



Title VI Equity Analysis  
for Service Changes  
Proposed for 2019

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## 1. Purpose of Analysis

Pursuant to RT's major service change policy and in accordance with federal Title VI civil rights requirements, the purpose of this analysis is to identify and document any potential disparate impacts on minority populations or disproportionate burdens on low-income populations resulting from a variety of service changes proposed to take effect throughout 2019 and potentially 2020.<sup>1</sup>

## 2. Project Description

This analysis encompasses two separate service change projects:

- Changes to potentially all of SacRT's bus routes, and potential changes to light rail schedules, as part of the **SacRT Forward** project
- Improvement of **weekend light rail headways** from 30 to 15 minutes, which took effect on a temporary basis on January 6, 2019

The potential changes from the SacRT Forward project are intended for implementation beginning June 16, 2019, but due to the large number of changes, implementation could potentially take effect in phases throughout the remainder of 2019 and early 2020. Details on the project are available at [sacrt.com](http://sacrt.com).

The light rail headway improvements took effect on January 6, 2019, and would be made permanent with adoption of a final Title VI analysis. This analysis will focus first on the more complicated SacRT Forward project, then cover the light rail headway improvements in Section 8.

## 3. Title VI Requirements

SacRT policy requires a draft Title VI service change equity analysis be made available for a 30-day public review and comment, that the SacRT Board of Directors and staff review public comments and take them into consideration, and that the SacRT Board of Directors approve a final equity analysis prior to adoption of major service changes. A draft version of this report was published on January 18, 2019.

This version reflects revisions made to the SacRT Forward plan published on or about February 18, 2019 and is intended to serve as the final analysis of the project for purposes of satisfying Title VI approval requirements.

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<sup>1</sup> RT's major service change policy is stated in Resolution No. 13-08-0125. The Federal Transit Administration's (FTA's) guidance related to Title VI of the Civil Rights Act of 1964 and Executive Order 12898 is specified in FTA Circular 4702.1B.

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**Figure 1  
Demographics of Existing Routes**

Route	Percent Minority	Percent Low-Income	Route	Percent Minority	Percent Low-Income	Route	Percent Minority	Percent Low-Income
1	62.4%	58.7%	28	50.7%	29.5%	68	83.3%	64.6%
2	76.8%	28.4%	29	26.1%	10.8%	72	70.9%	55.9%
3	68.8%	4.7%	30	58.9%	37.2%	74	73.7%	40.6%
5	90.1%	62.3%	33	70.4%	91.7%	75	60.9%	64.7%
6	75.8%	33.0%	34	50.0%	25.7%	80	67.9%	58.7%
7	63.2%	0.0%	38	69.4%	43.4%	81	86.1%	58.2%
11	80.5%	35.2%	47	85.7%	68.8%	82	65.8%	53.8%
13	74.5%	57.5%	51	78.5%	61.1%	84	65.1%	54.6%
15	74.7%	66.9%	54	85.7%	57.7%	86	82.5%	50.2%
19	67.6%	52.9%	55	87.9%	67.3%	87	73.1%	63.8%
21	61.9%	49.8%	56	90.9%	62.2%	88	69.9%	44.8%
22	69.4%	55.6%	61	80.2%	50.9%	93	73.3%	62.4%
23	62.5%	64.1%	62	71.1%	51.3%	95	47.3%	48.8%
24	61.4%	38.2%	65	88.8%	54.9%	103	30.8%	8.3%
25	56.6%	54.1%	67	80.4%	64.8%	109	37.5%	11.8%
26	76.2%	67.5%						

**Figure 2  
Demographics of Proposed Routes**

Route	Percent Minority	Percent Low-Income	Route	Percent Minority	Percent Low-Income	Route	Percent Minority	Percent Low-Income
1	62.4%	58.7%	56	90.9%	62.2%	88	69.9%	44.8%
11	80.5%	35.2%	61	80.2%	50.9%	93	73.3%	62.4%
13	74.5%	57.5%	62	71.1%	51.3%	102	76.8%	28.4%
15	74.7%	66.9%	67	80.4%	64.8%	103	68.8%	4.7%
19	67.6%	52.9%	68	83.3%	64.6%	105	90.1%	62.3%
21	61.9%	49.8%	72	70.9%	55.9%	106	75.8%	33.0%
23	62.5%	64.1%	75	60.9%	64.7%	107	63.2%	0.0%
25	56.6%	54.1%	81	86.1%	58.2%	109	37.5%	11.8%
26	76.2%	67.5%	82	65.8%	53.8%	129	26.1%	10.8%
30	58.9%	37.2%	84	65.1%	54.6%	134	50.0%	25.7%
33	70.4%	91.7%	86	82.5%	50.2%	161	80.2%	50.9%
38	69.4%	43.4%	87	73.1%	63.8%	193	30.8%	8.3%
51	78.5%	61.1%						

#### 4. Data and Methodology

In April 2013, an on-board passenger survey was conducted aboard SacRT buses and light rail trains. Passengers on randomly selected trips on all SacRT routes completed a self-administered questionnaire on various rider characteristics. Figures 1 and 2 provide the demographics of each route, existing and proposed, based on these surveys. For new or majorly altered routes, a benchmark route was chosen from the existing system.

For this analysis, revenue miles are used as an indicator of level of service. The analysis considers the distribution of service for the existing and proposed system. For the purpose of the SacRT Forward project and this analysis, 46 regular fixed-route bus routes were considered to be part of the existing system. This excludes supplemental/seasonal bus routes (typically operated to address overcrowding due to school ridership) and contract service (i.e., service paid for by third parties and operated by SacRT through a service agreement).

**Figure 3  
Existing Revenue Miles Per Route**

Route	Weekday	Saturday	Sun/Hol	Annual	Route	Weekday	Saturday	Sun/Hol	Annual
1	1,008	550	525	315,554	51	1,095	602	441	335,449
2	284	0	0	72,093	54	300	142	0	83,664
3	97	0	0	24,729	55	413	151	127	120,377
5	194	0	0	49,304	56	618	515	253	198,622
6	286	0	0	72,735	61	338	0	0	85,951
7	62	0	0	15,850	62	630	304	0	175,697
11	384	243	0	110,154	65	399	0	0	101,417
13	209	0	0	53,150	67	708	342	342	217,863
15	631	319	285	193,721	68	681	329	329	209,352
19	608	419	419	200,998	72	430	162	155	126,664
21	882	444	339	267,052	74	143	0	0	36,347
22	131	0	0	33,335	75	74	58	58	25,318
23	1,054	873	461	340,236	80	578	487	386	194,883
24	133	0	0	33,823	81	1,122	669	323	338,933
25	608	293	0	169,771	82	870	408	368	263,789
26	579	179	171	166,461	84	443	295	0	127,908
28	353	0	0	89,573	86	669	307	230	199,546
29	63	0	0	16,093	87	385	203	147	117,104
30	583	266	141	170,187	88	450	198	198	136,293
33	91	0	0	23,114	93	554	222	222	165,430
34	214	0	0	54,397	95	159	0	0	40,315
38	239	206	164	81,093	103	71	0	0	18,004
47	142	0	0	36,058	109	97	0	0	24,557

**Figure 4**  
**Proposed Revenue Miles Per Route**

Route	Weekday	Saturday	Sun/Hol	Annual	Route	Weekday	Saturday	Sun/Hol	Annual
1	1,013	531	498	314,205	75	335	141	141	100,844
11	627	499	499	214,619	81	1,215	683	592	378,872
13	567	484	484	197,827	82	922	540	500	291,768
15	356	331	229	121,171	84	1,018	776	418	323,586
19	403	346	346	140,872	86	677	448	382	217,899
21	856	506	363	265,056	87	421	287	245	136,253
23	1,184	1,001	600	388,161	88	459	309	271	148,718
25	957	574	383	295,560	93	582	339	233	179,125
26	874	745	401	284,351	102	105	0	0	26,772
30	389	144	135	114,292	103	97	0	0	24,740
33	109	0	0	27,603	105	13	0	0	3,190
38	408	201	147	122,867	106	68	0	0	17,336
51	1,104	671	653	353,800	107	62	0	0	15,850
56	581	536	340	195,426	109	97	0	0	24,597
61	795	483	483	255,572	129	64	0	0	16,139
62	667	323	301	204,104	134	66	0	0	16,695
67	965	797	429	311,885	161	3	0	0	864
68	1,074	887	477	347,104	193	71	0	0	17,993

Figure 3 shows the revenue miles per day and year for the 46 routes in the project, which total 5,932,965 revenue miles per year. Revenue miles would total 6,225,570 per year for the proposed system, as shown in Figure 4.

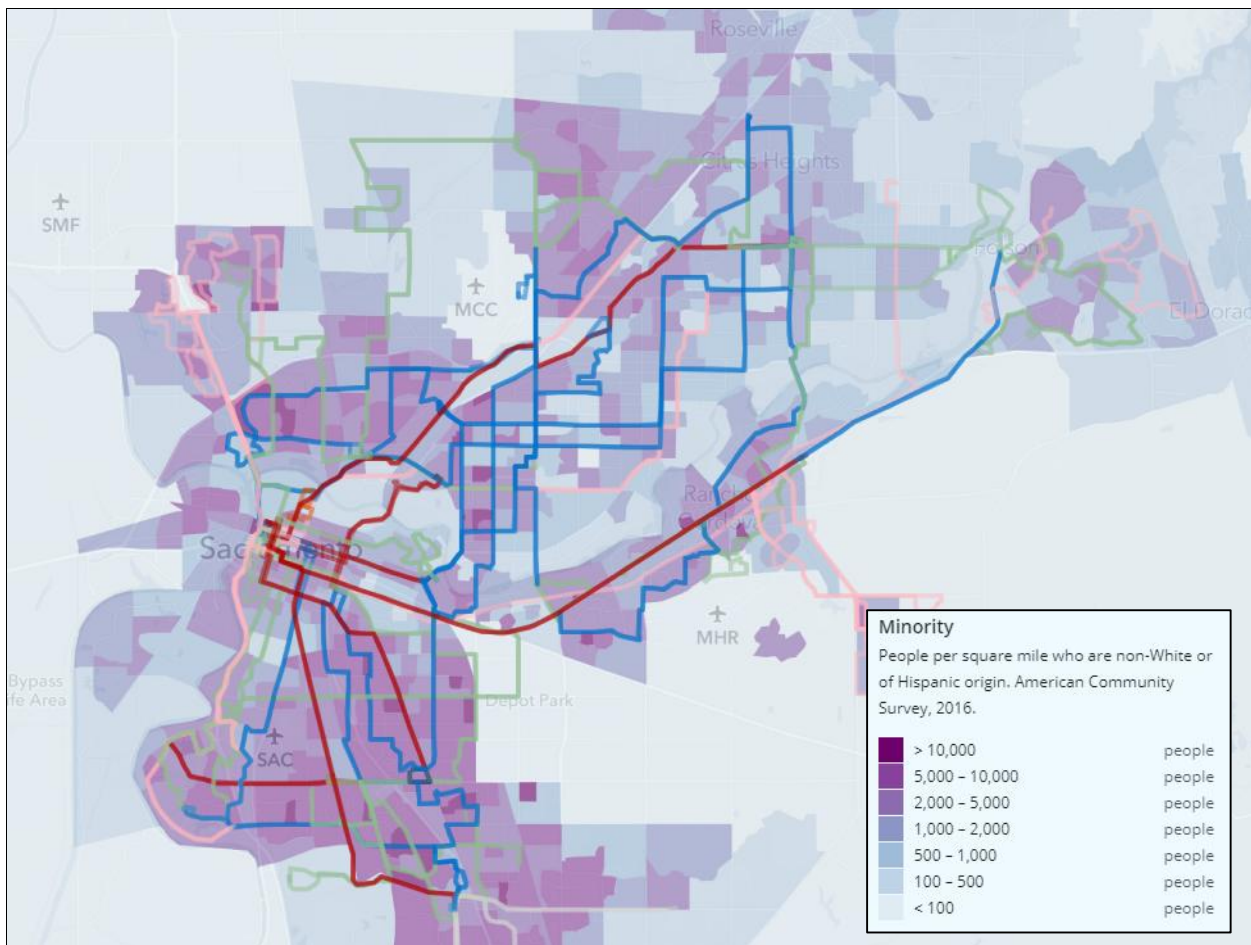




## 5. Effect on Minority Populations

FTA defines a minority person as anyone who is American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, or Native Hawaiian or other Pacific Islander. Figure 5 shows minority population density within the SacRT service area.

**Figure 5**  
**Minority Population Density**



Based on the demographic composition of the ridership of the 46 existing routes in the project, 4,281,802 revenue miles per year (72.2 percent) benefit minority populations and 1,651,163 revenue miles per year (27.8 percent) benefit non-minority populations.

Under the proposed system, of the 6,225,570 revenue miles in the project, 4,498,794 revenue miles per year (72.3 percent) would benefit minority populations and 1,726,776 revenue miles (27.7 percent) would benefit non-minority populations.

**Figure 6**  
**Existing Minority Revenue Miles by Route**

Route	Revenue Miles Per Year	Percent Minority	Minority Revenue Miles	Non-Minority Revenue Miles
1	315,554	62.4%	196,950	118,605
2	72,093	76.8%	55,357	16,736
3	24,729	68.8%	17,001	7,728
5	49,304	90.1%	44,443	4,861
6	72,735	75.8%	55,103	17,633
7	15,850	63.2%	10,010	5,839
11	110,154	80.5%	88,721	21,433
13	53,150	74.5%	39,591	13,559
15	193,721	74.7%	144,781	48,940
19	200,998	67.6%	135,935	65,063
21	267,052	61.9%	165,187	101,865
22	33,335	69.4%	23,130	10,205
23	340,236	62.5%	212,494	127,742
24	33,823	61.4%	20,777	13,046
25	169,771	56.6%	96,153	73,617
26	166,461	76.2%	126,876	39,585
28	89,573	50.7%	45,436	44,137
29	16,093	26.1%	4,198	11,895
30	170,187	58.9%	100,312	69,875
33	23,114	70.4%	16,265	6,849
34	54,397	50.0%	27,198	27,198
38	81,093	69.4%	56,288	24,805
47	36,058	85.7%	30,907	5,151
51	335,449	78.5%	263,309	72,140
54	83,664	85.7%	71,712	11,952
55	120,377	87.9%	105,805	14,572
56	198,622	90.9%	180,615	18,007
61	85,951	80.2%	68,892	17,059
62	175,697	71.1%	125,002	50,695
65	101,417	88.8%	90,034	11,384
67	217,863	80.4%	175,180	42,683
68	209,352	83.3%	174,460	34,892
72	126,664	70.9%	89,856	36,808
74	36,347	73.7%	26,782	9,565
75	25,318	60.9%	15,411	9,907
80	194,883	67.9%	132,401	62,482
81	338,933	86.1%	291,797	47,136
82	263,789	65.8%	173,596	90,192
84	127,908	65.1%	83,251	44,658
86	199,546	82.5%	164,716	34,830
87	117,104	73.1%	85,553	31,551
88	136,293	69.9%	95,290	41,003
93	165,430	73.3%	121,221	44,210
95	40,315	47.3%	19,058	21,257
103	18,004	30.8%	5,540	12,464
109	24,557	37.5%	9,209	15,348
<b>Total</b>	<b>5,932,965</b>	<b>72.2%</b>	<b>4,281,802</b>	<b>1,651,163</b>

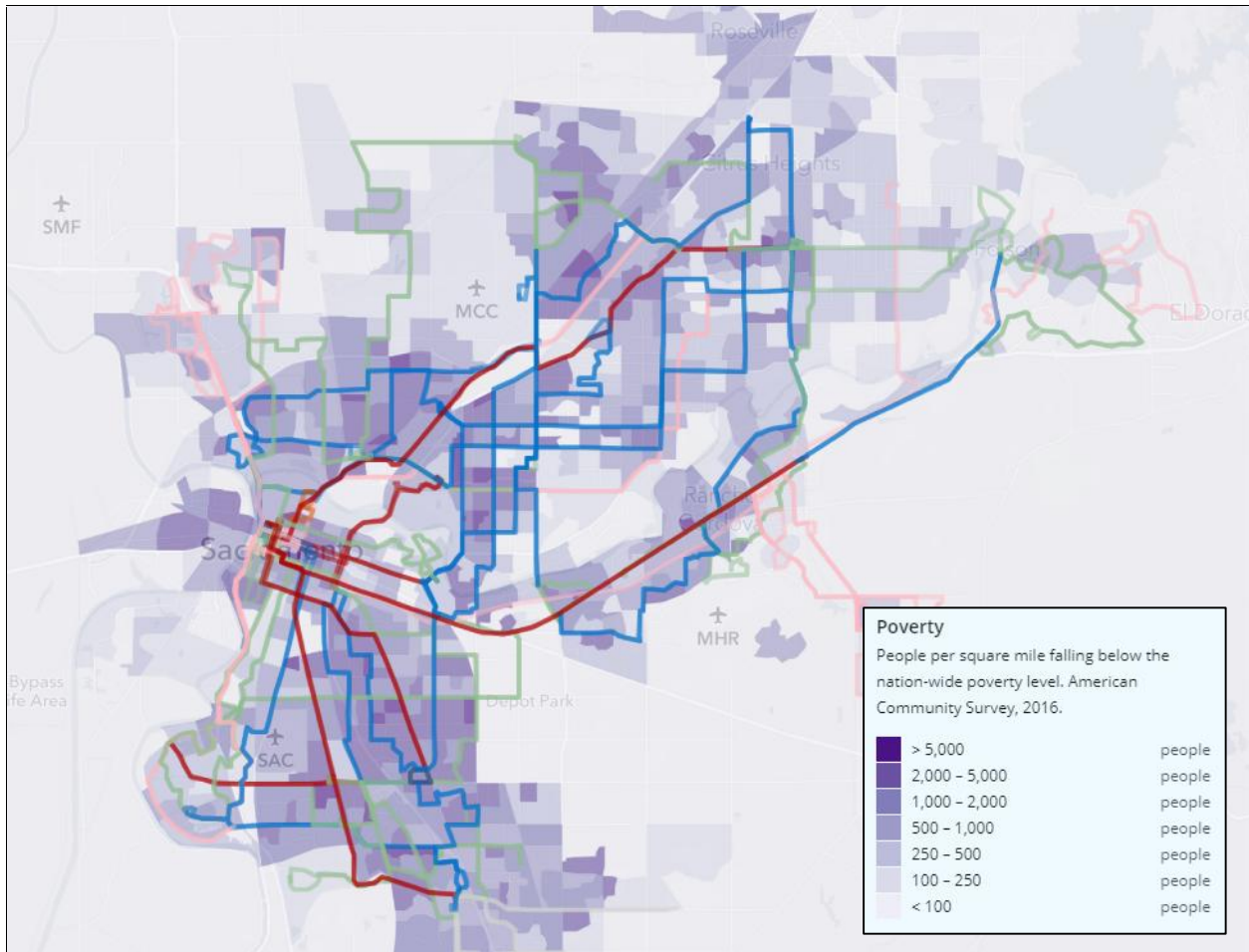
**Figure 7**  
**Proposed Minority Revenue Miles by Route**

Route	Revenue Miles Per Year	Percent Minority	Minority Revenue Miles	Non-Minority Revenue Miles
1	314,205	62.4%	196,107	118,098
11	214,619	80.5%	172,861	41,758
13	197,827	74.5%	147,361	50,466
15	121,171	74.7%	90,559	30,612
19	140,872	67.6%	95,272	45,600
21	265,056	61.9%	163,952	101,104
23	388,161	62.5%	242,425	145,735
25	295,560	56.6%	167,397	128,163
26	284,351	76.2%	216,731	67,620
30	114,292	58.9%	67,366	46,926
33	27,603	70.4%	19,425	8,179
38	122,867	69.4%	85,284	37,583
51	353,800	78.5%	277,714	76,086
56	195,426	90.9%	177,709	17,717
61	255,572	80.2%	204,847	50,724
62	204,104	71.1%	145,213	58,892
67	311,885	80.4%	250,781	61,104
68	347,104	83.3%	289,253	57,851
72	129,854	70.9%	92,119	37,735
75	100,844	60.9%	61,383	39,461
81	378,872	86.1%	326,181	52,691
82	291,768	65.8%	192,009	99,759
84	323,586	65.1%	210,610	112,976
86	217,899	82.5%	179,866	38,033
87	136,253	73.1%	99,543	36,711
88	148,718	69.9%	103,976	44,741
93	179,125	73.3%	131,255	47,870
102	26,772	76.8%	20,557	6,215
103	24,740	68.8%	17,008	7,731
105	3,190	90.1%	2,876	315
106	17,336	75.8%	13,133	4,203
107	15,850	63.2%	10,010	5,839
109	24,597	37.5%	9,224	15,373
129	16,139	26.1%	4,210	11,929
134	16,695	50.0%	8,348	8,348
161	864	80.2%	692	171
193	17,993	30.8%	5,536	12,457
<b>Total</b>	<b>6,225,570</b>	<b>72.3%</b>	<b>4,498,794</b>	<b>1,726,776</b>

## 6. Effect on Low-Income Populations

FTA defines a low-income person as a person whose household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines. The HHS definition varies by year and household size. For the purpose of this analysis, RT used HHS poverty guidelines from 2013. Survey participants were asked their household size and their household income from a list of ranges. For the purposes of this survey, the participant's income is assumed to be the midpoint of the range selected.<sup>2</sup> Figure 8 shows low-income population density within the SacRT service area.

**Figure 8**  
**Low-Income Population Density**



<sup>2</sup> For example, if a passenger selected a household income range of \$25,000 to \$35,000, that passenger's income was assumed to be \$30,000 for the purposes of this analysis.

**Figure 9**  
**Existing Low-Income Revenue Miles**  
**by Route**

Route	Revenue Miles Per Year	Percent Low-Income	Low-Income Revenue Miles	Non-Low-Income Revenue Miles
1	315,554	58.7%	185,326	130,229
2	72,093	28.4%	20,481	51,612
3	24,729	4.7%	1,164	23,566
5	49,304	62.3%	30,699	18,605
6	72,735	33.0%	24,034	48,701
7	15,850	0.0%	0	15,850
11	110,154	35.2%	38,779	71,375
13	53,150	57.5%	30,546	22,604
15	193,721	66.9%	129,650	64,071
19	200,998	52.9%	106,325	94,673
21	267,052	49.8%	132,985	134,067
22	33,335	55.6%	18,519	14,816
23	340,236	64.1%	218,211	122,026
24	33,823	38.2%	12,914	20,909
25	169,771	54.1%	91,886	77,884
26	166,461	67.5%	112,444	54,017
28	89,573	29.5%	26,431	63,142
29	16,093	10.8%	1,733	14,360
30	170,187	37.2%	63,281	106,906
33	23,114	91.7%	21,188	1,926
34	54,397	25.7%	13,988	40,409
38	81,093	43.4%	35,211	45,881
47	36,058	68.8%	24,790	11,268
51	335,449	61.1%	205,072	130,377
54	83,664	57.7%	48,286	35,378
55	120,377	67.3%	80,994	39,383
56	198,622	62.2%	123,451	75,171
61	85,951	50.9%	43,743	42,208
62	175,697	51.3%	90,101	85,596
65	101,417	54.9%	55,656	45,761
67	217,863	64.8%	141,151	76,712
68	209,352	64.6%	135,245	74,107
72	126,664	55.9%	70,743	55,921
74	36,347	40.6%	14,750	21,598
75	25,318	64.7%	16,382	8,936
80	194,883	58.7%	114,388	80,495
81	338,933	58.2%	197,174	141,759
82	263,789	53.8%	141,959	121,830
84	127,908	54.6%	69,824	58,084
86	199,546	50.2%	100,205	99,341
87	117,104	63.8%	74,694	42,411
88	136,293	44.8%	61,097	75,196
93	165,430	62.4%	103,293	62,137
95	40,315	48.8%	19,689	20,626
103	18,004	8.3%	1,500	16,503
109	24,557	11.8%	2,889	21,668
<b>Total</b>	<b>5,932,965</b>	<b>54.8%</b>	<b>3,252,870</b>	<b>2,680,095</b>

**Figure 10**  
**Proposed Low-Income Revenue Miles**  
**by Route**

Route	Revenue Miles Per Year	Percent Low-Income	Low-Income Revenue Miles	Non-Low-Income Revenue Miles
1	314,205	58.7%	184,533	129,672
11	214,619	35.2%	75,555	139,065
13	197,827	57.5%	113,693	84,133
15	121,171	66.9%	81,095	40,076
19	140,872	52.9%	74,519	66,353
21	265,056	49.8%	131,992	133,065
23	388,161	64.1%	248,947	139,214
25	295,560	54.1%	159,968	135,592
26	284,351	67.5%	192,078	92,273
30	114,292	37.2%	42,497	71,795
33	27,603	91.7%	25,303	2,300
38	122,867	43.4%	53,350	69,517
51	353,800	61.1%	216,291	137,509
56	195,426	62.2%	121,465	73,961
61	255,572	50.9%	130,068	125,504
62	204,104	51.3%	104,669	99,435
67	311,885	64.8%	202,066	109,819
68	347,104	64.6%	224,235	122,869
72	129,854	55.9%	72,525	57,329
75	100,844	64.7%	65,252	35,592
81	378,872	58.2%	220,408	158,463
82	291,768	53.8%	157,016	134,752
84	323,586	54.6%	176,644	146,943
86	217,899	50.2%	109,421	108,478
87	136,253	63.8%	86,908	49,346
88	148,718	44.8%	66,666	82,051
93	179,125	62.4%	111,844	67,281
102	26,772	28.4%	7,606	19,166
103	24,740	4.7%	1,164	23,575
105	3,190	62.3%	1,986	1,204
106	17,336	33.0%	5,728	11,607
107	15,850	0.0%	0	15,850
109	24,597	11.8%	2,894	21,704
129	16,139	10.8%	1,738	14,401
134	16,695	25.7%	4,293	12,402
161	864	50.9%	440	424
193	17,993	8.3%	1,499	16,494
<b>Total</b>	<b>6,225,570</b>	<b>55.8%</b>	<b>3,476,357</b>	<b>2,749,213</b>

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Based on the demographic composition of the ridership of the 46 existing routes in the project, 3,252,870 revenue miles per year (54.8 percent) benefit low-income populations and 2,680,870 revenue miles per year (45.2 percent) benefit non-low-income populations.

Under the proposed system, of the 6,225,570 revenue miles in the project, 3,476,357 revenue miles per year (55.8 percent) would benefit low-income populations and 2,749,213 revenue miles (44.2 percent) would benefit non-low-income populations.

## 7. Impacts of SacRT Forward Project

As proposed, the SacRT Forward project would redistribute service in a way that would result in a slight increase in the percent of that service that benefits both minority and low-income populations. The percent of revenue miles available to minority riders would increase from 72.2 to 72.3 percent. The percent of service available to low-income riders would increase from 54.8 to 55.8 percent.

**Figure 11**  
**Summary of Impacts**

	Percent Minority	Percent Low-Income
Existing	72.2%	54.8%
Proposed	72.3%	55.8%

Based on these results, this analysis finds that *the proposed changes would result in no disparate impacts to minority populations and no disproportionate burdens on low-income populations.*

## 8. Impacts of Light Rail Headway Improvements

The weekend light rail headway improvements implemented on January 6, 2019 have been evaluated separately from the SacRT Forward project. The headway improvements affected both the Blue Line and the Gold Line. Blue Line weekend ridership is substantially higher percentage minority (81.6 percent) and low-income (65.7 percent) than the SacRT system 69.0 percent and 53.0 percent, respectively); however, Gold Line weekend ridership is slightly lower percentage minority (66.1 percent) and low-income (51.3 percent) than the SacRT system.

**Figure 12  
Light Rail Rider Demographics**

	Percent Minority	Percent Low-Income
Blue Line Weekend Ridership	81.6%	65.7%
Gold Line Weekend Ridership	66.1%	51.3%
SacRT Systemwide Ridership	69.0%	53.0%

The headway improvements add 76,609 revenue miles to the Blue Line and 56,989 revenue miles to the Gold Line per year. After factoring in the demographic composition of these two lines, the new revenue mileage added to the system is 75.0 percent minority and 59.6 percent low-income, both of which exceed the existing systemwide average. *Therefore, these changes would result in no disparate impacts to minority populations and no disproportionate burdens to low-income populations.*

**Figure 13  
Demographics of New Light Rail Service**

	New Revenue Miles Per Year	% Minority Ridership	Minority Revenue Miles	% Low-Income Ridership	Low-Income Revenue Miles
Blue Line	76,609	81.6%	62,513	65.7%	50,332
Gold Line	56,989	66.1%	37,670	51.3%	29,235
Total	133,598	75.0%	100,183	59.6%	79,568

FTA Title VI guidance recommends taking multiple service changes into consideration in aggregate. Because both the light rail headway improvements and the SacRT Forward changes are positive to minority and low-income populations with respect to Title VI, this report also finds that *in aggregate, the proposed changes would result in no disparate impacts to minority populations and no disproportionate burdens to low-income populations.*