

Pierce Transit

Title VI Service Equity Analysis

Pursuant to FTA Circular 4702.1B

Route 495 Elimination

November 2016

PIERCE TRANSIT TITLE VI SERVICE EQUITY ANALYSIS

TABLE OF CONTENTS

1	INTRODUCTION	1
2	BACKGROUND	1
2.1	Service Characteristics.....	2
3	TITLE VI POLICIES & DEFINITIONS.....	3
3.1	PIERCE TRANSIT MAJOR SERVICE CHANGE POLICY	3
3.2	PIERCE TRANSIT DISPARATE IMPACT POLICY	3
3.3	PIERCE TRANSIT DISPROPORTIONATE BURDEN POLICY.....	4
4	METHODOLOGY	5
5	EFFECTS OF PROPOSED SERVICE CHANGE ON MINORITY AND LOW-INCOME POPULATIONS	6
5.1	Impact of Service Change on Minority and Low-Income Populations.....	6
5.2	Disparate Impact Analysis.....	9
5.3	Disproportionate Burden Analysis.....	9

PIERCE TRANSIT TITLE VI SERVICE EQUITY ANALYSIS

1 INTRODUCTION

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance. This analysis was conducted in compliance with Federal Transit Administration (FTA) Circular 4702.1B, which requires any FTA recipient serving a population of 200,000 or greater to evaluate any fare change and any major service change at the planning and programming stages to determine whether those changes have a discriminatory impact. This document is an analysis of the elimination of Pierce Transit's Route 495, which ended service in September 2015 concurrent with Sound Transit's commencement of ST Route 580.

2 BACKGROUND

Sound Transit implemented its new ST Express Route 580 in September 2015. Route 580 replaced Route 495 Sounder connector service that was operated by Pierce Transit between South Hill Park-and-Ride, the Red Lot in Puyallup and Puyallup Sounder Station. In addition, the new Route 580 provides a connection between Lakewood Station to Sounder on the trips that do not operate to and from Lakewood Station by providing a connection to the train at Puyallup Station. Pierce Transit and Sound Transit collaborated on the implementation of Route 580.

Pierce Transit's Major Service Change Policy as well as Pierce Transit Code (Ch. 1.60 – Public Hearing Procedures) require a Title VI analysis and a public hearing to be undertaken when a route is changed by twenty percent or more. Elimination of the Route 495 constitutes a major service change. Due to the fact that the service was being taken over by another agency, Pierce Transit did not conduct a Title VI analysis normally required for a major service change. This analysis of the impacts of the Route 495 elimination to minority and low income populations is being conducted after the fact to fulfill these requirements.

This service equity analysis examines the impact of the elimination of Route 495 on minority and low-income populations.

2.1 Service Characteristics

The Route 495 had the following characteristics:

- Timed to connect arriving Puyallup Sounder Station passengers with Red Lot, South Hill Park& Ride, and South Hill Mall Transit Center
- 8 trips per day, weekday afternoon peak-hour only
- Southbound-only
- Ridership of 277 Average Weekday Boardings in May 2015

Route 580 was designed to fill in the Sounder trips to/from Lakewood Sounder Station that currently terminate at Tacoma Dome Station. The ST 580 has the following characteristics:

- Connects passengers from Puyallup Sounder Station to Lakewood Sounder Station via Red Lot, South Hill Park & Ride, and SR-512 Park & Ride.
- Bi-directional
- 22 trips per day
- Timed to meet all northbound and southbound trains at Puyallup Station
- Ridership of 440 Average Weekday Boardings in May 2016

Route 580 substantially overlaps the 495 routing in both in time and space. The only location which lost service is the South Hill Mall Transit Center (SHMTC). Passengers wishing to reach Puyallup Station from SHMTC can still use PT Route 400. Route 400 follows the same route as the Route 495 between SHMTC and Puyallup Station, then continues on with service to Downtown Tacoma. Route 400 operates weekdays from 4:47AM until 8:53PM.

Outreach and Decision-making

The elimination of a route is considered a major service change under Pierce Transit's Major Service Change Policy and requires a Title VI Service Equity Analysis and public outreach. Since the route has been eliminated and this evaluation is being completed after the fact, an examination of public and customer comments was conducted to determine if there was any feedback on the elimination of the Route 495. Review of the customer comment database showed no complaints or concerns about the elimination of the Route 495.

Sound Transit conducted a Title VI Service Equity Analysis on the addition of the Route 580 service and did not find a disparate impact to minority populations or disproportionate burden to low income populations resulting from this addition of this service. Addition of the 580 was implemented in September 2015 as part of Sound Transit's Service Improvement Program.

Pierce Transit's Board of Commissioners will hold a Public Hearing on the elimination of Route 495 on November 14, 2016. Legal notices will be published on November 2, 2016, 12 days in advance of a Public Hearing on eliminating the Route 495, scheduled to take place at the Board of Commissioners' meeting. The legal notice and rider alert was also published on Pierce Transit's web site in advance of the public hearing.

3 TITLE VI POLICIES & DEFINITIONS

Pierce Transit's Board of Commissioners adopted three policies in February 2013 related to Title VI that guide this analysis: Major Service Change Policy; Disparate Impact Policy; and Disproportionate Burden Policy. The requirement for these policies comes from Federal Transit Administration (FTA) Circular 4702.1B, "Title VI Requirements and Guidelines for Federal Transit Administration Recipients" which became effective October 1, 2012. The Circular requires any FTA recipient that operates 50 or more fixed route vehicles in peak service and serving a population of 200,000 persons or greater to evaluate any fare change and any major service change at the planning and programming stages to determine whether those changes have a discriminatory impact.

3.1 PIERCE TRANSIT MAJOR SERVICE CHANGE POLICY

The purpose of this policy is to establish a threshold that defines a major service change and to define an adverse effect caused by a major service change.

A major service change is defined as any change in service on any individual route that would add or eliminate more than twenty percent of the route revenue miles or twenty percent of the route revenue hours. All major service changes will be subject to an equity analysis which includes an analysis of adverse effects on minority and low-income populations.

An adverse effect is defined as a geographical or time-based reduction in service which includes but is not limited to: span of service changes, frequency changes, route segment elimination, re-routing, or route elimination.

3.2 PIERCE TRANSIT DISPARATE IMPACT POLICY

The purpose of this policy is to establish a threshold which identifies when adverse effects of a major service change or any fare change are borne disproportionately by minority populations.

A disparate impact occurs when the minority population¹ adversely affected by a fare or service change is ten percent more than the average minority population of Pierce Transit's service area.

Disparate impacts on routes with either span of service changes and/or frequency changes will be determined by analyzing all routes with such changes together. Disparate impacts on routes with segment elimination, re-routing, or route elimination will be determined on a route by route basis.

If Pierce Transit finds a potential disparate impact, the agency will take steps to avoid, minimize or mitigate impacts and then reanalyze the modified service plan to determine whether the impacts were removed. If Pierce Transit chooses not to alter the proposed changes, the agency may implement the service or fare change if there is substantial legitimate justification for the change AND the agency can show that there are no alternatives that would have less of an impact on the minority population and would still accomplish the agency's legitimate program goals.

¹ **Minority Population** – Persons identifying themselves as a race other than white or of Hispanic origin, self-reported in the U.S. Census.

3.3 **PIERCE TRANSIT DISPROPORTIONATE BURDEN POLICY**

The purpose of this policy is to establish a threshold which identifies when the adverse effects of a major service change or any fare change are borne disproportionately by low-income² populations.

A disproportionate burden occurs when the low-income population adversely affected by a fare or service change is five percent more than the average low-income population of Pierce Transit's service area.

Disproportionate burden on routes with either span of service changes and/or frequency changes will be determined by analyzing all routes with such changes together. Disproportionate burden on routes with segment elimination, re-routing, or route elimination will be determined on a route by route basis.

If Pierce Transit finds a potential disproportionate burden, the agency will take steps to avoid, minimize or mitigate impacts and then reanalyze the modified service plan to determine whether the impacts were removed. If Pierce Transit chooses not to alter the proposed changes, the agency may implement the service or fare change if there is substantial legitimate justification for the change AND the agency can show that there are no alternatives that would have less of an impact on low-income population and would still accomplish the agency's legitimate program goals.

² **Low-Income Population** – Persons reporting as being under the federal household poverty limit as defined by the U.S. Department of Health and Human Services. In 2015 the poverty level for a family of four was \$24,250.

4 METHODOLOGY

The elimination of the Route 495 qualifies as a Major Service Change and thus is subject to a Title VI Service Equity Analysis.

Pierce Transit staff used Remix (www.remix.com) to undertake the Title VI analysis for this project. Remix allows you to automatically generate a Title VI report (based on Census data) by comparing existing service to a set of proposed changes. The methodology used by Remix to achieve this includes the following steps:

1. Get the population near a route, including its low income and minority percentage.
 - For each route, build a shape that represents the area within quarter mile of any of its stops.
 - Intersect the catchment area with 2009-2013 ACS Census data. Get a list of block groups and the percentage overlap with each.
 - For each block group, take the percentage of overlap and multiply it by the block group's statistics.
 - Get the population, minority population, and low income population for each group and sum them together. This is the total population a route could serve.
2. Compare the number of people-trips, before and after.
 - Multiply the population near a route times the number of trips it makes (per year) to get "people-trips".
 - Repeat for low-income and minority populations to get "low income people-trips" and "minority people trips".
 - Compare these numbers between the before and after versions of the route, to get a set of people-trip differences. We match before and after using routes that have the same name.
3. Get the total difference in people-trips across the transit system.
 - Repeat the process above for every route in the transit system.
 - Sum together the difference in people trips. This will return three numbers: total difference in people-trips, total difference in low-income people-trips, and total difference in minority people trips.
4. Calculate the change borne by low-income and minority populations.
 - Divide the total difference in low-income people trips by the total difference in people-trips to get the percentage of change borne by those with low incomes.
 - Repeat for minority people-trips.
5. Compare the percentage change to the average in the service area.
 - Calculate the average percentage of low-income and minority populations across the entire service area.
 - Subtract from the change borne by those populations.
 - Get two final numbers: the delta between the impact this set of transit changes had on low income and minority populations compared to any average change.

The equity analysis is provided below in Section 5.

5 EFFECTS OF PROPOSED SERVICE CHANGE ON MINORITY AND LOW-INCOME POPULATIONS

5.1 Impact of Service Change on Minority and Low-Income Populations

Figures 5-1 and 5-2 below show the eliminated Route 495 and the new Route 580 overlaid on census tracts with minority and low income populations higher and lower than the system-wide (PTBA) average minority and low income populations. Table 5-1 below shows the results of the analysis, comparing the minority and low-income proportion of the population living within ¼ mile of Route 495 with the minority and low-income proportion of the service area as a whole. The data shows that the population served by the Route 495 was 16% lower in minority population than the service area as a whole. The Route 495 served a 3.3% lower proportion of the area’s low-income population. In summary, this table shows that the 495 was not providing service to an area with high minority or low-income populations.

Table 5-1: Analysis of Service Change on Low-Income and Minority Populations

Summary of Service Change	Minority Proportion of Population			Low-income Proportion of Population		
	Quarter-Mile Radius around Stops on Route	Average Population in Service Area	Difference	Quarter-Mile Radius around Stops on Route	Average Population in Service Area	Difference
Route 495 Elimination	19.3%	35.3%	-16%	11.0%	14.3%	-3.3%

To look at the impact in a slightly different and more meaningful way, staff analyzed the percentage of minority and low-income populations served by the Route 495 and compared with the percentage minority and low-income populations served by the new Route 580. Table 5-2 describes the changes in service levels following elimination of the Route 495 and the addition of the Route 580. The table estimates populations within a quarter-mile of stops, and then multiplies those populations by the number of trips added or reduced by the service change. Totalling people-trips, a weighted average is calculated to determine the net impact to minority and low-income populations.

Table 5-2: Analysis of Service Change on Low-Income and Minority Populations: Eliminated Vs. New Service

Route	Before				After				Difference		
	Population (within 1/4 mi)	Low Income	Minority	Trips (Annual)	Population (within 1/4 mi)	Low Income	Minority	Trips (Annual)	People-Trips (Population * Trips)	Low Income People-Trips	Minority People-Trips
495 South Hill Mall / Puyallup Sounder	3,500	11.0%	19.3%	2,040	0			0	-7,140,000	-788,441	-1,379,040
580 Lakewood Sounder to Puyallup Sounder	0			0	4,265	19.9%	37.6%	4,590	19,576,350	3,890,628	7,366,950
All Changes	3,500	11%	19%	2,040	4,265	20%	38%	4,590	12,436,350	3,102,187	5,987,910

According to the table, the Route 495’s quarter-mile stop transit shed was 11% low-income /19.3% minority. This was replaced by the Route 580, with a quarter-mile stop transit shed of 19.9%/37.6%. So, Route 580 is serving a higher percentage of both low-income and minority populations than the eliminated Route 495 was serving. In looking at the total service available, there is a net gain in both low-income and minority annual people-trips of 3.1 million and 6 million, respectively.

Figure 5-1 Route 495 and Route 580 – Local Minority Census Blocks/Tracts

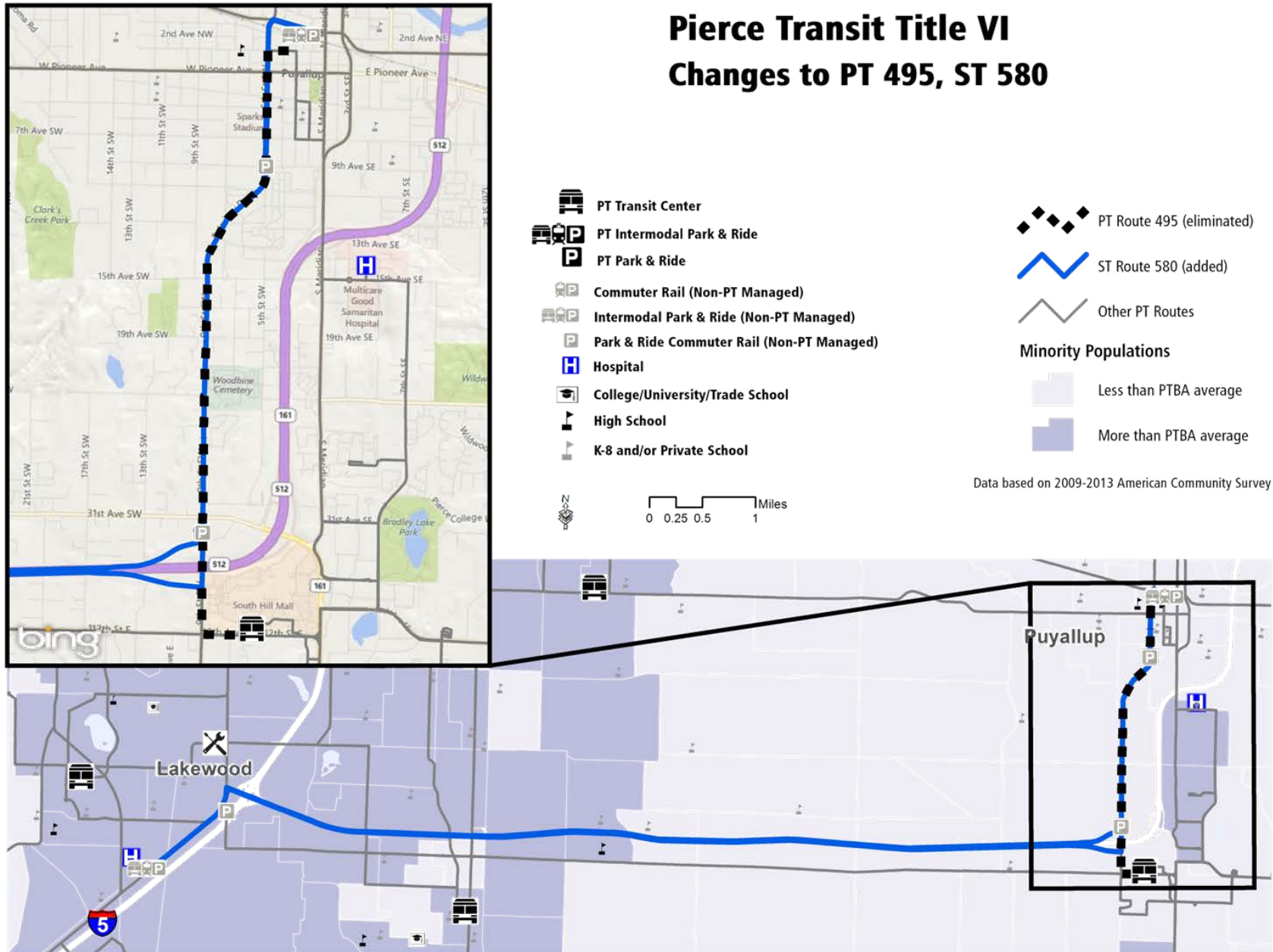
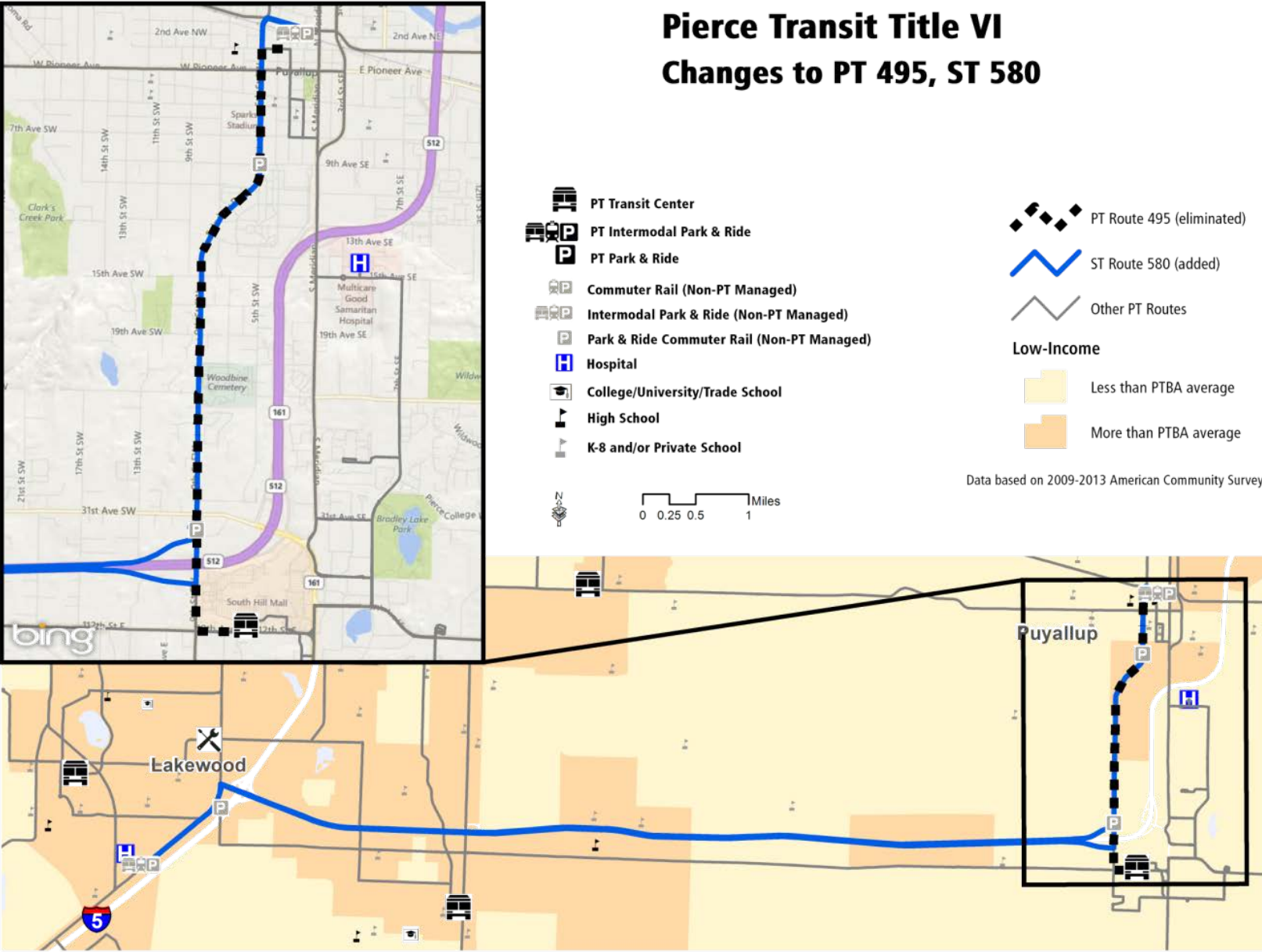


Figure 5-2 Route 495 and Route 580 – Local Low-Income Census Blocks/Tracts



5.2 Disparate Impact Analysis

Pierce Transit's policy states that a disparate impact occurs when the minority population adversely affected by a fare or service change is 10% more than the average minority population of Pierce Transit's service area. An adverse effect is defined in the Major Service Change Policy as a geographical or time-based reduction in service which includes but is not limited to: span of service changes, frequency changes, route segment elimination, re-routing, or route elimination. Pierce Transit's policy states that a disparate impact occurs when the minority population adversely affected by a fare or service change is 10% more than the average minority population of Pierce Transit's service area. In this case, there is an adverse effect because Route 495 was eliminated. However, the analysis shows that the Route 495 was not serving an area with a high minority population. The minority population served by the Route 495 was 19.3%, while the service area as a whole has a minority population of 35.3%. A determination of disparate impact is therefore not warranted. Additional analysis shows that minority populations benefit from the elimination of the Route 495 because it was replaced with Sound Transit's Route 580. Route 580 serves a minority population of 37.6% which is higher than the system average. With an increased number of daily trips and much larger service area, the Route 580 provides an increase of approximately 6 million annual trips to minority populations.

5.3 Disproportionate Burden Analysis

Pierce Transit's policy states that a disproportionate burden occurs when the low-income population adversely affected by a fare or service change is 5% more than the average low-income population of Pierce Transit's service area. An adverse effect is defined in the Major Service Change Policy as a geographical or time-based reduction in service which includes but is not limited to: span of service changes, frequency changes, route segment elimination, re-routing, or route elimination. In this case, there is an adverse effect because Route 495 was eliminated. However, the analysis shows that the Route 495 was not serving an area with a high low-income population. The low-income population served by the Route 495 was 11.0%, while the service area as a whole has a minority population of 14.3%. A determination of disproportionate burden is therefore not warranted. Additional analysis shows that low-income populations benefit from the elimination of the Route 495 because it was replaced with Sound Transit's Route 580. Route 580 serves a low-income population of 19.9% which is higher than the system average. With an increased number of daily trips and much larger service area, the Route 580 provides an increase of approximately 3.1 million annual trips to low-income populations.