

**Lynnwood Link Extension  
Title VI Service and Fare Equity  
Analysis**

March 2024

# Table of Contents

Executive Summary .....	4
Introduction .....	7
Regulatory Framework .....	7
Sound Transit Title VI Program Plan .....	8
National Environmental Policy Act – Environmental Justice Review .....	8
The Central Puget Sound Transit Context.....	9
Lynnwood Link Light Rail Extension Context.....	9
Summary of Changes .....	11
Policies and Definitions.....	14
Changes to a Single Line or Route .....	14
Systemwide Service Reductions .....	15
Systemwide Service Additions .....	15
Fare Equity Analysis Policy .....	15
Public Involvement Policy.....	16
Definitions and Data Analysis .....	16
Demographic Analysis Methodology and Title VI Data Definitions.....	16
Service Area Methodology .....	16
Sound Transit Title VI Population Estimates.....	16
Title VI Protected Populations by Route.....	21
Fare Policy and Rates Dataset Description.....	22
Service Equity Analysis.....	23
Individual Route Analysis .....	23
Overview .....	23
Methodology .....	24
Identifying Service Changes.....	25
Individual Line Analysis Conclusion .....	42
Systemwide Service Analysis .....	42
Overview .....	42
Methodology .....	42
Identifying Systemwide Service Additions and Reductions .....	42
Systemwide Service Reductions Analysis.....	44
Systemwide Service Additions Analysis.....	47
Systemwide Analysis Conclusion .....	48
Fare Equity Analysis .....	49

Description of Fare Changes .....	49
Policies and Definitions .....	49
Fare Equity Analysis Policy .....	49
Fare Policy and Rates .....	50
Dataset Description .....	50
Fare Media Analysis.....	50
Disparate Impact/Disproportionate Burden.....	50
Fare Impact Mitigation.....	50
Public Involvement and Outreach.....	52
Conclusion .....	55
Appendix A.....	56
Sound Transit Service Area Title VI Routes and Population (2023) .....	56
Route-Level Title VI Population Maps.....	57

# Executive Summary

Prior to service changes, Sound Transit (ST) uses the Service and Fare Equity (SAFE) analysis process to evaluate the effects and impacts of the proposed changes on protected populations, including low-income and minority persons. A SAFE analysis is needed to ensure that the opening of the Lynnwood Link light rail extension is consistent with Title VI policies defined by the Federal Transit Administration (FTA) and policies defined by the Sound Transit Board of Directors. All New Start, Small Start, or other fixed guideway capital projects are federally required to undergo SAFE analyses.

Consistent with the Sound Transit *Disparate Impact and Disproportionate Burden* policy (Board Resolution No. R2022-19) and FTA C 4702.1B, a Title VI service analysis was completed at two levels. The first is an individual route analysis, which evaluates each major service change on a route-by-route basis. The second is a systemwide analysis, which determines if the collective service changes disproportionately impact protected populations. Finally, a fare equity analysis was conducted for riders experiencing a change in fares brought on by expected service changes.

The **individual route analysis** identified that some of the service changes would create adverse effects. However, **the analysis found that service changes with adverse effects did not result in a disparate impact or a disproportionate burden** (Table 1). Therefore, no mitigations are required.

The systemwide analysis determined that percentage of protected populations that may benefit from service additions is greater than 80 percent of the percentage of non-protected population benefited (Table 2). For service reductions, the analysis determined the percentage of protected population that may experience adverse impacts was less than 20 percent of the percentage of non-protected population adversely affected. **Therefore, the systemwide analysis did not identify disparate impacts or disproportionate burdens on protected populations from September 2021 through September 2024.**

Table 1 summarizes the results of the Title VI individual route service equity analysis in the 2024 Service Plan. Additional details are included in the following document.

Table 1: Individual Route Service Equity Analysis Results

Route	Service Change	Title VI Protected Populations	Adverse effects	Disparate impact <sup>1</sup>	Disproportionate burden <sup>2</sup>	Mitigations
1 Line	Extend 1 Line service to Lynnwood in late 2024. Sound Transit (Sound Transit) would open four new stations: Shoreline South/148 <sup>th</sup> Station, Shoreline North/185 <sup>th</sup> Station, Mountlake Terrace Station, and Lynnwood City Center Station.	<ul style="list-style-type: none"> <li>• <b>Minority:</b> Sound Transit District average: 42.7%; 1 Line service area: 46.9% before the change in routing, 43.4% after the change in routing.</li> <li>• <b>Low-Income:</b> Sound Transit District average: 20.7%; 1 Line service area: 22.7% before the change in routing, 21.2% after the change in routing.</li> </ul>	No	No	No	N/A
511	Formalize emergency service suspension.	<ul style="list-style-type: none"> <li>• <b>Minority:</b> Sound Transit District average: 42.7%; Route 511 service area: 37.1%.</li> <li>• <b>Low-Income:</b> Sound Transit District average: 20.7%; Route 511 service area: 18.8%.</li> </ul>	Yes	No	No	N/A
512	Shorten to Lynnwood City Center Station (Lynnwood Transit Center), with a connection to the 1 Line. Service frequency up to 15 minutes throughout the day in both directions on weekdays and weekends.	<ul style="list-style-type: none"> <li>• <b>Minority:</b> Sound Transit District average: 42.7%; Route 512 service area: 37.7% before the change in routing, 41.9% after the change in routing.</li> <li>• <b>Low Income:</b> Sound Transit District average: 20.7%; Route 512 service area: 21.0% before the change in routing, 23.6% after the change in routing.</li> </ul>	Yes	No	No	N/A
513	Shorten to Lynnwood City Center Station. Service frequency continues to operate service every 30 minutes during peak periods.	<ul style="list-style-type: none"> <li>• <b>Minority:</b> Sound Transit District average: 42.7%; Route 513 service area: 38.3% before the change in routing, 43.6% after the change in routing.</li> <li>• <b>Low Income:</b> Sound Transit District average: 20.7%; Route 513 service area: 20.5% before the change in routing, 23.2% after the change in routing.</li> </ul>	Yes	No	No	N/A
NEW: 515	Initiate service from Lynnwood City Center Station to Union Station via Downtown Seattle, 5 <sup>th</sup> Avenue. Service frequency up to 10 minutes. Southbound travel in the morning peak period and northbound travel from Seattle in the afternoon.	<ul style="list-style-type: none"> <li>• <b>Minority:</b> Sound Transit District average: 42.7%; Route 515 service area: 41.0%</li> <li>• <b>Low Income:</b> Sound Transit District Average: 20.7%; Route 515 service area: 19.7%</li> </ul>	No	No	No	N/A

<sup>1</sup> If the route's service area changes with the service change, the analysis compares the District average to the service area percentage before and after the change to see if there are findings of disparate impact. All the disparate impact findings were the same for service areas before and after the service change.

<sup>2</sup> If the route's service area changes with the service change, the analysis compares the District average to the service area percentage before and after the change to see if there are findings of disproportionate burden. All the disproportionate burden findings were the same for service areas before and after the service change.

Table 2: Systemwide Service Equity Analysis Results

Systemwide Service Equity Analysis Results				
Service Reduction Disparate Impact Test				
Minority Population Adversely Affected	Non-Minority Population Adversely Affected	Ratio Comparison	Threshold for Disparate Impact	Result
37%	39%	$37\% \div 39\% = -4\%$	20% or greater	No disparate impact
Service Reduction Disproportionate Burden Test				
Low-Income Population Adversely Affected	Non- Low-Income Population Adversely Affected	Ratio Comparison	Threshold for Disproportionate Burden	Result
35%	39%	$35\% \div 39\% = -9\%$	20% or greater	No disproportionate burden
Service Addition Disparate Impact Test				
Minority Population Benefiting	Minority Population Benefiting	Minority Population Benefiting	Minority Population Benefiting	Minority Population Benefiting
63%	61%	$63\% \div 61\% = 103\%$	80% or less	No disparate impact
Service Addition Disproportionate Burden Test				
Low-Income Population Benefiting	Low-Income Population Benefiting	Low-Income Population Benefiting	Low-Income Population Benefiting	Low-Income Population Benefiting
65%	61%	$65\% \div 61\% = 106\%$	80% or less	No disproportionate burden

The fare portion of the equity analysis found that the proposed service change will result in a zero percent increase for low-income or minority passengers, while non-protected populations will face a one percent fare increase. **The fare change does not constitute a disparate impact on minority riders or a disproportionate burden on low-income riders.**

Sound Transit participated in various outreach, communications, and engagement tactics to inform riders about the proposed changes in the North Subarea, including Lynnwood Link Extension. These engagement activities included in-person and virtual engagement from May 2023 to January 2024. Sound Transit sought feedback from the public on Lynnwood Link Extension, together with feedback on proposed changes to Sounder North and Sound Transit Express Routes 511, 512, 513, and 515. In addition to hosting a service plan website with “Online Open House” project pages, Sound Transit administered online and paper surveys, dispatched ambassadors at multiple locations across the North project area, held two virtual information sessions, and utilized geo-targeted social media ads. Sound Transit’s engagement team also shared a stakeholder toolkit including information about the proposed changes, links to project websites, a schedule of upcoming information sessions, and sample social media copy to municipal and nonprofit community-based organizations along the Lynnwood Link Extension corridor.

# Introduction

This SAFE Analysis pertains to the Lynnwood Link Extension project which extends light rail from Northgate into Snohomish County through four new stations. Per FTA Circular 4702.1B, transit providers that will implement a New Start fixed guideway capital project are required to conduct a SAFE analysis.

Sound Transit conducts a Title VI service equity analysis to ensure that changes to transit service are consistent with Title VI regulations defined by the FTA and policies defined by the Sound Transit Board of Directors. The FTA is responsible for ensuring that federally supported transit services and related benefits are distributed by applicants and recipients of FTA assistance in a manner consistent with Title VI, Section 601 of the Civil Rights Act of 1964, which states:

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

The Title VI analysis provides an assessment of potential impacts on minority and low-income communities associated with the proposed changes in the service plan. The analysis includes the service changes and associated equity analysis and the public outreach process for the Lynnwood Link Extension and associated changes.

The Lynnwood Link Extension SAFE also includes a Fare Equity Analysis conducted for riders experiencing a change in fares caused by the service changes.

## Regulatory Framework

Chapter IV of FTA's Circular 4702.1B further describes the requirements that FTA recipients must follow to ensure their programs, policies, and activities comply with Title VI requirements. The requirements set system-wide service standards and policies that apply to all fixed-route providers of public transit.

Title 49 CFR Section 21.5 (b)(2) specifies that a recipient shall not "utilize criteria or methods of administration which have the effect of subjecting persons to discrimination because of their race, color or national origin, or have the effect of defeating or substantially impairing accomplishment of the objectives of the program with respect to individuals of a particular race, color, or national origin." Section 21.5 (b)(2) requires recipients to "take affirmative action to assure that no person is excluded from participation in or denied the benefits of the program or activity on the grounds of race, color or national origin."

Transit providers that operate 50 or more fixed-route vehicles in peak service and are in an urbanized area (UZA) of 200,000 or more in population are required to meet all requirements of Chapter IV including setting service standards and policies, collecting and reporting data, monitoring transit service, and evaluating fare and service changes. Additionally, FTA Circular 4702.1B specifically states:

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. The service and fare equity analysis will be conducted six months prior to the beginning of revenue operations, whether or not the proposed changes to existing service rise to the level of "major service change" as defined by the transit provider. All proposed changes to parallel or connecting service will be examined. If the entity that builds the project is different from the transit provider that will operate the project, the transit

provider operating the project shall conduct the analysis. The service equity analysis shall include a comparative analysis of service levels pre-and post- the New Starts/Small Starts/new fixed guideway capital project. The analysis shall be depicted in tabular format and shall determine whether the service changes proposed (including both reductions and increases) due to the capital project will result in a disparate impact on minority populations. The transit provider shall also conduct a fare equity analysis for any and all fares that will change as a result of the capital project.

### **Sound Transit Title VI Program Plan**

Sound Transit prepared the Title VI Program Plan in compliance with Title 49 CFR Section 21.9 (b) and with the FTA Circular 4702.1B “Title VI Requirements and Guidelines for Federal Transit Administration Recipients.” The purpose of the Title VI Program is to document the steps Sound Transit has taken and will take to ensure Sound Transit provides services without excluding or discriminating against individuals on the basis of race, color or national origin. The Title VI Program Plan provides an outline of Sound Transit’s Title VI policies including the major service change, disparate impact, and disproportionate burden policy. The Title VI Program Plan also includes the general requirements for Title VI and the requirements for fixed route transit providers. In 2022, the Sound Transit Board approved the Title VI Program Plan Update which was submitted to FTA later in that same year.

### **National Environmental Policy Act – Environmental Justice Review**

Sound Transit, the Washington State Department of Transportation (WSDOT), and the FTA published a Draft Environmental Impact Statement (DEIS) on the Lynnwood Link Extension project in July 2013. The Final Environmental Impact Statement (FEIS) was published in April 2015. The FEIS included a No Build Alternative and Build Alternatives, which can generally be described as:

- Segment A - 7 alternative route alignments with either 2 or 3 stations depending on specific route location.
- Segment B – 4 alignment alternatives with 1 or 2 stations depending on route location.

The FEIS determined that the No-Build Alternative would constrain transportation options and lead to worsening air quality in the region. Build Alternatives would also generate construction and operational impacts, including travel pattern disruption, noise, and vibration during the construction period, as well as impacts to transportation, property acquisitions, visual and aesthetic resources, ecosystems, noise and vibration, and parks and recreational resources.

Mitigation was developed for adverse operational and construction impacts identified for both natural resources and the built environment, and all the Build Alternatives incorporated impact avoidance and minimization measures.

The FEIS determined that the Lynnwood Link Extension Project would not result in any impacts that would be considered disproportionately high and adverse to minority and low-income populations under Presidential Executive Order (EO) 12898 and the U.S. Department of Transportation Order to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order).

The FEIS identified a preferred alternative, and the Sound Transit Board selected the project to be built in April 2015. The FTA issued a Record of Decision (ROD) in July 2015. The FHWA, as a NEPA cooperating agency, issued their own ROD in August 2015.



Sound Transit published one State Environmental Policy Act (SEPA) Addendum to the FEIS in 2018 that did not lead to any additional NEPA review and conducted one NEPA Re-evaluation with FTA in 2019 that also did not lead to publication of any new environmental documents. The addendum and Re-evaluation addressed refinements developed during final design of the Project. These documents determined that refinements to the Project would not substantially change the analysis of significant impacts and alternatives in the existing environmental documents, no new probable significant environmental impacts would result, and no supplemental EIS was required.

### **The Central Puget Sound Transit Context**

As the regional transit provider, Sound Transit trains and buses offer regional connections service between major population and employment centers in King, Pierce, and Snohomish counties. Sound Transit's district stretches 1,080 square miles and serves about three million people or 40 percent of the state's population. Sound Transit works closely with local transit agencies that provide service in the Sound Transit district. Metro is the largest of these partner agencies, serves Washington State's most populous county and has a service area population of approximately 2 million. Community Transit in Snohomish County has a service area population of approximately 570,000, and Pierce Transit in Pierce County has a service area of approximately 560,000. Operating partners provide local service to their respective counties as well as express service to transit hubs within the three-county area.

### **Lynnwood Link Light Rail Extension Context**

In fall 2024, Link 1 Line light rail will extend 8.5 miles from Northgate into Snohomish County, serving four new stations: Shoreline South/148<sup>th</sup>, Shoreline North/185<sup>th</sup>, Mountlake Terrace, and Lynnwood City Center. An additional infill station will open at NE 130<sup>th</sup> Street in 2026.

Service to Lynnwood was originally planned to open as an extension of both the 1 Line (Lynnwood–Angle Lake) and the 2 Line (Lynnwood–Redmond), with both lines servicing the new stations (Figure 1). However due to construction delays on the I-90 bridge for the 2 Line, full service on it will not begin until 2025 and service to Lynnwood will initially operate as an extension of the 1 Line only.

Figure 1: Lynnwood Link Light Rail Extension



Until the I-90 segment of East Link Extension opens and trains can cross Lake Washington to access the Operations and Maintenance Facility (OMF) East in Bellevue, service to Lynnwood will be less frequent due to the limited storage capacity of the Central OMF in Seattle. Without the additional storage capacity for trains, service on the line will operate up to eight minutes at peak. When the full 2 Line opens between Lynnwood and the Eastside, trains will run up to every four to six minutes during peak hours. This second OMF in Bellevue is needed for the additional storage and maintenance space for the region's expanding light rail network to ensure light rail cars are serviced and tested for frequent use.

# Summary of Changes

In 2023, Sound Transit identified how lower service levels caused by fleet storage limitation could affect the passenger experience. In response, the transit authority’s Board of Directors directed staff to mitigate 1 Line crowding by increasing capacity on Link, focusing on the peak hours when the highest volume of passengers are expected to utilize the 1 Line and providing alternative bus service between Snohomish County and Downtown Seattle.

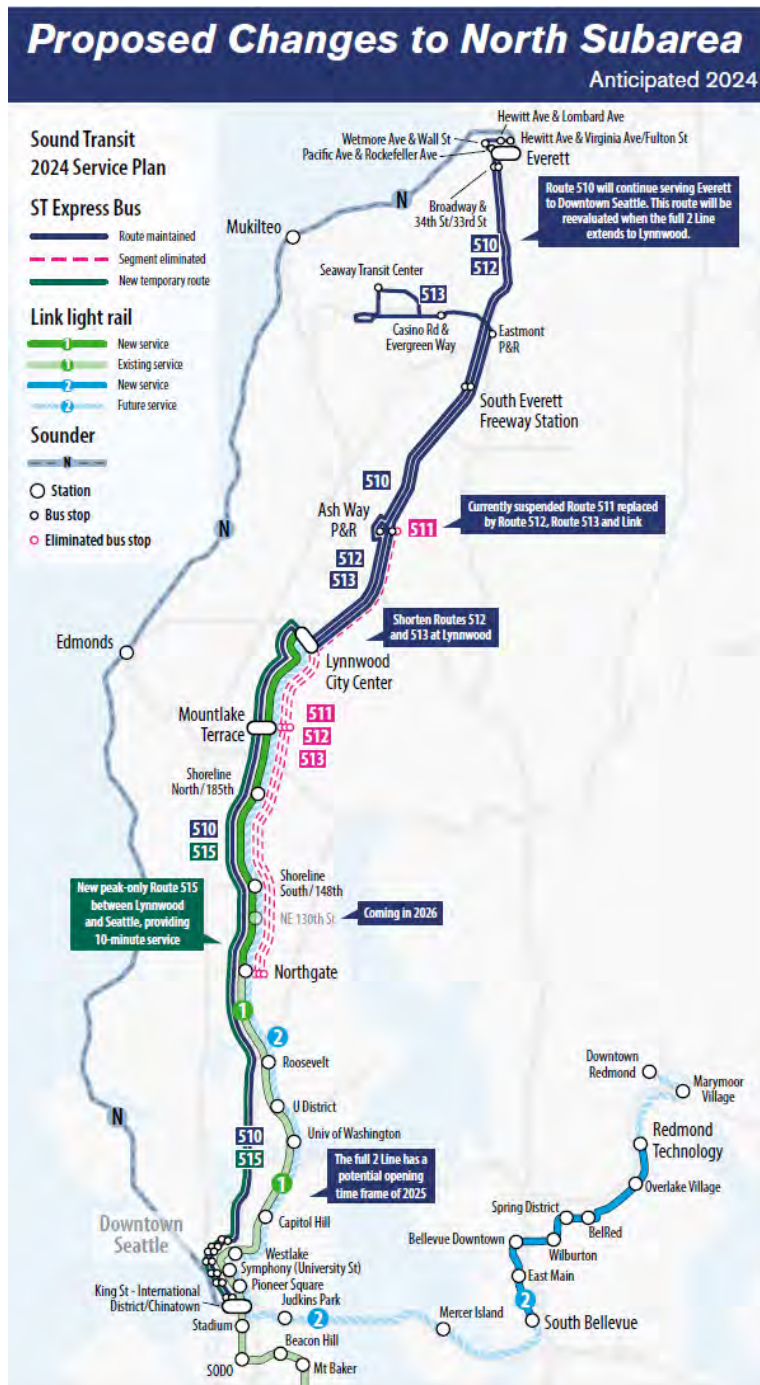
Table 3: Summary of Service Changes

Transit Agency	Service Changes	Highlights
Sound Transit	1 Line – Service extension Bus Route 511 – Route elimination Bus Route 512 – Alignment change Bus Route 513 – Alignment change Bus Route 515 – New service	<ul style="list-style-type: none"> <li>• Redistribution of resources to maintain headways on routes connecting to 1 Line.</li> </ul>
		<ul style="list-style-type: none"> <li>•</li> </ul>
		<ul style="list-style-type: none"> <li>•</li> </ul>

The proposed major service changes evaluated in this service equity analysis are part of the 2024 Service Plan Phase Two (Bus Service Plan). Sound Transit would formalize the emergency service suspension currently in effect by eliminating Route 511. Route 512 would be shortened to operate between Everett and Lynnwood City Center Station (Lynnwood Transit Center). Route 513 would also be shortened to operate between Seaway Transit Center and Lynnwood City Center Station. A new temporary peak-only Route 515 would supplement Link capacity between Lynnwood and downtown

Seattle until the 2 Line begins providing service; the 2 Line is anticipated to open as soon as spring 2025. Please see Figure 2 for a map of the proposed restructure.

Figure 2: Proposed Changes to North Subarea



Sound Transit proposes to terminate Routes 512 and 513 at the Lynnwood Link station when it opens. This will require those customers who previously made their trips solely by Sound Transit Express

service on these routes, and were traveling south of Lynnwood to transfer to Link or new peak hour Route 515 at Lynnwood to complete their trip.

Sound Transit and other central Puget Sound area transit agencies utilize the RFID-enabled fare card “One Regional Card for All” (ORCA). ORCA fare payment can be made using “E-Purse” (debit) or a pass product associated with a one-way fare value. On December 1, 2023, the Sound Transit Board adopted a new fare structure for Link services to take effect with the opening of the Lynnwood Link extension (Resolution R2023-37), reflected in Table 4.

Table 4: Fare Policy Changes

Fare Policy	Current Fare Structure	New Fare Structure	Change
Link	<ul style="list-style-type: none"> <li>Adult: \$2.25-\$3.50 (distance-based)</li> <li>Low-Income: \$1.00 (flat)</li> <li>Senior/Disabled: \$1.00 (flat)</li> <li>Youth: Free</li> </ul>	<ul style="list-style-type: none"> <li>Adult: \$3.00 (flat)</li> <li>Low-Income: \$1.00 (flat)</li> <li>Senior/Disabled: \$1.00 (flat)</li> <li>Youth: Free</li> </ul>	<ul style="list-style-type: none"> <li>Increase for adult fare</li> <li>No change for other fares</li> </ul>
Express Bus	<ul style="list-style-type: none"> <li>Adult: \$3.25</li> <li>Low-Income: \$1.00</li> <li>Senior/Disabled: \$1.00</li> <li>Youth: Free</li> </ul>	<ul style="list-style-type: none"> <li>Adult: \$3.25</li> <li>Low-Income: \$1.00</li> <li>Senior/Disabled: \$1.00</li> <li>Youth: Free</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>
Transfers	<ul style="list-style-type: none"> <li>ORCA Card: Original fare credited towards next leg of journey (within 2 hour transfer window)</li> <li>Cash: Pay full fare</li> </ul>	<ul style="list-style-type: none"> <li>ORCA Card: Original fare credited towards next leg of journey (within 2 hour transfer window)</li> <li>Cash: Pay full fare</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>

Currently, passengers utilizing Routes 512 and 513 wishing to travel to downtown Seattle must transfer to Link service at Northgate. Following the service changes, their transfer will occur at Lynnwood City Center Station. Because Sound Transit’s transfer policy is that the customer pay the difference between the two fare types and Express Bus has a higher fare than light rail, given the new \$3.00 flat fee, those transferring between Routes 512 or 513 and the 1 Line or Route 515 will never have to pay an additional fee. The portion of passengers who previously used Routes 512 or 513 to travel between Lynnwood and Northgate will now pay \$0.25 less than before, as they can make the trip using rail (\$3.00 fare), rather than Express Bus (\$3.25 fare).

# Policies and Definitions

The section below describes Sound Transit's approved policies for conducting and identifying major service changes, as well as for assessing their impacts on Title VI populations to ensure that changes to transit service are consistent with the Civil Rights Act of 1964, DOT Title VI regulations, FTA 4702.1B and policies defined by the Sound Transit Board.

The FTA is responsible for ensuring that federally-supported transit services and related benefits are distributed by recipients of FTA assistance in a manner consistent with Title VI, Section 601 of the Civil Rights Act of 1964, which states: No person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

**Disparate impact:** A facially neutral policy or practice that disproportionately affects members of a group identified by race, color or national origin pursuant to FTA guidelines.

**Disproportionate burden:** A policy or practice that disproportionately affects low-income populations more than non-low-income populations pursuant to FTA guidelines.

**Low-income population:** A population whose household income is at or below the poverty guidelines set by the Department of Health and Human Services level utilized by the regional transit fare program to determine low-income reduced fare eligibility.

**Minority population:** A population who self-identifies as American Indian/Alaska Native, Asian, Black or African American, Hispanic or Latino and/or Native Hawaiian/Pacific Islander.

**Major service change:** 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 revenue service hours, permanently move the location of a bus stop by more than a quarter mile or rail station by more than a half mile and/or close or eliminate a bus stop or rail station without a replacement of any kind within a quarter mile for bus stops or a half mile for rail stations. A major service change excludes:

- Replacement of an existing transit service by a different route, mode or contractor providing a service with the same headways, fare, transfer options, span of service and stops, so long as an analysis is completed that provides evidence that the replacement level service is equal to or better than the existing Sound Transit service; or
- Changes to route numbers without any other changes to the route characteristics; or
- Changes to service or new services are considered to be temporary, where temporary is defined as less than 12 months in duration.

The agency conducts an equity analysis of all proposed major service changes to determine adverse effects and equitable distribution of benefits. For major service changes:

- **Adverse effects** are a geographical or time-based reduction in service, which includes, but is not limited to, span of service changes, frequency of service changes, route segment elimination and rerouting or route elimination.
- **Benefits** are a geographical or time-based addition of service, which includes, but is not limited to, an increase in span, frequency, and service coverage.

## Changes to a Single Line or Route

When a proposed major service change to a single line or route creates a potential adverse effect, a disparate impact or disproportionate burden occurs when the percentage of the adversely affected

minority or low-income population in the service area of the line or route exceeds the percentage of the minority or low-income population within the Sound Transit District by at least five percentage points (e.g., 15 percent of the population adversely affected is low-income compared to a District average low-income population of 10 percent).

### Systemwide Service Reductions

When a systemwide potential adverse effect occurs due to major service changes on more than one line or route, the agency determines if the collective service reductions create a disparate impact or disproportionate burden by comparing the percentage of the service area's minority or low-income population adversely affected by the major service reductions to the percentage of the district's nonminority or non-low-income population adversely affected.

1. If the percentage of the minority or low-income population adversely affected is 20 percent or greater than the percentage of the non-minority or non-low-income population adversely affected (e.g., 12 percent or more of the minority population is adversely affected while 10 percent or less of the non-minority population is adversely affected), the reductions create a disparate impact or disproportionate burden.
2. Collective service reductions include both service reductions under consideration for the next year and implemented service reductions in the past two years, both major and minor service changes.

### Systemwide Service Additions

When a systemwide potential adverse effect occurs due to major service changes on more than one line or route, the agency determines if the collective service additions create a disparate impact or disproportionate burden by comparing the percentage of the minority or low-income population who benefit from the major service additions to the percentage of the district's non-minority or non-low-income population who benefits from the service additions.

1. If the percentage of the minority or low-income population benefited is 80 percent or less than the percentage of the non-minority or non-low-income population benefited (e.g., eight percent or less of the minority population benefits while 10 percent or more of the nonminority population benefits), the changes create a disparate impact or disproportionate burden.
2. Collective service additions include both service additions under consideration for the next year and implemented service additions in the past two years, both major and minor service changes.

### Fare Equity Analysis Policy

Sound Transit Board of Directors Resolution R2022-19 establishes policies for conducting equity analyses of fare changes impacting minority and low-income populations.

The policy directs Sound Transit to conduct a fare equity analysis prior to making any fare change or service change that affects fares to analyze potential adverse effects on minority and low-income populations and establishes the following thresholds for determining whether the proposed fare change would have a disparate impact on minority populations and/or a disproportionate burden on low-income populations:

- **Fare increases.** When considering a fare increase, if the agency's analysis indicates that the average percentage fare increase experienced by minority or low-income riders is 20 percent or greater than the average percentage fare increase experienced by non-minority or non-low-income riders, the change creates a disparate impact or disproportionate burden.
- **Fare decreases.** When considering a fare decrease, if the agency's analysis indicates the average percentage fare decrease experienced by non-minority or non-low-income riders is

20 percent or greater than the average percentage fare decrease experienced by minority or low-income riders, the change creates a disparate impact or disproportionate burden.

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

**Public Involvement Policy**

Sound Transit conducts public outreach regarding fare changes and major service changes as consistent with Sound Transit’s newly adopted Public Comment on Fare Changes and Major Service Changes Policy (Board Resolution No. R2023-34).

Sound Transit implements permanent fare changes and major service changes only after providing the public with reasonable opportunity to provide formal comment. All public feedback gathered about a proposed fare change or major service change is shared with the Board before any final decisions or actions.

**Definitions and Data Analysis**

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

**Demographic Analysis Methodology and Title VI Data Definitions**

Sound Transit uses census demographic data to identify Title VI communities (minority, low-income and limited-English proficiency (LEP)) for service equity analysis and calculates the systemwide or mode-specific average representation of these communities within the general population. Only minority or low-income status are used to determine if a disparate impact or disproportionate burden must be mitigated or analyzed. However, identifying LEP residents helps Sound Transit to ensure that outreach efforts reach diverse customers. Sound Transit uses the 2020 designated census tracts as the geographic basis for assessing the Title VI populations. Sound Transit uses the most recent five-year demographic estimates available from American Community Survey (ACS). The following sections describe the methodology for identifying each of the Title VI populations for the annual service equity analysis.

**Service Area Methodology**

Most transit agencies in the United States define their service area as a buffered distance around each of their transit routes. Given the unique service characteristics of Sound Transit service – limited stops connecting regional urban and employment centers – the agency defines its service area based on a radial distance from each transit stop, rather than the transit route alignment. The radial distance varies depending on the type of stop (Table 5).

*Table 5: Service Area Characteristics*

Stop Type	Service Area in Miles
Bus stop without parking	0.5
Rail stop without parking	1.0
Bus facility with parking	2.5
Rail station with parking	5

**Sound Transit Title VI Population Estimates**

Using the demographic analysis and Title VI definitions previously outlined in this section, percentages for Title VI populations for the Sound Transit service area are identified by census tract and the Sound



Transit District<sup>3</sup> overall. Table 6 shows Title VI population averages for the Sound Transit District using the American Community Survey five-year estimates 2021 dataset. Minority and low-income averages serve as a comparison in the service change analysis to determine if mitigation must be considered, while LEP averages help to advise the outreach strategy.

Table 6: Sound Transit District Population Percentage of Title VI Protected Populations

Title VI Protected Populations	Percentage of District Populations
Minority	42.7%
Low Income	20.7%
Limited English Proficiency	10.4%

The maps below (Figure 3, Figure 4, and Figure 5) show the Sound Transit stops and census tracts in the Sound Transit District and Sound Transit service area that have above-average percentages of minority, low-income and limited English proficiency (LEP) populations. The individual and systemwide service equity analyses use the **Sound Transit District averages for each protected population**, not the transit service areas, to compare the percentage of these populations in the individual route's service areas. The transit service area buffer illustrates how Sound Transit service and stops are sometimes outside of the District area.

---

<sup>3</sup> The Sound Transit District is the geographic area that contributes tax revenue to fund Sound Transit services while the Sound Transit service area is defined by set radial distances from Sound Transit stops. While these two geographies mostly overlap, there are parts of the service area that extend beyond the District boundaries and parts of the District that are not served by transit stops.

Figure 3: Map of Title VI Minority Population for Sound Transit Service Area

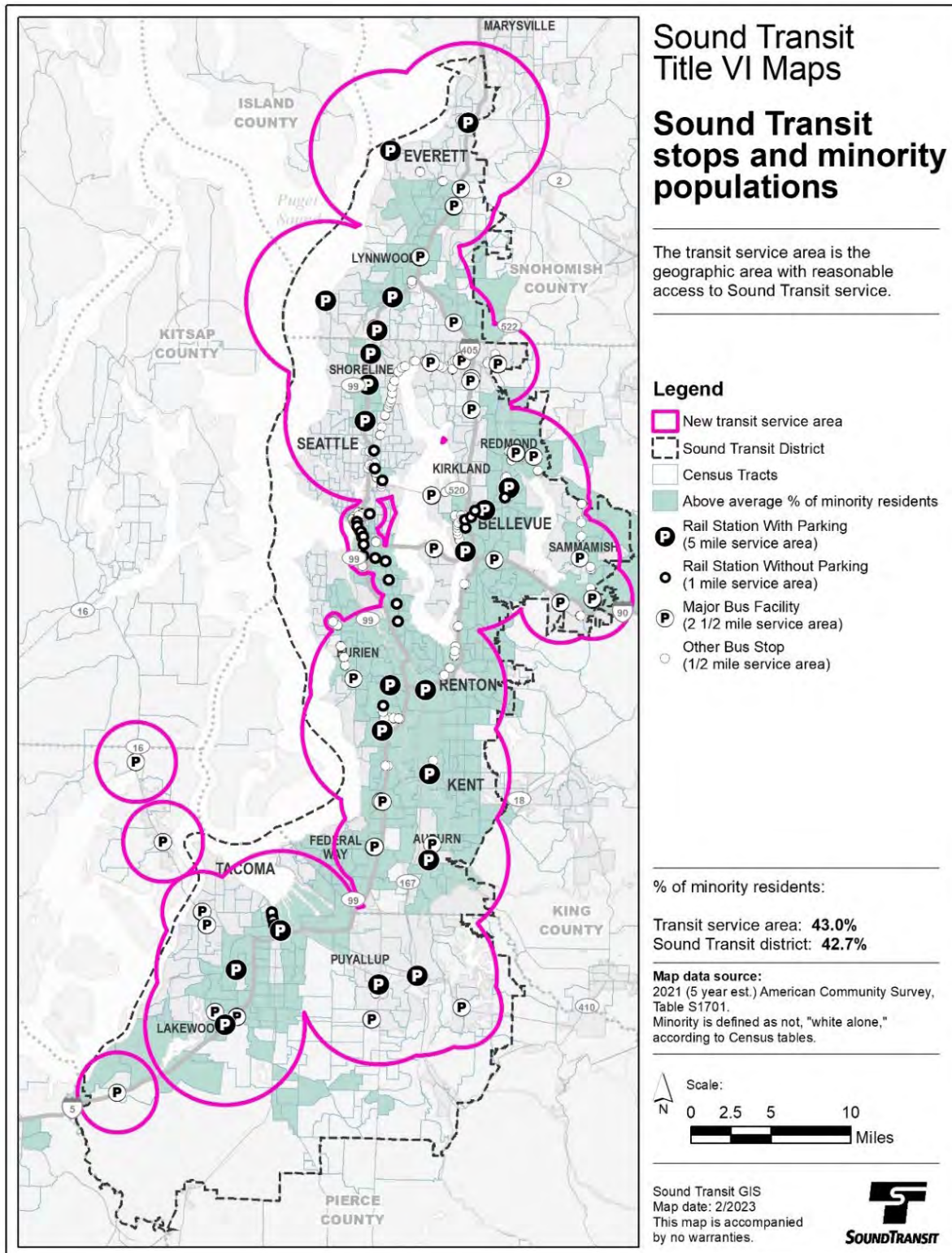


Figure 4: Map of Title VI Low-Income Population for Sound Transit Service Area

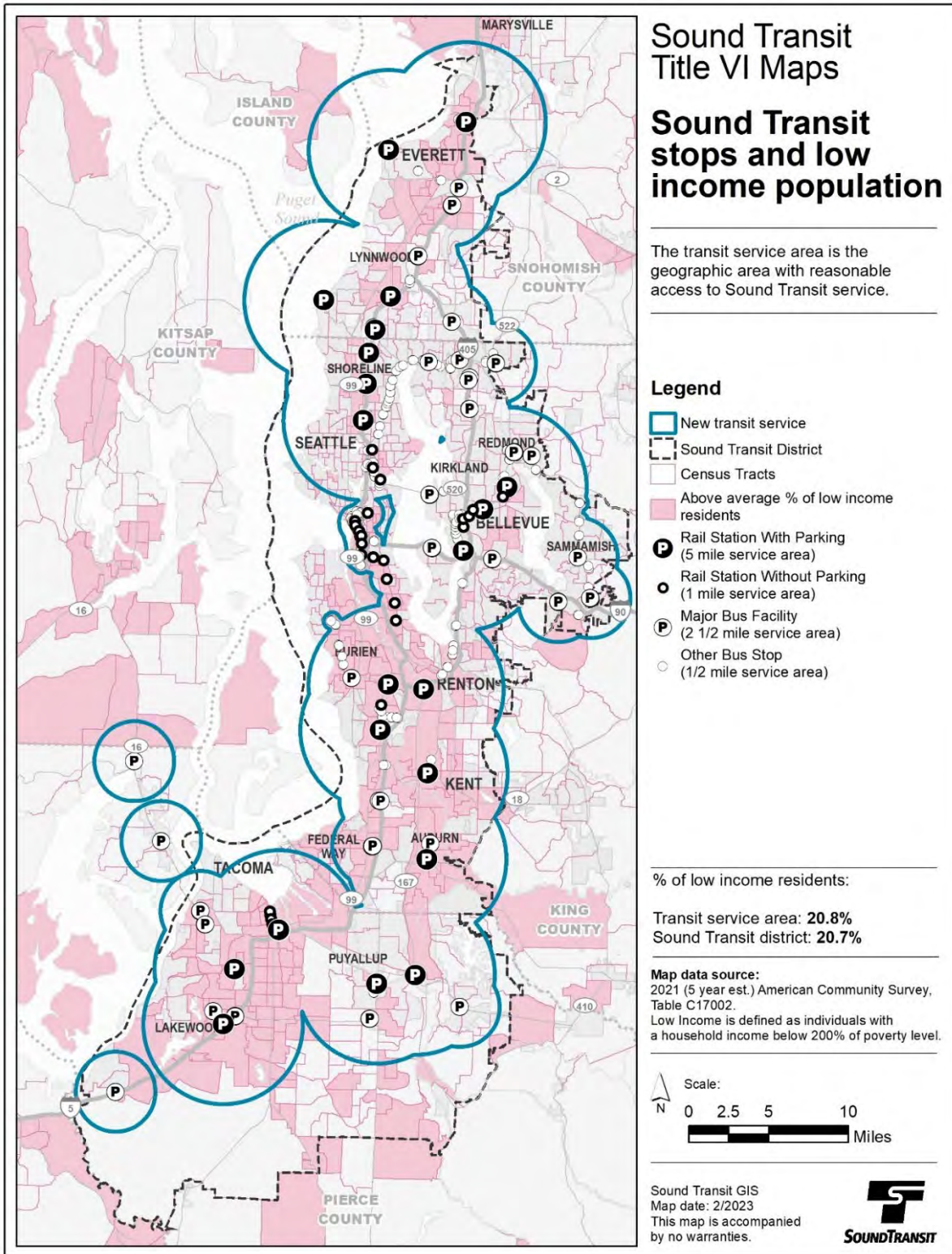
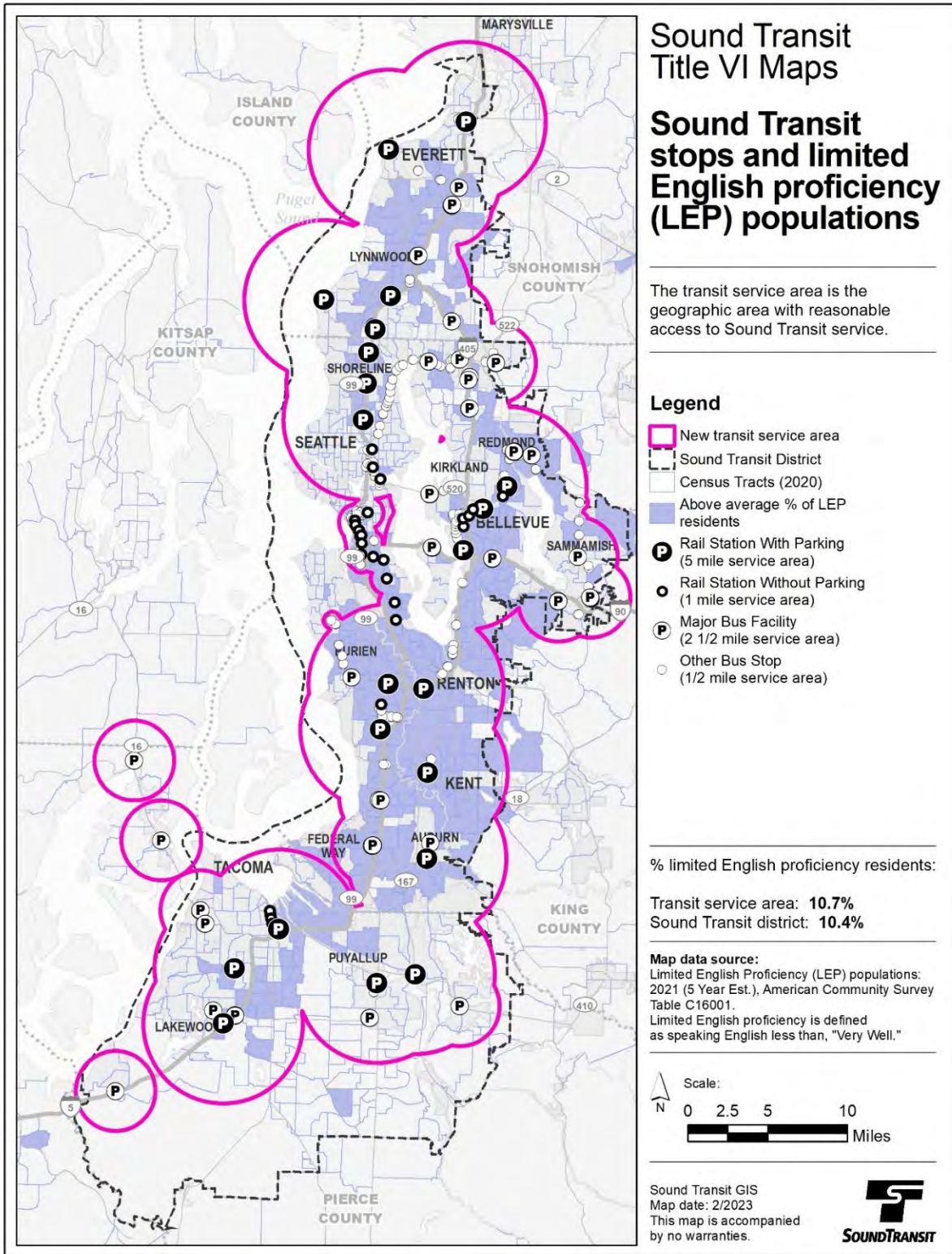


Figure 5: Map of Title VI Limited English Proficiency (LEP) Population for Sound Transit Service Area



## Title VI Protected Populations by Route

Table 7 below displays the Title VI protected populations by route for each of Sound Transit's service types<sup>4</sup>. Title VI-protected routes are highlighted when they are five or more percent of the district Title VI population average. For example, on Route 510, 40.7 percent of the population living within a half mile of a stop without parking and within 2.5 miles of a stop with parking identifies as a minority but this is less than the district average of 42.7 percent and thus not a protected route. Conversely, 48.5 percent of the population in the service area around Route 545 identifies as minority. Given that 48.5 percent is more than five percentage points higher than 42.7 percent it is considered a minority route.

Table 7: Title VI Protected Population by Route

Route	Minority Population	Low-Income Population	Limited English Proficiency (LEP)
<b>Express Bus</b>			
510	40.7%	23.2%	11.1%
511	37.1%	18.8%	10.2%
512	41.9%	23.6%	13.0%
513	43.6%	23.2%	14.2%
522	32.7%	13.7%	7.8%
532	42.3%	20.9%	12.5%
535	39.4%	15.9%	11.0%
542	44.6%	18.0%	10.8%
545	48.5%	14.5%	11.4%
550	47.3%	17.5%	10.2%
554	46.1%	15.4%	9.8%
556	43.1%	15.4%	9.4%
560	56.9%	24.0%	18.7%
566	56.3%	23.3%	16.5%
574	55.2%	33.4%	14.3%
577	53.0%	26.3%	13.2%
578	45.3%	24.6%	11.1%
580	27.0%	18.0%	5.0%
586	51.1%	33.6%	12.4%
590	46.0%	29.0%	8.3%
592	52.6%	31.7%	9.5%
594	50.2%	32.6%	9.3%
595	37.9%	24.4%	6.2%
596	21.5%	15.6%	3.1%
<b>Commuter Rail</b>			
N Line	37.5%	22.4%	10.4%
S Line	48.6%	26.3%	12.3%
<b>Light Rail</b>			
2 Line	46.9%	11.9%	11.8%
1 Line	43.4%	21.2%	11.4%
<b>Street Car</b>			
T Line	44.0%	27.4%	8.6%
District Average	42.7%	20.7%	10.4%

<sup>4</sup> Protected population statistics for Routes 512, 513 and the 1 Line are for the service area after the service change.

Additional population data is available in Appendix A.

### Fare Policy and Rates Dataset Description

The data used in this analysis is from an origin-destination (O-D) survey conducted onboard Sound Transit Express bus routes which are planned to terminate at the Lynnwood City Center Station when it opens – Routes 512 and 513. The survey was conducted in the first quarter of 2019. The survey was conducted during weekdays for all time periods using paper surveys offered to every rider for sampled trips. Survey workers remained on board during the entire trip or portion of the trip surveyed. Customers could return surveys to the survey workers or by postage paid return mail.

Overall, the survey included responses from about 9,500 Sound Transit Express riders (representing 19 percent of average weekday boardings, with a 43 percent response rate), including completed responses from 5,371 Sound Transit Express riders surveyed on those routes analyzed here. Responses were weighted to represent average weekday boardings at the route level.

For this analysis, low-income is defined as at or below 200 percent of the Federal poverty level. This is the same threshold used to qualify customers for the ORCA LIFT (low-income fare) program. Table 8 below describes the household size and income thresholds used to classify respondents as low-income for this analysis.

Table 8: Low-Income Thresholds

Household Size	Annual Household Income (2019)
1	\$24,972
2	\$33,816
3	\$42,660
4	\$51,492
5+	\$60,300

Sound Transit policy calls for a comparison of the impacts of a fare change on minority and low-income populations to the population of Sound Transit's service area. The numbers used in this report are derived from the American Community Survey 5-year Estimates, 2018.

# Service Equity Analysis

For the service equity analysis, Sound Transit conducted two levels of analysis, an individual route analysis and a systemwide analysis. The individual route analysis did not identify disparate impacts or disproportionate burdens resulting from the Project's major service changes. The systemwide analysis, which evaluates service reductions and service additions separately, also did not identify any disparate impacts or disproportionate burdens on protected populations from September 2021 through September 2024.

## Individual Route Analysis

### Overview

For the Lynnwood Link Extension service changes and connecting services analyses, Sound Transit examined each service change on a route-by-route basis, regardless of whether the change constituted a "Major" service change. A disparate impact or disproportionate burden was present if the percentage of minority and low-income populations living within the route's service area was five percentage points greater than the percentage of minority and low-income populations living within the Sound Transit District as a whole.

To determine if protected populations will experience disparate impacts or disproportionate burdens, the individual route analysis compares the Sound Transit District average percentages for minority populations and low-income populations to the route's service area percentages for these populations. If a service area changes with the service change (stations or stops were added or removed, etc.), the analysis compares the District average to the protected populations' percentage for the service area **before and after the service change. The individual route analysis found that none of the service changes resulted in a disparate impact or a disproportionate burden.** Therefore, no mitigations are required.

The service change analysis for individual routes is summarized in Table 9 below.

Table 9: Individual Route Service Change Analysis Summary

Service Change Analysis Summary					
Route	Proposed Change	Rationale	Type of Change	Disparate Impact	Disproportionate Burden
1 Line	Extend 1 Line service to Lynnwood in late 2024.  Four new stations: Shoreline South/148 <sup>th</sup> Station, Shoreline North/185 <sup>th</sup> Station, Mountlake Terrace Station, and Lynnwood City Center Station.	Improve the frequency and reliability of service from Northgate to Lynnwood City Center.	Major	No	No
511	Formalize emergency service suspension.	Repurpose resources to reduce crowding on 1 Line during peak periods (via Route 510 and Route 515).	Major	No	No
512	Shorten to Lynnwood City Center Station, with a connection to the 1 Line.  Service frequency: Up to 15 minutes throughout the day in both directions on weekdays and weekends.	Eliminate duplicative service; repurpose resources to reduce crowding on 1 Line during peak periods (via Route 510 and Route 515).	Major	No	No
513	Shorten to Lynnwood City Center Station.  Service frequency: Continue to operate service every 30 minutes during peak periods.	Eliminate duplicative service; repurpose resources to reduce crowding on 1 Line during peak periods (via Route 510 and Route 515).	Major	No	No
515	Initiate service from Lynnwood City Center Station to Union Station via Downtown Seattle, 5 <sup>th</sup> Avenue.  Service frequency: Up to 10 minutes. Southbound travel in the morning peak period and northbound travel from Seattle in the afternoon.	Reduce crowding on the 1 Line during peak periods.	Major	No	No

**Methodology**

When a proposed major service change to a single line or route creates an adverse effect, a disparate impact or disproportionate burden occurs when the percentage of the adversely affected minority or low-income population in the service area of the line or route exceeds the percentage of the minority or low-income population within the Sound Transit District by at least five percentage points (e.g., 15 percent of the population adversely affected is low-income compared to a District low-income population of 10 percent).

If a service area changes with the service change (stations or stops were added or removed, etc.), the analysis compares the District average to the protected populations’ percentage for the service area **before and after the service change**.



## Identifying Service Changes

Per the FTA circular, all changes to parallel and connecting routes must undergo a Title VI service analysis, when implementing a capital improvement guideway project, regardless if they reach the status of “major”. For the Lynnwood Link Extension, four commuter bus routes are changing and must be evaluated. These four routes also happen to meet Sound Transit’s major service policy. Table 10 compares the weekly revenue hours of each route that is undergoing a service change compared to the baseline.

*Table 10: Service Change Weekly Revenue Hours Comparison*

Service Change	March 2023 Weekly Revenue Hours	September 2024 Weekly Revenue Hours	Percentage Change	Type of Change
1 Line	2,190	2,469	13%	Major (new stop locations)
511	113 <sup>5</sup>	0	-100%	Major (route elimination)
512	921	703	-24%	Major (stop eliminations)
513	96	65	-28%	Major (hours reduction and stop eliminations)
NEW: 515	0	184	N/A	Major (new service)

The following section evaluates each route-level major service change for adverse effects, disparate impacts, and disproportionate burdens.

### *1 Line Lynnwood Link Extension*

Sound Transit proposed to extend 1 Line light rail service to Lynnwood (Figure 6) during Phase 1 of the 2024 Service Plan, which was approved by the Board of Directors in fall 2023. This extension will add four new stations to the 1 Line with service connecting Lynnwood to Angle Lake. Trains will run up to every eight minutes during rush hour and ten minutes midday, evenings, and weekends (Table 10). The frequency will be every 15 minutes in the late evening. With the opening of the Lynnwood Link Extension, 1 Line weekly revenue hours increase substantially, by 13 percent (Table 11). In order to prioritize peak period capacity and maintain a larger fleet than OMF Central was designed to accommodate, adjustments to evening service frequency and span of service at some stations will change.

---

<sup>5</sup> Route 511 was temporarily suspended during the March 2023 service change due to operator shortages. The table displays Route 511 statistics from the Fall 2022 service change, the last service change when the Route 511 was operational.

Figure 6: Map of 1 Line Extension to Lynnwood



Table 8: Approximate span and headways of 1 Line current and proposed service<sup>6</sup>

Table 11: Approximate Schedule for 1 Line

	Current 1 Line	Proposed 1 Line
<b>Weekdays</b>	<b>5:00 AM – 1:30 AM</b>	<b>4:30 AM – 1:30 AM</b>
Early AM	8 min. – 15 min.	15 min.
AM Peak	8 min.	8 min.
Midday	10 min.	10 min.
PM Peak	8 min.	10 min.
Evening	10 min.	8 min.
Evening (8PM-10PM)	10 min.	12 min.
Late Evening	15 min.	15 min.
<b>Saturday</b>	<b>5:00 AM – 1:30 AM</b>	<b>4:30 AM – 1:30 AM</b>
Day	10 min.	10 min.
Evening	10 min.	10 min.
Evening (8PM-10PM)	10 min.	12 min.
Late Evening	15 min.	15 min.
<b>Sunday</b>	<b>5:30 AM – 12:30 AM</b>	<b>5:30 AM – 12:00 AM</b>
Day	10 min.	10 min.
Evening	10 min.	10 min.
Evening (8PM-10PM)	10 min.	12 min.
Late Evening	15 min.	15 min.

Note: Frequencies and span of services are approximate and may vary by direction. Certain periods may experience higher or lower frequencies than the ones listed.

Table 12: Approximate Weekly Revenue Hours for 1 Line Current and Proposed Service

	Current 1 Line	Proposed 1 Line	Percent change
Weekly revenue hours	2,190	2,469	13%

Potential Adverse Effects and Benefits

No geographic-based adverse effects were found for the 1 Line service change. The route is on a fixed guideway, so it is not being rerouted. Additionally, the span of service is not subject to change. Frequency of service will decrease by up to two minutes during the weekday AM and PM peaks, due to service extension. However, Express Bus Route 515 – which is proposed to run from Lynnwood City Center to downtown Seattle – will provide service during those periods, operating with 10-minute headways.

Benefits of the 1 Line service change include increased route coverage from four additional stations north of Northgate Station. This service change will also introduce a new route segment of the 1 Line between Northgate Station and Lynnwood City Center Station.

Title VI Analysis

The minority and low-income populations in the proposed 1 Line service area and the current 1 Line service area are less than five percentage points greater than in the Sound Transit District as a whole (Table 13). Therefore, the 1 Line service change does not have a disparate impact or disproportionate burden.

Table 13: Title VI Populations in the Sound Transit District and the 1 Line Service Area

	Minority Population	Low-Income Population	Limited English Proficiency (LEP) Population
Sound Transit District	42.7%	20.7%	10.4%

	Minority Population	Low-Income Population	Limited English Proficiency (LEP) Population
1 Line service area (current)	45.1%	22.7%	11.6%
1 Line service area (proposed)	43.4%	21.2%	11.4%
Difference (current vs. Sound Transit District)	2.4%	2%	1.2%
Difference (proposed vs. Sound Transit District)	0.7%	0.5%	1.0%
Differences exceed percentage of the protected population within the District by at least five percentage points	No	No	

**Mitigations**

Mitigations are not necessary given no finding of a potential disparate impact or disproportionate burden.

**Public Input**

In July 2023, Sound Transit conducted community engagement to inform the public about the proposed service changes in the 2024 Service Plan. Feedback from the community was generally positive, with community members expressing enthusiasm for being able to access light rail service in Shoreline, Mountlake Terrace, and Lynnwood. Some expressed concerns about capacity on the 1 Line when it opens to Lynnwood. They vocalized the desire for supporting bus lines to provide additional capacity.

**Conclusion**

The Title VI analysis found no adverse effects. There is also no determination of disparate impact or disproportionate burden. The Sound Transit Board of Directors approved service changes as proposed in fall 2023.

*511 – Ash Way-Northgate*

Route 511 operated peak hour directional service between the Ash Way Park and Ride and Northgate Station during the peak only with timing set up to facilitate transfers to/from 1 Link. Service was suspended in March 2023 due to operator shortages and replaced with service on Route 512. The 511 will be permanently eliminated as it is no longer needed given the duplicity with 1 Line (Link); Route 512 and 513 will provide alternative service at the same stops as the eliminated Route 511 (see Figure 7). Since Route 511 will be eliminated, there will be no weekly revenue hours (Table 14). Resources can be distributed to remaining service in the corridor (Table 15).

Figure 7: Route 511 Service Change Proposal



Table 14: Approximate Span of Service and Frequencies of Route 511 Current and Proposed Service

	Route 511 <sup>7</sup>	Eliminated
<b>Weekdays</b>	4:15 AM – 7:00 PM	See Routes 512 and 513 for replacement service levels
Early AM	30 min.	
AM Peak	8-16 min.	
Midday	--	
PM Peak	8-16 min.	
Evening	--	
Late Evening	--	
<b>Saturday</b>		
Day	--	
Evening	--	
Late Evening	--	
<b>Sunday</b>		
Day	--	
Evening	--	
Late Evening	--	

Table 15: Weekly Revenue Hours for Route 511 Current and Proposed Service

	Current Route 511 <sup>8</sup>	Proposed Route 511	Percent change
Weekly revenue hours	113	0	-100%

**Alternatives Considered**

The Board of Director’s directed Sound Transit to reduce crowding on the 1 Line during peak periods. Given the available resources, agency staff determined that reinstating service along Route 511 would be incongruous with following the Board’s directive.

**Adverse Effects and Benefits**

There are adverse effects because the route is eliminated. However, Route 512 and 513 peak direction service and the Link 1 Line replace the entirety of Route 511. In October 2022, approximately two-thirds of Route 511’s boarding and alighting occurred at Lynnwood and Mountlake Terrace, two Stations that will be served by Link in 2024. Passengers traveling to Mountlake Terrace or Northgate Station will now need to transfer at Lynnwood from the 512 to 1 Link.

The benefits of replacing Route 511 service with Link and Route 512 service include increased span of service. The span of service for the proposed Route 512 service is longer than the current Route 511 service, spanning from the early morning to the late evening. Route 512 also provides weekend service.

**Title VI Analysis**

Service changes, such as eliminating Route 511, are subject to Title VI analysis. In this case, there is an adverse effect because the route elimination results in decreased service coverage. The entire route and all stops will be replaced by the Route 512, Route 513, and 1 Line. The minority and low-income populations in the Route 511 service area are less than five percentage points greater than in

<sup>7</sup> Route 511 was temporarily suspended during the March 2023 service change due to operator shortages. The table displays Route 511 statistics from the Fall 2022 service change, the last service change when the Route 511 was operational.

the ST District as a whole (Table 16). Therefore, the Route 511 service change does not have a disparate impact or disproportionate burden.

Table 16: Title VI Populations in the ST District and the Route 511 service area

	Minority Population	Low-Income Population	Limited English Proficiency (LEP) Population
ST District	42.7%	20.7%	10.4%
Route 511 Service Area	37.1%	18.8%	10.2%
Difference	-5.6%	-1.9%	-0.2%
Exceeds percentage of the protected population within the District by at least five percentage points	No	No	No

### Mitigations

Mitigations are not required since there is no finding of disparate impact or disproportionate burden. However, peak direction service at Ash Way P&R will be continue to be provided a Route 512 with a connection at Lynnwood City Center Station.

### Public Input

In September 2022, facing severe operator staffing shortages and declining service reliability, Sound Transit staff surveyed riders at Northgate Station to determine whether they would prioritize timed connections with Link or longer waits with better service reliability. The results of the survey supported the redesign of the ST Express network at Northgate by eliminating the peak period/peak direction Route 511 and replacing it with new peak period/peak direction service on Route 512 as a strategy to reduce service to operate within available workforce.

In July 2023, Sound Transit conducted community engagement to inform the public about the proposed service changes in the 2024 Service Plan, including formalizing the suspension of Route 511. Overall, a total of 12 comments and survey responses were received for the Route 511 proposal.

- One respondent expressed a desire for this route to be reinstated and extended, citing benefits to reverse-direction commuters. *(Note: Route 511 only operated in the peak-direction, Route 512 provided reverse-direction service)*
- Other comments requested that the route be removed with the resources reinvested into Route 512, due to all-day services being more useful to passengers than peak-only expresses.

The Route 511 proposal was not included in the January 2024 engagement because the proposal has not changed from July 2023.

### Conclusion

The Route 511 service change results in adverse effects. However, there is no determination of disparate impact or disproportionate burden.

### 512 – Everett-Lynnwood

Route 512 currently operates between Everett and Northgate, with intermediate stops in Lynnwood, Mountlake Terrace, and Shoreline. The route will be shortened to run between Everett and Lynnwood

City Center Station (Figure 8), operating all-day, two-way service seven days a week. All stops north of Lynnwood City Center Station will be maintained. Passengers traveling from Everett and continuing to Mountlake Terrace, Shoreline or Seattle would require a connection at Lynnwood City Center Station to the Link 1 Line.

While weekly revenue hours would decrease by 24 percent after the truncation at Lynnwood, the distance traveled by each bus would also be decreasing, allowing service levels to remain the same or improve between the current and proposed (Table 17). Currently, it takes about 40-60 minutes to travel from Everett to Northgate, with approximately 20 minutes of that time comprising travel between Lynnwood and Northgate. As a result, even though revenue hours are decreasing by nearly one-fourth (Table 18), frequency would improve for weekday AM peak and evening hours, remaining relatively unchanged during other time periods. Resources saved by the truncation would be transferred to the new, temporary Route 515. Route 515 and 510 (Everett-Seattle) will provide additional capacity during the 1 Line's peak periods, when it is anticipated to be the most crowded.



Figure 8: Route 512 Service Change Proposal



Table 17: Approximate Span of Service and Frequencies of Current and Proposed Route 512 Service

	Current Route 512	Proposed Route 512
<b>Weekdays</b>	<b>4:00 AM – 12:45 AM</b>	<b>4:00 AM – 1:30 AM</b>
Early AM	30 min.	30 min.
AM Peak	15 – 30 min.	15 min.
Midday	15 min.	15 min.
PM Peak	15 min.	15 min.
Evening	15 – 30 min.	15 min.
Late Evening	30 min.	30 min.
<b>Saturday</b>	<b>4:30 AM – 12:45 AM</b>	<b>4:15 AM – 1:45 AM</b>
Day	10 – 20 min.	15 min.
Evening	10 – 20 min.	15 min.
Late Evening	15 min.	30 min.
<b>Sunday</b>	<b>4:45 AM – 12:45 AM</b>	<b>4:15 AM – 1:45 AM</b>
Day	10 – 20 min.	15 min.
Evening	10 – 20 min.	15 min.
Late Evening	15 – 30 min.	30 min.

Frequencies are approximate and may vary by direction; they may be subject to change as additional scheduling and operational planning occurs.

Table 18: Weekly Revenue Hours for Route 512 Current and Proposed Service

	Current Route 512	Proposed Route 512	Percent change
Weekly revenue hours	921	703	-24%

**Alternatives Considered**

The Project development process considered alternatives to the alignment changes proposed for Route 512. One alternative considered included eliminating four late evening stops on the Route 512 north of Everett Station: Pacific Avenue and Rockefeller Avenue, Wetmore Avenue and Wall Street, Hewitt Avenue and Lombard Avenue, and Hewitt Avenue and Virginia Avenue. The stops were maintained in the final proposal to uphold the current service area.

**Adverse Effects and Benefits**

Truncating Route 512 results in the elimination of bus stops and decreased coverage.

Bus stops south of Lynnwood City Center would be eliminated; thus, passengers travelling south of Lynnwood will need to transfer to the 1 Line to get to stations between Lynnwood and Northgate. Passengers who already transfer at Northgate Station will still need to transfer, but at Lynnwood City Center Station instead. Connecting to Link earlier at Lynnwood provides riders the opportunity to spend less time in traffic congestion on I-5, increasing the reliability of travel.

Service coverage would decrease on Route 512 due to the truncation. Passengers could transfer to the 1 Line to travel to the same destinations south of Lynnwood. The 1 Line will operate more frequently and offer more travel time reliability than current Route 512. Additional service areas and destinations, such as University of Washington, Capitol Hill, and destinations south of downtown Seattle, will also be served through 1 Line service.

**Title VI Analysis**

Service changes, such as truncating Route 512, are subject to Title VI analysis. In this case, there is an adverse effect because the service change results in decreased service coverage. Passengers would be able to transfer to the 1 Line access to stations between Lynnwood and Northgate Stations. There is no finding of disparate impact because the minority population of Route 512 both before and after the service change does not exceed the district average by at least five percentage points (Table

19). There is also no finding of disproportionate burden because the low-income of Route 512 before and after the service change does not exceed the district average by at least five percentage points.

Table 19: Title VI Populations in the Sound Transit District and the Route 512 Service Area

	Minority Population	Low-Income Population	Limited English Proficiency (LEP) Population
Sound Transit District	42.7%	20.7%	10.4%
Route 512 Service Area (Before Service Change)	36.9%	20.9%	10.8%
Route 512 Service Area (After Service Change)	41.9%	23.6%	13.0%
Difference (current vs. Sound Transit District)	-5.8%	0.2%	0.4%
Difference (proposed vs. Sound Transit District)	-0.8%	2.9%	2.6%
Differences exceed percentage of the protected population within the District by at least five percentage points	No	No	

**Mitigations**

Mitigations are not required since there is no finding of disparate impact or disproportionate burden. Lynnwood Link would replace current Route 512 service between Lynnwood and Northgate offering more reliable service with more frequency throughout the day.

**Public Input**

In July 2023, Sound Transit conducted community engagement to inform the public about the proposed service changes in the 2024 Service Plan.

A total of 45 comments and survey responses were received for the Route 512 proposal.

- Respondents were broadly supportive and excited for our planned improvements for Route 512, as well as the connection to the 1 Line.
- One rider indicated they will begin riding Route 512 to transfer to the 1 Line instead of Route 510.

During the January 2024 supplementary engagement, only four participants commented on the revised proposal. All four participants opposed the proposal.

- One comment praised the 512 offering options between Seattle, Lynnwood, and Northgate. Another comment suggested continuing Route 512 from Ash Way to Seattle even after the 1 Line Lynnwood Link Extension opening to handle passenger volume.
- One comment indicated support for the original 2024 Service Plan’s proposal for simplified 512 service over the January proposal to continue Route 510 and introduce the new temporary Route 515.

**Conclusion**

The Route 512 service change results in adverse effects. However, there is no determination of a disparate impact or disproportionate burden. Through 2024 Service Plan engagement, Sound Transit collected input about the proposed change and most respondents were supportive of the proposal.

### *513 – Seaway-Lynnwood*

The Route 513 currently operates between Seaway Transit Center and Northgate Station with peak hour directional service only. The route will be shortened to operate between Seaway Transit Center and Lynnwood City Center Station (Figure 9). Truncating the route will result in the elimination of stops south of Lynnwood City Center Station. Route 513 will continue to serve the Eastmont Park and Ride and the Ash Way Park and Ride.

The proposed route 513 would result in a span of service that is reduced by approximately 45 minutes, as a result of service changes (Table 20). As compared to the current Route 513, headways would remain unchanged and the route would continue to operate in the peak direction. There would continue to be no service outside of peak hours.

The truncation of Route 513 would result in a 28 percent decrease in weekly revenue hours, as compared to current service levels (Table 21), although overall service levels would be maintained. Resources saved by shortening the route will allow for operation of new Route 515 and continuation of Route 510 to Seattle. This will provide additional capacity when the 1 Line is expected to be the most crowded.

Figure 9: Route 513 Service Change Proposal



Table 20: Approximate Span of Service and Frequencies of Current and Proposed Route 513 Service

	Current Route 513	Proposed Route 513
Weekdays	4:45 AM – 7:00 PM	5:00 AM – 6:30 PM
Early AM	30 min.	30 min.
AM Peak	30 min.	30 min.
Midday	--	--
PM Peak	30 min.	30 min.
Evening	--	--
Late Evening	--	--

Table 21: Weekly Revenue Hours for Route 513 Current and Proposed Service

	Current Route 513	Proposed Route 513	Percent Change
Weekly revenue hours	96	65	-28%

Sound Transit’s Board of Directors directed Sound Transit to reduce crowding on the 1 Line. Because Route 513 has redundancy with the Link extension, overlapping at four stations, Sound Transit staff determined that the resources recuperated from truncating service at Lynnwood City Center could be used to introduce new service (Route 515) to alleviate crowding conditions and support the Board’s direction.

**Potential Adverse Effects and Benefits**

Adverse effects associated with service change along Route 513 includes the elimination of two bus stops on this route: Mountlake Terrace and Northgate Station. Passengers traveling to these stops will now need to transfer at Lynnwood City Center from the 513 to Link 1. Those travelling to Downtown Seattle will continue to transfer to 1 Line but will do so at Lynnwood City Center instead of Northgate.

Service coverage would decrease on Route 513 due to truncation at Lynnwood City Center. Passengers could transfer to the 1 Line to access areas south of Lynnwood. The 1 Line will operate more frequently and offer more travel time reliability than current Route 513.

**Title VI Analysis**

Service changes, such as truncating Route 513, are subject to Title VI analysis. Because the current and proposed Route 513 service areas’ low-income and minority populations do not exceed the Sound Transit District population by more than five percentage points, there are no findings of disparate impact or disproportionate burden (Table 22).

Table 22: Title VI Populations in the Sound Transit District and the Route 513 Service Area

	Minority Population	Low-Income Population	Limited English Proficiency (LEP) Population
Sound Transit District	42.7%	20.7%	10.4%
Route 513 Service Area (Before Service Change)	38.3%	20.5%	11.1%
Route 513 Service Area (After Service Change)	43.6%	23.2%	14.2%
Difference (current vs. Sound Transit District)	-4.4%	-0.2%	0.7%
Difference (proposed vs. Sound Transit District)	0.9%	2.5%	3.8%
Differences exceed percentage of the protected population within the District by at least five percentage points	No	No	

**Mitigations**

Mitigations are not required since there is no finding of disparate impact or disproportionate burden. 1 Link service would replace the segment between Lynnwood and Northgate.

**Public Input**

In July 2023, Sound Transit conducted community engagement to inform the public about the proposed service changes in the 2024 Service Plan.

A total of 11 comments and survey responses were received for the Route 513 proposal.

- Most respondents were supportive of our proposal for Route 513, citing improved access to employers in the reverse-peak direction, such as Boeing.

During the January 2024 supplemental engagement, four out of the seven participants who commented on the proposal supported it. One comment opposed the Route 513 proposal because of its frequency and speed compared to Community Transit Route 116. Another comment opposed the proposal because of the travel options provided by Route 513.

**Conclusion**

The Route 513 service change results in adverse effects. However, there is no determination of disparate impact or disproportionate burden. Through 2024 Service Plan engagement, Sound Transit collected input about the proposed change and most respondents were supportive of the proposal.

**515 – Lynnwood to Seattle**

The addition of Route 515 would create a new, temporary peak-only service to supplement Link capacity between Lynnwood and downtown Seattle until the 2 Line opens, anticipated in 2025 (Figure 10). Route 515 would travel southbound from Lynnwood in the morning peak period and northbound

from Seattle in the afternoon as frequently as every 10 minutes (Table 23). Monitoring of ridership and performance of this temporary route would occur following implementation.

Figure 10: Route 515 Proposed Service



Route 515 would have 184 weekly revenue hours (Table 24). Resources would be sourced by reallocating saved resources from shortening Routes 512 and 513 from Northgate to Lynnwood.



Table 23: Approximate Span of Service and Frequencies of Current and Proposed Route 515 Service

	No Current Service	New Route 515
Weekdays	-	5:00 AM – 6:30 PM
Early AM	--	30 min.
AM Peak	--	10 min.
Midday	--	--
PM Peak	--	10 min.
Evening	--	30 min.
Late Evening	--	--

Frequencies are approximate and may vary by direction and may be revised as additional scheduling and operational planning occurs. 30 minute Early AM and Evening service for hour preceding AM peak (5-6AM), and following PM peak (6-7PM).

Table 24: Weekly Revenue Hours for Route 515 Current and Proposed Service

	No Current Service	Proposed Route 515	Percent change
Weekly revenue hours	0	184	N/A – New Service

Analysis by Sound Transit staff and coordinated efforts with Community Transit determined that reallocating operators from 512 and 513 to operate a peak only service between Lynnwood and downtown Seattle was the optimal solution for reducing crowding on the 1 Line during peak periods.

Potential Adverse Effects and Benefits

The addition of a new, temporary Route 515 constitutes a benefit since it adds service. The route would provide an additional option for passengers traveling to downtown Seattle at the times when 1 Line service is anticipated to be most crowded. There are no adverse effects.

Title VI Analysis

Adding a new route qualifies as a major service change subject to Title VI analysis. Because the Route 515 service area’s low-income and minority populations do not exceed the Sound Transit District population by more than five percentage points, there are no findings of disparate impact or disproportionate burden (Table 25).

Table 25: Title VI Populations in the Sound Transit District and the Route 515 Service Area

	Minority Population	Low-Income Population	Limited English Proficiency (LEP) Population
Sound Transit District	42.7%	20.7%	10.4%
Route 515 Service Area	41%	19.7%	10.7%
Difference	-1.7%	-1%	+0.3%
Exceeds percentage of the protected population within the District by at least five percentage points	No	No	

Mitigations

Mitigations are not required since there is no finding of disparate impact or disproportionate burden.

### Public Input

In July 2023, Sound Transit conducted community engagement to inform the public about the proposed service changes in the 2024 Service Plan. At the time, the proposed changes did not include Route 515, and as such no direct questions were asked. However, comments received regarding Route 510 which operates a similar service profile, were in favor of retaining and expanding supplemental capacity to downtown for a variety of reasons, such as span of service.

In January 2024, supplementary engagement was conducted to collect feedback on the revised 2024 Service Plan Phase Two proposed service changes (see “Planning Context” section for background on the updated proposals). All participants who commented on Route 515 supported the proposal. Some respondents noted that Route 515 increases travel options.

### Conclusion

Route 515 does not have adverse impacts, nor is there a determination of disparate impact or disproportionate burden. Based on the supplemental 2024 Service Plan engagement, riders appear to be supportive of the proposal.

## Individual Line Analysis Conclusion

The **individual route analysis** evaluates each major service change on a route-by-route basis. The analysis found that some service change proposals create adverse effects, however **none of the major service changes resulted in a disparate impact or a disproportionate burden**. Therefore, no mitigations are required.

## Systemwide Service Analysis

### Overview

The systemwide analysis compares benefits and impacts to Title VI protected and non-protected populations on all routes with changes over multiple years. **The results of the systemwide analysis did not identify any findings.**

The systemwide analysis evaluates service reductions and service additions separately. The analysis shows that the distribution of benefits to protected populations exceeds 80 percent for protected populations and the reduction of service to protected populations does not exceed 20 percent of the distribution. Therefore, the systemwide analysis did not identify any adverse effects on protected populations from September 2021 to September 2024. The following sections outline the process for each analysis.

### Methodology

To conduct the system wide analysis, the percentage of low-income and non-low-income populations impacted by the change are compared to the overall district using a ratio. The analysis begins by identifying the populations affected by service changes and summarizing into totals for people experiencing increased service and people experiencing reduced service. Then, the total affected populations are compared to the total population to calculate a percentage. Next, the threshold test evaluates the population comparison percentage to test for equity impacts.

### Identifying Systemwide Service Additions and Reductions

The first step in the analysis identifies service reductions and additions by route. Table 26 shows the total change in scheduled weekly revenue hours between September 2021 and September 2024 for each route. When weekly revenue hours increased, this change is identified as an addition. When

weekly revenue hours decrease, this change is identified as a reduction. In the following analysis steps, the totals for the routes in each group will be used to evaluate systemwide reductions and additions.

Changes in revenue hours reflect the opening of new Link service, the coordinated restructure of Sound Transit Express routes in response, and the on-going impact of staffing shortages which limit the amount of service delivered. Some routes operated by Pierce Transit, denoted with grey shading, are currently operating fewer hours than are reflected in this table as a result of temporary emergency reductions approved by the Sound Transit Board of Directors in Motion M2023-11.

Table 26: Scheduled Weekly Revenue Hours by Service Change from September 2021 to September 2024

Route	Sept. 2021	March 2022	Sept. 2022	March 2023	Sept. 2023	March 2024	Sept. 2024	Difference Sept. 2024 and Sept. 2021	Percent Difference Sept. 2024 and Sept. 2021	Addition or Reduction
1 Line	1,985	2,130	2,128	2,190	2,190	2,190	2,469	484	24%	Addition
2 Line	0	0	0	0	0	638	638	638	N/A	Addition
510	193	183	171	172	172	172	210	17	9%	Addition
511	142	113	95	0	0	0	0	-142	-100%	Reduction
512	1,035	951	898	922	922	922	703	-332	-32%	Reduction
513	118	123	116	96	96	96	65	-53	-45%	Reduction
515	0	0	0	0	0	0	184	184	N/A	Addition
522	1,019	1,003	978	975	975	975	975	-44	-4%	Reduction
532	135	133	129	125	125	125	126	-9	-7%	Reduction
535	420	412	406	398	398	398	411	-9	-2%	Reduction
542	416	417	415	427	427	427	427	11	3%	Addition
545	1,204	1,084	1,080	1,077	1,077	1,077	1,077	-127	-11%	Reduction
550	997	896	885	883	883	883	883	-114	-11%	Reduction
554	712	666	664	664	664	664	664	-48	-7%	Reduction
556	102	103	108	108	108	108	108	6	6%	Addition
560	665	656	697	673	673	673	673	8	1%	Addition
566	334	209	194	196	196	196	196	-138	-41%	Reduction
574	763	768	772	772	772	772	772	9	1%	Addition
577	315	271	287	274	274	274	274	-41	-13%	Reduction
578	714	687	706	708	708	708	708	-6	-1%	Reduction
580	42	13	13	13	13	13	13	-29	-69%	Reduction
586	116	127	120	126	126	126	126	10	9%	Addition
590	430	323	329	329	329	329	329	-101	-23%	Reduction
592	241	177	171	171	171	171	171	-70	-29%	Reduction
594	856	842	862	861	861	861	861	5	1%	Addition
595	55	54	61	61	61	61	61	6	11%	Addition
596	44	46	42	42	42	42	42	-2	-5%	Reduction
N Line	26	26	26	26	26	26	53	27	104%	Addition
S Line	165	177	183	183	183	183	183	18	11%	Addition
T Line	195	195	191	191	480	480	480	285	146%	Addition

**Systemwide Service Reductions Analysis**

When a systemwide potential adverse effect occurs due to major service changes on more than one line or route, the agency determines if the collective service reductions create a disparate impact or

disproportionate burden by comparing the percentage of the service area’s minority or low-income population adversely affected by the major service reductions to the percentage of the district’s non-minority or non-low-income population adversely affected.

Collective service reductions include both service reductions under consideration for the next year and implemented service reductions in the past two years, both major and minor service changes.

Table 27 shows the total change in weekly revenue hours between September 2021 and September 2024 for each route with a service reduction. The population columns then identify the total Title VI-protected and non-Title VI-protected populations affected by the service reduction for each route.

Table 27: Populations Affected by Service Reduction September 2021 to September 2024

Route	Change in Weekly Revenue Hours	Total Population	Minority Population	Non-Minority Population	Low-Income Population	Non-Low-Income
511	-142	409,600	151,900	257,700	76,900	332,700
512	-332	322,700	135,100	187,600	76,100	246,600
513	-53	270,000	117,800	152,200	62,500	207,500
522	-44	129,800	42,400	87,400	17,800	112,000
532	-9	351,700	148,800	202,900	73,500	278,200
535	-9	242,600	95,600	147,000	38,500	204,100
545	-127	241,400	117,000	124,400	35,000	206,400
550	-114	110,000	52,000	58,000	19,200	90,800
554	-48	170,400	78,600	91,800	26,200	144,200
566	-138	323,800	182,200	141,600	75,400	248,400
577	-41	155,600	82,500	73,100	40,900	114,700
578	-6	273,600	123,800	149,800	67,300	206,300
580	-29	85,400	23,000	62,400	15,400	70,000
590	-101	153,200	70,500	82,700	44,400	108,800
592	-70	158,800	83,500	75,300	50,300	108,500
596	-2	65,500	14,100	51,400	10,200	55,300
Population Percentage Affected by Reduction <sup>9</sup>		38%	37%	39%	35%	39%

### Analysis

If the percentage of the minority or low-income population adversely affected is more than 20 percent greater than the percentage of the non-minority or non-low-income population adversely affected (e.g., 12 percent or more of the minority population is adversely affected while ten percent or less of the non-minority population is adversely affected), the reductions create a disparate impact or disproportionate burden.

<sup>9</sup>Percentage affected by reduction calculated by summing the populations served by each route with a reduction, then divided by the sum of populations served by all routes to calculate a percentage. Note that some routes have overlapping service areas.

Using the data collected in the above table the following percentages were calculated for populations adversely affected by service reductions compared with the total population in the service area of all routes:

- Minority population adversely affected: 37 percent
- Non-Minority population adversely affected: 39 percent
- Low-Income population adversely affected: 35 percent
- Non-Low-Income population adversely affected: 39 percent

*Service Reductions Disparate Impact Test*

To evaluate for a potential disparate impact, the percentage of the minority population adversely affected is compared to the percentage of the non-minority population adversely affected using a ratio (Table 28). **Because the result of negative four percent is not 20 percent or greater, no disparate impact was identified.**

Table 28: Service Reduction Disparate Impact Test

Minority Population Adversely Affected	Non-Minority Population Adversely Affected	Ratio Comparison	Threshold for Disparate Impact	Result
37%	39%	$37\% \div 39\% = -4\%$ <sup>1</sup>	20% or greater	No disparate impact
<sup>1</sup> In order to compare with the policy threshold the ratio calculation is shown as the difference from 100%.				

*Service Reductions Disproportionate Burden Test*

To evaluate for a potential disproportionate burden, the percentage of the low-income population adversely affected is compared to the percentage of the non-low-income population adversely affected using a ratio (Table 29). **Because the result of negative nine percent is not 20 percent or greater, no disproportionate burden was identified.**

Table 29: Service Reduction Disproportionate Burden Test

Low-Income Population Adversely Affected	Non- Low-Income Population Adversely Affected	Ratio Comparison	Threshold for Disproportionate Burden	Result
35%	39%	$35\% \div 39\% = -9\%$ <sup>1</sup>	20% or greater	No disproportionate burden
<sup>1</sup> In order to compare with the policy threshold the ratio calculation is shown as the difference from 100%.				

## Systemwide Service Additions Analysis

When a systemwide adverse effect occurs due to major service changes on more than one line or route, the agency determines if the collective service additions create a disparate impact or disproportionate burden by comparing the percentage of the service area's minority or low-income population benefiting from the major service additions to the percentage of the District's non-minority or non-low-income population benefiting.

Collective service additions include both service additions under consideration for the next year and implemented service additions in the past two years, both major and minor service changes.

Table 30 shows the total change in weekly revenue hours between September 2021 and September 2024 for each route with a service addition. The population columns then identify the total Title VI-protected and non-Title VI-protected populations benefiting from the service addition for each route.

Table 30: Populations Benefited by Service Additions, September 2021 to September 2024

Route	Change in Weekly Revenue Hours	Total Population	Minority Population	Non-Minority Population	Low-Income Population	Non-Low-Income
1 Line	484	1,276,600	553,700	722,900	270,100	1,006,500
2 Line (South Bellevue to Redmond Technology Stations)	638	393,539	184,600	208,939	46,800	346,739
510	17	330,000	134,300	195,700	76,500	253,500
515	184	235,900	96,700	139,200	46,500	189,400
542	11	88,600	39,600	49,000	15,900	72,700
556	6	134,000	57,700	76,300	20,600	113,400
560	8	189,200	107,600	81,600	45,400	143,800
574	9	340,700	188,200	152,500	113,600	227,100
586	10	189,200	96,700	92,500	63,500	125,700
594	5	238,500	119,800	118,700	77,800	160,700
595	6	262,700	99,600	163,100	64,200	198,500
N Line	27	388,300	145,600	242,700	86,800	301,500
S Line	18	1,221,400	593,900	627,500	321,200	900,200
T Line	285	302,800	133,100	169,700	82,900	219,900
Population Percentage Benefiting by Addition <sup>10</sup>		62%	63%	61%	65%	61%

<sup>10</sup> Percentage benefiting from service addition calculated by summing the populations served by each route with a service addition, then divided by the sum of populations served by all routes to calculate a percentage. Note that some routes have overlapping service areas.

### Analysis

If the percentage of the minority or low-income population benefited is 80 percent or less than the percentage of the non-minority or non-low-income population benefited (e.g., eight percent or less of the minority population benefits while 10 percent or more of the non-minority population benefits), the changes create a disparate impact or disproportionate burden.

Using the data collected in the above table the following percentages were calculated for populations benefiting from service additions compared with the total population in the service area of all routes:

- Minority population benefiting: 63 percent
- Non-Minority population benefiting: 61 percent
- Low-Income population benefiting: 65 percent
- Non-Low-Income population benefiting: 61 percent

### Service Additions Disparate Impact Test

To evaluate for a potential disparate impact, the percentage of the minority population benefiting is compared to the percentage of the non-minority population benefiting using a ratio (Table 31). **Because the result of 103% percent is greater than the 80 percent or less threshold, no disparate impact/disparate impact was identified.**

Table 31: Service Additions Disparate Impact Test

Minority Population Benefiting	Non-Minority Population Benefiting	Ratio Comparison	Threshold for Disparate Impact	Result
63%	61%	$63\% \div 61\% = 103\%$	80% or less	No disparate impact

### Service Additions Disproportionate Burden Test

To evaluate for a potentially disproportionate burden, the percentage of the low-income population benefiting is compared to the percentage of the non-low-income population benefiting using a ratio (Table 32). **Because the result of 106 percent is greater than the 80 percent or less threshold, no disproportionate burden was identified.**

Table 32: Service Additions Disproportionate Burden Test

Low-Income Population Benefiting	Non- Low-Income Population Benefiting	Ratio Comparison	Threshold for Disproportionate Burden	Result
65%	61%	$65\% \div 61\% = 106\%$	80% or less	No disproportionate burden

### Systemwide Analysis Conclusion

The systemwide analysis evaluates service reductions and service additions separately. For service additions, the analysis shows that the distribution of benefits to protected populations exceeds 80percent. For service reductions, the adverse impacts to protected populations do not exceed 20 percent. **Therefore, the systemwide analysis did not identify any disparate impacts or disproportionate burdens on protected populations from September 2021 through September 2024.**



# Fare Equity Analysis

The Title VI analysis provides an assessment of potential impacts to minority and low-income communities associated with the proposed fare changes resulting from the Lynnwood Link Extension.

## Description of Fare Changes

Sound Transit proposes to terminate Routes 512 and 513 at the Lynnwood Link station when it opens. This will require those customers who previously made their trips solely by Sound Transit Express service on these routes, and were traveling south of Lynnwood to transfer to Link or new peak hour Route 515 at Lynnwood to complete their trip.

On December 1, 2023, the Sound Transit Board adopted a new fare structure for Link services to take effect with the opening of the Lynnwood Link extension (Resolution R2023-37). In comparison to the current fare structure, new fares will change in the following ways:

- **Link Fare Policy:** Transitioning from a distance-based system to a flat fare system results in a higher cost for passengers purchasing Adult, one-way fare. There are no changes for other fare types including LIFT (eligible low-income riders), RRFP (eligible seniors and/or passengers with disabilities, and Youth).
  - Adult ORCA/cash fare was previously \$2.25 to \$3.50 for Link riders and will now be \$3.00, regardless of distance traveled.
  - ORCA LIFT and RRFP fare will continue to be \$1.00, regardless of distance travelled.
  - Youth fare will continue to be free.
- **Express Bus Fare Policy:** No change from current fares.
  - Adult ORCA/cash fare will continue to be \$3.25.
  - ORCA LIFT and RRFP fare will continue to be \$1.00.
  - Youth fare will continue to be free.
- **Transfers:** No change from current transfer policy.
  - ORCA transfers include the original fare credited towards the next leg of the traveller's journey, within a two-hour transfer window.
  - Those paying with cash must pay the full fare for the next leg of their journey.

This fare equity analysis specifically examines the routes impacted by the Lynnwood Link Light Rail Extension; the full analysis for the new fare structure can be found in the report "2023 Title VI Fare Equity Analysis of Link Fare Options."

Currently, passengers utilizing Routes 512 and 513 wishing to travel to downtown Seattle must transfer to Link service at Northgate. Following the service changes, their transfer will occur at Lynnwood City Center Station. Because Sound Transit's transfer policy is that the customer pay the difference between the two fare types and Express Bus has a higher fare than light rail, given the new \$3.00 flat fee, those transferring between Routes 512 or 513 and the 1 Line or Route 515 will never have to pay an additional fee. The portion of passengers who previously used Routes 512 or 513 to travel between Lynnwood and Northgate will now pay \$0.25 less than before, as they can make the trip using rail (\$3.00 fare), rather than Express Bus (\$3.25 fare).

## Policies and Definitions

### Fare Equity Analysis Policy

Sound Transit Board of Directors Resolution R2022-19 establishes policies for conducting equity analyses of fare changes impacting minority and low-income populations.

The policy directs Sound Transit to conduct a fare equity analysis prior to making any fare change or service change that affects fares to analyze potential adverse effects on minority and low-income populations and establishes the following thresholds for determining whether the proposed fare change would have a disparate impact on minority populations and/or a disproportionate burden on low-income populations:

- **Fare increases.** When considering a fare increase, if the agency’s analysis indicates that the average percentage fare increase experienced by minority or low-income riders is 20 percent or greater than the average percentage fare increase experienced by non-minority or non-low-income riders, the change creates a disparate impact or disproportionate burden.
- **Fare decreases.** When considering a fare decrease, if the agency’s analysis indicates the average percentage fare decrease experienced by non-minority or non-low-income riders is 20 percent or greater than the average percentage fare decrease experienced by minority or low-income riders, the change creates a disparate impact or disproportionate burden.

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

## Fare Policy and Rates

### Dataset Description

The data used in this analysis is from an origin-destination (O-D) survey conducted onboard Sound Transit Express bus routes which are planned for elimination or to terminate at the Lynnwood station when it opens – Routes 512 and 513. -The survey was conducted in the first quarter of 2019. The survey was conducted during weekdays for all time periods using paper surveys offered to every rider for sampled trips. Survey workers remained on board during the entire trip or portion of the trip surveyed. Customers could return surveys to the survey workers or by postage paid return mail.

Overall, the survey included responses from about 9,500 Sound Transit Express riders (representing 19 percent of average weekday boardings, with a 43 percent response rate), including completed responses from 5,371 Sound Transit Express riders surveyed on those routes analyzed here. Responses were weighted to represent average weekday boardings at the route level.

### Fare Media Analysis

Table 35 below shows the number of minority, non-minority, low-income and non-low-income rider boardings for the routes analyzed here in each customer category paying cash or using ORCA from the O-D survey effort described above. As also noted above, the counts are representative of data weighted to average weekday ridership for the routes of focus here.

Table 33: Survey Results, Routes 511, 512, and 513 Ticket and Passenger Types

Plan Year	Minority	Non-Minority	Low-Income	Non-Low-Income
Adult ORCA	778	1587	359	2006
Adult Cash/Ticket	0	15	0	15
ORCA LIFT	69	49	102	17
RRFP ORCA	54	120	70	104
RRFP Cash	0	0	0	0
Youth ORCA	13	0	9	4
Youth Cash	0	0	0	0
Total	914	1771	540	2146

The 2019 survey showed very low levels of cash payment on these routes, with only 15 adults and no RRF (Senior and Disabled) or Youth riders paying cash. All the adult cash riders were non-minority and non-low-income.

### Disparate Impact/Disproportionate Burden

The table below (Table 36) shows the fare changes that will be experienced by riders on Routes 512 and 513 transferring Link or to Route 515 due to the termination of their routes at the Lynnwood Link station. Sound Transit does not provide cash transfers, while ORCA pass holders can use their pass for additional rides and E-purse riders have a two-hour transfer window for a transfer equal to the value of the fare paid for the first leg of their trip. Therefore, only cash riders in each customer category will be impacted by these service changes; ORCA riders will see no impact. Overall, cash ridership on these express routes is very low, with no Low-Income or Minority Adult or Senior/Disabled riders paying cash. Though low-income and minority Youth riders were identified as paying cash in the 2019 survey, As of September 1, 2022, Youth riders may ride free on all Sound Transit services and will therefore see no fare increase.

Table 34: Average Percentage Fare Increases for Express Rider Categories Transferring at Lynnwood Link Station to Link or Route 515

	Current Express Fare	Fare On:		Absolute Fare Change for Transfers		Percent Fare Change for Transfers	
		Link	Route 515	Link	Route 515	Link	Route 515
Adult ORCA	\$3.25	\$3.00	\$3.25	--	--	0%	0%
Adult Cash/Ticket	\$3.25	\$3.00	\$3.25	\$3.00	\$3.25	92%	100%
ORCA LIFT	\$1.00	\$1.00	\$1.00	--	--	0%	0%
RRFP ORCA	\$1.00	\$1.00	\$1.00	--	--	0%	0%
RRFP Cash	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	100%	100%

Combining the information in Table 32 and Table 33 provides the following table showing the average percentage fare change that would be experienced by riders by Title VI category (Table 34).

Table 35: Average Percentage Fare Change Experienced as a Result of Service and Fare Changes

Rider Group	Transfer to Link	Transfer to Route 515
Minority	0%	0%
Non-Minority	1%	1%
Low-Income	0%	0%
Non-Low-Income	1%	1%

This analysis indicates that fare changes resulting from this service change will result in a one percent average fare increase for non-low-income and non-minority riders, while the average fare increase for minority and low-income riders will be zero. Therefore, the fare change will not have a disparate impact on minority riders, nor will it have a disproportionate burden on low-income riders.

### Fare Impact Mitigation

The onboard surveys identified very few adult cash riders and no RRFN riders on the Sound Transit Express routes proposed for termination/elimination with opening of the Lynnwood Link extension. The Title VI analysis identified no disparate impact/disproportionate burden. However, there will be impacts on the small number of current cash fare riders with a one-seat bus ride that will be replaced by a two-seat (and two-fare) ride involving a transfer between Sound Transit Express service and Link. To mitigate these impacts, Sound Transit will undertake efforts to make it easy for cash riders to convert to the use of ORCA cards for fare payment. ORCA card fare payment will enable riders to receive full transfer value between modes and experience no fare increase.

Sound Transit street teams will provide ORCA cards to cash riders transferring between bus and Link services during the first week after the opening of Lynnwood Link. To assist cash riders to convert to ORCA, Sound Transit will provide cash riders with ORCA cards pre-loaded with fare value. Sound Transit will also continue the ongoing marketing campaign to promote the ORCA LIFT program for low-income riders. Sound Transit will continue loading E-purse incentives on ORCA LIFT cards for those who qualify for this program. Finally, Sound Transit will work with Metro and Public Health staff who will also be on site at the new station to actively enroll riders in the ORCA LIFT program and in the RRFN for senior and disabled riders. Riders new to ORCA will also be provided information on how to use the card, and how and where to revalue, including online, retailers and TVMs at Link stations.

These efforts will be accompanied by an extensive public outreach and information campaign to inform riders of the need to use an ORCA card to ensure they can continue riding for a single fare and avoid having to pay a higher fare through payment of two separate cash fares for any transfer trips following the service change.

## ***Public Involvement and Outreach***

Sound Transit's Engagement and Outreach division aims to provide high quality communications that build trust and connect Sound Transit with its customers, stakeholders, and the public. Sound Transit works to preserve and enhance its reputation, retain current riders, and attract new ones.

### **SAFE Engagement Summary: 2024 Service Plan – Lynnwood Link Extension**

Sound Transit participated in various outreach, communications, and engagement tactics to inform riders about the proposed changes in the North Subarea, including Lynnwood Link Extension. These engagement activities included in-person and virtual engagement from May 2023 to January 2024. Sound Transit sought feedback from the public on Lynnwood Link Extension, together with feedback on proposed changes to Sounder North and Sound Transit Express Routes 511, 512, 513, and 515.

### **2024 Service Plan Website and Online Open House Project Pages**

Sound Transit's System Engagement team worked with Web Design to create and host an easy-to-use online landing page where the public could share feedback on the 2024 Service Plan<sup>11</sup> from July 10 to August 6, 2023 via survey.

---

<sup>11</sup> The landing page was available at <https://www.soundtransit.org/system-expansion/planning-future-service/serviceplan>.

The Online Open House (OOH) included information introducing the 2024 Service Plan and was divided into geography-specific pages for the North (North King and Snohomish County), East (East King County), and South (South King and Pierce County) project subareas. Each OOH included detailed information about the proposed service changes in the subarea and allowed visitors to share their feedback through survey.

The OOH websites were designed and tested for screen-reader accessibility and functionality. All website and survey content was available in Spanish and Mandarin Chinese (both Simplified and Traditional).

Additionally, the main landing page for the 2024 Service Plan was crosslinked with the website for the separate Lynnwood Link Connections bus project currently underway with King County Metro.

An updated website to inform the public details of the revisions to originally proposed changes to Routes 511, 512, 513, and 515 was available from January 16 to 31, 2024.

### **2024 Service Plan Survey**

The North project area OOH included a short survey for riders to share feedback on the proposed changes. The survey questions were designed to channel feedback by specific bus or train routes—each survey respondent could provide feedback about any proposed change in service.

A paper version of the North online survey was also available at in-person Ambassador outreach events. The paper survey contained project information and a QR code link to the 2024 Service Plan website landing page for more details. The same questions and open comment boxes from the online survey were available on the paper version.

274 survey responses were received.

### **Ambassador Outreach**

In July, System Engagement dispatched Sound Transit staff Ambassadors to seven locations across the North and East project areas. Ambassadors set up in pairs on the North side at Everett Station, S. Everett Park and Ride, Ash Way Park and Ride, Lynnwood Transit Center, and Northgate Station. Engagement staff tasked Ambassadors with informing riders at high-traffic transit centers and stations about the 2024 Service Plan and the opportunity for the public to share feedback about the features of the Plan. Ambassadors met with over 1,100 riders in person this July to encourage them to visit the Service Plan website and share their feedback.

### **Virtual Information Sessions**

The System Engagement team held two Virtual Information Sessions for the public to share feedback and ask questions directly to the Service Plan project team. System Engagement held the meetings on Zoom, with no advance registration required to ensure greater ease of access to the public. Staff published the invitation and Zoom links to the information sessions on the 2024 Service Plan website, the Sound Transit Events Calendar, two SMS/email Passenger Notices, and a Sound Transit Press Release. Additionally, System Engagement placed paid, geo-targeted ads on Facebook in English, Spanish, and Simplified Chinese.

The first information session occurred on Wednesday, July 26 from 6 p.m. to 7 p.m. Fourteen attendees joined the Zoom meeting. The main themes in attendee questions and comments were:

- Link project timelines

- Partner agency service connections to Lynnwood
- Peak time service on Sound Transit Express

The second information session occurred on Thursday, July 27, from 6 p.m. to 7 p.m. Sixteen community members attended the second information session. The general themes of their questions included the above topics in addition to:

- Sound Transit Express service and connections with Link
- Station security
- Parking availability at new Link stations

## **Social Media**

The Social Media team placed geo-targeted advertisements in the North and East project areas. The ads were placed online on Facebook from July 11 to 23, 2023 and again in January 2024. The ads were placed in English in both the North and East project areas, with in-language Spanish ads in the North and Chinese ads in the East.

The July 2023 ads performed well compared to ads from similar projects. The ads were shown over 137,000 times, with 52,034 people seeing them. Of these, 2,669 people clicked on the ads to visit the 2024 Service Plan project pages. The average cost per click of all the ads was under \$1. An English language ad is said to have performed well if it shown to have cost \$1.00 per click. Nearly all the translated ads averaged less than \$1.00 per click indicating a high level of engagement.

The January 2024 ads also performed well compared to ads from similar projects. The ads were shown over 30,100 times, with 17,746 people seeing them. Of these, 806 people clicked on the ads to visit the Service Plan Phase Two project page. The average cost per click of all the ads was \$0.31, with a cost per click of under \$1 indicating a high level of engagement.

## **Stakeholder Toolkit**

System Engagement shared a Stakeholder Toolkit with municipal and nonprofit community-based organizations along the Lynnwood Link Extension corridor. Each toolkit contained information about proposed changes, links to project websites, a schedule of upcoming public information sessions, and sample social media copy and images for sharing through organizational and member networks. Recipients included Community Transit, Latino Educational Training Institute, Alderwood Community Church, and Sno-Isle Libraries.

# Conclusion

Sound Transit Lynnwood Link Extension is an 8.5-mile extension from Northgate to Lynnwood and is slated to open in fall 2024. It will serve four new light rail stations including Shoreline South/148th, Shoreline North/185th, Mountlake Terrace, and Lynnwood City Center. Concerned about lower service levels and diminished passenger experience, Sound Transit's Board of Directors directed staff to mitigate 1 Line crowding by increasing capacity on Link, focusing on the peak hours when the highest volume of passengers are expected to utilize the 1 Line and providing alternative bus service between Snohomish County and Downtown Seattle. Sound Transit, Community Transit, and Metro worked together closely to develop a coordinated bus network restructure to address these goals.

Towards this effort, Sound Transit proposed to redistribute existing resources to maintain or improve headways on routes connecting to the 1 Line. The following service changes were proposed:

- Eliminating service on express bus Route 511, eliminating service at stops that will be served by Route 512, Route 513, and the 1 Line
- Truncating service on express bus Route 512 to eliminate stops that will now be served by the 1 Line
- Truncating service on express bus Route 513 to eliminate stops that will now be served by the 1 Line
- Establishing new, temporary peak service between Lynnwood City Center and Downtown Seattle via express bus Route 515

The individual line service equity analysis found that there are no disparate impacts on minority populations or disproportionate burdens on low-income populations as a result of these service changes, nor did a systemwide analysis examining service reductions and additions.

The fare equity analysis performed in conjunction with these service changes found that, although some cash-based riders will have to pay for a transfer as a result of previous one-seat rides becoming a two-seat ride, there is no disparate impact or disproportionate burden for protected passenger classes.

Based on these service and fare equity findings, no mitigation is needed.

# Appendix A

## Sound Transit Service Area Title VI Routes and Population (2023)

Route	Total Population	Minority Population		Non-Minority Population	Limited English Proficiency (LEP) <sup>12</sup>		Low-Income Population <sup>13</sup>		Non-Low Income
		Count	Percentage		Count	Percentage	Count	Percentage	
1 Line	1,276,600	553,672	43.4%	722,928	145,964	11.4%	270,067	21.2%	1,006,533
2 Line	393,539	184,688	46.9%	208,851	41,900	10.2%	46,634	11.8%	346,905
510	330,000	134,300	40.7%	195,700	58,600	10.7%	76,500	23.2%	253,500
511	409,600	151,900	37.1%	257,700	55,100	11.1%	76,900	18.8%	332,700
512	322,700	135,087	41.9%	341,900	41,823	13.0%	76,129	23.6%	246,571
513	270,000	117,817	43.6%	152,183	38,288	14.2%	62,528	23.2%	394,700
522	129,800	42,442	32.7%	87,358	10,162	7.8%	17,757	13.7%	112,043
532	351,700	148,800	42.3%	202,900	9,600	10.8%	73,500	20.9%	278,200
535	242,600	95,600	39.4%	147,000	27,400	11.4%	38,500	15.9%	204,100
542	88,600	39,600	44.7%	49,000	11,200	10.2%	15,900	17.9%	72,700
545	241,400	117,000	48.5%	124,400	16,600	9.8%	35,000	14.5%	206,400
550	110,000	52,000	47.3%	58,000	12,600	9.4%	19,200	17.5%	90,800
554	170,400	78,600	46.1%	91,800	35,400	18.7%	26,200	15.4%	144,200
556	134,000	57,700	43.1%	76,300	53,600	16.5%	20,600	15.4%	113,400
560	189,200	107,600	56.9%	81,600	48,900	14.3%	45,400	24.0%	143,800
566	323,800	182,200	56.3%	141,600	20,500	13.2%	75,400	23.3%	248,400
574	340,700	188,200	55.2%	152,500	30,300	11.1%	113,600	33.3%	227,100
577	155,600	82,500	53.0%	73,100	4,300	5.0%	40,900	26.3%	114,700
578	273,600	123,800	45.2%	149,800	23,400	12.4%	67,300	24.6%	206,300
580	85,400	23,000	26.9%	62,400	12,700	8.3%	15,400	18.0%	70,000
586	189,200	96,700	51.1%	92,500	15,000	9.5%	63,500	33.6%	125,700
590	153,200	70,500	46.0%	82,700	22,300	9.3%	44,400	29.0%	108,800
592	158,800	83,500	52.6%	75,300	16,300	6.2%	50,300	31.7%	108,500
594	238,500	119,800	50.2%	118,700	2,000	3.1%	77,800	32.6%	160,700
595	262,700	99,600	37.9%	163,100	40,300	10.4%	64,200	24.4%	198,500
596	65,500	14,100	21.5%	51,400	150,800	12.3%	10,200	15.6%	55,300
N Line	388,300	145,600	37.5%	242,700	4,700	12.4%	86,800	22.4%	301,500
S Line	1,221,400	593,900	48.6%	627,500	186,500	11.9%	321,000	26.3%	900,400
T Line	302,800	133,100	44.0%	169,700	112,100	11.6%	82,900	27.4%	219,900
Sound Transit District Average	3,306,990 <sup>14</sup>	1,412,085	42.7%	1,894,905	343,927	10.4%	684,547	20.7%	2,622,443

<sup>12</sup> Limited English is defined as speaking English, "Less than very well."

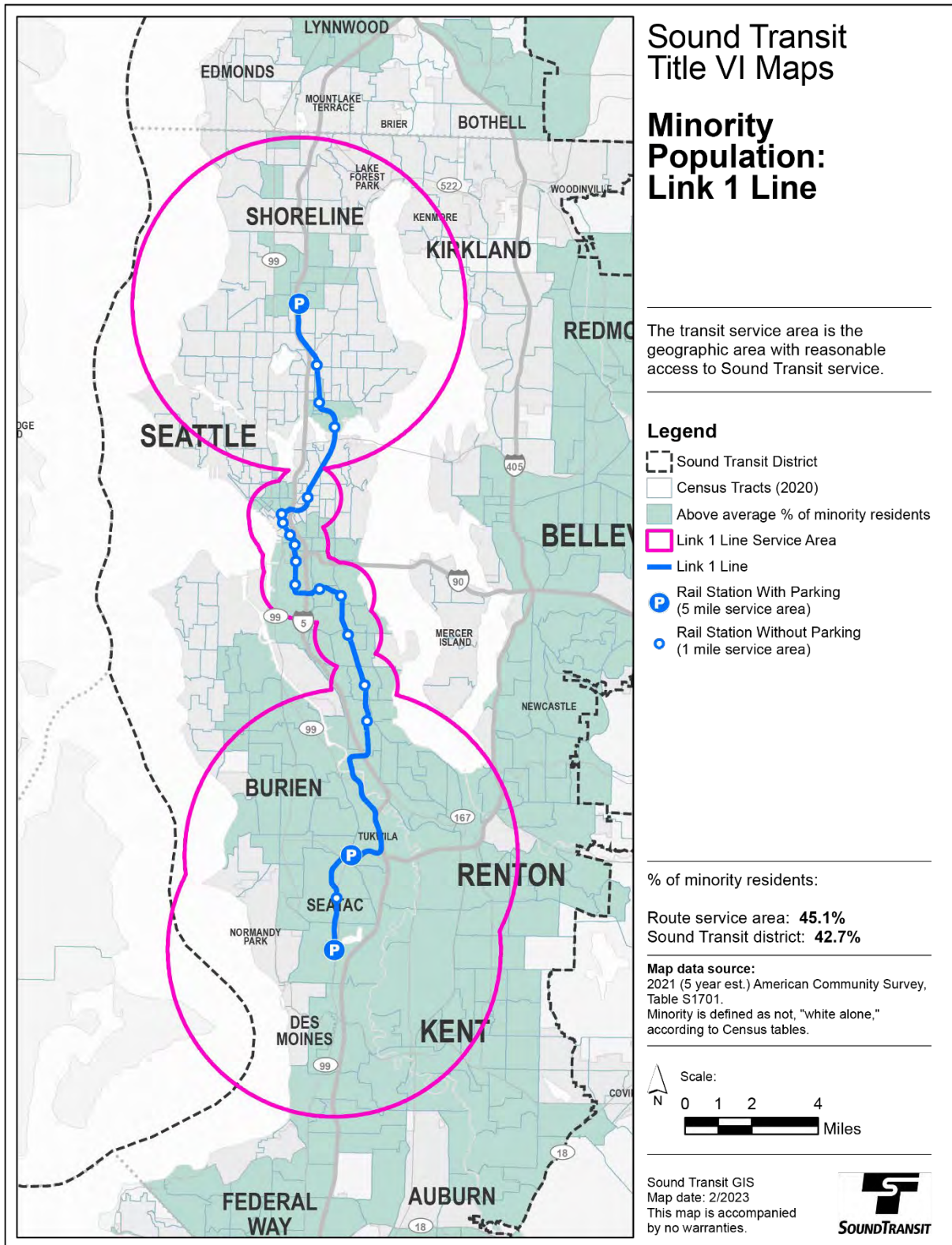
<sup>13</sup> Low-Income is defined as a 200 percent poverty level and below.

<sup>14</sup> Published District total population estimate, 2022.

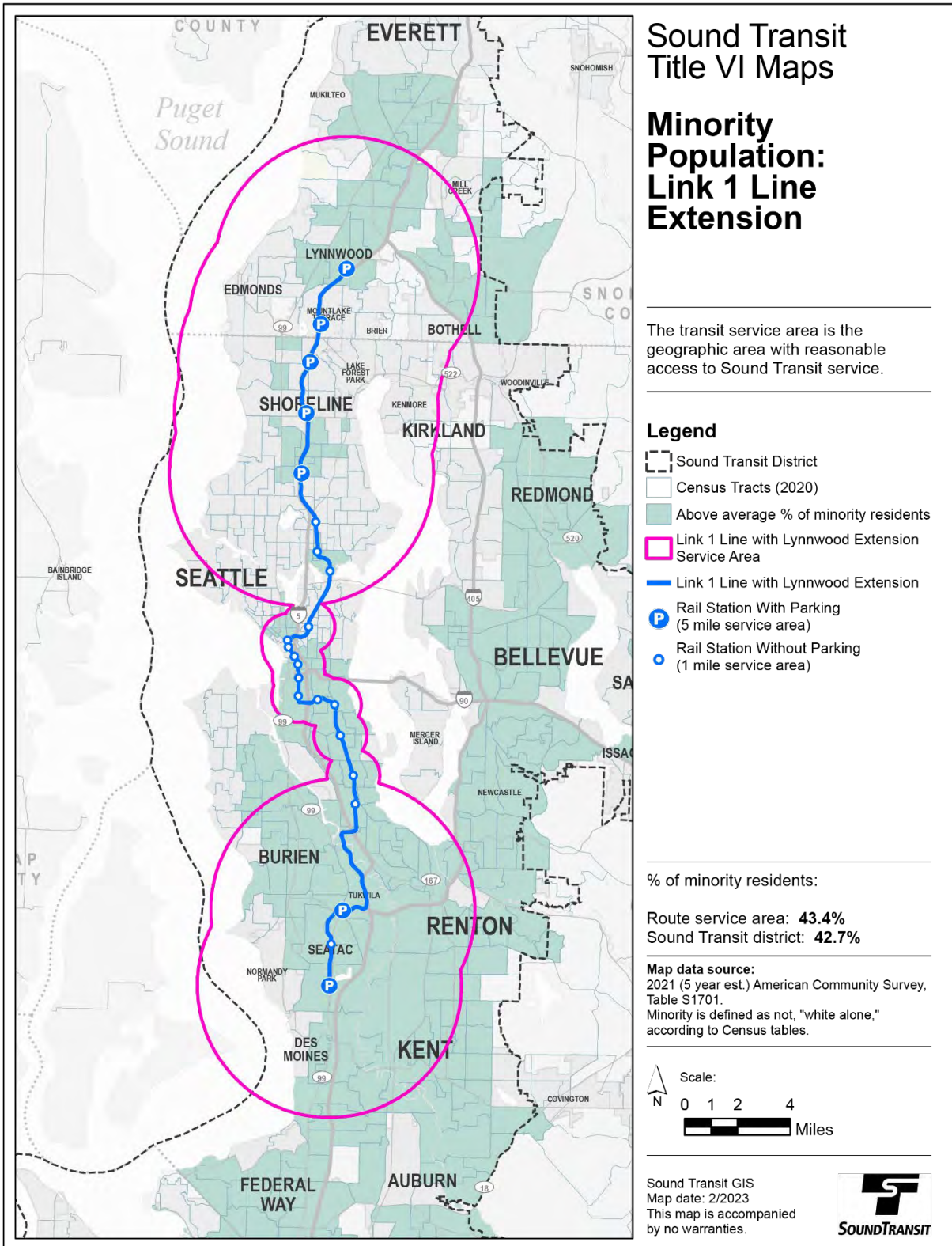


# Route-Level Title VI Population Maps

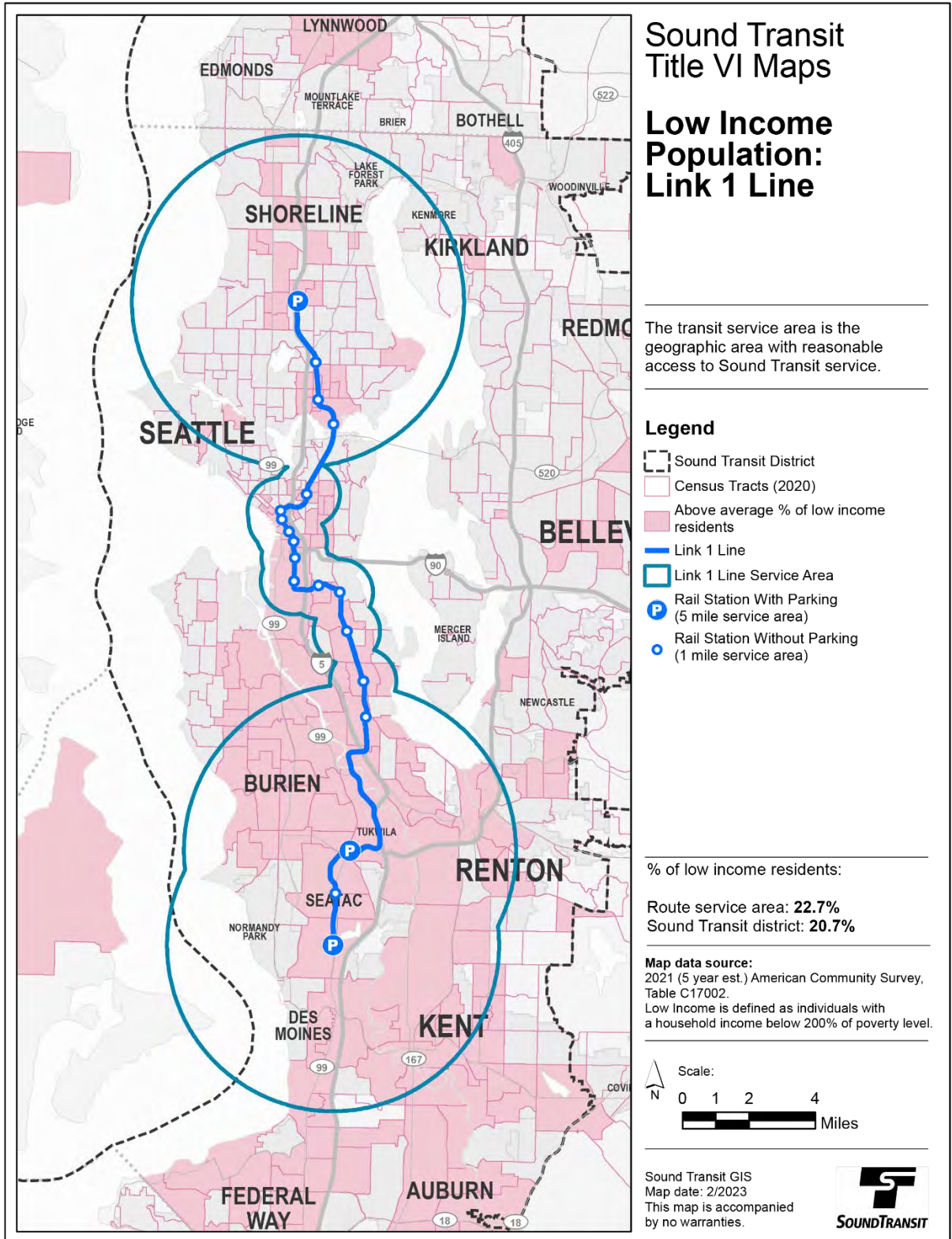
1 Line stations and Link 1 Line minority populations before Lynnwood Link Extension opens



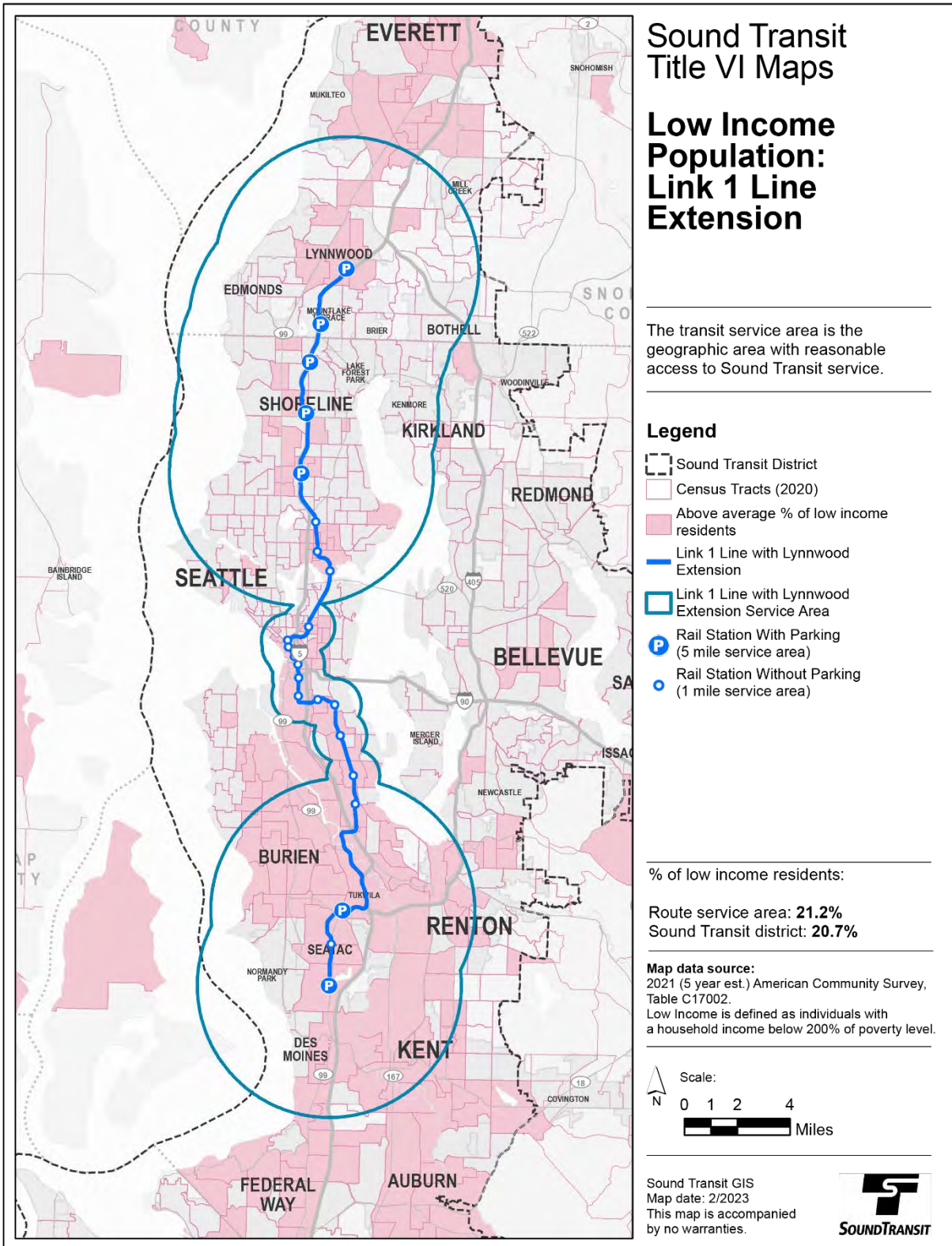
1 Line stations and Link 1 Line minority populations after Lynnwood Link Extension opens

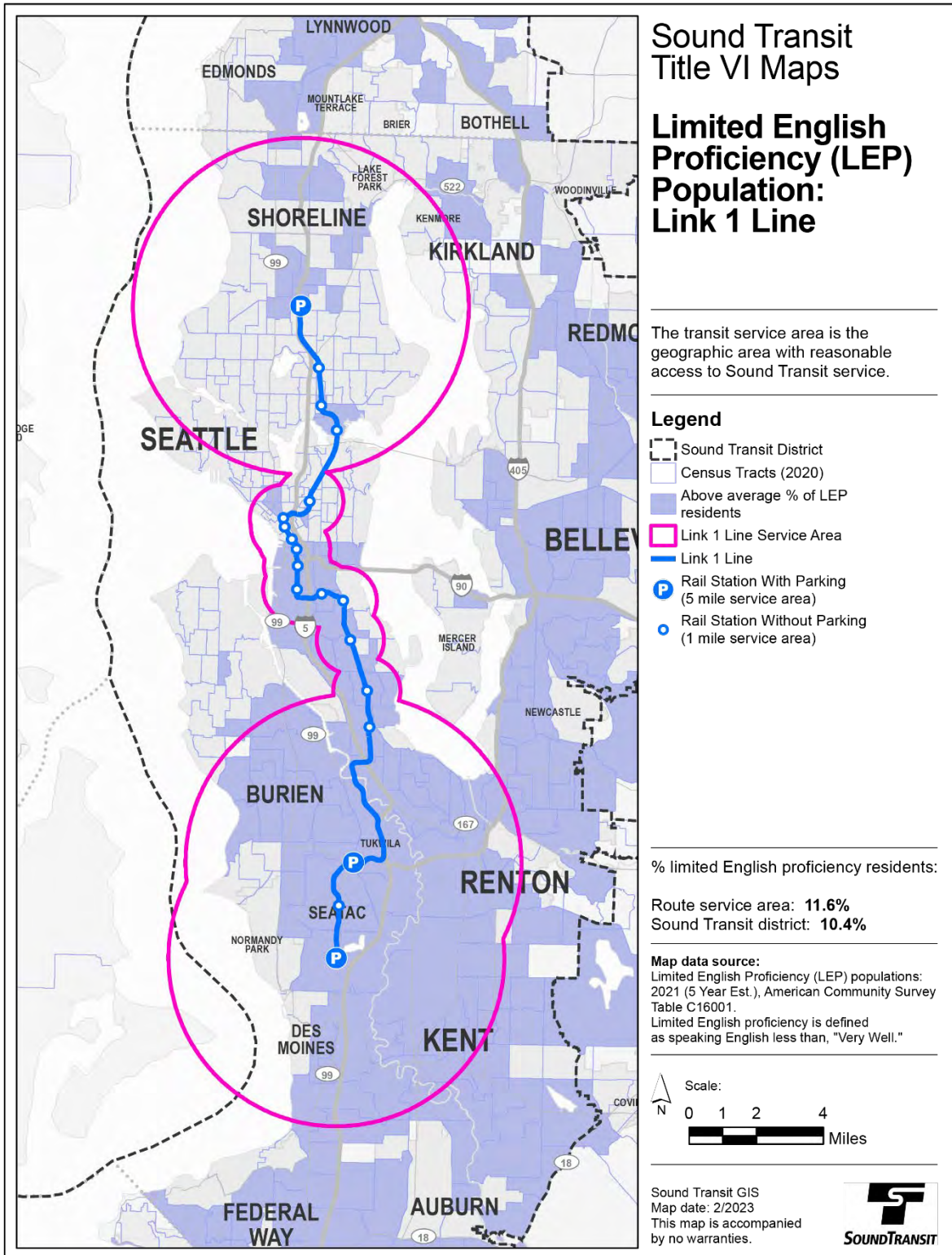


1 Line stations and Link 1 Line low-income populations before Lynnwood Link Extension opens

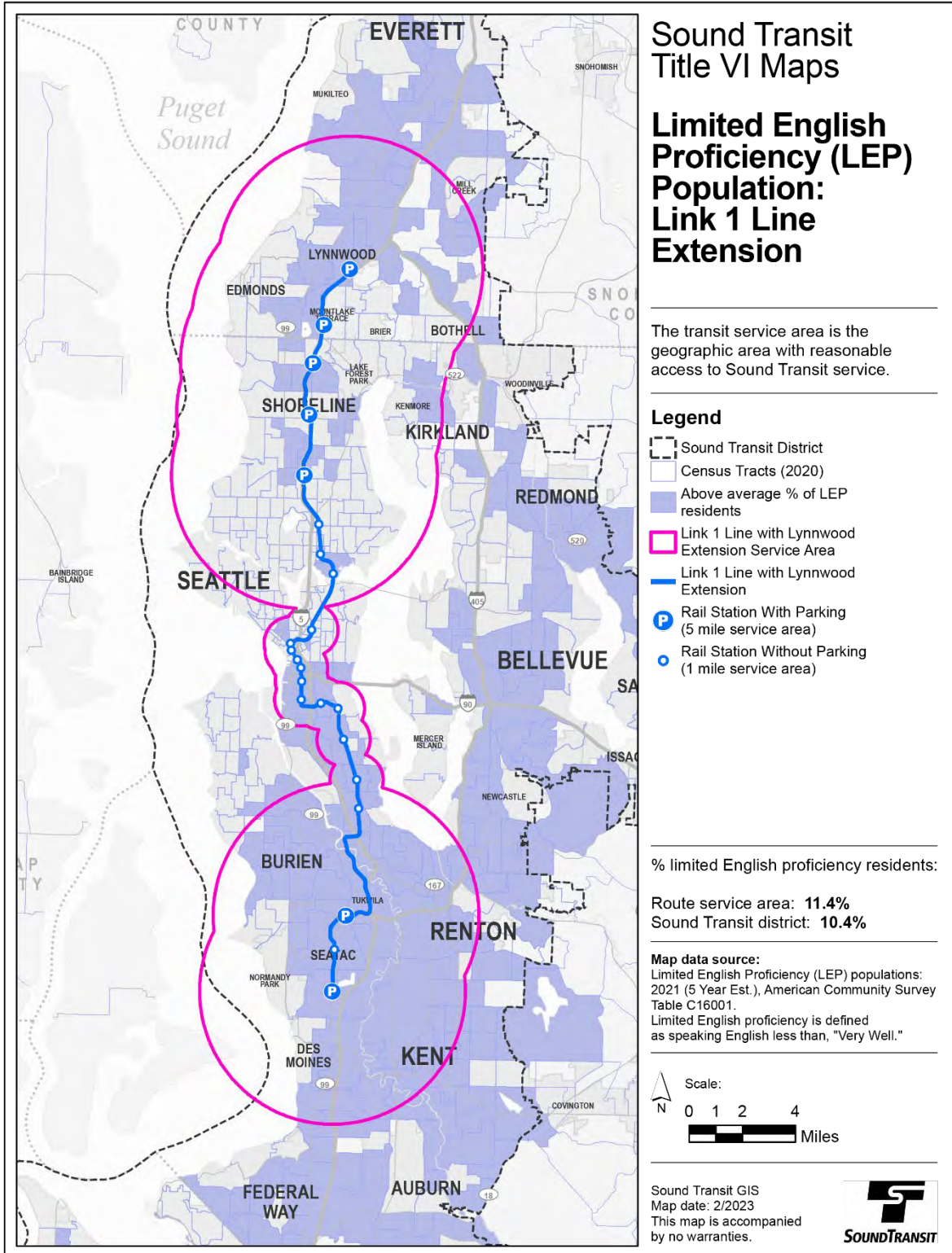


1 Line stations and Link 1 Line low-income populations after Lynnwood Link Extension opens

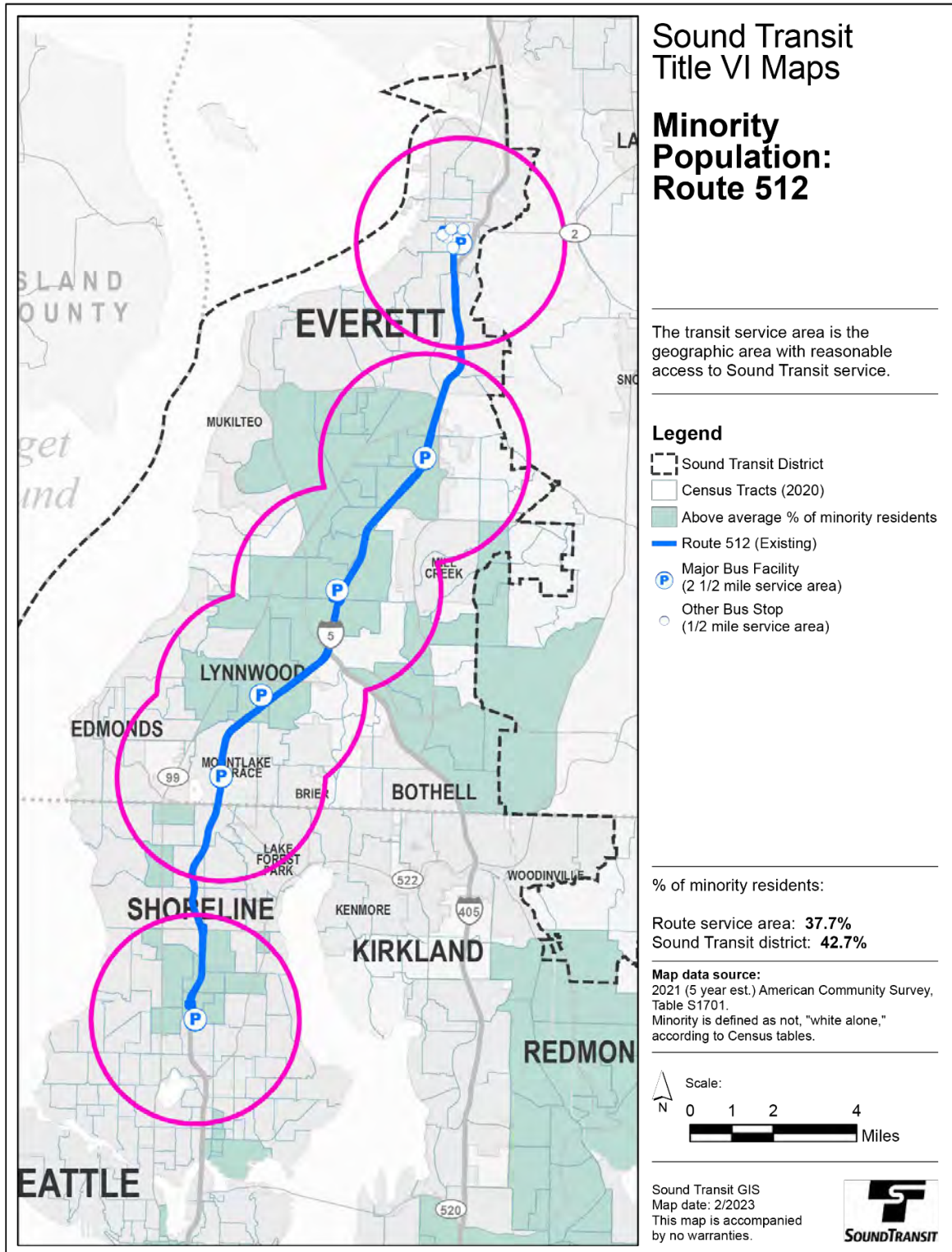




1 Line stations and Link 1 Line Limited English Proficiency (LEP) population after Lynnwood Link Extension opens

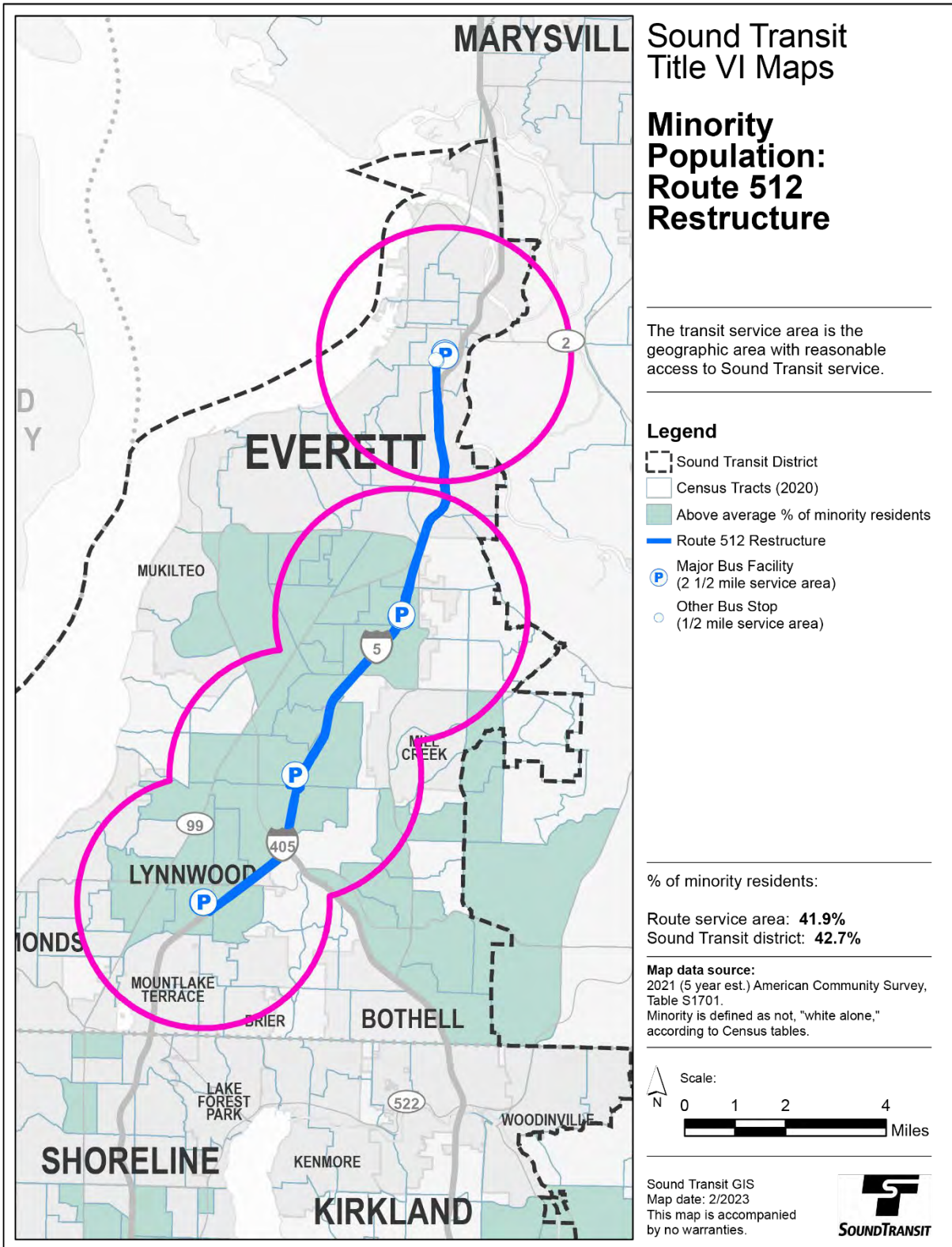


Route 512 stops and minority population before service change.



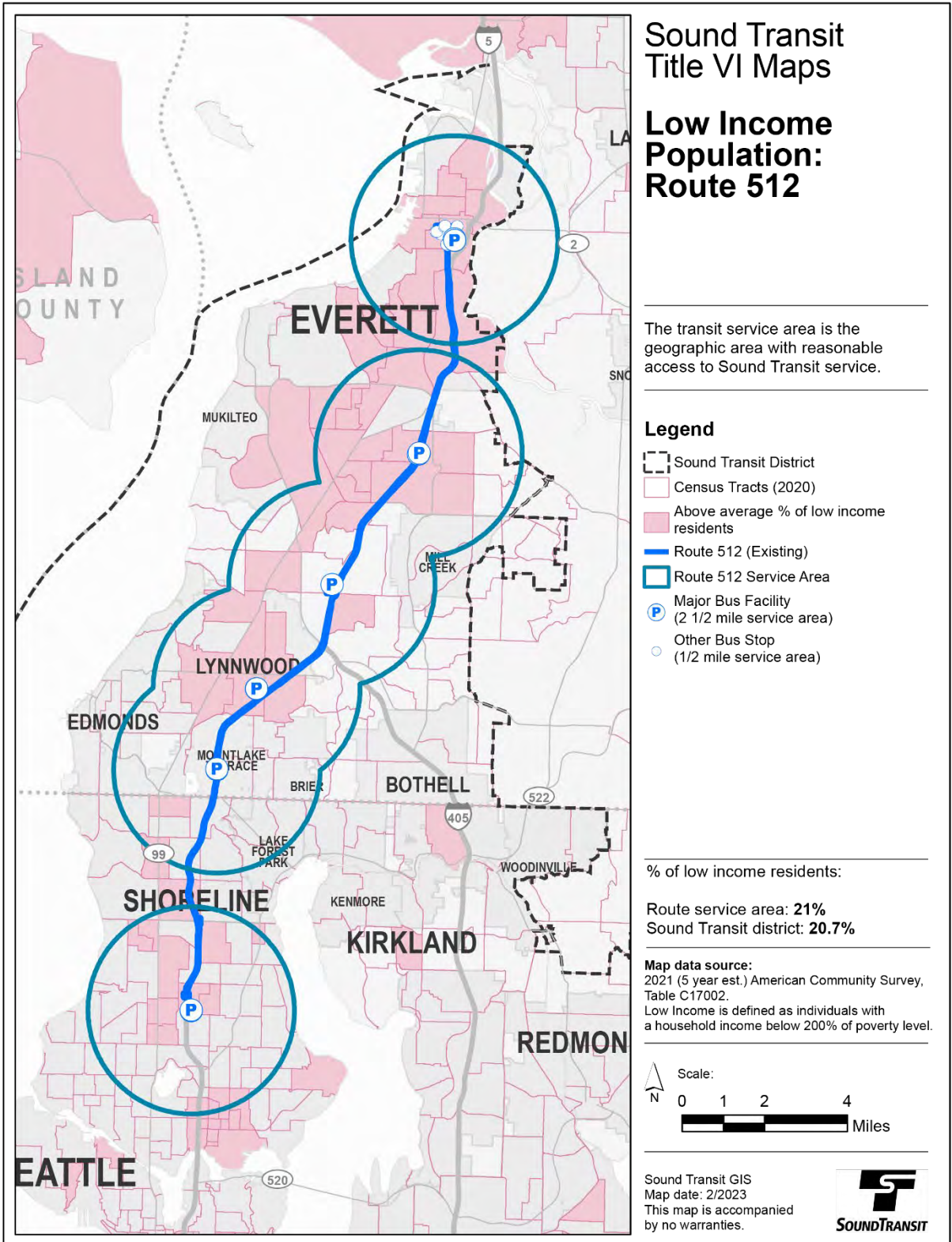
The primary variant of Route 512 is displayed on this map. There is a late Sunday variable that serves Stadium Station, Downtown Seattle and NE 45<sup>th</sup> St.

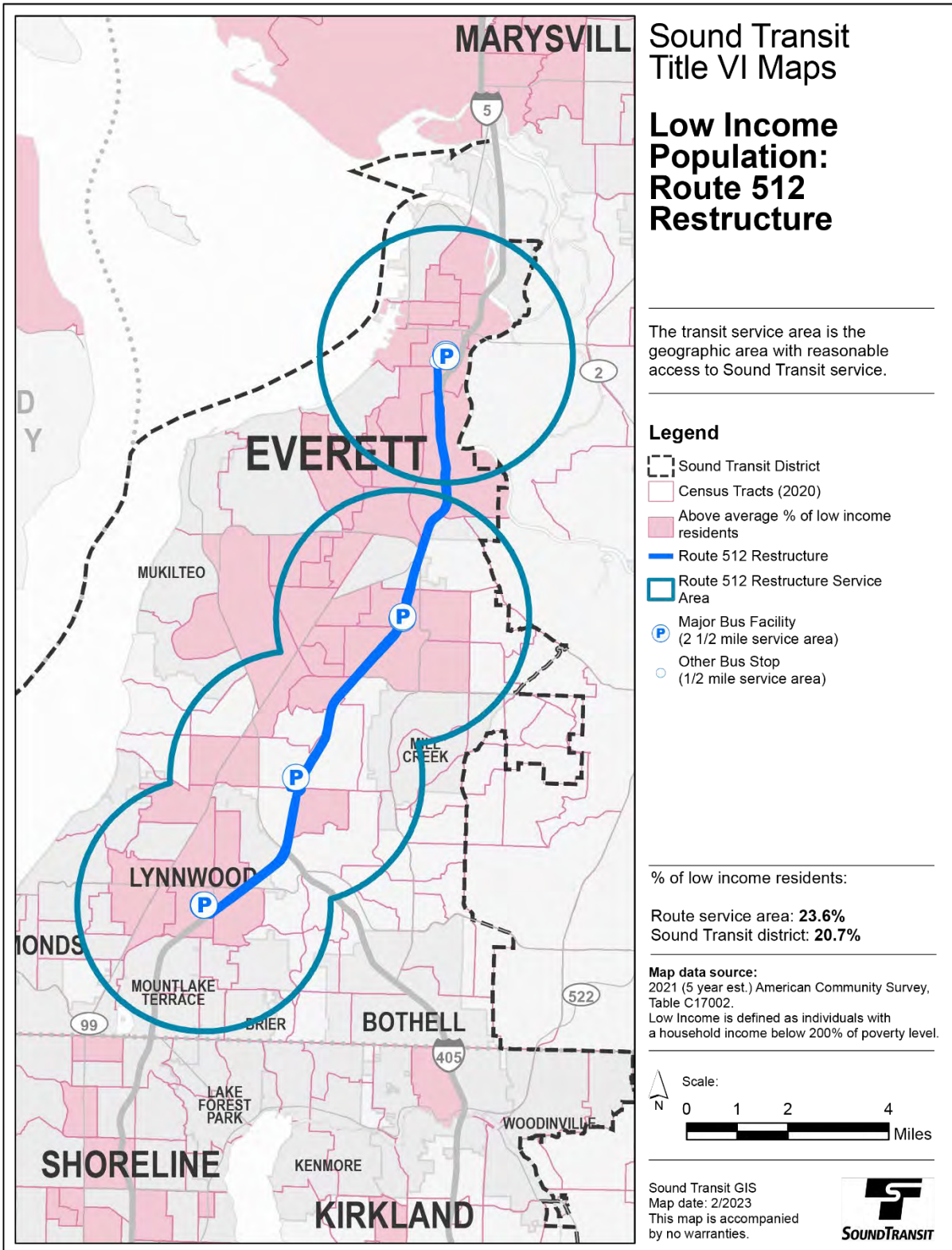
Route 512 stops and minority population after service change.



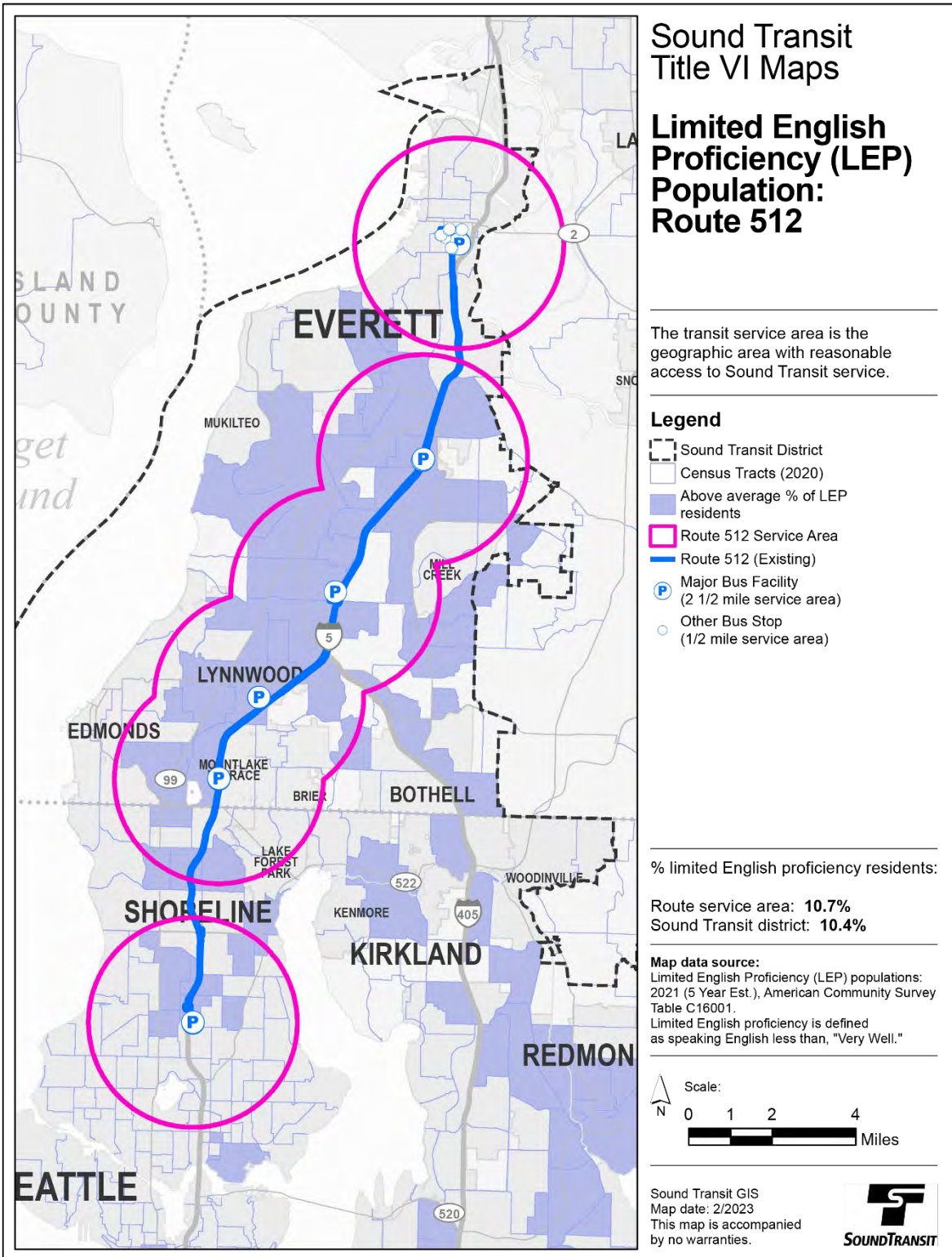


Route 512 stops and low-income population before service change.

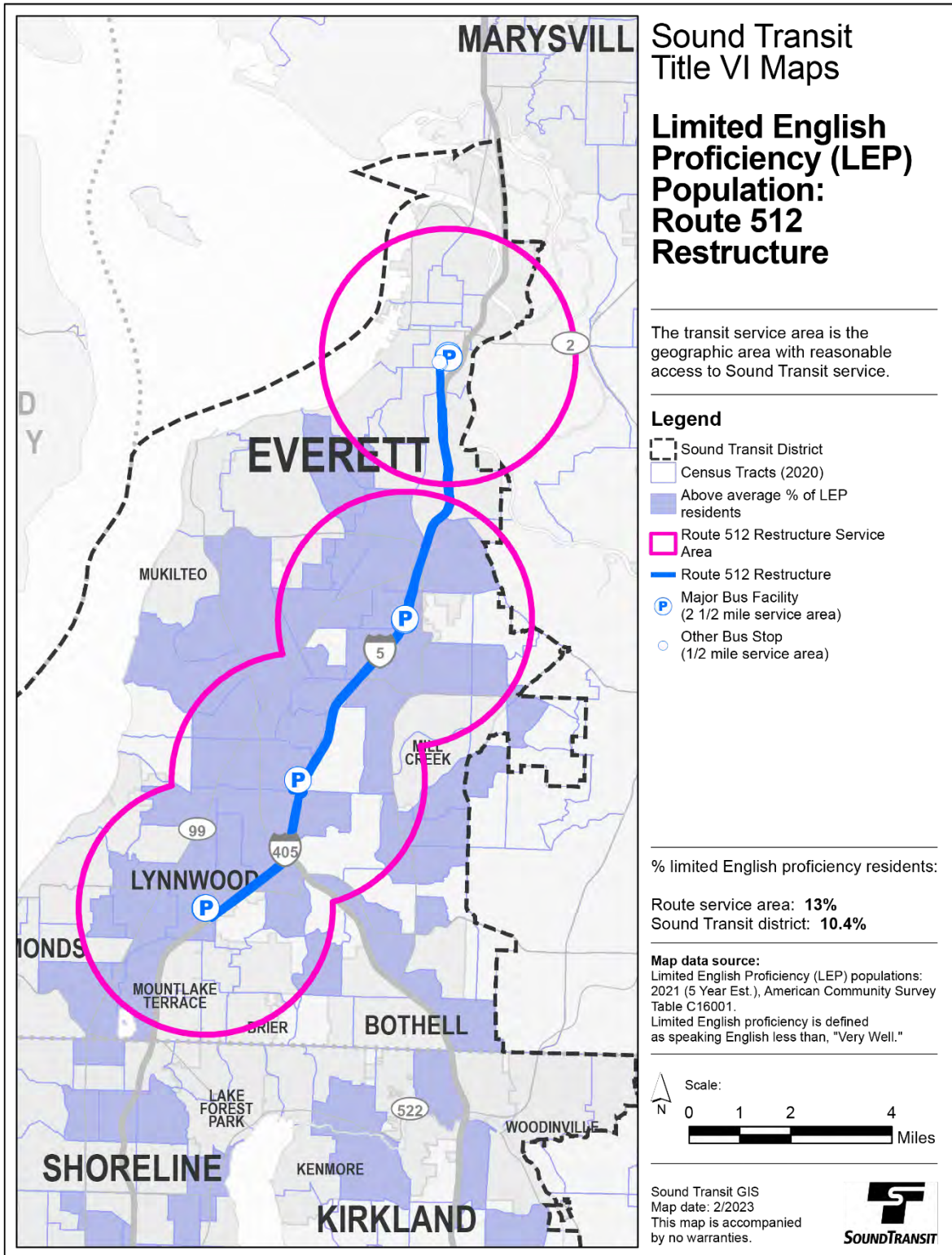




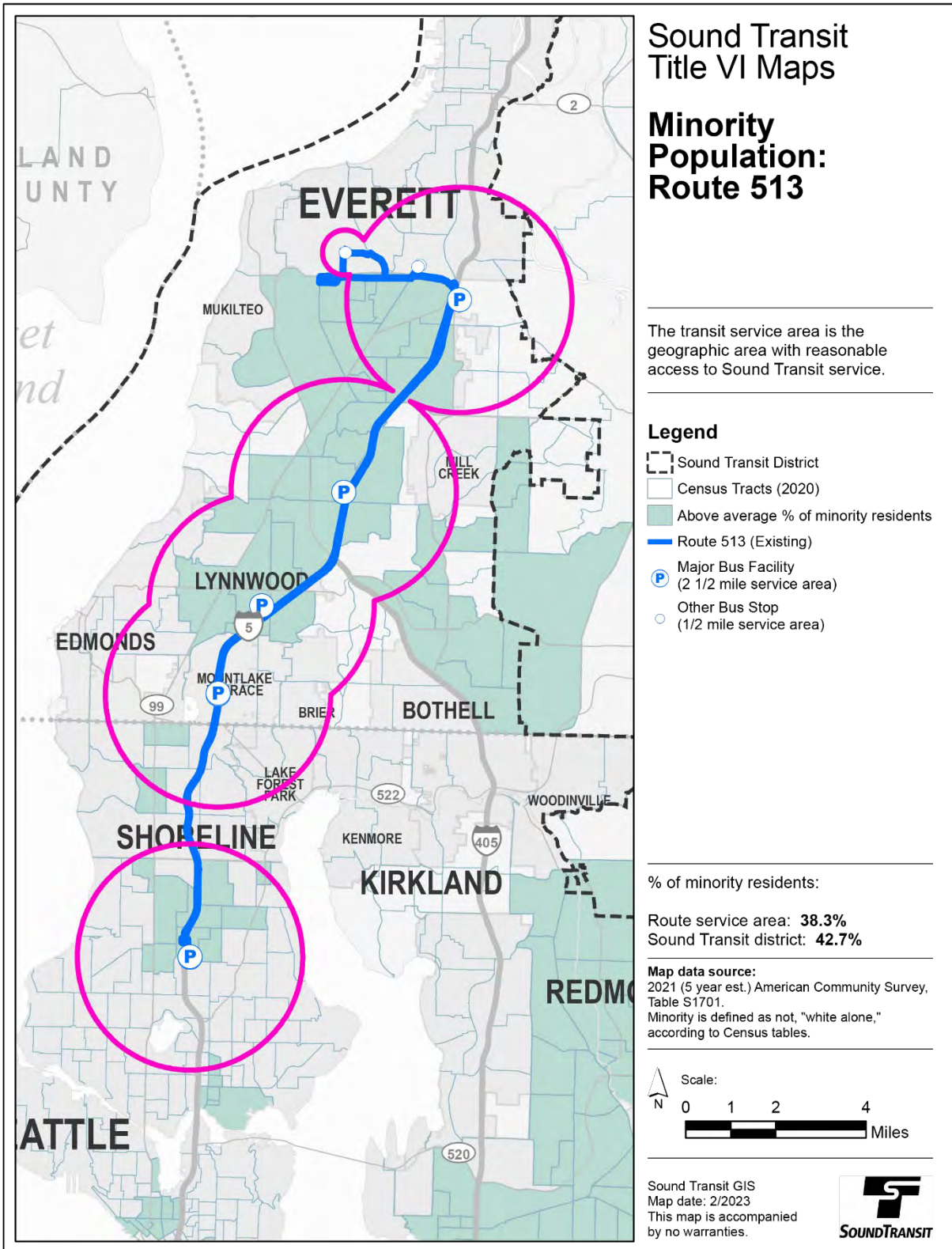
Route 512 stops and Limited English Proficiency (LEP) population before service change.



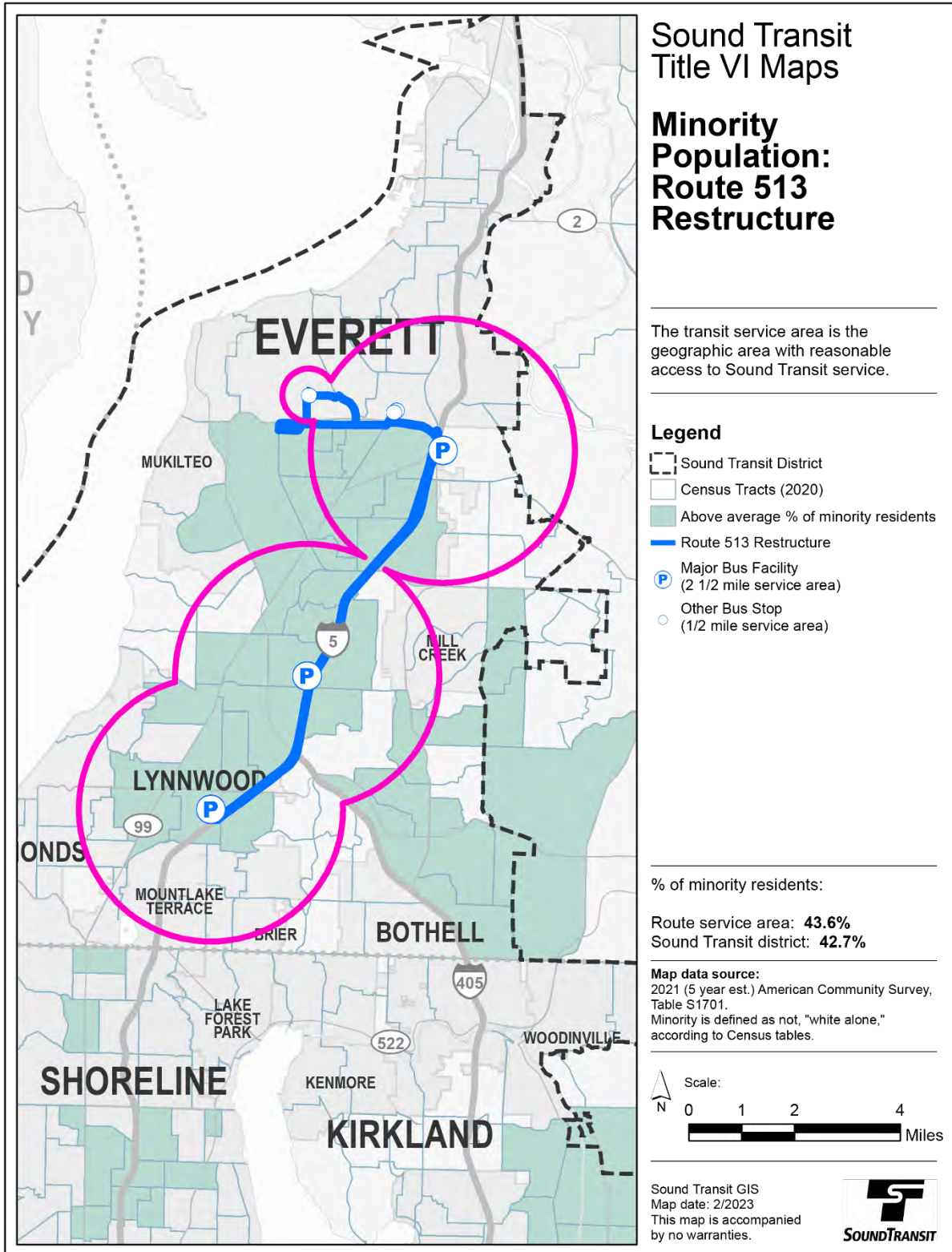
Route 512 stops and Limited English Proficiency (LEP) population after service change

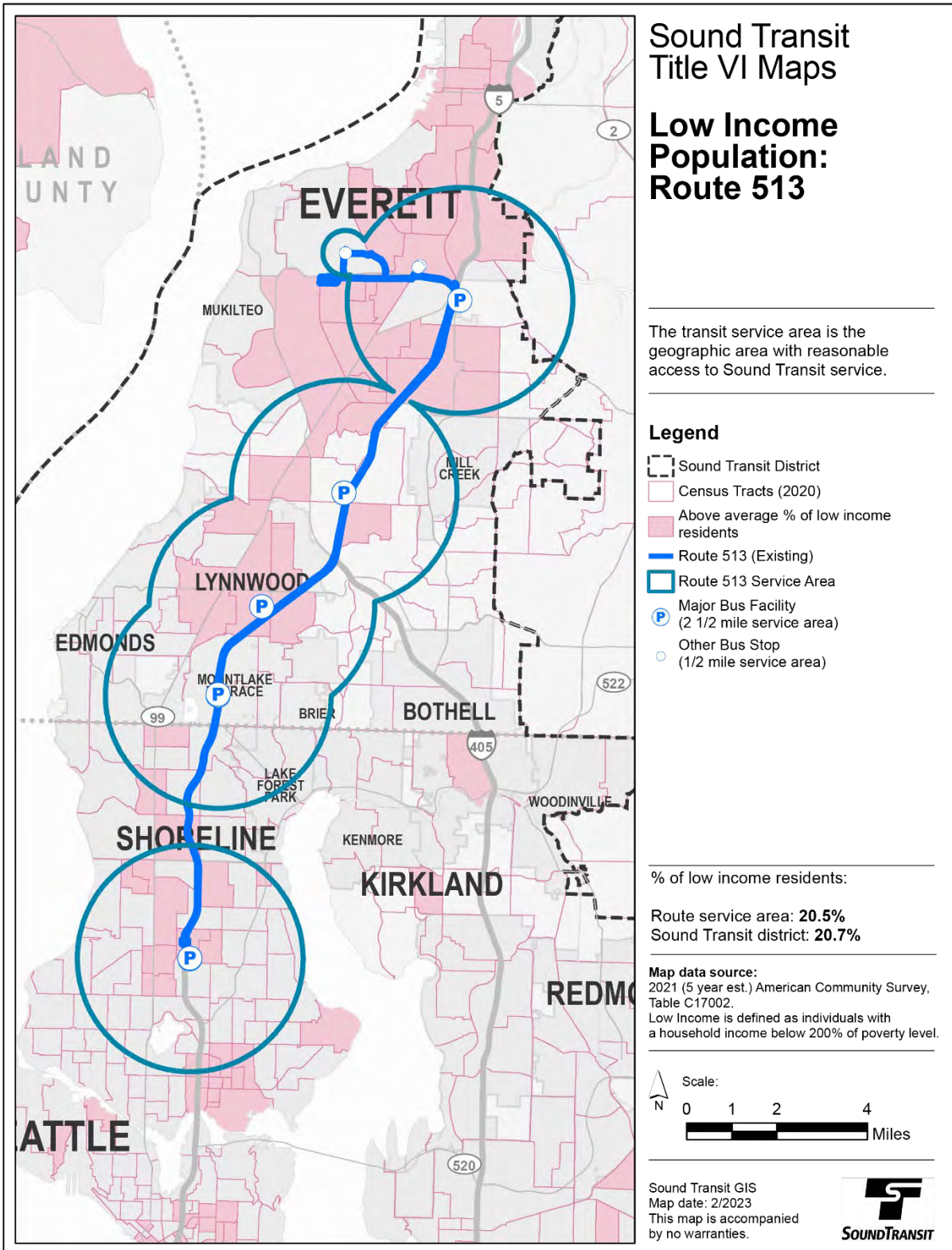


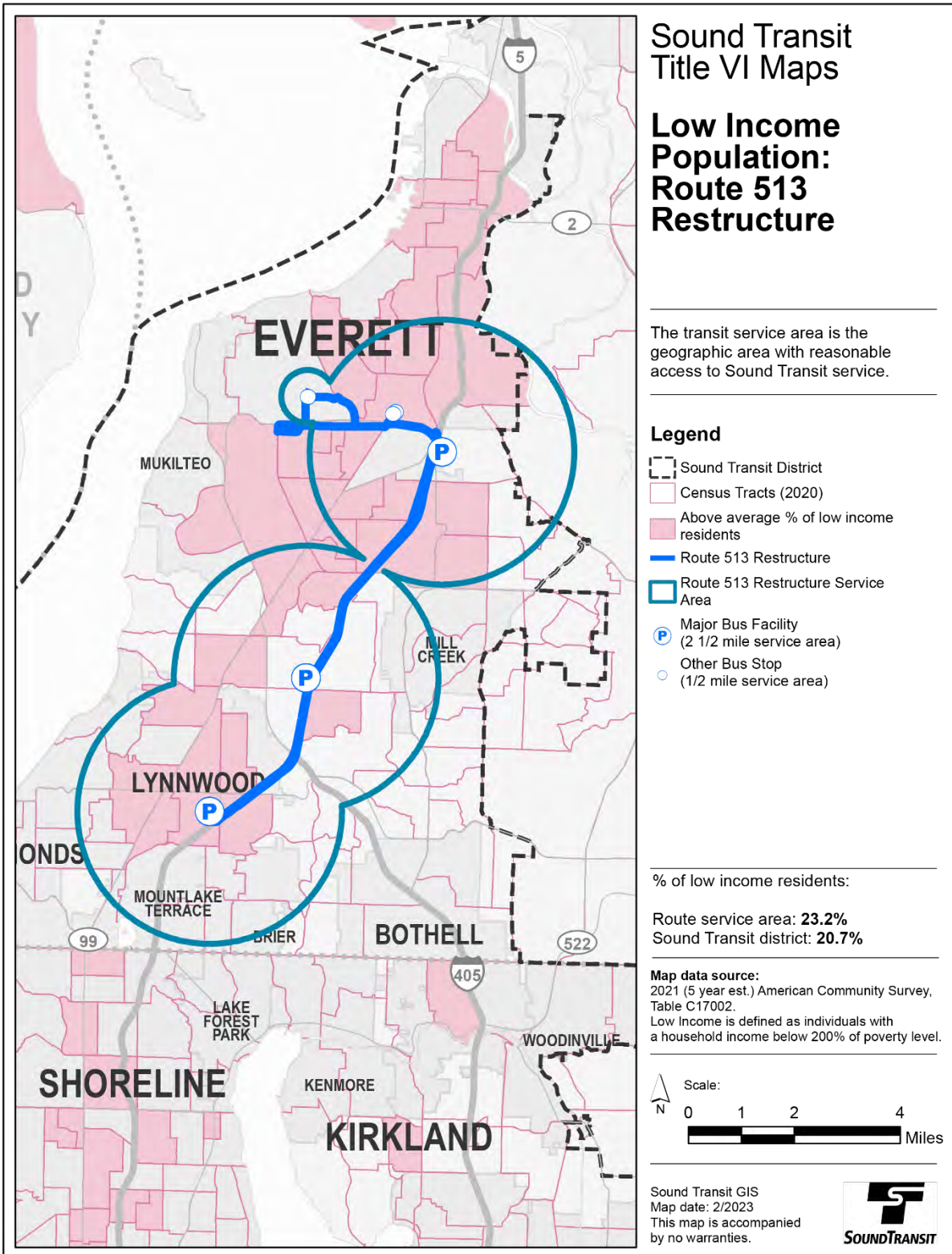
Route 513 stops and minority population before service change.



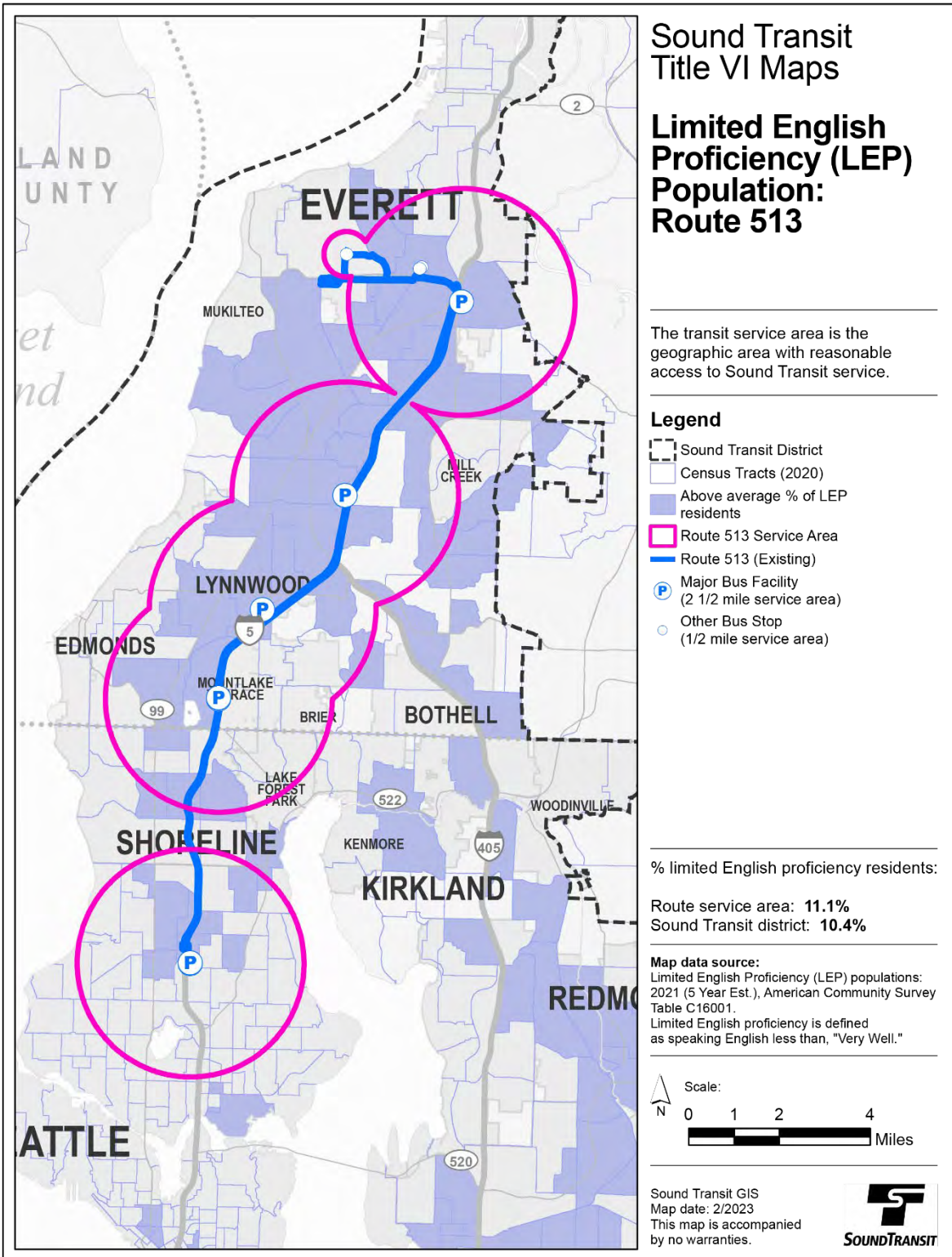
Route 513 stops and minority population after service change







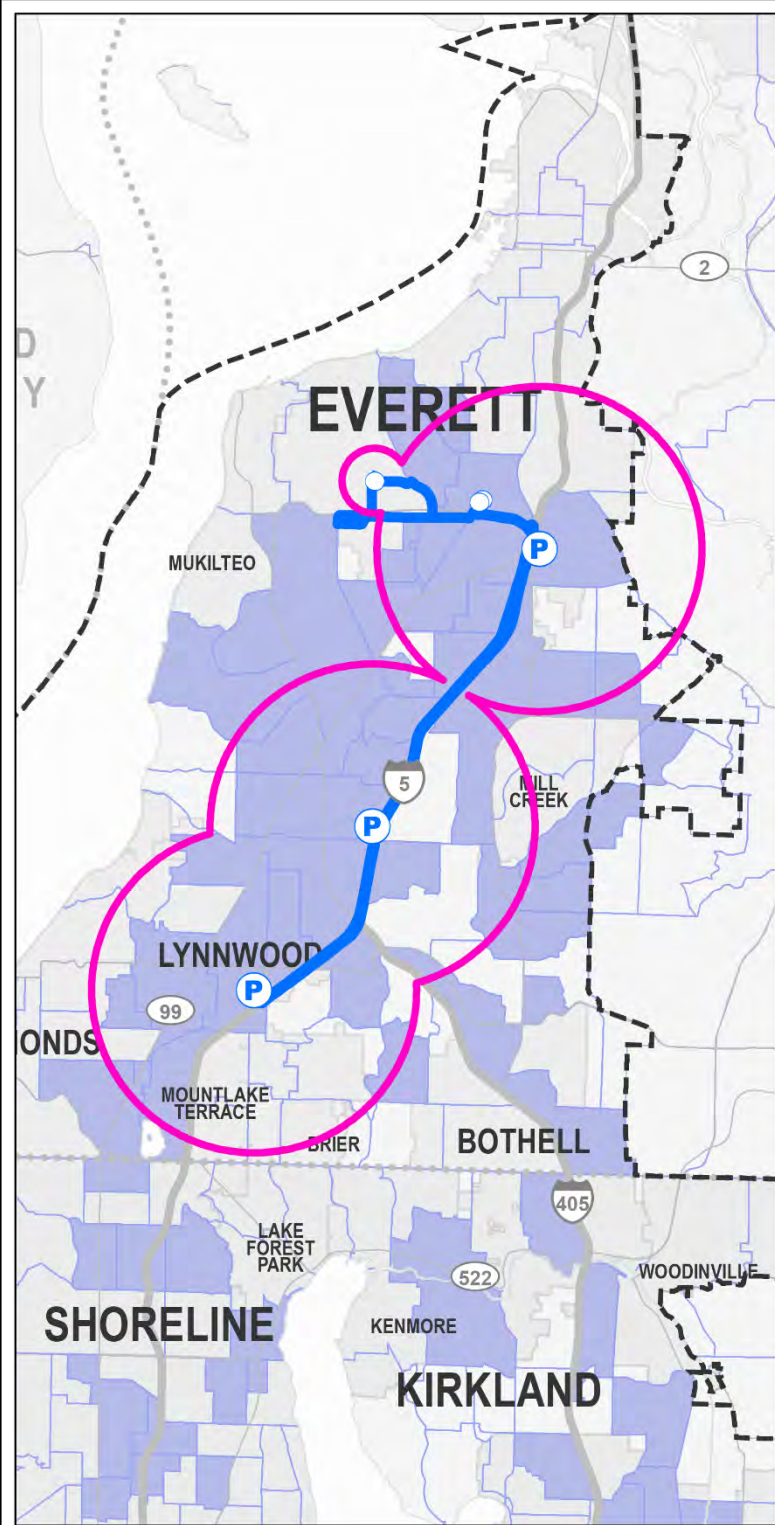




*Route 513 stops and Limited English Proficiency (LEP) population after service change*

# Sound Transit Title VI Maps

## Limited English Proficiency (LEP) Population: Route 513 Restructure



The transit service area is the geographic area with reasonable access to Sound Transit service.

### Legend

- Sound Transit District
- Census Tracts (2020)
- Above average % of LEP residents
- Route 513 Restructure Service Area
- Route 513 Restructure
- Major Bus Facility (2 1/2 mile service area)
- Other Bus Stop (1/2 mile service area)

% limited English proficiency residents:

Route service area: **14.2%**  
Sound Transit district: **10.4%**

**Map data source:**  
Limited English Proficiency (LEP) populations: 2021 (5 Year Est.), American Community Survey Table C16001.  
Limited English proficiency is defined as speaking English less than, "Very Well."



Sound Transit GIS  
Map date: 2/2023  
This map is accompanied by no warranties.

