GENFARE

The 3 Pillars of Equitable Mobility

U.S. Department
of Transportation
Secretary
Pete Buttigieg

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From the construction of the transcontinental railroad to the Montgomery Bus Boycott, transportation has always been inseparable from America's struggle for racial and economic justice. At its best, transportation can be a powerful engine of opportunity, connecting people to jobs, education, and resources—whether they live in a big city, a rural community, or anywhere in between. Ensuring equity and accessibility for every member of the traveling public is one of the Department of Transportation's highest priorities.

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Genfare is a signatory **of the APTA Racial Equity Commitment Program.**

APTA RACIAL EQUITY COMMITMENT PROGRAM

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Preface

In the Genfare white paper *Achieving Equitable Mobility,* two questions were addressed:

1. Should transit be free?

2. What is the best way to achieve more equitable mobility?

The white paper concluded that the best approach is better service, not cheaper bad service. It explained that an important prerequisite for better service is a fare collection system providing advanced capabilities at a reasonable price. This enables a transit agency to understand its community and tailor solutions to meet the needs of everyone in it, with particular attention to those with limited resources.

In this white paper, Genfare expands on the topic of equitable mobility, going in-depth on its three pillars:

1 Understanding and meeting community needs

2 Building multi modal end-to-end solutions

3 Realizing value and being cost effective

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Introduction: Defining and quantifying equitable mobility

In its Equity Action Plan, the U.S. Department of Transportation defines equity as: "the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality."

Genfare embraces this definition and champions equitable mobility as fair access to transportation resources for everyone, with a particular emphasis on underserved communities including unbanked and underbanked people. We recognize that lack of access to transportation, whether caused by transit deserts, prohibitive costs, or technological barriers, furthers inequality and inequity. Without

transportation, people can't get to work, school, recreation, healthcare providers, or family. This leads to higher rates of poverty, unemployment, illness, and isolation.

While cost is just one of the barriers to effective transit, it's a significant one. Transportation is the second largest expenditure category for households, accounting for an average of 15% of after-tax income, or $10,742, in 2019. Transportation expenses are second only to housing expenses. (U.S. DOT Equity Action Plan)

That's why equitable mobility is at the center of Genfare's mission, and a driver of how we operate. This philosophy is more than just talk. We don't just build fare collection solutions; we aim to help our transit agency customers be better partners in their communities. Efficiency isn't just about dollars or return on investment – it's more about meeting the needs of the members of the community who need it most.

Not surprisingly, the relative cost and time burden associated with transportation rises as incomes fall. Studies have found:

55%
of transit riders earn less than
$50k
per year

Workers who commute by bus have commute times **1.7 times longer** than workers who commute alone by car

47
minutes
by bus

26
minutes
for car

The lowest income households spend on average
37%
of their after-tax income on transportation, compared to
19%
by middle income households and
11%
by high income households.

U.S. DOT Equity Action Plan

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The mobility ecosystem must anticipate all the ways that travelers want and need to move. This requires transit agencies to understand their community and tailor solutions to meet the needs of everyone in it, with particular attention to those with limited resources – the unbanked, the underbanked, the transit dependent, and the anonymous rider.

Transit agencies across the U.S. have traditionally been primarily focused on asset management. Capital budgets have long been easier to fund than operational budgets. This has made transit agencies excellent asset managers, but they often fall short on finance management given the tough requirements they face.

Today, transit agencies are becoming more focused on operational planning and are getting better at collecting data, but often don't know how to best use it. This keeps transit behind the times when compared to other data-driven industries. Over time, the negative effects of uninformed planning piles up, resulting in outdated routes that no longer meet the needs of the community, decreased ridership, and glaring financial deficits.

The world is now run on information, and as an industry, we need to get on board. The technology needed to shift to data-driven transit planning is readily available and is being steadily implemented as transit agencies update their systems. Using this data effectively is key. Seeing the value in data and investing in not just collecting it, but using it to make decisions, is imperative.

Fortunately, there has recently been an increase in the number of transit agencies that have leadership who are comfortable with data and understand its value.

Definitions

Unbanked: households without a checking or savings account

Underbanked: households with a bank account but lack adequate access to other traditional financial services, such as credit and loans

Transit dependent: people with no personal transportation, no access to such transportation, or who are unable to drive

Where to begin

There are many options available to get to know your community, even when riders are unbanked or are not paying a fare. The technology for collecting this data exists today and is tested and proven. There are also low-tech options for learning about your riders and community, such as secret shoppers, meet and greets with management at transit hubs, focus groups, and surveys. Gaps can be filled in with census data. Combined, this can provide a full picture of the community to help meet its needs.

When it comes to fare-free or reduced fare riders, consider utilizing validating fare media rather than a universal free fare or a visual inspection of ID by the rider or conductor. The result is a reduction in fare evasion as well as better data collection. This can mean working with local schools to allow students to tap their ID cards or scan QR codes on transit, or with social service agencies to distribute free or funded fare media to their clients. Or if seniors ride free, making it easier for them to get a contactless smart card by mail or at a local library or community center.

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By truly understanding your community, an actionable plan can be crafted. Start by identifying how to provide useful solutions to support both choice and need riders, meeting them where they are, as well as finding gaps in the current programs. Giving riders uncomplicated options is paramount in deploying effective solutions that they will use.

More than ever, ridership data can be linked to individual riders, providing more opportunities to analyze and target the various rider personas an agency serves. This can provide a service of greater value to attract daily commuters, tourists, students, low-income workers, or even people who only ride transit when it helps them avoid traffic or parking headaches.

Effective use of data should inform route, schedule, and fare planning to better serve our communities. This data can be used not just to plan where buses are going and when, but what forms of payment are accepted and where and how riders are purchasing fares.

For example, the data may show that in certain parts of town, more riders are using cash on the bus, while in others, open payments are more utilized. This information may lead to a decision to create more opportunities for unbanked riders to digitize cash, such as ticket vending machines and retail point of service terminals, in some areas, while determining that in other neighborhoods, signage promoting the ability to tap a bank card on the bus is the best approach.

U.S. Population

5.4% and 17.9%
unbanked riders   underbanked riders
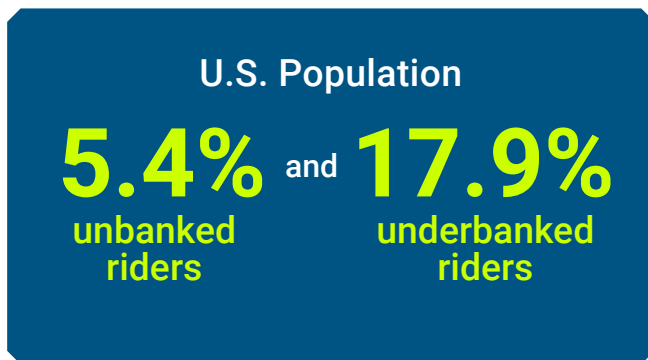
Making it easier for unbanked and underbanked riders, who make up 5.4% and 17.9% of the population, respectively, to digitize cash onto a mobile app, smart card, or other fare media has several advantages for the rider (allowing cash riders to take advantage of reduced fares, fare capping, and other fare structures that save them money) and the agency (reducing the burden of collecting cash and preventing theft). But most importantly, digitizing cash allows for more robust data collection. (Enghouse)

The role of fare collection in knowing your community

Fare collection plays an important role in raising the perceived and actual value of public transportation. After all, the farebox is central to collecting revenue to support transit operations. Just as importantly, today's advanced fareboxes collect something even more valuable than money: Information. The data alone – when it's used effectively – is worth the cost of implementing and administering a modern fare collection solution.

That's because fare collection is more than just for collecting money; it's a tool for creating better and more effective operations. It enables thorough, data-driven planning to meet the demonstrated needs of the community the agency serves, making a public transportation network even more valuable.

Today, a cloud-based system such as **Genfare Link**® is the smartest way to collect and analyze rider data. It allows for centralized reporting from all points of contact to present a better sense of rider behavior. Data can be continuously transmitted from everywhere it is collected.

At the most basic level, it can clearly show who is riding which routes, where they are boarding, at what time of day, and how often they ride. It can present how riders react to changes, weather, events, and other variables in real time, and how and where riders are purchasing their fares. It demonstrates how various fare structures, including reduced fares for students or seniors, targeted free fares, fare capping, and multimodal options affect ridership.

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How WMATA approaches equitable mobility

Long-time valued Genfare customer Washington Metropolitan Area Transit Authority (WMATA), in Washington, D.C., has created and shared an Equity Toolkit. The toolkit was created by WMATA's Equity Working Group, an interdepartmental effort including more than 30 members across 19 Metro offices, led by its Office of Planning. The purpose of the group is to develop proactive agency equity strategy that goes beyond Title VI, promote an inclusive transportation network, and facilitate cross-departmental communication related to equity.

The toolkit acknowledges:

1 Equity is an outcome where anyone, regardless of identity, can use the transit system to access the region's opportunities and resources; acknowledging differences in lived experience.

2 Some populations, particularly those of color, low income and/or with disabilities, disproportionately experience injustice across several facets of life due to longstanding, structural challenges.

3 Transit investments and operational decisions change lives, therefore it's essential intentionally prioritize equity when designing, implementing, and evaluating the agency's strategies, policies, practices, and investments.

The Equity Toolkit aims to guide users toward adopting an equity lens in their work. It challenges users to regularly ask: **"Is our current service equitable and what is the equity impact of a potential service or other operational change?"** It then provides the tools necessary to focus this lens, including standard definitions for demographic and income variables and access to a dataset that makes linking these variables with service data easy.

Weekday Metrobus survey totals showed that

54%

of riders were low income and

80%

were persons of color

WMATA Equity Toolkit

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Building multimodal end-to-end solutions

In the denser areas of large cities, transit can often move people as close to door-to-door as possible. For everyone else, people still need to get from their homes to the bus stop or rail station, or transit to work, school, or other destinations. A recent study found that 62% of jobs in large cities are within ½ mile of a transit stop. Even fewer homes are within a ½ mile of transit.

So where does that leave everyone who needs to fill the gaps in the first mile and last mile of their trips? Walking is an option for some, but harsh weather, disability, and safety concerns are limitations that many people face. Luckily, there are more choices than ever for end-to-end mobility, including bike share, scooter share, and carshare plus ride share and park and ride options. Today, in many places, a commuter can drive from their suburban home to a park-and-ride on the outskirts of the city, take the train downtown, then bike or scooter the last part of the trip.

But until the process of planning and paying for a multimodality trip is seamless, easy, convenient, and affordable, making this kind of end-to-end journey won't be attractive enough to people who have other options. This keeps cities from meeting their goals of taking more cars off the road and increasing multimodal ridership.

Today's technology can empower interoperability to allow riders to use one card or app across modalities to simplify every leg of their trip. It's already common in Europe and Asia. But it's only recently started being done in the U.S., such as in Pittsburgh, where public transit, bike share, scooters, mopeds, carshare, and carpool matching were facilitated by the city's recent Move PGH pilot, which uses its Transit App along with multimodal Mobility Hubs across the city.

Yet, just about everywhere else in the U.S., adoption of multimodal transit networks, sometimes called mobility-as-a-service (MaaS), has been slow. This isn't a technology problem – it's a control issue and a disconnect between the mass transit and microtransit providers.

The technology is there; trust is not

Most individuals are carrying around mobile phones — pocket computers that can serve as the foundation for this interoperability on the rider side. Open application programming interfaces (APIs) allow multiple public agencies and private companies to make their backend infrastructure available to each other. Many transit agencies have systems in place that allow unbanked riders to digitize cash to a smart card or app, which could potentially be shared with micromobility providers. Open payment is becoming increasingly common – and expected by consumers.

In short, we have what it takes to create one-stop-shop mobility platforms that all kinds of riders can use across modalities instead of signing up for and remembering passwords for a bunch of different apps or carrying a stack of cards.

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Trust between the public and private sector to share information with each other is lacking. There are questions about who will own the process, and who will be accountable for ensuring data security. There are worries about the other modalities cannibalizing riders. There aren't yet enough public policies providing incentives for the various players to work together.

It's time to put these concerns to the side and understand the reality that interoperability is a win-win. Providers of various modalities need to work with each other instead of against each other. This is where government can play a role in nudging the transit agencies and microtransit companies to play nice with the communal goals of seamless end-to-end transportation for which riders are enthusiastic.

For example, cities can incentivize private companies to coordinate with transit agencies by requiring interoperability as part of their expansion in or introduction to the city. Or, like in Austin, Texas, the city can take over the bike share system to make it part of the core transit offering. This hurdle can be overcome.

On the flip side, communities can also shift the public policies that make it so easy for people to drive. Riders who have a choice need an incentive to consider public transportation. While a large part of this is providing better and more convenient service, creative pricing models can also play a significant role for both incentivizing transit and disincentivizing driving.

For example, large cities that introduce congestion pricing in their cores, such as London, and coming soon, pending litigation, New York City, have seen increases in transit usage. Other options include dynamic parking pricing that encourages drivers to switch to transit before they approach the city center in a park-and-ride model, or bundling parking or micromobility modalities with transit fares to provide a discount to riders who use both in the same trip.

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How Pittsburgh Mobility Collective approaches end-to-end solutions

The Pittsburgh Mobility Collective (PMC) is a partnership of transportation service providers that work together to ensure that shared mobility services are deployed equitably, efficiently, and cohesively. The collective leverages public-private partnerships to build a better system integrating Pittsburgh Regional Transit services with micromobility services using a trip planning mobile app and on-street locations known as mobility hubs.

The PMC has six guiding principles:

1. Simple & affordable
2. Sustainable
3. Growth-oriented
4. Inclusive
5. Equitable
6. Innovative

These principles inform the Department of Mobility and Infrastructure's six goals:

1. No one dies or is seriously injured traveling on city streets.

2. Every household in Pittsburgh can access fresh fruits and vegetables within 20 minutes travel of home, without the requirement of a private vehicle.

3. All trips less than 1 mile are easily and enjoyably achieved by non-vehicle travel.

4. No household must spend more than 45% of household income to satisfy basic housing, transportation, and energy needs.

5. The combined cost of transportation, housing, and energy does not exceed 45% of household income for any income group.

6. The design, maintenance, and operation of city streets reflects the values of our community.

During its two-year Move PGH pilot program, Pittsburgh residents and visitors took over

1 million trips

on shared e-scooters and bikes and purchased hundreds of thousands of digital tickets.

City of Pittsburgh Move PGH Pilot

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For transit to be valuable it must provide value to riders, agencies, municipalities, and taxpayers. Value isn't only about cost – it goes so much deeper. For example, a quality transit system can attract and retain coveted employers, which then drives economic development to the area.

On an individual level, a robust transit system allows all members of a community to access places important to them, whether that's a job, groceries, recreation, or time spent with loved ones. That's true whether the rider – who could be a student, a senior, a disabled person, or anyone else – depends on transit or if they have options for getting around.

Likewise, efficiency isn't just about dollars or return on investment – it's more about meeting the needs of the transit dependent and attracting choice riders at the same time. Transit gets easier to use through fare collection solutions that accept whatever form of payment is in the riders' pockets. This allows transit to reach more people and go more places, thereby raising its efficiency and value to the community.

87%

of trips on transit directly benefit the local economy

APTA Public Transportation Fact Book

Eliminating barriers to equitable mobility

A community's infrastructure must be accessible to all to be equitable. That means continuing to accept cash as well as making it easy for unbanked or underbanked riders to take advantage of fare structures that can save them money. It also means increasing service to underserved communities so residents can access food and jobs that might not be available within their neighborhood's boundaries.

Continuing to accept cash and coin at the farebox is essential for equitable mobility. However, it's also important to eliminate barriers to digital payments to lower costs for agencies and riders alike. One way to achieve this is to reduce the role of transit agencies in staffing and maintaining extensive distribution networks by decentralizing the means for riders to fund their cards or accounts.

For example, retail point of sale terminals and relationships with third-party retail networks allow riders to top off their cards or accounts at convenient shops or community centers near their bus stop instead of having to travel to a transit hub to use a ticket vending machine. Allowing riders to pay their fares using their smartphone, even if they don't have a bank card to attach to an account, is another option.

There is also great value in automating processes for transit agencies who are working with organizations such as schools or social service agencies, enabling more relationships and better tailored programs for their constituents. This makes transit agencies more efficient in reaching out to the community with subsidized, reduced, or free fares. There's tremendous value in that outreach.

Using organization-distributed fare media for free or reduced riders rather than visual inspection also keeps valuable ridership and route data coming in to help plan more efficient schedules.

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There's real value in perceived value

Paying a fare increases the perception of the value of transit. Some agencies that adopted universal free fares during the pandemic experienced an explosion of non-destination riders. Safety, cleanliness, and quality of service complaints went up, deterring choice riders and making it more difficult to recruit bus and train operators. A well-structured fare system that is easily accessible to residents and community partners will ensure that access to transit services can be provided to all eligible riders, particularly for those who qualify for reduced- or no-fare privileges.

Partnerships with food or housing programs can make transit accessible to people without the means to buy fares, without burdening the transit agency with administering every aspect of its free and reduced fare.

Cost-effective fare collection leads to cost-effective transportation

In addition to new fare collection hardware and software being reasonably priced, the latest technology can also reduce the cost of collecting fares. In short, upgrading fare collection equipment can offer more capabilities at a lower upfront cost and lower operating costs.

Using a cloud-based platform and digitizing fare collection significantly reduces costs for an agency's IT platform and support, particularly for 24/7 support for rider websites and mobile apps.

Now that credit and debit cards may be accepted onboard, the cost of pass distribution can be significantly reduced for the agency. When combined with fare capping, it's possible for agencies to reduce or eliminate the sales of traditional monthly passes and day passes, which typically are labor-intensive to administer.

Having all forms of fare sales and collection managed through one central system accessible to all authorized users on their own computers reduces the cost of information technology (IT) resources and eliminates system integration challenges.

Across the industry, fare revenue collection equipment made up just

1%
of the
$23.7
billion

in capital expenditures for public transit in 2020.

APTA Public Transportation Fact Book

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Strategies for cost effectiveness

In 2023, Genfare installed new fareboxes for Pace Suburban Bus to replace the 30-year-old fareboxes in its suburban Chicago buses. The legacy Genfare fareboxes were still functioning but needed modernization to not just improve reliability and be ready to accept more forms of payment, but to streamline maintenance. If a Pace farebox needs to be serviced, embedded technology will instantly alert depot maintenance staff of what needs to be done when the bus returns at the end of the operator's shift, saving thousands of hours of labor with real-time monitoring.

Fare capping is another strategy for increasing both efficiency and rider equity. Fare capping provides the savings of a monthly, weekly, or daily pass without the up-front cost of printing the passes. Capping has a huge value for all types of riders, whether they have trouble coming up with the $65 for a monthly pass at the same time their rent is due, or they just don't know how many rides they will take over the month. Once they have completed enough $2 rides to meet the daily, weekly, or monthly pass cost, the system stops charging them until the next period. This is also a benefit for choice riders and visitors who then don't have to calculate how many rides they plan to take — the system automatically provides them with the best value.

Equitable mobility fits into the equation of calculating value – by making even more services and benefits available to all riders, regardless of their ability to pay with a bank card or with an up-front investment. Genfare looks forward to continuing to provide the tools each partner transit agency can use to serve more riders and more communities, at less cost, with less of a burden on agency staff.

> A 2022 study found that of the
> **101 largest transit agencies**
> in the U.S.,
> **21 offered fare capping.**
> Of these, 20 offered daily caps, 4 used weekly caps, and 14 used monthly caps. Monthly caps had the largest impact on ridership.
>
> Hightower et al

Top 5 strategies

Open payment
Reduces amount of cash collected, the cost of physical fare media, and reduces dwell time

Organization passes
Shifts administration to partner education, employer, social service, healthcare, and other organizations

Real-time monitoring
Reduces frequency of vaulting, aids in more efficient maintenance, prevents downtime

Fare capping
Reduces administrative load of pass sales, works across variety of fare media

Cloud-based platform
Reduces IT maintenance and troubleshooting, uses existing computers, simplifies reporting for better data-driven decision-making

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Conclusion | From surviving to thriving

Paying close attention to the three pillars of equitable mobility can help meet your agency's goals and their anticipated outcomes. Planning through a lens of equitable mobility will lead to increased ridership, relay confidence to your community, and support operations. Transportation that is beneficial to all who use it is key to a thriving community.

Adopting streamlined and effective solutions that meet your riders where they are while being adaptable to whatever the future throws your way is a winning strategy to providing equity for all. One size or solution does not fit all. Genfare doesn't just build fare collection solutions; we aim to help our transit agency customers be better partners in their communities.

Cost-effective, value-added equitable mobility solutions are available to meet the needs, schedules, and budgets of agencies of any size. Even though transit agency budgets are strained, creating a clear plan that increases revenue while leading to equity for all stakeholders is an achievable goal.

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Equitable mobility solutions

Payment processing

GEN**pay**

CHASE ◉
Merchant Services

mastercard **VISA**

DISC**O**VER

Omni Channel Payment Processing

Fare collection and validation

Fast Fare farebox

Open Link validator

Handheld validator

Fare media

Cash and coin

Magnetics

Smart cards

Barcodes

Open Payments

Wearable

 Pay   G Pay   SAMSUNG pay

Mobile wallets

Fare sales and rider administration

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Vendstar ticket vending

e-Fare

e-Fare Rider Portal

Retail Point-of-Sale (RPOS)

Administrative Point of Sale (POS)

GENFARE link.

Garage equipment

Vaults

Probes

Mobile ticketing and trip planning

Mobile Link

Mobile Link MaaS solution

Mobile Select integration with third-party rider apps

Third-party integrations

CAD/AVL

Micromobility providers

Smart hardware and software

Payment processors

Retail networks

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Partner with Genfare

Selecting the right partner to help make your plan a reality is key in ensuring its success. Contact us today to learn how an enhanced fare collection solution can elevate equitable mobility at your agency.

Josh Moskowitz
Business Development Director, West

Josh.Moskowitz@spx.com

Larry Chefalo
Business Development Director, Central

Larry.Chefalo@spx.com

Jennille Logan
Business Development Director, Southeast

Jennille.Logan@spx.com

Edward Brandis
Business Development Director, Northeast

Edward.Brandis@spx.com

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