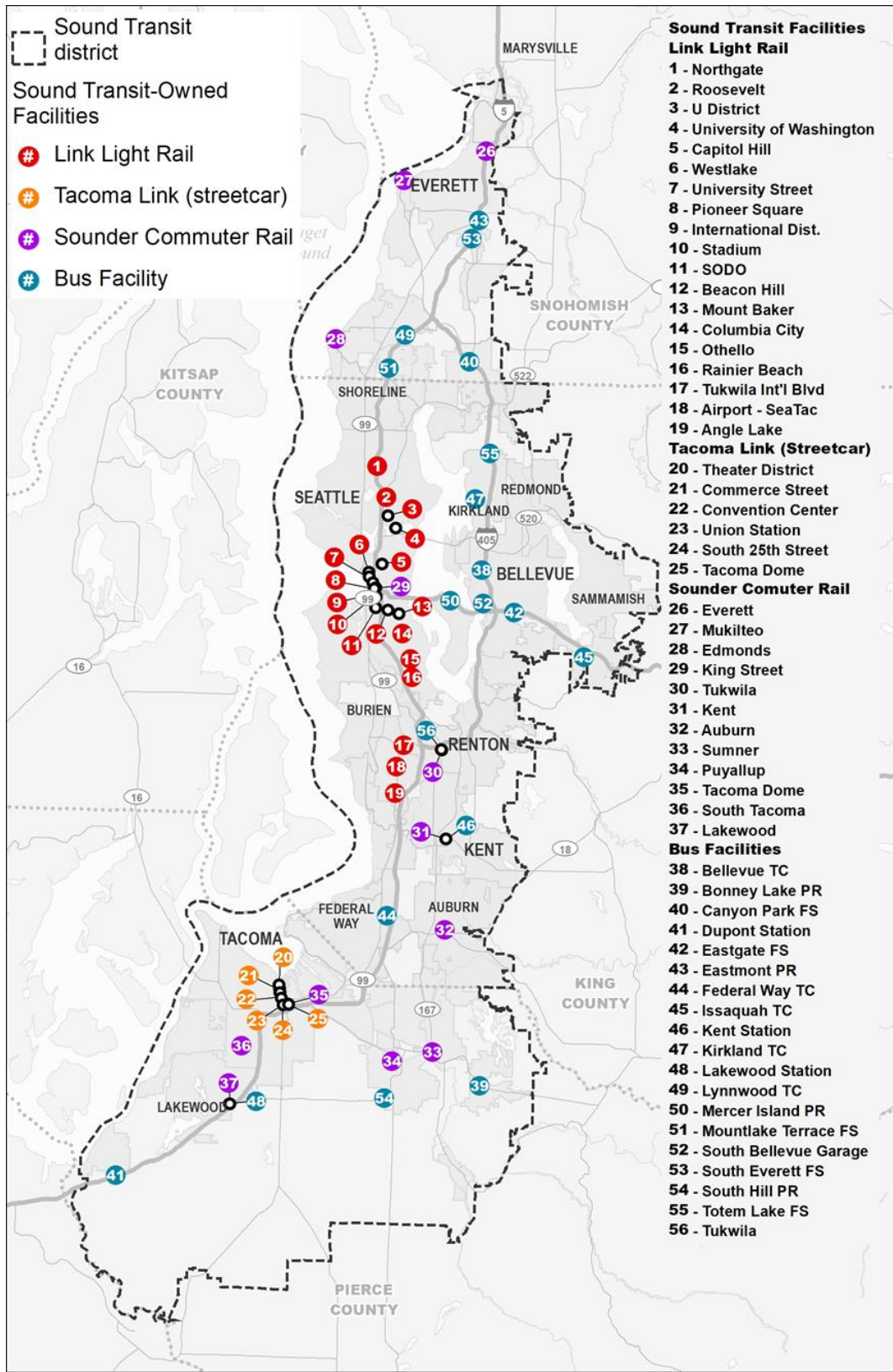


Figure 17: Stop Locations



## Appendix K: 2021 Conveyance Report

Station	Minority	Low-income	Light Rail	Commuter Rail	ST Express	Average Uptime	Meeting 97% Target
Angle Lake Garage	Yes	No	Yes		Yes	98.7%	Yes
Auburn Station	No	Yes		Yes	Yes	99.2%	Yes
Beacon Hill Station	Yes	Yes	Yes			95.8%	No
Canyon Park FS	Yes	No			Yes	99.5%	Yes
Capitol Hill Station	No	Yes	Yes			98.7%	Yes
Everett Station	No	Yes		Yes	Yes	99.5%	Yes
Federal Way TC	Yes	Yes			Yes	99.6%	Yes
International District/ Chinatown Station	Yes	Yes	Yes			98.6%	Yes
Issaquah TC	No	Yes			Yes	99.0%	Yes
Kent Station	Yes	Yes		Yes	Yes	99.3%	Yes
King Street Station	Yes	Yes		Yes		99.9%	Yes
Lakewood Station	Yes	Yes		Yes		99.9%	Yes
Mount Baker Station	Yes	Yes	Yes			99.4%	Yes
Mountlake Terrace FS	No	Yes			Yes	99.8%	Yes
Mukilteo Station	No	No		Yes		98.0%	Yes
Northgate Garage	Yes	Yes	Yes		Yes	99.2%	Yes
Northgate Station	Yes	Yes	Yes			99.8%	Yes
Pioneer Square Station	No	Yes	Yes			85.6%	No
Roosevelt Station	No	No	Yes			98.9%	Yes
SeaTac/Airport Station	Yes	Yes	Yes			97.0%	No
Tukwila Int'l Blvd Station	Yes	Yes	Yes			98.9%	Yes
U District Station	Yes	Yes	Yes			98.9%	Yes
University St. Station	No	Yes	Yes			100.0%	Yes
UW Station	Yes	Yes	Yes			98.8%	Yes
Westlake Station	No	Yes	Yes			96.8%	No

Table 42: Elevators by Station

Station	Minority	Low-income	Average Uptime	Meeting 95% Target
UW Station	Yes	Yes	98.42%	Yes
Capitol Hill Station	No	Yes	98.03%	Yes
Westlake Station	No	Yes	56.18%	No
University St. Station	No	Yes	100.00%	Yes
Pioneer Square Station	No	Yes	44.87%	No
International District/Chinatown Station	Yes	Yes	68.44%	No
Northgate Station	No	No	97.57%	Yes
Mount Baker Station	Yes	Yes	95.01%	Yes
Tukwila Int'l Blvd Station	Yes	Yes	94.44%	No
SeaTac/Airport Station	Yes	Yes	87.47%	No
Angel Lake Station	Yes	No	96.97%	Yes
Roosevelt Station	No	No	98.80%	Yes
U District Station	Yes	Yes	98.16%	Yes

Table 43: Escalators by Station

## Appendix L: 2021 Bike Rack and Cage Distribution Tables

Location	Type	Minority	Low-income	Light Rail	Streetcar	Commuter Rail	ST Express	Bike Racks	Bike Cages/ Lockers
Angle Lake Station	Elevated fixed guideway station	Yes	No	Yes				Yes	Yes
Auburn Station	At grade fixed guideway station	No	Yes			Yes		Yes	Yes
Beacon Hill Station	underground fixed guideway station	Yes	Yes	Yes				Yes	Yes
Bellevue TC	Bus transfer center	Yes	No				Yes		
Bonney Lake P&R	Surface parking lot	No	No				Yes	Yes	Yes
Canyon Park Ped. Bridge	Bus transfer center	Yes	No				Yes		
Capitol Hill	underground fixed guideway station	No	Yes	Yes					
Columbia City Station	Exclusive Platform Station	Yes	Yes	Yes				Yes	Yes
DSTT-International District	Underground fixed guideway station	Yes	Yes	Yes					
DSTT-Pioneer Square	Underground fixed guideway station	No	Yes	Yes					
DSTT-University St	Underground fixed guideway station	No	Yes	Yes					
DSTT-Westlake	Underground fixed guideway station	No	Yes	Yes					
DuPont Station	Bus transfer center	No	No				Yes	Yes	Yes
Eastgate Freeway Station	Bus transfer center	Yes	No				Yes		
Eastmont	Surface parking lot	No	No				Yes		
Edmonds Station (temporary Sounder commuter rail)	Exclusive platform station	No	No			Yes		Yes	Yes
Everett Station	At grade fixed guideway station	No	Yes			Yes		Yes	Yes
Federal Way TC	Bus transfer center	Yes	Yes				Yes	Yes	Yes
Issaquah TC	Bus transfer center	No	Yes				Yes	Yes	Yes
Kent Station - Sounder	At grade fixed guideway station	Yes	Yes			Yes		Yes	Yes
Kent Station - ST Express	Bus transfer center	Yes	Yes				Yes	Yes	Yes
King Street Station	At grade fixed guideway station	Yes	Yes			Yes			
Kirkland Transit Center	Simple at-grade platform station	No	No				Yes		Yes

Location	Type	Minority	Low-income	Light Rail	Streetcar	Commuter Rail	ST Express	Bike Racks	Bike Cages/Lockers
Lakewood Station - bus Bays	At grade fixed guideway station	Yes	Yes				Yes		Yes
Lakewood Station - Platform	At grade fixed guideway station	Yes	Yes			Yes			Yes
Lynnwood TC	Bus transfer center	Yes	Yes				Yes	Yes	
Mercer Island P & R	Bus transfer center	No	No				Yes	Yes	Yes
Mountlake Terrace Freeway Station	Exclusive Platform Station	No	Yes				Yes		
Mt. Baker Station	Elevated fixed guideway station	Yes	Yes	Yes				Yes	Yes
Mukilteo	At grade fixed guideway station	No	No			Yes		Yes	Yes
Northgate Station	Elevated fixed guideway station	Yes	Yes	Yes					Yes
Othello Station	Exclusive Platform Station	Yes	Yes	Yes				Yes	Yes
Puyallup Station	Exclusive Platform Station	No	Yes			Yes	Yes	Yes	Yes
Rainier Beach Station	Exclusive Platform Station	Yes	Yes	Yes				Yes	Yes
Roosevelt	underground fixed guideway station	No	No	Yes				Yes	Yes
SeaTac Airport Station	Elevated fixed guideway station	Yes	Yes	Yes				Yes	Yes
Sodo Station	Exclusive Platform Station	Yes		Yes				Yes	Yes
South Everett Freeway Station	Bus transfer center	Yes	Yes				Yes	Yes	Yes
South Hill P&R	Surface Parking lot	No	No				Yes	Yes	Yes
South Tacoma Station	Exclusive Platform Station	Yes	Yes			Yes		Yes	Yes
Stadium Station	Exclusive Platform Station	Yes	Yes	Yes					
Sumner Station	Exclusive Platform Station	No	No			Yes		Yes	Yes
Tacoma Dome Station - South Freighthouse Square Concourse	At grade fixed guideway station	Yes	Yes			Yes			
Tacoma Link Commerce Street Station	Simple at-grade platform station	No	Yes		Yes				
Tacoma Link Convention Center Station	Simple at-grade platform station	No	Yes		Yes				
Tacoma Link South 25th Street Station	Simple at-grade platform station	No	Yes		Yes				
Tacoma Link Station Tacoma Dome	Simple at-grade platform station	Yes	Yes		Yes				
Tacoma Link Union Station	Simple at-grade platform station	No	Yes		Yes				
Tacoma Link Theater District Station	Simple at-grade platform station	No	Yes		Yes				
Totem Lake Freeway Station	Bus transfer center	No	No				Yes		

Location	Type	Minority	Low-income	Light Rail	Streetcar	Commuter Rail	ST Express	Bike Racks	Bike Cages/ Lockers
Tukwila International BLV Station	Elevated fixed guideway station	Yes	Yes	Yes			Yes	Yes	Yes
Tukwila Station - Bus Platform	At grade fixed guideway station	Yes	No				Yes	Yes	Yes
Tukwila Station - Rail Platform	At grade fixed guideway station	Yes	No			Yes		Yes	Yes
U District	Underground fixed guideway station	Yes	Yes	Yes				Yes	
Univ. of WA	Underground fixed guideway station	Yes	Yes	Yes				Yes	
South Bellevue Garage	Parking Structure	Yes	No				Yes	Yes	Yes

Table 44: Bike Rack and Cage Distribution by Station

# Appendix M: 2021 Shelter Distribution Map

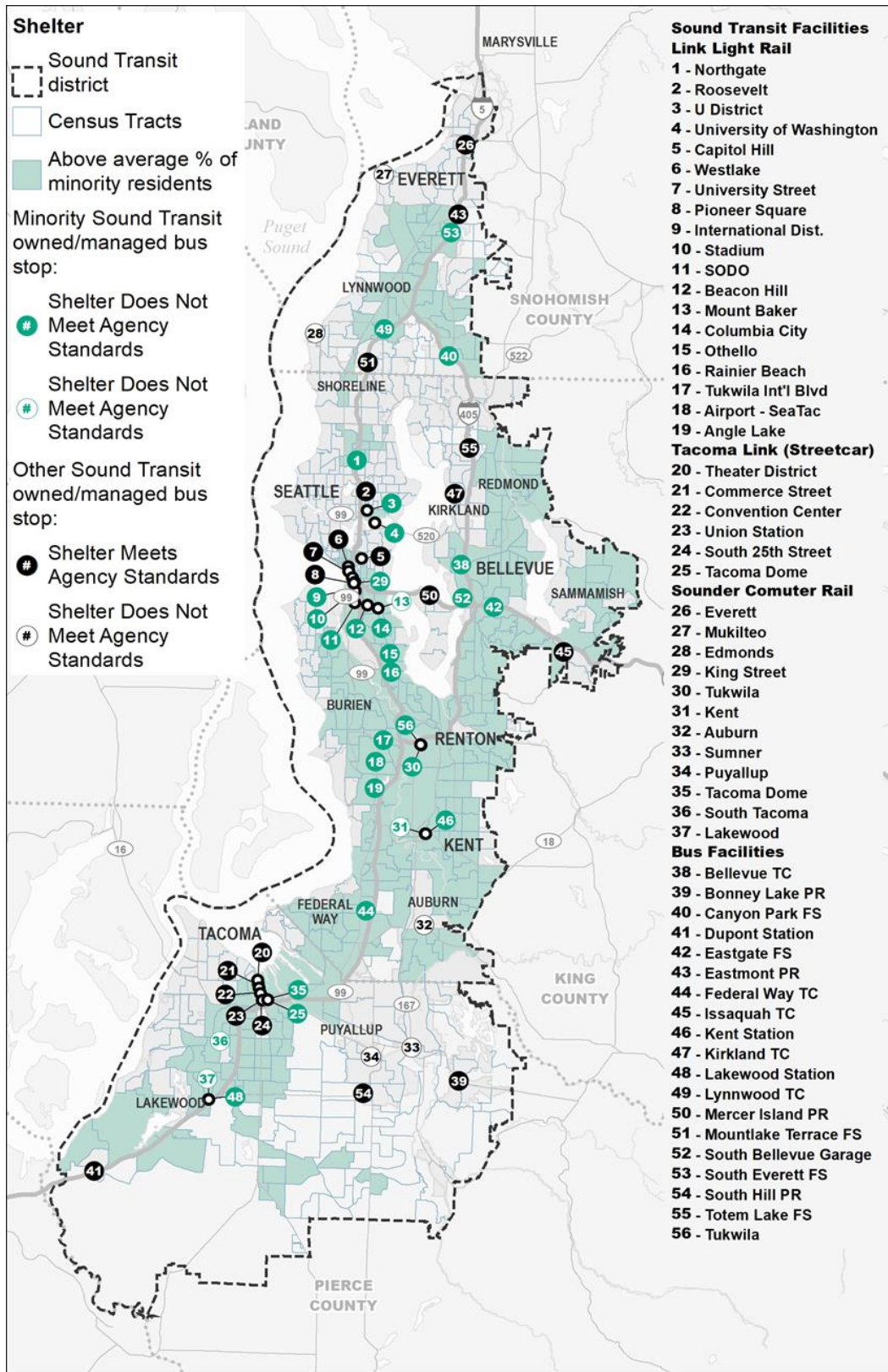


Figure 18: Minority Shelter Distribution Map



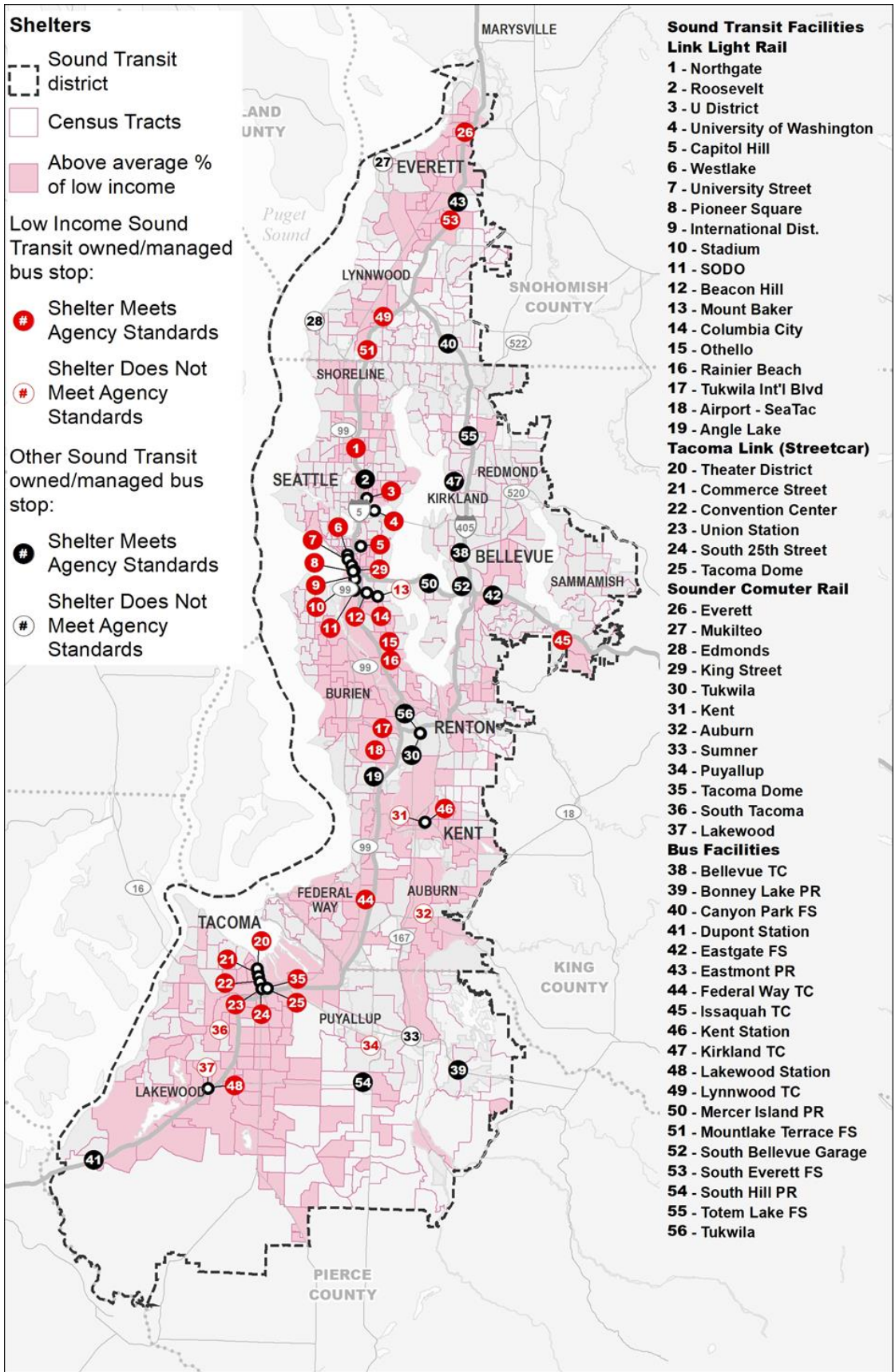


Figure 19: Low-Income Shelter Distribution Map

# Appendix N: 2021 Seating/Bench Distribution Maps

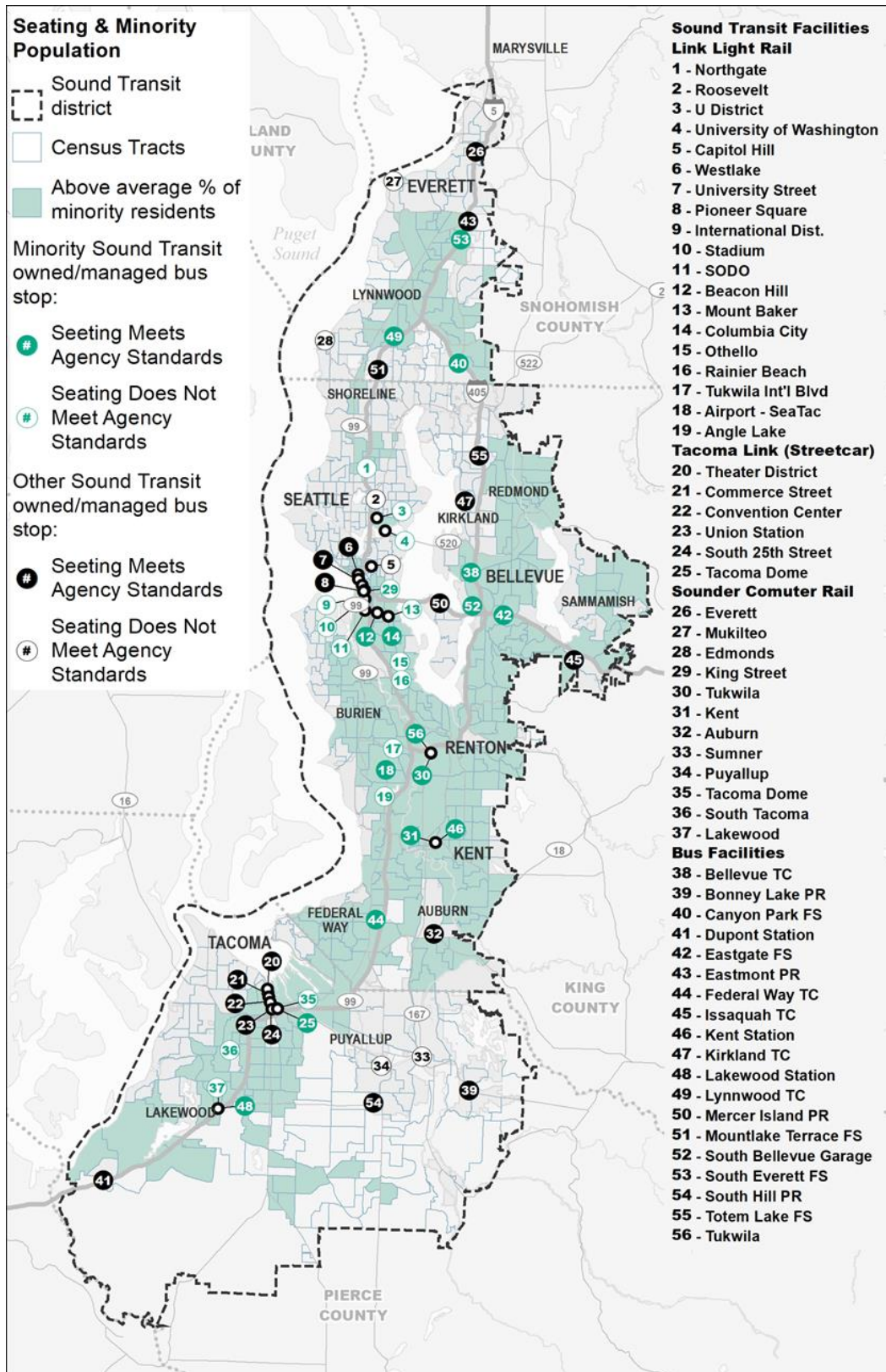


Figure 20: Minority Seating Distribution Map



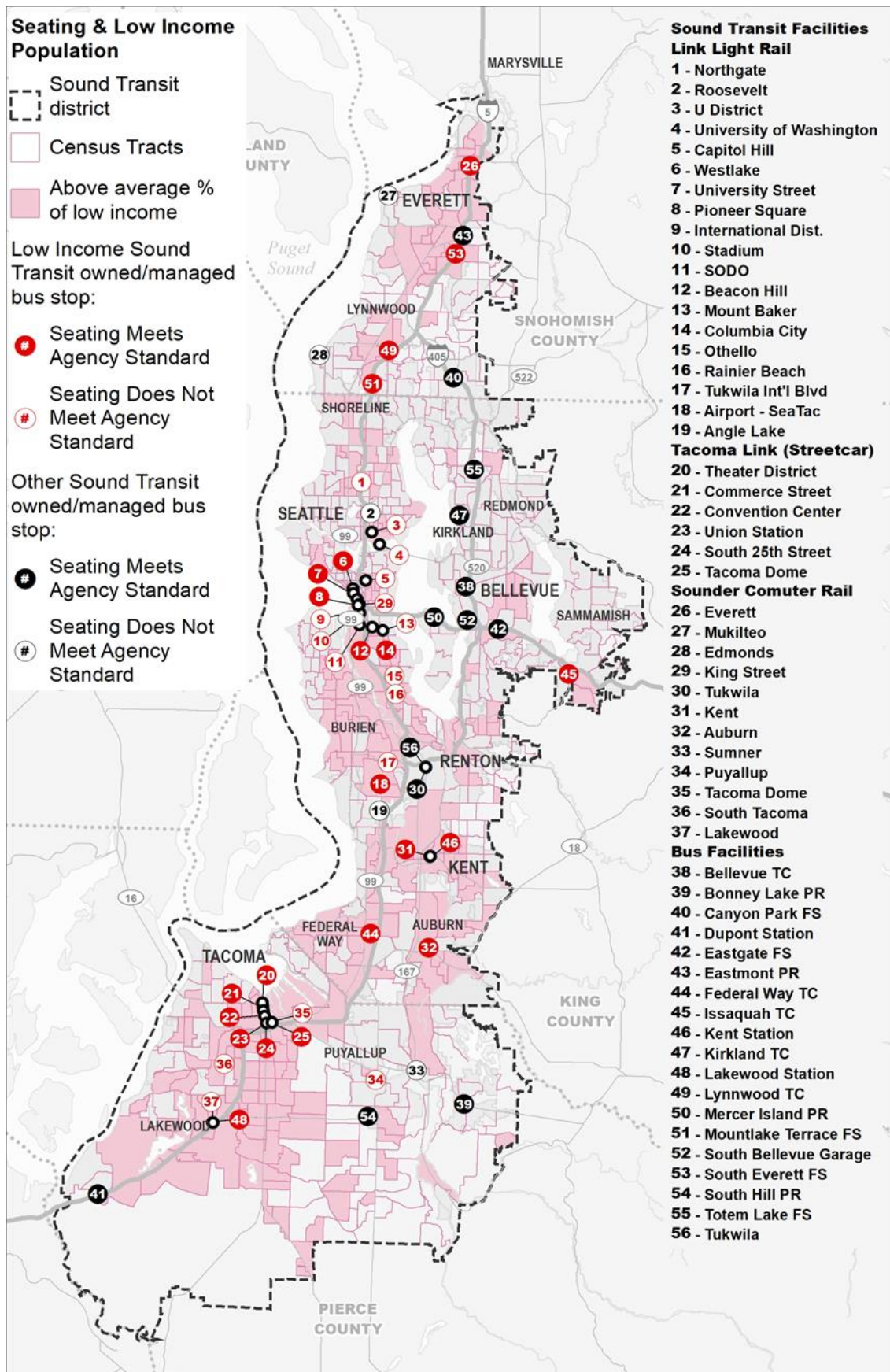


Figure 21: Low-Income Seating Distribution Map

# Appendix O: RESOLUTION NOs. R2013-18 and R2013-19



**RESOLUTION NOs. R2013-18 and R2013-19**  
**Establishing policies for conducting equity analyses of Major Service Changes and Fare Changes impacting minority and low income populations**

MEETING:	DATE:	TYPE OF ACTION:	STAFF CONTACT:	PHONE:
Executive Committee Board	09/05/2013 09/26/2013	Recommend to Board Final Action	Leslie Jones, Diversity Programs Director <b>Alec Stephens, Diversity Technical Advisor</b>	206-398-5047 206-398-5019

**PROPOSED ACTION**

Resolution No. R2013-18: Establishing policies for conducting equity analyses of Major Service Changes impacting minority and low income populations

Resolution No. R2013-19: Establishing policies for conducting equity analyses of Fare Changes impacting minority and low income populations.

**KEY FEATURES SUMMARY**

- As a recipient of federal financial assistance, primarily from the Federal Transit Administration, Sound Transit must continue to ensure that it complies with Title VI of the Civil Rights Act of 1964, which protects individuals from discrimination on the basis of race, color and national origin in any program receiving federal funds.
- The resolutions address how Sound Transit will proceed with major service changes or fare changes in a manner that complies with Title VI.
- The resolutions incorporate practices that Sound Transit has used in the past in assessing major service changes and fare changes. In compliance with Title VI Guidelines by the Federal Transit Administration, Sound Transit is to set forth those practices as policies adopted by the agency’s policy-making body.
- Major Service Changes. A Title VI “equity evaluation” shall be conducted for all major service changes, which are defined 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.
- Fare Changes. A Title VI “equity evaluation” shall be conducted for all fare changes except for:
  1. Instances where Sound Transit has declared that all passengers will ride free.
  2. Temporary fare reductions that are mitigating measures for other actions.
  3. Promotional or temporary fare reductions lasting no more than six months.
- The resolutions establish thresholds for determining whether proposed major service changes or fare changes indicate disparate impacts to minority populations or disproportionate burdens to low income populations, and outlines efforts to be made to mitigate such impacts, and conduct outreach activities to affected populations to ensure the inclusion of affected people in the process prior to the adoption of the proposed changes.
- The resolutions provide that the Title VI equity evaluation, mitigation efforts, and outreach activities will be included as a part of the record for consideration by Sound Transit prior to final action on the proposed major service change or fare change.

**BACKGROUND**

Section 601 of Title VI of the Civil Rights Act of 1964 states that:

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.

Sound Transit receives federal financial assistance to design and build the regional transit system through grants primarily awarded and administered by the Federal Transit Administration. As an FTA grant recipient, Sound Transit cannot, on the basis of race, color, or national origin, either directly or through contractual means:

- Deny an individual any service, financial aid or benefit provided under the program to which he or she might otherwise be entitled;
- Make distinctions in the quality, quantity or manner in which the service or benefit is provided; or
- Segregate or separately treat individuals in any matter related to the receipt of any service or benefit.

As Sound Transit operates its transit services—Link Light Rail, Regional Express Bus, and Sounder Commuter Rail, and associated facilities—it must ensure that such services are provided in an equitable manner. This includes decisions by Sound Transit to make major changes to its transit services or changes in its fare structures.

The two resolutions set a policy framework under which Sound Transit will evaluate proposed major service changes or fare changes that may be recommended for Sound Transit Board approval as follows:

1. Sound Transit includes in its evaluation whether such changes adversely affect minority or low income populations;
2. Determine if the adverse effects result in “Disparate Impacts to Minority Populations”, setting as a threshold effects that for the minority populations subject to the major service change are greater than the minority population in the Sound Transit District (currently, 31.13%); and/or result in “Disproportionate Burdens to Low Income Populations”, setting as a threshold effects that for the low income populations subject to the major service change are greater than the low income population in the Sound Transit District (currently, 11.24%);
3. If the proposed changes result in disparate impacts to minority populations and/or disproportionate burdens to low income populations Sound Transit will examine and develop ways to mitigate or lessen the effect, and alert the affected Title VI stakeholders of the proposed changes to allow them to comment on the change and the impacts.
4. The Title VI evaluation of the proposed major service changes or fare changes, the impacts, mitigation efforts, outreach to impacted stakeholders, and public comments will be a part of the record before the Sound Transit Board when it makes its decision to approve the major fare change or fare change in question.
5. The Sound Transit Board may approve the change unaltered and Sound Transit may proceed to implement the change “if there is a substantial legitimate justification for the change(s) and Sound Transit can demonstrate that there were no alternatives that would have less of an impact on minority or low income populations and would still accomplish Sound Transit’s legitimate program goals.”

**FISCAL IMPACT**

Not applicable to this action.



**SMALL BUSINESS PARTICIPATION**

Not applicable to this action.

**EQUAL EMPLOYMENT WORKFORCE PROFILE**

Not applicable to this action.

**APPRENTICE UTILIZATION COMMITMENT**

Not applicable to this action.

**PUBLIC INVOLVEMENT**

Over 60 organizations and individuals in the Sound Transit region, representing minority and low income advocacy, interest and community based organizations, were sent a letter notifying recipients of the proposed policies and soliciting comments. The letter included a summary of the proposed actions along with copies of the draft resolutions, and offering to provide further information or respond to questions. The information also contained a discussion of Title VI, and the process for public comment not only to staff, but also the dates and times of the Executive Committee and the Sound Transit Board meetings when consideration of the policies is scheduled should they decide to provide comments directly to Boardmembers. In addition, this information was provided to Sound Transit’s Diversity Oversight Committee for discussion and comments at their meeting, held on August 23, 2013.

As set forth in the policies, more extensive outreach will take place regarding proposed major service changes or fare changes to populations affected by the particular change.

**TIME CONSTRAINTS**

The policies will be included in the Sound Transit 2013 Title VI Submittal to FTA. The Board is scheduled to take final action on a motion to approve the submittal at its September 26, 2013 meeting. Submittal is to be sent to FTA by October 1, 2013. It would be preferable to include the adopted policies, however, draft policies pending Board approval could be included if further consideration is required by the Board.

**PRIOR BOARD/COMMITTEE ACTIONS**

Resolution No. R2011-15—Adopted an inclusive public participation policy to assure meaningful access to public involvement and community outreach programs for minority, low-income and limited English proficient populations.

**ENVIRONMENTAL REVIEW**

JI 8/28/2013

**LEGAL REVIEW**

RM 8/29/2013



**RESOLUTION NO. R2013-19**

A RESOLUTION of the Board of the Central Puget Sound Regional Transit Authority establishing policies for conducting equity analyses of Fare Changes impacting minority and low income populations, in accordance with Title VI requirements and guidelines for Federal Transit Administration recipients.

WHEREAS, the Central Puget Sound Regional Transit Authority, hereinafter referred to as Sound Transit, has been created for the Pierce, King, and Snohomish Counties region by action of their respective county councils pursuant to RCW 81.112.030; and

WHEREAS, Sound Transit is authorized to plan, construct, and permanently operate a high-capacity system of transportation infrastructure and services to meet regional public transportation needs in the central Puget Sound region; and

WHEREAS, in general elections held within the Central Puget Sound Regional Transit Authority district on November 5, 1996 and November 4, 2008, voters approved local funding to implement a regional high-capacity transportation system for the central Puget Sound region; and

WHEREAS, Sound Transit has made a commitment to the people within its 3-county region to seek community involvement as it plans, designs, builds, and operate a regional transit system; and

WHEREAS, Sound Transit is a recipient of federal funding primarily from the Federal Transit Administration; and

WHEREAS, consistent with Title VI of the Civil Rights Act of 1964, Sound Transit is committed to:

- Providing services without regard to race, color, or national origin,
- Promoting the full and fair participation of affected populations in transit decision making,
- Preventing denial, reduction, or delay in benefits related to programs and activities that benefit minority or low-income populations, and

WHEREAS, in accordance with Title VI requirements and guidelines for FTA recipients, Sound Transit conducts an equity evaluation of major service changes and all fare changes to determine whether such changes result in adverse impacts on minority populations or impose burdens on low-income populations; and

WHEREAS, Sound Transit is to then evaluate whether the major service change or whether the fare change results in disparate impacts on minority populations or disproportionate burdens on low-income populations; and

WHEREAS, Sound Transit is to ensure inclusive public participation and take all reasonable steps to remove, explore alternatives or otherwise mitigate and reduce the disparate impacts on minority populations or disproportionate burdens on low-income populations; and

WHEREAS, in accordance with the FTA's Title VI requirements and guidelines, Sound Transit is to establish a policy defining the threshold to determine whether any Fare Change results in disparate impacts to minority populations or disproportionate burdens to low-income populations; and

WHEREAS, Sound Transit engaged the public in developing these policies in a manner consistent with Sound Transit's inclusive public participation policy.

NOW THEREFORE BE IT RESOLVED by the Board of Directors of the Central Puget Sound Regional Transit Authority, that in accordance with Title VI of the Civil Rights Act of 1964, and FTA requirements and guidelines, this policy is enacted to establish policies to conduct an equity analysis of fare changes to assess the impact of such changes on Minority and Low-Income populations.

BE IT FURTHER RESOLVED that all fare changes regardless of the amount of the increase or decrease (and including changes in payment type or payment media, and availability or duration of

paper or electronic transfers) will be subject to an equity analysis which includes an analysis of potential adverse effects on minority and low-income populations with the following exceptions:

1. Instances where Sound Transit has declared that all passengers will ride free.
2. Temporary fare reductions that are mitigating measures for other actions.
3. Promotional or temporary fare reductions lasting no more than six months.

BE IT FURTHER RESOLVED that when Sound Transit conducts an Equity Assessment of Fare Changes, the threshold for determining that the changes in question result in Disparate Impacts for minority populations or Disproportionate Burdens for low income populations are as follows:

1. Disparate Impact—a disparate impact occurs when the minority percentage of the population adversely affected by any fare change is greater than the average minority percentage of the population of Sound Transit's service area. As appropriate, Sound Transit will analyze any available information generated from ridership surveys indicating whether minority riders are disproportionately more likely to use the mode of service, payment type or payment media that would be subject to the fare change as a comparison in the analysis.
2. Disproportionate Burden—a disproportionate burden occurs when the low income percentage of the population adversely affected by any fare change is greater than the average low income percentage of the population of Sound Transit's service area. As appropriate, Sound Transit will analyze any available information generated from ridership surveys indicating whether low income riders are disproportionately more likely to use the mode of service, payment type or payment media that would be subject to the fare change as a comparison in the analysis.

BE IT FURTHER RESOLVED that if it finds that the fare change results in a potential disparate impact or potential disproportionate burden, then in accordance with Title VI of the Civil Rights Act

of 1964 and FTA requirements and guidelines, Sound Transit will consider steps to avoid, minimize or mitigate the adverse impacts and reanalyze the modified change(s) to determine if the impacts were removed or lessened.

BE IT FURTHER RESOLVED that prior to adopting the fare change(s), Sound Transit will include in its report the equity evaluation of the fare change(s), and that the public and Title VI stakeholders will be invited to provide comments regarding the change(s) including the steps to avoid, minimize or mitigate the adverse impacts and the modified change(s) to determine if the impacts were removed or lessened.

BE IT FURTHER RESOLVED that If Sound Transit chooses not to alter the proposed fare change(s), the implementation of the fare change(s) may proceed if there is a substantial legitimate justification for the fare change(s) and Sound Transit can demonstrate that there were no alternatives that would have less of an impact on minority or low income populations and would still accomplish Sound Transit's legitimate program goals.

ADOPTED by the Board of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on September 26, 2013.



Pat McCarthy  
Board Chair

ATTEST:



Marcia Walker  
Board Administrator