AAATA Fare Study

Technical Memos #1 & #2: Existing Fare Structure, Best Practices, & Industry Review FINAL

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This document comprises both technical memos 1 and 2 for the Ann Arbor Area Transportation Authority (AAATA) Fare Study. First, we will review TheRide's existing fare structures and fare collection system. Second, we will present an industry review and best practices by comparing TheRide to ten peer agencies that have been identified as strategically similar to TheRide. Lastly, the document will explore in greater detail what have been identified as key areas of interest to the TheRide team.

1 TheRide's Existing Fare Structure

1.1 Current Fare Structure

1.1.1 Fixed Route Pricing & Policies

The current single-ride fare for TheRide is $1.50. This fare comes with a free transfer upon request that is valid for 90 minutes from the time of issuance. However, this transfer may not be used for a return trip on the same route.

Five categories of riders receive a discounted fare on TheRide's fixed route services. ADA-eligible individuals can ride the service for free with their ARide Card, as can seniors 65 or older with their GoldRide Card and children ages five and younger. Students in grades K-12 possessing a valid student ID and individuals possessing a Fare Deal Card can ride for $0.75 per trip.

There are three types of Fare Deal Cards. A Senior Fare Deal Card is available to persons ages 60 to 64. A Low Income Fare Deal Card is available to riders with a Medicaid card or who are verified as low income through an authorized agency. A Disability Fare Deal Card is available to persons with a disability who do not qualify for ARide services.

Riders can choose to purchase a day pass for $4.50 that is valid for unlimited rides on fixed route service during the day of purchase ending at 11:59 pm. There are no discounts offered on day passes. Riders also have the option to purchase a 30-day pass for $58 that is valid for unlimited rides on fixed route service for 30 days from first use. Students in grades K-12 with a school ID card can purchase a Youth Pass valid for 30 days for only $29. Individuals possessing one of the three types of Fare Deal Cards can also purchase a 30-day pass, called a Value Pass, for $29.

A complete list of the fares, fare media, eligibility requirements, and validity period of fare products for fixed route is provided in Attachment 1: Fixed-Route Fare Media Chart.

1.1.2 Paratransit Pricing & Policies

TheRide provides ADA paratransit service in accordance with the Americans with Disabilities Act (ADA) of 1990. TheRide also provides non-ADA paratransit service to non-disabled seniors aged 65 and older, called GoldRide. ARide and GoldRide trips are provided in lift-equipped buses and sedan type vehicles.

On TheRide's paratransit services, ARide and GoldRide, eligible individuals can book a single trip for $3 if a reservation is made in advance or $4 if made the same day. Adult companions to paratransit individuals can ride for $3 per trip and youth companions for $1.50 per trip. Companions ages five and younger ride free, as do certified personal care attendants.

ARide and GoldRide customers can purchase a booklet of 10 Scrip Coupons, each of which are good for a single trip, for $30. Note that purchase of a Scrip Coupon booklet does not represent a cost savings to the customer.

The GoldRide is only available within Ann Arbor's city limits and to limited locations in Pittsfield Township. Trip requests are taken on a first-come, first-serve basis, and advance reservations are encouraged. Though same-day trip reservations can be requested, these trips are subject to availability.

ARide same day services are available for trips originating and ending within the City of Ann Arbor.

1.1.3 Specialty Services Pricing & Policies

TheRide offers a number of services outside of their fixed route and paratransit services.

ExpressRide

ExpressRide is a commuter service comprising of two separate routes that run from Canton to Ann Arbor and from Chelsea to Ann Arbor. A one-way fare costs $6.25, and no discounts are offered on cash fares. Commuters can choose to purchase a 10-ride ticket for $62.50 that is punched by the driver each time to keep track of the number of trips used. Note that this represents no discount from the single-ride fare. Employees of the University of Michigan and whose employers are members of the go!Pass program (explained in further detail later) can purchase a 10-ride ticket for only $31.25, a discount rate of 50%. The final option for riders using one of the ExpressRide routes is to purchase a 30-Day Commuter Pass for $125, which allows the rider to take unlimited rides on either ExpressRide route and all local fixed routes for 30 days from the date of first use. Similar to the 10-ride ticket, commuters

employed by the University of Michigan or a participating go!Pass employer can receive a discounted 30-Day Commuter Pass for $62.50. The discounts on 10-ride tickets and 30-Day Commuter Pass are provided by the employers; TheRide does not provide the additional subsidy.

Transfers are made available to riders of ExpressRide routes upon request. These transfers are valid on fixed route services. TheRide customers who wish to use their transfer from a fixed route on an ExpressRide route must pay an additional $4.75 to upgrade their transfer.

FlexRide

FlexRide is an on-demand service pilot program being implemented by TheRide in Southeastern Ypsilanti Township. FlexRide provides same-day and next-day rides to customers within the FlexRide pilot service area as well as the Route 46 stop at Paint Creek Shopping Center, the Ypsilanti District Library, the Ypsilanti Township Civic Center, and Lincoln Schools when school buses are not operating. The service is only available Monday through Friday from 9am to 5pm.

Customers must pay $1 per trip to use the service, although a promotional code will get any rider a free ride through April 27, 2018. Riders who reserve over the phone pay cash upon pick-up. Those who use the online portal or mobile app pay with a major credit card or PayPal.

Certain riders are eligible for a reduced fare on FlexRide. Students in grades K-12 and individuals with a Fare Deal Card can ride for $0.50 with the proper ID. Children age five or younger, ARide ID Card holders, GoldRide ID Card holders, 30-Day FlexPass holders, and 30-Day Value Pass holders all ride for free on FlexRide.

Park & Ride Service

Commuters can use any of TheRide's Park & Ride lots for free, then pay the applicable fare to ride fixed route service to their final destination. Currently, TheRide serves eight Park & Ride facilities: Green Road, Miller Road, Pioneer High School, State Street, Ypsilanti Transit Center, Meijer Carpenter Road, and Washtenaw County Service Center.

Holiday & Late Night Services

Through its NightRide and HolidayRide programs, TheRide provides curb-to-curb services during late-night hours and on major holidays when fixed route, ExpressRide, ARide, and GoldRide services do not operate.

NightRide operates within the City of Ann Arbor and east to downtown Ypsilanti between Clark Road/East Huron River Drive on the north and Ellsworth Road/Michigan Avenue on the south. The service runs midnight to 6 am Monday through Friday, 11 pm to 7:30 am on Saturday, and 8 pm to 7:30 am on Sunday. HolidayRide operates on days when TheRide does not provide fixed route service. While advance reservations are not required, they are strongly encouraged for trips that begin or end outside of Ann Arbor. These reservations can be made by phone or email.

The standard fare for NightRide service is $5 per person, cash only. Passengers with a GoldRide or ARide

ID Card are eligible for a $2.50 fare. Passengers with a go!Pass whose trips begin or end within the Ann Arbor Downtown Development Authority (DDA) area are eligible for a $3 fare. Customers who take a trip that begins or ends outside of Ann Arbor without an advance reservation must pay $7 for their fare. These trips are only provided if space is available on scheduled trips. One child age five or younger may ride free. HolidayRide follows the exact same fare structure as NightRide.

GroceryRide

GroceryRide provides weekly trips from several senior housing communities in both Ann Arbor and Ypsilanti to local grocery stores for $0.75 each way. This service is open to the general public and is run using standard, fixed route buses from TheRide.

1.1.4 Employer Program Pricing & Policies

TheRide participates in two separate employer programs: the go!Pass program, which includes multiple employers located within the Ann Arbor Downtown Development Agency's border, and the MyCommuter program, which is currently exclusive to Google.

go!Pass

The go!Pass program issues go!Pass swipe cards to employers, who then distribute them to individual employees. It is thus the employers' responsibility to keep track of the cards. The go!Pass cards are active for one year, from November 1st to October 31st. After this date, the old passes are deactivated, and new passes of a different color are sent to participating employers. Employers are required to pay a participation fee in order to be a member of the go!Pass program. The magnitude of the participation fee depends on the employer's total size, whether or not all employees choose to participate in the go!Pass program, and the maximum fee an employer would be charged is $100 per year. Employers also pay a per pass fee of $15 per year for each participating employee.

However, the Downtown Development Authority (DDA), not the employers, pay for the actual usage of the pass. In recent years, the DDA has paid $680,000 annually for the go!Pass program. This figure was calculated by using a rate of $1.03 per ride, which was arrived at by accounting for estimated usage by people who would otherwise be eligible for a reduced fare (those with disabilities, low-income persons, and seniors), predicted transfer rates, and a bulk fare discount of 10%. On average, the go!Pass program has experienced 4% growth year over year.

For FY2019, TheRide and DDA have entered into a contract that establishes a not to exceed (NTE) amount of $613,000 for fares. This NTE amount of $613,000 is in addition to the $80,000 anticipated in employer fees collected directly by TheRide. Under this contract, TheRide has the potential to receive $693,000, including the expected employer fees and NTE amount of $613,000.

TheRide administers the go!Pass program in coordination with established representatives at each participating employer. These employers are in charge of keeping track of go!Pass distribution and notifying TheRide of any issues that arise regarding their go!Passes.

MyCommuter Card

Google is unique in that its original office was located within the downtown core, though they recently decided to move locations to a building outside of the DDA boundary. Thus, they became ineligible for participation in the go!Pass program. Google wanted to continue offering a transit benefit to their employees. Since they are a large employer and they had ridership data from their previous participation in the go!Pass program, TheRide decided to develop an individual "pilot contract" for Google to test a multi-employer commuter program throughout the City of Ann Arbor.

Google handles all requests by employees for passes and manages their administration on-site. The program administrator at Google notifies TheRide whenever they need additional passes, but otherwise TheRide remains largely uninvolved in MyCommuter Card distribution and management.

Google pays a flat rate of $1.50 per swipe of a MyCommuter Card. There is no transfer discount incorporated into the per-swipe price.

1.1.5 College Program Pricing & Policies

TheRide's service area encompasses multiple colleges and universities. A number of these institutions have separate program agreements with TheRide that enable their students, faculty, and staff to use TheRide's services at varying, discounted levels.

University of Michigan - MRide

Through the MRide program, the University of Michigan (UM) and TheRide offer UM affiliates unlimited access to TheRide's fixed route services. UM affiliates simply use their MCard, a photo ID card with a magnetic stripe administered by UM, to board. UM pays TheRide $1.19 for each boarding completed with an MCard. The MRide contracted rate of $1.19 is lower than the full cash fare because TheRide took into account estimated usage by people who would otherwise be eligible for a reduced fare (those with disabilities, low-income persons, and seniors), predicted transfer rates, and a bulk fare discount of 10%.

The Federal Transit Administration (FTA) makes an annual allocation of federal formula transit funds to the Ann Arbor urbanized area. A portion of the annual allocation is based on the transit service operated and funded by UM, known as their Blue Bus system. As part of the MRide Program agreement, TheRide receives the entirety of the federal funding, as well as any matching state funds. TheRide then deducts the amount of this funding attributable to UM's bus operations from the estimated cost of ridership of the MRide program, and calculates monthly payments based on the net estimated figure. Within 60 days after the end of the program year, TheRide and UM reconcile the actual payment owed with the estimated payments that have been made in order to formally complete their contract for the year.

Eastern Michigan University

TheRide sells special, branded 30-Day passes to Eastern Michigan University (EMU) at a 10% bulk discount on consignment. EMU then offers these passes at an additional 20% discount, meaning EMU students, faculty, and staff can purchase a 30-Day pass for $40.60, or 30% off the normal pass price of

$58. Passes are purchased at the EMU Cashiers Office on campus with a valid student or employee ID. EMU 30-Day pass holders must also present a valid EMU student or employee ID card when boarding the bus. While TheRide would be interested in pursuing a model with EMU that mirrors their contract with UM, this type of program is not feasible at this time.

Washtenaw Community College

Washtenaw Community College (WCC) students, faculty, and staff can swipe their ID to board for free at two bus stop locations on campus. These transactions can be corroborated using the geolocation data collected by the farebox. TheRide compiles these boardings, aggregates usage to come to an amount owed based on $1.35 per swipe (a 10% bulk purchase discount on the regular adult cash fare), and sends them to WCC as a bill each month. Riders who board using a WCC ID card can ask for a free transfer.

1.1.6 Youth Program Pricing & Policies

Ann Arbor Public Schools

Ann Arbor Public Schools (AAPS) has entered into a formal agreement with TheRide to provide some of their high school students with Exceptional Passes. AAPS pays TheRide $0.675 for each swipe of an Exceptional Pass card, which has a magnetic stripe on it that can be read by the farebox. This pricing includes a 10% bulk discount but does not account for transfers. TheRide uses the record of boardings from the fareboxes to tabulate boardings and charge AAPS accordingly.

This program started as a means of outsourcing parts of school transportation demand when AAPS was having difficulty contracting the appropriate amount of yellow bus service to serve its students. Thus, when the Exceptional Pass program debuted, passes were only to be used to get to and from school or school-related activities and along certain routes that ran by the participating high schools. Use of the Exceptional Pass seems to occur outside of these parameters, but AAPS continues to pay for the full pass usage amount. As such, this situation does not appear to constitute an issue for TheRide at this time.

Ypsilanti Public Schools

Ypsilanti Public Schools buy 30-Day Value Passes for the $29 youth rate available to the general public in sets of 100 to distribute to their students as they see fit. Ypsilanti Public Schools pays TheRide for these passes at the moment of purchase.

1.1.7 Interoperator Agreements

TheRide is currently involved in two interoperator agreements. One is with a private transportation company called Michigan Flyer, and the other is with another public transit agency named WAVE.

Michigan Flyer

TheRide and Capitol Transit in Lansing, Michigan have contracted with Michigan Flyer, a private company, to offer a public transit option for individuals in the Lansing and Ann Arbor areas traveling to and from the Detroit Metropolitan Airport (DTW). Through the contract, TheRide and Capitol Transit

subsidize the airport service, thus enabling passengers to pay a lower fare than what they would pay were the service completely private.

Riders are asked to purchase their tickets in advance online through the Michigan Flyer website, although riders can purchase their ride the day of depending on availability. One-way fares between Ann Arbor and DTW are available for $12, or a customer can purchase a two-way fare for $22. AirRide passengers do not need any proof of purchase, since AirRide drivers are equipped with tablets that contain a list of all pre-purchased passes.

AirRide customers can park in the parking structure at the corner of 4th Avenue and William Streets for $2 per day during their trip. Parking at this specialty rate is allowed for anywhere from 2 to 14 days. Any time past that, and customers will have to pay the full day rate for the parking structure. Parking structure tickets must be validated by the AirRide motorcoach driver to be eligible for the specialty rate.

WAVE

Western Washtenaw Value Express (WAVE) is a subrecipient of TheRide, which passes through about 50% of WAVE's operating expenses. WAVE is a rural transit operator. Part of this service includes an hourly fixed route service called the Community Connector that runs along the Jackson Road corridor on the west side of Ann Arbor. TheRide pays WAVE an annual subsidy to assist with the operating costs associated with this WAVE route. The WAVE route connects to TheRide's Route 30-Jackson at the Meijer located at the intersection of Jackson and Zeeb roads. Riders wishing to transfer between WAVE and TheRide must pay full fare, or the applicable discount fare, on each service.

1.2 Current Fare Collection

1.2.1 On-board Fare Collection Technology

TheRide uses 115 GFI Odyssey fareboxes for all of its fixed route services. This type of farebox was first purchased by the agency in 2009.

Farebox Media Capabilities

The GFI Odysseys have been programmed to accept bills up to $10 in value and all coins, except pennies. If excess money is paid for a fare, the farebox TRiM unit can print a change card equivalent to the value of overpayment. The same TRiM unit is responsible for issuing transfers. Both change cards and transfers are issued on 10 mil paper magnetic stripe fare media with a plastic coating. These fareboxes are also programmed to be able to issue passengers 1-Day passes.

Each of the GFI Odysseys are equipped with a magnetic stripe reader, a TRiM unit, and a smart card proximity reader. The smart card proximity reader is only capable of reading first generation smart cards, though, which at this moment in time are rarely employed by agencies due to their limited data capabilities. Thus, this capability of the farebox is currently not being used by TheRide and likely will not be used in the future.

Pre-purchased 1-Day and 30-Day passes are inserted into the TRiM unit in order to activate these rolling period passes. Once activated, these passes are swiped by boarding riders at the upper right-hand corner of the farebox.

Change cards are inserted into the TRiM units, and the appropriate fare is deducted from the value on the card. The new remaining balance is printed onto the change card. Since the media must be re-encoded with the remaining balance, the media cannot be swiped.

Farebox Data Capabilities

TheRide uploads its fare collection data from the bus fareboxes to a garage computer and then a central server during the vaulting process. A data probe is connected to the farebox when a bus pulls into the vaulting station. Farebox collection data since the last vaulting is uploaded and any new configuration data is downloaded. The data transfer must be completed before the vault can be pulled.

Farebox collection data includes route, trip and geolocation (latitude/longitude) information along with cash collection details and any buttons pushed by the driver. Configuration data includes details about card validity and fares.

The data is pulled from the GFI central system to a data mart maintained by the TheRide's IT team. This data mart is used for all ridership reporting. it is used to create a monthly report that is used for reporting ridership to the NTD and the State of Michigan. Some of this information is also passed along to employers and the University of Michigan, who many times like to see data concerning their specific ridership segments. The data is also used to establish billing amounts for these third-party payers.

The process is designed to pull data from every vehicle nightly, as every vehicle is usually vaulted nightly. If any vehicle is not vaulted for any reason, the data is held until the next time the vehicle is vaulted. While there is a potential risk of losing data because the onboard memory fills up, this has not been an issue because in general vehicles are vaulted frequently enough to prevent this from happening. Another issue can be delays. When there is a large amount of data to be downloaded to the farebox it increases the time required to service each vehicle. Because large data sets, like fare changes or mass updates to card lists, affect all buses at once, these delays add up and can cause significant issues for maintenance on a specific night.

The data from the farebox is not directly reconciled with any other data sources, such as pass or ticket sales or Automated Passenger Counters. Annual NTD surveys are accomplished by having AAATA personnel review on board video histories for the sample runs to identify stops, boardings and deboardings.

Farebox Maintenance & Replacement

The TRiM units on the vehicles seem to cause the most maintenance issues and roadcalls, especially due to the use of wet passes and change cards. While TRiM units can be replaced in the field, and often are, only certain components can be replaced in the field. Maintenance staff experience minimal issues with the bill and coin acceptors - maybe a few reports a week. There are virtually no issues with the swipe

readers. Overall, costs of maintenance come primarily from deterioration of cash boxes. Otherwise, TheRide is able to maintain their current GFI Odyssey farebox units for little expense. There are no current plans for replacement.

Currently, the maintenance schedule calls for repairs to be made to units either after 20,000 swipes or 6 months. Maintenance staff are in the process of aligning their historic maintenance cycle schedules with newly implemented Trapeze Enterprise Asset Management (EAM) software.

1.2.2 Fare Media

TheRide distributes and accepts a variety of fare media on its services.

Cash

Cash is accepted on all of TheRide's services except AirRide. TheRide processes about $30,000 per week in their cash room, where employees bag dollars and count coins themselves. The process in total takes about 1.5 hours per week. TheRide collected approximately $1.5 million in cash from the farebox in 2017. Additional cash is collected onboard other vehicles (e.g., paratransit, FlexRide, Holiday & Late Night Services) and placed in a zipper pouch.

Change Cards

Change cards are issued by the farebox to riders who overpay their fare by $0.25 or more on fixed route services. These change cards cannot be redeemed for cash. Instead, they can only be used to pay for additional fixed route trips with TheRide.

Change cards are issued by the farebox's TRiM unit on 10 mil paper magnetic stripe media with a plastic coating. They are inserted on subsequent boardings for fare payment. Upon issuance and as value is deducted, change cards have their remaining value printed on the back of the fare media in addition to being encoded on the media. This value is updated by the farebox after each transaction completed using the change card. The printed value provides greater transparency to the rider while also assisting TheRide in the case that a change card cannot be read by the farebox.

Transfers

Transfers are issued for free upon request to fixed route riders paying with a cash fare and to WCC students boarding using their school ID at one of their designated on-campus stops. Transfers are issued on the same 10 mil paper magnetic stripe media with a plastic coating as change cards. Riders swipe the media upon future boardings. Transfers are valid for 90 minutes from time of issuance, and are printed with an expiration time. The farebox will reject an expired transfer. The farebox is also programmed to reject a transfer if someone tries to use it to complete a round trip. Riders are required to request transfers upon boarding and fare payment.

Magnetic Stripe Passes & Cards

TheRide's 1-Day Pass, 30-Day FlexPass, 30-Day Value Passes, EMU 30-Day Pass, and ExpressRide

Commuter Pass are all issued on plastic-coated paper fare media with a magnetic stripe that can be read by the farebox and printed with an activation date. These passes are inserted into the farebox's TRiM unit upon first boarding for activation. Upon future boardings, riders swipe these passes.

Each of the four 30-Day Value Passes - senior, low income, disability, and youth - have a different design that prompts the bus operator to ask for the appropriate photo ID verification card. The 30-Day Youth Value Pass has "Youth" printed on it in all capital and bolded letters, with smaller text that specifies the pass is for students in grades K-12. The other three 30-Day Value Passes have "Value" printed on them in all capital and bolded letters, then smaller writing to identify the specific type. To make these 30-Day Value Passes easily distinguishable from a distance, TheRide has assigned a different design color to each type. Non-ADA disability passes are green, low income passes are red, and senior passes are yellow. All 30-Day Value Passes also look distinctly different than full-price Day Passes and 30-Day Flex Passes.

AAPS Exceptional Passes, MCards, WCC ID cards, and go!Passes are all equipped with a magnetic stripe that can be read by the farebox. The Exceptional Pass is a thin vinyl magnetic swipe card that is designed with the AAPS logo. The go!Pass is a poly-coated paper magnetic swipe card that is specially branded for the program and is valid for one year. MCards and WCC ID cards are thick plastic photo ID cards with University of Michigan and Washtenaw Community College branding, respectively.

Since the AAPS Exceptional Passes and go!Passes must last a year, and the MCards and WCC ID cards must typically last many years, it is logical that these passes are made of sturdier materials than many of the other passes.

Tokens

Each year, TheRide collects about 50,000 to 75,000 tokens on its fixed route service. These tokens serve as a primary means for local social service agencies to provide transit services to their clients. Tokens come in two sizes, large and small. The larger token is equivalent to a reduced fare, and the smaller token is equivalent to a full adult fare. Operators are instructed that these tokens are not to be treated as currency. As such, operators are told not to issue change cards to reduced fare-eligible individuals who pay with a full fare token or to allow two reduced fare tokens to count as a full fare token.

Full fare tokens are sold at $15 for a package of 10. Reduced fare tokens are sold at $75 for a package of 100.

Punch Card

A 10-ride paper punch card is offered for ExpressRide customers to purchase. This fare media is punched by the driver upon each boarding to indicate usage and thus the number of rides remaining on the card. The operator then must key the boarding into the farebox manually.

Scrip Coupon Booklet

Scrip coupon booklets are sold to ARide customers for $30 each. A passenger simply hands a coupon to the paratransit vehicle operator upon boarding instead of paying cash. This fare media must be tracked

manually since it is not equipped with a magnetic stripe or any other form of data-enabling technology.

FlexRide Online & App-based Reservations

FlexRide reservations can be made by phone, online, or through a mobile app. Both the online reservation system and the mobile app are powered by MODE car. The MODE car reservation system requires a rider to either login or set up a new account. To create an account, a passenger must provide their first and last names, their email address, a phone number, and a password. The system then asks for the rider's pick-up and drop-off locations and the date and time of the trip. As mentioned in the sections above, the rider then must pay with a major credit card or PayPal to complete their reservation. For reservations made by phone, the rider must pay cash upon boarding.

1.2.3 Retail and Online Fare Product Distribution

Fares can be purchased through multiple venues.

TheRide sells fare products at its main office and the Blake Transit Center in downtown Ann Arbor. Both of these locations sell passes, tokens, and Scrip Coupon booklets that can be purchased using cash, checks, Visa, MasterCard, or Discover card. TheRide also has a number of retail locations located within its service area. Bank of Ann Arbor branches sell full-fare tokens and Flex Passes that can be purchased with cash or check. There are four participating branches in Ann Arbor and one in Ypsilanti.

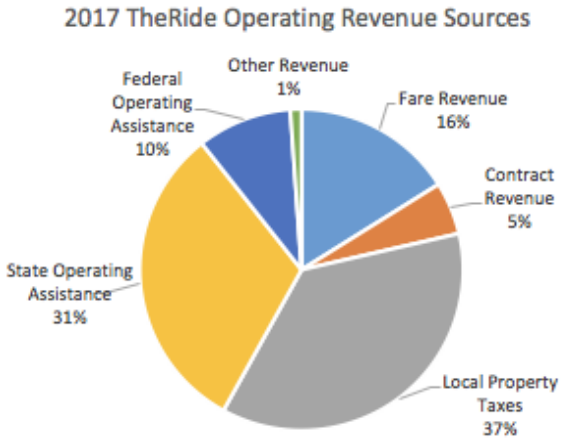
Passes, tickets, and Scrip Coupon booklets can also be purchased online at TheRide.org using a Visa, MasterCard, or Discover card. Passes and Scrip Coupon booklets can be order by mail using a check or money order.

In addition to pre-purchasing them, 1-Day passes can be purchased on buses when boarding.

TheRide also offers a bulk sales program to interested parties. In 1993, TheRide introduced a 10% discount for bulk purchases.

1.3 TheRide Funding Sources

TheRide's operating and capital costs are covered by a combination of federal and state grants, passenger fares, a local property tax millage levied by the authority, and Purchase of Service Agreements (POSA) with non-authority member communities. In 2017, the majority of TheRide's operating revenue was from local property taxes (37%), state operating assistance (31%), passenger fares (16%), and federal operating assistance (10%).



Source: TheRide 2017 Q4 Financial Statement

1.3.1 Passenger Fares

In 2017 and 2016, TheRide generated approximately $6,939,000 and $6,187,000, respectively, in passenger fare revenue. Passenger fare revenue covered approximately 14-15% of total operating costs, or 16-17% of operating costs excluding leases and depreciation.

LOCAL OPERATING REVENUES:	2017	2016
Passenger fares:		
Urban fixed route	$ 2,113,760	$ 2,038,936
Urban demand response	796,832	735,244
Commuter express	115,970	119,249
Interurban airport shuttle	1,015,255	1,048,721
VanRide fares	24,853	56,791
Nonurban demand response	104,910	122,402
Special Fares:		
City of Ann Arbor, Michigan - DDA (go!pass)	752,248	666,023
City of Ann Arbor, Michigan - DDA (NightRide)	10,626	12,354
Ann Arbor Public Schools	74,906	80,418
Eastern Michigan University	193,576	192,312
University of Michigan (MRide)	1,687,997	1,062,601
Washtenaw Community College	48,154	52,115
Total local operating revenues	$ 6,939,087	$ 6,187,166

Source: 2017 AAATA Audited Financial Statements

1.3.2 Property Tax Millage

In 1974, voters in the City of Ann Arbor approved a 2.5 mills property tax dedicated to public transportation. Through the Headlee Amendment (1978) to the State of Michigan constitution, the property tax millage was reduced and is currently 2.011 mills. In 2010, voters in the City of Ypsilanti approved a 0.9789 mill property tax dedicated to public transportation. These millages do not expire.

In 2014, voters in the three member communities (the cities of Ann Arbor and Ypsilanti as well as the Charter Township of Ypsilanti) approved a 0.7 mill property tax dedicated to public transportation (reduced to 0.686 due to the Headlee Amendment). This millage expires after 5 years. On March 15, 2018, the AAATA Board approved ballot language for a renewal vote in August 2017. This proposal would renew the millage and restore it to the originally approved 0.7 mill amount.

In 2015, voters in Scio Township approved a 0.36 mill property tax dedicated to public transportation,

where Scio Township will levy the property tax and purchase public transportation services from TheRide under a Purchase of Service Agreement (POSA).

Property tax revenues received for the years ending September 30, 2017 and 2016 totaled approximately $15,515,000 and $15,131,000, respectively.

1.3.3 Federal and State Funding

In 2012, the passage of Michigan Public Act 387 created the Regional Transit Authority of Southeast Michigan (RTA) and added Washtenaw County to the formerly tri-county transit region comprised of Macomb, Oakland, and Wayne counties. Under this Act, AAATA/TheRide, the Suburban Mobility Authority for Regional Transportation (SMART), the Detroit Department of Transportation (DDOT), and the Detroit Transportation Corporation (the "Detroit People Mover") are subrecipients of the RTA for federal and state operating assistance and capital grants. The State of Michigan and the Federal Transit Administration (FTA) pay directly to TheRide at the direction of the RTA. Each transit agency receives federal and state formula funding in amounts as if they had applied independently (i.e., formular funds "earned" by one agency's ridership cannot be diverted to another agency).

Michigan Public Act 387 does not affect the transit agencies' receipt of local funding through millages, purchase of service agreements, or general fund allocations. The RTA does not control locally-provided funds.

2 Best Practices & Industry Review

Peer agency information is useful primarily to understand industry practices, identify benchmarks, and learn from fare innovations implemented elsewhere – especially by those agencies that have successfully implemented new fare collection technologies, introduced new fare structures, or achieved other specific fare objectives.

The peer information that is most valuable is therefore not just the numbers, but what can be gained by understanding other agency's fare structures and how they have evolved. The purpose of this review is to gain insights from peers that may be useful in identifying and evaluating conceptual fare policy options as TheRide seeks to improve its fare structure and explore new fare collection technologies to better meet the needs of both the agency and its customers.

The peer review is broken into two parts: 1) review of peer fare structures and pricing and 2) review of a broader set of peers and how they have responded to similar issues challenging TheRide as well as strategies used to achieve similar fare policy goals as TheRide is considering.

2.1 Peer Transit Agencies

Ten peer agencies were selected by the study team, based on size and operating characteristics. These agencies are included here to provide benchmarks for TheRide's fare structure. The peer review begins with the systemwide comparison of service characteristics and performance indicators. The subsequent section explores the fare structures and pricing of the peers.

The peers were identified based on similar service characteristics (using the Urban Integrated National Transit Database peer selection process based on TCRP G-11 methodology) and geographic proximity (i.e., within Michigan). The list of peers was also narrowed down based on identifying peers that have undergone recent fare changes. This peer review balances national peers with local and regional peers.

Other peers were considered but not included. In some instances, while the cities may be comparable to Ann Arbor (e.g., Boulder, CO), the cities are a part of a larger regional transit district (e.g., Boulder is part of the Regional Transportation District that serves all or part of eight counties around Denver, CO). Other cities were not considered because (1) they have not undergone a recent fare change and (2) many of their characteristics are too different from TheRide's. For example, Gulfport, MS operates about half of the revenue miles as TheRide and has an operating budget less than ⅕ of TheRide's. Similarly, while Fort Collins, CO currently serves a similar urban area population, it is experiencing population growth at almost 30% compared to TheRide's single digit growth.

List of Peers

City	Agency	Rationale
Champaign-Urbana, IL	Champaign-Urbana Mass Transit District	2015 fare changes, 2018 fare technology changes, college town
Erie, PA	Erie Metropolitan Transit Authority	2015 fare changes
Gainesville, FL	Gainesville Regional Transit System	2015 fare changes, college town
Grand Rapids, MI	Interurban Transit Partnership	2015 fare changes, 2017 fare technology changes
Hartford, CT	Greater Hartford Transit District and CTTRANSIT - Hartford Division	Fare changes in progress
Peoria, IL	Greater Peoria Mass Transit District	2015 and 2016 fare changes
Roanoke, VA	Greater Roanoke Transit Company	2017 fare changes
Shreveport, LA	Shreveport Area Transit System	2017 fare changes
South Bend, IN	South Bend Public Transportation Corporation	2015 fare changes, college town
Syracuse, NY	Central New York Regional Transportation Authority	2015 fare changes

2.1.1 Service Characteristics & Performance Indicators

Service characteristics and performance metrics were calculated using National Transit Database (NTD) data to understand the comparability of peer agencies and their fare policies to TheRide.

Peer Service Characteristics

City	Modes	Service Area (sq miles)	Service Area Population	Population Density	Revenue Hours	Revenue Miles	Boardings	Boardings per Capita	Boardings per Revenue Hour	College Town
Ann Arbor, MI[1]	MB, CB, DR, DT, VP	110	224,916	2,045	459,240[2]	6,168,989[2]	6,653,770	29.58	14.49	Yes
Champaign-Urbana, IL	MB, DR	40	136,540	3,414	321,579	3,631,640	12,755,208	93.42	39.66	Yes
Erie, PA	MB, DR	77	189,872	2,466	255,350	2,973,072	3,220,376	16.96	12.61	No

Gainesville, FL	MB, DR	76	163,990	2,158	357,893	4,402,713	9,747,516	59.44	27.24	Yes
Grand Rapids, MI[1]	MB, RB, DR, VP	155	417,978	2,697	621,813	8,295,515	11,401,003	27.28	18.34	No
Hartford, CT[3]	MB, RB, DR	664	851,535	1,282	1,113,562	15,409,909	16,501,680	19.38	14.82	No
Peoria, IL	MB, DR	105	209,896	1,999	246,040	3,368,513	3,173,439	15.12	12.90	No
Roanoke, VA	MB, CB, DR	43	97,032	2,257	155,730	2,512,248	2,304,796	23.75	14.80	No
Shreveport, LA	MB, DR	61	275,213	4,512	188,392	3,018,203	2,691,118	9.78	14.28	No
South Bend, IN	MB, DR	68	154,346	2,270	125,122	1,700,495	1,741,129	11.28	13.92	Yes
Syracuse, NY	MB, DR	510	641,357	1,258	540,694	6,583,553	10,913,355	17.02	20.18	No

Source: 2016 National Transit Database

Notes: MB = Motor Bus, CB = Commuter Bus, RB = Rapid Bus/BRT, DR = Demand Response, DT = Demand Taxi, VP = Vanpool

[1] While TheRide provides vanpool service, the service characteristics shown here do not include vanpool. The only other peer that offers vanpool service is Grand Rapids, MI.

[2] For Demand Taxi, TheRide did not report the revenue hours or miles for 2016. The reported revenue hours or miles for 2015 were used for Demand Taxi in 2016.

[3] Hartford, CT is served by Greater Hartford Transit District and CTTRANSIT - Hartford Division. The service area for CTTRANSIT - Hartford Division is larger than Greater Hartford Transit District. The service area population for Greater Hartford Transit District is larger than for CTTRANSIT - Hartford Division. While revenue hours, revenue miles, and boardings reflect the combined totals, the service area size and population as well as metrics calculated are based on CTTRANSIT - Hartford Division since they operate the fixed route service.

Key Takeaways:

- *TheRide is generally comparable to the selected peers in the service area size and population density. TheRide provides slightly higher service levels than peers with comparable cost effectiveness (operating cost per boarding) as its peers.*
- *TheRide operates more modes than its selected peers. The only peer that offers vanpool service is Grand Rapids, MI. Hartford, CT is the only peer that offers demand taxi service.*
- *While other cities may be home to institutions of higher education, we classified three of TheRide's peers as college towns: Champaign-Urbana, IL, Gainesville, FL, and South Bend, IN. Transit agencies in college towns regularly exhibit higher boardings per capita, as exhibited here by TheRide, Champaign-Urbana, IL, and Gainesville, FL. Established boarding agreements with those institutions are discussed in more detail in Third-Party Pass Programs.*

Performance Indicators

Performance indicators can help in understanding the comparability of fares. However, there are a variety of factors that influence performance indicators as well a variety of considerations that go into setting fares and for those reasons, performance indicators and fares are not truly comparable across transit agencies. Each agency's fares are driven by factors as varied as subsidy levels, federal/state/local mandates, reduced fare requirements, farebox recovery goals, operating costs and conditions, discounts afforded through different fare products, availability of transfer privileges, service types, modes, special fare programs, incentives to use specific services such as off-peak travel and smart cards, and so on.

Those dynamics are unique to each transit agency. For example, there is no apparent correlation between fare and farebox recovery rates.

Nevertheless, performance indicators can enable comparison with peers and help in identifying opportunities for improvement. A key measure of the effectiveness of an agency's fare policies is the farebox recovery ratio, which is the share of operating costs that are covered by fare revenues. Among ten peers, farebox recovery rates range from a low of 9.72% in Peoria to a high of 65.32% in Gainesville. The peer average is 24.13%, 5.39 points higher than TheRide's 18.74%. To ensure consistency across agencies, the data for the farebox recovery ratios are pulled from the 2016 National Transit Database. The farebox recovery ratios are calculated by dividing total fare revenues for all modes by total operating expenses for all modes ($\frac{\text{Fare Revenues}}{\text{Operating Costs}}$), and do not include depreciation expense. Individual transit agencies may calculate their farebox recovery ratios differently.

Fixed Route Bus Performance Farebox Recovery

City	Local Bus Fares	Farebox Recovery	Fare Structure
Ann Arbor, MI	$1.50	15.88%	Service Based
Champaign-Urbana, IL	$1.00	22.92%	Service Based
Erie, PA	$1.55	19.94%	Service Based
Gainesville, FL	$1.50	65.32%	Service Based
Grand Rapids, MI	$1.75	27.19%	Service Based
Hartford, CT	$1.75	17.30%	Service Based & Zone Based
Peoria, IL	$1.00	9.72%	Service Based
Roanoke, VA	$1.75	26.66%	Service Based
Shreveport, LA	$1.25	18.72%	Service Based
South Bend, IN	$1.00	14.21%	Service Based
Syracuse, NY	$2.00	25.42%	Service Based & Zone Based
Peer Average	**$1.46**	**24.13%**	

Source: 2016 National Transit Database (MB, CB, RB)

Note: AirRide, which is reported to NTD as CB, is excluded from the performance metrics for Ann Arbor, MI.

Farebox recovery is influenced by fares and the cost to provide the service. The following peer agencies' key performance metrics were derived from FTA's National Transit Database:

- Farebox Recovery: $\frac{\text{Fare Revenues}}{\text{Operating Costs}}$, % of operating costs recovered through fares collected
- Cost per Revenue Hour: $\frac{\text{Operating Costs}}{\text{Revenue Vehicle Hours}}$, an indicator of operating cost efficiency
- Cost per Boarding: $\frac{\text{Operating Costs}}{\text{Number of Boardings}}$, an indicator of the cost effectiveness of operations
- Average Fare per Boarding: $\frac{\text{Fare Revenues}}{\text{Number of Boardings}}$, average fare paid by passengers, taking into consideration reduced and discounted as well as full fares
- Subsidy per Boarding: $\frac{\text{Operating Costs} - \text{Fare Revenues}}{\text{Number of Boardings}}$, share of operating costs per boarding not covered by fares collected

In addition to evaluating these performance indicators by mode, they are also evaluated by service type.

Fixed Route Bus Performance Indicators

City	Farebox Recovery	Cost per Revenue Hour	Cost per Boarding	Avg Fare per Boarding	Subsidy per Boarding
Ann Arbor, MI	15.88%	$108.20	$4.47	$0.71	$3.76
Champaign-Urbana, IL	22.92%	$114.32	$2.53	$0.58	$1.95
Erie, PA	19.94%	$86.26	$4.84	$0.96	$3.87
Gainesville, FL	65.32%	$70.71	$2.32	$1.52	$0.80
Grand Rapids, MI	27.19%	$75.97	$3.14	$0.85	$2.28
Hartford, CT	17.30%	$119.71	$5.76	$1.00	$4.76
Peoria, IL	9.72%	$115.49	$5.78	$0.56	$5.22
Roanoke, VA	26.66%	$61.22	$3.28	$0.87	$2.40
Shreveport, LA	18.72%	$76.09	$4.26	$0.80	$3.46
South Bend, IN	14.21%	$86.33	$5.17	$0.73	$4.44
Syracuse, NY	25.42%	$134.30	$5.41	$1.37	$4.03
Peer Average	**24.13%**	**$101.43**	**$4.11**	**$0.99**	**$3.12**

Source: 2016 National Transit Database (MB, CB, RB)

Note: AirRide, which is reported to NTD as CB, is excluded from the performance metrics for Ann Arbor, MI.

Key Takeaways:

- *TheRide's cost per revenue hour, a common measure of cost efficiency, only slightly exceeds the peer average cost across Fixed Route Bus services. TheRide's cost per boarding, average fare per boarding, and subsidy per boarding all perform slightly worse than the peer average.*
- *Gainesville, FL's farebox recovery ratio significantly outperforms that of all other peers. This is in part is because it operates at the second-lowest cost per revenue hour of the peers.*

Motor Bus/Bus Rapid Transit Performance Indicators

City	Farebox Recovery	Cost per Revenue Hour	Cost per Boarding	Avg Fare per Boarding	Subsidy per Boarding
Ann Arbor, MI	15.61%	$108.28	$4.45	$0.69	$3.75
Champaign-Urbana, IL	22.92%	$114.32	$2.53	$0.58	$1.95
Erie, PA	19.94%	$86.26	$4.84	$0.96	$3.87
Gainesville, FL	65.32%	$70.71	$2.32	$1.52	$0.80
Grand Rapids, MI	27.19%	$75.97	$3.14	$0.85	$2.28
Hartford, CT	16.01%	$114.71	$5.66	$0.91	$4.75
Peoria, IL	9.72%	$115.49	$5.78	$0.56	$5.22
Roanoke, VA	26.91%	$60.87	$3.17	$0.85	$2.32
Shreveport, LA	18.72%	$76.09	$4.26	$0.80	$3.46
South Bend, IN	14.21%	$86.33	$5.17	$0.73	$4.44
Syracuse, NY	25.42%	$134.30	$5.41	$1.37	$4.03
Peer Average	**23.98%**	**$99.94**	**$4.05**	**$0.97**	**$3.08**

Source: 2016 National Transit Database (MB, Grand Rapids - MB, RB)

Key Takeaways:

- *For many of TheRide's peers, Motor Bus/Bus Rapid Transit encompasses the agency's entire Fixed Route Bus service. As a result, the data in this table does not vary significantly from the Fixed Route Bus table shown above. Like TheRide, Hartford, CT, Roanoke, VA, and Shreveport, LA operate Fixed Route Bus services not categorized as Motor Bus/Bus Rapid Transit.*
- *Without the high farebox recovery ratio for Commuter Bus factored in, TheRide's farebox recovery ratio for Motor Bus is the third lowest among its peers.*
- *TheRide's cost efficiency is lower than its peers since its cost per revenue hour is $12 higher than its peer average. Nonetheless, TheRide's cost effectiveness (cost per boarding) is in line with that of its peers.*
- *While TheRide's average fare per boarding is the third lowest among its peers, lower operating costs per boarding keep TheRide's subsidy per boarding in line with the peer average.*

Commuter Bus/Express Bus Performance Indicators

City	Farebox Recovery	Cost per Revenue Hour	Cost per Boarding	Avg Fare per Boarding	Subsidy per Boarding
Ann Arbor, MI	41.89%	$100.78	$9.68	$4.05	$5.62
Hartford, CT	29.17%	$200.28	$6.84	$2.00	$4.85
Roanoke, VA	20.57%	$70.94	$14.96	$3.08	$11.88
Peer Average	**28.89%**	**$189.25**	**$6.97**	**$2.01**	**$4.95**

Source: 2016 National Transit Database (CB, Hartford - RB)

Note: AirRide, which is reported to NTD as CB, is excluded from the performance metrics for Ann Arbor, MI.

Key Takeaways:

- *Commuter Bus services generally collect a higher fare than local fixed route service, as demonstrated here. TheRide's average fare per boarding for ExpressRide is twice the peer average and almost six times TheRide's average fare per boarding for its local fixed route service.*
- *The high cost per revenue per hour for Hartford, CT is likely due to the higher operating costs of its Commuter Bus services into New York City. Despite the higher cost per revenue hour, the farebox recovery for Hartford, CT is in line with Roanoke, VA.*
- *The differences in average fare per boarding among the peers drives TheRide to significantly outperform its two peers in farebox recovery ratio. TheRide's higher average fare per boarding and resulting higher farebox recovery as compared to its peers is in part due to TheRide's policy to limit the subsidization of its ExpressRide since the cities served are outside of TheRide's fixed route service area.*

Demand Response Performance Indicators

City	Farebox Recovery	Cost per Revenue Hour	Cost per Boarding	Avg Fare per Boarding	Subsidy per Boarding
Ann Arbor, MI	7.89%	$45.56	$30.55	$2.41	$28.14
Champaign-Urbana, IL	18.34%	$33.90	$10.17	$1.87	$8.30
Erie, PA	79.54%	$51.74	$20.94	$16.66	$4.28

Gainesville, FL	9.59%	$40.69	$32.64	$3.13	$29.51
Grand Rapids, MI	13.15%	$44.10	$20.00	$2.63	$17.37
Hartford, CT	3.12%	$46.35	$30.49	$0.95	$29.54
Peoria, IL	7.83%	$39.85	$25.94	$2.03	$23.91
Roanoke, VA	10.54%	$50.47	$24.94	$2.63	$22.31
Shreveport, LA	9.88%	$36.43	$22.78	$2.25	$20.53
South Bend, IN	9.86%	$53.27	$20.26	$2.00	$18.26
Syracuse, NY	5.79%	$80.16	$50.83	$2.95	$47.89
Peer Average [1]	**7.25%**	**$48.38**	**$27.12**	**$1.97**	**$25.15**

Source: 2016 National Transit Database (DR, Ann Arbor - DR, DT)

[1] The peer average excludes Erie, PA, which includes revenue from its Medical Assistance Transportation Program as part of its fare revenue collected, resulting in a higher farebox recovery and average fare per boarding and consequently a lower subsidy per boarding.

Key Takeaways:

- *TheRide's operating costs of Demand Response is in line with peers. In order to improve farebox recovery, TheRide would need to identify ways to further improve its cost efficiency (cost per revenue hour) and cost effectiveness (cost per boarding) since fare revenue for ADA paratransit service is constrained to a certain extent by the maximum fare that can be charged for ADA paratransit service. ADA mandated paratransit fares are regulated and may not be more than twice the fare that would be charged to an individual paying the full fare for a trip of similar length at a similar time of day on the entity's fixed route system, exclusive of discounts. TheRide has a study currently underway to review its paratransit services, which may result in recommendations that may help improve TheRide's cost efficiency and effectiveness and increase its farebox recovery.*
- *Larger service areas are generally less dense and harder to provide effective Demand Response services to. Hartford, CT and Syracuse, NY serve areas 4.5-6x larger than TheRide's service area and are the least dense of all peers. They also have the lowest Demand Response farebox recovery ratio.*

2.1.2 Fare Structures, Products, Pricing, Programs

The following section focuses on the fare pricing, transfer policies, and fare products offered for the 10 identified peers. It additionally covers topics including third-party pass programs, free fare zones, and fare media (including change cards).

While understanding peer fare pricing can provide valuable insights when a transit agency is considering a fare change, there are a variety of considerations that go into setting fares and for those reasons, fares are not truly comparable across transit agencies. Each agency's fares are driven by factors as varied as subsidy levels, federal/state/local mandates, reduced fare requirements, farebox recovery goals, operating costs and conditions, service types, modes, constraints or opportunities of fare collection technology, and so on.

Rider Categories

As a grantee of the Federal Transit Administration (FTA), TheRide's peers are required to offer half fare discounts on cash fares, during off-peak periods, to seniors (65+), persons with disabilities, and Medicare recipients. Like most transit agencies, peers generally offer those discounts at all times and on most fare products. At least one peer agency (Peoria) phased out time restricted discounts in their most recent fare change.

TheRide and a limited number of peers go beyond the FTA mandate to offer free fares on fixed route to ADA paratransit eligible riders and seniors 65+. Unlike TheRide's peers, TheRide offers discounted fares to individuals 60-64 and low income riders. Like many of TheRide's peers, TheRide offers discount fares to K-12 students.

	Discount Fare							
City	**ADA-Eligible[1]**	**Disabled Riders**	**Seniors 65+**	**K-12 Students**	**College Students**	**Individuals 60-64**	**Low Income Riders**	**Veterans**
Ann Arbor, MI	Free	50%	Free	50%	-	50%	50%	-
Champaign-Urbana, IL	Free	Free	Free	0-50%	-	-	-	Free
Erie, PA	52%	52%	Free	-	-	-	-	-
Gainesville, FL	Free	50%	50%	50%	-	-	-	50%
Grand Rapids, MI	52%	52%	52%	22%	22%	-	-	-
Hartford, CT	52%	52%	52%	20%	-	-	-	-
Peoria, IL	50%	50%	50%	50%	-	-	-	50%
Roanoke, VA	52%	52%	52%	52%	-	-	-	-
Shreveport, LA	52%	52%	52%	52%	-	-	-	-
South Bend, IN	50%	50%	50%	15%	-	-	-	-
Syracuse, NY	50%	50%	50%	-	-	-	-	-

[1] Inclusive of Disabled Riders

Peer transit agencies take a variety of approaches to what forms of identification are required to receive discount fare.

- Like TheRide, four agencies (Champaign-Urbana, IL, Erie, PA, Roanoke, VA, and Shreveport, LA) require Senior/Disabled/Medicare riders to obtain an agency-issued photo ID card to receive their discount fare.
- Six agencies (Gainesville, FL, Grand Rapids, MI, Hartford, CT, Peoria, IL, South Bend, IN, and Syracuse, NY) offer an agency-issued ID but will accept other forms of ID depending on the rider category. For example, Grand Rapids, MI riders with disabilities are eligible to receive their discount fare by showing an agency-issued ID card or their Medicare card; seniors can receive their discount fare by showing their Medicare card, driver's license, or other proof of age.

Additional information about discount fares can be found in Attachment #2.

Local Fares

Peers' local adult bus cash fares range from $1.00 to $2.00. All of the peers offer a discount Senior/Disabled/Medicare (S/D/M) fare with discounts ranging from 50% to 100%. One agency (Erie, PA) does not offer discounted S/D/M fares during peak hours. Most peers offer discounted Youth or K-12 fares.

Transfer policies for local services are varied and specific to each agency. At least one peer agency (Peoria, IL) phased out free transfers in their most recent fare change. Half of the peers offer free transfers. Free transfers are valid anywhere from 30 minutes to two hours on local routes and generally exclude roundtrips. Two agencies charge for transfers. One agency that charges for transfers provides discounted transfers to S/D/M customers, while the other agency has a flat price for transfers. Neither provides discount transfers for Youth.

Regardless of transfer policy, all peers offer local day passes. Day passes for adults range from $2 to $5, 2.0x to 3.0x the local bus fare. One agency (Champaign-Urbana, IL) only offers a day pass on Saturdays and Sundays. Some agencies offer discounted day passes for S/D/M and Youth customers. Of the agencies offering free transfers, Ann Arbor's day pass multiplier is the highest at 3.0x the local bus fare.

All peers but one offer monthly or rolling period (30- or 31-day) passes. Compared to TheRide's $58 30-day pass, peers' Adult passes are priced between $20 and $63, and average $43 across the nine peers with monthly/31-day/30-day passes. Most peers offer discounted passes for S/D/M and Youth riders. Price multipliers for Adult passes range between 20x and 40x; at 38.7, TheRide's 30-day pass multiple is lower than only one peer (Peoria, IL).

While most peers offer both a discount fare and monthly pass to all of their discount riders, some peers offer only select fare products to discount riders. Like TheRide, the majority of TheRide's peers do not offer discount day passes. Peers that do not offer discount fares or monthly passes to all of their discount riders include:

- Erie, PA and Peoria, IL do not offer a discount monthly pass.
- Hartford, CT offers a discount monthly pass to S/D/M riders but does not offer a discount monthly pass to Youth.
- South Bend, IN offers a discount fare for S/D/M riders but does not offer a discount monthly pass for S/D/M riders. Conversely, South Bend does not offer a discount fare for Youth but offers a discount monthly pass for Youth.
- Syracuse, NY does not offer a full fare Adult or a discount monthly pass. Instead Syracuse, NY offers both full fare Adult and S/D/M discount 10-, 20-, and 30-Ride passes.

	Local Bus Fare			Day Pass		Monthly/31-Day/30-Day Pass		
City	Full	Discount	Transfer Policies	Full	Discount	Pass Type	Full	Discount
Ann Arbor, MI	$1.50	$0.75	Free, 90 mins, unlimited, one-	$4.50	n/a	30-Day	$58	$29

		(Fare Deal) Free (S/ADA)	way (no roundtrips)	(3.0x)[1]			(38.7x)[1]	(38.7x)[1]
Champaign-Urbana, IL	$1.00	Free (S/D/M)	Free, one-way (no roundtrips)	$2.00[2] (2.0x)	n/a	Monthly	$20 (20x)	n/a
Erie, PA	$1.55	$0.75 (D/M) Free (S)	$0.40 full, $.20 M/D	$3.10 (2.0x)	n/a	31-Day	$49 (31.6x)	n/a
Gainesville, FL	$1.50	$0.75	No transfers	$3.00 (3.0x)	n/a	Monthly	$35 (23.3x)	$17.50 (23.33x)
Grand Rapids, MI	$1.75	$0.85 (S/D/M)[3]	Free, 120 mins, three routes (no roundtrips)	$3.50 (2.0x)	n/a	31-Day	$47 (26.9x)	$30 (S/D/M) (35.29x)
Hartford, CT	$1.75	$0.85 (S/D/M) $1.40 (Y)	Free, 120 mins, unlimited	$3.50 (2.0x)	$1.70 (S/M/D) (2.0x) $2.80 (Y) (2.0x)	31-Day	$63 (36x)	$30.60 (S/D/M) (36x)
Peoria, IL	$1.00	$0.50	No transfers	$3.00 (3.0x)	n/a	30-Day	$40 (40x)	n/a
Roanoke, VA	$1.75	$0.85	Free, 30 mins	$3.50 (2.0x)	$1.70 (2.0x)	31-Day	$56 (32x)	$28 (32.94x)
Shreveport, LA	$1.25	$0.60	$0.25, 90 mins, two transfers	$3.00 (2.4x)	n/a	30-Day	$40 (32x)	$20 (33.33x)
South Bend, IN	$1.00	$0.50 (S/D/M)	No transfers	$3.00 (3.0x)	n/a	31-Day	$35 (35x)	$30 (Y) (30x)
Syracuse, NY	$2.00	$1.00	Free, one transfer, one-way (no roundtrips)	$5.00 (2.5x)	$2.50 (2.5x)	n/a	n/a	n/a

Notes: S = Seniors 65+, ADA = ADA-eligible rider, D = Persons with Disability, M = Medicare cardholder, Y = Youth or K-12

[1] Pass multiple based on the base fare

[2] Day passes available Saturdays and Sundays only

[3] Grand Rapids, MI offers discounts to Youth in the form of a 10-Ride Ticket, which costs $10.50 as opposed to the full fare $13.50 10-Ride Ticket. The discount 10-Ride Ticket costs 6x more than the full local bus fare.

Commuter Bus Fares

Only two peers (Hartford, CT and Roanoke, VA) offer commuter bus services. The Adult fares range from $3.20 to $6. Unlike TheRide, both peers offer discount fares for S/D/M customers on these services. Roanoke, VA's discount fare also applies to students K-12. Hartford, CT operates two different Commuter services - the I-Bus Interstate Express servicing New York and Express Services originating in Downtown Hartford in a spoke-hub fashion.

Like TheRide, both peers offer intra-agency transfers on commuter services following the same policies as their local transfers. Both offer free transfers within a limited window.

Both peers offer day passes on commuter services; Adult day passes are priced between $6.40 and $12, and discount day passes are half of the Adult day pass price. Hartford's discount commuter day pass is not available on the I-Bus Interstate Express.

Like TheRide, Hartford and Roanoke offer rolling period commuter passes. Compared to TheRide's $125 30-Day pass, peers' Adult passes are priced between $108.80 and $204. Roanoke offers a discount 31-

Day pass, but Hartford does not. Peer pricing multiples for Adult passes range between 30-34x. At 20x, TheRide's 30-Day pass multiple is lower than its peers. The lower multiple may be in part to offset the TheRide's higher commuter bus fare than the peers. TheRide charges more for its commuter bus, ExpressRide service, since the cities (Canton and Chelsea) served by these routes do not contribute funding to the operations of TheRide.

City	Commuter Bus Fare		Transfer Policies	Day Pass		Monthly/31-Day/30-Day Pass		
	Full	Discount		Full	Discount	Pass Type	Full	Discount
Ann Arbor, MI	$6.25	n/a	Free, 90 mins, unlimited, one-way (no roundtrips)	n/a	n/a	30-Day	$125 (20x)	n/a
Hartford, CT								
I-Bus Interstate Express	$3.20	$1.60 (S/D/M)	Free, 120 minutes, unlimited	$6.40 (2.0x)	n/a	31-Day	$108.80 (34x)	n/a
Express Service Zone 2	$3.20	$1.60 (S/D/M)	Free, 120 minutes, unlimited	$6.40 (2.0x)	$3.20 (S/D/M) (2.0x)	31-Day	$108.80 (34x)	n/a
Express Service Zone 3	$4.10	$2.05 (S/D/M)	Free, 120 minutes, unlimited	$8.20 (2.0x)	$4.10 (S/D/M) (2.0x)	31-Day	$139.40 (34x)	n/a
Express Service Zone 4	$5.00	$2.50 (S/D/M)	Free, 120 minutes, unlimited	$10.00 (2.0x)	$5.00 (S/D/M) (2.0x)	31-Day	$170.00 (34x)	n/a
Express Service Zone 5	$6.00	$3.00 (S/D/M)	Free, 120 minutes, unlimited	$12.00 (2.0x)	$6.00 (S/D/M) (2.0x)	31-Day	$204.00 (34x)	n/a
Roanoke, VA	$4.00	$2	Free, 30 mins	$10 (2.5x)	$5 (2.5x)	31-Day	$120 (30x)	$60 (30x)

Third-Party Pass Programs

TheRide's peers offer a variety of advertised third-party pass programs for colleges and universities, employers, and other institutions.

- Students, staff, and faculty ride free with their university ID card from the University of Illinois (Champaign-Urbana, IL), University of Florida and Santa Fe College (Gainesville, FL), Grand Valley State University (Grand Rapids, MI), and University of Notre Dame and St. Mary's (South Bend, IN). Grand Rapids, MI also offers free rides on specific routes for university affiliates at Ferris State University and Grand Rapids Community College. These programs are the result of prearranged agreements with the universities that are either priced on a per trip basis or at a fixed amount per participant.
- Grand Rapids, MI also offers discounted single ride fares to faculty, staff, and students of Aquinas College ($0.25/ride with a Aquinas ID) and Calvin College ($0.50/ride with a Discount Card issued by Calvin College).
- Gainesville, FL and South Bend, IN also offer discounted period passes (semester and monthly/30-Day/31-Day) for students, staff, and faculty at other local higher ed institutions.
- Peers also offer a variety of employer passes. For example, Gainesville's Employee Bus Pass

Program is open to all employers with 100 or more employees. The employer commits to purchasing passes for all employees (regardless of transit use) at a cost of $7.50/employee/year (5x the local, one-way bus fare). Employees either use their regular employee ID to board or may have a sticker added to their regular employee ID that is visually validated by the operator upon boarding.

- Both Gainesville, FL and Shreveport, LA allow city employees to ride free with their employee ID.

Free Fare Zones

Two of TheRide's peers offer free fare zones:

- Grand Rapids, MI: Silver Line Bus Rapid Transit includes an 8-station no fare zone in downtown Grand Rapids. The no fare zone is a partnership between the City of Grand Rapids and Downtown Grand Rapids Inc.
- Champaign-Urbana, IL: Stops called "iStops" on or near the University of Illinois campus are fare free for certain routes and are identified as such at the stops. The included stops varies by route.

In addition, Erie, PA operates the Bayliner Trolley which is free to all.

Fare Media

TheRide's peers offer their fixed route customers a variety of ways to pay their fares and store their day and period passes. Peers also offer a variety of fare media for their paratransit service, mostly on paper scrip coupons. These products are not discussed here.

Due to their small to mid-size and the infrastructure costs typically associated with new fare collection technology, most of TheRide's peers rely on paper or magnetic stripe tickets. At least one peer agency (Peoria, IL) phased out paper products including free transfers and punch passes in their most recent fare change. Only two peers use tokens: Erie, PA and Champaign-Urbana, IL. Champaign-Urbana only uses tokens to distribute discount fares to K-12 students.

Shreveport, LA is the only peer that currently has a smart card system. The smart card system is integrated with a mobile ticketing application. Shreveport has leveraged this technology to begin phasing out certain fare products on paper, including day passes and 30-Day passes, making them available only to smart card and mobile application users.

Two additional peers are implementing or developing smart card systems. Grand Rapids, MI is launching an integrated smart card and mobile ticketing system in early 2018. In CT, Hartford's smart card system is currently under development. The maturation of smart card technology has allowed smaller transit agencies to launch simplified smart card systems.

Many transit agencies have been introducing mobile ticketing as an alternative or enhancement to their smart card systems. Shreveport currently offers a mobile ticketing application integrated with its smart card system. Grand Rapids' smart card system launch will also launch an integrated mobile ticketing application. Champaign-Urbana is launching a stand-alone mobile ticketing application in April 2018.

Fare collection technology is further discussed in 2.2.3.

City	Tokens	Paper	Mag. Stripe Tickets	Smart Card	Mobile Ticketing
Ann Arbor, MI	X		X		
Champaign-Urbana, IL	X*	X			IP
Erie, PA	X		X		
Gainesville, FL			X		
Grand Rapids, MI		X	X	IP	IP
Hartford, CT		X	X	IP	
Peoria, IL			X		
Roanoke, VA		X	X		
Shreveport, LA		X		X	X
South Bend, IN			X		
Syracuse, NY			X		

Notes: * for students only; IP = in process

Change Cards

Four of TheRide's peers issue change cards: Gainesville, FL; Grand Rapids, MI; Roanoke, VA; and Syracuse, NY. Champaign-Urbana, IL does not issue change cards, but issues change up to $5 before 7 pm. Grand Rapids, MI has proposed discontinuation of change cards as part of the fare changes associated with the introduction of their new electronic fare system.

2.2 Key Areas of Interest

Based on the review of TheRide's current fare system and the results of the stakeholder interviews conducted at the beginning of March 2018, a few key areas of interest were identified for further exploration. This section provides a summary of how other transit agencies have approached the following:

- Discount fare programs
- Third-party pass programs
- Fare collection technology
- Fare simplification
- Multi-modal fare integration
- Regional fare integration
- Strategies for regular fare reviews and changes

2.2.1 Discount Fare Programs

As a grantee of the Federal Transit Administration (FTA), TheRide is required to offer half fare discounts on cash fares, during off-peak periods, to seniors, persons with disabilities, and Medicare recipients.

The discounts offered to eligible rider categories varies by transit agency. Most transit agencies offer these discounts at all times and on most fare products. Most transit agencies also extend discount fares to other rider categories with limited mobility, such as youth or K-12 students.

How the discounts are managed and distributed also varies by transit agency. Some transit agencies require an agency-issued ID while others accept any valid ID that proves eligibility (e.g., driver's license, student IDs, Medicare card). FTA regulations enable transit agencies to require riders to show proof eligibility in order to receive a half fare when they pay their fare. The regulations also permit transit agencies to require discount fare riders to obtain a special agency-issued ID card as the sole basis for paying the half fare. However, obtaining a special ID card must be relatively easy. For agency-issued IDs, there is no guidance on what should and should not be printed on the card. What transit agencies have chosen to print onto agency-issued IDs varies based on how fares are paid and fare enforcement needs.

Discounts Offered

Seniors

The FTA requires its grantees to offer half-fare discounts on cash fares to seniors. TheRide currently offers free fixed route fares to seniors 65+ and discount fares to individuals ages 60 to 64. Generally, transit agencies do not offer free fares to seniors. Only two of its peers included in section 2.1 Peer Transit Agencies, Champaign-Urbana, IL and Erie, PA, offer free fares for seniors. The rest offer either a 50% or 52% discount on fixed route services.

Another deviation from the industry standard relates to TheRide's definition of senior. The FTA defines seniors as individuals who are 65 or older, but the Administration permits grantees to extend senior discounts to younger persons. While TheRide chooses to offer this half-fare discount to individuals ages 60 to 64, it is very unusual to offer a discount to these riders, especially as individuals remain in the workforce longer and thus have a stable source of income later into life. Thus, very few transit agencies extend discount fares to individuals ages 60 to 64, and those who do are looking at increasing the age threshold. None of TheRide's peers included in section 2.1 Peer Transit Agencies offer a discount to individuals ages 60 to 64.

When agencies have chosen to change discount fare policies (e.g., increase the qualifying age threshold for seniors), individuals who are already receiving a discount under the current policy typically get grandfathered in and continue to pay the discount fare. For example, individuals who currently qualify continue to be eligible for discount fares but new individuals are not able to register or do not qualify as the eligibility age increases each year.

Persons with Disabilities

Similar to seniors, the FTA requires its grantees to offer half-fare discounts on cash fares to persons with disabilities. On its fixed route services, TheRide offers free fares for ADA-Eligible Riders and discount fares to persons with disabilities that are not registered or do not qualify for ADA paratransit service.

The main premise behind offering free fares to ADA-eligible riders is to minimize ADA paratransit demand, which has a greater subsidy per boarding than fixed route. In some cases, ADA-eligible riders

may be capable of using fixed route services (e.g., for specific trips or in clear weather) even if they are eligible to use paratransit. Transit agencies may choose to incentivize these riders to use their lower cost fixed route services by charging them only a nominal fare or no fare on these services, as opposed to just the half-fare discount on fixed route fares normally offered to persons with disabilities. There are trade-offs in determining whether to offer additional discounts to ADA-eligible riders or enabling them to ride for free. Some agencies choose to charge a nominal fare instead of a free fare because charging some fare encourages greater buy-in to the service and because, in the future, it is easier to increase a fare from a nominal fare than from a free fare.

The OCTA in Orange County, CA, for example, offers a $0.25 fixed route bus fare for ADA-eligible riders. In the Phoenix, AZ area, ADA-eligible riders are able to ride Valley Metro bus and light rail services at no charge. Similarly, in Los Angeles County, CA, ADA-eligible riders are able to ride all fixed route services for free. With respect to TheRide's peers in section 2.1 Peer Transit Agencies, only two out of ten offer free fares to ADA-eligible riders: Champaign-Urbana, IL offers free fixed route service to all persons with disabilities; Gainesville, FL offers free fixed route service to ADA-eligible riders. The remaining eight offer either 50% or 52% discounts to ADA-eligible riders and persons with disabilities on their fixed route services.

Personal Care Assistants

Personal care assistants (PCAs) provide assistance to ADA-eligible riders. The FTA does not allow PCAs to be charged on ADA paratransit service. A companion (i.e., friend or family member) does not count as a PCA unless the companion is actually acting in the capacity of PCA. PCAs may be charged a fare on fixed route. While some transit agencies go beyond the minimum requirements (e.g., TheRide) and allow PCAs to ride for free, there is no requirement that they do so. Transit agencies can also require ADA-eligible riders to indicate whether they require the assistance of a PCA as part of the initial eligibility process and are permitted to make further inquiries regarding the actual need for a PCA. If the rider does not indicate the use of a PCA, then any individual accompanying him or her will be regarded simply as a companion.

It is a relatively uncommon practice to allow PCAs to ride for free on fixed route. None of the peers used for this study appear to offer benefits to PCAs on fixed-route services, though they all allow PCAs to ride for free on paratransit services. Nonetheless, some transit agencies (e.g., Community Transit in Seattle, WA, Spokane Transit in Spokane, WA, Duluth Transit Authority in Duluth, MN) allow for PCAs to ride for free on fixed route. Like TheRide, the ADA-eligible riders traveling with a PCA must indicate that they require a PCA during the eligibility process. The eligibility for a PCA is then printed onto the ADA-eligible rider's ID card. Still, this discount policy is difficult to enforce because the PCA may not always be the same person, and few PCAs are explicitly identified. Like other transit agencies, TheRide has tried to tackle fare enforcement around this policy by requiring that someone designated as a PCA receiving the free fare deboard at the same stop as the ADA-eligible rider or pay the full fare. A few transit agencies have also tried to address potential fare evasion of non-PCAs receiving free fares by requiring identification of the PCAs (e.g., in Duluth, MN); however, this policy can be difficult to enforce.

Enforcement of Discount Fares

Historically, transit agencies have enforced discount fare programs by requiring eligible individuals to carry a photo ID that served as proof of eligibility and could be shown to the bus operator upon boarding. However, many transit agencies have chosen to migrate their programs to electronic enforcement with the advent of new fare technologies. Currently, this type of electronic enforcement is primarily seen in conjunction with smart card technology. There are, though, instances of electronic enforcement with mobile ticketing that have begun to emerge. With either of these technologies, electronic enforcement requires a process wherein a rider receives a special discount card or discount account info from the agency.

An ongoing challenge with using emerging technology to help with enforcement is the question of how to incorporate riders who pay with cash. Many peers allow discount riders to pay with cash, and some peers do not even require special identification when a discount cash fare is paid. In Tucson, AZ, SunTrans has tackled this challenge by requiring the rider to tag their smart card, which has a photo ID, to verify their discount eligibility before a rider can pay a discounted cash fare.

Advantages of Electronic Enforcement

There are several advantages to electronic enforcement:

- Electronic fare media can be programmed to enforce eligibility periods (e.g. temporary disability status, low income status that requires certification, youth status that an individual can age out of)
- Electronically tying an individual to a specific discount-eligible account enables deactivation if a rider's smart card is lost or stolen and then transfer of the balance to a new card
- Enhanced data collection on number of free and discounted riders taken on services since data no longer depends on manually keyed in data from operator
- Minimizes rider-operator conflict by reducing operator's role in fare enforcement if a smart card or a mobile ticketing account is tied to a specific individual

Thus, this policy is emerging as an industry best practice.

The Clipper smart card system in the San Francisco Bay Area, CA is an example of how smart cards and electronic enforcement can enable innovative and flexible programs and policies. Clipper requires riders who receive a discounted fare to register and receive a special Clipper card that, based on the rider's information, determines what discounts are available to the rider. The use of a special ID card has helped also in distribution and enforcement of discount fares. For example, prior to Clipper (formerly Translink), youth were required to show student IDs upon request as proof of eligibility, and passes could be purchased at retail locations without ID. WIth the rollout of the Clipper card, youth were required to obtain a special Clipper card in order to receive discounted fares (discount riders can still pay cash at the farebox). At first, there was a fair amount of push-back from parents, because they now had to go through the process of establishing an account and reloading passes onto the card instead of simply picking up new passes each month at a retail outlet.

Most of the discount Clipper cards do not require photos. Initially, AC Transit in Oakland, CA required youth to obtain a Clipper card with a photo printed onto the card. However, since each card is linked to an individual and lost or stolen cards would be deactivated in obtaining a new card, the additional administrative burden of printing and distributing cards with photos was deemed not cost effective, and now the cards no longer have photos for youth. The only Clipper photo ID is the Regional Transit Connection (RTC) card for persons with disabilities. Since some of the smaller transit agencies are still joining Clipper, printing photos, names, and expiration dates of eligibility enable transit agencies not on Clipper yet to use the card for visual verification.

Chicago, IL has taken a similar approach to the San Francisco Bay Area. As part of the launch of the Ventra smart card system in Chicago, IL, CTA leveraged the capabilities of smart cards and consolidated their various policies surrounding youth discounts into one smart card. Prior to the launch of Ventra, high school students were required to carry a permit, a student fare card for school days, and an adult fare card for weekends. Now, the smart card functions as the permit and is programmed to enable a student to ride at a discount on weekdays and at full fare on weekends. The integration of proof of eligibility and fare payment also improved enforceability of discount fare passes. Since passes are loaded onto a smart card that serves as proof of eligibility, customers cannot argue that they did not know they needed to show proof of eligibility. An advantage of this approach is that it permits other family members to purchase the fare products, while still linking eligibility and enforceability.

Overall, issuing and registering a specific card to an individual has helped in reducing bus operator/rider conflicts and has enabled bus operators to focus on other priorities such as operating the bus safely instead of fare enforcement.

RTD in Denver, CO is on the opposite end of the spectrum of how technology can be used to enforce discount fares in that it does not require riders to register their discount fare smart cards, opting instead to enforce discount eligibility at time of use as opposed to time of purchase. As a result, when a rider tags a discount smart card on the farebox, a light on the driver console indicates that the fare that has been paid was a discount fare. It is then on the bus operator to request proof of eligibility. Unfortunately, this creates that possibility that individuals purchase fares that they are ineligible for, then attempt to use those fares to ride RTD's services. While this policy of enforcement at time of use instead of enforcement at time of purchase is somewhat necessary when non-electronic fare media are being used, since retailers are unlikely to verify that an individual is eligible to purchase a discount fare, it does not conform with industry best practices for smart card systems that use the card to determine eligibility for discount fares and passes (i.e., if the cardholder is not eligible for a discount fare, then the cardholder will not be able to load a discount fare product).

Challenges

Electronic fare enforcement does create the potential for fraud and for discount fare riders to share their card with a non-eligible rider. San Francisco Municipal Transportation Agency (SFMTA) in CA has run into this issue on their Muni services with enforcement of their Free Fares for Youth program. In the Bay Area, youth Clipper cards are branded the same as adult cards since when a youth rider ages out of receiving a discount, their cards automatically convert to charging the adult fare. Because youth cards

are not immediately distinguishable from adult cards, there have been reported issues with adults using the youth cards to board services. Increasing enforcement around this issue, though, has been determined to be not cost effective, so SFMTA is taken no further action on the enforcement problem at this time.

Photos and Names on Discount Fare ID Cards

The purpose of having photos and names on discount fare ID cards is to help with enforcement by ensuring that the person using the card to purchase a discount fare is the cardholder. The challenges to photos and names, however, are that:

(1) issuing photo IDs increases administrative costs since an agency is then required to print a specific, new card for each discount eligible rider, instead of simply assigning them a discount fare card in the back office system

(2) there are concerns about special identification cards with a name and photo increasing stigma for certain populations who are eligible for discount fares

Despite these concerns, many transit agencies still choose to include names and photos on ID cards for discount-eligible individuals, especially for ID cards that are used as flash passes and are not electronically validated. Nonetheless, agencies may choose to be selective about which types of discount fare ID cards require a photo ID and/or name to be placed on them. The extent to which requirements around proving discount fare eligibility are enforced varies among agencies and operators:

- In Seattle, WA, the ORCA smart card system has integrated proof of eligibility for discount fares with their smart cards. The ID itself is on an ORCA card, and the discount fare can be paid electronically or with cash. While all smart cards function as discount IDs include an individual's name, the inclusion of a photo on the ID varies by specific ID type. No photo is included on their senior-eligible IDs, but there is one on disability-eligible IDs. The photo on the disability-eligible ID is for proof of eligibility for agencies that may not be on ORCA or when a rider requests to pay a discount fare with cash. Unlike other discount fares, low income ORCA LIFT riders can only pay their fares with either stored value or pass on their assigned ORCA LIFT cards.
- SunTran in Tucson, AZ requires a photo ID and name on all of their discount ID cards. Like ORCA, SunTran has integrated proof of eligibility with their smart cards by establishing special coded and printed smart cards with a name and photo ID for their discount-eligible customers. Discount riders are required to tag their cards to confirm eligibility prior to paying the discount fare with cash.
- MBTA in Boston requires fare payment with an agency-issued discount fare smart card, regardless of whether a rider chooses to pay with their smart card or with cash. If a rider wants to use cash to pay their fare, they must first tap their discount fare smart card at the farebox, which allows them to load the cash value onto their smart card by inserting the cash into the farebox. The fare is then technically deducted from the value that was just loaded onto the smart card. All agency-issued discount fare smart cards include a name and photo ID. Customers

eligible for discounted fares must go to the CharlieCard (MBTA) Store to obtain their cards and provide any necessary documentation.

There are key considerations that underlie decisions about whether or not to place names and photos on discount eligibility cards. An agency must determine what amount of information needs to be collected for fare enforcement and how eligibility is enforced (e.g., visual flash pass vs. electronic enforcement). An agency must also decide what level of integrity in enforcement of discount fares is necessary. Lastly, an agency must consider whether they prefer that enforcement occur at time of purchase or at time of use. The answers to these questions, combined with choices around fare collection technology, impact the necessity of having photos and/or names on ID cards.

Low Income Fare Programs

In recent years, there has been growing interest in providing affordable fares for low income riders, similar to TheRide's Fare Deal.

There are five key elements of a low income fare program: the income threshold used, the eligibility verification process, the level of discount, funding for the program, and fare payment for program users.

Income Threshold

Different transit agencies have decided to use different income thresholds for low income pass program eligibility. King County Metro in Seattle, WA and TriMet in Portland, OR (program launching July 2018) use an income threshold of 200% of the federal poverty level for eligibility, while DART in Dallas, TX bases eligibility indirectly on income by providing discounted fares for individuals receiving Transportation Assistance for Needy Families (TANF) benefits. DART's program is structured to reduce the administrative burden on the transit agency by allowing TANF benefit recipients to simply use their EBT cards to purchase fares. For TANF, each state has discretion on the benefit levels and how to determine financial need. As Metro Transit in Minneapolis, MN launches its program, it is taking a somewhat similar approach to DART and will be using certifications provided by other programs to determine eligibility. This is similar to how TheRide currently runs its low income FareDeal program.

Eligibility Verification Process

Many transit agencies see value in outsourcing the eligibility verification process to other government agencies or to other community institutions. DART's reliance on TANF cards precludes the need for the agency to administer its own eligibility verification process. King County Metro outsources its eligibility verification process to more than 40 separate locations across King County, including community colleges, food banks, human service providers, nonprofit organizations, and health clinics. To qualify, potential partners needed to demonstrate experience with Limited English Proficiency (LEP) populations and the ability to verify income eligibility, manage and account for low income ORCA cards, and track and report data in the County's online databases. TriMet is still conducting research and public outreach to decide how to administer their program.

Discounts

Discounts for a low income fare program depend on an agency's assessment of need in the community they serve as well as funding constraints (discussed in the following section). The DART program provides a 50% discount on monthly passes. King County Metro's ORCA LIFT program provides an all-day flat reduced fare of $1.50 for adult riders on Metro buses, and a discounted monthly pass can also be purchased at 36 times the $1.50 fare. This represents a 45% discount on the local base fare for King County Metro. TriMet's program will enable participants to purchase 2.5 hour and day passes at half-price and monthly passes at a 72% discount, similar to its youth and senior fares.

Funding

When implementing a low income fare program, many agencies seek additional financial support from other levels of government. DART's program funding technically comes from the federal government in the form of TANF benefits with the additional 50% subsidy covered by DART. King County Metro's program is being subsidized by the agency itself. At the time of the program's debut, Metro expected to lose about $4.75 million a year in fares by offering the reduced rate and spend $3 million dollars to manage the program. TriMet's program was created by the Oregon State Legislature, who included funding for the program.

Sometimes funders outside of government decide to contribute to a low income fare program. One of the most publicized instances of this is the funding structure behind Free Muni for Low Income Youth program run by the SFMTA in San Francisco, CA. Various corporate donors, including Facebook and Google, have made donations to the agency specifically to fund this program. However, this funding was a one-time payment and will not necessarily be renewed.

Fare Payment

The majority of new low income fare programs (e.g., King County Metro, TriMet, and Minneapolis Metro Transit) are administered using smart cards. The use of smart cards can assist in collecting data, enforcing fares, reducing fare collection costs, speeding boardings and reducing dwell and travel times, and verifying program eligibility - all important aspects of maintaining the integrity of the programs.

Implementing on smart cards at launch can also minimize potential Title VI issues compared to if the program were initially implemented with cash then migrated to exclusively smart card. Sun Tran in Tucson, AZ, who has one of the longest running low income programs (est. 1972), has had difficulties eliminating the cash option because it could cause a Title VI issue since participating riders historically have had the option to pay with cash at the farebox.

2.2.2 Third-Party Pass Programs

Third-party pass programs are generally designed to meet the needs of rider groups who use transit services regularly, such as employees and students. Another focus point of third-party pass program design is to encourage these groups' continued use of the transit system by facilitating access to fare products, often by providing these products at a discount to the end user.

Transit agencies' decisions on what pass programs are offered, how they are priced, and how they are administered are influenced by a variety of cost and administrative considerations:

- Administrative costs to register, invoice, and enforce a program
- Impact on operations and fare enforcement
- Additional operating costs to accommodate additional ridership during peak service and operator availability/shortage
- Current capacity of routes
- Cost of crowding, both in potentially needing to increase service and in discouraging other riders from using the service
- Additional capital costs associated with increasing service (e.g., vehicles, maintenance facilities)
- Increase in demand for additional service if a location is not well served by current transit routes
- Lost fare revenue from offering reduced or free fares
- Subsidies required to cover the costs of additional trips

TheRide has already established a number of large third-party pass programs. Staff, though, hope to develop a third-party pass program policy that will enable the continuation of current programs while also providing more structure for the implementation of future programs. Peer third-party programs may provide some insight into alternative program structures and identify opportunities to encourage third-party payers to self-manage their participation, shifting some of the administrative burden from TheRide to program participants. This shift would free up resources within TheRide so the agency can focus on expanding its pass programs instead of administering current ones.

In order to help guide TheRide staff in development of this policy, this section discusses the key considerations that must be discussed when implementing a new pass program. The section also describes numerous examples of how other transit agencies have chosen to structure their own various types of third-party pass programs.

Before any third-party program is officially implemented, an agency must consider both (1) how the program will be priced and (2) how the program will be administered.

Pass Program Pricing

There are three primary pricing models for these types of pass programs: all-in, opt-in, and capping.

All-in Pricing

In an all-in pricing structure, organizations are charged for their participation based on all individuals eligible to use the program, regardless of whether or not they actually use transit:

- These programs are designed specifically to attract riders to transit who may not otherwise choose that transportation option. This is usually accomplished by selling discounted passes to organizations who may then pass all or part of the savings through to their members or offer the passes free as a member benefit.
- The central objective is to attract non-riders to transit with the hopes of encouraging them to become regular riders.

- For smart card all-in programs, the organization is generally responsible for managing their headcount and list of participants through a special portal that enables the organization to remove someone who is no longer affiliated with the organization or request to add a new individual. If the portal is created and managed correctly, having the organization manage its account can help minimize the administrative burden on the transit agency. Since pricing may also be based on actual ridership data, each organization has an incentivize to deactivate cards as soon as possible to minimize paying for unauthorized trips.
- This pricing scheme assumes that members who already use transit will continue to do so and that some members will never use transit. But, because they are all included in the program, the price paid for non-users subsidizes the cost of providing service to existing or new users. In other words, pricing is based on the number of eligible participants and provides discounts, much like an insurance policy, relative to what it would cost if all members used transit on a regular basis.
- Pricing all-in programs is very challenging without good data on actual usage rates. While historically these programs were priced based on survey data or bus operator keys, they are increasingly priced using smart card data.
- Organizations are typically pre-billed under this model, usually paying in advance for a full year, but agencies can choose to post-bill, as in the case of TheRide's go!Pass program.

There are numerous examples of all-in pass program pricing models. In Denver, CO, RTD's Eco Pass program relies on historical survey or usage rates data to estimate the appropriate charges for the established contract period. This program is pre-billed, and there currently are no adjustments to the contract price to reflect actual use. With the introduction of smart cards for the Eco Pass program, RTD has considered using the data to improve their ability to "right price" the program to better reflect actual usage. In Seattle, WA, the Business Passport program is an all-in program with some special provisions. TheRide's contract with the University of Michigan is also technically an example of an all-in pricing model since all University of Michigan affiliates can use their University-issued MCard photo ID to board TheRide's fixed route services. TheRide's goPass! Is also an all-in pass program.

One variation of how transit agencies have structured their all-in pass programs is dependent on whether there is cross-subsidization between participating employers. The employer programs in Seattle and Denver use either geographic zones (Seattle) or service level areas (Denver) to create a pricing matrix that accounts for transit usage in each zone/service level area. Denver also uses employer sizes to differentiate pricing. Aggregating employers together can help minimize pricing changes from year to year; however, it can lead to some employers overpaying compared to the service they use while others underpay.

Many smaller transit agencies with employer programs generally have employer-specific pricing with the exception of areas with a high concentration of jobs (e.g., downtown central business district). Generally, the programs are priced individually since the pool of employers may not be sufficient to price the program effectively. Des Moines' DART calculates an annual payment for their Unlimited Pass program participants based on estimates of current members' ridership and/or annual bus pass purchases. Thus, each organization's contract price is individually negotiated.

When pricing the rides taken by these programs, many transit agencies use the adult full fare or adult average fare. For example, Seattle prices its all-in employer pass programs using the adult full fare while accounting for transfers. Meanwhile, VTA in San Jose, CA uses the adult average fare. VTA also differentiates its all-in insurance model pricing based on organization type (e.g., a Corporate Pass for For-Profit Organizations, including businesses, schools, residential housing, developments, or corporations organized for the purpose of earning profits, and a Not-For-Profit Pass for nonprofits, low-income housing, and government agencies).

Transit agencies that wish to use an average adult fare instead of their adult full cash fare to price their programs have come up with different ways to estimate this price. For accurate estimates of the average fare paid, substantial data is needed, especially since this average fare price must be updated on a regular basis.

Opt-in Pricing

In an opt-in pricing structure, organizations purchase fare products, such as monthly or annual passes or stored value on a smart card, for their members who explicitly choose to use transit and thus join the program:

- Monthly pass or stored value orders may change each month, based on individual members' needs from month-to-month, providing more flexibility to both the participating individuals and the organizations.
- Products may or may not be discounted, and organizations typically pay each month in advance when orders are placed.
- Often these programs are combined with a pre-tax transit benefit program, and only part or none of the cost is subsidized by the employer.

Seattle's Business Choice program is an opt-in program that enables employers to provide ORCA smart cards to as many or as few employees as they choose. Under this program, an employer can choose to distribute cards with either monthly passes or stored value, which works like cash but is paid using the smart card. Regular retail prices apply to the products loaded onto the passes and the products employees purchase using the cards. There are no discounts on passes, but the number of passes or amount of stored value purchased may change from month to month. RTD in Denver has taken a slightly different approach and provides discounts on its FlexPass monthly passes. FlexPass provides a discount to employers of up to 20% per monthly pass (RTD provides employers up to 10% matching discount + 5% discount if employer offers FlexPass on pre-tax basis + 5% discount if employer purchases 200+ passes/month). The average FlexPass discount in 2016 that RTD provided was 15%.

Capping

In a capping pricing structure, payments for participating organizations do not exceed a set price per person. With capping, organizations may be post-billed after actual use is determined, or, if pre-billed, accounts may be adjusted to reflect actual use.

In Phoenix, AZ, the Platinum Pass program is post-billed on a per ride basis. An employer is charged only for the actual number of riders up to a maximum of $64 per month per rider for local bus and light rail

services and up to a maximum of $104 per month per rider for Express/RAPID Bus. Unlimited travel is permitted once the cap is reached. The $64 cap is the price of a 31-day local/light rail pass; the $104 cap is the price of an Express/RAPID bus pass.

Pass Program Payment

There are three payment models for third-party pass programs: direct, indirect, and partnership:

1. Direct: participating individuals pay the whole cost of their participation, possibly through payroll deductions and possibly by taking advantage of Federal transit benefits that allow individuals to pay for transit using pre-tax dollars.

2. Indirect: participation costs are included as an employer benefit, as part of school fees, etc. Prior to the new Tax Bill, federal transit benefits also accrued to employers, who are able to treat employee transit benefits as tax deductible expenses.

3. Partnership: participating individuals or organizations share the cost of the program with other agencies, such as a school district or government agency.

In some instances, the different payment models may be combined, such that part of the cost is passed through, and the individual pays a portion of the cost while the remainder is paid by another third-party. Although most agencies leave it to an organization's discretion whether to subsidize any of the cost, a few encourage or require organizations to subsidize all or part of the program cost. In Seattle, employers may cover the cost of the Business Passport program in full or may pass up to 50% of the cost through to their employees. Charlotte, NC and Salt Lake City, UT require employers to absorb 10%-30% of pass sales cost.

Pre-Tax Benefits

Many transit agencies work with organizations to encourage ridership and maximize use of pre-tax benefits. Many transit agency websites make an effort to quantify these financial benefits of participating in third-party pass programs for both organizations and individuals. This outlining of benefits usually includes the federal tax benefits of transit program participation, since the IRS allows commuters to use pre-tax dollars to pay for their commute (up to $255/month for transit and up to $260/month for qualified parking in 2017). However, these dollar amount thresholds for tax exempt commuting benefits include any organizational contribution towards the parking or transit benefits. Therefore, any contribution by a participating organization on behalf of its members reduces the amount a member can elect as a pre-tax amount for their parking or transit benefits. Additionally, while some employer transit benefits may be distributed by the transit agency via a fare product, such as an all-in pass, a monthly pass or stored value, benefits may also be distributed by a third-party benefit program via commuter checks or a benefits credit card.

As an example of how transit agencies may broadcast these benefits to potential pass program participants, the Maryland Transit Administration's website (http://www.commuterchoicemaryland.com) compares the relative benefits for employers and employees of three employer pass program payment options: employer-supported, employee pre-tax salary deduction, and combination employer/employee. In Maryland, employers are also eligible to

claim a Maryland Commuter Tax Credit for 50% of the amount of the benefit given to an employee, up to a maximum credit of $50 per employee per month.

Pass Program ID Cards

Historically, participants in third-party pass programs used photo ID cards issued by their employer, school, etc. A sticker with the current year or semester would then be affixed to the ID and shown to the bus operator. The bus operator would then key into the farebox the appropriate key for the organization.

As third-party pass programs have migrated to electronic fare media, including magnetic stripe tickets and smart cards, transit agency-issued ID cards typically do not have the cardholder's photo on them. This is because the agency is theoretically reimbursed for the trips made using the pass program ID card, regardless of whether or not a cardholder's use of the card conforms with the intent of the pass program. This includes situations where a student uses a school pass to make trips other than to and from school or where someone lends their pass program ID card to a friend or a family member. This type of pass program structure incentivizes the organizations participating in the third-party pass program to ensure that pass program ID cards are properly managed, meaning they are collected when members leave an organization or turned off when lost.

Despite not requiring photos, in some instances, a transit agency may require an additional photo ID upon request to prove eligibility. For example, in Oklahoma City, OK, students who receive the Haul Pass 2 are required to show a student ID upon request in addition to swiping their agency-issued magnetic stripe pass that entitles them to free fares on fixed route service.

Not adding photos to third-party pass program ID cards enables organizations to reuse cards for new members. However, a challenge may arise if the individual that the card is tied to is not updated to reflect the new ownership of the pass program ID card. In this case, difficulties may arise if an organization wants to cancel the card if it lost or stolen since there might not be a record of what card has been issued to them.

Nonetheless, some transit agencies have chosen to include photos on third-party pass program smart card IDs. In Denver, CO, RTD prints a photo and name on its EcoPass, Neighborhood EcoPass, and College Pass IDs. This can help address concerns about enforcement but at additional administrative burden and cost to the agency. When RTD was having challenges with its smart card system, the photos on the cards helped with enforcement of the program since the cards could not be electronically validated.

An organization may also work with the transit agency to enable its own media used for ID cards to work with the transit agency's fare collection system, such as the MRide cards. Integrating an organization's ID cards with the transit agency's fare collection system requires ensuring that the agency can read the media type that the ID card uses. Media types include magnetic stripe cards, HID cards (often referred to by their ISO/IEC standard, 15693) or the most commonly used standard for contactless smart cards which is called NFC or ISO/IEC 14443. Beyond the basic technology, the card must meet the agency's security requirements and specifications to enable the card to be read by the fare collection system. In

some cases, in order to work as both an ID and a transit pass cards will need to have a chip and a magnetic stripe or be have two separate chips. In some instances, a transit agency may give blank magnetic stripe or chip cards to an organization to print onto. This integration requires coordination between the organization and the transit agency to ensure the cards are being managed properly.

Student Pass Programs

While some agencies, such as Santa Clara VTA in the San Francisco Bay Area, CA, include K-12 schools and/or colleges as a subset in broader third-party pass programs, other agencies choose to treat them as a unique category of pass programs. Student pass program pricing and distribution models include:

- Discounted monthly or semester passes sold by the transit agency directly to students.
- Discounted monthly or semester passes administered by the school, where the school is responsible for selling passes only to eligible students.
- All-in programs provide free transit to all students at participating K-12 schools, colleges, and universities. Pricing is usually based on headcounts of those eligible to use the program combined with usage rates, which are estimated through user surveys, farebox data keyed in by operators, or data provided by fare media such as smart cards.

Denver's College Pass, VTA's Collegiate Pass, and Foothill Transit's Class Pass in Los Angeles County, CA are all examples of the all-in college pass program structure. Funding sources for this type of college pass program often includes student activity fees, dedicated student transit fees, or other school revenue sources (often through the school transportation department's parking fees). None, however, typically cover the full costs of providing transit service, and these programs therefore usually involve some cost sharing with the transit agency. In addition, some transit agencies choose to charge colleges a lower price per boarding or trip than those assessed to employers or other individuals/organizations. For example, Foothill Transit's reimbursement rate from colleges is 50% of the adult fare, and pricing for VTA's Collegiate Pass is based on a lower average fare than the adult average fare used for their employer Smart Pass.

In addition to these college programs, there are a number of third-party pass programs implemented for students:

- TriMet in Portland, OR allows Portland Public School District students to ride for free on fixed route. The City of Portland, Portland Public School District, and TriMet each fund 1/3 of the program's cost.

- In San Francisco, CA, SFMTA's Free Muni for Youth Program provides free access to Muni services for registered low- and moderate-income youth ages 5 to 18 when using their assigned Clipper card. There is no dedicated funding source at this time, and the initial start-up costs were paid mostly by donations from corporate donors.

- In Nashville, TN, MTA's StrIDe Youth Mobility Program allows students enrolled in grades 9 through 12 to ride MTA buses for free using their school ID cards; students in grades 5 through 8 who attend an out-of-zone school where they have no yellow bus service are eligible to

participate with parental permission. The program is a partnership between the Mayor's Office, the Metro Council, Metro Nashville Public Schools, and Nashville MTA.

- In Seattle, WA, the Seattle mayor recently announced plans to launch a free transit pass program for all Seattle public high-school students starting in Fall 2018. The program will be funded by $3.8 million from the Seattle Transportation Benefit District (~80% of program cost), and the remaining ~$1 million will be contributed by King County Metro in forgone revenue (~20% of program cost).

2.2.3 Fare Collection Technology

As fare collection technology evolves it is important to remember that fare policy should drive the technology and not the other way around. The chief lens through which an agency should view technology options is the question of how technology can better serve the agency's fare collection goals.

Today, TheRide uses a combination of cash, tokens, magnetic stripe tickets and flash passes as fare payment media. The industry today has evolved to make a number of new technologies available that can increase customer convenience, the data collected about fare payments and ridership and the sophistication of fare policies, all while potentially reducing the operational cost of collecting fares.

Smart cards and mobile ticketing technologies are the two technologies currently most used by transit agencies to achieve their fare collection goals. Among larger peers, smart cards have been introduced over the last two decades to implement universal payment. Today, peers are increasingly using mobile ticketing. Among larger peers, smart cards have been introduced over the last two decades to implement universal payment and fare integration goals. Today, peers are increasingly using mobile ticketing to support fare and service integration goals. Companies such as PayNearMe are also changing the retail distribution and fare collection technology landscape.

Common objectives for new fare collection technologies include:

- Accommodating and enforcing fare policies electronically, such as transfer validity rules
- Introducing and/or enforcing special fare programs
- Introducing new fare products, such as TriMet's trip accumulator that will replace day passes and monthly passes with fare capping
- Obtaining improved ridership and fare payment data, and
- Attracting a new demographic of riders who see mobile ticketing or smart card technology as easier and/or more attractive than traditional fare payment technologies.

Smart Card Systems

While smart card systems have several advantages, they can be costly to implement. Smart cards provide some of the best ridership data, which can be used to understand travel patterns and transit use. Peer agencies can also this data to better price its pass programs as well as other products, such as monthly passes. Smart cards can also help in managing eligibility for discounts.

Universal payment options are frequently achieved using smart card systems that rely on reusable cards. These cards have an embedded microchip to record fare transactions and store passes and monetary value for use on transit. Fare transactions are processed using near field communications (NFC). Smart card systems require riders to pre-purchase passes or load stored value online, at a customer service center, or at a retail outlet; adding value on-board at fareboxes is also possible.

Very few agencies of the small- and mid-size transit agencies have pursued smart card technology because of the significant costs associated with implementation and operation. Implementation of a smart card system can easily cost tens of millions of dollars. The smart card systems that small- and mid-size transit agencies have deployed have generally been the smart card system offered with the GFI Odyssey.

A new, simpler, generation of smart card systems, based in the Software as a Service (or SaaS) model and often integrated with mobile ticketing, is emerging with capital costs an order of magnitude lower.

Mobile Ticketing

Mobile ticketing is also growing in popularity due to its low cost and ability to stand up the mobile ticketing solutions quickly. Mobile ticketing has also proven to have high adoption, especially of certain market segments. Mobile ticketing can also be integrated with smart card systems providing more flexibility to the rider.

Mobile ticketing technology works by giving users the ability to use an app on a smartphone or tablet to pay for transit, then use that device as their ticket or proof of payment when boarding. Tickets and passes can be purchased on an as-needed basis. Mobile ticketing even allows users to purchase their tickets as their bus is arriving, eliminating the need to carry cash or pre-purchase a pass.

Fare validation can be visual or electronic. Mobile ticketing with visual validation is relatively inexpensive and quick to implement. The data provided by activating a mobile ticket are better than visually inspecting a paper ticket issued by a ticket vending machine and relying on a bus operator to enter information to a farebox, but not as good as the electronic data that are available from using barcodes or beacons for validation.

Fares can also be electronically enforced using QR codes or beacons. QR codes require scanners and communications equipment on all vehicles to read the codes, which can cost thousands of dollars per vehicle, in exchange for improved data. A lower cost option are beacons. The low powered beacons can be installed for hundreds of dollars per vehicle and provide data similar to that provided by bar codes. A small, battery powered devices installed on a vehicle communicates with the phone or tablet on boarding. The phone or tablet, then operates as the communications hub that logs and validates transit users' rides. These beacons are just being deployed on transit systems in the U.S. but have been service proven in Europe.

The cost mobile ticketing depends on the transit agency's choices regarding application development and validation. The first mobile ticketing applications were designed for each individual agency that procured them, with complete customization to the agency's wishes:

- The agency was able to control the design of the entire application.
- Agencies could choose to include a trip planner and/or vehicle tracker within the application itself, or use a deep link to connect to either another mobile app or a website with these capabilities.
- Agencies could also introduce customized fare products specific to the agency.

Over time, the capabilities have expanded for customized apps and now may include deep links to other apps, including trip planning, ride hailing, and car sharing apps. However, build-out of the custom application and systems connected to it can take many months and incur additional costs. Custom built mobile applications cost, at minimum, hundreds of thousands of dollars in addition to the per-use fees commonly associated with mobile ticketing. Additionally, while several mobile ticketing vendors offer trip planners, many agencies already have their own trip planners with more capabilities than those provided by mobile ticketing vendors and so they may opt to use their own. Some transit agencies do, however, still decide to pursue a customized mobile ticketing application. In certain cases, such as with TriMet in Portland, OR, the agency gains proprietary control over their mobile application once it is built by a developer. This establishes their right to use and control the platform and back-office systems.

Mobile ticketing startups are now offering new off-the-shelf mobile applications with financial models that include no upfront costs, providing more cost-effective options especially for small- and mid-size transit agencies. These apps are set up as software as a service (SaaS). Instead of owning the app, agencies pay fees to use the app:

- Vendors may charge a flat fee for development and use and then a fee per transaction to cover costs that depend on the number and value of transactions (e.g., bank card fees).
- Some vendors bundle fees together similar to a concession (e.g., 10% of revenue collected).
- Depending on fee structure, vendors may have an incentive to increase market adoption.

These apps provide just the basics, but they can be fully operational within a matter of weeks and include minor customization (e.g., standard fare products, logo, and minor adjustments). Specific requirements, such as the capability of accepting pre-paid debit cards are often a distinguishing feature between vendors, rather than a custom built capability. The fees associated with SaaS mobile ticketing are usually similar to those of custom built solutions, without the up-front cost.

Mobile Ticketing Deployment

In Mass Transit's "Future of Fare Collection in Transportation" report, the research showed that 87% of transport agencies either have or are planning to implement mobile ticketing. Mobile is expected to be the leading ticket retail option for passengers by 2021. Peer agencies that use mobile ticketing include The T (Fort Worth, TX), DART (Dallas, TX), OCTA (Orange County, CA), RTC (Reno, NV), RTS (Eureka, CA), Big Blue Bus (Santa Monica, CA), StarTran (Lincoln, NE), Citilink (Fort Wayne, IN), SporTran (Shreveport, LA), and HART (Tampa, FL). Additionally, MTD (Champaign-Urbana, IL), The Rapid (Grand Rapids, MI), MCT(Madison County, IL) and EMBARK (Oklahoma City, OK) all have mobile ticketing in development.

Given the speed with which mobile ticketing can be deployed, some agencies have chosen to deploy the application first and follow later with electronic validation. This means that the system will operate for some time with only data of when the tickets were activated, and not when or on which vehicle(s) they

were actually used. Later, the agency can deploy electronic validation. Examples of this approach include OCTA in Orange County, CA who have had mobile ticketing for over two years and are deploying bar code readers later this year and TriMet in Portland, OR who have had mobile ticketing for several years and now are integrating it with their smart card readers.

Mobile Ticketing & Smart Card Integration

Some agencies have introduced both smart cards and mobile ticketing. Generally, these are larger transit agencies and/or regions. A few examples of integration include:

- In Portland, OR, TriMet launched mobile ticketing while developing the smart card system that just launched. The technologies both support improved fare integration, making it easier for riders to use different modes over a single day or a single trip. TriMet is integrating its mobile ticketing and smart card backends.
- In Chicago, IL, subway and buses accept the regional Ventra card, and Metra commuter rail accepts a mobile ticket accessed via the Ventra mobile app. The Ventra backend is integrated so riders can load value onto their registered Ventra card and use the transit value through its mobile ticketing app. This provides additional flexibility for cash riders who may not have a credit or debit card to load money through the mobile ticketing app.

Electronic Cash Payment Networks

One of the ongoing challenges with smart cards and mobile ticketing is establishing a robust retail network to enable unbanked and underbanked riders to purchase passes and load stored value. Electronic cash payment network are providing new opportunities for cash riders to load value to electronic fare media.

The leading competitor in this field is a company called PayNearMe, which partners with national retail chains as well as local stores to establish an electronic cash payment system that enables agencies to accept cash payments for services remotely. Customers use store check-out lines to pay bills or load money into accounts by providing a special payment code that, when scanned, connects to the relevant account for deposits. Since deposits and ticket use are associated with an anonymous account, transit agencies can collect more data to learn about ridership trends and usage.

These electronic cash payment network vendors take a set percentage of transaction value as part of any business agreement with them, then splits this percentage with the retailers in its network. In Dallas, TX, DART is currently in the process of negotiating with PayNearMe to provide a means for unbanked riders to add value to their transit accounts as part of DART's implementation of GoPass smart cards and a mobile ticketing application.

Acceptance of prepaid debit cards has also proven an effective way to reach underbanked riders. In Reno, NV, one of the first agencies to accept prepaid debit for mobile ticketing, 56% of riders use debit cards, 31% use prepaid debit, and 13% use credit cards.

Use of Fare Collection Data for Planning

Electronic fare collection data can provide valuable information for service planning and pricing services. Currently, TheRide generates a monthly report of ridership that is used to report back to the NTD and State of Michigan. Some of this information is also passed along to employers and the University of Michigan, who many times like to see data concerning their specific ridership segments. This same data is also used to establish billing amounts for these third-party payers.

More sophisticated fare collection technology can dramatically improve the data available for planning on general fare usage and special programs. Smart cards and mobile ticketing can both provide usage data including route/run/stop/time for boardings and linked trips. Additionally they can provide patterns of use.

It is important to respect both riders privacy, TheRide's information policies, and state and local laws by not linking trips to personally identifiable information (PII). In order to do this, many agencies obfuscate their ridership data using one way hashes and other common PII protection methods to ensure that no one can be 'tracked' using the data.

Beyond trip origin and linked trips, some fare collection vendors are starting to explore 'be-in, be-out' technology that tracks when riders disembark using the on board beacons and their communication with riders cell phones. This technology has not been commercially proven yet but would provide valuable information about not only where riders are boarding but also where they are alighting.

While transit agencies are just being to explore how they can use this electronic fare collection data, the analysis that agencies have been conducting so far have proven useful for service planning to understand ridership patterns (e.g., time of day, boarding/alighting locations, transfer activity, frequency of use) and ridership rider categories of certain routes (e.g., adult, senior, youth, etc.).

2.2.4 Fare Simplification

Many transit agencies have in recent years looked for opportunities to simplify their fare structures and policies, whether by standardizing the discounts offered to market segments or flattening their fare structure.

Standardization of Discounts

Offering standardized discounts can simplify communication and marketing as only one discount price needs to be advertised. For agencies with paper and magnetic stripe passes, standardized discounts can also streamline fare media distribution as the passes can be sold through customer service, online, or a retail network instead of having differentiated fare media for different discount rider categories. A drawback of using the same fare media is that the data being collected by the farebox is not able to differentiate between the discount rider categories.

For smart card and mobile ticketing, the benefit of offering the same discount and using the same fare media diminishes as the electronic fare collection can offer a variety of discount rates relatively easily. Even if the discount provided is the same, many transit agencies set up the discount rider categories

separately to improve data collection and enable differentiation between rider categories. This system setup also provides flexibility if an agency chooses to differentiate the discounts in the future.

While transit agencies are federally mandated to offer a minimum of a 50% discount on single ride peak fares during the off-peak for Senior/Disabled/Medicare, they are not required to offer discounts to other rider categories. Transit agencies can choose to offer varying discount rates for non-mandated discount rider categories based on their financial situation and policy goals while taking into consideration the riders' ability to pay and external funding sources to help subsidize fares.

The rider categories that receive a discount and the discount that they receive vary across peers, and to a certain extent are an agency-specific decision.

Some transit agencies, such as Santa Clara VTA in the San Francisco Bay Area, CA, have recently implemented fare changes to align the discounts offered to different rider categories by increasing the Youth discount to match the Senior/Disabled/Medicare discount.

As transit agencies have introduced new discount rider categories, they have also set the discount for the categories at the same discount rates as existing categories. For example, as TriMet in Portland, OR is launching its low income program, it will be setting the fare and pass prices to match the discounts established for Senior/Disabled/Medicare/Youth riders.

Other agencies have implemented different discounts as they have introduced new discount rider categories. For example, in Seattle, WA, with the introduction of the low income ORCA LIFT fare, the established fare for most travel within King County is a flat $1.50 on both King County Metro's bus services and Sound Transit's light rail and 1-zone express bus. Sound Transit also provides discounts on its 2-zone express bus and commuter rail services that extend beyond King County. Other transit agencies in the region have joined ORCA LIFT and offer up to a 50% discount on fares. While the ORCA LIFT fares align with the Youth fare for the participating agencies, the discount provided is less than that offered to Senior/Disabled/Medicare riders.

Some agencies have also chosen to offer discounts only to certain rider categories on specific fare products. For example, in Shreveport, LA, SporTran offers a discount to K-12 students on monthly passes only, and does not offer discounts to this group on single ride fares. Other agencies (including CityLink in Peoria, IL) take a strict interpretation of the federal mandate and thus only offer discounts on single ride fares and not monthly passes. Many of the TheRide's peers, and TheRide itself, do not offer discounted day passes. Limiting the number of discount fare products can help in simplifying communication and marketing by reducing the number of products to be advertised and explained as well as by reducing fare media distribution.

Fare Structure Simplification

There are two types of fare structures that take into account the distance of the trips being undertaken.

- Zone-based:
    - Commonly used on both commuter bus and rail systems
    - Fare is based on the number of zones traveled

    - Generally, zone-based fares work best on commuter rail systems with a dedicated conductor to collect and enforce fares, or on services with off-board fare payment
    - In the bus environment, either the rider informs the bus operator where they plan to alight/number of zones to travel or the rider pays as they alight. This process puts the onerous on the bus operator to track riders boarding/alighting and enforce under fare payment
    - With smart cards, riders are often required to tag on/tag off to calculate the number of zones traveled based on GPS location

- Mileage-based:
    - Commonly used on rail systems with station-to-station pricing
    - Fare is determined based on the distance traveled, often using a base fare/access fee with a per mile fare
    - In Salt Lake City, UT, UTA piloted using mileage-based fare pricing using its smart card system that calculated the fare based on the GPS distance traveled on bus using tag on/tag off data. The primary objective was to make short trips more affordable and attractive

In a bus environment, distance-based fares tend to be difficult to understand and explain to customers. They can also be difficult to enforce. Distance-based fares require customers to pay the fare upfront or if using a smart card to tag on and tag off. While tag on and tag off smart card data can provide valuable information regarding a customer's travel patterns, many transit agencies do not view the benefit as overcoming the burden of programming the complex business rules necessary to use GPS location to define the number of zones traveled. Especially when transfers are accepted, the fare matrix used by the smart card systems can become extremely complicated. Bus operators also have difficulty enforcing customers to tag on and off. To encourage smart card customers to tag off, transit agencies will often charge customers the maximum fare upon tagging on and then refund the difference upon tagging off. However, this can result in an increase in the number of customer complaints and requests for refunds received. In addition to customers failing to tag off, another impact of tagging off to consider is increased dwell time as customers tag off, especially if a card reader has not been installed at the rear door.

Instead of distance-based fares, transit agencies also use service-based fare structures to differentiate pricing based on the type of service. Bus transit agencies tend to be more likely to implement service-based fares as charging customers based on the distance that they traveled can be difficult in a bus environment. Agencies with service-based fares, such as TheRide, set fares based on the classification of the route, which is often determined by a service-based definition. There tends to be a relationship with the average passenger trip length (e.g., higher fare for longer haul routes, lower fare for circulator services), the type of vehicle, or the cost to provide the service (e.g., higher fare for services that operate during the peak only, lower fare for services with smaller vehicles). Transit agencies may also charge a higher fare on services with improved amenities (e.g., dedicated over-the-road coaches) or services that operate during the peak period that generally travel longer distances and at higher speeds. Some common service types in order of pricing include circulator/community, local/bus rapid transit,

express/limited stop, and commuter/regional/park-and-ride. The use of established service standards can help in determining how service-based fares can best be delineated and priced.

With service-based fares, some agencies offer the ability to pay a lower fare for shorter distance trips. This is more common where customers use the service for local trips because other transit service is not available in that corridor or is not available at that time of day. With agencies that offer the ability for customers to pay a local fare, such as AC Transit in the San Francisco Bay Area, CA, the customer tells the bus operator upon boarding where they plan to deboard, and the bus operator adjusts the fare on their driver console.

Another type of fare structure that can be overlayed with distance-based and service-based fares is time of day or peak/off-peak pricing. Time of day pricing enables transit agencies to charge higher fares when there is higher demand and less capacity. Time of day pricing can complicate fare payment. Some transit agencies determine pricing based on the trip (most common for commuter rail systems with specific train times with longer headways). Others determine pricing based on time of boarding/fare payment (most common for bus, light rail, or heavy rail systems with shorter headways).

In recent years, transit agencies have been simplifying their fare structures and flattening and/or migrating away from distance-based fares or time of day pricing. The simplification has been in part to make it easier to implement fare collection practices and policies as transit agencies introduce new fare collection technologies. Transit agencies have also been interested in making it easy for new riders to understand how to use transit by simplifying their fare structures.

There has also been growing concern about the suburbanization of poverty and the impact of using distance-based pricing as lower income households are pushed to outer parts of the region. While historically lower income riders tend to make shorter distance trips, with the suburbanization of poverty, lower income riders may need to make longer distance trips. The implications of suburbanization of poverty are yet to be borne out with data on the average trip length of riders, but it is an important consideration as the introduction of distance-based pricing is being evaluated.

As part of fare simplification, transit agencies have been evaluating the use of service-based fare structures instead of distance-based fares. In Denver, CO, as part of its fare simplification in 2016, RTD flattened its rail zone structure from three zones down to two zones and simplified from three service-based fares (local, express, regional) to two service-based fares (local, regional). RTD also discontinued the use of distance-based fares on bus. Prior to the fare simplification, riders traveling on longer distance services such as its regional bus routes could pay a local or an express fare based on the distance of their trip. Generally, most riders were paying the regional fare. However, by no longer enabling the rider to downgrade their fare to a local or express fare, this policy change resulted in a fare increase.

Transit agencies have also streamlined their service-based fares. Santa Clara VTA in the San Francisco Bay Area, CA eliminated its community bus as a specific fare type. VTA had established a lower fare for its community bus routes at inception for two basic reasons:

1. The routes were serviced by cutaway vehicles which were significantly cheaper to acquire and operate.

2. Bus Operators assigned to community bus routes were paid less than Bus Operators assigned to regular routes.

These cost differentials no longer exist since VTA operates diesel hybrid transit buses on community bus routes, and bus operators are paid the same wages regardless of the route they operate. In addition, with the planned service redesign for 2019, community bus will no longer be included as a service category. As a result, as part of the 2018 fare change, VTA discontinued community bus as a specific fare type.

Possibly one of the most significant fare simplifications that is currently planned is in Seattle, WA. King County Metro as part of its 2018 fare change will be eliminating its zone-based and time of day pricing, instead replacing it with flat fare pricing as shown below.

<table>
<tr><th></th><th colspan="3">Current Pricing until July 1, 2018</th><th rowspan="2">New Pricing effective July 1, 2018</th></tr>
<tr><th></th><th>All Zones, Off-Peak</th><th>1-Zone, Peak</th><th>2-Zone, Peak</th></tr>
<tr><td>Adults (19-64)</td><td>$2.50</td><td>$2.75</td><td>$3.25</td><td>$2.75</td></tr>
<tr><td>Youth (6-18)</td><td colspan="3" rowspan="2">$1.50</td><td rowspan="2">$1.50</td></tr>
<tr><td>ORCA LYFT (low income)</td></tr>
<tr><td>Senior/Disabled</td><td colspan="3">$1.00</td><td>$1.00</td></tr>
</table>

In addition to fare simplification, the fare change is expected to result in a slight increase in fare revenue while reducing fares for riders who are needing to move south of the Seattle city limits in search of affordable housing. Nonetheless, Adult off-peak riders will see a $0.25 increase. However, the majority (65%) of Metro riders will see no change in fares or a $0.50 fare decrease. Fares for midday and late-night riders will increase $0.25.

In Pittsburgh, PA, PAT underwent a similar flattening of its fare structure as part of its 2017 fare change. It changed its $2.50 for shorter rides and $3.75 for longer riders to a flat $2.75 fare. As part of the fare change, PAT also introduced a stored value discount and charges $2.50 for riders for its ConnectCard, effectively offsetting any fare increase on these shorter rides. The agency had anticipated a fare revenue loss as part of the fare change as about 26% of riders had their fare reduced, but had expected a long-term payoff through increased ridership and a reduction in staff needed to count cash. The revenue loss experienced has been less than anticipated, and it has in part been attributed to a reduction in fare evasion due to the simplification. One reason fare evasion could be down is that when the agency switched to a flat fare it also forced all passengers to enter the front of the bus and pay upon boarding. Previously, PAT used a confusing system that allowed passengers to enter any door and pay when entering or leaving depending on the time of day, so some passengers may have entered and exited rear doors without paying.

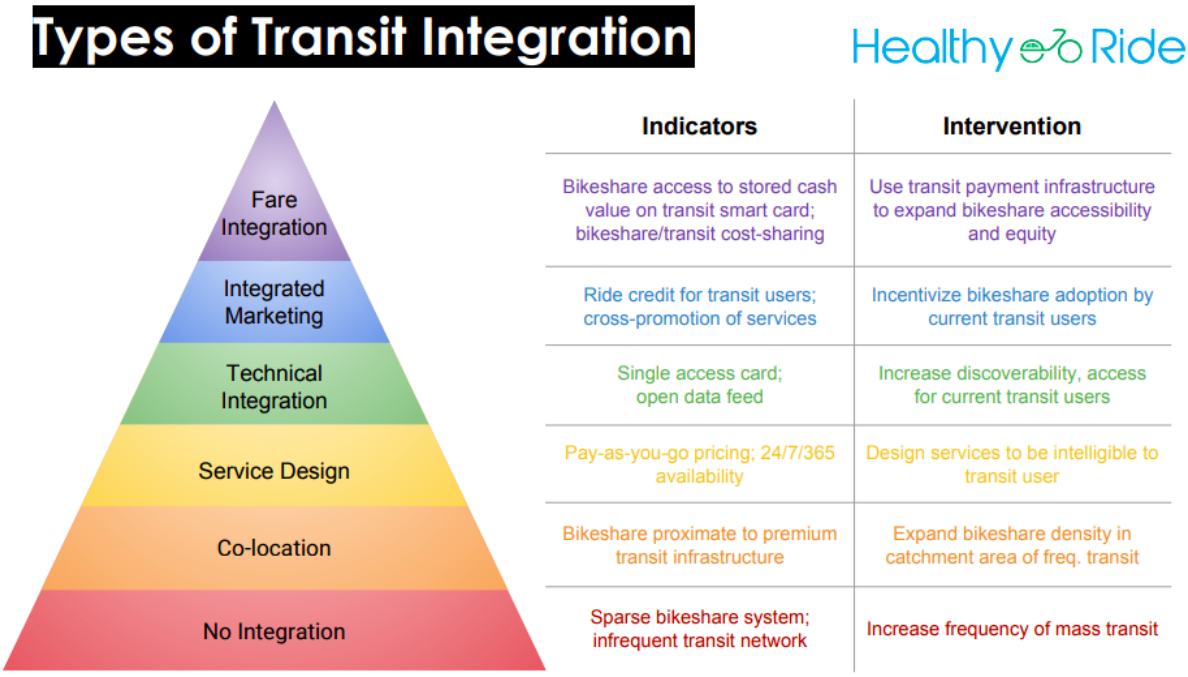
Again, like the standardization of discounts, fare structure simplification is an agency-specific consideration and depends on the characteristics of an agency's service area and service design. When considering the tradeoffs between fare simplification and differentiated pricing (e.g., distance-based or time of day pricing), it is important consider a variety of factors:

- Revenue impacts of discontinuing differentiated pricing
- System design and service standards
- Impact of increased demand on capacity during the peak
- Differences in the average trip lengths and value of service being consumed
- Implications of fare changes to offset the flattening of fares and their equity impacts
- Alternative strategies to differentiate pricing that accomplish similar outcomes (e.g., service-based fares in lieu of distance-based)

2.2.5 Multimodal Fare Integration

There has been growing interest in multimodal fare integration with the rise of interest in mobility-as-a-service (MaaS) programs. MaaS describes a shift away from personally-owned modes of transportation and towards mobility solutions that are consumed as a service. MaaS is the integration of various forms of transport services into a single mobility service accessible on demand, including a diverse menu of transport options (transit, bikeshare, carshare, rideshare, taxis, etc.).

TheRide in Ann Arbor has the potential to integrate its services with the local Arbor Bike bike share program, if desired. Integration can take place at a variety of levels, from less complex to more complex:



(Source: https://nacto.org/wp-content/uploads/2018/01/NACTO-Transit-Integration-Slide-Deck.pdf)

Any integration at the service design level or above will require the development of new policy. Any integration at the technical level or above will require the implementation of both new policy and new technology. Any of these strategies should be accompanied by a public outreach and education effort to let riders know about the integration between transit and bikeshare.

Numerous cities have chosen to integrate their transit and bikeshare services at varying levels of intensity:

- In late 2017, Pittsburgh, PA became the first city in the U.S. to offer free bikeshare access to regular transit users. Transit riders who have a ConnectCard, Pittsburgh's RFID-based smart card, can take unlimited bikeshare trips of 15 minutes or less. This integration was enabled by the fact that both the bikeshare and the transit system use RFID cards to access their systems. According to the Executive Director of Healthy Rides, Pittsburgh's bikeshare program, the first time a ConnectCard holder wants to use the bikeshare system, they must tap their smart card at a bikeshare kiosk, input their phone number, and then use the PIN number texted to their phone to verify their access to the bike. This action formally links the individual's ConnectCard to Healthy Bikes. On all subsequent trips, the user simply has to tap their smart card on the desired bike. If someone desires to use a bike for longer than 15 minutes, however, they must formally register with Healthy Bikes.
- In Los Angeles, CA, Metro administers both the city's transit and bikeshare systems. As such, Metro has moved to integrate the two systems by allowing customers to register their TAP smart card online at Metro's website, enabling the rider to use Metro bikes in addition to Metro buses and rail with the same card.
- In Milwaukee, WI, MCTS and Bublr Bikes bikeshare do not operate with the same fare payment technology. Thus, Milwaukee's solution to integration consists of placing a special Bulbr Bikes sticker onto MCTS fare cards that allows for connection to both systems. Thus, while the systems are not actually connected on the back-end in any way, the rider can use the same card to access both systems. MCTS has also begun announcing onboard information about nearby Bulbr Bike stations along with their typical route and stop information announcements. This public outreach strategy builds on locational integration; 80% of Bulbr Bike stations overlap with transit routes.

2.2.6 Regional Fare Integration

For regions with more than one transit agency, regional fare integration allows riders to transfer between modes and/or agencies more seamlessly. Peers have developed programs to manage fare integration through fare payment media or fare products. Regional fare integration can enable either interagency fare policy agreements (e.g., Seattle, WA, Los Angeles, CA) or regional fare collection technology (e.g., Chicago, IL, San Francisco Bay Area, CA). Regional fare integration can result in transparent service delivery (e.g., Phoenix, AZ, San Diego, CA). In addition to service coordination, regional fare integration can be important in providing a completely seamless experience for riders.

Interagency Fare Policy Agreements

Interagency fare policy agreements can be complex as each agency generally sets their own fare policies. There are also challenges to minimizing the revenue impact with revenue sharing of interagency fare product revenue. In the San Francisco Bay Area, CA, efforts to improve regional fare policy coordination and create a regional pass have failed in part due to the inability to sufficiently address agencies' concerns about potential revenue loss. However, in regions with strong political pressure and will, regional fare policy integration has occurred.

The transit agencies in the four counties in the Seattle, WA area successfully implemented a regionally-coordinated "uniform, single-ticket fare system" among local and regional transit providers. The process began at the staff level with a working group that defined the issues facing implementation of a regional pass. They also convened meetings with local elected officials on their Boards to get agreement on acceptable provisions for a regional pass. The risk of revenue loss was a key point, and was resolved when Sound Transit agreed to provide funding for a Fare Integration Fund to keep agencies whole with respect to fare revenue. In 1999, the agencies jointly developed a regional pass program (PugetPass) that provides access for transit users to all of the region's agencies. While each agency maintains the ability to set their own fares, the agencies all agreed to denominate their fares in $0.25 increments and to price monthly passes at 36 times the cash fare. For example, the monthly pass valid on Metro's 1-zone service costs $99 ($2.75 x 36) and is also valid on any other services with fares of $2.75 or less. Riders using that pass to board Metro's $3.25 2-zone service must pay a $0.50 upgrade fee, or must pay a $1.25 upgrade to purchase Sound Transit's $4.00 light rail fare from downtown Seattle to SeaTac Airport. In addition to the PugetPass, the participating transit agencies allow free interagency transfers with use of ORCA. A regional agreement provides for sharing revenues among the participating agencies based on the actual use of each pass sold. Prior to ORCA implementation, revenue sharing was based on results of annual rider surveys. With the introduction of ORCA, the regional pass migrated to ORCA, and ORCA data have been used for revenue allocation since 2011. The revenue sharing formula was explicitly developed to provide free transfers across agencies, ensure fair revenue distribution, and prevent cross subsidies. By encouraging the operating agencies to work together and think through the passenger experience, one of the benefits of the program has been to build better working relationships and trust among the participating agencies. Those relationships are maintained today as the region moves toward designing fare policies and procuring the next generation of the ORCA fare system.

In Los Angeles County, CA, a similar pass program (EZ Transit Pass) has been created, but the program is generally more expensive than an agency-specific pass so adoption is relatively low. Transit agencies also offer interagency transfers, which are more commonly used. Due to how operations funding was allocated in the region based on the base fare, transit agencies in LA County tend to charge $0.50 for interagency transfers in order to maintain a low base fare. Since each transit agency sets its own fare and the fare including a transfer is not based on the higher of the two fares, the cost of a trip that requires multiple agencies will vary by direction of travel (e.g., a Foothill Transit to LA Metro trip costs $1.50 + $0.50, whereas a LA Metro to Foothill Transit trip costs $1.75 + $0.50).

Interagency fare policy agreements can also be relatively simple and result in standardization of rider category discounts (e.g., same senior or youth age threshold) or result transit agencies simply accepting each others fare products. The acceptance of each other fare products becomes complicated as transit agencies migrate to electronic fare payment methods and connecting transit agencies may not have compatible fare collection technology. For example, the magnetic stripe passes used on TheRide cannot be read by WAVE since WAVE does not have compatible Odyssey fareboxes and instead uses a drop box.

Regional Fare Collection Technology

Transit agencies with integrated fare policy agreements and sophisticated revenue sharing, such as in the Puget Sound region of Washington, have used fare collection technology to better enable

interagency transfers and products, providing a more seamless experience for riders while also providing the data needed for revenue allocation. With the introduction of magstripe tickets, smart cards, and mobile ticketing, both fare collection and data collection have become easier and more accurate, making it possible to rely on data from the fare system to report ridership and to allocate fare revenues by mode and agency. Prior to the introduction of electronic fare collection, transit agencies used paper passes and transfers as well as on-board tallies at the farebox, rider surveys, passenger counts, or ticket sales data to allocate ridership and revenue to modes or agencies.

Regions without regional integrated fare policy agreements have also used technology to improve the rider's experience transferring between agencies. These regions have at times launched regional fare collection systems (e.g., Chicago, IL, San Francisco Bay Area, CA) while others have launched with technology integration (e.g., St. Louis, MO).

In 2011, the Illinois Governor Quinn signed into law Public Act 97-0085, amending the Regional Transportation Authority (RTA)[1] Act to encourage the increased use of technology to enhance the customer experience and increase transit ridership. One requirement of the legislation was for RTA to develop an enhanced interagency transfer policy by January 1, 2013. While there continues to be no comprehensive regional fare policy regarding interagency transfers and/or fare products, the three transit agencies in the region have a variety of interagency fare products, mostly between CTA, the transit provider in Chicago, and Pace, the suburban transit provider, with add-on passes with the commuter rail provider, Metra. In addition to addressing potential revenue loss associated with introducing new intergancy fare policies and products, an ongoing challenge has been technology given that Metra is an ungated rail system without card readers onboard or on the station platforms to accept smart card fare payments. As a result, as the integrated regional fare payment system was implemented, Metra's fare collection integration has been limited to mobile ticketing using the Ventra App, which is integrated with the smart card back office.

In the San Francisco Bay Area, CA, pursuant to Metropolitan Transportation Commission (MTC)[2] Resolution No. 3866, MTC is mandated by Section 66516 of the California Government Code to promote the coordination of fares between transit agencies within its jurisdiction, effective 1997. While regional fare coordination has been explored in 2008 as part of the Integrated Fare Study led by SFMTA and more recently in 2013 as part of a purview of the C2 Fare Coordination Subcommittee for the next generation Clipper smart card. The 2008 study was conducted in response to Regional Measure 2 (2004), which raised the toll on State-owned bridges in the Bay Area to fund congestions relief projects, including planning for better transit connections. RM2 required the TransLink (now Clipper) Consortium to develop a plan for an integrated fare program covering regional rapid transit trips - specifically by making it easier for transit riders "whose regular commute involves multizonal travel and may involve two or more operators." So the study focused on commute trips that involved two or more operators. The study was constrained by the Consortium's requirement that any recommendations had to be

[1] The Regional Transportation Authority (RTA) is the financial and oversight body for the three transit agencies in northeastern Illinois.

[2] The Metropolitan Transportation Commission (MTC) is the transportation planning, financing and coordinating agency for the nine-county San Francisco Bay Area.

revenue neutral to the transit agencies. Since they couldn't use fares to attract riders, and since RM2 made increasing transit ridership a goal for the study, the study concluded that investments in marketing, promotions, service, and service connectivity improvements would probably attract additional transit riders more effectively than revenue neutral fare integration. Similar obstacles emerged in the recent planning for C2. However, some gains in regional fare coordination were made with transit agencies migrating to consistent age thresholds for youth and seniors.

In the St. Louis region there are several transit agencies. As Bi-State Development, which operates St. Louis Metro, designed and procured a new smart card system they intentionally made it open to the region. This was accomplished by procuring the back office and the field equipment separately. The back office vendor (Indra) was required to deliver a set of Application Programming Interfaces, or APIs that allow other vendors' field equipment to communicate with the smart card back office. In a later procurement, Bi-State engaged Scheidt and Bachmann to install fareboxes that included smart card readers on their fleet. Scheidt and Bachmann used the APIs to receive configuration data from and send transaction data to the Indra back office.

This architecture allows other regional agencies to procure their own on-vehicle devices and integrate them with the Indra regional back office. Madison County Transit has done this and accepts the regional smart card on their buses.

A similar architecture is being deployed in the Puget Sound region for the next generation of their One Regional Card for All (ORCA) regional smart card. The back office vendor will provide a series of APIs for querying the regional smart card system and posting transactions. When the system rolls out one of the seven regional agencies will use a different field equipment from the others. Going forward if any of the agencies wants to change field equipment they will be able to independently.

Regional Fare Integration

In Phoenix, AZ and San Diego, CA, local/municipal transit providers have come together to develop common fare structures and pricing, but have also taken fare coordination to the next step, to achieve regional fare integration. Valley Metro in Phoenix and MTS in San Diego are umbrella agencies that give transit services operated or funded by different jurisdictions the appearance to the public of a single regional operation, with common logos and vehicle paint schemes as well as fares. In both regions, fares are structured by service type, but not by operating or funding agency. In both cases, consolidated governance structures have been created to plan and deliver transit services, based on the German "Verkehrsverbund" transport federation concept.

In Phoenix, the Regional Public Transportation Authority (RPTA)[3] was formed in 1985. Several jurisdictions are involved in the facilitation of transit services with three primary providers that contract

[3] The Regional Public Transportation Authority (RPTA) was formed in 1985 as the result of Proposition 300 in which Phoenix-area voters approved a one-half percent sales tax increase for expansion of the local freeway system and expansion of mass transit. In the 1980s and early 1990s, the region had a fragmented transit system, with the majority of transit service provided by the City of Phoenix (Phoenix Transit System). The cities of Mesa and Scottsdale implemented their own services starting in 1990. The jurisdictions in the county wanted more transit services for their respective cities. Many purchased transportation service from the Phoenix Transit System;

for fixed route transit service in the Phoenix area: the RPTA, the City of Phoenix, and the City of Tempe. Jurisdictions enter into intergovernmental agreements with the transit providers for service. Transit providers buy and sell service by revenue mile in order to compensate for cross-jurisdictional issues. In 1993, the Phoenix transit agencies voted on a unifying name for transit within the region, Valley Metro. This set into motion unifying regional transportation decision-making and coordination as well as unifying the fare structure. The RPTA Board of Directors and City of Phoenix City Council set and approve fare changes for the region's transit service. The fare structure is shared throughout the region. The City of Phoenix handles all of the fare media transactions and transit operators collect cash fares. City of Phoenix allocates fare revenue based on boarding locations. The transit vehicles are equipped with sophisticated fareboxes able to allocate fare revenue correctly to the multiple sponsors of the service.

In San Diego County, further consolidation occurred in 2003, when the State Legislature, citing the "imperative need" for coordinated and comprehensive planning and implementation of transportation projects, mandated the consolidation of activities performed by SANDAG (the regional transportation planning agency), MTS, and NCTD (the agency the provides transit services in the northern part of the county and operates commuter rail service between the NCTD and MTS service areas). As a result, SANDAG was assigned responsibilities for all transportation planning, funding allocation, project development, and construction in the county. MTS and NCTD retained responsibility for service planning and delivery - and for participating in the Regional Fare Structure Working Group to review the comprehensive fare ordinance each year during the annual budget process and propose changes to SANDAG's Comprehensive Fare Ordinance. The Fare Ordinance is consistent with SANDAG Board Policy No. 029, Regional Fare Policy, which provides the regional framework for transit fares, including a uniform fare structure, transfer policy, and agreement for revenue sharing of regional fare products. SANDAG sets annual farebox recovery targets for each service; transit agency boards review and provide input on proposed changes to the fare ordinance and solicit public input.

2.2.7 Strategies for Regular Fare Reviews and Changes

Historically, transit agencies have found it difficult to increase fares, and many have avoided fare changes as long as possible. However, as a matter of good business practice, transit agencies should review fares regularly, to plan for fare changes necessary to ensure that fare revenues achieve agency objectives.

Some transit agencies have adopted policies that are intended to facilitate regular reviews of fares (e.g., Santa Clara VTA in San Francisco Bay Area, CA requires review every two years as part of its Biennial Budget), or to establish a program of regular fare increases (e.g., UTA in Salt Lake City, UT, RTD in Denver, CO). These policies are often tied to specific goals, such as increasing the farebox recovery ratio or increasing fares to keep pace with an index such as the Consumer Price Index (CPI). UTA adjusts fares on a regular basis in response to changes in fuel prices. RTD's Strategic Business Plan assumes a 10%

however, the municipalities preferred not to use the Phoenix Transit System brand within their jurisdiction. The region's municipalities worked with RPTA to create a regional brand. The City of Phoenix and the surrounding municipalities agreed to the regional branding of the vehicles. The Valley Metro Board member agencies include Avondale, Buckeye, Chandler, El Mirage, Gilbert, Glendale, Goodyear, Maricopa County, Mesa, Peoria, Phoenix, Scottsdale, Surprise, Tempe, Tolleson and Wickenburg.

fare revenue increase every three years to offset operating expense increases. A growing number of transit agencies who have deferred fare increases (e.g., Foothill Transit in Los Angeles, CA, Santa Clara VTA in San Francisco Bay Area, CA) have also been implementing phased fare increases to minimize the fare increase in any given year. Policies such as these help to manage customer expectations, provide a policy basis for staff review and recommendation and Board action, avoid large infrequent fare increases, and provide a more sustainable approach to financial management.

A very short list of agencies that have adopted fare review policies includes Sacramento RT in CA, Champaign-Urbana Mass Transit District in IL, Valley Metro in Phoenix, AZ, and the WETA in San Francisco Bay Area, CA. While these agencies are diverse, they are all committed to sound and sustainable business practices. The following is an example of a policy on fare reviews that was developed with one of these agencies:

Fare Review Policy

Purpose: The purpose of the fare review policy is to ensure a fair and reasonable relationship between the cost of service provided and the fare charged for such services.

Policy: The agency will review transit fares annually to ensure that they reasonably reflect the cost of services provided.

Objective: It is the agency's objective to schedule and adopt regular fare adjustments as part of its long term financial plan. Fare changes will be targeted to achieve specific farebox recovery objectives, to ensure that the agency is able to maintain and improve the services its operates.

Procedures: The agency will review its fare policy annually. The following procedures will be followed in implementing the fare review policy:

- Agency management will prepare and submit a report to the Board assessing fares relative to inflation, peers, operating cost recovery, financial need, and other relevant considerations as part of the annual budget process
- Agency management will recommend changes to, or continuance of, the existing fare structure and pricing based on their analysis. Any price change will consider standing fare pricing policies (e.g., all base fares are rounded to the nearest $0.25; all pass prices are rounded to the nearest $1.00), payment strategies, impact on operations, and expected impacts on ridership and fare revenue
- No Board action shall be required unless a change to the adopted fare structure is recommended
- If a multi-year fare change is recommended, a public hearing shall be provided as part of the initial adoption. An opportunity for public comments shall be provided prior to each fare change during the multi-year fare policy period

- Adopted fare changes shall take effect automatically, without further Board action, unless the Board takes action to adopt an alternative change or makes a decision not to implement the previously adopted fare change

3 Attachment #1: Fixed Route Fare Media Chart

TheRide

Fixed-Route Fare Media Chart

Name of Fare / Pass	Rider Pays to Ride	Swipe Pass	Show ID	Fare Media	Farebox Key
Full Cash	$1.50				1st > Left Panel
Transfer	FREE	●			5*
Day Pass	$4.50	●			3rd < Right Panel
Fare Deal *Value - Income Eligible* *Value - Student* *Value - Senior* *Value - Disability*	$0.75		●		4th > Left Panel 1 2 3
ADA Fare	FREE w/ AAATA Issued ID		●		8
GoldRide	FREE w/ AAATA Issued ID		●		7
Students (Grades K-12)	$0.75 w/ School Issued ID $1.50 without School ID**		●		1 1st > Left Panel
Children (5yr & Younger)	FREE				2nd < Right Panel
Full Fare Token	One Token				1st > Left Panel
Reduced Fare Token	One Token with ID		●		
30 Day Flex Pass	FREE	●			
Value Pass - Senior	FREE	●	●		
Value Pass - Income Eligible	FREE	●	●		

● Swipe Pass ● Show ID *Press Upon Malfunction **At Driver's Discretion

January 2015

TheRide

Fixed-Route Fare Media Chart

Name of Fare / Pass	Rider Pays to Ride	Fare Media	Farebox Key
Value Pass - Disability	FREE	● ● 	
Value Pass - Student	FREEE	● ● 	
AAPS Exceptional Pass	FREE w/ School Issued ID *(at Driver's discretion)*	● ● 	
EMU Pass	FREE w/ School Issued ID	● ● 	
WCC Pass	FREE (Check Photo) *(Valid only at WCC. May receiveve transfer.)*	● ● 	
MRide Pass	FREE (Check Photo)	● ● 	2nd > Left Panel*
go!Pass / go!Pass SmartCard	FREE (Check Photo)	● 	Proximity reader
ExpressRide Commuter Pass	$6.25 *30-Day swipe 10-ride punch*	● 	1st > Left Panel D
FootballRide & ArtFairRide	$1.50		D
Ride TheRide On Us	FREE 2-Ride Punch		2nd < Right Panel
Employees	FREE with AAATA Issued ID	● 	2nd < Right Panel
Change Card	*(Dip card shows value on back.)*		C

● Swipe Pass ● Show ID *Press Upon Malfunction

TheRide

Fixed-Route Fare Media Chart

Name of Fare / Pass	Specific Eligibility	Duration of Use
Full Cash		One Way
Transfer	w/ Cash Fare or WCC	90 Minutes
Day Pass		11:59PM
Fare Deal	w/ K-12 or Fare Deal Card	Check Exp Date / Photo
ADA Fare		Check Exp Date / Photo / PCA
GoldRide		Check Photo
Students (Grades K-12)	Grades 9-12 with ID*	
Children	5 Yrs and Younger	
Full Fare Token		One Way
Reduced Fare Token	w/ K-12 or Fare Deal Card	One Way
Flex Pass		30 Days from Validation
Value Pass - Senior	w/ Fare Deal "S" Card	30 Days from Validation
Value Pass - Income Eligible	w/ Fare Deal "IE" Card	30 Days from Validation
Value Pass - Disability	w/ Fare Deal "D" Card	30 Days from Validation
Value Pass - Student	w/ School ID*	30 Days from Validation
AAPS Exceptional Pass	w/ School ID*	School Year (Sept - June)
EMU Pass	EMU Student or Staff ID	
WCC Pass	Only at WCC Bus Stop	Check Exp Date & Photo
MRide Pass	UM Student or Staff	Check Exp Date & Photo
go!Pass	Downtown Employee	One Year (Nov - Oct)
go!Pass SmartCard	Downtown Employee	
ExpressRide Commuter Pass		30 Swipe or 10-Ride Punch
FootballRide & ArtFairRide		UM Football Season / Art Fair
Ride TheRide On Us		Check Expiration Date
Employees		
Change Card	Overpayment of $0.25	

* At Driver's Discretion

TheRide

Fixed-Route Fare Media Chart

Name of Fare / Pass	Application Cost of Fare / Pass
Full Cash	
Transfer	
Day Pass	$4.50
Fare Deal	
ADA Fare	
Good As Gold	
Students (Grades K-12)	Inquire with School
Children (5 & Younger)	
Full Fare Token	$15.00 / Pkg of 10
Reduced Fare Token	$75.00 / Pkg of 100
Flex Pass	$58.00
Value Pass - Senior	$29.00
Value Pass - Income Eligible	$29.00
Value Pass - Disability	$29.00
Value Pass - Student	$29.00
AAPS Exceptional Pass	Inquire with School
EMU Pass	Inquire with School
WCC Pass	
MRide Pass	
go!Pass	
ExpressRide Commuter Pass	$125 / 30-Days; $62.50 /10-Ride Ticket
FootballRide & ArtFairRide	Inquire with AAATA
Ride TheRide On Us	Inquire with AAATA
Employees	
Change Card	

4 Attachment #2: Discount Fare Categories & Eligibility

City	Rider Category	Fixed Route Discount	Eligibility	Restrictions
Ann Arbor, MI	Fare Deal	50%	K-12 students, persons with disabilities, seniors 60-64 years, low income riders	Requires agency-issued photo ID Card (K-12 student ID)
	GoldRide	Free	Seniors 65+	Requires agency-issued photo ID Card
	ARide	Free	Persons with disabilities qualifying for ADA paratransit service	Requires agency-issued photo ID Card
Champaign-Urbana, IL	Disabled	Free	Persons with disabilities, Medicare Card holders under 65	Requires agency-issued photo ID Card
	Senior	Free	Seniors 65+	Requires agency-issued photo ID Card
	School Fare	0-50%	K-12 students	Proof of age may be requested
	Veterans	Free	Veterans	Requires agency-issued ID Card for 3-year bus pass
Erie, PA	Reduced Fare	52%	Persons with disabilities, Medicare card holders	Requires agency-issued photo ID Card; excludes 7-8 am & 4:30-5:30 pm
	Senior	Free	Seniors 65+	Requires agency-issued photo ID Card
Gainesville, FL	ADA Certified	Free	ADA Certified persons	Requires ADA photo ID
	Medicaid/Medicare	50%	Medicare and Medicaid card holders	Requires agency-issued photo ID Card or valid photo ID and Medicare/Medicaid card
	Senior	50%	Seniors 65+	Requires agency-issued photo ID Card or valid photo ID with age
	Student	50%	K-12 students, City College students	Requires valid student photo ID for college students; no ID necessary for students K-12
	Veterans and Active Duty Military	50%	Veterans and Active Duty Military	Requires agency-issued photo ID Card or valid Veteran/Military photo ID
Grand Rapids, MI	Disabled	52%	Persons with disabilities, Medicare Card holders under 65	Requires agency-issued photo ID card or Medicare Card
	Senior	52%	Seniors 65+	Requires Medicare card, driver's license, or other proof of age
	Student	22%	K-College	Requires valid school ID; only applies to 10-Ride Ticket
Hartford, CT	Senior/Disabled	52%	Persons with disabilities, Medicare card holders, seniors 65+	Requires agency-issued photo ID card or Medicare Card
	Youth	20%	Age 5-18	Proof of age may be requested

Peoria, IL	Disabled	50%	Persons with disabilities, Medicare Card holders	Requires agency-issued photo ID card or Medicare Card
	Senior	50%	Seniors 65+	Requires agency-issued photo ID card, Medicare Card, state driver's license or identification card
	Student	50%	K-12 students, college students	Requires valid school or college ID, class schedule, or report card
	Veteran	50%	Eligible veteran status (statuses other than dishonorable or "uncharacterized" status)	Requires agency-issued photo ID card
Roanoke, VA	Disabled	52%	Persons with disabilities	Requires agency-issued photo ID card
	Senior	52%	Seniors 65+	Requires agency-issued photo ID card
	Student	52%	Students 11-18	Requires school ID or agency-issued photo ID card
Shreveport, LA	Disabled	52%	Persons with disabilities	Requires agency-issued photo ID card
	Senior	52%	Seniors 65+	Requires agency-issued photo ID card
	Student	50%	Students age 12 through the 12th grade	Requires agency-issued photo ID card; only applies to monthly pass
South Bend, IN	Disabled	50%	Persons with disabilities, Medicare Card holders	Requires agency-issued photo ID card or Medicare card
	Senior	50%	Seniors 65+	Requires agency-issued photo ID card or valid photo ID with age
	Student	15%	Students K-12	Requires student ID or proof of age; only applies to 31-Day pass
Syracuse, NY	Disabled	50%	Persons with disabilities, Medicare Card holders	Requires agency-issued photo ID card or Medicare Card and photo ID
	Senior	50%	Seniors 65+	Requires agency-issued photo ID card or Medicare Card and photo ID
	Children	50%	Age 6-9 accompanied by adult	No restrictions