



MBTA 2023 System-Wide Passenger Survey



Spring 2024

*Prepared by the Office of
Performance Management and Innovation*



Executive Summary

The Massachusetts Bay Transportation Authority (MBTA) regularly surveys its riders to understand who rides the bus, subway or light rail, Commuter Rail, and the ferry. The MBTA's rolling System-Wide Passenger Survey, often referred to as the "Rider Census," represents the diversity of people who ride MBTA services and is an important tool in planning for bus, rail, and ferry services in the Greater Boston region. In 2022, the MBTA initiated an annual survey to collect information about who is using the transit system and which services they rely on. The MBTA is required to collect this information by the Federal Transit Administration (FTA) to ensure that the changes to the system, service, and fares equally benefit people, regardless of their income levels or race and ethnicity. In addition to ensuring equity in transit, the MBTA uses results from the rolling Rider Census to understand how people move through the system to better plan improvements. This report marks the second year of annual survey results and offers data from the last two years as a single, pooled dataset with more station- and route-level disaggregation than in the calendar year 2022 (CY22) data release.

Data is collected annually from spring through late fall, and data will typically be available mid-spring of the following year. The documentation included on this page represents data collected in calendar year 2023 (CY23) and provides context and guidance to understand and use the rolling Rider Census data. The technical documentation may assist those who are looking to more deeply understand the data calculation and aggregation process. The data is available for download on the MBTA Open Data Portal.

Survey Background

Pursuant to Title VI of the Civil Rights Act of 1964 and in line with guidance from the Federal Transit Administration (FTA) circular FTA C 4702.1B, the MBTA must conduct regular evaluations of its system to ensure equity across income levels and race and ethnicity demographics. Additionally, major changes in service or fares must be evaluated to ensure they do not disproportionately impact populations protected on the basis of race or ethnicity, or disparately burden lower income riders (see the [MBTA Service and Fare Change Equity Policy](#) for details).

Previous versions of the Rider Census, conducted once every five years, reflected point-in-time snapshots of rider demographics; the last such survey was conducted in 2016. As of 2022, the MBTA conducts an ongoing, or "rolling," Rider Census, which collects data annually from a smaller sample of riders across the T. This shift to more frequent data collection allows for a more accurate understanding of who travels on bus, rail, and ferry services. For example, a rolling survey format allows riders of new services to be counted sooner, which enables the MBTA to include riders of new services – like the East Boston Ferry (opened 2022) or the Medford Brand of the Green Line Extension (opened 2023) – in its planning and analysis, rather than having to wait up to five years to survey riders of new services.

In addition to Title VI equity analyses, the results of the Rider Census are used across the T in capital planning, service planning, fare policy, and public outreach planning. Among

other benefits, this survey model means that pilot programs can be evaluated using demographic data collected through a methodologically consistent effort.

Methods: Data

To ensure that the MBTA surveyors talk to a sample of transit riders that accurately reflects the people riding specific services and traveling between specific stops or stations, the rolling Rider Census research team developed a sampling plan that allows for accurate representation of the system every five years. This means that, during the first five years of the new rolling Rider Census data may be summarized at a more aggregate level than that of previous system-wide surveys. With each additional year of data collection, the MBTA will be able to share more granular data, specific to individual routes and stations.

Detailed information about the rolling Rider Census sampling plan and response weighting may be found in Chapters 2 and 3 of the technical documentation, respectively.

The rolling Rider Census sampling plan was constructed to allow reporting at a similar level of aggregation to 2015-17 by the end of the first five years of data collection. This means that the collection of rolling Rider Census data collected through calendar year 2026 will provide data aggregated at a similar level as the 2016 Rider Census data release.

Prior to the 2026 data release, survey data will be publicly available at a higher level of aggregation than in years past. Specific aggregation by service mode is as follows:

- Heavy rail will generally be reported by station or small group of stations
- Light rail will generally be reported by station or small group of stations for the Green Line, and the Mattapan Trolley will be reported for the whole branch
- Bus will be reported individually or in small groups for high-ridership routes and in larger geographic groups for moderate and low-ridership routes
- Ferry data will be reported in one group, consisting of all routes
- Commuter Rail reporting is aggregated to the individual line

Responses to the rolling Rider Census survey are weighted by both ridership (how many people ride that particular service) and transfer rate (how many people make similar transfers as reported in the survey). This ensures that conclusions drawn from survey data are as representative as possible of overall MBTA ridership.

It is important to note that all survey research and data collection is exposed to some level of bias and error. The MBTA acknowledges that sampling bias may have been introduced by a series of factors, including but not limited to:

- Weekday only surveying, between 7:00 AM and 7:00 PM
- The need to survey high-ridership locations in order to meet minimum response requirements for statistical validity of reporting
- Limited range of languages available
- Survey respondents' potential lack of awareness of available languages

Survey Findings

The two-year pooled dataset from 2022 and 2023 data collection indicates that 57% of riders system-wide self-identified as being a woman, with women comprising the majority of riders for every service mode as well, ranging from 50% of riders on ferry service to 58% of riders on Orange Line service. On the system level, 61% of riders surveyed self-identified as being part of class protected on the basis of race or ethnicity.

One key policy change from the past year impacted the data of riders whose incomes the MBTA categorizes as “low-income.” In spring of 2023, the MBTA changed the Service and Fare Change Equity Policy to raise the “low-income” threshold from 60% of the Area Median Income (AMI) to 80% AMI. This more conservative threshold, in conjunction with U.S. Census Bureau income data for 2022, essentially raised the low-income threshold by \$25,000 compared to last year’s data release. In 2022, 48% of respondents self-identified as low-income. This proportion jumped to 75% in the 2022 and 2023 pooled dataset.

Detailed information about rider demographics may be found in the technical documentation or the interactive web tool.

Next Steps

We expect to repeat this data collection and release cycle on an annual basis. Rider surveying for calendar year 2024 will result in a public data release in spring 2025. If you have any questions or comments, please reach out at opmi@mbta.com.