

Pierce Transit

Title VI Service Equity Analysis

Pursuant to FTA Circular 4702.1B

Emergency Service Reductions due to COVID-19 Pandemic: March 2020 – March 2021

March 2021

Pierce Transit – Planning & Scheduling Dept.

**PIERCE TRANSIT TITLE VI SERVICE EQUITY ANALYSIS
EMERGENCY SERVICE REDUCTIONS DUE TO COVID-19 PANDEMIC
MARCH 2020 AND MARCH 2021**

TABLE OF CONTENTS

1	INTRODUCTION	1
2	BACKGROUND	1
2.1	ACTION	2
3	TITLE VI POLICIES AND DEFINITIONS.....	2
3.1	PIERCE TRANSIT MAJOR SERVICE CHANGE POLICY	2
3.2	PIERCE TRANSIT DISPARATE IMPACT POLICY	3
3.3	PIERCE TRANSIT DISPROPORTIONATE BURDEN POLICY.....	3
4	METHODOLOGY	4
5	EFFECTS OF SERVICE CHANGE ON LOW-INCOME AND MINORITY POPULATIONS	5
5.1	SPAN CHANGES.....	5
5.2	FREQUENCY CHANGES.....	6
5.3	ROUTE ELIMINATION	6
5.4	DISPARATE IMPACT ANALYSIS.....	7
5.5	DISPROPORTIONATE BURDEN ANALYSIS.....	7
6	OUTREACH AND DECISION MAKING	7
7	APPENDIX.....	9
7.1	ROUTES MEETING THRESHOLD FOR MAJOR SERVICE CHANGE.....	9
7.2	MAP OF ROUTES MEETING THRESHOLD FOR MAJOR SERVICE CHANGE	10
7.3	MAP OF ROUTE 102 AND 595	11

PIERCE TRANSIT TITLE VI SERVICE EQUITY ANALYSIS

EMERGENCY SERVICE REDUCTIONS DUE TO COVID-19 PANDEMIC

MARCH 2020 AND MARCH 2021

1 INTRODUCTION

- Title VI of the Civil Rights Act of 1964 prohibits discrimination on 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 a Title VI analysis of changes to fixed route bus service throughout the Pierce Transit benefit area as a result of emergency service reductions implemented due to the COVID-19 pandemic and beyond, until such time that fixed route bus service can be restored back to pre-pandemic levels. Emergency service changes made between March 2020 and planned service for March 2021 constitute a major service change under FTA Title VI Service Equity rules and require analysis to evaluate impacts on transit riders as the result of service reductions.

2 BACKGROUND

- When the COVID-19 pandemic began in March 2020, Pierce Transit had to rapidly respond, modifying and reducing service levels 3 times over 8 weeks and eventually cutting service by about one-third from pre-COVID levels. Six routes were suspended temporarily, and many routes were operating on vastly reduced schedules under emergency service levels.
- In May 2020, as the situation stabilized, Pierce Transit was able to restore some service, back to 80 percent of pre-COVID levels.
- In September 2020, the agency restored service to about 90 percent of what existed before COVID.
- All the changes had to occur quickly, responding to ridership levels, available revenues and resources and State mandates for social distancing, while providing as much transit service as possible.
- March 2021 is the next regularly scheduled service change. As Pierce Transit plans for this next level of service, projected sales tax revenues, lower ridership, reduced fare revenues, and State mandated passenger-load maximums due to the COVID pandemic affect the amount of service that can be provided. Available service hours for the March 2021 service change will be at about 90 percent of what existed before COVID. The March 2021 service plan identifies reductions in span and frequency on five local bus routes, and elimination of one local express route.
- Emergency service changes made between March 2020 and planned service for March 2021 constitute a major service change under FTA Title VI Service Equity rules and require analysis to evaluate impacts on transit riders as the result of service reductions. Appendix 7.1 highlights the 6 routes which meet the threshold for major service changes.

2.1 ACTION

- Throughout the course of the pandemic, Pierce Transit Staff aimed to maintain service on higher-ridership days and trips while also considering affects to regional access and impacts to low income and minority communities. Datasets that aided in this decision-making include: annualized route productivity, daily ridership trends (both prior to and during the pandemic), and 2018 ACS Census Block data for minority and low-income populations within the service area.
- To inform the public of the changes in service, staff issued press releases, rider alerts, and utilized technology to communicate changes throughout the rapidly changing pandemic.
- Routes having any change in service that added or eliminated more than twenty percent of the route revenue miles or twenty percent of the route revenue hours were identified as major service changes and noted as to the type of change in service (see Appendix 7.1).
- Five routes were identified as having span and frequency changes greater than twenty percent, and one route was identified for elimination (see map in Appendix 7.2).
- An equity analysis was performed on these six routes, to identify and evaluate adverse effects on minority and low-income populations.
- Results of the analysis for each route evaluated is contained in this report, showing the percentage of burden borne by minority and low-income populations.

3 TITLE VI POLICIES AND DEFINITIONS

Pierce Transit's Board of Commissioners adopted three new 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.

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.

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

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 2018 the poverty limit was \$25,100 for a family of four.

4 METHODOLOGY

Once routes with major service changes were identified, Pierce Transit Staff used Remix (www.remix.com) to aid in further Title VI analysis. Remix allows users to easily calculate the demographic information within a quarter mile of a route's stops using 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 2014-2018 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.

Pierce Transit staff then used the following steps to estimate potential impacts to low-income and minority populations served by each route. Calculations can be found in section 5 of this report.

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.
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.

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

Pierce Transit is required to evaluate changes to span and frequency as separate categories in order to determine whether disparate impacts or disproportionate burdens exist at a systematic level under each category. Conversely, changes to routing—in this case, route elimination—is required to be analyzed on a route-by-route basis to determine disparate impacts/disproportionate burdens.

5.1 SPAN CHANGES

Table 5-1 describes changes in service span levels on Routes 13, 63, 402 and 425. 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. A weighted average is calculated to determine the net impact to minority and low-income populations.

Table 5-1: Routes Experiencing a Change in Service Span and Impact to Low-Income and Minority Populations

Route	MARCH 2020				MARCH 2021				Difference				Change in Annual Trips	Trip Count Change from Original	
	Population (within 1/4 mi)	Low Income	Minority	Trips (Annually)	Population (within 1/4 mi)	Low Income	Minority	Trips (Annually)	People-Trips (Population * Trips)	Low Income People-Trips	Minority People-Trips	Change Borne by Low Income			Change Borne by Minorities
13	13,975	13.50%	26.70%	6,912	13,975	13.50%	26.70%	2,048	-67,974,400	-9,176,544	-18,149,165	14%	27%	-4,864	-70%
63	9,399	12.80%	40.50%	2,304	9,399	12.80%	40.50%	1,024	-12,030,720	-1,539,932	-4,872,442	13%	41%	-1,280	-56%
402	26,200	10.70%	31.50%	15,939	26,200	10.70%	31.50%	9,618	-165,610,200	-17,720,291	-52,167,213	11%	32%	-6,321	-40%
425	11,155	11.10%	28.30%	9,892	11,155	11.10%	28.30%	3,572	-70,499,600	-7,825,456	-19,951,387	11%	28%	-6,320	-64%
Total									-316,114,920	-36,262,223	-95,140,206				

	Low Income	Minority
Change Borne By	11.5%	30.1%
PTBA Average	12.9%	38.0%
Difference	-1.4%	-7.9%

5.2 FREQUENCY CHANGES

Table 5-2 describes changes in service frequency levels on Routes 13, 63, 212, 402 and 425. Using the same methods for measuring span changes, a weighted average is calculated to determine the net impact to minority and low-income populations.

Table 5-2: Routes Experiencing a Change in Service Frequency and Impact to Low-Income and Minority Populations

Route	MARCH 2020				MARCH 2021				Difference					Change in Annual Trips	Trip Count Change from Original
	Population (within 1/4 mi)	Low Income	Minority	Trips (Annually)	Population (within 1/4 mi)	Low Income	Minority	Trips (Annually)	People-Trips (Population * Trips)	Low Income People-Trips	Minority People-Trips	Change Borne by Low Income	Change Borne by Minorities		
13	13,975	13.50%	26.70%	6,912	13,975	13.50%	26.70%	2,048	-67,974,400	-9,176,544	-18,149,165	14%	27%	-4,864	-70%
63	9,399	12.80%	40.50%	2,304	9,399	12.80%	40.50%	1,024	-12,030,720	-1,539,932	-4,872,442	13%	41%	-1,280	-56%
212	9,262	15.80%	42.90%	17,201	9,262	15.80%	42.90%	16,174	-9,512,074	-1,502,908	-4,080,680	16%	43%	-1,027	-6%
402	26,200	10.70%	31.50%	15,939	26,200	10.70%	31.50%	9,618	-165,610,200	-17,720,291	-52,167,213	11%	32%	-6,321	-40%
425	11,155	11.10%	28.30%	9,892	11,155	11.10%	28.30%	3572	-70,499,600	-7,825,456	-19,951,387	11%	28%	-6,320	-64%
Total									-325,626,994	-37,765,131	-99,220,886				

	Low Income	Minority
Change Borne By	11.6%	30.5%
PTBA Average	12.9%	38.0%
Difference	-1.3%	-7.6%

Through its elimination, Route 102 was the only route to undergo changes to routing. Table 5-5 illustrates the impact to minority and low-income populations served by route 102. See Appendix 7.3 for a map of Route 102.

Table 5-3: Routes Experiencing Elimination and Impact to Low-Income and Minority Populations

Route	MARCH 2020				MARCH 2021				Difference					Change in Annual Trips	Trip Count Change from Original
	Population (within 1/4 mi)	Low Income	Minority	Trips (Annually)	Population (within 1/4 mi)	Low Income	Minority	Trips (Annually)	People-Trips (Population * Trips)	Low Income People-Trips	Minority People-Trips	Change Borne by Low Income	Change Borne by Minorities		
102	8,642	26.30%	35.40%	3,072	0	0%	0%	0	-26,548,224	-6,982,183	-9,398,071	26%	35%	-3,072	-100%
Total									-26,548,224	-6,982,183	-9,398,071				

	Low Income	Minority
Change Borne By	26.3%	35.4%
PTBA Average	12.9%	38.0%
Difference	13.4%	-2.6%

5.4 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.

Of the population affected by proposed changes to service **span**, 30.1% is minority (Table 5.1). This is 7.9% less than the system average minority population of 38%. This difference is less than 10%, and therefore there is no disparate impact due to changes in service span. Similarly, 30.5% of the population affected by changes to **frequency** is minority (Table 5.2), 7.6% less than the system average. Because this difference is also less than 10%, there is no disparate impact due to changes in frequency. Finally, with a 35.4% minority population affected by the proposed **elimination** of Route 102 (Table 5.3), 2.6% less than the system average, this also does not qualify as a disparate impact.

5.5 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.

Of the population affected by proposed changes to service **span**, 11.5% is low income (Table 5.1). This is 1.4% less than the system average low-income population of 12.9%. Because the difference is less than 5%, there is no disproportionate burden due to changes in service span. Similarly, of the population affected by proposed changes to service **frequency**, 11.6% is low income (Table 5.2). This is 1.3% less than the system average, and consequentially also does not create a disproportionate burden. However, with the **elimination** of route 102, 26.3% of the population affected is low income (Table 5.3). This is 13.4% more than the system average low-income population and qualifies as a disproportionate burden. Section 6 describes how this impact is mitigated through an alternative service option.

6 OUTREACH AND DECISION MAKING

To help mitigate the impact of route 102, Pierce Transit coordinated with Sound Transit to ensure continuity of service between Purdy, Gig Harbor and Tacoma Dome Station; Sound Transit added a stop at Tacoma Dome Station along route 595. Although the span and frequency of route 595 differs from route 102—and this only minimizes the impact—this additional stop will allow residents of Gig Harbor and Purdy to maintain a direct connection to Downtown Tacoma. See Appendix 7.3 for a map of routes 102 and 595.

Table 6-1 compares the difference in fares for the two routes. Fares are the same rate for senior and disabled riders on both routes, with use of a regional reduced fare permit. Adult and youth one-ride fares are higher on route 595 than route 102. However, while low income fares are not available on route 102, Sound Transit route 595 offers two types of discounted fare options: an ORCA LIFT pass (25% less than route 102 adult fare) and a subsidized annual pass option for those who qualify. Qualification for the ORCA LIFT fare is based on household income of less than double the federal poverty level (as established by US Health and Human Services Department). The subsidized annual pass is available to

residents of King, Pierce, or Snohomish County with incomes at or below 80% of the federal poverty level, and who are enrolled in one of six state benefit programs. This option may qualify riders for a subsidized annual pass to pay 100% of fare on route 595.

Table 6-1: Comparison of Route Fares

Fares	Route 102	Route 595	Difference
Adult*	\$ 2.00	\$ 3.25	\$ 1.25
Youth	\$ 1.00	\$ 1.50	\$ 0.50
Discounted (Senior/Disabled)	\$ 1.00	\$ 1.00	\$ -
*Low-Income (ORCA LIFT)	not available	\$ 1.50	\$ (0.50)

Staff issued press releases, rider alerts, and utilized technology to communicate changes with the public throughout the rapidly changing pandemic. At its meeting on December 14, 2020, the Pierce Transit Board of Commissioners considered implementing the proposed increase in service levels for the March 2021 service change. Upon acceptance of the proposed March 2021 service change package, Pierce Transit staff then presented to Pierce Transit’s Community Transportation Advisory Group (CTAG), Executive Directors and the Pierce Transit Board of Commissioners on the equity impacts of proposed changes.

To gather input from the public regarding the proposed March 2021 service change, Pierce Transit’s Board of Commissioners held a public hearing on January 11, 2021. Legal notices were published on December 30, 2020, 10 days in advance of the public hearing, in the *Tacoma News Tribune*, and the *Tacoma Daily Index*, as well as on Pierce Transit’s web site. Rider alerts notifying the public about the hearing and seeking public comment were also displayed on Pierce Transit’s website and posted on social media. At the public hearing, one comment was made by a Tacoma resident who expressed two concerns: first, inquiring about when reduced service would end, and second, reminding staff that although rural areas experience lower ridership, those riders are still dependent on Pierce Transit’s service. In response, Pierce Transit staff will continue to emphasize alternative options for service, where available—such as in the case of Sound Transit’s route 595 now servicing riders impacted by the elimination of route 102.

7 APPENDIX

7.1 ROUTES MEETING THRESHOLD FOR MAJOR SERVICE CHANGE

Route	March 2020		March 2021		Difference		Change in Service
	Revenue Hours	Revenue Miles	Est. Revenue Hours	Est. Revenue Miles	Revenue Hours	Revenue Miles	
1	447.9	4,797.5	440.7	4,796.8	-1.6%	0.0%	
2	236.2	2,259.6	227.9	2,311.1	-3.5%	2.3%	
3	184.2	1,482.4	180.6	1,734.4	-2.0%	17.0%	
4	145.1	1,693.8	121.9	1,423.6	-16.0%	-16.0%	
10	63.0	573.8	60.3	550.3	-4.2%	-4.1%	
11	69.4	773.0	56.7	646.8	-18.3%	-16.3%	
13	13.2	150.9	4.9	44.8	-62.7%	-70.3%	Span & Frequency
16	69.3	736.8	64.4	666.6	-7.1%	-9.5%	
28	42.8	450.5	43.7	440.3	2.2%	-2.3%	
41	93.7	1,064.6	93.0	1,045.7	-0.7%	-1.8%	
42	55.1	537.9	51.9	527.0	-5.9%	-2.0%	
45	64.0	737.5	60.3	713.6	-5.8%	-3.2%	
48	101.5	1,172.1	92.7	1,129.0	-8.6%	-3.7%	
52	60.0	561.9	57.2	542.7	-4.8%	-3.4%	
53	82.7	985.9	82.1	955.4	-0.7%	-3.1%	
54	60.2	615.7	60.4	603.8	0.4%	-1.9%	
55	67.3	825.0	68.3	811.4	1.5%	-1.6%	
57	82.8	726.5	79.1	711.8	-4.4%	-2.0%	
63	6.5	105.2	3.1	46.3	-52.2%	-56.0%	Span & Frequency
100	61.1	1,078.9	60.1	1,040.1	-1.6%	-3.6%	
102	15.6	262.3	-	-	-100.0%	-100.0%	Route Elimination
202	105.2	988.4	94.0	933.5	-10.6%	-5.6%	
206	103.4	1,352.9	95.2	1,249.4	-8.0%	-7.7%	
212	68.1	601.0	50.9	525.5	-25.2%	-12.6%	Frequency
214	64.0	863.0	64.2	842.5	0.3%	-2.4%	
400	41.7	557.5	41.5	557.5	-0.5%	0.0%	
402	158.3	1,803.8	114.9	1,302.5	-27.4%	-27.8%	Span & Frequency
409	32.3	456.2	26.0	376.6	-19.5%	-17.5%	
425	49.0	478.5	20.6	162.6	-57.9%	-66.0%	Span & Frequency
497	7.2	95.9	6.9	85.3	-3.9%	-11.1%	
500	145.9	1,693.5	142.0	1,685.4	-2.7%	-0.5%	
501	84.6	1,129.2	77.2	1,049.9	-8.7%	-7.0%	

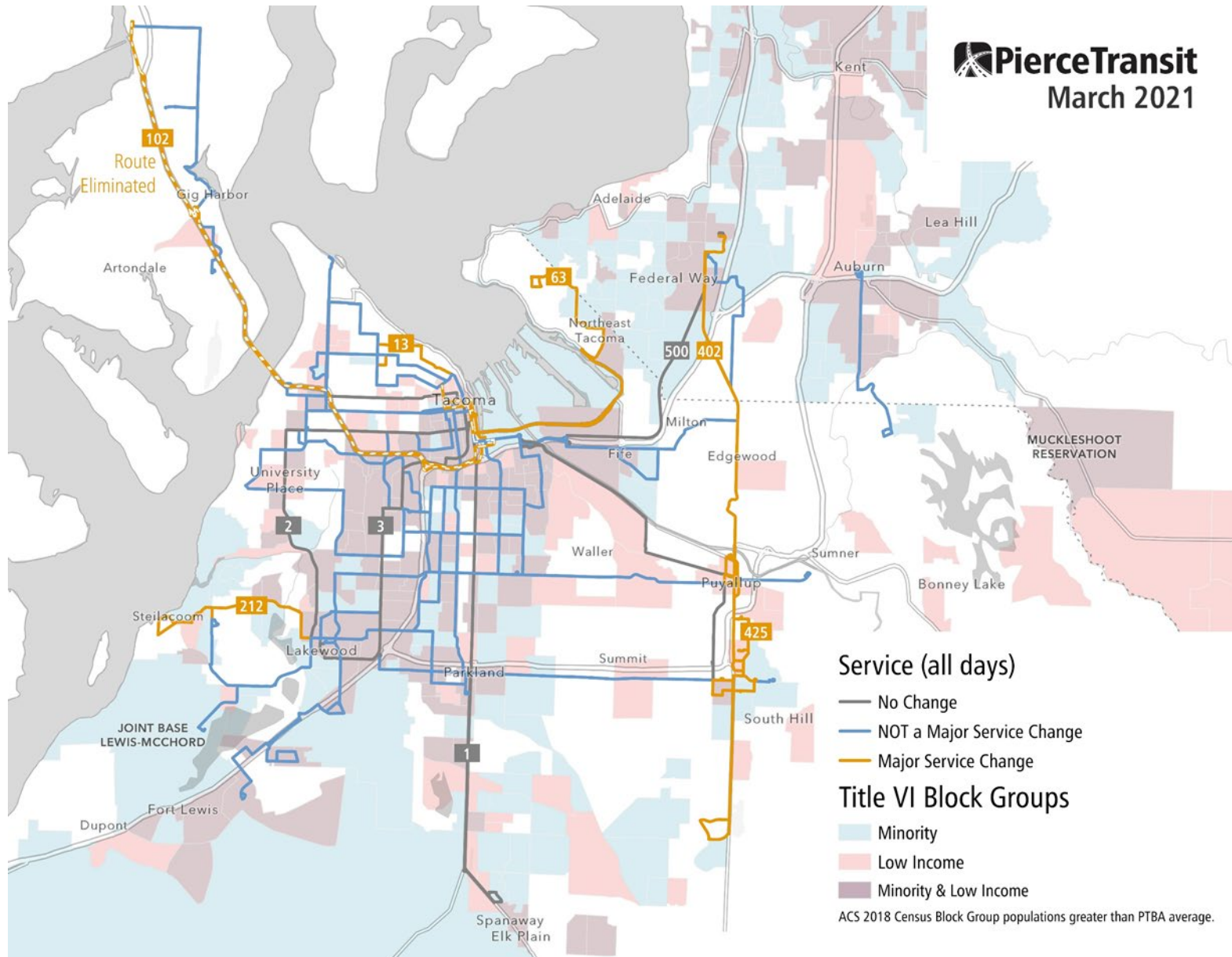
PIERCE TRANSIT MAJOR SERVICE CHANGE POLICY

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.

MITIGATION:

The elimination of Route 102 qualifies as a disproportionate burden. Mitigation includes an additional stop at the Tacoma Dome along ST route 595 to ensure continued service between Purdy, Gig Harbor and downtown Tacoma.

7.2 MAP OF ROUTES MEETING THRESHOLD FOR MAJOR SERVICE CHANGE



7.3 MAP OF ROUTE 102 AND 595

