



Massachusetts Bay Transportation Authority

Fare Affordability: Board Update

Lynsey M. Heffernan, Assistant General Manager of Policy and Transit Planning

Steven Povich, Director of Fare Policy & Analytics

David Churella, Senior Manager of Fare Policy & Analytics

October 13, 2022

What is the problem we are trying to solve?

- Fares are an important lever for the MBTA; they generate material revenue and help encourage specific ridership behaviors.
 - The MBTA's [Fare Policy](#) attempts to balance ridership, revenue, and equity
- Post-Covid-19, the MBTA has seen material declines in ridership and revenue. However, most riders who rely on transit are already on the system.
 - We know that service quality, reliability, safety, and frequency are the most important factors for attracting riders to transit
 - Still, affordability remains a challenge for low-income riders¹
- ***The proposals in this presentation target affordability, while encouraging some incremental ridership.***

¹ “How Low-income Transit Riders in Boston Respond to Discounted Fares: A Randomized Controlled Evaluation” (Jeff Rosenblum, June 2019)



Fare Policy Options

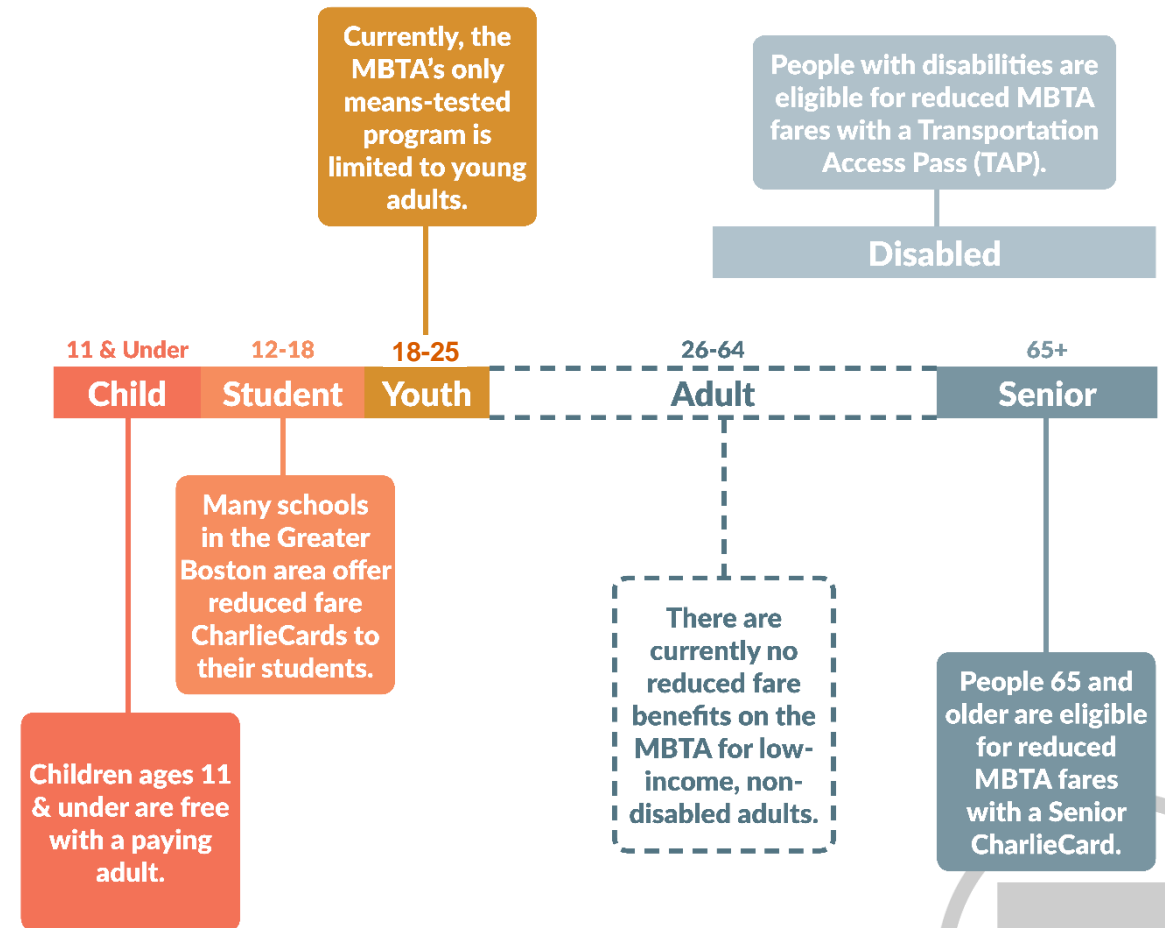
- Major changes in the MBTA fare policy are **not** currently accounted for in the MBTA's operating budget, therefore the MBTA would need a **new source of revenue** to account for the financial losses brought by fare reductions.
- MBTA staff have looked at two major proposals to address affordability:
 - Implementing a **Means-Tested Fare** to allow low-income riders to take trips at half price on all modes
 - Implementing a **Fare-Free Bus** program to allow some trips to be free for bus riders
- The following slides explain the costs and benefits of these two fare policy ideas *when implemented at full-scale*. Either proposal has such significant operational impacts that a multi-year phased implementation would be required.
- Costs are analyzed in two categories: **Fare Revenue Loss** and **Operating Costs** incurred
- Costs are incurred across modes, most importantly, **Fixed Route** and **Paratransit**.



Means-Tested Fares: Context

- The MBTA has several reduced fare programs¹
 - Students: 49,000
 - Seniors: 59,000
 - TAP (Disability): 20,000
 - Blind: 1,500 (note Blind riders ride for free)
 - Youth Pass: 4,500
 - Only means-tested program; T relies on a municipal partnership model
- *We estimate that approximately 60,000 additional riders fall into the 26-64 age bracket with incomes under 200% of the federal poverty line; these riders could benefit from means-tested fares*

Current MBTA Reduced Fares



Means-Tested Fares: Policy Overview

What are Means-Tested Fares?

- Half-priced fares and passes on all modes for eligible riders with low-income (<200% of the federal poverty line)
 - Apply existing Reduced Fare catalog of prices and products to participating riders
 - As of July 1, 2022, all single ride tickets and the vast majority of passes are available in a Reduced Fare version

How would we administer?

- Partner with a 3rd party to determine eligibility
 - Eligibility proven via enrollment in other programs with similar income cutoffs, such as Fuel Assistance, SNAP, MassHealth, etc.



Means-Tested Fares: Revenue and Cost Implications

	Low Estimate	High Estimate
Fixed Route Fare Loss	\$30 million	\$33 million
Fixed Route Op Costs	\$3.0 million	\$8.1 million
The RIDE Fare Loss	\$1.5 million	\$1.5 million
The RIDE Op Costs	\$11 million	\$15 million
Total	\$46 million	\$58 million

Key Drivers of Uncertainty

- Eligibility Threshold: Assume 200% of FPL
- Rider uptake and system usage: Assume all eligible riders participate; actual uptake is likely lower. Demand elasticity is based on academic and MBTA research.

Fixed Route Fare Revenue Loss

- Riders: About 60k eligible riders at 200% of the FPL. Riders select pay-per-ride or pass purchases based on current riding behavior plus induced demand
- Covid Scaling: We estimate about 95% of low-income ridership has been retained

Fixed Route Operating Costs

- Service: 0-1% incremental service required, based on 2-3% induced demand
- Administration: \$3-4 million of administrative costs.

The RIDE Fare Revenue Loss

- Rides: Assume 76% of rides are eligible based on existing demographic data; add induced demand
- Fare Revenue: Revenue from existing trips is reduced by 50%

The RIDE Operating Costs

- Operating Costs: Each induced trip costs approximately \$75



Means-Tested Fares: Analysis Comparison

Fixed Route Fare Revenue Loss

- ↓ 5% decrease in low-income ridership
- ↑ Addition of Reduced Fare monthly passes on CR & Ferry as of 7/1/22

Fixed Route Operating Costs

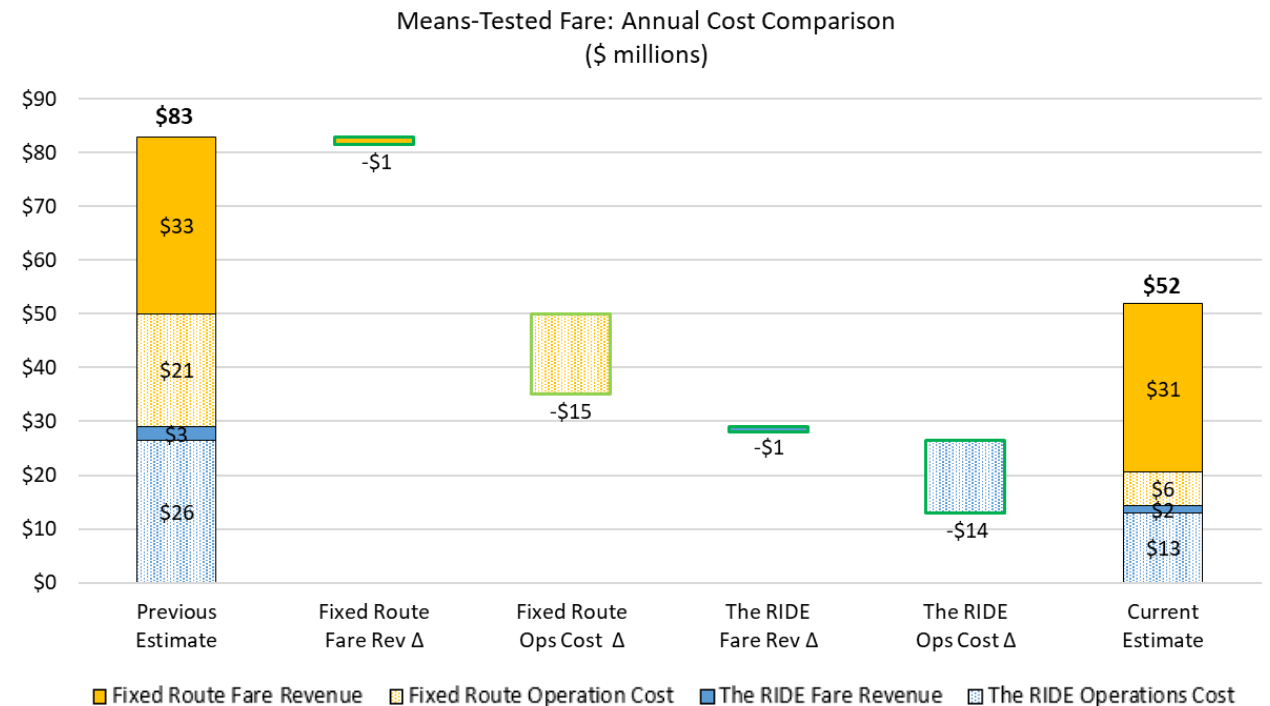
- ↓ Existing slack in the fixed route system limits the need for increased service to meet induced demand
- ↔ Maintained administrative cost assumptions

The RIDE Fare Revenue Loss

- ↓ 39% decrease in ridership projections (eligible means-tested trips)

The RIDE Operating Costs

- ↓ Decrease in induced demand on lower base ridership and data from Fare-Free Bus Programs
- ↑ Increases in some cost expectations, such as fuel and personnel costs



Capital Costs

Due to lower crowding levels across the MBTA network post-Covid, we believe that the induced demand will not require the purchase of new buses or bus facilities, so we have not included any capital costs associated with Means-Tested Fares.

Means-Tested Fares: Discussion

Means-Tested Fares are an effective strategy to improve affordability and increase access for low-income riders because they offer support across all modes in the transit network with material rider savings, while maintaining sustainable revenue for the MBTA, and do not distort incentives or operations.

Pros	Cons
<ul style="list-style-type: none">• <u>Comprehensive:</u> Supports low-income riders across the entire system, including Commuter Rail communities<ul style="list-style-type: none">• We believe there is significant opportunity to help low-income Commuter Rail riders who are currently priced out of the system• <u>Sustainable:</u> Attracts new ridership and retains sustainable revenue for the MBTA• <u>Tested policy:</u> Most major US transit system have some version of a reduced fare for low-income riders• <u>Data:</u> Retains important data source on system usage	<ul style="list-style-type: none">• <u>Admin:</u> Additional administrative burden on the MBTA• <u>Operational Burden:</u> Operational challenges expected to occur most acutely on The RIDE

Fare-Free Bus: Context

Program Overview

In partnership with the City of Boston, the MBTA ran fare-free service on Route 28 from August 2021 through February 2022 as a fare pilot. Beginning in March 2022, due to continued funding from the City of Boston, the program was expanded to the Routes 23, 28, and 29 and will run through February 2024.

28 Pilot Takeaways

- Ridership: The free fares successfully encouraged increases in ridership (22%), some of which came from trips that would have been car trips (5%) or would not have happened at all (2%).
- Service: Route 28 absorbed a material increase in ridership with minimal negative impacts on travel times and reliability. Dwell time per passenger was down 20% as compared to similar routes.
- Economic Impact: This pilot cost \$500,000 with limited benefit. Only 1/3 of riders saved money, as the majority continued to transfer to other bus and subway lines or purchased monthly passes to maintain access to the broader network.



Fare-Free Bus: Revenue and Cost Implications

	Low Estimate	High Estimate
Bus Fare Loss	\$40 million	\$49 million
Bus Op Costs	\$4.9 million	\$16 million
The RIDE Fare Loss	\$3.9 million	\$3.9 million
The RIDE Op Costs	\$45 million	\$72 million (+\$9 MM capital)
Total	\$94 million	\$141 million (+\$9 MM capital)

Key Drivers of Uncertainty

- Pass purchasing and route substitution behavior: Rider response to free bus service has impacts on the broader system beyond bus-only trips and fares
- Extent of “Induced Demand” for free services: Fully fare-free services are a more significant system change than previous limited-scale initiatives

Bus Fare Revenue Loss

- Fare Revenue Impacts Along Four Channels:
 - 1) Pay-per-ride bus-only trips (full revenue loss)
 - 2) Local bus pass sales (full revenue loss)
 - 3) Shift from LinkPass to pay-per-ride (partial shift)
 - 4) Pay-per-ride shift from rapid transit to free bus (partial shift)
- COVID Changes: Free bus revenue loss ≈ 71% of pre-COVID estimates

Bus Operating Costs

- Bus Service Costs: 1% - 4% incremental bus service required, based on 6% - 18% increase in overall bus demand
- Rapid Transit Ridership: Expected 1% - 2% decrease in subway ridership
- Bus Fleet: Analysis assumes MBTA bus fleet is kept at its current size, which is sufficient to serve induced demand

The RIDE Fare Revenue Loss

- Rides and Revenue: Full revenue loss from 100% free trips on The RIDE.

The RIDE Operating Costs

- Operating Costs: Significant additional operating cost of providing service to meet increased demand for free service on The RIDE.
- Capital Costs: Potential upfront capital cost of fleet expansion

Fare-Free Bus: Analysis Comparison

Bus Fare Revenue Loss

↓ 29% decrease in lost bus revenue reflects lower bus ridership and overall system revenue post-COVID

Fixed Route Operating Costs

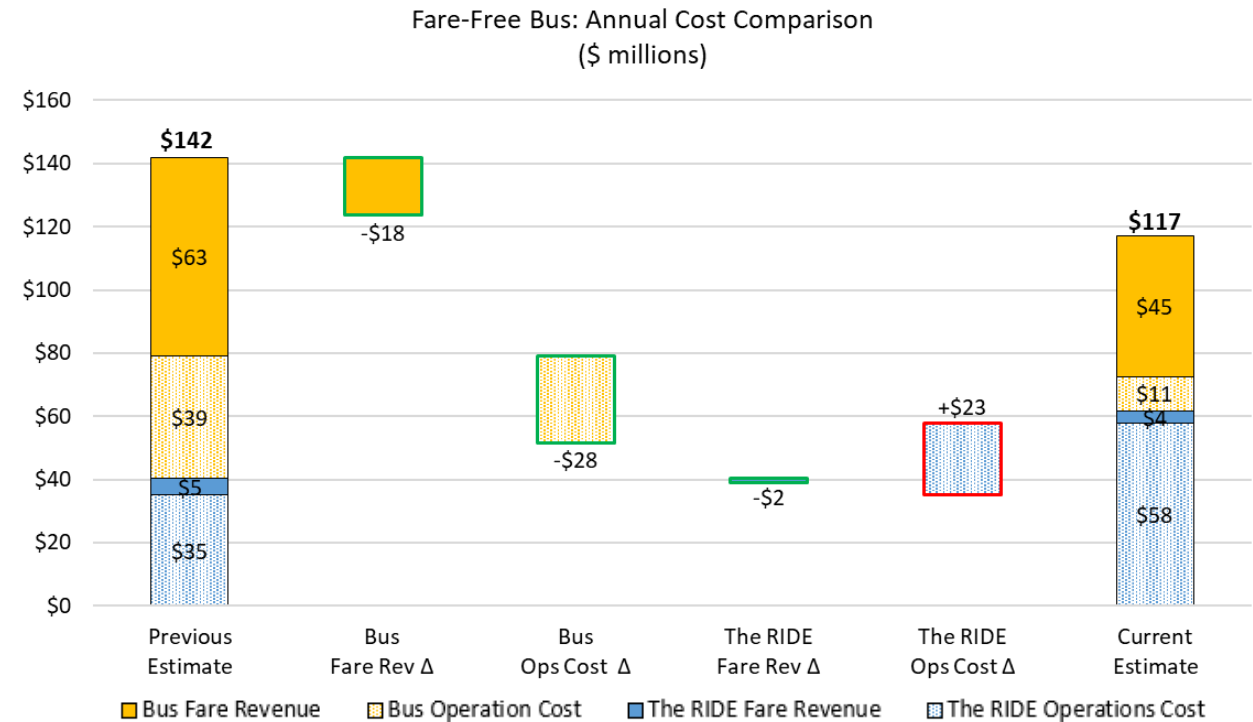
- ↓ Existing slack in the bus system limits the need for increased service to meet induced demand
- ↓ [Capital Costs]: Existing and pre-planned bus fleet and facilities expected to be sufficient to meet induced demand

The RIDE Fare Revenue Loss

↓ 28% decrease in ridership projections

The RIDE Operating Costs

- ↑ Increases in some per-ride cost expectations, such as fuel and personnel costs
- ↑ Higher induced demand from alignment of methodologies used in Means-Tested Fare and Fare-Free Bus calculations
- ↑ Inclusion of various cost components omitted from previous analysis



Capital Costs

Due to lower crowding levels across the MBTA bus network post-COVID, we believe that induced demand will not require the purchase of new buses or bus facilities. Some additional vehicles for The RIDE may be necessary, but not as many as would have been required at pre-COVID ridership levels.

Fare-Free Bus: Discussion

Fare-Free Bus saves few riders significant money, distorts use of the MBTA network toward an imperfect subset of the complete service offering (bus-only and The RIDE), and poses serious concerns for Paratransit operations. While popular, it is not an effective policy to achieve fare affordability for most riders in need.

Pros	Cons
<ul style="list-style-type: none">• <u>Simple:</u> Reduces barrier to use bus system; simple to understand; limited administrative burden• <u>Dwell Time:</u> Bus operations performance improvements	<ul style="list-style-type: none">• <u>Very Limited Effectiveness:</u> Offers very limited economic impact as only paratransit and bus-only riders save money• <u>Disrupts Network:</u> Distorts the fare incentives relative to system design, pushing riders to bus instead of the complete network• <u>Narrow:</u> Only serves the communities in MBTA bus service area• <u>Operational Burden:</u> Material risk of crowding on buses• <u>The RIDE Challenge:</u> The RIDE has a highly variable cost structure and the MBTA is required to serve every trip

Fare Affordability Policy Options

- Means-Tested Fares and Fare-Free Bus can both improve affordability
 - Policies would have different magnitudes of impact on different populations of MBTA system users
 - The practical and operational challenges of implementing each policy also differ
- The financial impact of implementing either policy would be prohibitive under the current MBTA operating budget
 - Additional funding would be required to offset the revenue losses and additional operational costs of either fare affordability approach

<u>Annual Financial Impact: Revenue Loss and Operational Costs</u>		
	Low Estimate	High Estimate
Means-Tested Fares	\$46 million	\$58 million
Fare-Free Bus	\$94 million	\$141 million (+\$9 MM capital)

