



rtta

Greater Dayton RTA

How Greater Dayton RTA retired its fareboxes and delivered a faster service with Account-Based Ticketing

100%

adoption of
Tapp Pay

4 M

journeys in
the first year of
operation

200

retail locations to
add cash to Tapp
Pay account

Introduction



Mode: Bus



Dayton, Ohio

Takeaways

- Dayton Regional Transit Authority (RTA) was the first agency in the US to no longer accept cash on-board their bus fleet after cash fares fell to less than 10 per cent of journeys, as cash riders use alternative ways to purchase tickets.
- An increase in riders adding funds to their account using cash at ticket vending machines and more than 200 local retailers across Dayton and surrounding areas via payment solutions providers InComm Payments and T-CETRA eases the move to a cashless onboard operation.
- The Tapp Pay Account-Based Ticketing system powered by Masabi revolutionizes the rider experience with over 4,000,000 journeys made in just over 12 months of full operation.
- Fare-capping delivers riders fare equity with fares charged based on usage rather than a riders' ability to afford the pass upfront.

The Challenge

As part of its commitment to maintaining a comprehensive and equitable service and preparing for the post-pandemic recovery, Dayton's Regional Transit Authority was looking for ways to speed up services for riders to improve journey times and help attract more people to ride RTA services.

At the same time, riders were looking for more equitable, safe and contactless ways to pay their fare quickly and conveniently without having to have the correct fare for the farebox or needing to interact with physical infrastructure.

Dayton knew that convenience was key to people choosing public transit and attracting new riders. They needed fare payment innovation delivered quickly to support a 'safe way to pay' with a complete system overhaul that could revolutionize the rider experience without breaking the bank.

The Fare Payments-as-a-Service Solution

Dayton's Regional Transit Authority (RTA) wanted to roll out contactless ticketing across the city area's bus and paratransit network to increase fare equity.

Instead of selecting a bespoke fare collection system that would be expensive to build, operate and maintain, and take years to deploy, Dayton opted for a Fare Payments-as-a-Service (FPaaS) solution.

By signing up to Masabi's Justride platform, which is used by over 150 agencies of all sizes around the globe, Dayton was able to configure the system and get the latest ticketing innovations into riders' hands quickly and cost-effectively.

Adopting Masabi's 'Mobile First' approach enabled Dayton to quickly launch mobile ticketing with visually validated passes. The rest of the system was deployed in manageable stages over the following months to enable rapid innovation.

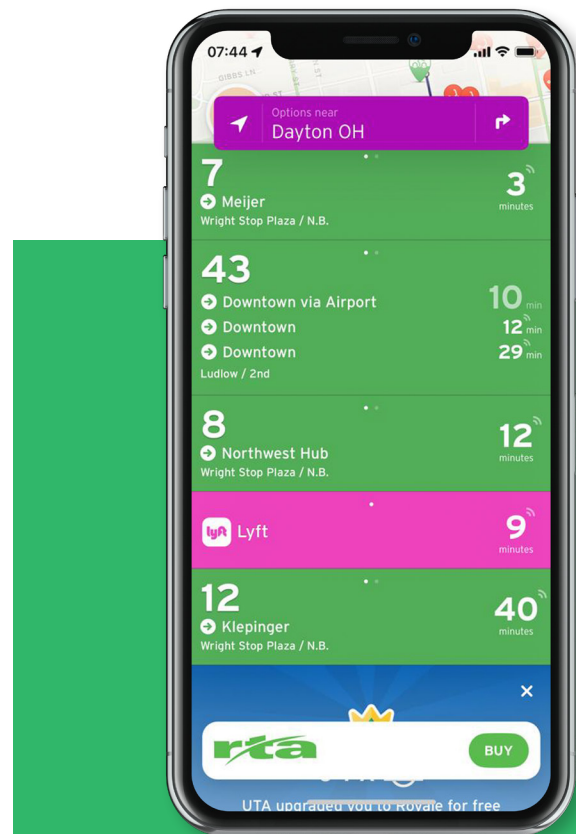
Stored Value Accounts and Fare Capping

The transition away from the old fare payments system began with the introduction of mobile ticketing. Dayton launched mobile ticketing using Masabi's Justride Software Development Kit (SDK) integrated into the Transit app during 2020, providing a seamless ticketing and journey planning experience for riders.

Account-Based Ticketing removes the need for passengers to purchase tickets or select fares before they travel. Instead, they simply tap and ride with fares calculated in the back-office, enabling a seamless travel experience for riders.

In 2021, Dayton began the rollout of the first stage of its new Account-Based Ticketing solution with the launch of Stored Value on mobile along with Masabi's Justride electronic validation units (JRVs) deployed across the bus fleet, removing the need for riders to purchase tickets or select a fare before traveling. Instead, they could simply tap their mobile barcode in the Transit app and ride.

A few months later Dayton introduced new reloadable Tapp Pay smartcards to deliver Account Based Ticketing for all riders – supported by the rollout of new ticket vending machines and the opportunity for customers to add funds to their smartcards and Tapp Pay accounts using cash via local retailers.



Dayton riders can visit their local convenience store and add funds to their Tapp Pay account using cash (or bank cards) through partnerships with T-Cetra's VIDAPAY and Incomm Payments' Vanilla Direct service.

Justride's back office charges passengers the best possible fare using fare capping technology. This means all riders – including those who previously paid for single tickets with cash – only pay for what they use when they use it and are never overcharged for their trip.

It also means everyone has access to the best fares, rewarding customer loyalty in a truly equitable way, which dramatically enhances fare equity.

Operational advantages of farebox retirement

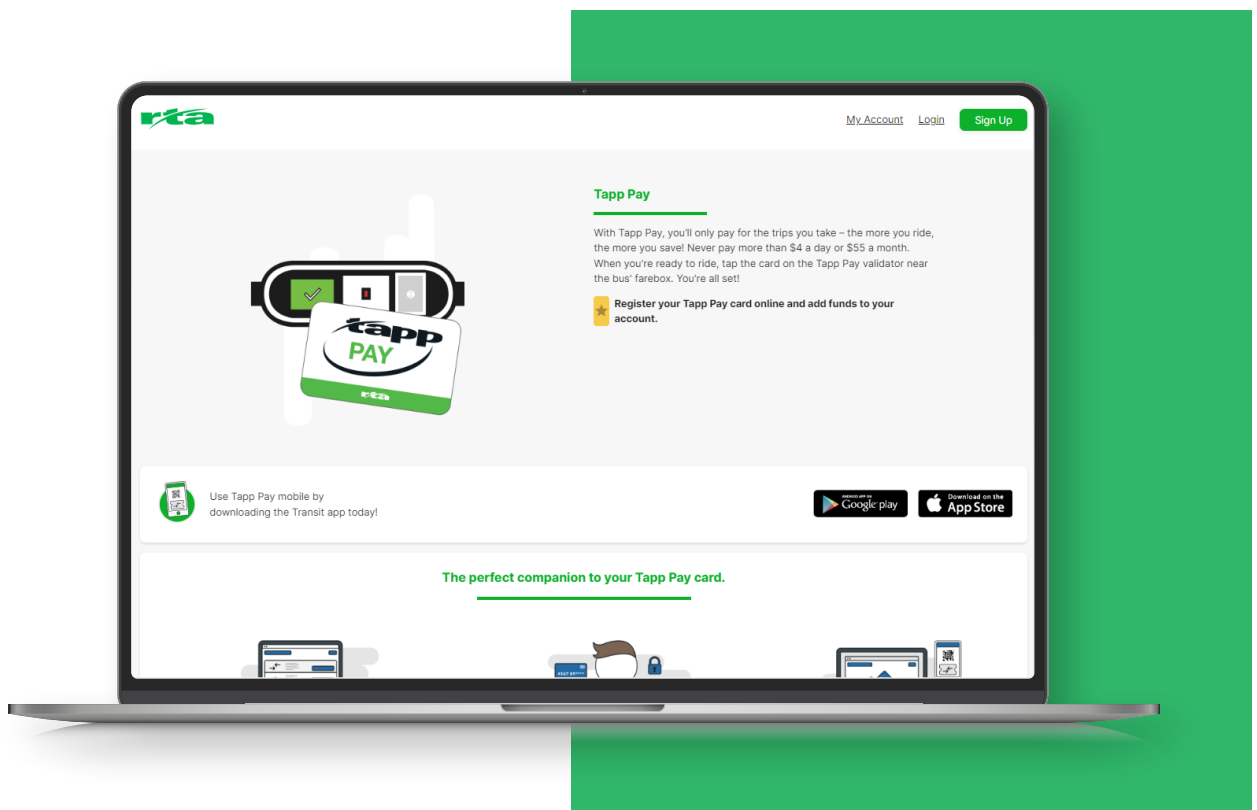
Research shows that it can take up to 15 seconds for each passenger paying cash to board a bus – that could add up to a dwell time of five minutes on a fixed route if 20 people on that route want to pay cash for their tickets. On a busy commuter route with many riders getting on and off the bus, that could lead to long delays during rush hour.

As well as speeding up services, transitioning to a cashless onboard model removes the need to operate and maintain fareboxes and the significant logistical challenges and costs associated with securely transferring that cash from the bus to the bank.

Removing cash onboard vehicles also makes drivers' lives easier, with less people questioning and querying tickets, not having the right change or issues with the farebox. Drivers can fully focus on driving the bus and passenger safety.

While a cashless onboard operation is common in cities across Europe it comes with important equity challenges to consider which need to be addressed to ensure all rider groups can access transit services. If cash is to be reduced, or removed, from transit vehicles then there needs to be adequate and convenient access for cash-paying riders to use the system before they board.

In Dayton, this was achieved by installing new Ticket Vending Machines at key locations in Dayton and by enabling cash retail services allowing riders to add funds using cash at local retailers throughout Dayton. This was made possible thanks to Masabi's partnerships with Incomm Payments and T-Cetra facilitating this convenience at over 200 key local retailers.



The launch of Tapp Pay saw an immediate transition to mobile ticketing and a reduction in riders using cash media and fares which started out at 43% in May 2020 before falling to 28% in December 2020 and then to just 10% in July 2021.

The transition away from fareboxes was received well by riders and led to reduced dwell times and faster services for riders. It also reduced the cost of cash handling and farebox maintenance.

This made the next step in the project possible as Dayton became the first agency in the USA (we think) to retire their fareboxes and go completely cashless on-board, which happened in November 2021.

Delivering Fare Equity with Account-Based Ticketing

The success of the new Tapp Pay system in increasing fare equity and convenience was important to its success. Riders no longer needed to select fares in advance or purchase tickets, simplifying the fare payment experience to a simple tap with the new smartcards or Transit app when boarding.

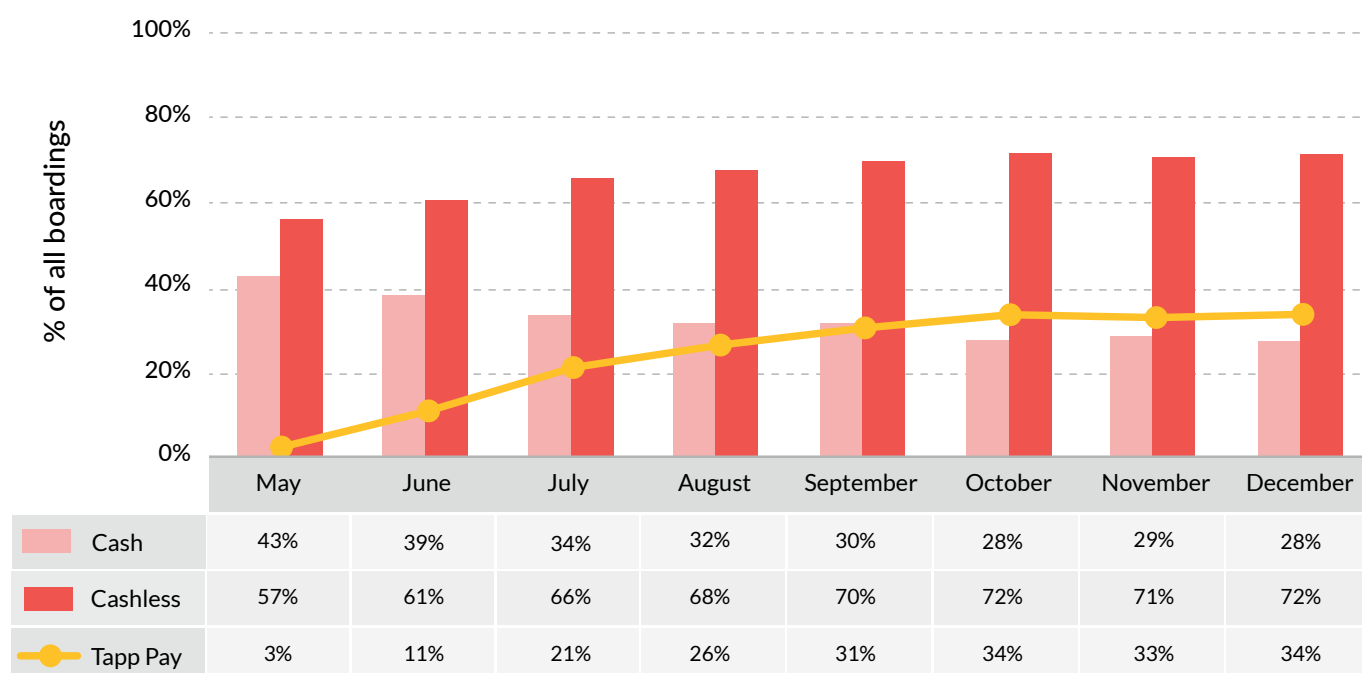
It also meant all riders could benefit from the discounts available with period passes, without needing to be able to afford to pay for them in advance, enhancing fare equity for the people of Dayton thanks to Masabi's fare capping technology.

The new system works by charging a single fare when boarding the bus and then the best appropriate fare is charged based on usage of the system (the number of taps over periods of time), meaning no rider is overcharged for their journey. If a rider uses the system enough they earn a weekly pass and have the amount they are charged capped at that level and travel for the rest of that week for free. If they then use the system enough to earn a monthly pass then the system caps the rider's fare and travel for the rest of that month is free. This combination of Account-Based Ticketing with fare capping greatly enhanced convenience and fare equity for riders.

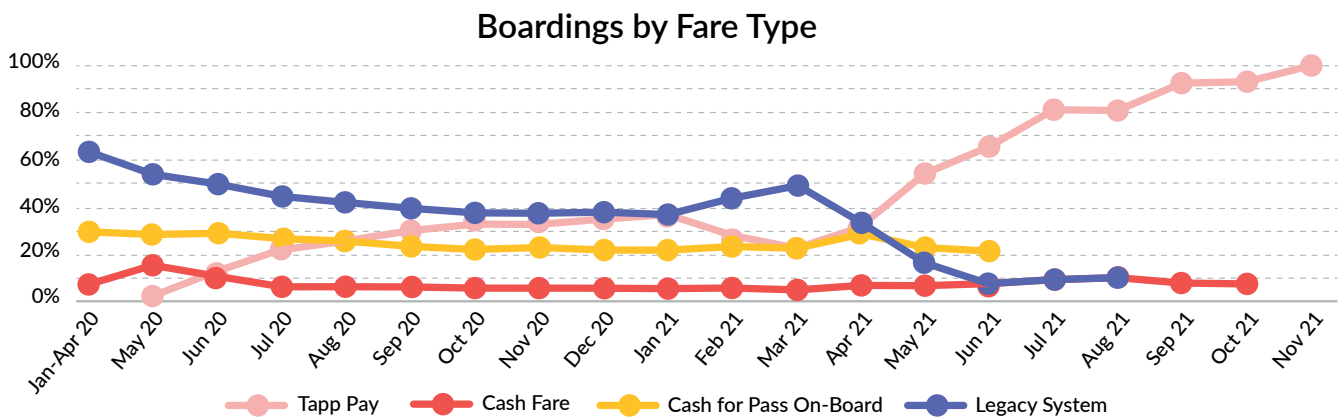
The Results

Mobile payments were rolled out in June 2020 and by December 34% of fares were through Tapp Pay's mobile app, Transit.

Total Customer Boardings



Onboard cash fare payments fell from 43 per cent in January 2020 to just 28 per cent in December 2020 and 10% by July 2021.



As cash payments continued to fall, RTA began flagging up the retirement of its fareboxes to customers in 2021 to increase awareness of the alternatives and incentivize uptake.

Then in November, the fareboxes were retired.

By the summer of 2022 over 4,000,000 trips had been made using the new Tapp Pay system with the mobile channel accounting for around 30% of trips.

The latest data suggests that all riders – including those who previously paid cash for their tickets onboard – have embraced the new payments channels and are now benefitting from a more convenient service and the best fares.

Dayton's experience demonstrates how – by using Account Based Ticketing with fare capping and comprehensive cash top-up services – a cashless onboard experience does not discriminate against those who still want, or need, to pay with cash for their bus tickets.

Conclusion

Removing cash from the bus does not mean excluding cash riders – as long as cash riders are fully supported, which can be achieved without accepting cash payment onboard buses.

According to research commissioned by credit card payments facilitator Visa Inc, almost half of commuters see contactless payments as the single most significant improvement to their overall travel experience, while 77 per cent of those surveyed said it had improved the experience of travel on public transport.

From an operational perspective, transitioning to a cashless onboard model removes the need to operate and maintain fareboxes and the significant logistical challenges and costs associated with securely transferring that cash from the bus, to the depot, to the bank.

By moving to Account Based Ticketing with fare capping and integrating cash digitization options at local retailers and removing or reducing the reliance on the farebox, transit agencies can reduce costs, manage risks and secure ticket revenue, while making the bus quicker and more convenient and enhancing fare equity for all riders.

Masabi's Justride Platform

Masabi's Justride is the leading Fare Payments-as-a-Service platform for public transport in the world. Transit agencies can sign up to mobile ticketing services, enable Mobility as a Service (MaaS), and deploy a complete Account-Based Ticketing system supporting all rider groups and allowing passengers to simply tap a contactless bank card, mobile device or smartcard to travel, without needing to buy tickets in advance or select fares. Justride is the largest, most advanced and complete platform in the world, with over 150 agencies of all sizes across 9 countries signed up. Justride is leading the movement away from bespoke design-build fare collection systems which are expensive, slow and risky to deploy and do not regularly update with new features and functionality.

