

# A NEW WAY TO RIDE

New Policy Opportunities Enabled  
by the MTA's New Fare Payment System



# Acknowledgements

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# Introduction

When the Metropolitan Transportation Authority (MTA) introduced the MetroCard in 1994, it had the potential to be a significant upgrade over the token system in use at the time. Yet it took years and substantial external pressure to translate the MetroCard’s potential into free bus-to-subway transfers and unlimited-ride passes—policies that seem inevitable in hindsight. Now, after nearly twenty-five years as the MTA’s primary fare payment medium, it’s clear the MetroCard has far exceeded its useful life.

Soon the MTA will join its peers in London, San Francisco, and many other cities with adoption of a new fare payment system (NFPS). The system will offer riders diverse fare payment options, including contactless credit or debit cards, digital wallets like Apple Pay or Google Wallet, and a new MTA-issued fare card.

**Adoption of the NFPS is an opportunity to pursue policies that can make transit faster, easier to understand, and fairer for the nearly nine million riders who rely on the MTA every day. The authority must put its riders first from the beginning by immediately adopting the full range of policies enabled by this technology.**

In this report, we recommend three categories of low-cost policy and technological advances pioneered elsewhere that the MTA should adopt as part of its new fare payment system in order to improve riders’ daily commutes:

- **Make Bus Boarding Seamless:** Allowing bus riders to board through any door and eliminating on-board cash fare payment speeds the boarding process and helps keep buses reliably on schedule.
- **Guarantee Riders Pay a Fair Price:** Through a policy known as fare capping, a single fare option for transit and commuter rail travel, and new partnerships with emerging mobility providers, riders can choose the best transportation mode for their trip and know they’ll pay a reasonable price.
- **Enhance Service Information:** By refining its data collection and sharing practices, the MTA can provide accurate, real-time service and station information to riders.

Many transit providers around the globe have translated the capabilities of modern fare systems into policies that benefit riders. All door boarding has sped buses in San Francisco since 2012. Cashless payment and “fare capping” have become popular payment features in London. Transit providers from Sydney to Singapore offer accurate, real-time service information, including current passenger crowding conditions.

By embracing these and other best practices, the MTA can make its transit systems as convenient and affordable to use as possible. After years of watching other cities leapfrog the antiquated MetroCard system, New Yorkers deserve no less.

# What is the New Fare Payment System?

The MTA is retiring the MetroCard and adopting a new set of fare payment options. The 6-year phased roll out of the new system began in October 2017. That's when the MTA signed a contract with Cubic Transportation Systems (Cubic) for new fare technology and support services across New York's transit and commuter rail systems. Rather than swiping a MetroCard, MTA customers will instead be able to tap a mobile wallet like Apple Pay, a contactless debit or credit card, or the new MTA fare card at subway turnstiles and on buses across the city. According to the MTA, Long Island Rail Road (LIRR) and Metro-North Railroad riders will be able to combine their subway, bus and rail tickets into one form of payment as well. Here's what riders can expect:

**May 2019:** Riders are able to pay by tapping a contactless bank card or mobile wallet at card readers installed at a limited number of subway turnstiles and buses. These riders pay for fares just like they would pay for a cup of coffee. The MetroCard is still available. It won't be retired until the new fare system is fully operational in mid-2023.

**October 2020:** Every bus and subway turnstile is outfitted with card readers able to process electronic payments. Financial card issuers may automatically send new contactless debit and credit cards as soon as New York customers' non-contactless bank cards expire.

**February 2021:** The MTA debuts a new contactless transit card. The NFPS will be "account-based," meaning riders possess an MTA account and use it to add card value and check account balances. Customers will use a variety of self-service options to manage their account, including a new agency-wide mobile app. At this point, riders can purchase MTA transit cards at out-of-system retailers like Duane Reade and CVS. Cards are not yet offered inside stations.

**March 2022:** The MTA installs new transit card vending machines in subway stations, Metro-North stations, and LIRR stations.

**July 2023:** The MetroCard is retired. Riders pay fares with contactless bank cards, smartphones, and the new MTA transit card.

# Make Boarding Seamless

The MTA can speed up bus passenger boarding by allowing riders to pay at the curb and to board through any bus door. Eliminating sluggish on-board cash payment can also cut boarding time.

**Recommendation: Reduce bus boarding time by allowing riders to board through any bus door. Allow riders to pay at the curb on high-ridership routes.**

New Yorkers embarked on nearly six percent fewer bus trips in 2017 than in 2016, the worst single-year ridership decline in the last fifteen years.<sup>1</sup> This is hardly surprising, given New York City’s buses are among the slowest and least reliable in the country.<sup>2</sup> In parts of downtown Brooklyn and midtown Manhattan, where average speeds are below five miles per hour, New Yorkers can outrun a bus with a good pair of walking shoes.

One major cause of bus delay is excessive “dwell time”—the time it takes for passengers to board or alight and pay the fare at bus stops. On local routes, the MTA equips buses with a farebox at the front door. Passengers must board single-file through the front and pay using one machine under the supervision of the driver. This creates long passenger queues, especially at busy stops. The amount of time buses spend at stops constitutes 10 to 25 percent of a typical bus journey.<sup>3</sup> Accordingly, policies designed to speed up

the boarding process can have real impact in reducing overall journey time.

To reduce boarding queues, speed up service, and improve reliability, the MTA should allow riders to board through any door on every bus route in the city. On high-ridership routes, riders should pay fares “off-board” at the curb prior to boarding.

These two policies are in use on the city’s Select Bus Service (SBS) routes and have helped to cut journey times by up to 30%.<sup>4</sup> Furthermore, MTA data show that on routes using all door boarding and “proof of payment,” where NYCT security personnel randomly inspect customer tickets for fare compliance, fare evasion has fallen between 50% and 80%.<sup>5</sup> These policies have clearly enhanced the passenger experience. All-door boarding enables passengers to easily board and maneuver through crowded buses. Speedier buses save riders time.

Despite these benefits, the MTA and New York City Department of Transportation have adopted a plodding pace of SBS route implementation. The City recently committed to adding only two or three SBS routes per year over the next decade.<sup>6</sup>

To speed up buses and stem the city’s accelerating loss of bus riders, the MTA and NYC DOT must deploy measures like all door boarding and off-board payment more

## Dwell Time Reductions on Select SBS Routes

SBS Route	Before	After	Change	Ridership Growth	Change in Dwell Per Passenger
Bx12	15:51	9:34	-40%	6.30%	-43%
M15	18:54	12:04	-36%	30%	-51%
Bx41	9:24	6:48	-28%	25%	-42%
B44	11:31	15:24	-40%	10%	-46%

Source: Metropolitan Transportation Authority. Data compiled by the National Association of City Transportation Officials (NACTO).<sup>32</sup>

broadly. At high-ridership bus routes, fare validators installed curbside at bus stops could facilitate passenger payment prior to boarding through any door. The City and MTA could coordinate to creatively leverage existing curbside hardware – such as LinkNYC or parking meters – to accept cash or fare payment. Lower-ridership routes could receive validators placed at front and rear bus entrances or situated on posts within buses.



A TriMet Hop Fastpass validator placed curbside to facilitate off-board fare payment for MAX Light Rail. Individual small, pole-mounted validators require less upfront investment than curbside ticket vending machines in use on SBS routes. However, they offer less functionality such as obtaining or refilling transit cards. Image: TriMet.

However, the NFPS procurement contract signed by the MTA in October indicates the authority may adopt a less ideal approach: continuing to allow riders to board through any door on SBS routes only and installing on-board bus validators on those routes instead of at the curb. This could slow down boarding on the city’s highest ridership routes. Meanwhile, the agency is not planning to take advantage of the opportunity to save riders time on the majority of routes.

System wide all-door boarding has become standard in San Francisco. When the San Francisco Municipal Transportation

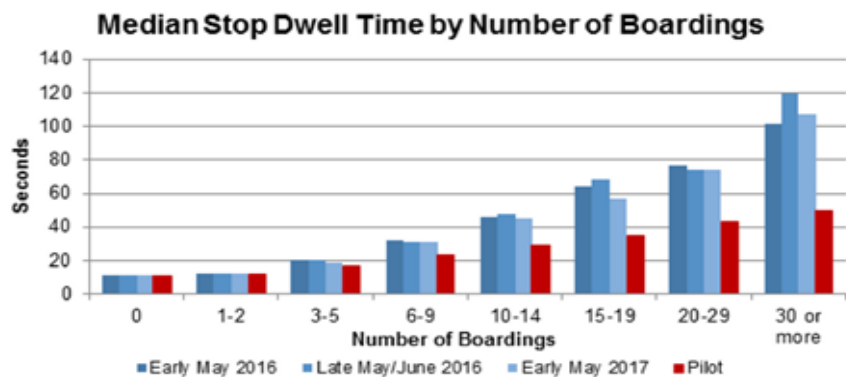
Agency (Muni) implemented citywide all-door boarding for its Muni buses and trolleys, dwell times dropped by an average of 38% per passenger.<sup>7</sup> Meanwhile, the rate of riders who board without paying the full fare decreased



Bus riders board through all doors at a Muni bus stop. Image: SFMTA.

and overall boardings increased.<sup>8</sup> SFMTA combined all-door boarding with an increase in transit fare inspectors. These inspectors were deployed based on a data collection and analysis effort that revealed routes and times of days where fare evasion was highest.

A more recent 2017 pilot by the Massachusetts Bay Transportation Authority (MBTA) similarly highlighted the benefits of all-door boarding. The two-week study of two Silver Line bus routes—underwritten by the Barr Foundation, which reimbursed the MBTA for all passenger fares during the study—allowed the authority to analyze an all-door boarding policy.<sup>9</sup> The pilot showed encouraging results for improving bus speeds and reliability: the busiest stops saw median boarding times cut in half, and data showed reduced journey time



The MBTA Silver Line pilot saw the largest dwell time decreases at stops with the highest numbers of boardings. Graph courtesy of MBTA.

variability.<sup>10</sup> The MBTA plans to implement system-wide all-door boarding and eliminate on-board cash payment as it replaces the CharlieCard with a NFPS similar to the one under development in New York.<sup>11</sup>

### **Q: What about fare evasion?**

Rather than worry whether every rider pays the fare every time, some agencies are choosing to draw riders by making buses faster and more convenient through all-door boarding and proof of payment. The MTA can adopt best practices from agencies that have improved rider satisfaction and safety while ensuring acceptable fare compliance and enforcement levels.

In San Francisco, Muni studied and tweaked its fare enforcement program prior to allowing all-door boarding citywide. Critics of the boarding policy worried it would increase fare evasion and subsequent revenue loss. Data from before and after implementation show the opposite is true: both fare evasion and revenue loss fell.<sup>12</sup>



A fare control officer inspecting riders' proof of payment in San Francisco. Image: SFMTA.

The purpose of Muni's fare inspection program is the prevention of fare evasion. Secondary benefits include safety, security, and customer service.<sup>13</sup> Inspectors are civil servants, not police officers, and fare evasion is treated as a non-criminal infraction. This avoids court involvement or saddling riders with criminal records.<sup>14</sup> A relatively small force of inspectors rotates in teams

to different police districts every day. Thus, riders can expect an inspector anywhere and anytime. Rotation provides a measure of certainty that inspection does not target any particular neighborhood or class of people in a discriminatory manner.

Muni minimizes service impacts with a "ride along" inspection approach where possible—an inspection team boards a bus and validates fare cards as the bus progresses, rather than delaying vehicles to validate fares.

### **Recommendation: Speed bus boarding by eliminating sluggish on-board cash fare payment.**

Much as single-door bus boarding increases dwell time, on-board cash fare payment lengthens the duration of each stop. Cash-paying riders can take two to three times longer to board than those who are allowed to pay at the curb and walk on the bus. The time to process a cash transaction can be highly variable and result in unpredictable dwell times.<sup>15 16</sup> To speed bus boarding and improve reliability, the MTA should take steps to eliminate on-board cash payment on buses.

Transport for London's (TfL) experience eliminating cash bus fares provides a model for the MTA to ease the transition for the 15% of New York City bus riders who don't use MetroCards.<sup>17</sup>

As it eliminated on-board cash fares in 2014, TfL debuted a 'one more journey' policy allowing passengers without sufficient funds for a bus fare, but with a positive account balance on their fare cards, to make one more trip.<sup>18</sup> The policy prevents stranding riders without a payment option.

The popularity of TfL Oyster and bank card payment, as well as a nearly £1 incentive to use Oyster instead of cash,<sup>19</sup> meant a relatively small number of bus riders were still paying cash by the time it was eliminated.<sup>20</sup>

A transition away from on-board cash acceptance will no doubt affect low-income



riders. The majority of bus riders who pay in cash are people who earn less than \$28,000 per year.<sup>21</sup>

To help riders gain access to MetroCards, New York City should partner with the MTA to adopt a proposal known as “Fair Fares.” Under the proposal, New York City would subsidize the cost of providing half-price fare cards to riders living at or below the federal poverty line.<sup>22</sup> The policy would have the dual benefit of helping the poorest riders afford the increasing cost of transit while lowering the number of bus riders who pay with cash. Other large U.S. cities and transit agencies already provide a low-income fare: King County Metro in Seattle has offered a half-priced fare card for low-income riders since 2015,<sup>23 24</sup> and San Francisco introduced its low-income transit pass program in 2005.<sup>25</sup>

**Q: What about riders without smart phones or bank cards?**

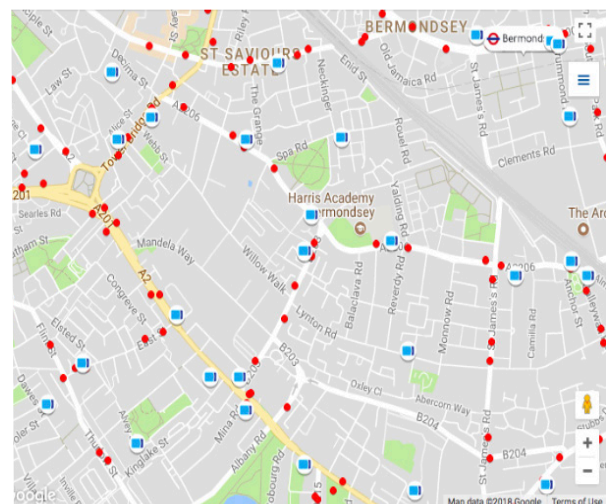
Riders who do not have, or prefer not to use, smartphones or contactless bank cards will be able to buy and reload contactless transit cards from new vending machines and through an out-of-system retail network. This network must be convenient for riders while offering them the best customer service possible.

Today, New York City and the surrounding MTA service area is home to roughly 2,000 retailers that sell MetroCards. Many riders, however, would be surprised to discover MetroCards can be purchased at convenience stores, newsstands, and grocery stores. Maintaining a robust out-of-system retail network and increasing awareness of transit card retailers is paramount for successful deployment of the new fare payment system. The MTA must ensure that retail

card vendors are located in close proximity to high-ridership bus stops, especially in neighborhoods located far from transit stations. Perhaps most importantly, they should be heavily located in areas that are home to large numbers of unbanked riders without access to debit or credit cards and smartphones.<sup>26</sup>

Finally, online and mobile support for payment and technological questions should be available to all users. A marketing campaign focusing on outreach and education on using the new fare media should occur prior to the rollout to prepare customers before the new fare media are available.

Transport for London, which also selected Cubic as the supplier of their fare payment system, is a model for out-of-network fare card sales. TfL Oyster cards can be purchased or value can be added at thousands of Oyster Ticket Stops and all Tube, London Overground and TfL Rail stations. Retailers include newsstands, convenience stores, and supermarkets.



Red dots represent TfL transit stations or stops offering Oyster card purchase and reloading, while blue dots represent out-of-network Oyster vendors offering the same. Source: TfL

# Guarantee Riders Pay a Fair Price for Transit

The MTA can guarantee every rider pays a fair price by “capping” the accumulated travel costs of single-ride tickets when they reach an equivalent unlimited-pass rate—whether that’s the daily, weekly, or monthly rate. It can offer a flat-fare option for transfer between commuter rail, subways, and buses within city limits. And it can partner with mobility companies to enable seamless customer travel.

**Recommendation: Adopt a “fare capping” policy to guarantee all riders pay a fair price for transit.**

Here in New York, the poorest riders are stuck paying the highest fares. Riders who can afford an unlimited pass benefit from significant per-ride savings, while lower-income riders with less cash on hand often pay the costlier single-ride fare. Fare capping can eliminate this long-standing unfairness. It’s a policy in which riders’ accumulated single-ride fares are “capped” when they reach an equivalent unlimited-pass rate—whether that’s the daily, weekly, or monthly unlimited rate.

The NFPS will be sophisticated enough to count how many times a rider visits the system within clear time spans using single-ride tickets and be able to stop charging after s/he hits a capped limit. There’s no technological limitation. It’s simply a matter of MTA leadership choosing to adopt the policy.

Other agencies have taken this approach. TfL and Cubic, the company behind London’s Oyster card, first enabled a daily fare cap on Oyster in 2005. London has offered a daily and weekly cap to riders who pay fares using contactless bank cards since 2014.

Fare capping costs are not negligible. TriMet, Portland Oregon’s transit provider, recently

instituted a daily fare cap on its new Hop Fastpass transit card. According to internal analyses, TriMet expects a 1% to 1.5% reduction in fare revenue after instituting the fare cap policy.<sup>27</sup> However, it expects costs to be offset somewhat because electronic fare payment reduces cash collection costs and the hardware and maintenance associated with it. The MTA likewise assumes it will experience a reduction of these costs.

Regardless, New York State Governor Andrew Cuomo and the elected officials who fund the MTA should consider reimbursing the authority for the cost of providing such a fare policy.

**Recommendation: Cut commute times and tap into commuter rail capacity by offering a flat-fare option for transfer between subway, bus, and commuter rail within city limits.**

Even with the City’s relative abundance of public transportation, plenty of New Yorkers live far from convenient transit options. Many others squeeze onto crowded, overburdened buses and subways. Meanwhile, seats on nearby Metro-North Railroad and LIRR go unused.<sup>28</sup> To offer more New Yorkers convenient travel at a reasonable price, the MTA should tap into underutilized commuter railroad capacity to offer a flat-fare option for transfer between subway, bus, and commuter rail within city limits.

The authority has indicated it may adopt such a fare. As a component of the new payment system, LIRR and Metro-North commuters will be able to purchase a joint railroad and subway ticket using the MTA eTix app. And as of early-2018, the MTA expects to pilot a single flat-fare option with transfer between bus, subway, and commuter rail for riders at a limited number of LIRR stations in Brooklyn and Queens.<sup>29</sup>

The MTA must not delay in expanding these fare offerings citywide early in the new fare system roll out. This will enable riders on crowded subways like the Lexington Avenue line or in underserved neighborhoods in the Bronx, Queens, and Brooklyn the option to transfer to nearby commuter railroads at a reasonable price.

**Recommendation: Partner with mobility services to provide seamless trip planning and payment together within one mobile app.**

New Yorkers want to get to where they're going quickly, reliably, and at a reasonable cost. Today's rider is less concerned with arriving by any particular mode of transportation. He or she wants to tap a fare card or scan a cell phone to access transportation, perhaps after doing a quick time and cost comparison.

Integration between transit agencies and transportation providers like Citi Bike or car share has so far come in two forms: The first is fare technology integration, or enabling the same fare card, cell phone, or user account to be used for multiple transportation services. The second is fare policy integration, in which

fares are aligned across modes, sometimes including free or discounted transfers between services.<sup>30</sup>

The MTA is developing a systemwide mobile app with the potential to integrate its service trip-planning and payment with emerging mobility services. For example, with relative ease the MTA's mobile app can provide location, availability, and payment information for nearby Citi Bike stations. More importantly, the MTA should offer the ability to pay with an MTA account balance for a discounted transfer to Citi Bike (or any other mobility service). In this example, coordination and financial assistance from the City is integral to the concept. This is sound public policy that would divert drivers from congested roads while encouraging sustainable transportation use.

This type of partnership benefits travelers elsewhere. A feature of TriMet's transit app allows transit users to find and book nearby transportation options to help with the first or last mile of their transit trips. That includes ride-sharing service Lyft, car-sharing service car2go, and Portland's bike share provider, BIKETOWN. The agency expects to offer a payment option soon, so riders can also pay for their trips within one app.<sup>31</sup>

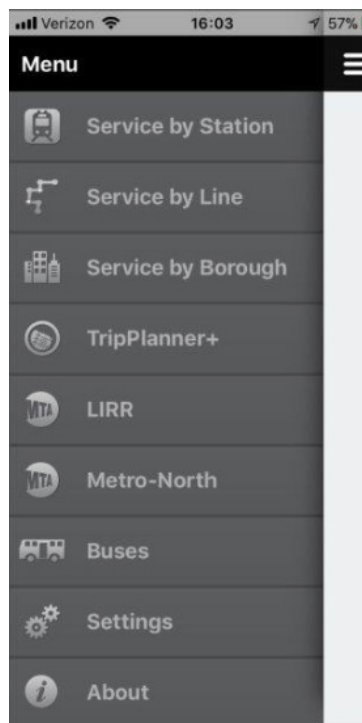
# Enhance Service Information

**Recommendation: Refine data collection practices in order to provide accurate, real-time information to riders.**

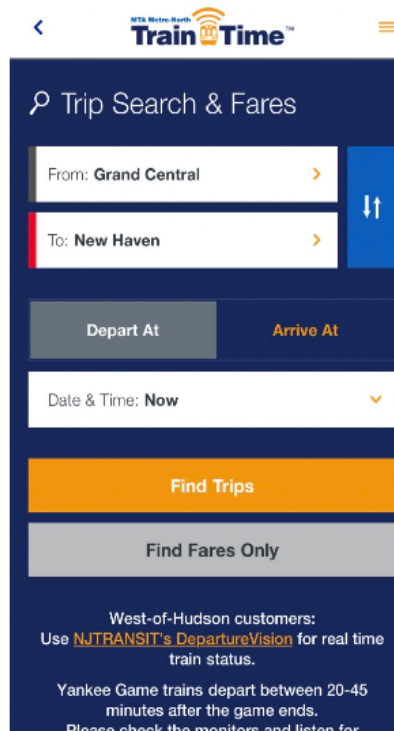
The MTA is in the process of upgrading and consolidating many of its mobile apps and web platforms into one systemwide app. To ensure the information it provides is accurate and useful, the authority must upgrade or in some cases develop new datasets and make them easily accessible to the public. Real-time transit data, including GPS-enabled vehicle location information, passenger count and fare collection data, and service-disruption information must be continuously refined and made reliable. The data must be standardized and public so third-party app developers and riders can benefit from and make use of it.

The MTA expects millions of riders to rely daily on its app for trip-planning and account services. At a minimum, it should be designed to offer accurate travel information in a simple user design. Trip-planning functions should take into account station closures, service disruptions, and elevator and escalator outages.

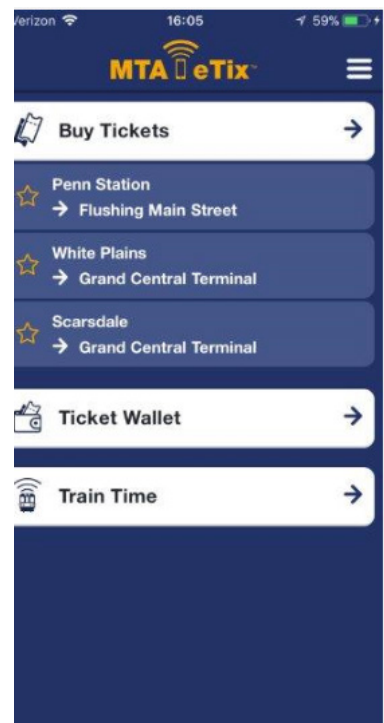
**MTA Weekender**



**Metro-North Train Time**

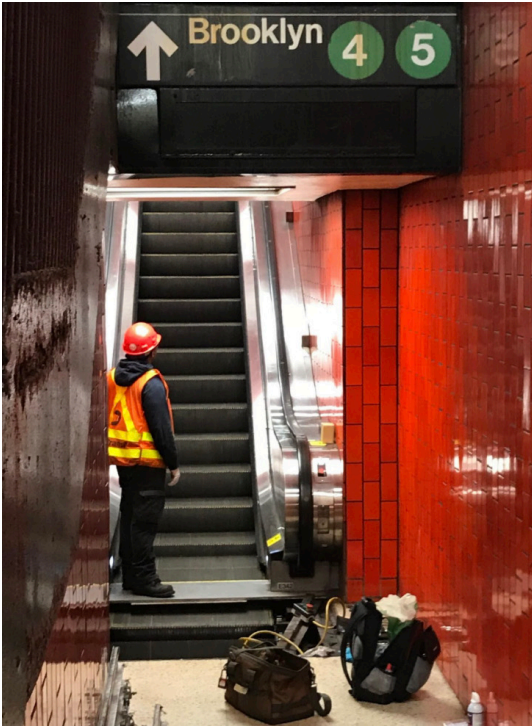


**MTA eTix**



The MTA offers a large and bewildering number of single-function apps and websites: Subway Time, Bus Time, Metro-North Train Time, and LIRR Train Time for service schedules; Weekender for weekend subway service changes; and MTA eTIX to purchase Metro-North and LIRR tickets. Many of these functions will be consolidated under one systemwide mobile app. Source: MTA app gallery.

In the case of elevator and escalator outages, mobile platforms should serve as a clearinghouse for updated, accurate outage information and estimates on when equipment will return to service. This can help prevent riders from experiencing frustrating, unplanned encounters with inaccessible stations.



Alert riders to out of service elevators and escalators. Image: Colin Wright

The new fare payment system will offer passenger boarding data and fare collection data that are far more reliable than data currently available to the MTA. For example, dispatchers will have a more precise estimate of the number of passengers on a bus or inside a subway station. The MTA could use this information to alert riders via mobile app if an approaching bus or a nearby station is experiencing crowding conditions. Riders would be able to account for this in their travel

plans. Some would opt to wait for a different bus. Others would walk a little further to a different subway station. Both would help to alleviate crowding. This is, of course, not an excuse for the MTA to ignore the underlying causes of bus and station crowding.

Transport for NSW in Sydney and the Land Transport Authority in Singapore offer this information to riders. The agencies collect bus crowding data based on real-time passenger fare payment data and GPS-enabled bus tracking. This information is then used to inform riders how crowded a bus is before it arrives via third-party mobile apps.<sup>33 34</sup>

This recommendation is entirely possible with fare technology, though it requires a commitment from various MTA departments to closely coordinate and faithfully share data to the public and with third-party trip-planning apps like Google Maps.

## Conclusion

More broadly, each of these recommendations requires a commitment from the MTA to focus on improving riders' experience as they develop and deploy the new fare payment system. At a moment when subway and bus service is declining and riders are increasingly frustrated with the state of transit, the MTA has a unique opportunity to demonstrate responsiveness to riders' needs and a commitment to a truly 21<sup>st</sup>-century transit system. After years of frustration with public transit, New Yorkers deserve nothing less.

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