THE CITY OF ASHEVILLE

MEMORANDUM

TO: City of Asheville Council Members

FROM: Ashley Haire, Transportation Department Director;
Devin Quinlin, Transit Planning and Projects Coordinator

DATE: October 12, 2026

SUBJECT: Asheville Rides Transit - Mobile Fare Feasibility

This memorandum summarizes research conducted by Transportation Department staff regarding technology options and costs associated with implementing a mobile fare payment platform on the Asheville Rides Transit (ART) bus system.

BACKGROUND

What is Mobile Fare?

Mobile fare is a digital payment system that allows transit passengers to buy, store, and validate transit fares on a smartphone/smart device instead of (or in addition to) using paper tickets, cash, or plastic smart cards. Types of mobile fare systems include (listed in increasing level of sophistication and cost):

- Visual validation/flash pass options: Passengers show the bus driver their paid fare on their smartphone/smart device screen. This method requires the driver to log rides using a button on the driver-facing side of the farebox.
- Hybrid Mechanical Farebox: Using a farebox that looks similar to our existing fareboxes, passengers may pay their fare using cash, a QR code, a smart card, or credit/debit cards.
- Fixed Pole- or Surface-Mounted Validators: Passengers can pay their fare by scanning a QR code on their smartphone/smart device, using tickets/plastic smart cards with a magnetic stripe, or using a debit/credit card.

2022 City of Asheville Mobile Fare Study

City of Asheville Transit Division staff conducted a mobile fare analysis in 2021-2022. The study was conducted with consultant support using grant funding from the National Center for Applied Transit Technology (NCATT). This research focused on technology options, pricing, and drafting an Implementation Plan and Request for Proposals (RFP).

Research from this 2022 City study identified 3 feasible mobile fare options for ART:

Option 1: New Electronic Farebox + Account-based System - New hardware onboard that accepts credit/debit cards, cash, and smart device payments.

Option 2: Validator + Mobile Ticketing - Keep existing fareboxes for cash transactions, add pole-mounted validators that accept smart device payments.

Option 3: Existing Electronic Farebox + Mobile Ticketing (least sophisticated) - Keep existing system, add a mobile app visual validation option (flash pass to show the driver).

Early-stage discussions about these findings were held in small meetings with individual council members and in a presentation to the Transit Committee in Sept 2024.

ONGOING STAFF EFFORTS

Transit Division operational staff are further researching mobile fare options to make best recommendations for ART. Staff met with four vendors of varying sizes/ capabilities offering different service options. Staff are also meeting with other peer transit agencies to learn about their experience with mobile fare, including costs, challenges, benefits, and operational successes.

Staff support implementing mobile fare options on ART buses. However, these systems come at a cost and being strategic about deploying the right system is important. Transit Division is seeking a long-term solution with a reliable vendor and equipment. On-board validators are the most versatile, efficient, and data friendly option, but have large up-front costs. ART may be better suited by starting with visual validation via smart device apps for riders to show the driver as they board, with the opportunity to progress to on-board validators over time. Most agencies make this transition within a few years and this transition is more easily accomplished if our selected vendor has a proven track record of successfully offering, providing, and supporting both types of mobile fare systems.

MOBILE FARE IMPLEMENTATION AND OPERATIONAL COSTS

Mobile fare vendors assess a fee per use based on fare type. This fee varies by vendor and by fare type (e.g., regular fares vs. discounted fares vs. passes), but is generally between 7-13% of the fare price. Table 1 provides typical monthly and annual rides on ART by fare type.

Table 1. Typical monthly and annual rides on ART by fare type

FARE TYPE	Cost	Typical Monthly Rides by Fare Type	Approx. Annual Rides by Fare Type
Regular	*Regular*		
Cash fare	$1.00 and $0.50	18,898	226,778
Ticket Booklet (11 single ride passes per booklet)	$9.00	3,316	39,789
Monthly Pass	$20.00	25,089	301,066
Annual Pass	$220.00	1,176	14,109
Discount	*Discount*		
Ticket Booklet (11 single ride passes per booklet)	$4.50	3,170	38,042
Monthly Pass	$10.00	13,667	164,003
Annual Pass	$110.00	1,451	17,412
Passport	*Passport*		
Passport	$0.52	4,214	50,572

Based on the data in Table 1, staff have prepared estimates of cost for visual validation and on-board validator systems. The estimates account for the capital (equipment) cost of deploying mobile fare, operational costs for software, ongoing fees or membership rates, and the proportion of cost that would stem from per-fare fees (7% to 13% of each mobile fare purchase, but vary based on fare price).

These per-fare rates would result in a net decrease in ART's farebox revenue, which was $576,698 in FY24. For illustrative purposes, ART's regular fare is currently $1.00; if fares are not raised, this means ART would receive only $0.87 to $0.93 of each $1.00 fare. A "convenience fee" could be added for mobile fare use to offset this loss, but this is unconventional in the industry, as mobile fare is typically incentivized by offering mobile fare at a discounted rate.

Importantly, not all ART riders would adopt mobile fare. More research is needed to estimate adoption rates.

Tables 2 and 3 show rough estimated costs for implementing visual validation and on-board validators, respectively.

Table 2. Estimated costs for deploying visual validation mobile fare

VISUAL VALIDATION			
Item	**Vendor 1**	**Vendor 2**	**Vendor 3**
Up Front Costs			
Mobile App Development Backend System Project Management	$2,500	$37,500	Unknown (more research needed)
Prelim. Est. Total Capital Cost	**$2,500**	**$37,500**	**Unknown**
Recurring Annual Membership Costs			
Yearly SaaS Fee Ongoing Software Subscription Technical Support	$2,500.00	$20,000.00	$8,000***
Mobile Fare Transaction Costs (Annually)			
Per Transaction Costs (vendor share and credit card processing fees)	$0.06 +7% (<$2) $0.06 + 10% (>$2)	$0.10 + 2%	7.50%
Est. Total Annual Transaction Costs	**$57,280**	**$26,473**	**$38,144**
Total Recurring Costs			
Annual Membership	**$2,500**	**$20,000**	**$8,000*** **
Annual Transaction Fees	**$57,280**	**$26,473**	**$38,144**
Est. Total Annual Recurring	**$59,780**	**$46,473**	**$46,144**
Est. Total Costs in Year 1	**$62,280**	**$83,973**	**Unknown**

*calculations assume 100% mobile fare adoption (unlikely); 10-50% adoption typical within one year
**cost estimates based on current fare data and estimated fees from vendors
*** does not include additional fees for required co-op membership

Table 3. Estimated costs for deploying on-board validation mobile fare

ON-BOARD VALIDATORS			
Item	**Vendor 1**	**Vendor 2**	**Vendor 3**
Up Front Costs			
Validators, Installation, Maintenance Mobile App Devel. + Backend System Project Management	$111,000	$84,000	~$90,000
Prelim. Est. Total Capital Cost	**$111,000**	**$84,000**	**$90,000**
Recurring Annual Costs			
Yearly SaaS Fee Ongoing Software Subscription Technical Support	$2,500.00	$25,000.00	$8,000***
Mobile Fare Transaction Costs (Annually)			
Per Transaction Costs (vendor share and credit card processing fees)	$0.06 +7% (<$2) $0.06 + 10% (>$2)	$0.10 + 2%	7.50%
Est. Total Annual Transaction Costs	**$57,280**	**$26,473**	**$38,144**
Total Recurring Costs			
Annual Membership	**$2,500**	**$25,000**	**$8,000*** **
Annual Transaction Fees	**$57,280**	**$26,473**	**$38,144**
Est. Total Annual Recurring	**$59,780**	**$51,473**	**$46,144**
Est. Total Costs in Year 1	**$170,780**	**$135,473**	**> $136,144**

*calculations assuming 100% mobile fare adoption (unlikely); 10-50% adoption typical within one year
**cost estimates based on current fare data and estimated fees from vendors
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CONCLUSIONS

Council expressed interest in investigating the potential for mobile fare payment. Staff support this technology transition but acknowledge that these systems are not costless. Some of the considerations staff are evaluating as they research mobile fare options include:

1. Costs of mobile fare system
    - Benefits: Easier rider experience, modernized system
    - Tradeoffs: Physical hardware and installation costs, recurring software and membership fees, ongoing share of fare revenues between 7-13%[1] (although there is the potential to raise mobile fare prices, constituting a convenience fee[2])

2. Rider accessibility and equity
    - Benefits: Tickets are available without traveling to ART Transit Center or paying a cash fare.
    - Tradeoffs: Mobile fare requires passengers to have a smart device. Many systems also require mobile fare users to have a bank account for linking their smart device. Bankless systems are available with larger mobile fare vendors but these would require additional capital expenditure and maintenance for electronic kiosks distributed around the service area.

3. Timeline for implementation
    - Benefits: Phasing mobile fare deployment may be an option in which ART transitions from a simpler system (visual validation) to more sophisticated technology (on-board validators)
    - Tradeoffs: Implementation may be a prolonged process depending on funding; staff would seek a vendor with adequate technology that can commit for the longer term

Staff continue to research options for implementing mobile fare systems. Pursuing this technology for the ART bus fleet will require identifying funding for that purpose during the annual budget cycle, preparing an RFP for these services, and selecting a vendor with stability, competitive pricing, and a track record of success with other peer transit agencies.

[1] ART fare revenue typically makes up ~3% of annual operating costs (FY24 fare revenue = $576,698)

[2] Unconventional practice– mobile fares are customarily *discounted* compared to standard fares in order to incentivize use