The Research Bureau

EXPRESS FOR WHOM?

Ridership, Recovery, and the Importance of the Worcester/Framingham Line

REPORT 25-07

June 2025

EXECUTIVE SUMMARY

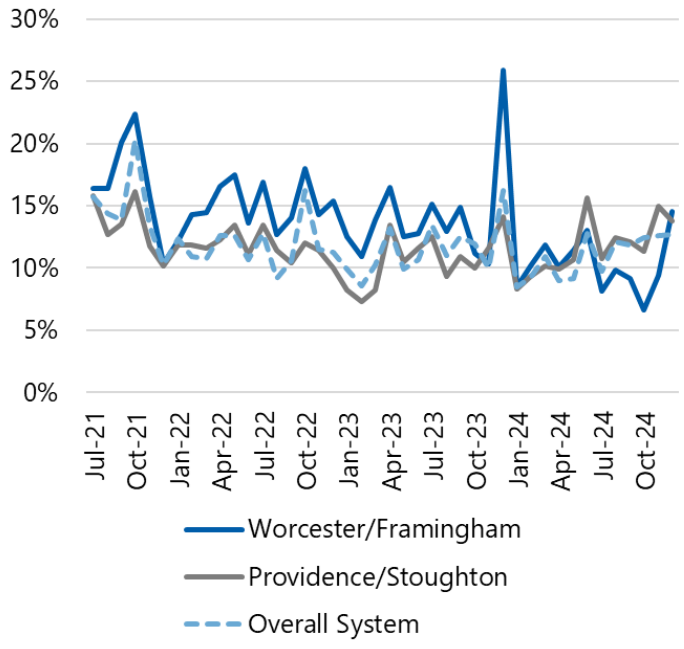
In late September 2023, the Massachusetts Bay Transportation Authority (MBTA) announced that it would eliminate a set of "express" regional rail trains that ran to and from Worcester's Union Station. Then, on April 27, 2024, the MBTA announced it would reintroduce an express train from Worcester to South Station by May 20, 2024. Instead of leaving at 6:30 AM, this new train departed at 7:40 AM (now 7:35) and ran express between Worcester and Framingham and then to Lansdowne. It arrives at South Station at 8:45 AM. There is no equivalent train returning to Worcester in the afternoon.

The Worcester/Framingham line is one of the most popular among the MBTA's 13 regional rail lines. This report looks at ridership data since 2020 to piece together an understanding of **who** is riding the line, **when**, and **where** they might be coming from.

Although the COVID pandemic years **led to a precipitous drop-off in users of the regional rail, ridership has largely recovered across the entire system** (pages 4-5), and much of this recovery **has been driven by weekend ridership** (pages 6-7). More frequent trains, and especially a concerted switch to a more **regular clockface schedule** (page 6), has led weekend ridership to a much larger percentage of total ridership.

On the Worcester Line, total and average monthly weekday ridership has been steadily increasing since June 2020, with **nearly every month since July 2021 having a larger number of riders than the same month the year before** (page 8). **Weekend ridership as a percentage of total ridership on the line has often been higher than the Providence/Stoughton Line** (the number one line for ridership) and the system as a whole (page 9).

Weekend Ridership as a Pct of Total Ridership, July 2021 through December 2024



Reliability, measured as Worcester Line trains arriving at their final destination within five minutes of their scheduled time, has seen improvements since before the pandemic (pages 10 and 11). **Between June 2020 and December 2024, only 16 months have had below 90% reliability, and four below 85%. Between January 2016 and January 2020, 43 were below 90%, of which 23 were below 85%.**

Fall 2024 station boarding data found that nearly **16% of inbound weekday passengers boarded at Worcester Union Station, despite only seeing 21 of 27 trains** during the day; only Framingham and Boston Landing came close. **About 46% of inbound riders boarded at Worcester, Grafton, Westborough, Southborough, Ashland, or Framingham**. Twelve other stops made up the rest of the onboardings (pages 12-15).

Inbound Stop	Onboardings	Pct of Total
Worcester	1139	15.55%
Grafton	337	4.60%
Westborough	370	5.05%
Southborough	404	5.52%
Ashland	380	5.19%
Framingham	780	10.65%
West Natick	503	6.87%
Natick Center	368	5.02%
Wellesley Square	431	5.88%
Wellesley Hills	272	3.71%
Wellesley Farms	239	3.26%
Auburndale	153	2.09%
West Newton	213	2.91%
Newtonville	357	4.87%
Boston Landing	870	11.88%
Lansdowne	337	4.60%
Back Bay	172	2.35%

According to the 2023 MBTA passenger survey (15-16), about **29% of Worcester/Framingham Line riders take the train five days a week, and 56.5% of riders make less than 80% of the Area Median Income** (across the entire Worcester Line area).

Finally, between 2018 and 2022, the **number of working residents living within a half-mile of Worcester's Union Station has grown by 37%** (pages 17-20). See the appendix for a list of commonly used terms in this report.

INTRODUCTION

In late September 2023, the Massachusetts Bay Transportation Authority (MBTA) announced that it would eliminate a set of "express" regional rail trains that ran to and from Worcester's Union Station. The morning train, boarding at 6:30 AM, ran express from Worcester to Framingham; and ran express again from Framingham to Lansdowne station, arriving in just under an hour (with subsequent stops at Back Bay and South Station). The MBTA replaced that train with one that made five additional stops: Grafton, Westborough, Southborough, and West Natick, after which the train ran express to Boston Landing and from there to Lansdowne, Back Bay, and South Station. These additional stops added 21 minutes to the scheduled arrival time at South Station; previously, the train would arrive at 7:35 AM and now arrived at 7:56 AM. This schedule mimicked two other morning trains.

When the original express train existed, it ran in reverse at 4:55 PM. From South Station to Back Bay to Lansdowne, it ran express to Framingham and then express to Worcester, arriving at 6:02 PM. After the September 2023 update, the new "outbound" commute (trains moving away, rather than towards, South Station) left ten minutes earlier, at 4:45 PM, and arrived nine minutes later, at 6:11 PM, adding 19 minutes to the commute. In total, Worcester commuters who depended on those express trains saw their commutes increase by, optimistically, 40 minutes. It should be noted that the 6:30 AM express train did not exist prior to May 23, 2022 – a previous, pre-pandemic express train ran express from Worcester to Lansdowne at 8 AM—so this 6:30 train existed for about a year and a half before it was eliminated.

At the time that these changes were announced, the MBTA told the Telegram & Gazette that they were made "in response to customer and stakeholder feedback that services should be more in line with the pre-pandemic schedule." The goals were to include additional peak service with shorter headways (i.e., the time in between trains) while maintaining midday – off-peak – hourly frequency; in addition, an MBTA spokesperson said that "75% of riders on the line originate or terminate at Framingham" (Cartolano, 2023a).

Soon after these changes were announced, Worcester's City Manager, the Mayor, and the City Council called on the Governor's office to delay or halt any changes to the existing express line (Cartolano, 2023a). By April 2024, the City announced an MBTA Working Group (the "Mayoral Task Force") whose stated goals were to "collaborate with the MBTA to help realize the full potential of commuter service through Union Station, understand and capitalize on the implications of West-East rail, and create a structure for more consistent community input regarding transportation service between Worcester and Boston" (Worcester Announces MBTA Working Group | City of Worcester, MA, 2024). The Research Bureau was invited to participate in meetings as of November 2024.

On April 27, the MBTA announced it would reintroduce an express train from Worcester to South Station by May 20, 2024. Instead of leaving at 6:30, this new train departed at 7:40 AM (now 7:35) and runs express between Worcester and Framingham and then to Lansdowne. It arrives at South Station at 8:45 AM. There is no equivalent train returning to Worcester in the afternoon.

Where does that leave Worcester? Unfortunately, a 7:35 AM express train, if on schedule, arrives in Boston just before the beginning of a 9-5 workday, which may be untenable for many commuters. Additionally, commuters still must contend with a longer commute at the end of the workday. An hour and a half on the train each way, even if a commuter doesn't have to fight traffic, is a big ask, especially if driving offers flexibility to get to and from Boston more quickly. What Worcester needs, then, is faster trains, all day. Strong existing ridership on the line can make a healthy case for faster trains; those, in turn, will only come when the MBTA makes serious capital improvements to the line in the form of electric trains and more accessible stations.

This report, **the first in a two-part series**, will examine ridership on the Worcester/Framingham Line. **This line is frequently second in terms of the number of riders, and a strong case can be made for continued capital improvements along the line that will ultimately increase the number and frequency of trains**. By using ridership and station boarding data, as well as demographic data from other sources, it will provide a deep look at where the line stands today. The follow-up report, "The Promises of the Worcester Line," will look at infrastructure, capital improvements, commuting, and traffic data that can unlock the promises of the Worcester/Framingham Line for the future.

RIDERSHIP DATA ACROSS THE SYSTEM: PUTTING WORCESTER INTO CONTEXT

The MBTA has a wealth of data that is useful for examining the Worcester/Framingham Line, including total ridership in the system, on the line, and station boarding data. Other sources of data include the U.S. Census Bureau's American Community Survey as well as its Longitudinal Employer-Household Dynamics program.

Just like with every other transportation mode, the COVID-19 pandemic took a toll on regional rail ridership. According to the National Transit Database, the number of annual unlinked passenger trips (total individual boardings) across the system dropped **by 72% in Fiscal Year 2021**, though the years immediately prior to FY20 also saw some decline in ridership. The years since FY21 have seen ridership move closer to pre-pandemic totals (*Charts 1 and 2, right)*.

ANNUAL MONTHLY RIDERSHIP

Month-to-month ridership via the MBTA's open data portal shows that individual months are starting to perform above monthly ridership totals from calendar year 2019. **Monthly ridership has slowly returned to the predicted trend from the 20 months before the pandemic**. Calendar year 2024 saw an average of 2.5 million regional rail riders each month, compared to 2.65 million in 2019. The majority—85% to 95% of regional rail riders—use it on weekdays. The data that is available does not differentiate between (and therefore includes) inbound and outbound trips *(Chart 3, next page)*.

2024 was the first year to see any months exceed ridership from their equivalent month in 2019: June, July, and September 2024 each saw higher ridership than the same month in 2019 *(Chart 4, next page)*. The MBTA's regional rail has seen slow, but steady recovery since its precipitous drop off in riders in March and April 2020. This recovery has been driven by the slow return of weekday riders and the explosion of weekend riders. Although it is a different transit service entirely, it would be remiss not to remind readers that Worcester's WRTA reached this greater-than-100% milestone in November 2021.

Weekend ridership is only a fraction of total ridership, but it has far exceeded pre-pandemic levels (*Charts 5 and 6, next page)*. In the **twenty months before the pandemic (July 2018 through February 2020), weekend ridership made up 4.94% of the total ridership of the regional rail**. The largest month for riders in this period was March 2019, with 161,285 riders (this was around the time the $10 weekend pass was made permanent, after beginning in June 2018) and average monthly ridership during this period was 130,221. **In the twenty months between May 2023 and December 2024, weekend ridership made up 11.43% of total ridership**. The highest month of ridership was December 2023, with 375,610 riders; and average monthly ridership was 278,907. Although much more variable during this period, weekend ridership has far surpassed the pre-pandemic trendline based on the 20 months before the pandemic.

Unlike weekday ridership, which has not in any month since January 2020 surpassed any of the same months in

Chart 1: Annual Regional Rail Boardings, 2015 to 2024

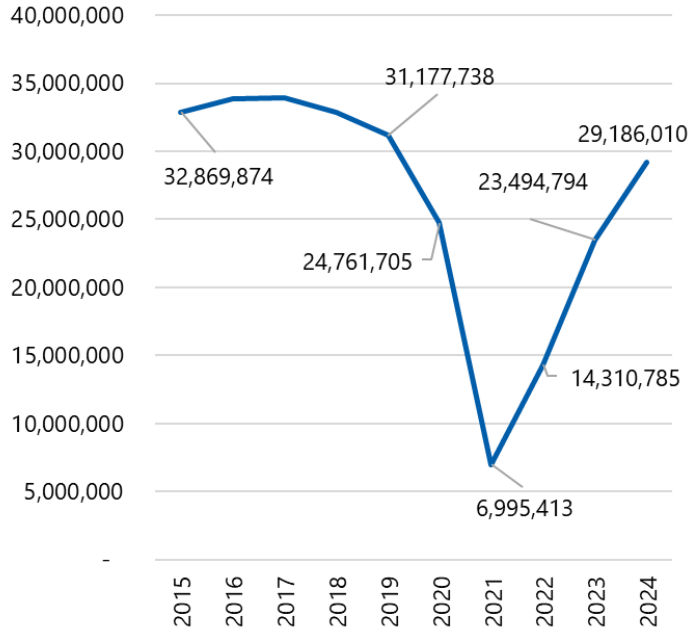
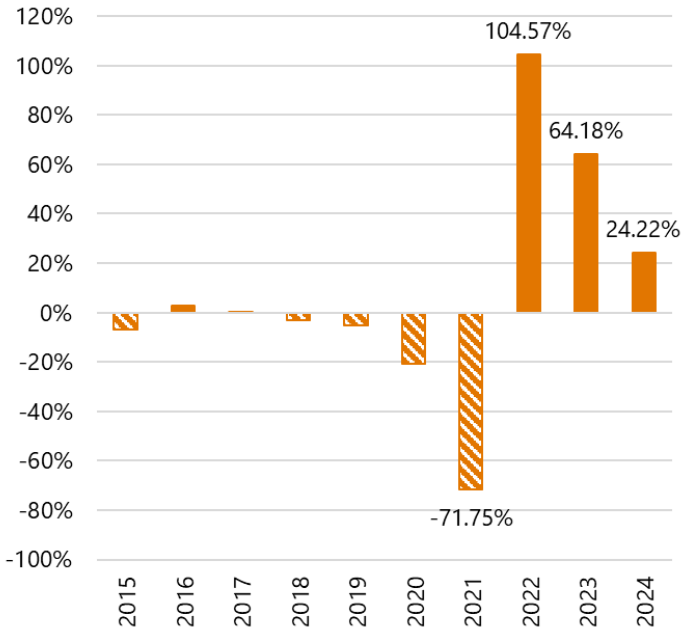


Chart 2: Annual % Change, Total Boardings



Source: National Transit Database, Agency Profiles (2015-2023) and Monthly Ridership (2024)

2019, **weekend ridership has not dropped below 100% of pre-pandemic ridership since before April 2022**. Although weekday ridership is the majority of ridership—and it has almost returned to pre-pandemic levels—it is weekend ridership that has driven new rider growth on regional rail (*Chart 7, next page)*. Impressive, too, considering that weekends comprise only two days, have far fewer trips per day, and lack the commuters that drive weekday numbers.

UNDERSTANDING WEEKEND RIDERSHIP

Why has weekend ridership done so well? There are a few possibilities. One could be **that public knowledge of the $10 pass has increased**, and people are simply taking advantage of it more often. As time has passed, regular and irregular riders may be more aware that the option exists, especially if they use the MBTA's mobile ticketing app. Another possible explanation is **an easier "clockface" schedule to follow on weekends**—i.e., the train is there every two hours, making the schedule easier to memorize, easier to use, and easier to plan trips around.

Chart 3: Monthly Ridership, July 2018 to December 2024

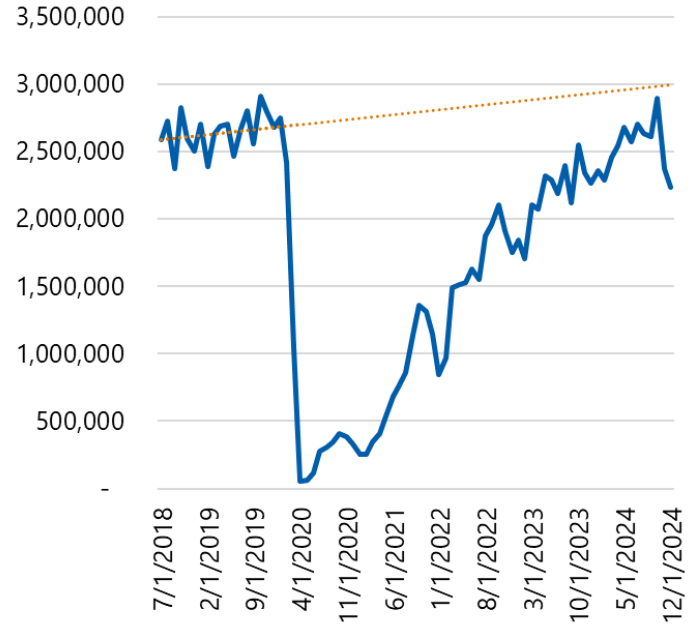


Chart 5: Monthly Weekend Ridership

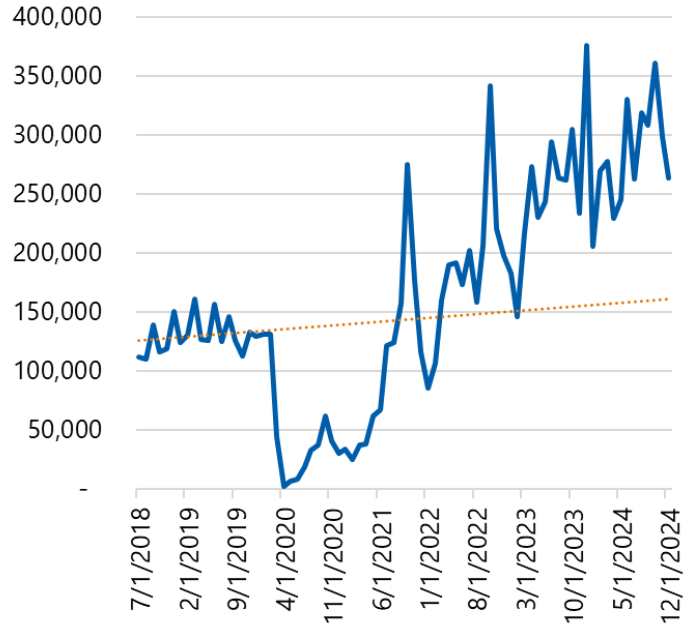


Chart 4: Riders as Percentage of Same Month in 2019

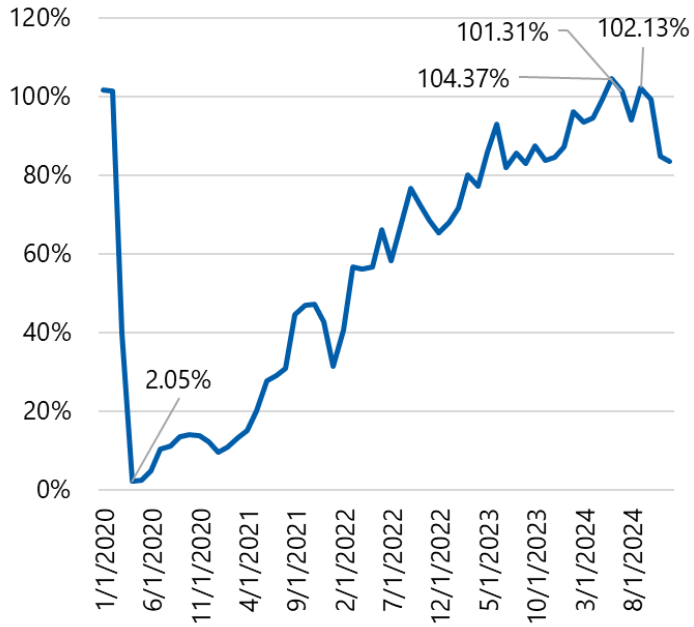
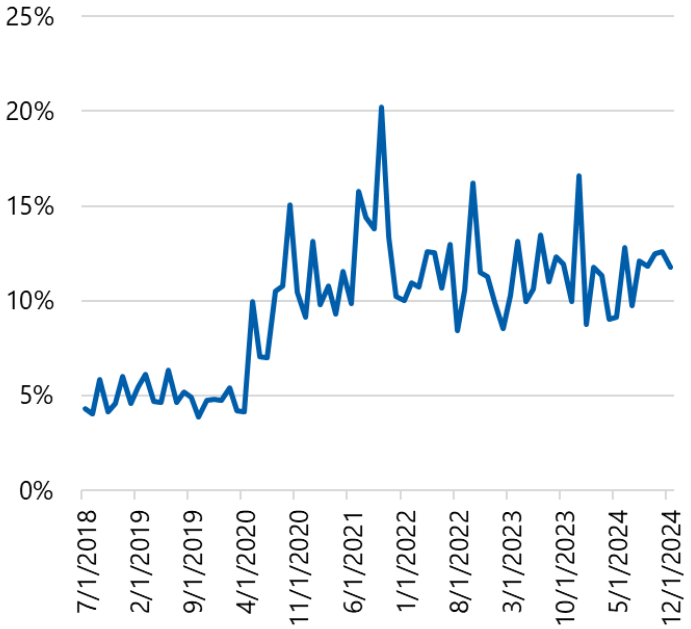
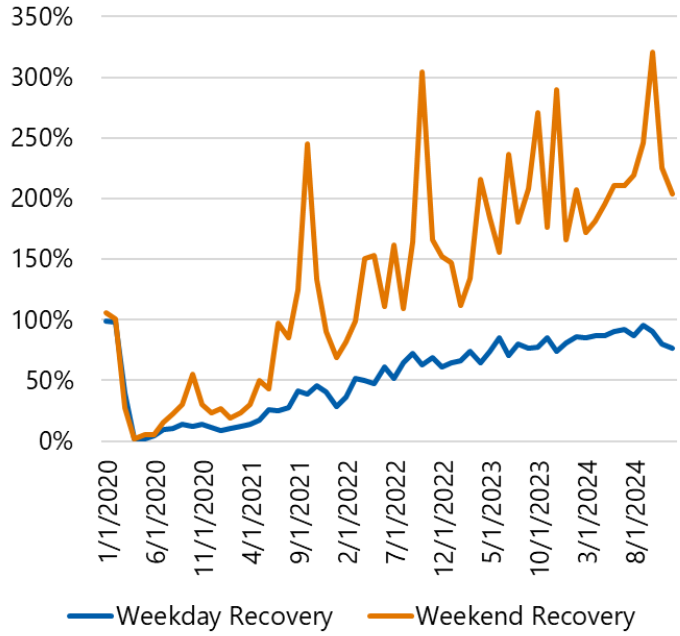


Chart 6: Weekend Ridership as a Pct of Total Ridership



Source: MBTA Monthly Ridership by Mode and Line; orange line indicates trend from 20 months before pandemic.

Chart 7: Weekday and Weekend Ridership Compared to Same Month in 2019



Source: MBTA Monthly Ridership by Mode and Line

The schedule of the Worcester Line demonstrates this strongly. By comparing the May 2019 schedule with the May 2024 schedule (*Table 1)*, we can see that (1) the number of inbound train trips has increased by one each weekend morning and (2) that the 2024 schedule maintains a consistent two-hour departure window for almost the entire day, unlike in 2019.

This increased frequency is by design. Each of the six alternatives presented by the MBTA's 2020 Rail Vision Report, the stated goal of which was to create pathways for the MBTA to leverage its rail network to meet future mobility, economic, and sustainability needs, **featured increased and regular frequency as a key goal**, no matter what the infrastructure of the lines looked like (Disclosure: The Research Bureau's Executive Director and CEO, Paul Matthews, previously served on the Rail Vision Advisory Committee). The MBTA's regional rail modernization program web page reinforces this as well. A clockface schedule marked by frequent and predictable trains all day long—whether during "peak" commuter or "off-peak" other times—is clearly a key part of the MBTA's future vision. Although there were only ten trains on Saturdays and Sundays, they departed regularly every two hours for seven of those ten; **and a frequent and memorable clockface schedule enables riders to plan the rest of their trip more effectively**. Moreover, there is some literature indicating that the regional rail's move to a clockface schedule all day on weekdays and on weekends

Table 1: Weekend Schedules on the Worcester/ Framingham Line, May 2019 and May 2024

May 2019		May 2024	
Worcester (Departing)	**South Station (Arriving)**	**Worcester (Departing)**	**South Station (Arriving)**
-	-	5:10 AM	6:45 AM
7:00 AM	8:30 AM	7:10 AM	8:45 AM
8:50 AM	10:20 AM	9:10 AM	10:45 AM
10:50 AM	12:20 PM	11:10 AM	12:45 PM
12:50 PM	2:20 PM	1:10 PM	2:45 PM
2:30 PM	4:00 PM	3:10 PM	4:45 PM
4:30 PM	6:00 PM	5:10 PM	6:45 PM
6:30 PM	8:00 PM	6:55 PM	8:30 PM
8:30 PM	10:00 PM	9:10 PM	10:45 PM
11:00 PM	12:30 AM	11:25 PM	1:00 AM

Source: May 2019 and May 2024 schedules, via https://www.dbperry.net/MBTA/#FraminghamWorcester

Table 2: Waits Between Weekday Trains on the Worcester/ Framingham Line, Worcester Departures Only, May 2019 and May 2024

May 2019		May 2024	
Worcester (Departing)	**Time Until Next Train**	**Worcester (Departing)**	**Time Until Next Train**
-	-	4:15 AM	0:45:00
4:45 AM	0:30:00	5:00 AM	0:45:00
5:15 AM	0:35:00	5:45 AM	0:45:00
5:50 AM	0:32:00	6:30 AM	0:37:00
6:22 AM	0:35:00	7:07 AM	0:33:00
6:57 AM	0:27:00	7:40 AM	0:33:00
7:24 AM	0:36:00	8:13 AM	0:52:00
8:00 AM	0:50:00	9:05 AM	0:55:00
8:50 AM	**1:45:00**	10:00 AM	1:00:00
10:35 AM	**1:30:00**	11:00 AM	1:00:00
12:05 PM	**1:50:00**	**12:00 PM**	**1:05:00**
1:55 PM	**1:55:00**	1:05 PM	0:55:00
3:50 PM	**1:30:00**	2:00 PM	1:00:00
5:20 PM	0:45:00	3:00 PM	0:47:00
6:05 PM	**1:15:00**	3:47 PM	0:43:00
7:20 PM	**1:10:00**	**4:30 PM**	**1:15:00**
8:30 PM	0:30:00	5:45 PM	0:50:00
9:00 PM	0:35:00	**6:35 PM**	**1:20:00**
9:35 PM	**1:45:00**	7:55 PM	1:00:00
11:20 PM	1:00:00	**8:55 PM**	**1:55:00**
12:20 AM	-	10:50 PM	-

Source: May 2019 and May 2024 schedules, via https://www.dbperry.net/MBTA/#FraminghamWorcester. Bold indicates a wait longer than an hour.

has helped ridership recovery compared to other transit modes (Polzin et al., 2024).

It should be noted that the weekday schedule has also changed dramatically since before the pandemic, with more frequent trips inbound during the day; and the slower ridership recovery on weekdays is likely due to changed commuting patterns (including more frequent work-from-home) post-pandemic, rather than a lack of available trains. *Table 2 on the previous page* shows the May 2019 vs May 2024 weekday schedule for trips originating in Worcester, as well as the time between one train and the next. Although peak times remained more frequent, most trains in the 2024 schedule departed under an hour from each other. **There were only four times when riders had to wait more than an hour** for the next train, and only one of those was by more than an hour and a half. Only one of those waits, the 12 PM to 1:05 PM trains happened in the middle of the day; the next is the 4:30 PM to 5:45 PM train. **By contrast, there were eight "waits" in May 2019 where riders had to wait more than an hour** before the next train departed from the station. Of those, six were by more than an hour and a half and the first long wait was between the 8:50 AM and 10:35 AM trains. The conversion from commuting-focused to all-day regular frequencies between May 2019 and May 2024 is clear from this schedule. The entire regional rail system has seen a post-pandemic schedule overhaul to increased and more regular frequencies.

For the most part, the charts in the preceding section reflected the entire regional rail network. Using MBTA provided estimates of day-by-day boardings using scaled conductor counts for each regional rail line, going back to June 2020 for weekdays and July 2021 for weekends, we can take a closer look in the next section at the Worcester/Framingham Line itself.

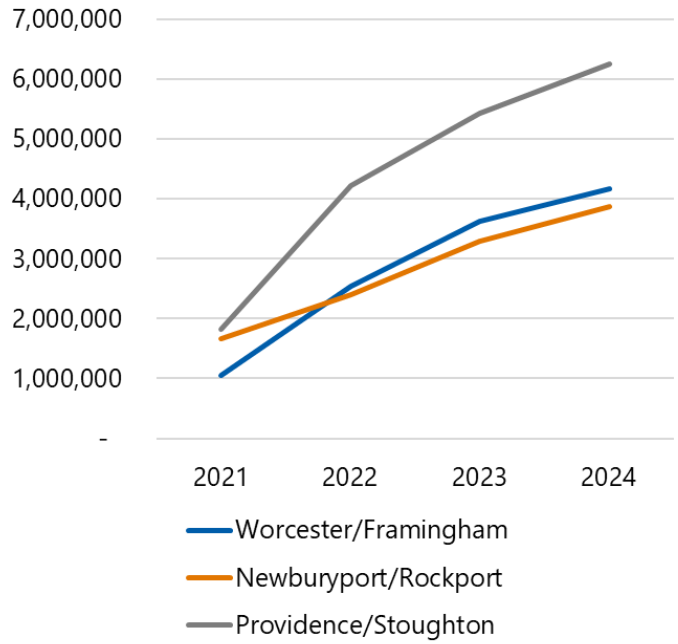
ESTIMATED BOARDINGS ON THE WORCESTER/FRAMINGHAM LINE

Thanks to the MBTA's estimated daily boarding data for all its regional rail lines, there is a wealth of data available for understanding Worcester/Framingham Line dynamics compared to the system. In this section, the data will also reflect estimated boardings on the Newburyport/Rockport and Providence/Stoughton Lines, **which with Worcester are the three regional rail lines with the most riders**. One note about the data: there is no indication where or when these riders boarded the trains. That means, for example, that **the Worcester/Framingham data reflects riders who got on any train at any of its 18 stations across its 44-mile length, travelling either inbound or outbound**.

Estimated ridership has increased since 2021 (*Chart 8)* and is on trend to continue to increase across each of the top three lines. The Worcester/Framingham Line has slightly more riders than the Newburyport/Rockport Line, but Providence/Stoughton has had about a third more riders than Worcester's line during this period.

Weekday ridership has continued to increase from its June 2020 pandemic lows (*Chart 9, next page)*. **In most months since April 2022, the Worcester/Framingham Line was the second-most ridden line in the system on weekdays**, after Providence/Stoughton (which has a sizable lead). This includes peak and off-peak riders. **As a comparison, currently the Worcester Line has 55 trains on weekdays and 20 on weekends, the Providence Line has 74 and 20, and the Newburyport Line has 59 and 35.**

Chart 8: Estimated Yearly Boardings, 2021-2024



Source: MBTA Commuter Rail Ridership by Service Date and Line.
Note: 2021 does not include weekend ridership until July.

Since July 2021, weekday ridership on the Worcester/Framingham Line has been higher than the same month in the prior year for every month except November and December 2024, though month-to-month (i.e., May to June) there is more variation. Overall, each month being larger than the same month the year before is a good sign for ridership recovery since the pandemic (*Charts 10 and 11, next page)*.

In 2024, **there was an estimated average of 14,394 boardings each weekday** on the Worcester/Framingham Line. *Chart 12* shows the estimated daily average of boardings each month between June 2020 and December 2024 for Worcester/Framingham, Newburyport/Rockport, and Providence/Stoughton Lines.

In 2024, the Worcester/Framingham Line ranked third in terms of overall weekend ridership. *Chart 13* on the next page shows weekend ridership since July 2021. **There is no discernible pattern of when weekend ridership peaks on the Worcester/Framingham Line, but it has been on a continuously upward trend since 2021**. October of each year is, however, a discernible yearly peak for the Newburyport/Rockport Line, and there is a clear reason why: Salem is a stop. This major spike in weekend riders keeps the yearly boardings on the Newburyport Line competitive with Worcester's.

Chart 9: Estimated Monthly Weekday Boardings, June 2020 through December 2024

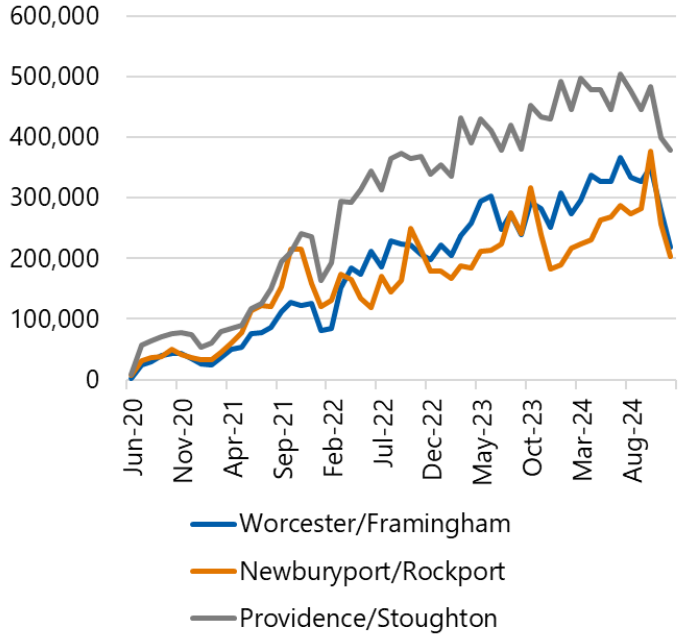


Chart 10: Pct Change in Weekday Boardings from Same Month in Prior Year, Worcester/Framingham Line[1]

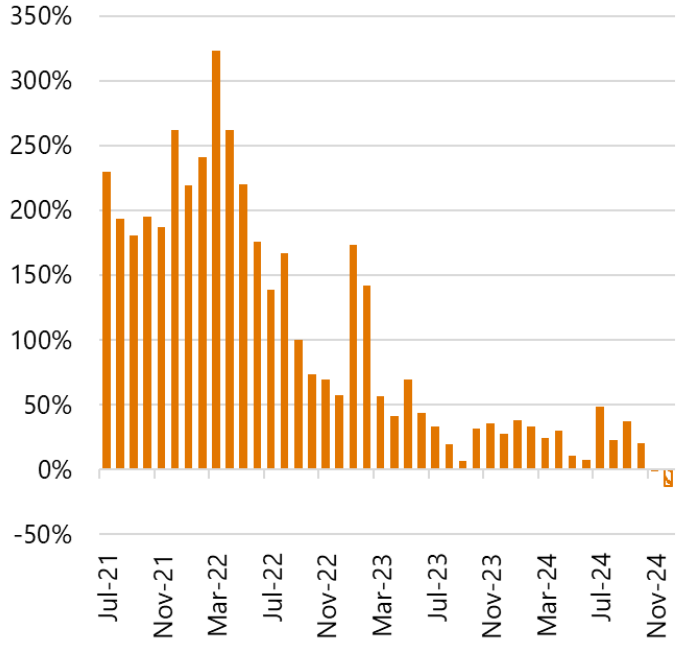


Chart 11: Pct Change in Weekday Boardings from the Month Before, Worcester/Framingham Line[2]

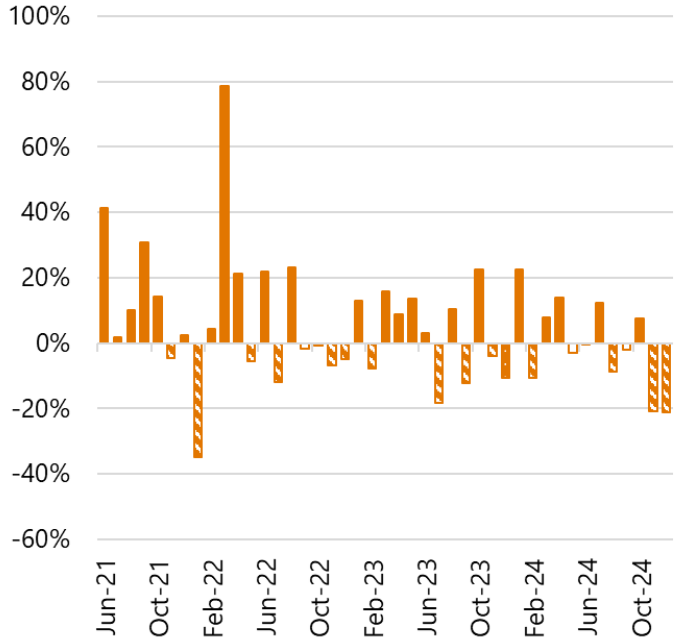
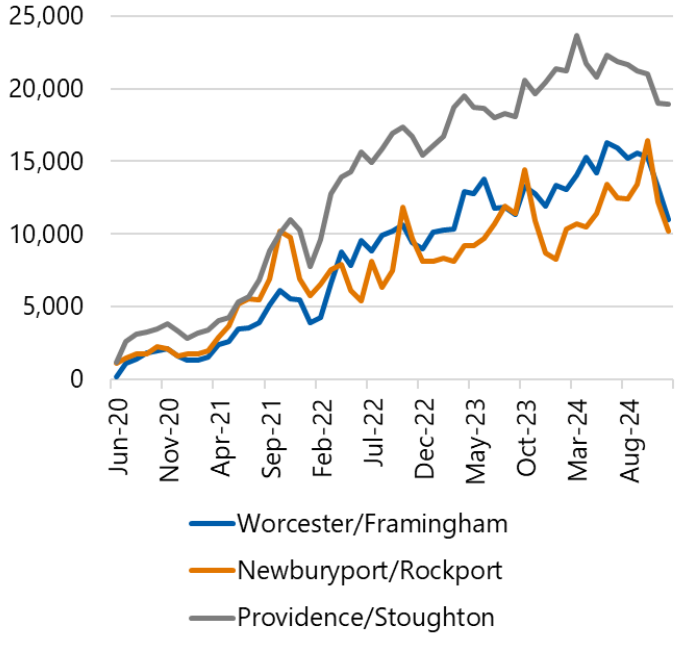


Chart 12: Average Weekday Ridership, June 2020 through December 2024



Source: MBTA Commuter Rail Ridership by Service Date and Line.

10.11% of total ridership on the Worcester/Framingham Line in 2024 was from weekend riders; this is slightly lower than the system overall, where weekend ridership represented about 10.91% of total ridership (*Chart 14)*. Although the Providence/Stoughton Line generally has a larger number of weekend riders than the Worcester/Framingham Line, since 2021 Worcester's weekend riders frequently represent a greater share of its total riders. Indeed, for most of the period beginning July 2021, Worcester Line weekend riders have represented a greater share of total riders than on the overall system.

Given that we do not have estimated boardings on the lines readily available from before the pandemic, it is difficult to compare recovery from the same months in 2019. However, like *Chart 10* on the previous page, we can compare each month each year to the same month the year before. Weekends saw a lot of growth compared to the year before throughout 2022 and most of 2023; but 2024 saw some sustained declines in year-over-year growth (*Chart 15)*.

Like the rest of the regional rail system, ridership on the Worcester/Framingham Line has increased throughout the post-pandemic period. Weekend ridership on the line, as a percentage of total ridership, was slightly lower in 2024 than it was in the system overall. It is likely, like the rest of the system, that weekend ridership makes up a larger portion of total ridership post-pandemic than it did pre-pandemic.

Still, though, **weekdays make up the bulk of ridership**, and not simply because there are five weekdays and two weekend days. First, on each weekday there are 27 inbound (towards South Station) and 28 outbound (away from South Station) trains, for a total of 55. On weekends, there are only 10 trains in either direction, for a total of 20. So already, there are 2.75x more trains available on any given weekday than on any weekend day. This, in addition

Chart 13: Weekend Ridership, Selected Lines, July 2021 through December 2024

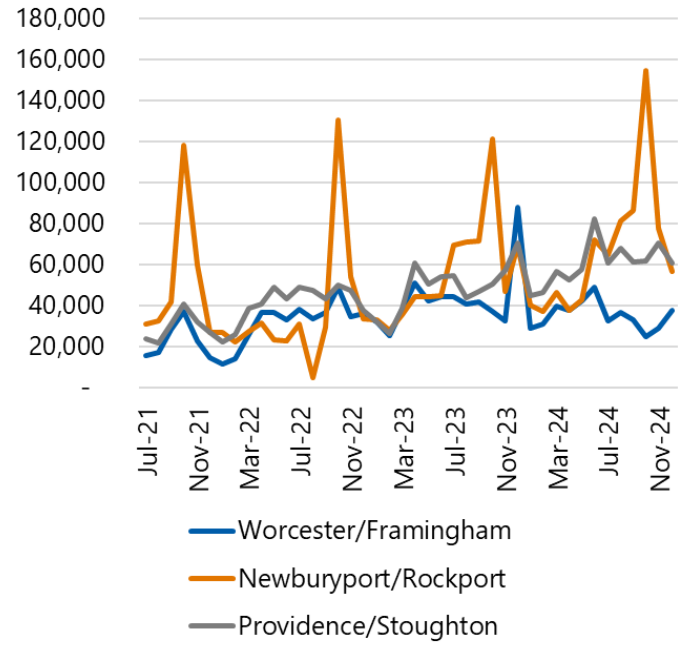


Chart 14: Weekend Ridership, Selected Lines, as a Pct of Total Ridership, July 2021 through December 2024

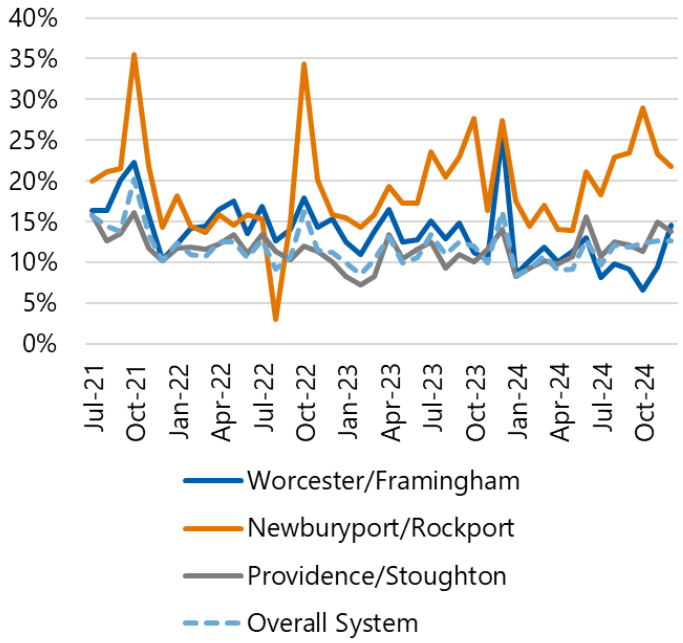
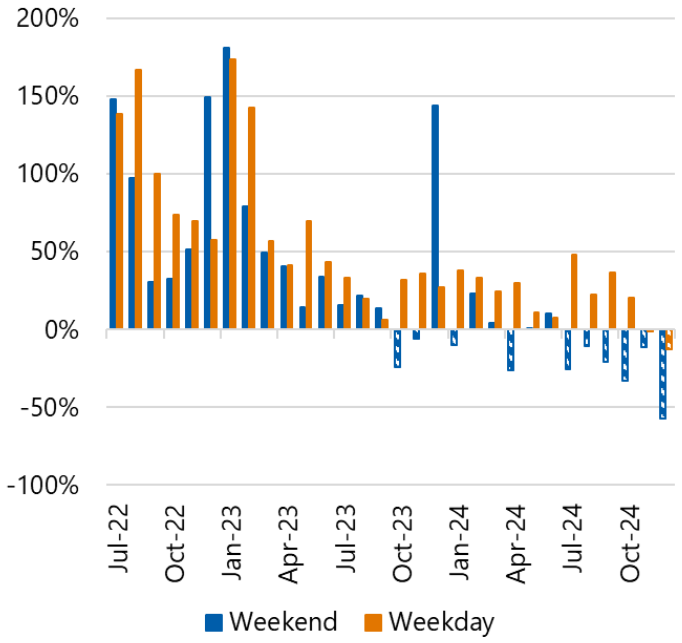


Chart 15: Weekend vs Weekday Pct Change from Same Month in Prior Year



Source: MBTA Commuter Rail Ridership by Service Date and Line.

to the system's long time reputation as a train for commuters, is a big factor in driving more riders on weekdays. Indeed, this is borne out in the survey data later in this report from 2023. However, in recent years, the MBTA has worked to transition to a "regional rail" model—which focuses not just on "peak" times (i.e., when commuters are getting on in the morning and the afternoon) but on increasing service all day and on weekends, like the schedule change examples shown in the previous section of this report. See the MBTA's Regional Rail Modernization Program for more details. Still, it is impressive how many riders get on the Worcester/Framingham Line on Saturdays and Sundays.

In December 2024, for example, an average of 5,120 people boarded the Worcester/Framingham Line each Saturday–to put that into perspective, that is almost half the number of people who boarded on Mondays, 11,135, and with fewer overall scheduled trips to boot.

In 2024, the average number of Saturday riders each month hovered between 20% and 50% of riders on the average weekday. In some cases, the average number of Saturday riders exceeded 50% of the average on a weekday – **May 2024, for example, saw average Saturday ridership of 51.9% of average Monday ridership** (though of course one of those Mondays was Memorial Day, and thus may have operated on a different schedule with fewer commuting riders). Even considering that holidays might fall on weekdays, and that some months may have five rather than four of any given day, there are a significant number of riders on Saturdays even with less than half the number of trains as on any weekday.

ON TIME PERFORMANCE OF THE WORCESTER LINE

It would be remiss to talk about passenger trips without talking about on time performance (OTP). The MBTA measures OTP for regional rail by counting the number of trains that arrive to their destination within five minutes of the scheduled time. Reliability is then measured by dividing the number of those trains that arrived in that time frame with the total number of trains. More information can be found in the MBTA's Service Delivery Policy (and note that subway and bus reliability is measured differently). OTP data is more readily available from the MBTA, going back to January 2016. Reliability is measured at a train's terminus – whether it arrived at Worcester, Framingham, or South Station at its scheduled time. Taking a look at OTP on a monthly basis shows that it has improved substantially in the post-pandemic period. This first chart shows OTP divided into three categories: weekdays peak and off-peak, weekday peak, and weekday off-peak, as well as the linear trend for weekdays.

Chart 16: Average Daily Boardings, Worcester/Framingham Line, 2024

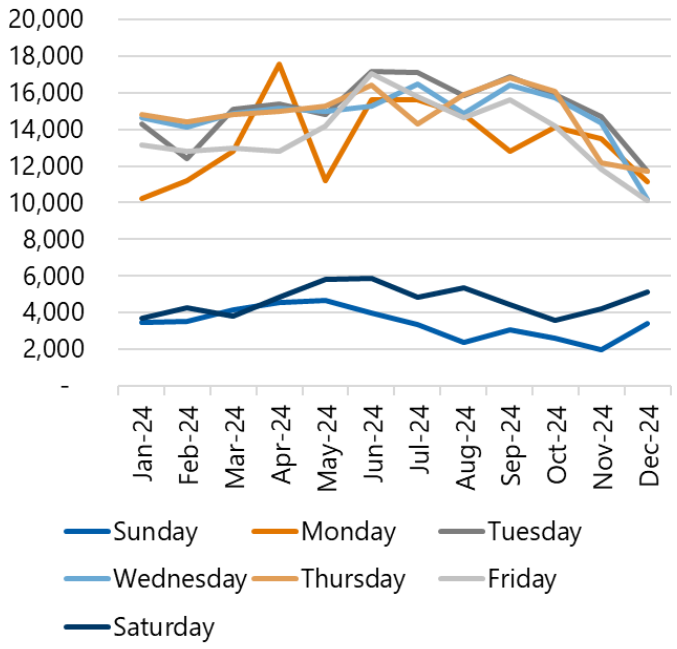
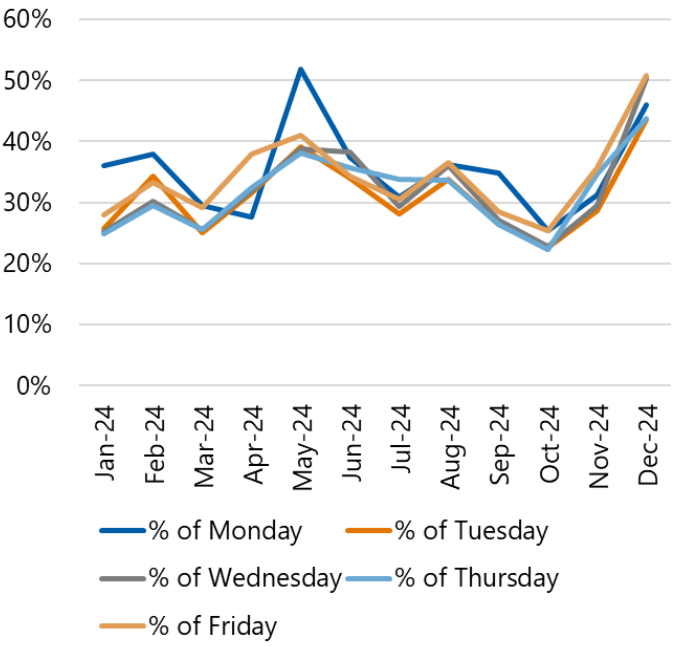


Chart 17: Average Saturday Ridership as a Pct of Average Weekday Ridership, Worcester/Framingham Line, 2024



Source: MBTA Commuter Rail Ridership by Service Date and Line.

Although reliability was consistently poor in 2016 and 2017, it began to improve by 2018, and post-pandemic it has remained reliable. Indeed, in 2024 only three months saw the percent of reliable trains below 90%, and between May 2023 and April 2024 **no month dropped below 90% (for all weekday trips). In the 55 months between June 2020 and December 2024, there have only been 16 where reliability was below 90%**, and only four of those

were below 85%; five had more than 95% reliability. **By comparison, in the 49 months between January 2016 and January 2020, 43 months had reliability of less than 90%; 23 of those were less than 85%**. Reliable trains are key to maintaining and increasing ridership, as riders (and potential riders) need to feel like their train will get them to where they need to be on time.

Chart 19 compares weekday off-peak with weekend OTP on the Worcester/Framingham Line. Weekday off-peak was chosen as a comparison point because weekend trains are off-peak as well. Weekends have struggled with reliability and have had more variability than even off-peak weekdays. **Between June 2020 and December 2024, 15 months have had less than 90% reliability on weekends; six of those were in 2024 alone**. The decrease in reliability in 2024 could help explain why weekend ridership in certain months in 2024 was down compared to the same month the year before.

Thanks to the recent release of station boarding data for fall 2024, the next section of this report on ridership will examine the average onboardings and alightings on inbound and outbound trips on the Worcester/Framingham Line across all its 18 stations.

Chart 18: Worcester/Framingham Line Weekday On Time Performance, January 2016 through December 2024

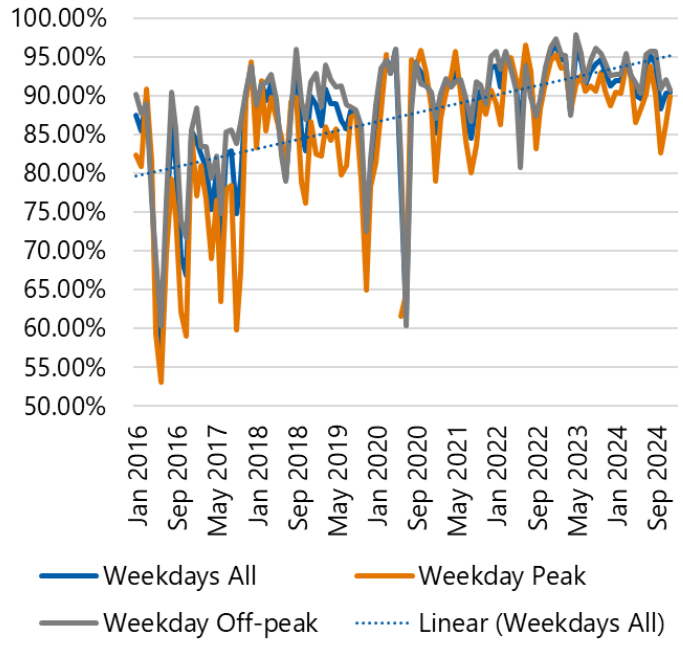
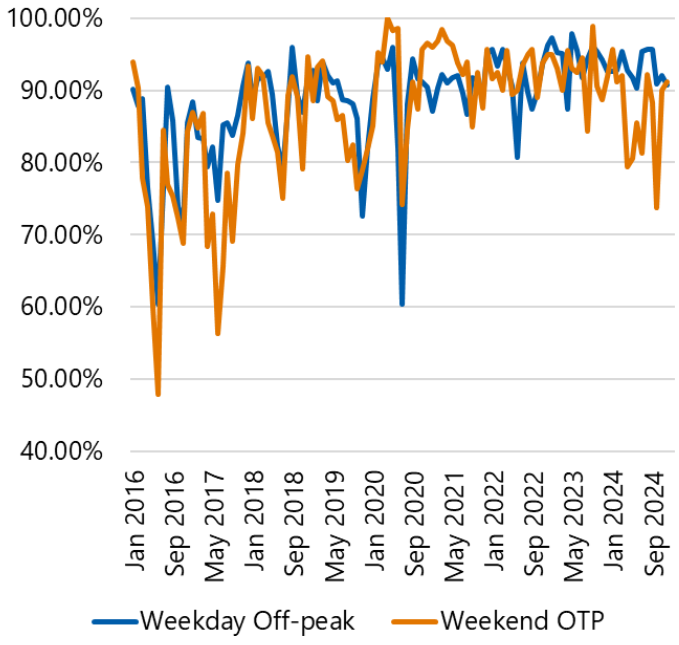


Chart 19: Worcester/Framingham Line Weekday Off-Peak and Weekend OTP, January 2016 through December 2024



Source: MBTA Bus, Commuter Rail, and Rapid Transit Reliability, January 2016 through Present

THE MBTA'S STATION BOARDING DATA FOR FALL 2024

In March 2025, the MBTA released updated station boarding data for regional rail, its first release since spring 2018. This data was collected by MassINC Polling Group on Tuesdays, Wednesdays, and Thursdays from September to November 2024, is organized by train number, and presents itself as the typical number of people getting on and off each train at each stop, as well as the average load when the train departs – that is, the number of people still on the train. Most trains were only counted once, though a few had to have recounts. **Additionally, individual trains were counted on different days, so *Tables 3 and 4* should not be misconstrued as showing all trains on the same day, but, rather, a composite day**. Unfortunately, the **data only tracks boardings on weekdays**, and MassDOT/MBTA's Office of Performance Management and Innovation (OPMI) Data Blog acknowledges that there were some midday issues on the Worcester Line due to station and track work. **In addition, the following data, train numbers, and schedules, reflect the Spring/Summer 2024 schedule** (which began in May and ended in November). For more information about data caveats, see this blog post at MassDOT Tracker.[3]

There are a few different ways to cut this data. First, while there are 27 trains on the Worcester/Framingham Line that travel inbound on weekdays, not every train starts in Worcester – nor does every train stop at every station. To effectively show this data and how it might affect Worcester in particular, the Bureau is presenting the data as "heat maps." These allow readers to quickly compare Worcester to other stops on the trains where Worcester is the origination or destination. The first, *Table 3,* shows "onboardings" at each station on the Worcester Line during the study period as trains head inbound – towards South Station. The second, *Table 4,* shows "alightings" (i.e., the number of people getting off the train) at each station on the Worcester Line, but this time while trains head outbound – away from South Station. **Colors compare each train to itself only; the more orange a cell is, the more onboardings or alightings that station had compared to other stations on the same train**. Times of first departure and final arrival are included below the tables to give a sense of the timeframes involved.

Across all inbound trains, only six stops had more onboardings than the Worcester stop when the train originated in Worcester. Three were in Framingham (including the only morning express train), two were in Boston Landing in the afternoon, and one was at Lansdowne in the afternoon. Morning trains that originated from Framingham (582, 584, and 586) also had a significant number of onboardings between Natick Center and Boston Landing. This was especially true in the case of train 584 (7:25 AM), where nearly or more than 100 people boarded at almost every station (only train 508 at 7:07 AM had similar onboarding numbers between Worcester and Framingham).[4]

Overall, the trains with the most passengers boarding in Worcester were the 508, 506, 504, and 552, which departed at 7:07 AM, 6:30 AM, 5:45 AM, and 7:40 AM respectively. The **508 train at 7:07 AM was especially popular**; this train had the most onboardings for Grafton, Westborough, Southborough, and Ashland. The **506 train, which left Worcester at 6:30 AM, had the second most onboardings for Worcester, at 123**, and at the stops between Worcester and Framingham saw onboardings of 49, 46, 46, and 67. The 506 train left at the same time the "Heart-to-Hub Express" did before fall 2023. Eliminating the express train added four stops between Worcester and Framingham. **However, while individually each of those four stops had fewer onboardings than in Worcester, in combination, and no matter which peak morning train, these stops did have more onboardings than Worcester**.

Interestingly, **the 552 (7:40 AM)**—the only express train that made no stops between Worcester and Framingham or between Framingham and Lansdowne—**had more onboardings in Framingham than in Worcester. Moreover, 552 had more average onboardings in Framingham**, according to the dataset, **than any other train in Framingham**, including the 504 (5:45 AM), 506 (6:30 AM), and 508 (7:07 AM), which only had two additional stops between Framingham and Lansdowne, compared to the 552.[5]

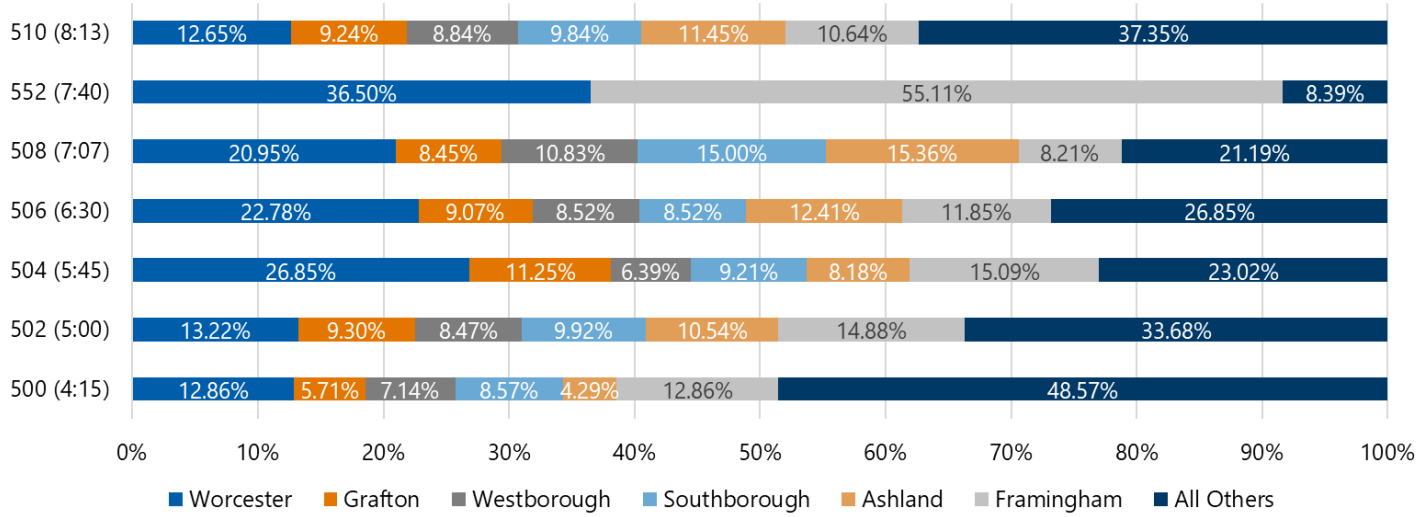
It is worth taking note of the timeline of the express train (552) versus the train right before it (508). While the 552 had a total travel time of 65 minutes, compared to the 508's 86 minutes, it left Worcester at 7:40 AM, departed Back Bay at 8:39 AM and arrived at South Station at 8:45 AM. **While a great number of Worcester and Framingham commuters took the 552, the fact is that its late arrival time at South Station likely made the train unattractive for those working the traditional 9 to 5 workday**, depending on the distance of their office to

Table 3: Worcester/Framingham Line, Inbound Onboardings, Fall 2024 Station Boarding Data

Stop	500	502	504	582	506	584	508	552	586	510	512	514	516	518	520	522	524	526	592	528	594	530	598	532	534	536	538
Worcester	9	64	105	-	123	-	176	100	-	63	51	39	35	78	38	50	26	38	-	27	-	31	-	31	30	12	13
Grafton	4	45	44	-	49	-	71	-	-	46	11	11	9	4	4	5	3	3	-	17	-	6	-	5	0	0	0
Westborough	5	41	25	-	46	-	91	-	-	44	14	9	11	20	8	3	11	8	-	18	-	9	-	2	4	1	0
Southborough	6	48	36	-	46	-	126	-	-	49	11	15	5	8	9	4	3	9	-	18	-	6	-	3	1	1	0
Ashland	3	51	32	-	67	-	129	-	-	57	7	9	0	0	4	2	9	0	-	5	-	3	-	0	0	1	1
Framingham	9	72	59	16	64	46	69	151	34	53	11	20	17	30	14	13	18	11	8	21	7	8	8	5	8	7	1
West Natick	7	48	44	3	77	37	100	-	49	33	10	2	9	20	9	7	14	-	13	-	15	0	3	0	2	1	0
Natick Center	7	11	-	27	-	113	-	-	56	41	9	7	4	4	6	8	11	-	26	-	22	12	2	0	0	2	0
Wellesley Square	2	14	-	46	-	102	-	-	65	7	12	1	1	18	6	47	18	-	24	-	29	12	5	7	10	4	1
Wellesley Hills	2	2	-	28	-	78	-	-	43	8	0	4	6	26	7	7	14	-	12	-	3	9	9	9	5	0	0
Wellesley Farms	4	7	-	36	-	96	-	-	44	16	4	13	1	2	3	0	2	-	3	-	3	2	2	0	1	0	0
Auburndale	0	2	-	26	-	44	-	-	31	16	0	3	-	12	-	-	5	-	-	-	10	-	3	-	1	0	-
West Newton	3	9	-	30	-	78	-	-	43	12	4	2	-	12	-	-	5	-	-	-	12	-	2	-	0	1	-
Newtonville	4	28	-	55	-	122	-	-	78	8	10	7	-	18	-	-	17	-	-	-	6	-	3	-	1	0	-
Boston Landing	5	25	39	106	45	114	56	-	118	33	8	15	5	40	7	16	67	39	39	14	40	4	13	16	5	1	0
Lansdowne	0	13	7	20	16	72	16	22	0	11	10	0	4	12	8	21	27	23	21	9	10	6	0	5	2	2	0
Back Bay	0	4	0	7	7	11	6	1	1	1	14	0	8	8	2	3	14	18	20	4	27	15	0	0	1	0	0
South Station	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Train Departing	*4:15*	*5:00*	*5:45*	*6:35*	*6:30*	*7:25*	*7:07*	*7:40*	*8:15*	*8:13*	*9:05*	*10:00*	*11:00*	*12:00*	*13:05*	*14:00*	*15:00*	*15:47*	*16:40*	*16:30*	*17:20*	*17:45*	*18:55*	*18:35*	*19:55*	*20:55*	*22:50*
Train Arriving	*5:50*	*6:36*	*7:10*	*7:33*	*7:56*	*8:23*	*8:33*	*8:45*	*9:11*	*9:49*	*10:43*	*11:38*	*12:33*	*13:38*	*14:38*	*15:33*	*16:39*	*17:07*	*17:29*	*17:50*	*18:13*	*19:13*	*19:48*	*20:03*	*21:30*	*22:30*	*0:18*

Source: MBTA Commuter Rail Ridership by Trip, Season, Route/Line, and Stop

Chart 20: Pct of Riders Boarding Inbound Trains at Selected Stops Between 4 and 9 AM, Worcester/Framingham Line



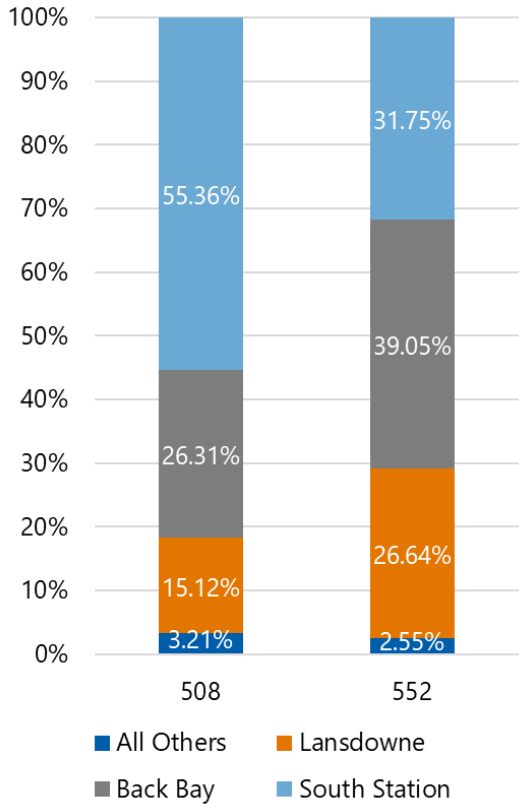
Source: MBTA Commuter Rail Ridership by Trip, Season, Route/Line, and Stop. Trains represent only those that start at Worcester; three trains during this period start in Framingham. Four of the Worcester trains—504, 506, 508, and 552—run express after Framingham.

Back Bay or South Station. That, of course, assumes that the train arrived and departed on time. The 508 (7:07 AM), by contrast, departed Back Bay by 8:27 and arrived at South Station by 8:33. **The majority of riders of the 508 alighted at South Station; meanwhile, a plurality of riders on 552 alight at Back Bay** (though, there is no guarantee that the onboarding and alighting data were collected on the same day). *Chart 21* shows the percentage of riders getting off at the last three stops on each of these trains (which they have in common). The choice to alight at Back Bay—or to take the 7:40 AM train because you were already going to get off of the train there—could be driven in part by the train's later arrival time and closeness to 9 AM. The 552 was the only peak AM commuter train with more passengers getting off at a station other than South Station. Of note, the 552 in Spring 2018—which left Worcester at 8 AM and went express to Lansdowne, and so is the only train similar to the current 552 express—had 262 onboardings in Worcester. **That train did not arrive at South Station until after 9 AM.**

Still, despite all of this, **Worcester had the most onboardings of any stop on inbound trains throughout the day**—despite only having 21 of 27 trains depart from Union Station (*Chart 22)*. Nearly 16% of inbound onboardings happened in Worcester. Only Boston Landing (11.88%) and Framingham (10.65%) come close. **Even on trains departing between 4 AM and 9 AM, Worcester had more onboarding riders than any other stop, despite seeing only seven of the 10 trains that departed during this period (12.87% of all onboardings on these 10 trains**; Framingham had 11.52% and Boston Landing had 10.88%). It should be noted that four of those seven trains were zonal express after Framingham.

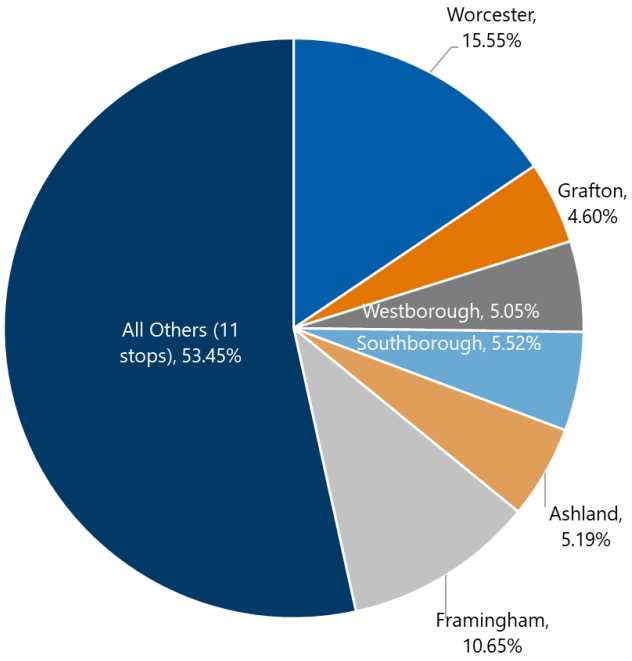
There is more variability in outbound alightings (*Table 4, on the next page)*. **There were 53 stops, across the 22 trains that end in Worcester, that had more alightings than in Worcester**. **Most of these stops were**

Chart 21: Pct of Alightings at Selected Stops, 508 and 552 Inbound Morning Trains, Worcester/Framingham Line



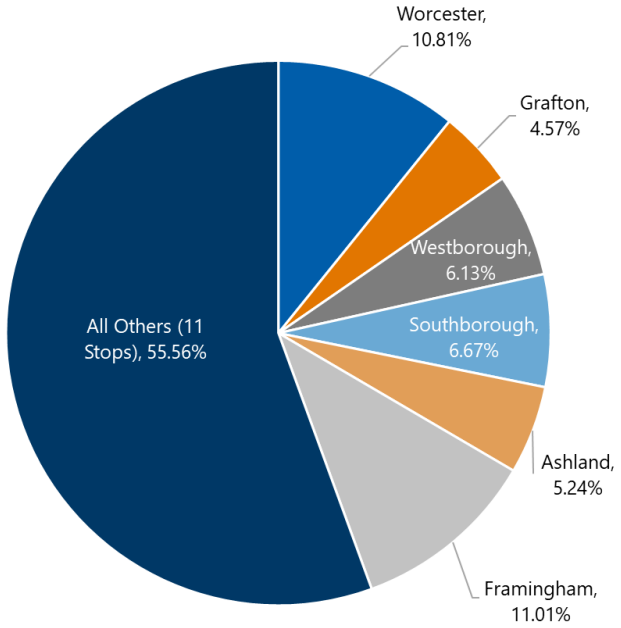
Source: MBTA Commuter Rail Ridership by Trip, Season, Route/Line, and Stop

Chart 22: Pct of Onboardings, Selected Stops, All Inbound Trains on Worcester/Framingham Line



Source: MBTA Commuter Rail Ridership by Trip, Season, Route/Line, and Stop

Chart 23: Pct of Alightings, Selected Stops, All Outbound Trains on Worcester/Framingham Line



Source: MBTA Commuter Rail Ridership by Trip, Season, Route/Line, and Stop

concentrated on four trains: 519 (12:55 PM departure), 523 (2:40 PM), 533 (6:35 PM), and 535 (7:35 PM). Only one of these trains was at peak commuting time, and three of them stopped at every station between South Station and Worcester. The most alightings that happened in Worcester on outbound trains were on the 525 (4 PM departure), 527 (4:45 PM), and 529 (5:30 PM) trains, which ran express from Boston Landing to West Natick; each train is a peak train. Of any single train, the 525 had the most alightings in Worcester, compared to other trains and stations. On the 527 and the 529, two other stations had more alightings than in Worcester. While Worcester had a large number of alightings from these particular trains, the trains between Framingham and Worcester had in, combination, more alightings than in Worcester.

The onboarding and alighting data is interesting because it gives a sense of which trains are the most popular, but it also shows that even the trains that are "off-peak" still have a great deal of riders.

There is clearly a difference in these two tables between where people get off the train versus where they get on. For example, although Worcester had more than 1,100 inbound onboardings, it had only 823 outbound alightings over the course of the day. However, we should not expect these numbers to be the same, since people are not

Table 4: Worcester/Framingham Line, Outbound Alightings, Fall 2024 Station Boarding Data

Stop	501	503	505	583	549	585	507	509	511	513	515	517	519	521	523	591	525	593	527	595	529	597	531	533	535	537	539	541
South Station	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Back Bay	0	0	2	20	0	30	2	3	24	0	1	3	0	11	1	7	0	1	12	1	13	25	8	3	2	1	2	1
Lansdowne	0	0	2	5	2	14	10	22	21	7	1	2	1	4	3	1	1	9	5	32	29	18	12	16	5	3	1	0
Boston Landing	0	2	6	5	-	10	21	29	48	10	11	9	5	22	43	73	47	37	46	38	106	81	46	45	40	9	13	6
Newtonville	-	-	-	0	-	-	-	16	-	-	-	6	-	15	31	28	-	97		152	-	107	-	28	11	9	6	3
West Newton	-	-	-	0	-	-	-	8	-	-	-	7	-	10	10	20	-	48	-	94	-	55	-	14	10	5	4	1
Auburndale	-	-	-	0	-	-	-	10	-	-	-	0	-	2	3	9	-	38	-	67	-	35	-	13	7	3	2	2
Wellesley Farms	0	0	-	0	-	3	-	4	1	1	0	0	4	5	6	20	-	51	-	79	-	47	-	15	3	2	3	0
Wellesley Hills	0	1	-	2	-	10	-	12	5	5	7	7	3	9	6	11	-	46	-	63	-	48	-	13	9	7	1	1
Wellesley Square	0	1	5	8	-	21	-	26	8	12	7	14	5	15	17	30	-	139	-	84	-	89	-	29	12	8	8	3
Natick Center	0	1	-	2	-	21	-	23	4	1	3	7	5	10	25	40	-	78	-	63	-	57	-	10	9	2	3	3
West Natick	0	0	-	1	-	6	-	10	1	3	4	5	0	11	14	37	102	18	128	31	117	24	51	18	20	12	6	0
Framingham	0	3	4	12	4	19	21	15	3	10	13	20	1	28	20	72	107	33	85	24	131	40	80	20	32	21	9	11
Ashland	0	0	4	-	-	-	9	0	0	1	2	2	5	12	25	-	110	-	56	-	101	-	34	7	21	5	4	1
Southborough	0	0	1	-	-	-	10	11	1	2	3	4	2	7	11	-	134	-	122	-	94	-	64	10	14	12	3	3
Westborough	0	3	5	-	-	-	7	21	3	4	1	1	4	12	22	-	111	-	95	-	83	-	42	11	23	11	5	3
Grafton	1	0	3	-	-	-	4	13	0	1	2	4	0	12	16	-	99	-	69	-	65	-	24	8	8	12	5	2
Worcester	6	9	27	-	28	-	21	23	64	19	19	34	2	56	12	-	152	-	100	-	111	-	64	12	4	20	20	20
Train Departing	*4:45*	*5:25*	*6:02*	*6:15*	*6:52*	*7:10*	*7:30*	*7:55*	*8:55*	*9:50*	*10:50*	*11:45*	*12:55*	*13:45*	*14:40*	*15:25*	*16:00*	*16:10*	*16:45*	*16:55*	*17:30*	*17:45*	*18:15*	*18:35*	*19:35*	*21:00*	*22:00*	*23:45*
Train Arriving	*6:11*	*6:52*	*7:25*	*7:07*	*7:58*	*7:57*	*8:49*	*9:31*	*10:26*	*11:21*	*12:21*	*13:21*	*14:26*	*15:21*	*16:14*	*16:19*	*17:24*	*17:04*	*18:10*	*17:54*	*18:55*	*18:40*	*19:39*	*20:10*	*21:09*	*22:34*	*23:34*	*1:19*

Source: MBTA Commuter Rail Ridership by Trip, Season, Route/Line, and Stop

obligated to return to the exact place that they initially left; and, in addition, there is no way to know whether inbound onboardings and outbound alightings were counted on the same day. **All told, alightings in Worcester constituted 10.81% of total riders getting off the train according to these counts;** and alightings at the four stops between Worcester and Framingham account for 22.62% of all riders getting off trains.

In 2024, **13.71% of estimated regional rail boardings happened on the Worcester/Framingham Line**, putting it in second place for boardings after Providence/Stoughton. With strong weekend ridership, an increasing number of total riders every year, and the MBTA's professed push to a regional rail model that includes 30-minute to one hour headways at every station, the line should continue to see ridership growth. The question that should then be asked is, **who is riding the Worcester/Framingham Line?**

A RIDER PROFILE OF THE WORCESTER/FRAMINGHAM LINE

Understanding who is riding the regional rail, and why, is an important step for ultimately increasing ridership on the line. This section of the report will focus on a 2023 Passenger Survey that the MBTA released in 2024 to get a better picture of who is taking the train.

The MBTA's 2023 Passenger Survey offers plenty of information about who is using its services, though the data it offers is somewhat limited. For example, the survey only occurred on weekdays between 7 AM and 7 PM at select locations (MassDOT/MBTA Office of Performance Management and Innovation, 2024). The goal of the MBTA's newly annual survey release is to have information similar to the 2016 Rider Census available by 2026, and over the course of annual surveys create a regular increase in data granularity. In some cases below, because of weighting, percentages exceed 100.

Despite the limitations listed above, especially the emphasis on weekday riders, we can still put together a picture of who is riding the Worcester/Framingham Line. For example, **slightly more than 50% of weekday riders (compared to slightly lower than 50% systemwide) take the Worcester/Framingham Line to get to work**. However, a greater number of Worcester/Framingham Riders use the line to access social activities than the overall system, while the system has more riders using it for school than the Worcester Line (*Chart 24, next page. There are more charts in the appendix for the rest of the statistics found in this section).*

Riders on the Worcester Line **overwhelmingly report taking regional rail three to five days per week**. 23.27% report taking it three to four days, and 28.92% report taking it five days. These numbers are very similar to those reported in the overall network, 23.21% and 28.22% respectively. Given that most riders report taking rail for the purpose of getting to work, this would make sense. Even the three-to-four-day riders may be working remotely for part of the time. The fact that a majority of weekday riders take it less than five days a week would seem to reflect the new normal of remote work. It should be noted, again though, that this data only reflects passengers surveyed during the week, so would not be reflective of any weekend riders.

Nearly 65% of Worcester line riders and 61.3% of riders overall identified themselves as White. 20% of Worcester riders identified as Black or African American, compared to 21.9% across all regional lines. Riders also overwhelmingly identified as non-Hispanic or Latino: nearly 85% of Worcester riders and 83% of system wide rail riders replied that they were not Hispanic or Latino. However, **overall, in total 47.4% of Worcester Line riders self-identified either as a race other than white or as Hispanic or Latino**. In addition, nearly 50% of riders on the Worcester Line self-identified as women, compared to 53.7% in the system as a whole.

A plurality of riders (44.8%) on the Worcester Line and in the system overall make 30% to 80% of the Area Median Income (AMI). 24.69% of Worcester Line Riders report an income of 60% to 80% of AMI, slightly above the system wide total of 23.32%.[6] **11.73% of riders report making less than 30% of AMI. In addition, 61% of Worcester Line riders self-identified as low income.**

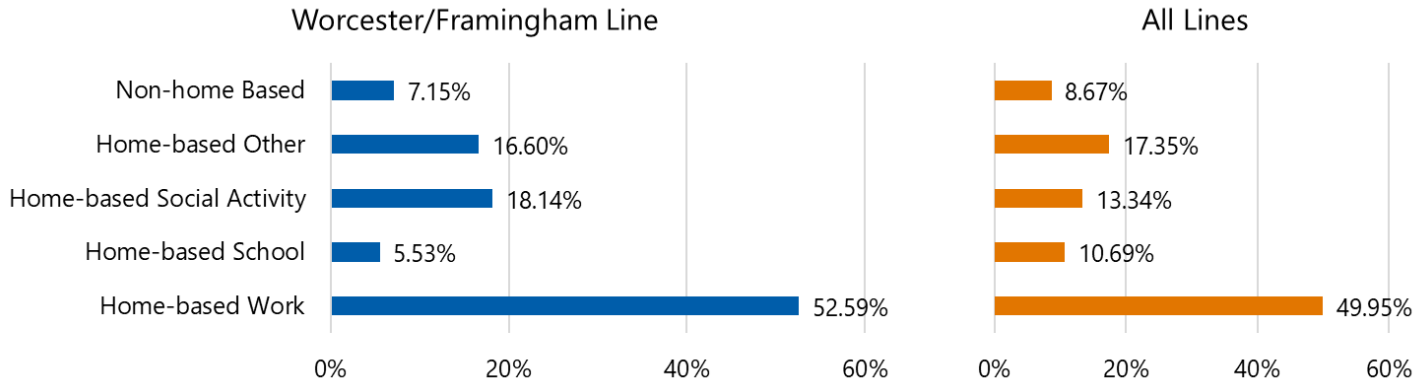
Even though 56.5% of riders make less than 80% of AMI (of which 31.6% make less than 60% of AMI), more than 85% of Worcester Line riders reported paying the full fare of the regional rail themselves, with another 8.6% reporting that they pay the full fare with a subsidy from their employer. 0.73% of surveyed Worcester riders reported using the Transportation Access Pass, which is available to riders with disabilities or enrolled in Medicare. It should be noted that the MBTA's current income-eligible fare program came into being in late 2024, well after this passenger survey—so there is a

good chance that there are fewer full fare riders riding the Worcester/Framingham Line today than there were in 2023.[7] Considering the reported AMI of surveyed passengers, perhaps more riders could be better served by knowledge of and joining the low-income fares program.

Finally, one of the key selling points of public transit is that it can replace the use of other forms of travel—namely, private automobile use. Riders still need to get work, home, or their destinations in some way. **Whether driving alone or carpooling, the car is the main way that riders would get to their destinations if the regional rail was unavailable**. Of course, for those riders going to Boston and who are located closer to the city, other options might be available. For example, riders who normally get onto the train at West Newton Station might be able to take the T's Green Line instead. But for those riders relying on the rail without those options, driving is the only one available.

The typical Worcester Line rider takes the train 3 to 5 days a week to work; makes 30% to 80% of the Area Median Income; and pays the full fare. This rider is most likely to be a non-Hispanic white woman, who would have otherwise driven alone if the rail was not available. (Using OPMI's rider demographics tool lets readers see estimates of riders across the whole system, including the Worcester/Framingham Line). **Despite 61% of weekday Worcester Line riders identifying as low-income and 56.5% earning less than 80% of the Area Median Income, more than 85% still paid full fare in 2023—highlighting a potential gap in fare affordability prior to the MBTA's current income-based fare program.**

Chart 24: Regional Rail Trip Purpose



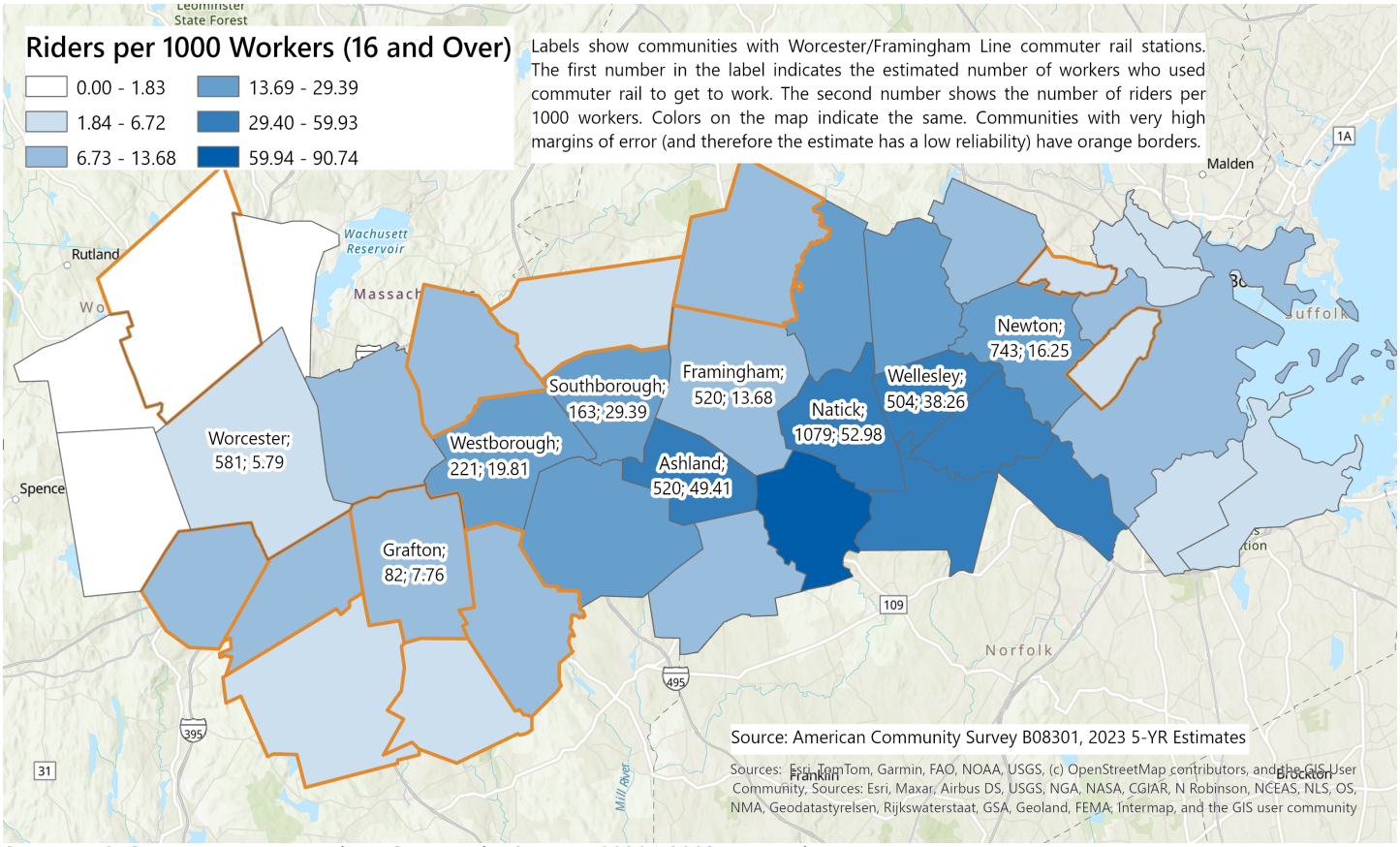
Source: MBTA 2023 Passenger Survey. Note: "Home-based" refers to the origin point of riders; are they going to work or another activity from home or somewhere else?

MAPPING OTHER AVAILABLE DATA TO UNDERSTAND THE WORCESTER LINE

Other data that is available to The Research Bureau comes from the U.S. Census Bureau's American Community Survey and the Longitudinal Employer-Household Dynamics Program. Unfortunately, even that data is limited. For example, the American Community Survey has estimates for the number of people that take public transportation to work, including by regional rail; but lacks granular data about the demographics of those riders. There is data available for riders of public transportation generally, but that is going to be a mix of the people who take the bus within the city as well as those who take regional rail outside of it—and thus no way to know how those two groups might differ. Moreover, we do not have information from the American Community Survey about riders who take the regional rail to get to entertainment, to go shopping, to go to the hospital, and the like. Despite these limitations, there is some interesting data that has been mapped below.

One such source of data is Table B08301, Means of Transportation to Work. The 5-year estimates for 2023 provide a starting picture of the number of workers (16 and over) who consider the regional rail to be their main means of transit for work. However, the reliability of this estimate should not be overstated. For example, according to this survey there are about 581 workers in Worcester proper who use the regional rail to get to work – plus or minus the margin of error of 238. Compare that range (343 to 819) to the number of people boarding trains in Worcester in the Fall 2024 station boarding counts, which was 1,139 across the entire day. While of course some percentage of those riders are taking the rail for reasons other than work, the point is that 581 is a starting point, and not the end of the discussion. Compare this to the number of people who drive, either alone or in a carpool: 77,728, plus or minus a margin of error of 1,860. Taking into account all workers in Worcester, these numbers mean that an estimated 5.79 out of 1,000 workers in

Map 1: Riders Per 1,000 Workers (16 and Over), 2023 5-Yr Estimates



Source: U.S. Census Bureau, American Community Survey B08301 2023 5-Yr Estimates

Worcester ride the regional rail to work—the smallest number of any of the communities along the Worcester/Framingham Line that have rail stations.

Of course, most of those commuting to work are not necessarily going all the way to Boston; but the majority of workers taking the regional rail very likely are. To give a better sense of who is making such a long commute, Census Bureau table B08134 breaks down means of transportation to work by travel time**. If we consider only those whose travel time to work is 45 minutes or more, which is charitably the minimum amount of time it might take to drive to Boston from downtown Worcester with no traffic, the number of total workers shrinks to 14,535. Of those, 12,655 workers drive to work and 559 take the regional rail.[8] In this case, there are an estimated 38.46 out of 1,000 workers (commuting 45 minutes or more to work) that use the regional rail**.

Using the data from B08301 (all commuters, regardless of travel time), *Map 1* gives a sense of the number of workers taking the regional rail to work. This map includes all the communities that (1) have a Worcester/Framingham Line regional rail station or (2) are adjacent to such a community. Communities that fit (1) are labeled with the estimated number of workers using the regional rail to travel to work, as well as the number of working riders per 1,000 workers. Third, the maps colors reflect the number of riders per 1,000 workers—darker colors indicate higher

Table 5: Working Residents, Commuters, and Fall 2024 Station Boarding Data: Selected Stops on Worcester Line

	Working Residents			Census Estimate of Workers Taking Regional Rail to Work	Fall 2024 Station Boarding Data
	within 1/2 Mile	within 1 mile	1/2 mile change since 2018		
Worcester	2,211	14,554	37.24%	581	1,139
Grafton	73	429	48.98%	82	337
Westborough	335	1,344	126.35%	221	370
Southborough	439	1,382	-2.88%	163	404
Ashland	640	2,408	64.52%	520	380
Framingham	2,396	6,621	1.31%	520	780

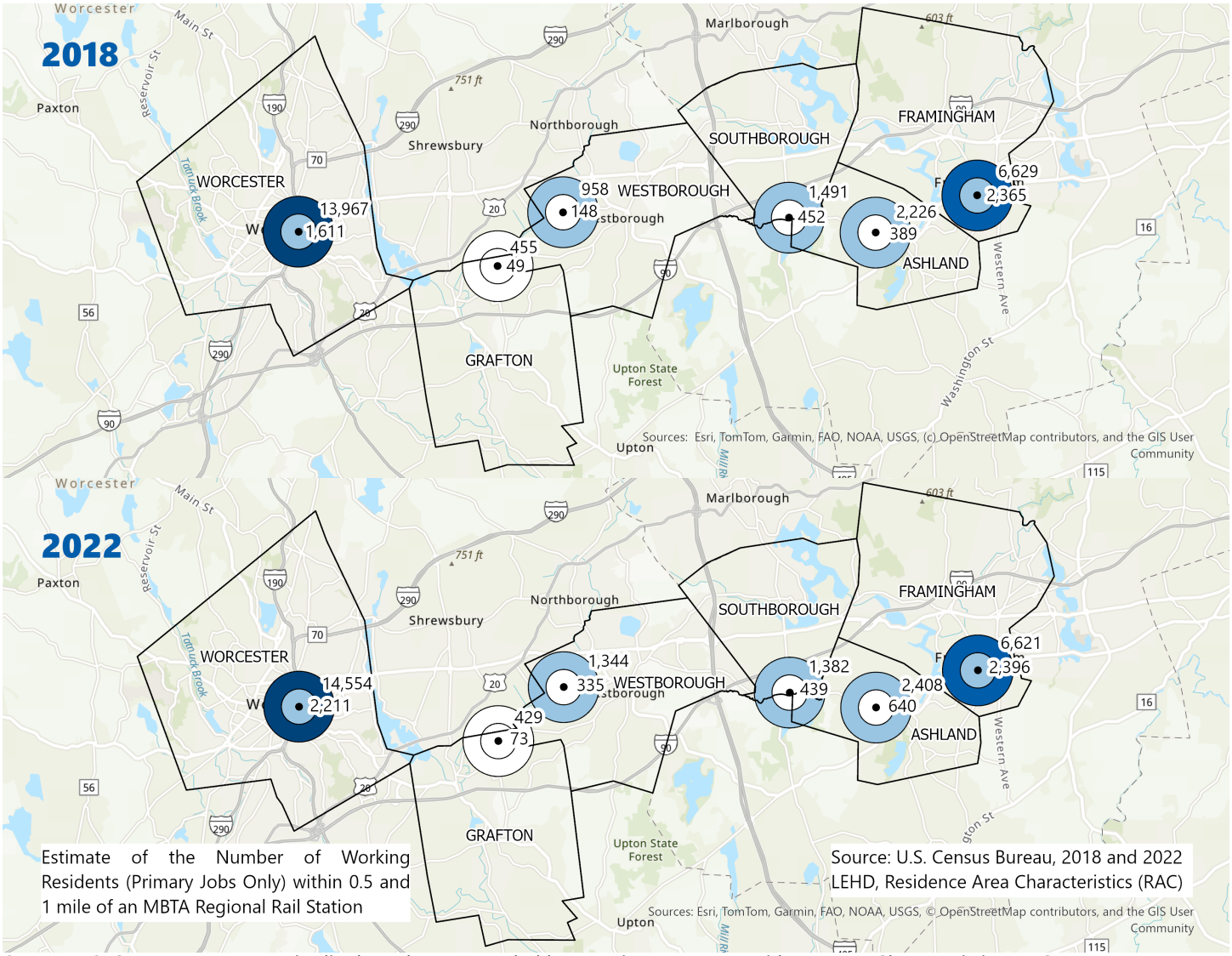
Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics Program, Residence Area Characteristics; U.S. Census Bureau, American Community Survey B08301 2023 5-Yr Estimates; MBTA Commuter Rail Ridership by Trip, Season, Route/Line, and Stop

totals. Finally, orange borders denote communities with such high margins of error that their estimates have a low reliability of being accurate. These riders could be going to any stop for work, not necessarily riding the line all the way to the end, and there is no indication whether they are going inbound or outbound. There is also no indication that they are taking the Worcester/Framingham Line specifically to work, either.

Depending on one's municipality of residence, getting to the regional rail station itself from home—or even getting to work from the station—might require the use of a car for the first leg of the trip. One of the goals of Massachusetts' MBTA Communities Act was to create more **transit-oriented housing development** to encourage people to live near transit and to make it a key part of their daily lives. Indeed, MassINC has written extensively about this very subject, including in its April 2018 report *The Promise and Potential of Transformative Transit-Oriented Development in Gateway Cities*. Beginning from the premise that "Gateway City regional rail stations get minimal ridership from downtown neighborhoods and few developers seek out this land for transit-oriented development," the report's authors argue that "changing economic forces provide fertile ground for Gateway City TOD," that these areas can accommodate substantial development, and that the influx of new riders could be supported by the MBTA. (Hodge & Forman, 2018) Worcester is the only Gateway City served by the Worcester/Framingham Line—offering a unique opportunity to pilot Gateway City-centered TOD at scale.

We can see a version of **transit-oriented development by looking at who is living and working close to regional rail stations over time**. The U.S. Census Bureau's Longitudinal Employer-Household Dynamics program

Map 2: Estimate of the Number of Working Residents (Primary Jobs Only) within 0.5 and 1 mile of an MBTA Regional Rail Station, 2018 to 2022



Estimate of the Number of Working Residents (Primary Jobs Only) within 0.5 and 1 mile of an MBTA Regional Rail Station

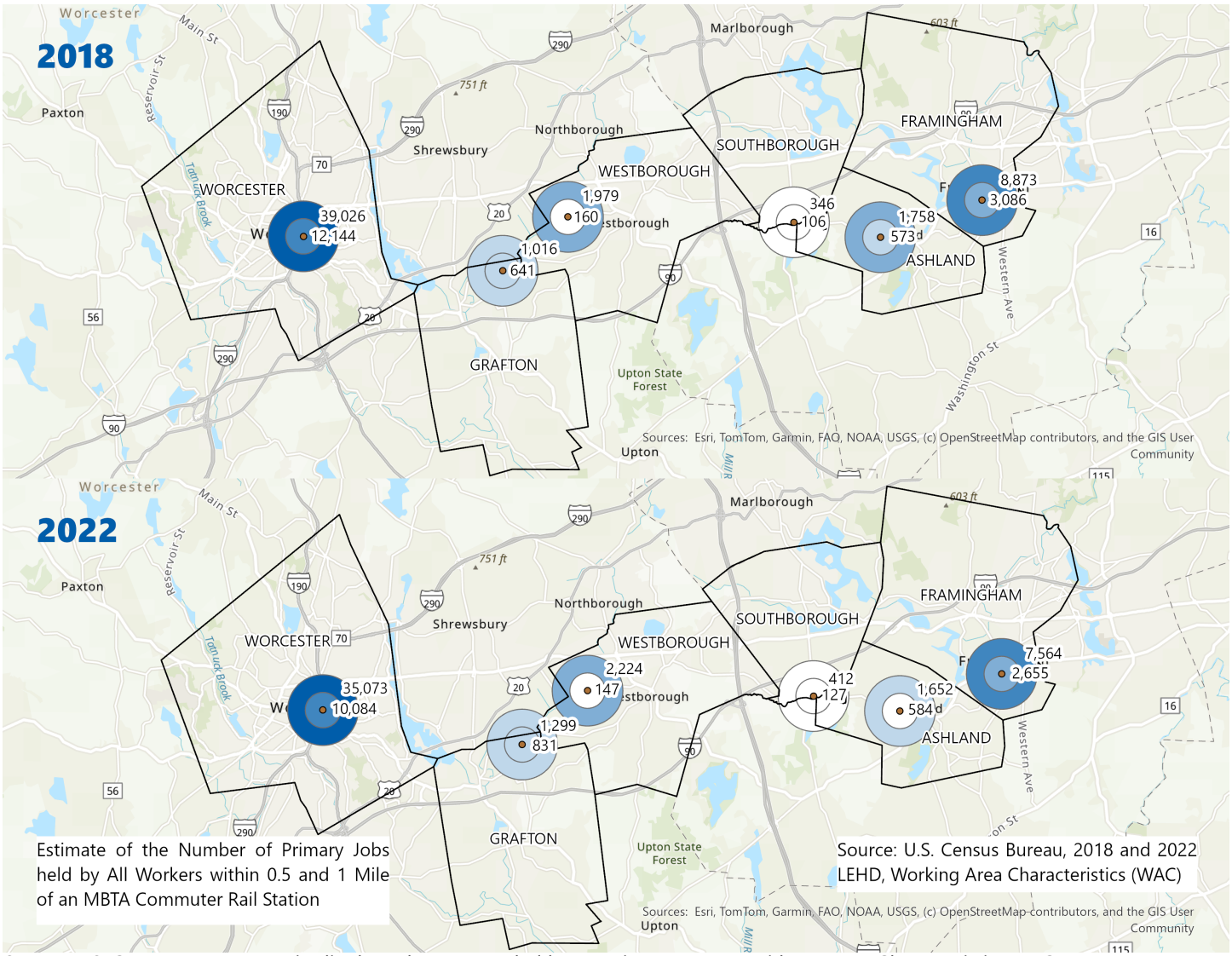
Source: U.S. Census Bureau, 2018 and 2022 LEHD, Residence Area Characteristics (RAC)

Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics Program, Residence Area Characteristics (RAC)

keeps detailed track of workers' movement from home to work. Using this dataset, we can track the estimated number of working residents living near regional rail stations, as well as the number of jobs nearby. Starting from Census Blocks, we used geographic apportionment to estimate the number of workers living or working within a half-mile or a mile radius from a regional rail station between Worcester and Framingham. Then, the following maps compare the change in each of these numbers between 2018 and 2022 (the last year for which data is available).

Map 2 on the previous page shows the estimated change in the number of working residents living within a half mile and a mile of regional rail stations between Worcester and Framingham, in both 2018 and 2022. **There were large percentage increases in the number of working residents living within a half mile in Worcester (37.2%), Grafton (49%), Westborough (126.4%), and Ashland (64.5%). Although in 2018 there were an estimated 800 more working residents living within a half mile of Framingham's regional rail station than within a half mile of Worcester's station, by 2022 that gap shrunk to 185**. Of course, only a portion of these residents will actively use regional rail to get to work; however, there is clearly a growing pool of nearby working residents who can potentially use the rail without having to drive to the station. Note, too, that the number of working residents living within a half-mile of Worcester's Union Station is greater than the Census estimate of riders using regional rail to get to work (~581) and the number of people boarding trains in Worcester in Fall 2024 (1,139). It should not be misconstrued that all the working residents living near a station will necessarily need to use the regional rail—but the pool of potential riders nearby is

Map 3: Estimate of the Number of Primary Jobs Held by All Workers within 0.5 and 1 mile of an MBTA Regional Rail Station, 2018 to 2022



Estimate of the Number of Primary Jobs held by All Workers within 0.5 and 1 Mile of an MBTA Commuter Rail Station

Source: U.S. Census Bureau, 2018 and 2022 LEHD, Working Area Characteristics (WAC)

Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics Program, Residence Area Characteristics (RAC)

deep compared to the number of people using rail for any reason. **In addition, there are likely even more workers living within a half-mile of Union Station in 2025—since 2022, the Cove (173 units), Alta on the Row (370 units), the Revington (228 units), District 120 (83 units), and other housing units have become available in the area, with more on the way**.

Of course, transit-oriented development is not just about places for workers to live near the rail, but destinations for those workers as well. In that vein, *Map 3* shows the change in the number of jobs near regional rail stations between 2018 and 2022, using the Census Bureau's LEHD program data. While housing density near these six stations has seen a marked increase, the number of primary jobs[9] have generally seen a decrease. Unlike housing, which will exist no matter the external conditions, this decline could be due to any number of reasons. These are most likely pandemic related. For example, remote work during this period in 2022 may have impacted the number of jobs physically located near the stations. **Indeed, since this data is based on commuting, there is a good chance that people were not commuting as much or as far in 2022, as close as it was to the pandemic. Just like with the number of housing units, the numbers in 2025 would likely look very different.**

CONCLUSIONS ON RIDERSHIP DATA

Monthly ridership on the system overall is slowly getting back to its immediate pre-pandemic trend, and much of that new growth is driven by weekend ridership. While weekend ridership is only a fraction of weekday ridership, **it is weekends that are far ahead of any of their pre-pandemic numbers**. Worcester's weekend ridership has remained strong, largely stabilizing between 10% and 15% of its total ridership; and, despite having less than half as many trains, not to mention the lack of weekday commuters, average Saturday ridership on the line has never dropped below 20% of any weekday—and has, at times, reached over 50% of any weekday. In other words, ridership on the Worcester/Framingham Line is strong, and is getting stronger. **One of the MBTA's FY26-30 capital improvement projects (P1257) includes upgrades to track and signal infrastructure on the line that could enable 30 minute service frequencies. With such frequent service, we could continue to see the Worcester/Framingham Line grow.**

This report would not be possible without the data that the MBTA has made publicly available, and if anything demonstrates the strong need for more regular collection of station level data. That data is what allows The Research Bureau and the public writ large to ask important questions about station usage and schedule changes. Annual collection may be difficult or costly, but the six year gaps that currently exist between station level data (spring 2012, 2018, and Fall 2024) make it difficult to notice trends and patterns in ridership data. With the MBTA's rebranding to regional rail and its promise to increase rail activity, more regular, detailed public data collection would be greatly to the public's benefit. In addition, the growth of weekend ridership indicates a dire need for weekend station level data – any future data collection should be sure to include weekends.

Still, with the data that we have there are still questions to be asked, despite strong growth on the Worcester line. We can see that in Fall 2024, onboardings were strong in Worcester. However, with that in mind it is worth looking back at one of the initial justifications made for removing the earlier express train from Worcester: that 75% of riders on the Worcester/Framingham Line originate or terminate in Framingham (Cartolano, 2023a). As shown earlier, 15.55% of inbound onboardings on the Worcester/Framingham Line occurred in Worcester itself; 10.65% occurred in Framingham. The four stops between Worcester and Framingham make up 20.35% of onboardings. Framingham plus the 11 stops after it make up nearly 65% of onboardings.

Looking at onboardings and alightings all day show that about 18% of riders board or alight between Worcester and Ashland, and 82% board or alight between Framingham and South Station. If, however, we remove Lansdowne, Back Bay, and South Station from those numbers (given that these Boston-based stations are the destinations or originating points for many riders), about 34% of riders board or alight between Framingham and Boston Landing. While still about twice as many riders are boarding or alighting between Framingham and Boston Landing, there are also twice as many stops as between Worcester and Ashland. While we don't know what the numbers looked like when the MBTA initially made its decision, current evidence doesn't seem to bear out that 75% of riders originate or terminate in Framingham.

Indeed, that original assertion ignores that the express train stopped in Framingham in the schedule that was being changed. If the argument was that the express train was leaving a lot of riders off between Worcester and Framingham (and subsequently West Natick), that would be understandable as there are quite a few riders between these stops. Nearly 50% of onboardings on inbound trains according to the station boarding data occurred at Worcester, Grafton, Westborough, Southborough, Ashland, and Framingham. These are important stops on the Worcester/Framingham Line, indeed for all of the regional rail network, and ensuring they have adequate service is both important and worthwhile. **If anything, these six communities should be working together to advocate for new infrastructure and frequency improvements that would make the line worthwhile for all of them**. Resuming a Worcester-Framingham working group, for example, could leverage each of these communities to make their needs known. **Advocating for fast-tracked infrastructure improvements, such as electrification, improved signaling, and more frequent service would benefit all riders on the line**.

In addition, this report has shown that there is continuously strong ridership on the Worcester/Framingham Line, and therefore it is imperative that as the Commonwealth proceeds ahead with the Allston I-90 multimodal project that it maintains rail service levels throughout. Serious disruptions on the line could be a ridership setback, and it is very important that throughout construction and after that the Commonwealth pays special attention to limiting disruption—and ultimately increasing service—through the project and its aftermath.

In any case, Union Station has an impressive number of onboardings on a train that can make up to 16 other stops (not including South Station), and that can take anywhere from 70 to 100 minutes depending on the time of departure. **Worcester provides a strong anchor, then, to a line that moves nearly 5 million people a year**. But the fact of the matter is, the Worcester/Framingham Line could be more impressive. It could move more people, quicker. Poised as the center of West-East Rail, it could be a crown jewel in linking together the economic outcomes of the region – joining Massachusetts' largest cities. **So, what are the promises of the Worcester/Framingham Line, and how can we get there?** While this report focused on the ridership of the Worcester/Framingham Line as it stands today, what could the Worcester/Framingham Line ultimately be? **A follow-up report from the Worcester Regional Research Bureau will explore infrastructure, continued capital investments as evidenced in the MBTA's current Capital Improvement Plan, West-East Rail, traffic counts on I-90, and projections for the future that can demonstrate the "promises" of the Worcester Line**.

Express for Whom? Ridership, Recovery, and the Importance of the Worcester/Framingham Line is supported by a grant from the Barr Foundation.

The opinions expressed in this report do not necessarily reflect the views of the Barr Foundation.

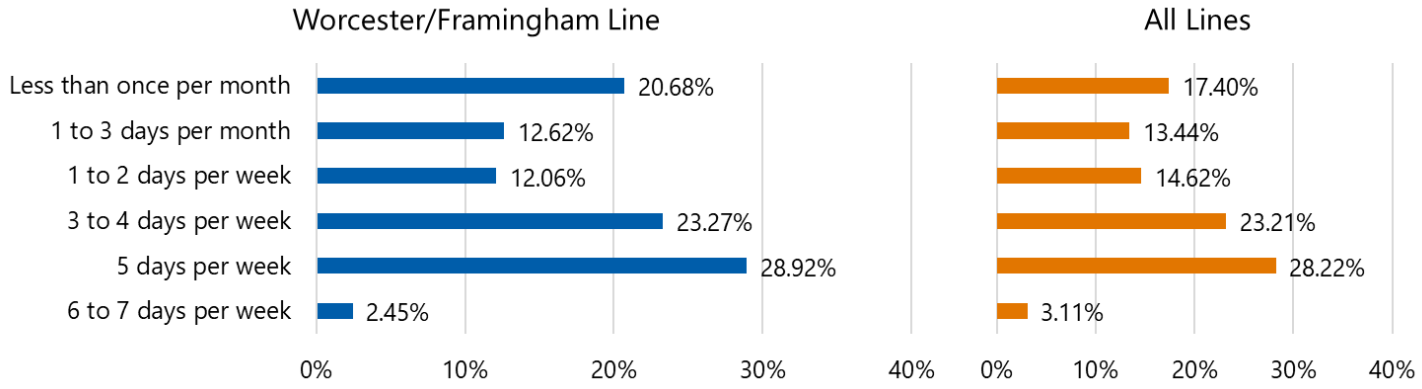
APPENDIX A: TERM GLOSSARY

Alighting	The term used to refer to riders getting off of a train
Clockface Schedule	Predictable train departure times at regular intervals
Express Trains	Trains that skip particular stops on the way towards or away from South Station. Examples include the Worcester-Framingham-Lansdowne Express, and the trains that skip stops between West Natick and Boston Landing
Frequency	How often trains depart from a station
Inbound	Trains that travel *towards* South Station as their final destination
Off-Peak	All trains that do not depart Monday to Friday, 7 AM to 9 AM and 4 PM to 7 PM
On Time Performance (OTP)	Whether trains arrive at their final destination within five minutes of the scheduled time. It is a percentage calculated by counting the number of trains that arrived within five minutes and dividing it by the total number of trains that day.
Outbound	Trains that travel *away* from South Station
Peak	The busiest "commuting" hour trains—Monday to Friday, 7 AM to 9 AM and 4 PM to 7 PM
Regional Rail	The idea that trains can run and serve all types of uses, for everyone in the region, rather than simply commuters
Transit-Oriented Development	New residential or commercial development that is purposely built on or near accessible public transit

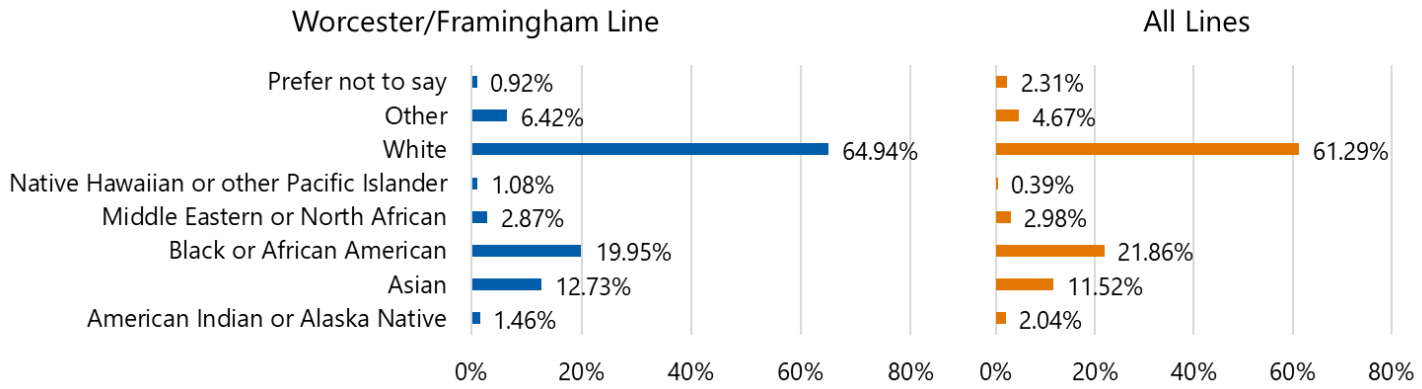
APPENDIX B: MBTA 2023 PASSENGER SURVEY RESULTS

Moreover, Continued from pages 15 and 16, the following two pages of appendix include charts related to the 2023 MBTA Passenger Survey. While there are limitations to the data, discussed at length on those pages, these following charts do provide a profile of weekday MBTA regional rail riders on the Worcester/Framingham Line compared to All Lines. Because results are weighted, percentages may occasionally sum to greater than 100. More information about the survey can be found here.

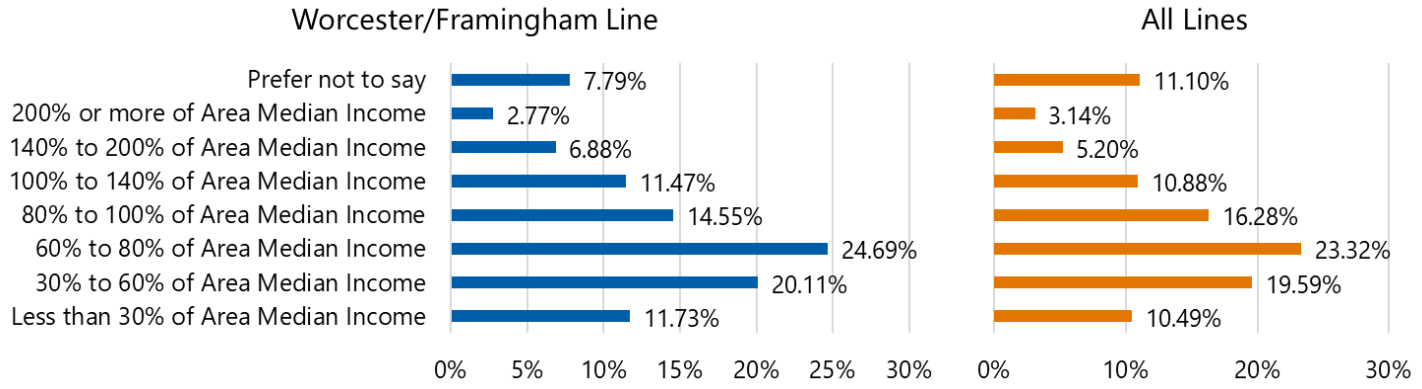
Trip Frequency



Self-Identified Race of Rider



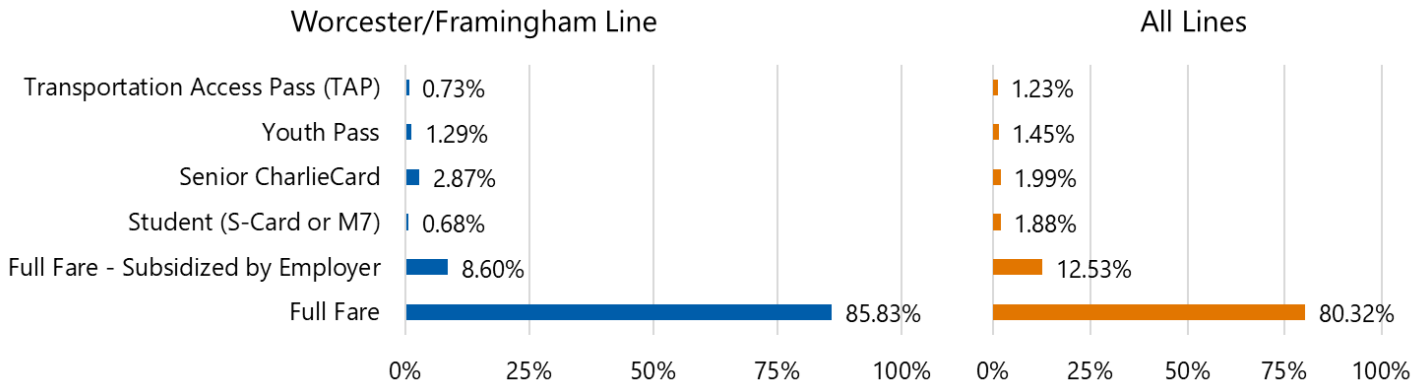
Household Income



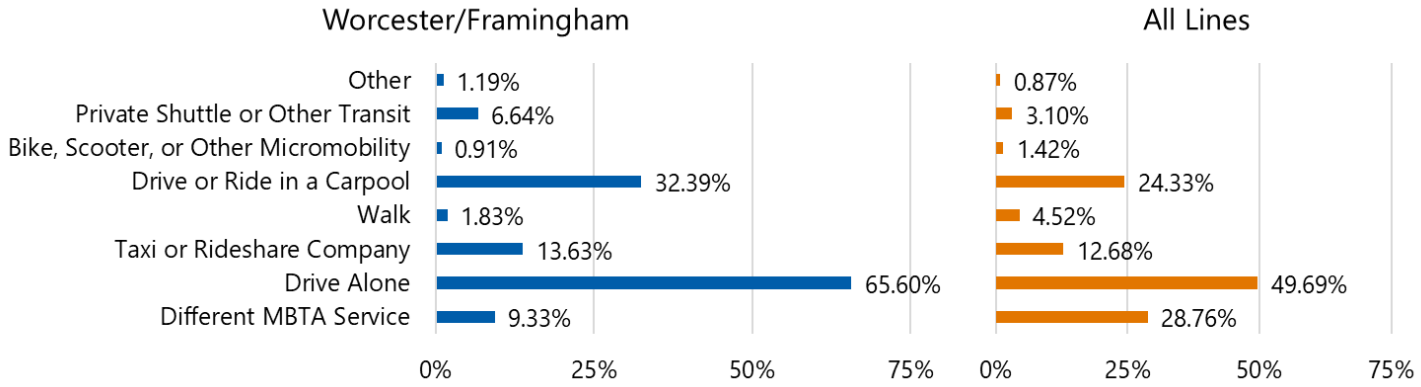
Source: 2023 MBTA Passenger Survey

APPENDIX: MBTA 2023 PASSENGER SURVEY RESULTS

Fare Type



Alternative Mode of Transit if Regional Rail Was Not Available



Source: MBTA 2023 Passenger Survey

NOTES ON THE TEXT

[1] July 2021 was chosen as the first month to compare, instead of June 2021, because there is only a week of data available for June 2020.

[2] June 2021 was chosen as the first month to compare here because it is the first month in the pandemic period to have an estimated more than 75,000 boardings. Despite January 2022 having fewer weekday riders than December 2021, it still has 200% more riders than January 2021, and so on.

[3] The linked blog makes clear that the shift to all-day service since the last station counts in 2018 has helped to increase the number of "off-peak" riders across the whole system; "peak" riders have seen their numbers decline.

[4] Boston Landing's popularity among riders may indicate that West Station, which would be built nearby as part of the Allston I-90 multimodal project, could be a popular station, including among those choosing to exit I-90 and take the train to Back Bay or South Station.

[5] One theory for why this might be the case is that riders in Framingham will see far fewer people on the 552 train than on the 508 by the time the train arrives in Framingham.

[6] In 2023, 60% to 80% of AMI in the Worcester, MA Metro Area was $49,140 to $65,500 for a one person household, and $70,200 to $93,600 for a four person household. Calculations are provided by the Federal Department of Housing and Urban Development, and are based on the Area Median Income of a four-person household. However, given that we don't know where Worcester Line riders were surveyed, the AMI they refer to could be higher or lower depending on the station and their area of residence.

[7] Income-eligible reduced fares are only available to Massachusetts' residents between the ages 18 and 64 who are enrolled in certain state assistance programs, like MASSGrant, or MassHealth (CarePlus, Family Assistance, Limited, or Standard), and SNAP, among other programs. Participants must renew their eligibility every year, which could be burdensome. Other groups do qualify for reduced fares through other means, which are shown in Figure 22, including seniors, riders with disabilities or Medicare recipients, and certain middle and high school students. Free fares are available as well for children under 11 as well as four other classes. See https://www.mbta.com/fares/reduced for more details.

[8] Table B08134: Means of Transportation to Work by Travel Time to Work; 2023 5-YR

[9] Primary jobs refers to where workers make most of their money; in other words, this map is not counting any secondary jobs because of the risk of double-counting workers

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