

# **Analysis of Racial/Ethnic Disparity in TriMet Fare Enforcement Outcomes on the MAX 2016-2018**

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**Brian C. Renauer, Ph.D.  
Criminal Justice Policy Research Institute  
Portland State University**

## Key Goals:

1. Follow-up to the 2014-2016 study. Using the most recent 2 years of data March 2016 to 2018.
2. Used the same methodology involving the fare evasion survey as the racial/ethnic baseline of the likelihood of being involved in a fare evasion incident.
3. Some new analyses focusing on individuals

## Key Terms:

✓ *Disparity* = differences in enforcement outcomes between racial/ethnic groups of riders *based on an expectation of each group's likelihood* of receiving a warning, citation, or exclusion.

1. Looking for patterns in fare enforcement data that indicate thresholds large enough to determine if disparities between racial/ethnic groups are unlikely due to random statistical or measurement issues.
2. If a threshold in disparity is reached it is considered noteworthy and could signify systemic causes within organizational policy, practices, enforcement officers, or ridership demographics is causing the pattern, including racial bias or profiling.
3. A more thorough investigation of the issue is then warranted.
4. If a threshold is not reached, that doesn't mean an agency should be any less vigilant to ensure equitable enforcement practices or concerned that hidden biases may exist.

## Data:

48,060 fare enforcement incidents on the **MAX** from March 2016 to March 2018.

## Baseline for likelihood of being in a fare evasion incident:

- Racial/ethnic average of the 2016 to 2018 Fare Evasion Surveys

# Fare Evasion Incidents 2014-16 Compared to 2016-18

**Table 2: Fare Enforcement Outcomes (4 years March 2014 to March 2018)**

Race	2014-16 incidents	2016-18 incidents	2014-16 citations	2016-18 citations	2014-16 warnings	2016-18 warnings	2014-16 exclusions	2016-18 exclusions
Grand Total	54,594	48,060	42,836	39,464	5,854	4,228	5,904	4,368
African American	9,807	8,093	7,579	6,454	906	673	1,322	966
Asian	2,595	2,394	2,063	2,083	358	248	174	63
Hispanic	4,796	3,515	3,628	2,843	605	338	563	334
Native American	415	178	316	94	48	14	51	70
Unknown	962	2,706	692	2,111	178	454	92	141
Non-White	18,575	16,886	14,278	13,585	2,095	1,727	2,202	1,574
White	36,019	31,174	28,558	25,879	3,759	2,501	3,702	2,794

**Table 3: Fare Enforcement Outcomes (4 years March 2014 to March 2018)**

Race	2014-16 % incidents	2016-18 % incidents	2014-16 % citations	2016-18 % citations	2014-16 % warnings	2016-18 % warnings	2014-16 % exclusions	2016-18 % exclusions
African American	18.0%	16.8%	17.7%	16.4%	15.5%	15.9%	22.4%	22.1%
Asian	4.8%	5.0%	4.8%	5.3%	6.1%	5.9%	2.9%	1.4%
Hispanic	8.8%	7.3%	8.5%	7.2%	10.3%	8.0%	9.5%	7.6%
Native American	0.8%	0.4%	0.7%	0.2%	0.8%	0.3%	0.9%	1.6%
Unknown	1.8%	5.6%	1.6%	5.3%	3.0%	10.7%	1.6%	3.2%
Non-White	34.0%	35.1%	33.3%	34.4%	35.8%	40.8%	37.3%	36.0%
White	66.0%	64.9%	66.7%	65.6%	64.2%	59.2%	62.7%	64.0%

- **Conclusion 1** = *Declines in total enforcement incidents (9.3%), citations, warnings, and exclusions. Exclusions are down 20%. Declines occurred roughly equally for all racial/ethnic groups.*
- **Conclusion 2** = *Marked change in the proportion of riders classified as as “**unknown**” race/ethnicity (970 incidents to 2,706). Understanding this increase is important. Appears to be driven by a small number of inspectors.*

# Baseline Test # 1: Results

*Table 4: Racial/Ethnic Proportions for Baseline Survey and Fare Enforcement Outcomes 2016-2018*

Race	Baseline % Evaders	% incident	% warn	% cite	% excl <sup>1</sup>
African American	17.8%	16.8%	15.9%	16.4%	22.1%
Asian	5.3%	5.0%	5.9%	5.3%	1.4%
Hispanic	13.1%	7.3%	8.0%	7.2%	7.6%
Unknown	NA	5.6%	10.7%	5.3%	3.2%
Non-White	38.9%	35.1%	40.8%	34.4%	36.0%
White	61.1%	64.9%	59.2%	65.6%	64.0%

<sup>1</sup>Note: “excl” refers to the percentage of exclusions for each racial/ethnic group.

**Conclusion 3** = Differences between the fare evasion survey results and enforcement outcomes are small and indicate little disparity. **Differences are all below the 5% threshold.** African American exclusions are elevated, but below threshold and lower than 2016 report.

**Table 6: Repeat Fare Enforcement Violators 2016-2018**

Race	% repeat (all)	% repeat (within race)	# of incidents involving repeat persons
Total Repeat	33.9%		
African American	22.8%	46.0%	3719 (out of 8,093)
Asian	2.8%	19.3%	462 (out of 2,394)
Hispanic	4.7%	21.8%	768 (out of 3,515)
Native American	0.5%	47.2%	84 (out of 178)
Unknown	5.1%	30.8%	834 (out of 2,706)
Non-White	36.0%	34.7%	5,867 (out of 16,886)
White	64.0%	33.5%	10,446 (out of 31,174)

**Conclusion 4** = *Repeat fare evasion is still a unique challenge and remains more pronounced among African American riders.*

# Chronic Exclusions and Fare Evasion

**Table 8: Chronic Exclusions among African American and White Riders 2016-2018**

Race	Persons excluded	Persons with 3 or more exclusions (in 2 years)	% of exclusions	% of persons
African American	732	56	26% (249 exclusions)	1%
White	2683	142	20% (572 exclusions)	.4%

**Conclusion 5** = *Elevated exclusion rates for African Americans is more likely an issue with a small population of riders engaging in chronic fare evasion and receiving multiple exclusions and less likely the result of systemic racial/ethnic biases in enforcement. The presence of a small group of riders with chronic exclusions is also prevalent among White riders.*

# Exclusions by Sub-Type

**Table 9: Exclusion Violations by Type 2016-2018**

Exclusion Type	African American	Asian	Hispanic	Native American	Unknown	White
Fare related	56.4%	56.4%	55.1%	44.3%	61.7%	52.7%
Prohibited activities	4.5%	4.5%	5.7%	4.3%	5.7%	8.6%
Prohibited misuse	6.4%	6.4%	12%	18.6%	7.8%	10.3%
Criminal activity	20.6%	20.6%	16.5%	22.9%	16.3%	17.8%
Prohibited risks to security and order	12.1%	12.1%	10.8%	10%	8.5%	10.6%

**Conclusion 6** = *Not much racial/ethnic variation in exclusion sub-types.*

# Geographic Variation

**Table 10: Top 50% Stop Locations Where Fare Enforcement Occurs by Race/Ethnicity**

	Number of incidents	% of total incidents	African American	Asian	Hispanic	Native American	Other	White
All stops, % of incidents	48,060		<b>16.8%</b>	<b>5.0%</b>	<b>7.3%</b>	<b>0.4%</b>	<b>5.6%</b>	<b>64.9%</b>
<i>Top 50% of stop locations</i>								
Rose Quarter TC	7,494	15.6%	17.9%	4.7%	6.8%	0.3%	5.6%	64.6%
Old Town/Chinatown	3031	6.3%	16.4%	6.1%	7.4%	0.3%	5.5%	64.3%
Gateway TC	2509	5.2%	20.9%	3.7%	8.2%	0.5%	4.9%	61.7%
Hollywood/42nd Ave	2330	4.8%	17.8%	4.2%	7.3%	0.3%	5.5%	64.8%
82 <sup>nd</sup> Ave	2056	4.3%	21.2%	5.2%	7.5%	0.3%	5.1%	60.7%
Lloyd Center/11th	1776	3.7%	19.9%	4.6%	6.8%	0.2%	4.0%	64.4%
Providence Park	1431	3.0%	13.6%	4.2%	7.0%	1.0%	6.6%	67.6%
PSU South/5th & Jackson	1140	2.4%	12.3%	8.8%	3.9%	0.1%	5.3%	69.7%
Sunset TC	1125	2.3%	11.6%	7.6%	8.8%	0.5%	7.6%	63.8%
Interstate/Rose Quarter	1058	2.2%	21.1%	3.6%	6.0%	0.2%	4.8%	64.4%
% of incidents at top 50% stops		49.8%	17.8%	5.0%	7.1%	0.4%	5.5%	64.3%
% of incidents at all other stops		50.2%	15.9%	5.0%	7.6%	0.4%	5.8%	65.4%

**Conclusion 7 = Not much racial/ethnic variation in stop locations.**

# Baseline Test # 2 – Logistic Regression

**Table 11: Relationship between race/ethnicity and warnings, citations, and exclusions using logistic regression**

Race	Model 1: Comparing Citations vs. Warnings	CI Odds Ratios	Model 2: Comparing Exclusions vs. Citations	CI Odds Ratios
African American	Non-significant	.595- .781	Non-significant	935- 1.162
Asian	Non-significant	.869- 1.363	Small negative, but statistically significant <sup>1</sup>	.289- .536
Hispanic	Non-significant	.903- 1.325	Non-significant	1.080- 1.490
Non-White	Small negative, but statistically significant <sup>1</sup>	.710- .868	Non-significant	.872- 1.041
White	Comparison group		Comparison group	

<sup>1</sup> Note: “significant” means that the p-value in the relationship between race/ethnicity and a citation or exclusion, compared to Whites, was less than .05 controlling for other factors in both a the full model and a reduced model with just the race/ethnicity variable.

**Conclusion 8** = *Impact of race/ethnicity of rider is not a significant predictor of differentiating who receives a citation vs. warning, or citation vs. exclusion.*

**Conclusion 9** = *The question of how to address the population of chronic fare evaders and exclusion recipients, particularly those that become known “regulars”, forms an important policy discussion. Continued citations and exclusions alone does not appear to address the issue.*

*QUESTIONS*