

December 2020

2020 Public Transit Benchmark Report

Aon's Public Transit Liability Benchmark Analysis

[Executive Summary](#)



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Introduction

Aon's Actuarial and Analytics professionals are pleased to present the third edition of the Aon Public Transit Liability Benchmark Analysis.

This benchmark study is produced under a co-marketing agreement between Aon and the American Public Transportation Association (APTA). Participation in this edition of the benchmark study was open to all public transit organizations.

This study is designed with public transit risk managers and stakeholders in mind. The report offers an opportunity to gain more insight into the risk profile of public transits and specifically to enable them to measure, maintain, and potentially reduce their liability exposure. The quantitative and qualitative aspects of the report allows for peer group comparisons of losses, discussion of the impact of safety and loss prevention best practices, and overall perceptions of the leading risk trends. Because of the unique nature of transit risks, a benchmark report that provides risk managers with an effective tool to compare their organization to transit peers is valuable for controlling the probability and/or impact of unfortunate events.

All participants were asked to complete a survey with two main sections. The first section consisted of questions about the organization's risk management structure and practices. The second section presented a list of thirty risks and asked the participants to choose and rank the top ten risks they thought posed the greatest threat to their organization. After completing the survey, participants were asked to provide their loss runs valued between 6/30/2019 and 3/31/2020. Forty-one organizations responded, representing one hundred twenty-one individual transits across twenty-one states, Washington DC, and Canada. Approximately 3.0 billion rider trips are taken on these organizations each year.

The database of public transit liability claims underlying the industry benchmarks contains approximately 90,000 non-zero claims from both auto liability and general liability lines, representing approximately \$1.5 billion of incurred losses. The database contains historical claim information for eleven accident years, 2009 to 2019. To preserve the confidentiality of the participants, all results are presented on an aggregated basis.

The benchmark statistics in this study are grouped on an accident year basis, based on the date of the incident that led to the claim. The study provides actuarial analysis and projections for public transit liability costs from varying perspectives, including:

- Countrywide benchmark statistics based on the entire database of transit systems
- Benchmark statistics by bus and rail operations separately based on ridership exposure
- Benchmark statistics for bus operations based on bus count and mileage exposures
- Benchmark statistics at various per occurrence limits from \$100,000 to \$5,000,000
- Statistics based on severity, expense, litigation status, and report lag
- Statistics by geographical region
- Survey results
- Claims categorized and summarized

Introduction

The study examines trends in frequency, severity, and overall loss rates related to public transit liability. With the exception of incident-only statistics, claims with zero-dollar value are excluded from our analysis. Unless otherwise noted, these statistics can be defined as follows:

- Frequency – the number of occurrences per unit of exposure measurement. Frequency for bus operations and rail operations are both measured based on annual ridership. Bus operations frequency is also measured based on bus count and annual miles driven.
- Severity – the average loss per occurrence, where the loss includes indemnity and allocated loss adjustment expense (ALAE).
- Loss Rate – the annual incurred loss dollars per the same unit of exposure measurement by which the frequency was measured, which for bus and rail operations is annual ridership. Bus operations loss rate is also measured based on bus count and annual miles driven.

The loss rate is the product of the frequency and the severity, and it is a major component of the total cost of risk for a public transit entity.

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Executive Summary

The 2020 report is perhaps the most important study of public transit liability that we've conducted to date. The current environment for risks related to public transportation operations is extremely challenging. We expect the environment to continue to be difficult subject to our ability to effectively manage the repercussions of the COVID-19 pandemic. Prior to the pandemic effect on ridership, the commercial risk transfer markets for public transits had already begun to impact the price and availability of liability insurance. While we have determined that at this time we are unable to draw statistical conclusions related to the impact of COVID-19 on loss trends on either a frequency or severity basis based on the timing of the data that was submitted for evaluation, we do conclude that the need to further enhance our understanding of transit risk profiles is even more important as available insurance capacity continues to tighten and pricing for liability insurance for transit risks increases.

Our actuaries and transit practice professionals have invested a significant amount of time and effort to deliver this unique tool to the transit industry. Our goal is to continue to develop the report to produce useful findings and to assist the industry with identifying risk trends and best practices. To follow is our most recent effort at achieving that goal. We offer our sincerest gratitude to the participants in the study for their time and efforts and to the supporters at APTA without whom we would not have been able to produce the information that follows.

Executive Summary

Key Findings

Based on our analysis of public transit liability limited to \$1 million per occurrence, we have found the following:

Overall Results and Trends

Frequency

- Overall public transit liability claim frequency is flat (i.e. 0% annual trend).
- The forecasted 2020 accident year frequency for bus and rail operations combined is 0.36% per 1,000 riders. In other words, this implies one occurrence per 278,448 riders.
- The forecasted 2020 accident year frequency for incident-only/\$0 claims is 0.51% per 1,000 riders. This implies one incident-only report per 195,562 riders.

Severity

- Overall public transit liability claim severity is increasing at a 1% annual rate.
- The severity forecast for accident year 2020 is \$16,824.

Loss Rate

- Overall public transit liability loss rates are increasing by an average of 1% annually.
- The forecasted 2020 accident year loss rate for bus and rail operations combined is \$60.42 per 1,000 riders, or approximately 6.0 cents per rider.

Public Transit Liability Benchmark

Advisory Benchmarks	Projected Accident Year 2020	Selected Annual Trend
\$0 Claim Frequency*	0.51%	
Frequency*	0.36%	0.0%
Severity	\$16,824	1.0%
Loss Rate*	\$60.42	1.0%

**per 1,000 riders*

Executive Summary

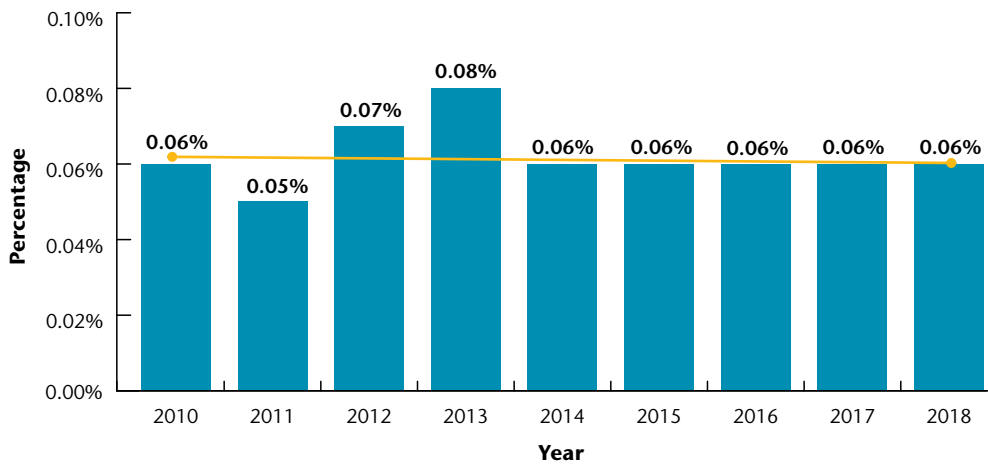
Results and Trends by Bus and Rail Operations (ridership)

Frequency

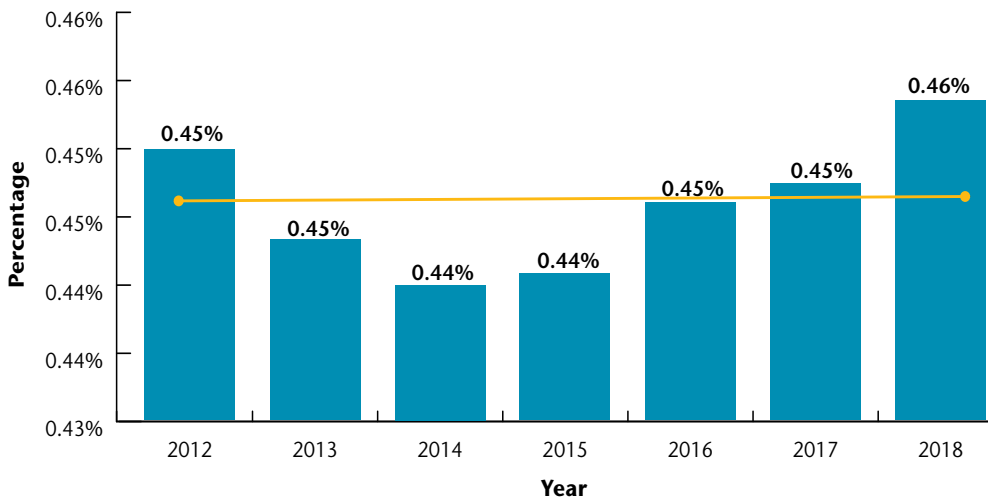
The frequency rate for bus operations is significantly higher than that of rail operations. The forecasted 2020 accident year frequency for bus is 0.47% per 1,000 riders, which implies one occurrence per 213,945 riders, while the forecasted 2020 accident year frequency for rail is 0.06% per 1,000 riders, which implies one occurrence per 1,573,206 riders. Additionally, the frequency rate for bus operations has remained flat (a 0% annual rate) while the frequency rate for rail operations is decreasing at a 1.0% annual rate.

For incident-only/\$0 claims, the frequency rate for bus operations is also higher than that of rail operations. The forecasted 2020 accident year frequency for bus is 0.65% per 1,000 riders, which implies one incident-only report per 154,229 riders, while the forecasted 2020 accident year frequency for rail is 0.14% per 1,000 riders, which implies one incident-only report per 701,031 riders.

Rail Benchmark Claim Frequency



Bus Benchmark Claim Frequency

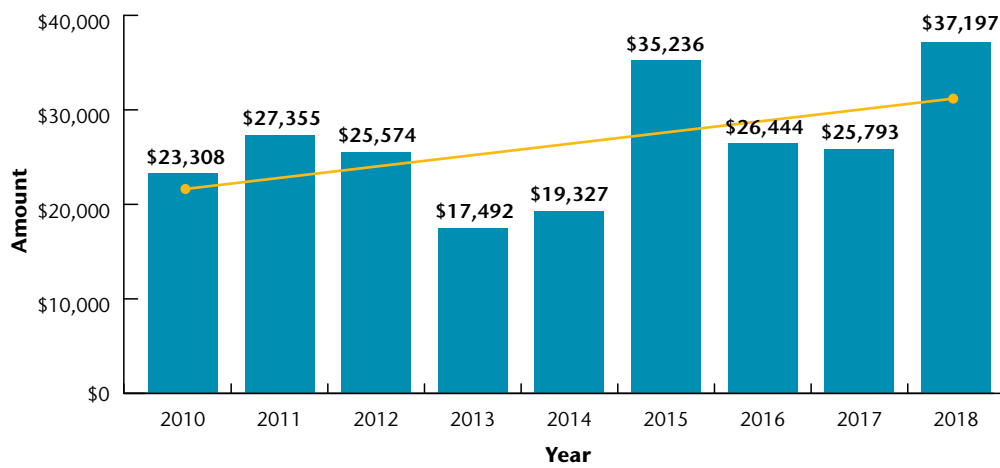


Executive Summary

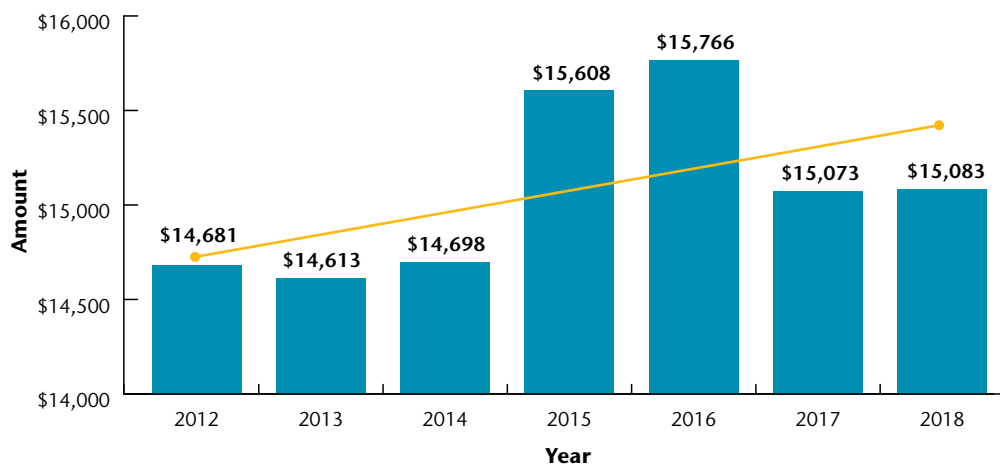
Severity

The severity rate for bus operations is lower than that of rail operations. The forecasted 2020 accident year severity is \$16,476 for bus operations and \$30,190 for rail operations. The severity for bus operations is increasing at a 1.0% annual rate while the severity for rail operations is increasing at a 4.0% annual rate.

Rail Benchmark Claim Severity



Bus Benchmark Claim Severity

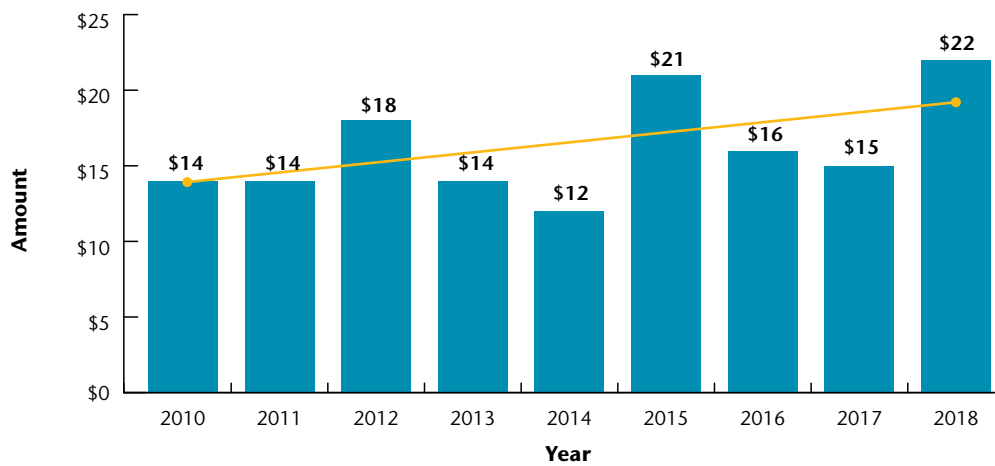


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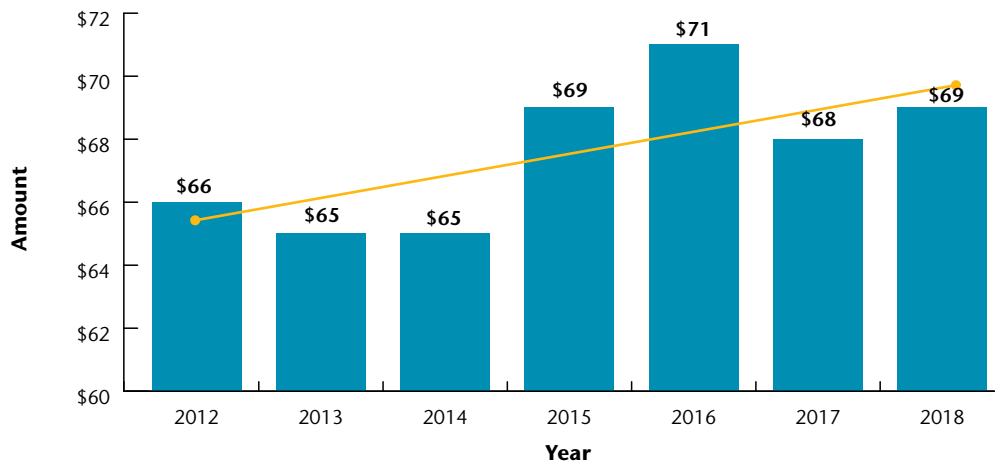
Loss Rate

The loss rate for bus operations is significantly higher than that of rail operations. The forecasted 2020 accident year loss rate for bus operations is \$77.01 per 1,000 riders, or approximately 7.7 cents per rider, while the forecasted 2020 accident year loss rate for rail operations is \$19.19 per 1,000 riders, or approximately 1.9 cents per rider. The loss rate for bus operations is increasing at a 1.0% annual rate while the loss rate for rail operations is increasing at a 3.0% annual rate.

Rail Benchmark Loss Rate



Bus Benchmark Loss Rate



Executive Summary

As this study indicates, the frequency of bus claims is higher than that of rail claims, while the severity of rail claims is higher than that of bus claims. As buses interact with pedestrians and other road traffic, there is a greater potential for incidents leading to liability claims. While these claims can sometimes be very severe and expensive, many others are related to minor “fender-bender” incidents, which drive down the overall average bus liability claim severity. On the other hand, rail operations often operate on dedicated tracks with little or no interaction with pedestrians and vehicular traffic. While there are sometimes very severe rail occurrences (e.g. derailments or other train malfunctions), these are relatively rare, but they do drive up the average claim cost of rail occurrences. It is important to note that our current study includes only two such events.

Rail Operations

Public Transit Liability Benchmark – Rail

Advisory Benchmarks	Projected Accident Year 2020	Selected Annual Trend
\$0 Claim Frequency*	0.14%	
Frequency*	0.06%	-1.0%
Severity	\$30,190	4.0%
Loss Rate*	\$19.19	3.0%

*per 1,000 riders

Public Transit Liability Benchmark – Bus

Advisory Benchmarks	Exposure: Ridership*	Exposure: Bus Count	Exposure: Miles**	Selected Annual Trend
\$0 Claim Frequency	0.65%	42.6%	1.46%	
Frequency	0.47%	30.7%	1.05%	0.0%
Severity	\$16,476	\$16,476	\$16,476	1.0%
Loss Rate	\$77.01	\$5,057	\$173.33	1.0%

*per 1,000 riders **per 1,000 miles

Results and Trends by Bus Operations (bus count)

Frequency

- The forecasted 2020 accident year frequency for bus operations using bus count as an exposure basis is 30.7% per vehicle, which implies one occurrence per three vehicles every year.

Severity

- The forecasted 2020 accident year severity is the same over all exposure bases – \$16,476.

Loss Rate

- The forecasted 2020 accident year loss rate for bus operations using bus count as an exposure basis is \$5,057 per vehicle.

\$0 Claim Frequency

- The forecasted 2020 accident year frequency for incident-only/\$0 claims for bus operations using bus count as an exposure basis is 42.6% per vehicle, which implies one incident-only report per two vehicles every year.

Executive Summary

Results and Trends by Bus Operations (HUB mileage)

Frequency

- The forecasted 2020 accident year frequency for bus operations using mileage as an exposure basis is 1.05% per 1,000 miles, which implies one occurrence per every 95,056 miles.

Severity

- The forecasted 2020 accident year severity is the same over all exposure bases – \$16,476.

Loss Rate

- The forecasted 2020 accident year loss rate for bus operations using mileage as an exposure basis is \$173.33 per 1,000 miles, or approximately 17.3 cents per mile.

\$0 Claim Frequency

- The forecasted 2020 accident year frequency for incident-only/\$0 claims for bus operations using mileage as an exposure basis is 1.46% per 1,000 miles, which implies one incident-only report per every 68,524 miles.

Additional Statistical Detail

- Approximately 69% of claims had a total incurred value of under \$5,000; however, this accounts for only approximately 7% of the total incurred dollars. By contrast, only 0.15% of claims had a total incurred of \$1,000,000 or higher, but these claims accounted for approximately 31% of the total incurred dollars.
- Over a fourth of all claims for bus and rail were reported the day on which the occurrence that led to the claim occurred. Two-thirds of the claims were reported within a week of their occurrence and approximately 84% of claims were reported within a month of their occurrence.
- Increased Limit Factors are presented for various per occurrence limits from \$100,000 to \$5,000,000 with the base limit of \$100,000 per occurrence.
- Approximately 19% of the total loss dollars were comprised of expense payments.
- Approximately 14% of claims were litigated; however, these claims accounted for 55% of the total loss dollars. Litigated claims were, on average, 7 times more expensive than claims that were not litigated.
- Twenty-two questions were asked of participants in the survey. Six of them – closed vs open system, sovereign immunity status, police force, urban vs rural, cannabis legality, and sleep apnea testing – were further subdivided into frequency, severity, and loss rate analysis. Additionally, the top ten risks participants ranked as the greatest threats to their organization are presented.
- Approximately 68% of the claims arose from automobile accidents, with 92% of those claims stemming from vehicle on vehicle accidents. Within this category, rear-end collisions were the most common type of accident. Of the claims that did not arise from automobile accidents, approximately 53% arose from passengers falling and approximately 19% arose from entry and exit issues.

Executive Summary

We would like to thank the public transit participants for submitting their data for this study.

We hope that you find this benchmark study useful for comparing your loss rates to those indicated by the benchmark.

Should there be any questions regarding this analysis, we are available to discuss them with you.

Respectfully submitted,

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About Aon

Aon plc (NYSE:AON) is a leading global professional services firm providing a broad range of risk, retirement and health solutions. Our 50,000 colleagues in 120 countries empower results for clients by using proprietary data and analytics to deliver insights that reduce volatility and improve performance.

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