

**Fare Equity Analysis  
Methodology & Results**

**All Door Boarding  
Initial Implementation and Proposed Program  
January 2016**

Service Planning and Scheduling  
Civil Rights Programs Compliance

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## **1. PROPOSAL OVERVIEW**

Metro is proposing to increase operating speeds and reduce rider travel time through the introduction of all door boarding on the Metro Silver Line and the Metro Rapid bus network. Operator supervision of fare payment is not possible for rear door boarding passengers. Therefore, a proof of payment method must be employed in conjunction with on vehicle fare enforcement by dedicated fare inspection teams.

Three methods for proof of payment have been considered: (1) provision of added equipment at the farebox to vend a receipt to cash paying customers, (2) requiring a TAP card for fare payment, and (3) upgrading TAP software to permit adding value to a TAP card on the bus (referred to as "Topping Off"). The added equipment would add capital acquisition and ongoing maintenance expenses, and require passengers paying with cash to continue boarding through the front door. The added expense would still require fare inspections, and the added front door boardings by passengers paying with cash would reduce the travel time benefits of the program. Requiring a TAP card for fare payment would permit fare inspections without added expense beyond the cost of the inspection teams, and would permit all door boarding by all passengers. The downside of this approach is that a required TAP card would exclude passengers without a TAP card from boarding buses on lines with all door boarding. The third approach permits issuing a TAP card to passengers who would otherwise be paying their fare in cash, but would slightly reduce the benefit of all door boarding because those without TAP cards would have to board through the front door to get one although for subsequent boardings they would have one and only would need to board through the front door if they needed to add value to it.

A limitation of the third method of fare payment is that riders who are paying their fare with tokens would not be able to ride a service that permits all door boarding because the token would not be converted into value on a TAP card. This fare equity evaluation will determine whether customers who would otherwise want to pay their fare with tokens on lines permitting all door boarding are significantly more minority than other bus riders (Disparate Impact), and/or whether token using customers on these lines are significantly more likely to have poverty level household incomes than other bus riders (Disproportionate Burden).

## **2. METHODOLOGICAL APPROACH**

A Title VI Fare Equity Evaluation is presented herein in accordance with the requirements of Federal Transit Administration Circular 4702.1B. The evaluation assesses whether or not there are adverse disparate impacts on minority passengers and/or disproportionate burdens on low income riders arising from the proposed exclusion of cash fare paying riders from lines permitting all door boarding. The analysis compares the minority and poverty characteristics of the group of Silver Line and Rapid line riders with the characteristics of all Metro bus riders.

The primary data source for this analysis was the Spring 2015 Customer Satisfaction Survey. The survey determined minority status and poverty status of participants. This is the first such survey to provide poverty status as prior surveys did not inquire about household size and grouped respondents by income ranges. While line level data varied in significance and was not usable for this evaluation, data for groups of lines was consistently more significant and used for this evaluation.

## Step By Step Methodology

Data for number of minority and total riders was derived from the survey for the group of Silver and Rapid lines combined as well as all bus lines combined. Riders paying with tokens were identified and their minority populations and total populations within each group were also identified.

	All Riders		Token Only		All	Token
	Minority	Total	Minority	Total	Minority %	Minority %
Silver + Rapid	2469	3048	51	65	81.0%	78.0%
All Bus	12592	15384	364	421	81.9%	86.4%

Table 1  
Minority Ridership Shares for Analysis Groups

Similarly, data for poverty and total riders was obtained from the survey for each of the analysis groups. Riders paying with tokens were also identified and the results are shown in Table 2.

	All Riders		Token Only		All	Token
	Poverty	Total	Poverty	Total	Poverty %	Poverty %
Silver + Rapid	1313	3048	36	65	43.1%	54.8%
All Bus	6948	15384	271	421	45.2%	64.3%

Table 2  
Poverty Ridership Shares for Analysis Groups

Finally, the minority and poverty shares of riders for the proposed program were compared with the comparable values for the Metro bus system to determine whether significant impacts would result from either program.

### 3. RESULTS

The Board of Directors has adopted thresholds for determining when disparate impacts and/or disproportionate burdens result from a proposed action.

A disparate impact occurs when the absolute difference between the minority share of impacted riders and the minority share of similarly situated riders not directly impacted exceeds 5%, and/or the relative difference between the minority share of impacted riders and the minority share of similarly situated riders not directly impacted exceeds 35%.

A disproportionate burden occurs when the absolute difference between the poverty share of impacted riders and the poverty share of similarly situated riders not directly impacted exceeds 5%, and/or the relative difference between the poverty share of impacted riders and the poverty share of similarly situated riders not directly impacted exceeds 35%.

The minority comparisons for the proposed program with the bus system are shown in Table 3.

MINORITY SHARES	Silver & Rapid Lines	Bus System
Token Users	78.0%	
All Riders	81.0%	81.9%
ABSOLUTE DIFFERENCE	Silver & Rapid Lines	
Token Users	-3.8%	
All Riders	-0.8%	
RELATIVE DIFFERENCE	Silver & Rapid Lines	
Token Users	-4.7%	
All Riders	-1.0%	

Table 3  
Minority Share Comparison for Analysis Groups

The poverty comparisons for the proposed program with the bus system are shown in Table 4.

POVERTY SHARES	Silver & Rapid Lines	Bus System
Token Users	54.8%	
All Riders	43.1%	45.2%
ABSOLUTE DIFFERENCE	Silver & Rapid Lines	
Token Users	9.7%	
All Riders	-2.1%	
RELATIVE DIFFERENCE	Silver & Rapid Lines	
Token Users	21.4%	
All Riders	-4.6%	

Table 4  
Poverty Share Comparison for Analysis Groups

There are no differences exceeding the Board adopted thresholds for the minority shares of either token users or other riders of the services proposed to be included in the all door boarding program and all bus riders. Thus, the all door boarding program, as proposed, will not have a Disparate Impact on minority riders.

The poverty share for token users on the services proposed for inclusion in the all door boarding program differs from the poverty share of all bus riders by an amount exceeding the Board adopted absolute difference threshold. Because this group is adversely affected by the proposed program, and significantly poorer than other bus riders, this constitutes a Disproportionate Burden on poverty riders using tokens on the proposed program services. There are no significant differences between the poverty shares of non-token user riders of the proposed program services and all bus riders so poverty level non-token users are not burdened.

In summary, the proposed initial implementation of the all door boarding program will result in a Disproportionate Burden on token users on the proposed program services because they are adversely impacted (tokens will not be accepted for fare payment on these services), and significantly poorer than other bus riders. This impact will be mitigated at such time as TAP cards replace tokens as a means of providing transportation benefits to social service program clients (who are the primary recipient of tokens) which is already being pursued.