



Title VI Fare Equity Analysis

DRAFT

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1. Purpose of Analysis

Pursuant to SacRT's fare 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 changes to SacRT's fare structure.

2. Project Description

This analysis covers two fare changes:

1. Daily Best Connect Card Fare – On March 13, 2017, SacRT authorized, on a temporary six-month basis, a Daily Best Fare for Connect Card users, ensuring that riders who board three or more times using Connect Card pay no more than the daily fare amount (i.e., while preventing them from paying a higher-than-necessary cost to travel). The Daily Best Fare charges a full fare amount (\$2.75, or \$1.35 discount fare) for the first and second boarding of the day. If the rider chooses to board SacRT a third time during the same service day, the Connect Card system will automatically adjust the fare amount charged to ensure the total daily fare paid by the cardholder does not exceed the price of SacRT's daily pass (\$7.00 or \$3.50 discount fare).
2. 90-Minute Connect Card Fare – On April 24, 2017, SacRT authorized, on a temporary six-month basis, a 90-Minute Fare for Connect Card users. The 90-minute fare is priced the same as SacRT's traditional single ride fare (i.e., \$2.75, or \$1.35 discount fare); however, it entitles the user to unlimited bus and light rail rides during the 90-minute activation period.¹

3. Title VI Requirements

SacRT is required to conduct a Title VI fare equity analysis prior to implementing any fare change, with some exceptions, including promotional free-ride days and promotional fare programs lasting up to six months.² Both of the proposed changes were implemented for a six-month pilot program, with final approval contingent on approval of a Title VI fare equity analysis.

Prior to any fare changes being approved permanently, the Board must approve the findings of a final Title VI fare equity analysis. Prior to approving a final Title VI fare equity analysis, SacRT policy requires that a draft analysis of the proposed changes

¹ RT's traditional light rail single ride tickets actually allow unlimited boardings on light rail during a 90-minute period; however, no such privilege existed for bus riders prior to the mobile fare app.

² See FTA Circular 4702.1B, Chapter IV, Section 7 and RT Fare Change Policies (Resolution No. 15-11-0129).

(this document) be made available for a 30-day public review period, that members of the public be invited to comment, and that staff and the Board of Directors take public comments into consideration. In accordance with these requirements, this document will be published on SacRT's web site and SacRT will provide notice to customers of the opportunity to provide comments.

4. Data and Methodology

On-Board Survey - In April 2013, an on-board passenger survey was conducted on SacRT buses and light rail trains. Passengers on randomly selected trips on all SacRT routes completed a self-administered questionnaire. In accordance with FTA guidance, when possible, equity analyses are based on demographic estimates of actual riders. These on-board survey responses therefore form the basis of the analysis below.

Fare Survey - On an annual basis, SacRT conducts a passenger fare survey. This survey provides ridership figures for each fare type, including multi-ride passes, and is used to compute an average fare per boarding for each fare type.

Special Surveys – In the case of new fare types, SacRT may use special surveys or research to estimate minority and/or low-income utilization rates.

Analysis - Using the demographic data from the 2013 on-board survey, SacRT can estimate the percent minority and the percent low-income utilization of each fare type. This data is combined with the average fare per boarding for each fare type from the annual fare survey. SacRT can then estimate overall average fare splits for minority versus non-minority and low-income versus non-low-income riders.

Findings - Potential disparate impacts (and disproportionate burdens) from fare changes are determined by comparing the rate of change of the average fare for all minority riders to that for non-minority riders. SacRT's Title VI goal is for the percent increase in average fare for minority populations to be less than or equal to that for non-minority populations in the case of a net fare increase and equal or greater to that for non-minority populations in the case of a net fare decrease. A disparate impact may exist if there is a statistically significant deficiency from this goal. SacRT defines a deficiency as statistically significant if the rates of change differ by more than 20 percent.

Minority Definition - 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.

Low-Income Definition - 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, SacRT used HHS poverty guidelines from 2013.³ 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.⁴

5. Baseline Data

Based on Fiscal Year 2018 budget forecasts, SacRT will average \$1.51 in fare revenue per passenger boarding. These figures include a \$1 million deduction for transfer agreement reimbursements to other agencies, 451,728 boardings made by children under age five, and 297,524 boardings made by riders in other minor categories for which SacRT has no demographic data. Excluding these categories, SacRT expects to collect \$32,609,897 in fares over 20,250,747 passenger boardings for an average fare of \$1.61 for riders with known demographic data. These figures are used as a baseline for the remainder of this analysis.

Figure 1
Baseline Minority
Ridership Statistics – FY 2018

	Fare Revenue		Boardings		Average Fare
	Amount	%	Amount	%	
Minority	\$21,176,121	64.9%	13,499,345	66.7%	\$1.57
Non-Minority	<u>\$11,433,777</u>	<u>35.1%</u>	<u>6,751,402</u>	<u>33.3%</u>	\$1.69
Subtotal	\$32,609,897	100.0%	20,250,747	100.0%	\$1.61
Non-Classified	<u>(\$1,000,000)</u>		<u>749,253</u>		
Total	\$31,609,897		21,000,000		\$1.51

³ Although newer HHS statistics are available, the 2013 statistics were the newest statistics available at the time that the statistical analysis was performed on the 2013 on-board survey data. RT's baseline demographic statistical data is typically refreshed during the process of preparing the triennial Title VI update report, which was last updated in 2017.

⁴ 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.

Minority riders make up an estimated 66.7 percent of SacRT ridership and pay an estimated 64.9 percent of fares. They pay an average of \$1.57 per boarding, compared to \$1.69 for non-minority riders. Low-income riders make up an estimated 45.7 percent of SacRT fixed-route ridership and pay an estimated 42.3 percent of fares. They pay an average of \$1.49 per boarding compared to \$1.71 for non-low-income riders.

**Figure 2
Baseline Low-Income
Ridership Statistics – FY 2018**

	Fare Revenue		Boardings		Average Fare
	Amount	%	Amount	%	
Low-Income	\$13,785,347	42.3%	9,263,407	45.7%	\$1.49
Non-Low-Income	<u>\$18,824,550</u>	<u>57.7%</u>	<u>10,987,340</u>	<u>54.3%</u>	\$1.71
Subtotal	\$32,609,897	100.0%	20,250,747	100.0%	\$1.61
Non-Classified	<u>-\$1,000,000</u>		<u>749,253</u>		
Total	\$31,609,897		21,000,000		\$1.51

Baseline fare revenue, passenger boardings, and average fare forecasts for Fiscal Year 2018 are provided for each major fare type in Figure 3.



**Figure 3
Ridership and Fare Revenue
By Fare Type – FY 2018 Forecasts**

Fare Type	Face Value	Fare Revenue	Boardings	Average Fare
Single Cash - Bus	\$2.75	\$1,997,447	726,344	\$2.75
Single Ticket - Bus	\$2.75	\$538,705	195,893	\$2.75
Single Cash - Rail	\$2.75	\$1,288,214	669,351	\$1.92
Single Ticket - Rail	\$2.75	\$1,685,720	875,893	\$1.92
Disc Single Cash - Bus	\$1.35	\$582,956	431,819	\$1.35
Disc Single Tkt - Bus	\$1.35	\$103,016	76,308	\$1.35
Disc Single Cash - Rail	\$1.35	\$146,054	131,799	\$1.11
Disc Single Tkt - Rail	\$1.35	\$191,151	172,495	\$1.11
Daily Pass	\$7.00	\$5,298,884	3,398,862	\$1.56
Disc Daily Pass	\$3.50	\$1,694,963	1,499,707	\$1.13
Monthly Pass	\$110.00	\$9,965,915	3,716,716	\$2.68
Semi-Monthly Pass	\$60.00	\$276,474	124,018	\$2.23
Student Semi-Monthly	\$27.50	\$702,852	643,071	\$1.09
Senr/Disb Monthly/Semi	\$55.00	\$1,832,223	1,949,312	\$0.94
Los Rios		\$2,300,000	2,636,157	\$0.87
CSUS		\$822,387	714,256	\$1.15
DHA		\$1,936,200	833,535	\$2.32
Fare Evader		\$0	608,018	\$0.00
Lifetime		\$0	134,268	\$0.00
Mobile Single	\$2.75	\$482,183	250,540	\$1.92
Mobile Daily	\$7.00	\$123,116	79,088	\$1.56
Mobile Disc Single	\$1.35	\$50,792	45,835	\$1.11
Mobile Disc Daily	\$3.50	\$32,785	29,008	\$1.13
G1 Employee Pass		\$500,000	283,200	\$1.77
Round Trip (Special Event)	\$5.50	\$46,693	16,979	\$2.75
Round Trip (Discount Spec Event)	\$2.75	\$11,166	8,273	\$1.35
Subtotal		\$32,609,897	20,250,747	\$1.61
Child		\$0	451,728	\$0.00
Other Boardings		\$0	297,524	\$0.00
Transfer Agreements		(\$1,000,000)	n/a	n/a
Total		\$31,609,897	21,000,000	\$1.51

6. Demographics of New Fares

Due to the recent launch of the Connect Card, demographic data on cardholders would likely be skewed toward participants in the voluntary “soft launch” program, who likely do not represent the average Connect Card user once the card is more widely distributed. For this analysis, staff has therefore used demographics from existing users of traditional fares who are expected to convert to Connect Card, in lieu of data collected directly from Connect Card users.

Users of the new Daily Best Fare are expected to be drawn entirely from existing daily pass users, which are 75.5 percent minority and 59.6 percent low-income (with similar figures for the discount daily pass). Users of the 90-Minute Ticket are expected to be drawn largely from existing daily pass users, but also from existing single ride and monthly pass users. Based on expected use of the 90-minute ticket by each of these groups, users of the 90-minute ticket are expected to be 72.6 percent minority and 53.9 percent low-income. The discount 90-minute ticket is expected to have similar minority utilization but slightly higher low-income utilization at 58.4 percent.

Based on this analysis, all four new fare types are expected to have greater minority and low-income utilization than the overall SacRT system, which has 66.7 percent minority and 45.7 percent low-income utilization.

Figure 4
Minority and Low-Income
Use of New Fare Types

Fare Type	% Minority	% Low-Income	Minority/ Low-Income Fare Type
Daily Best Fare - Full	75.5%	59.6%	Yes
Daily Best Fare - Disc	75.2%	60.7%	Yes
90m Ticket Connect Card - Full	72.6%	53.9%	Yes
90m Ticket Connect Card - Disc	72.5%	58.4%	Yes
SacRT System (Baseline)	66.7%	45.7%	

7. Sales and Ridership Forecasts

Based on projections of existing sales data for the new fare types collected during the six-month pilot period and available at the time of preparation of this report, all of the new fare types combined are expected to total \$1,009,550 in sales and 758,303 boarding passengers per year. The most heavily-used type is expected to be the full-priced 90 Minute Ticket on Connect Card, at \$716,400 in sales per year.

**Figure 5
Sales and Ridership Forecasts
for New Fare Types**

Fare Type	Minority/Low-Income Fare Type	Fare Revenue	Boardings	Average Fare
Daily Best Fare - Full	Yes	\$159,075	105,365	\$1.51
Daily Best Fare - Disc	Yes	\$24,404	21,896	\$1.11
90m Ticket Connect Card - Full	Yes	\$716,400	521,018	\$1.38
90m Ticket Connect Card - Disc	Yes	\$109,671	110,024	\$1.00
Subtotal - New fares	Yes	\$1,009,550	758,303	\$1.33
Baseline - SacRT System	n/a	\$32,609,897	20,250,747	\$1.61

Collectively, the average fare for the new fare types is expected to be \$1.33 per boardings, approximately 17 percent less than SacRT's existing systemwide average of \$1.61.

Daily Best Fare ridership is expected to come primarily from existing users of SacRT's prepaid daily passes. Approximately 15 percent of existing daily pass boardings are made using a prepaid pass (with the remainder being purchased at the time of boarding from the bus farebox or a light rail fare vending machine). SacRT expects that all existing prepaid daily pass users will become Connect Card users, due to retirement of the existing prepaid daily passes, but that only approximately 20 percent will continue to use a daily pass, in the form of the Daily Best Fare, with the remaining 80 percent taking advantage of the new 90-minute fare to make multiple-seat rides at a lower out-of-pocket price.⁵

⁵ For example, a rider making a round trip using two buses each direction would formerly pay \$7.00 for a daily pass and would, under the proposed change, be allowed to pay \$2.75 in each direction for two 90-Minute Tickets, paying a total of \$5.50 for his/her round trip, saving \$1.50.

Figure 6
Expected Change in Sales

Fare Type	Before	After	Change
Existing Fares			
Single Cash - Bus	\$1,997,447	\$1,987,460	(\$9,987)
Single Ticket - Bus	\$538,705	\$536,012	(\$2,694)
Single Cash - Rail	\$1,288,214	\$1,279,010	(\$9,204)
Single Ticket - Rail	\$1,685,720	\$1,673,676	(\$12,044)
Disc Single Cash - Bus	\$582,956	\$580,041	(\$2,915)
Disc Single Tkt - Bus	\$103,016	\$102,501	(\$515)
Disc Single Cash - Rail	\$146,054	\$145,164	(\$890)
Disc Single Tkt - Rail	\$191,151	\$189,987	(\$1,164)
Daily Pass	\$5,298,884	\$4,336,087	(\$962,798)
Disc Daily Pass	\$1,694,963	\$1,549,479	(\$145,484)
Monthly Pass	\$9,965,915	\$9,829,635	(\$136,280)
Semi-Monthly Pass	\$276,474	\$269,033	(\$7,441)
Student Semi-Monthly	\$702,852	\$699,315	(\$3,537)
Senr/Disb Monthly/Semi	\$1,832,223	\$1,821,502	(\$10,721)
New Fares			
Daily Best Fare - Full	\$0	\$159,075	\$159,075
Daily Best Fare - Disc	\$0	\$24,404	\$24,404
90m Ticket Connect Card - Full	\$0	\$716,400	\$716,400
90m Ticket Connect Card - Disc	\$0	\$109,671	\$109,671
Total	\$26,304,576	\$26,008,454	(\$296,122)

Ridership on the 90-Minute Ticket is expected to come from multiple sources. The largest single source is expected to be existing prepaid daily pass users who find the 90-Minute Ticket more advantageous than a Daily Pass; however, a small fraction of Monthly Pass users are also expected to transition to 90-Minute Tickets in cases where they provide a better value.

Customers regularly making a two-seat ride and riding between fifteen and twenty days per month are likely to convert from a Monthly Pass to the 90-Minute Ticket. Customers regularly making a two-seat ride but riding fewer than fifteen days per month are also likely to convert to the 90-Minute Ticket, but from a Daily Pass rather than a Monthly Pass.

A small number of riders are also assumed to occasionally be making a two-seat ride *without* a return trip on transit, and therefore paying \$5.50 for their one-way journey (i.e., paying the \$2.75 single fare twice). The 90-Minute Ticket would allow these riders to

avoid paying their second single fare of \$2.75, allowing them to achieve a 50 percent savings on their out-of-pocket cost to take transit.

8. Net Sales and Ridership Impacts

The new fare types primarily impact Daily Pass users, with a small impact on Monthly Pass users. For this analysis, net sales and ridership impacts are estimated by assuming a Connect Card adoption rate, as well as assumed conversion rates from existing pass users to the new fare types. The tables below provide details on the changes that are expected to occur to each existing and new fare categories.

**Figure 7
Expected Change in Boardings**

Fare Type	Before	After	Change
Existing Fare Types			
Single Cash - Bus	726,344	722,713	(3,632)
Single Ticket - Bus	195,893	194,913	(979)
Single Cash - Rail	669,351	666,004	(3,347)
Single Ticket - Rail	875,893	871,514	(4,379)
Disc Single Cash - Bus	431,819	429,660	(2,159)
Disc Single Tkt - Bus	76,308	75,927	(382)
Disc Single Cash - Rail	131,799	131,140	(659)
Disc Single Tkt - Rail	172,495	171,633	(862)
Daily Pass	3,398,862	2,872,039	(526,824)
Disc Daily Pass	1,499,707	1,390,228	(109,479)
Monthly Pass	3,716,716	3,642,382	(74,334)
Semi-Monthly Pass	124,018	120,298	(3,721)
Student Semi-Monthly	643,071	639,856	(3,215)
Senr/Disb Monthly/Semi	1,949,312	1,939,565	(9,747)
New Fare Types			
Daily Best Fare - Full	0	105,365	105,365
Daily Best Fare - Disc	0	21,896	21,896
90m Ticket Connect Card - Full	0	521,018	521,018
90m Ticket Connect Card - Disc	0	110,024	110,024
Total	14,611,589	14,626,173	14,584

9. Impact on Average Fare

Users of the Daily Best Fare, who are expected to consist entirely of current Daily Pass users, will not see any change in their average fare per boarding. Users of the 90-Minute Ticket are expected to come from a variety of existing fare types with an overall average fare of \$1.92 per boarding. These riders are expected to experience a \$0.54 reduction (28 percent) in their average fare per boarding to \$1.38. Discount 90-Minute Ticket users are expected to see a similar 26 percent reduction in average fare.

**Figure 8
Changes in Average Fare
For Users of New Fare Types**

New Fare Type	Old Average Fare	New Average Fare	Change	% Change	Minority/ Low-Income Type?
Daily Best Fare - Full	\$1.51	\$1.51	\$0.00	0%	Yes
Daily Best Fare - Disc	\$1.11	\$1.11	\$0.00	0%	Yes
90m Ticket Connect Card - Full	\$1.92	\$1.38	-\$0.54	-28%	Yes
90m Ticket Connect Card - Disc	\$1.35	\$1.00	-\$0.35	-26%	Yes

All four proposed fare categories are expected to have above-average minority and low-income utilization and all four categories are expected to benefit or be unaffected by the proposed fare changes.

10. System wide Average Fare Impacts

If the proposed changes are approved, SacRT is expected to average \$1.49 in fare revenue per passenger boarding for Fiscal Year 2018, a reduction of \$0.02 from the baseline estimate of \$1.51. For categories with known demographic data, where the existing average fare is \$1.61, the proposed average fare would decrease to \$1.59 per boarding.

**Figure 9
Impact of New Fares
On Systemwide Minority Average Fare**

	Fare Revenue		Boardings		Average Fare
	Amount	%	Amount	%	
Minority	\$20,961,233	64.9%	13,509,928	66.7%	\$1.55
Non-Minority	<u>\$11,352,543</u>	<u>35.1%</u>	<u>6,755,403</u>	<u>33.3%</u>	\$1.68
Subtotal	\$32,313,776	100.0%	20,265,331	100.0%	\$1.59
Non-Classified	<u>-\$1,000,000</u>		<u>749,253</u>		
Total	\$31,313,776		21,014,584		\$1.49

Under the proposed changes, minority riders would continue to pay less per boarding (\$1.55) than non-minority riders (\$1.68).

**Figure 10
Impact of New Fares
On Systemwide Low-Income Average Fare**

	Fare Revenue		Boardings		Average Fare
	Amount	%	Amount	%	
Low-Income	\$13,625,132	42.2%	9,271,513	45.8%	\$1.47
Non-Low-Income	<u>\$18,688,644</u>	<u>57.8%</u>	<u>10,993,818</u>	<u>54.2%</u>	\$1.70
Subtotal	\$32,313,776	100.0%	20,265,331	100.0%	\$1.59
Non-Classified	<u>-\$1,000,000</u>		<u>749,253</u>		
Total	\$31,313,776		21,014,584		\$1.49

Low-income riders would also continue to pay less (\$1.47) than non-low-income riders (\$1.70).

11. Comparison of Impacts

Compared to baseline expectations, minority, non-minority, low-income, and non-low-income riders would all see a reduction in average fare; however, the reduction would be greater for minority populations than for non-minority populations and the reduction would be greater for low-income populations than from non-low-income populations.

Figure 11
Projected Change in Average Fare
Minority and Low-Income Splits

Rider Type	Existing	Proposed	Change	% Change
All	\$1.610	\$1.595	-\$0.016	-0.979%
Minority	\$1.569	\$1.552	-\$0.017	-1.092%
Non-Minority	\$1.694	\$1.681	-\$0.013	-0.769%
Low-Income	\$1.488	\$1.470	-\$0.019	-1.249%
Non-Low-Income	\$1.713	\$1.700	-\$0.013	-0.780%



12. Findings

Potential disparate impacts to minority populations are determined by comparing the *rate of change* of the average fare for all minority riders to that for non-minority riders. An adverse difference exceeding 20 percent is considered significant. The same analysis is conducted for low-income populations to determine potential disproportionate burdens.

Figure 12
Determination of Potential Disparate Impacts
and/or Disproportionate Burdens

a. Percent decrease in non-minority avg fare	-0.77%
b. Threshold of statistical significance (80% * a)	-0.62%
c. Percent decrease in minority avg fare	-1.09%
d. Do fares decrease more for non-minority populations? (a < c)	No
e. Is there evidence of a potential disparate impact (c > b)	No
f. Percent decrease in non-low-income avg fare	-0.78%
g. Threshold of statistical significance (80% * f)	-0.62%
h. Percent decrease in low-income avg fare	-1.25%
i. Do fares decrease more for non-low-income populations? (f < h)	No
j. Is there evidence of a potential disproportionate burden? (h > g)	No

Per SacRT policy and FTA guidance, the impact of multiple fare changes are considered in aggregate to determine their combined effect.

All the new fares combined are expected to benefit minority populations more than non-minority populations; therefore, this analysis finds *that there are no potential disparate impacts on minority populations as a result of the proposed fare changes.*

All the new fares combined are also expected to benefit low-income populations more than non-low-income populations; therefore, this analysis finds *that there are no potential disproportionate burdens on low-income populations as a result of the proposed fare changes.*