



SOUTH CENTRAL TRANSIT AUTHORITY

TRANSIT DEVELOPMENT PLAN UPDATE

APPENDIX I: FARE ANALYSIS

JUNE 2018



FARE STRUCTURE ANALYSIS

Introduction

The purpose of this fare analysis is to evaluate the existing zone-based fare structure of SCTA, conduct a peer review of fare structures at similar regional transit agencies across the country, and determine strategies to simplify the fare structure while maintaining or increasing ridership and revenue, and with a structure that is more standardized between BARTA and RRTA. The analysis evaluated the impacts of fare structures and pricing changes on ridership, revenue, and other considerations (such as equity/Title VI). Both short-term and long-term recommendations on the fare structure are included in this analysis.

Current Fare Revenue and Operating Costs

The SCTA FY 2017-18 Operating Budget Summary reported that passenger fare revenues for 2016-17 were estimated at \$12,770,324, and \$13,656,957 was budgeted for 2017-18; an increase of almost 7%. Table 1 provides an overview of the fare revenues and operating expenses for BARTA and RRTA for both fixed route and paratransit service. Interestingly, the revenue for ten trip tickets and day passes are the mirror opposite of each other for BARTA and RRTA. This is due to the significant discount offered by BARTA with their all-day pass, but lack of discount on the ten trip tickets. In contrast, RRTA's day pass is barely discounted, the rate matches a two-way base cash fare, while their 10-ride pass has a significant discount.

Table 1: Fare System Financial Overview – Fixed Route

Fare Type	BARTA / Berks County	RRTA / Lancaster County
Fixed Route		
Passenger Fare Revenue (2016/7) Estimated		
Cash	\$1,493,622	\$1,078,719
31-Day Pass	\$662,526	\$506,058
Ten Trip Tickets/10-Ride Pass	\$52,496	\$401,106
All/One Day Pass	\$573,746	\$83,967
Special Fare – Route Specific	\$0	\$250,000
Total	\$2,782,390	\$2,319,850
Senior Citizen	\$870,000	\$650,900
Total Passenger Revenue	\$3,652,390	\$2,970,750
Total Operating Expenses	\$9,974,766	\$9,517,704
Farebox Recovery Ratio¹	37%	31%
Passengers²	2,800,742	1,789,940
Average Fare per Passenger³	\$1.40	\$2.02

Table 2: Fare System Financial Overview – Shared Ride

Fare Type	BARTA / Berks County	RRTA / Lancaster County
Shared Ride/Paratransit		
Passenger Fare Revenue (2016/7) Estimated		
Cash	\$141,000	\$0
DPW-MATP	\$2,584,416	\$2,462,000
Office of Aging (OOA)	\$81,500	\$279,000
BH/DS	\$375,240	\$31,506
Other Agencies	\$405,000	\$1,694,000
Program Offset	(\$150,578)	(\$94,000)
Total	\$3,436,578	\$4,372,506
Senior Citizen	\$1,542,000	\$2,000,000
Total Passenger Revenue	\$4,978,578	\$6,372,506
Total Operating Expenses	\$5,829,320	\$6,895,362
Farebox Recovery Ratio¹	85.41%	92.42%
Passengers	240,716	296,155
Average Fare per Passenger³	\$20.68	\$21.52

Source: SCTA 2017-18 Operating Budget Summary

1: Farebox Recovery Ratio = Fare Revenue / Operating Expenses

2: BARTA & RRTA Route Performance Analyses FY 2016-17

3: Average Fare per Passenger = Total Passenger Revenue / Passengers

BARTA / RRTA Fare Structure Comparison

As shown in Table 2, both BARTA and RRTA have the same base cash fare of \$1.70. The major difference between the fare structure of BARTA and RRTA is that RRTA utilizes a multiple tiered zone system with four (4) different zones, while BARTA only has only one additional fare zone on top of the base fare. Ten-trip tickets or 10-Ride passes¹ and 31-Day passes, as listed in Table 3, offer discounted rides when compared to cash fares, but generally RRTA offers greater discounts than BARTA. A one-day or all-day pass is also offered by both transit agencies for riders making multiple trips in one day. BARTA provides additional discounts to students and park-n-ride users who purchase multiple-trip tickets and passes, however RRTA does not offer these same types of products.

¹ Pass and ticket type names may be used interchangeably when referring to products offered by BARTA and RRTA.

Table 3: Comparison of BARTA and RRTA Cash Fares

Fare Type	BARTA	RRTA
Base Fare	\$1.70	\$1.70
Zone Fare	\$0.25 (in addition to Base Fare; see individual route schedules)	One Zone - \$1.85 Two Zones - \$2.15 Three Zones - \$2.50 Four Zones - \$2.90
Transfers	\$0.25 (invalid after 2 hours; transfer passes issued on the first bus for the second bus)	Base Zone - \$0.05 Zone 1 - \$0.20 Zone 2 - \$0.50 Zone 3 - \$0.85 Zone 4 - \$1.25 (can be used until the last time printed on it; transfer tickets are requested when riding the first bus, but paid for when boarding the second bus)
Student Fare	\$1.20 (grades 1-12 with student ID)	Base Zone - \$1.35 Zone 1 - \$1.50 Zone 2 - \$1.80 Zone 3 - \$2.15 Zone 4 - \$2.25 (K-12; high school students must show student ID)
Persons with Disabilities and Medicare Card Holders (Half Fare Program)	\$0.85 (with Reduced Fare ID Card issued by BARTA)	Base Zone - \$0.85 Zone 1 - \$0.90 Zone 2 - \$1.05 Zone 3 - \$1.25 Zone 4 - \$1.45 (only during non-peak hours)
Senior Citizens	FREE (with PennDOT Senior Citizen Transit ID Card)	FREE (with PennDOT Senior Citizen Transit ID Card)
Children 5 and under	FREE (up to 3 with paying adult)	FREE (with a paying adult)

Source: BARTA, RRTA

Table 4: Comparison of BARTA and RRTA Multiple Ride Passes

Pass/Multi-Ride Ticket Type	BARTA	RRTA
31-Day Pass (Adult)	\$47.00 (ride anywhere)	Base Zone - \$35.00 Zone 1 - \$40.00 Zone 2 - \$47.00 Zone 3 - \$55.00 Zone 4 - \$64.00
31-Day Pass (Student)	\$29.00 (ride anywhere)	Student discounts not offered
31-Day Pass (Park-N-Ride)	\$31.00 (to and from park-n-ride lots only)	No special discount for park-n-ride lots
Ten Trip Tickets (Adult)	\$17.30 (ride anywhere)	Base Zone - \$12.00 Zone 1 - \$13.50 Zone 2 - \$15.50 Zone 3 - \$18.50 Zone 4 - \$21.50
Ten Trip Tickets-Half Fare (qualifying customers only)	Not available	Base Zone - \$6.00 Zone 1 - \$6.75 Zone 2 - \$7.75 Zone 3 - \$9.25 Zone 4 - \$10.75
Ten Trip Tickets (Student)	\$11.00 (ride anywhere, grades 1-12 with student ID)	Student discounts not offered
Day Pass	\$3.00 (in advance, 2 days to ship) \$4.00 (on bus)	\$3.40 (up to Zone 2) \$5.25 (all Zones)

Source: BARTA, RRTA

Table 4 provides an interesting comparison of potential savings when multi-ride tickets/passes are purchased and utilized for a given number of trips, when compared to single ride cash fares. There is significant value in the 31-day passes when used for the equivalent of 2 trips per day, over the typical number of work days in a month (22) for a 5-day work schedule. BARTA ten trip tickets are actually more expensive than the same number of trips paying the cash fare, therefore it simply functions as a comparative, convenient alternative to paying in cash. Typically, day passes are priced assuming multiple trips, however BARTA's pass is discounted so much that it is cheaper than two rides. Because of the zone system, RRTA offers two all-day passes, one up to two zones, and the other includes all zones. As expected the savings is greater savings if riders are traveling to the farther zone permitted under that particular pass.

Table 5: Comparison of BARTA and RRTA Multiple Ride Pass Savings vs. Cash Fare

Pass/Multi-Ride Ticket Type	BARTA		RRTA	
	Cash Cost	Pass Savings	Cash Cost	Pass Savings
31-Day Pass (Adult) (assumed 44 rides)	Base - \$74.80 Zone - \$85.80	\$27.80 \$38.50	Base - \$74.80 Zone 1 - \$81.40 Zone 2 - \$94.60 Zone 3 - \$110.00 Zone 4 - \$127.60	\$39.80 \$41.40 \$47.60 \$55.00 \$63.60
31-Day Pass (Student) (assumed 44 rides)	Base - \$52.80 Zone - \$63.80	\$23.80 \$34.80	N/A	N/A
31-Day Pass (Park-N-Ride) (assumed 44 rides)	Base - \$74.80 Zone - \$85.80	\$43.80 \$54.80	N/A	
Ten Trip Tickets (Adult)	Base - \$17.00 Zone - \$19.50	-(\$0.30) -(\$0.30)	Base - \$17.00 Zone 1 - \$18.50 Zone 2 - \$21.50 Zone 3 - \$25.00 Zone 4 - \$29.00	\$5.00 \$5.00 \$6.00 \$6.50 \$7.50
Ten Trip Tickets (Half Fare)	N/A	N/A	Base - \$8.50 Zone 1 - \$9.00 Zone 2 - \$10.50 Zone 3 - \$12.50 Zone 4 - \$14.50	\$2.50 \$2.25 \$2.75 \$3.25 \$3.75
Ten Trip Tickets (Student)	\$12.00	\$1.00	N/A	N/A
Day Pass (assumed 2 rides)	Base - \$3.40 Zone - \$3.90	\$0.40* \$0.90*	2 Zone - \$4.30 All Zone - \$5.80	\$0.90 \$0.55

Source: BARTA, RRTA

*Only if purchased 2 days in advance. Day passes cost \$4.00 if purchased on the bus.

Table 5 provides BARTA Special Services and RRTA Red Rose Access fares when riding paratransit service. ADA paratransit fares for persons with disabilities (PwD) are required by federal law to be no more than twice the base cash fare for the same or equal trip. BARTA and RRTA full fares apply for companions, but personal care attendants ride free of charge. Full fares are applicable to non-ADA riders under 65. The 15% copay is a fare charged to seniors when riding paratransit service; fares on fixed route are free. The copay averages about 15% of the total cost of the trip.

Table 6: Comparison of BARTA and RRTA Paratransit Service

Mileage	BARTA			RRTA		
Mileage	Full Fare	15% Copay	PwD Copays	Full Fare	15% Copay	PwD Copays
0-1.99	\$16.70	\$2.55	\$3.40	\$13.70	\$2.10	\$2.40
2-3.99	\$21.00	\$3.15	\$3.40	\$17.30	\$2.60	\$2.60
4-5.99	\$25.30	\$3.80	\$3.80	\$21.00	\$3.15	\$3.15
6-9.99	\$34.50	\$5.20	\$5.20	\$31.50	\$4.75	\$4.75
10-15.99	\$42.00	\$6.30	\$6.30	\$38.30	\$5.75	\$5.75
More than 16	\$49.60	\$7.45	\$7.45	\$45.25	\$6.80	\$6.80
Out of County (10 miles outside)	\$50.00	\$7.50	\$7.50	\$50.00	\$7.50	\$7.50
ADA Co-pays	Flat Co-pay			Miles	Fare	
	\$3.40			0-5.99	\$2.40	
				6-9.99	\$4.00	
				10-15.99	\$4.25	
				16+	\$4.50	
Companions and Escorts	Full Fare			Full Fare		
Personal Care Attendants	Free			Free		
Access to Jobs Fare	--			\$3.00		
Medical Assistance Transportation Program	Fixed Route 20 – Trip Ticket					

Source: BARTA, RRTA

When to Pay / Where to Buy Passes

Exact change is required when paying cash fares on both BARTA and RRTA buses. BARTA tends to sell more one-day passes than RRTA. Conversely, RRTA sells more 10-ride tickets. This is likely due to the fact that 10-trip tickets from BARTA cost more than the cash fare.

BARTA

The base fare or trip ticket is due when boarding the bus. If at any time during the trip the bus crosses the fare zone boundary, customers must deposit a zone fare when exiting the vehicle.

Transfer fares, along with base fares, are paid when entering the vehicle. Riders must request a transfer ticket from the driver. BARTA pass holders do not need to purchase transfers.

BARTA one-day passes are available for purchase on all vehicles. 10 Trip Tickets, and 31 Day Passes are available for advance purchase at BARTA offices, the BTC, and at Boscov's sales locations. One-day passes, 10 trip tickets, and 31-day passes can also be purchased on BARTA's website. Online orders are mailed in approximately 2 business days. Additional sales outlets are provided but are not documented on the website, including various community facilities or schools.

The pass sales report for the most recent month available (February 2018) showed that most fare products are purchased at the BTC. The list below summarizes pass sales locations.

- BTC – 12,497
- Berks Connections/Pretrial Service – 2,300
- YMCA Reading Berks – 667
- Ops Center (Mail Orders) – 548
- Ops Center (On-line) – 267
- Berks County Counseling Center – 47
- Opportunity House – 3
- Other Locations - 0

RRTA

The full fare (base plus zone) is due when boarding the bus on city routes (Routes 1-5). On county routes (Route 10-20) customers pay when they get off the bus when traveling into or out of Lancaster City. 10 ride passes do not expire, and customers do not have to worry about exact change or calculating the zone fares.

For transfer fares, customers must request a transfer from the first bus driver. The transfer fare plus any additional zone fare is paid when boarding the second bus.

An All Day Pass Zone 2 or All Day Pass All Zones can be purchased on the bus. Additional zone charges apply beyond Zone 2 with an All Day Pass Zone 2. All Day Pass All Zones are good for all zones on any RRTA bus route.

All day passes, 10 ride passes, 31-day passes, and half fare 10 ride passes are available for purchase online or at the RRTA Information Center or the RRTA Operations Center. Online orders are mailed in approximately 2 business days.

The pass sales report for the most recent month available (February 2018) showed that most fare products are purchased at QSS. The list below summarizes pass sales locations (Note: Zone 2 and All Zone pass sales are combined).

- QSS – 1,425
- Spanish American Civic Association – 300
- Gatehouse – 110
- Tabor Community Services – 100
- Operations Center – 56
- Ops Center (On-line) – 20
- Other Locations - 0

Available Programs

Half Fare Program

Both BARTA and RRTA offer Half Fare Programs for qualifying persons with disabilities (Medicare card holders and those verified by doctors) and persons over age 65. Customers with a Reduced Fare ID (BARTA) or Half Fare ID (RRTA) can ride at half of the cash fare. Half fares are available all day every day to BARTA customers, and at all times except for weekdays between 7:00-8:00 AM and 4:30-5:30 PM for RRTA customers.

Transit Vouchers

Available to RRTA customers, RideECO vouchers are offered by the Delaware Valley Regional Planning Commission (DVRPC) and can be used to buy RRTA passes. It saves employers and commuters money, because the program takes advantage of federal legislation that allows tax free dollars to pay for transit fares.

RRTA Sales Outlet Program allows employers to provide RRTA passes to their employees at their place of business. Employers can pay for the entire cost of the passes or pay a portion of the cost. The convenience of providing the passes at the employee's place of work is an added bonus for employees. Also, there are tax benefits for both the employer and employee.

Commuter Services of South Central PA helps employers set up pre-tax purchases of up to \$245 per month for employees to purchase transit fares.

The availability of transit vouchers is not documented on BARTA's website.

Partnerships

RRTA has partnered with Harrisburg Area Community College (HACC) and Millersville University to provide free rides on particular routes, while classes are in session during the fall and spring semesters. Students must show their student ID when boarding the bus.

Previously, HACC students were able to ride RRTA Route 20 all day and Route 14 after 5:20 PM for free. On weekends, HACC students could ride Route 13 to the HACC Campus and Route 14 to the HACC Campus for free. This program ended as of January 1, 2018, due to the discontinuation of funding from HACC.

Millersville University students may ride Route 16, MU Park City Xpress, and MU Xpress for free.

There are no similar school or other partnerships documented on RRTA's website.

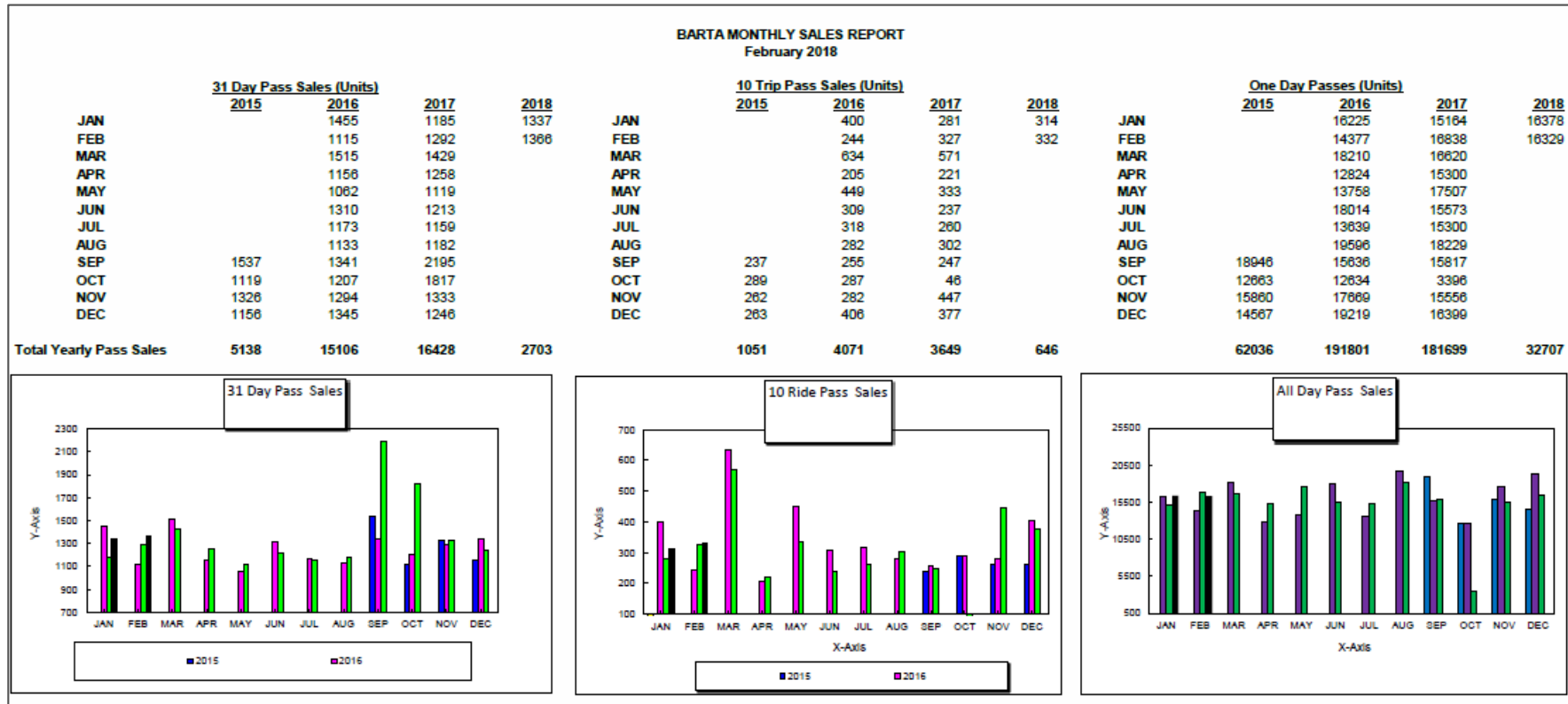
Pass Sales

BARTA pass sales reports indicate that the one-day pass is significantly more popular than any multi-ride ticket or pass, over 10 times more day passes are sold when compared to a 31-day pass. The 10-ride ticket is only equivalent to about 25% of 31-day pass sales, and less than 2% of one-day pass sales. In October 2017 25 cent rides were made available for the month to encourage more ridership. This promotion had a significant impact on pass sales, but mostly impacted one-day passes, which was a reduction of 80% on the average pass sales per month over the remainder of 2017, and 85% reduction on 10-ride tickets, whereas unlimited ride passes remained relatively constant. A history of pass sales from 2015 through February 2018 for BARTA and RRTA is provided on the following pages in Table 6 and Table 7.

In reviewing how many pass sales are being made at each outlet, it became quite evident how widely available passes actually were and what type of passes were being sold. The BTC was the most popular place for purchases. The most popular pass type sold by BARTA is the one-day pass. Over 16,000 one-day passes were sold in February 2018, compared to 1,300 31-day passes and 330 10-ride tickets. The majority (about 12,500) of one-day passes were sold at the BTC. While Boscov's at Berkshire Mall was popular, neither the East nor West Boscov's produced any sales.

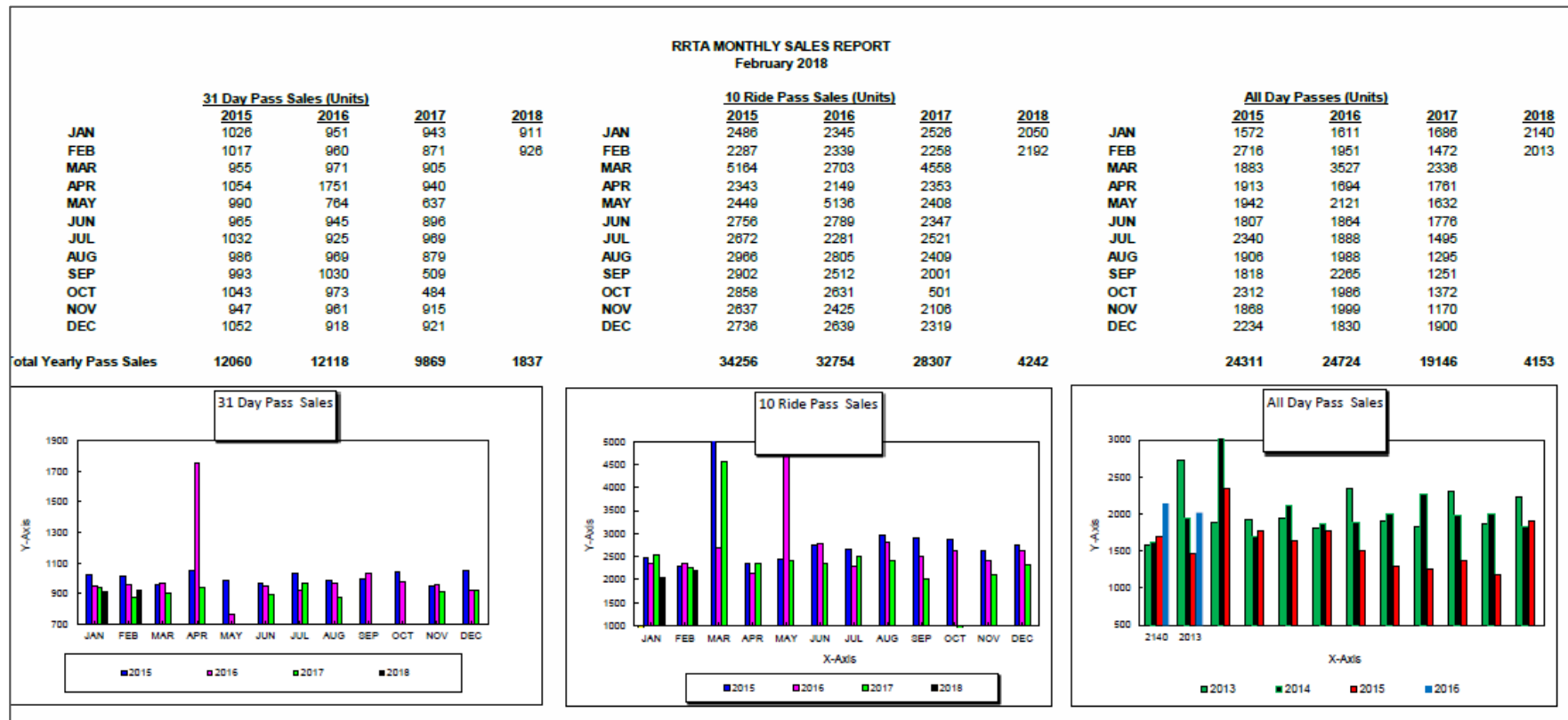
Pass sales in the RRTA system are not as strong as BARTA's. The most popular location to purchase passes is QSS, and the most popular pass type is 10 ride tickets – nearly twice as many 10 ride tickets sold in February 2018 than 31-day passes or all-day passes. Total online pass sales for RRTA in February 2018 was 183 units, and the most popular pass type sold online was 10-ride tickets with 113 units sold.

Table 7: BARTA Pass Sales History



Source: BARTA & RRTA Bus Pass History

Table 8: RRTA Pass Sales History



Source: BARTA & RRTA Bus Pass History

Pass Utilization

2016 was used as the basis for an annual overview of pass usage by BARTA and RRTA, because data in 2017 was skewed due to the October 2017 service promotion that significantly lowered fares. Table 8 summarizes the use of 31 and day passes and 10-ride tickets.

Table 9: 2016 Pass Usage

Pass Type		BARTA	RRTA*
Monthly Pass	Adult	658,315	881,052
	Student	55,694	
	Park-N-Ride	3,402	
10 Trip Tickets	Adult	30,782	606,925
	Student	7,163	
Day Pass	Advance	539,234	317,184
	On-Board	148,173	
Total		1,442,763	1,805,161

Source: 2016 GFI Token, Ticket and Pass Count by Route

* Zone information not available

Other Fare Payments

In addition to the pass options summarized above, the other types of fare payment transaction, including cash, transfers, half fares and free fares are summarized in Table 9. In addition, RRTA reported 42,231 free rides. The fares for some of these rides are covered through partnership agreements with participating area colleges.

Table 10: 2016 Non-Pass Fare Transactions

Fare Type		BARTA	RRTA*
Cash		145,561**	413,067
Transfer		104,474	76,301
Student		61,836	N/A
Half Fare		37,353	32,505
Senior		411,542	256,074
Other	Medical Assistance Transportation Program		--
Total			

Source: 2016 GFI Token, Ticket and Pass Count by Route

* Zone information not available

** Includes zone fares

Peer Fare Evaluation

The fare structures of six public transit agencies from across the United States were evaluated to determine how BARTA and RRTA fares compare to their peer agencies. The agencies chosen from the PennDOT Act 44 list were:

- COLTS – County of Lackawanna Transit System; Scranton, PA
- ECAT – Escambia County Area Transit; Pensacola, FL
- Citilink – Fort Wayne Public Transportation Corporation; Fort Wayne, IN
- RMTD – Rockford Mass Transit District; Rockford, IL
- SCT – Sonoma County Transit; Santa Rosa, CA
- VRT – Valley Regional Transit; Meridian, ID

These six particular agencies were chosen out of a longer list of pre-identified peers, in order to provide a spectrum of comparisons from agencies with and without zone structures, alternative pass options, and some of whom may be more progressive than others in fare technology. To effectively compare the fare structures of these public transit providers, it is important to have a basic understanding of the service area that they serve. Table 10 documents a brief overview of the communities each agency serves, and Table 11 and Table 12 provide a comparison of fare structures for cash and passes.

Table 11: Overview of Peer Transit Agencies

Agency	Service Area	Population	Number of Routes*	Unlinked Trips**	Operating Expenses
COLTS	465 sq mi	213,006	29	1,058,785	\$9,193,757
ECAT	748 sq mi	309,574	24	1,494,210	\$6,762,013
Citilink	660 sq mi	365,565	15	1,902,307	\$10,839,411
RMTD	801 sq mi	342,552	33	1,732,316	\$12,114,430
SCT	1,592 sq mi	497,776	28	1,201,186	\$11,130,865
VRT	1,664 sq mi	663,680	27	1,376,242	\$8,281,091
BARTA	857 sq mi	413,521	19	3,034,952	\$10,788,694
RRTA	942 sq mi	519,445	18	1,926,379	\$9,068,274

Source: COLTS, ECAT, Citilink, RMTD, SCT, VRT, BARTA, RRTA, US Census 2012-2018 ACS, US Census, US Department of Transportation National Transit Database (2016)

*May include special routes or shuttles. Some routes may be seasonal or require special identification.

**Includes service provided directly by agency and by third party agreement.

Four out of the six agencies have some type of zone system. RMTD and VRT are most similar to BARTA with a single supplemental zone fare, while ECAT and SCAT have three and four zones respectively outside of their base zone, which resembles RRTA. Transfers are either free, or there is a significant charge (roughly 50% of the base fare). All agencies accommodate student cash fares and vary from being free to a reduced fare. Some agencies offer discounted fares for college students, but most only extend those “student” or youth fares to kindergarten/grade 1 through grade 12, or approximately age 5 through 20. Half fares are offered for Medicare card holders and persons with disabilities at all agencies, and for seniors some are free, while others are half fare. Children under 5, or at the equivalent average height, (such as the height of a farebox) ride for free. Special fares for military or veterans are provided by ECAT and SCT only.

Table 12: Comparison of SCTA Peer Agencies' Cash Fares

Fare Type	COLTS	ECAT	Citilink	RMTD	SCT	VRT***
Base Fare	\$1.75	\$1.75	\$1.25	\$1.50	\$1.50	\$1.00
Zone Fare	--	Adult - \$2.35 Student - \$1.25 Reduced/Seniors - \$1.10 + Special routes	--	+ \$0.25 in Cherry Valley Zone	2 Zones - \$2.10 3 Zones - \$3.00 4 Zones - \$3.90 5 Zones - \$4.80	\$3.00 Universal
Transfers	\$0.75	FREE	Not valid unless with a pass.	FREE (within 1 hr)	FREE if staying in same zone <i>1 zone to 2:</i> Adult - \$0.60 Youth - \$0.60 Reduced - \$0.30 <i>Fees for additional zones.</i> <i>Discounted fare for transfers from Santa Rosa Citybus</i>	Not valid unless with a pass
Student (K/1-12 or (age 5-20))	With pass only	\$1.25 with ID (High School & College)	\$0.60 with ID	\$0.75 with ID	Local - \$1.25 2 Zones - \$1.85 3 Zones - \$2.75 4 Zones - \$3.65 5 Zones - \$4.55 FREE with college ID	\$0.50
Reduced Fare (Medicare Card holders & Persons with Disabilities)	\$0.85 (\$0.35 transfers) with ID	\$0.85 with ID; FREE with ADA ID	\$0.60 with ID	\$0.75 or FREE if enrolled in Ill Benefits Access Program with ID	Half Fare with ID*	\$0.50 With Medicare Card
Seniors	FREE with ID	\$0.85 with ID	\$0.60 with ID	FREE with ID	Half Fare with ID**	\$0.50
Children	FREE under 45"	FREE if shorter than farebox	FREE under 5	FREE under 5	FREE under 5	FREE under 5
Military	--	FREE in Uniform; \$1.00 with ID	--	--	FREE for veterans with ID	--

Source: COLTS, ECAT, Citilink, RMTD, SCT, VRT

"ID" refers to Identification Card issued by transit agency.

* Includes valid DMV or Medicare Card. **Includes valid proof of age, Medicare Card, or DMV ID/driver's license.

***Special fares available for Non-profit clients and Employers.

All peer agencies offer unlimited ride monthly or 30/31 day passes or some version of a multi-ride ticket (some 10-ride, others 20-ride). Monthly passes vary in price for the equivalent cost of between 32 (COLTS) and 42 (SCT) single cash fares, but is 36/37 trips for the other agencies. Only COLTS and ECAT provide small discounts on their multi-ride ticket. Monthly student passes are only offered by COLTS, SCT, and VRT.

Table 13: Comparison of SCTA Peer Agencies' Multiple Ride Passes

Pass Type	COLTS	ECAT	Citilink ⁴	RMTD	SCT ⁵	VRT
30/31 Day Pass (Adult)	\$56.00 \$60.00 for Inter-county	\$47.00	\$45.00	\$55.00	\$62.50	\$36.00 \$70.00 for universal
30/31 Day Pass (Student)	\$28 (Adult Student)	--	--	--	\$47.00	\$18.00 \$35.00 for universal
30/31 Day Pass (Reduced)	--	\$35.00	\$22.00	--	\$31.25	\$18.00 \$35.00 for universal
Ten Trip Tickets (Adult)	\$15.75	\$29.00 ¹	--	\$15.00	\$30.00 ¹	\$10 for \$12 v value \$20 for \$24 v value
Ten Trip Tickets (Student)	\$7.85	\$12.00	--	\$7.50	\$25.00 ¹	--
Ten Trip Tickets (Reduced)	--	\$7.00 ² \$12.00 ³	\$6.00	\$7.50	\$15.00 ¹	--
One Day Pass (Adult)	\$4.00	\$4.75	\$3.00	--	--	\$2.00 \$6.00 for universal
One Day Pass (Reduced)	--	--	\$1.50 (incl. students)	--	--	\$1.00 \$3.00 for universal
Weekly Pass	--	\$14.50	--	\$16.00	--	--
3-month Pass (Adult)	--	--	--	--	--	\$93.00 \$180.00 for universal
3-month Pass (Student)	--	--	--	--	--	\$46.00 \$90.00 for universal
3-month Pass (Reduced)	--	--	--	--	--	\$46.00 \$90.00 for universal
6-month Pass (Adult)	--	--	--	--	--	\$165.00 \$320.00 for universal
1 Year Pass	--	--	--	--	--	\$266.00 \$516.00 for universal

Source: COLTS, ECAT, Citilink, RMTD, SCT, VRT

1 - 20-Ride Ticket

2 - Seniors and Persons with Disabilities

3 - Medicare Cardholders

4 - Youth Summer Fun Pass available for \$25.00 – unlimited rides May 21-August 11 for children 5-18.

5 - SuperPass available for \$405 for unlimited monthly rides on SCT, Santa Rosa CityBus, Petaluma Transit, and/or Golden Gate Transit. Summer Youth Pass available for \$24.00

Day passes are sold by four of the peer agencies, except RMTD and SCT. Citilink goes so far as to offer a reduced fare day pass for only \$1.50, but is still slightly more than two single reduced fare rides (2 x 60 cents). A weekly pass is only offered by ECAT and RMTD, and is priced at the equivalent of approximately 8 and 10 single cash rides respectively. VRT is the only agency to offer additional 3-, 6- and 12 month passes. The systemwide yearly pass sells for \$516, which equates to 172 systemwide single rides, which is a very significant discount if riders can afford to pay this type of fare up front. For a rider who makes 2 trips per day, each work day (5 days), for 50 weeks of the year (assuming vacation/holidays), they may take 500 trips over the course of the year, and so the discount is greater than 50%.

Transit providers are required by ADA to provide paratransit service within $\frac{3}{4}$ of a mile from any fixed-route service. Eligibility for paratransit service is fairly standard across all agencies. Customers are required to be certified as ADA eligible by the public transit agency before using paratransit service. The procedure for establishing ADA eligibility differs slightly from one agency to another, but generally involves filling out an application and processing by the transit agency. Table 13 captures the paratransit fares of the peer agencies. The availability of a monthly pass offered by COLTS, appears to be a pretty rare fare product, and is surprising given the high cost of providing paratransit service.

Table 14: Comparison of SCTA Peer Agencies' ADA Service

Service Type	COLTS*	ECAT	Citilink	RMTD***	SCT	VRT
Paratransit	1-way - \$3.50 6 tickets - \$21 Month Pass - \$112 1-way to Luzerne County** - \$3.75	\$3.50	\$2.50	\$3.00 10 tickets - \$30	1 Zone - \$3.00 2 Zones - \$4.20 3+ Zones - \$4.80	\$2.00
Paratransit Companion	--	\$3.50	\$2.50	--	--	\$2.00
Paratransit Care Attendant	--	FREE	FREE	--	--	FREE

Source: COLTS, ECAT, Citilink, RMTD, SCT, VRT

*Also provides rural access for trips more than $\frac{3}{4}$ mile beyond fixed route. 1-way - \$3.75, 6 tickets - \$22.50.

**Transfer at Wilkes-Barre/Scranton International Airport

***Also provides Same Day Rides service for paratransit trips that are for a medical related trip. Must be scheduled 3 hours in advance. Also provide Medicaid rides service for individuals who are not eligible for paratransit, but are Medicaid card holders. No charge for trips to medical facilities.

When to Pay / Where to Buy Passes

Exact change is required when paying cash fares on RMTD and SCT buses.

Exact change is not required on COLTS, ECAT, Citilink, and VRT buses. Change cards are dispensed from the fare box upon cash fare payment.

The majority of peer agencies operate very similarly to BARTA and RRTA in terms of how and where fare products are purchased. One outlier is Citilink, which offers a mobile ticketing option called Token Transit. SCT has a dynamic system that has partnered with its neighboring agencies by facilitating a common fare product – the Clipper Card. From a customer perspective having a single fare card that works on multiple transit agencies that they travel on is very convenient. Several of the agencies specify sales at grocery and drug stores. These types of retailers are



more likely to be visited more frequently than a mall or department store and also reach a wider audience.

COLTS

The base fare or trip ticket is due when boarding the bus. Transfer fares should be paid when boarding the first bus. Riders must request a transfer ticket from the driver. Pass holders do not need to purchase transfers.

Passes may be purchased at COLTS headquarters and the Lackawanna Transit Center. Certain passes can be purchased at Boscov's Department Store and Library Express in The Marketplace at Steamtown, Gerrity's Supermarket locations, Albright Memorial Library, and Nancy Kay Holmes Branch Library. Passes may also be purchased on the COLTS website.

ECAT

The base fare or trip ticket is due when boarding the bus.

Passes may be purchased on the ECAT website.

Citilink

The base fare or trip ticket is due when boarding the bus. Riders that need to transfer are encouraged to purchase all day passes, otherwise a full fare must be paid when entering each vehicle. All day passes may be purchased from the driver.

Passes may be purchased online on the Citilink website. If customers wish to pay in person they may order online and pay at the Citilink office. Customers may also download the Token Transit app and pay for passes and have them on their mobile phone.

RMTD

The base fare or trip ticket is due when boarding the bus. Passengers boarding or alighting in the Cherry Valley Zone pay an additional \$0.25.

It is not clear on the website where tickets and passes can be purchased. Tickets and passes can be ordered by mail order form, payable by check.

SCT

The base fare is due when boarding the bus. Transfers are requested from the driver and transfer payment is due upon boarding the first vehicle.

Passes may be purchased at Sonoma County Transit office, select Safeway locations, Cloverdale City Hall, Sonoma Valley Visitors' Bureau, and Windsor Chamber of Commerce. Passes may also be purchased on the SCT website.

SCT buses also accept the Clipper Card. The Clipper Card is a transit pass available throughout the San Francisco Bay Area. Clipper Cards can be purchased at SCT office, online, at Walgreens stores, or at Raley's. Santa Rosa CityBus, Petuluma Transit, and Golden Gate Transit also accept Clipper Cards.

VRT

The base fare or pass is due when boarding the bus. Riders requiring a transfer are encouraged to purchase a 1-Day Pass. No transfers will be issued.



One-day passes can be purchased on the bus. Stored value cards (\$12 & \$24) can be purchased at pass outlets, the VRT Meridian office, Happy Day Transit Center, and Main Street Station. 31-day and stored value cards can be purchased at select Albertsons stores, select WinCo stores, the ACHD Commuteride office, Main Street Station, and the VRT offices. Three-month passes can be purchased at the VRT Meridian office, Main Street Station, and Happy Day Transit Center. Year passes can only be purchased at the VRT Meridian office, and require a photograph to be taken by VRT.

Available Programs

Many of the programs offered by the peer agencies are models already used by either BARTA or RRTA. College/university partnerships with transit agencies are a growing market and are already in place at RRTA, COLTS, Citilink, and SCT. An interesting aspect of the Clipper Card at SCT is that it's a smartcard that automatically calculates the correct fare and discounts applicable transfer credits when more than one transit system is used. A variety of medical or community services type programs are also offered by many of the peer agencies.

COLTS

COLTS Campus Connections is the free use of the entire COLTS bus system by students, faculty and staff from The University of Scranton and Marywood University upon producing a current, valid college ID.

The Evening City Circle Routes provide transportation for second- and third-shift employees in Scranton between 7 p.m. and 1 a.m. There are two routes, and both shuttle buses circle their routes continually, beginning and ending at the Lackawanna Transit Center. Regular fare is \$1.75 on the Evening City Circle Routes, and transfers are 75¢.

ECAT

ECAT provides mobility and travel training for interested individuals and groups. This includes a bus feature demonstration, a one-on-one trip, and instruction on how to read ECAT bus routes and schedules for inexperienced riders.

The West Florida Commuter Assistance Program serves 10 counties throughout Northwest Florida including Escambia, Santa Rosa, Okaloosa, Walton, Jackson, Washington, Bay, Calhoun, Gulf, and Holmes. They provide a transportation hotline to assist commuters with any questions or concerns they may have about their commute options. They also offer information and access to a variety of rideshare programs to fit commuter needs.

Citilink

Routes 21 and 22 operate as "Flexlink" services. Flexlink service means if a rider's trip origin or destination is within $\frac{3}{4}$ of a mile of these routes, the bus can "deviate" from its fixed route on request to pick up or drop off passengers at the nearest designated alternate stop.

Citilink and Ivy Tech Community College Northeast operates "campusLink" a free shuttle service for students, faculty, staff and the general public between Ivy Tech's Coliseum and North campuses.

Cougar Express Bus is a free service available every USF school day during fall and spring semesters. The USF Cougar Express loops every 30 minutes with the first stop of the day at the USF Residence Halls. The bus will arrive downtown on the quarter hour. Both Citilink and CTN bus service is free for USF students, faculty and staff. The Citilink service is free to the public.



Citilink manages JobLink for Commuters and JobLink for Employers. JobLink offers a number of services that provide more reliable and affordable transportation options for the workforce.

RM TD

RM TD operates 3 demand response services in addition to paratransit service. Customers do not have to be certified for these services however, there are certain limitations and/or requirements for each of these services.

Medicaid rides are available at no charge for persons holding a medical card who need transportation to medical facilities and who may not be eligible for Rockford Paratransit.

Rockford Mass Transit's Call to Connect service picks up where the fixed route Machesney Park service leaves off; providing connecting service to the Armory, Meijer or OSF Rock Cut. The Call to Connect transfers are free.

Same Day Medical trips are available only to ADA eligible riders. Riders can call up to 3 hours in advance to schedule a ride IF it is for a medical trip. Medical trips can be anything from a doctor's appointment or walk in clinic visit, to needing to get to a pharmacy to fill a prescription.

SCT

The Clipper Card system enables transit travel throughout the Bay Area's nine counties using one convenient pass. The Clipper Card automatically calculates the correct fare and discounts any applicable transfer credits when more than one transit system is used.

College students with a valid student identification can use SCT at no charge and with no trip limitations. The SCT Subsidized Fare Program is financially supported by the County of Sonoma, Sonoma State University and the Santa Rosa Junior College.

SCT operates a series of routes that provide coordinated transfer trips from various parts of the county to SMART rail stations located at Airport Blvd, Rohnert Park, Cotati and Petaluma. These bus routes are referred to as the "50-series" routes.

VRT

VRT offers a variety of specialized transportation services, known as GoRide, and provides transportation supports throughout Ada County and Canyon County. These services are provided through a variety of community partners and are expected to continue to grow in the future.

The Volunteer Driver program operates in both Ada and Canyon counties and rides can be requested for anytime 24/7. Anyone is eligible to use the Volunteer Driver program. Rides may be requested at any time but are subject to the availability of drivers.

Metro Community Services offer free trips in Canyon County. This service is available for seniors and persons with disabilities 8:00 AM to 4:00 PM weekdays.

The Shared Vehicle program is for non-profit 503(c) 3 agencies that have available drivers and need the use of 12-15 passenger fleet vans. Drivers must be vetted and agencies are responsible for fueling the vehicle.

A partnership with SHIP (Supportive Housing and Innovative Partnerships) offers free trips in Boise. Garden City, Eagle and Meridian. This service is available to seniors, persons with disabilities, and veterans, and it operates 7:00 AM to 6:00 PM on weekdays.

Rides 2 Wellness is for patients of St. Luke's or St. Alphonsus who have been diagnosed with congestive heart failure, diabetes, or chronic obstructive pulmonary disease. This service is available to patients accessing select St. Luke's and St. Alphonsus facilities.

Harvest Transit offers free trips in Meridian. The hours of service are 9 a.m. to 3 p.m. Monday through Friday. This service is available to seniors, persons with disabilities, and veterans.

The Village Van program is for low-income and Refugee Job Access operating in Ada County, seven days a week. Participation requires an agency sponsorship. The fare is \$1.50 each way. The service is available to low-income workers.

The CanyonRide Commuter Van program is operated by Rideshare by Enterprise. This service is available to everyone, and service hours vary according to need.

Comparison of SCTA to Peers

SCTA (BARTA & RRTA) provide more rides per capita than all of their peer agencies. SCTA is providing 5.3 rides per capita (BARTA alone provides 7.3) compared to the closest peer agency studied; Citilink at 5.2. Individually, BARTA and RRTA each operate fewer fixed route buses (19 & 18 respectively) than all of the studied peer agencies except Citilink which operates only 15 fixed routes. Additionally, the cost per passenger trip for BARTA is \$3.56 and for RRTA is \$4.71. The only peer that compares is ECAT at \$4.53 per trip.

Most of the peer agencies offer similar pricing for base fares. Two peer agencies had base fares higher than SCTA's, and the lowest base fare is \$1.00 at VRT. Four out of the six peer agencies operate a zoned fare structure; only SCT's had more zones than RRTA at 5. Two peer agencies offer free transfers, and two others encourage or require customers to purchase day passes if they plan to transfer. Reduced fares are offered for students, persons with disabilities, seniors, and children by all peer agencies. Two of the peer agencies offer reduced or free rides to military and veterans.

Most of the peer agencies offer 10-trip tickets, one day passes, and 31 day passes. Two agencies offer a weekly pass option. One agency additionally offers 3-month, 6-month, and 1-year pass options.

ADA service provided by peer agencies is similar to the service provided by SCTA.

TDP Survey and Public Meeting Feedback

Before developing a series of recommendations for SCTA to consider, below is a collation of rider comments from the 2017 customer onboard survey regarding the current fare structure, pricing and policy, and other comments relative and sensitive to changes in fare pricing/products. In addition, there were quite a few comments about simplifying the fare structure and adopting more modern fare payments. Many attendees referenced SEPTA Key, SEPTA's new fare payment system which is in the process of being rolled out.

BARTA

In the BARTA survey 51% of riders surveyed reported that they transferred between buses on the trip they were surveyed on. More frequent riders are more likely to transfer; although they are also more likely to have a pass, so that transfers become immaterial for those riders. 40% of riders surveyed were very satisfied with the value for bus fare.

Of all BARTA riders, 86% say they use a cell phone. Within that 86%, 74% say that they access the Internet on their cell phone, while 12% do not. Apparently, 74% of the BARTA riders have smartphones and thus are able to access transit apps or the BARTA website for information

about schedules. Even in the age group 75 years old or older, 76% say they use a cell phone; however only 15% indicate that they access the Internet on a cell phone. Whereas 91% to 93% of those between the ages of 18 and 44 access the internet on their cell phone.

Comments on fares specifically included:

- BUS FARE NEEDS TO BE CHEAPER LIKE IT WAS IN OCTOBER (Route 3)
- MILITARY SHOULD HAVE A DISCOUNT FARE EVERYDAY (Route 4)
- CHEAPER BUS FARE LIKE OCTOBER (Route 4)
- NEEDS TO REPLACE PAPER CARDS TO MAGNETIC PLASTIC CARDS (Route 1)
- PLEASE ACCEPT EBT CARDS! (Route 4)
- LONGER HOURS TO BUY BUS PASSES (Route 8)
- SHOULD WORK ON PROVIDING A 1 YEAR BUS PASS (Route 14)

RRTA

In the 2017 RRTA customer onboard survey 33% of riders surveyed reported that they transferred between buses on the trip they were surveyed on. Again, more frequent riders are more likely to transfer. The more distant the zone from the base zone, the more likely the rider is to have to change buses. An analysis of the relationship between inter-zone travel and transferring showed that there is no relationship. That is, if a rider travels among zones, they are not significantly more likely to have to transfer than a rider who travels in only one zone.

	Inter and intra-zone travel	
	Travels across zones	Travels within a zone
Change of bus	36%	34%
No change of bus	64%	66%

Source: RRTA Onboard Customer Survey

On RRTA, 44% of riders surveyed were very satisfied with the value of the bus fare.

Of all RRTA riders, 83% say they use a cell phone. Within that 83%, 72% say that they access the Internet on their cell phone, while 11% do not. Apparently, 72% of the RRTA riders have smartphones. In the age group 75 years old or older, 63% say they use a cell phone; and 40% indicate that they access the Internet on a cell phone. Whereas 87% of those between the ages of 18 and 44 access the internet on their cell phone.

Comments on fares specifically included:

- HALF FARE HALF PAY 62 YEAR. (Route 1)
- I THINK YOU GUYS SHOULD DO 25 CENTS BUS RIDES AGAIN (Route 1)
- FARE RATES ARE CONFUSING ESPECIALLY IF YOU GET TRANSFER (Route 17)
- I THINK THE FARE TO HIGH (Route 14)
- CHEAPER RIDES. (Route 2)
- FAIRS ARE TOO HIGH (Route 20)

Summary of Feedback

Based on the above comments transfers between routes are an important consideration, although, since passes allow unlimited rides, customers have options to avoid transfer fees. They are still confusing and transfer costs can deter riders from taking multiple buses on their trips, and

sometimes take alternative modes or not make a trip at all, in order to avoid transferring. Several comments related to the fares generally being too high, but they are within the range of their peer agencies. Less critical comments included more options for fare payment/media including more durable ticket products, EBT as a payment option, military discounts, extended hours for fare purchases, and consideration of a one-year pass.

It seems reasonable to deduce that riders are generally tech savvy and therefore are more likely to be open to an innovative or more technologically advanced fare system than currently exists.

Fare Analysis

One of the primary goals of the fare analysis was to determine the feasibility of simplifying or removing the zone structure at BARTA and RRTA, and how those changes may impact ridership and revenue. For a rough simplistic measurement of ridership impacts relative to a change in fares; the Simpson-Curtin rule is a frequently used and accepted rule of thumb in transit planning. The rule indicates that a 3% fare increase has a corresponding reduction in ridership of 1%. The formula is however very dated, overly simplistic, especially for an application to complex zone structures, such as those at BARTA and RRTA, and there are so many other factors external to transit that can influence transit rider behavior. A robust impact analysis was not possible due to the lack of available data, as well as it being beyond the scope of this project, and so we have developed a more custom but generalized approach to the analysis, the assumptions of which are documented below.

Methodology

Extracting from RRTA's 2018 Pass Sales History Report, which documents the total number of 31-day and one-day pass and 10-ride ticket sales by month since 2015 through February 2018 (shown in Table 6 and Table 7) we assumed 2016 was the most typical full year of recent data available, since October 2017's promotion significantly altered revenue patterns. We determined the average pass sales per month in 2016 and September 2016 most closely matched the "average" monthly sales by pass type over the year for BARTA, while October 2016 most closely matched the "average" for RRTA.

Monthly reports, that included the sales location and zone for each of the 31-day and one-day pass and 10-ride ticket for September and October 2016, were summarized and presented in Table 14 and Table 15, to determine the number of pass sales, by pass type for adult and half fares by zone as applicable, and the revenue associated with those sales based on the current fare cost. The percentage of sales by zone was also calculated for RRTA. For BARTA the revenue generation for day passes (\$46,908) was just slightly lower than adult 31-day pass (\$50,619). RRTA in contrast has low revenue generation for their day pass (\$7,504) the majority of which comes from their zone 2 day-pass. Their highest revenue generator is their adult 31-day pass (\$43,170), and is followed not too far behind by adult 10-ride tickets (\$33,504). Park-N-Ride passes at BARTA and half fare 10-ride tickets at RRTA represent the lowest fare generators. At RRTA over 50% of revenue comes from the base and zone 1.

Table 15: BARTA September 2016 Pass Sales

Pass Type			Total
31-Day Pass	# Pass Sales	Adult	1,077
		Student	263
		Park-N-Ride	1
	Revenue	Adult	\$50,619
		Student	\$7,627
		Park-N-Ride	\$31
10-Trip Tickets	# Pass Sales	Adult	1,077
		Student	263
	Revenue	Adult	\$3,460
		Student	\$605
One-Day Pass	# Pass Sales		15,636
	Revenue		\$46,908
TOTAL	Revenue		\$109,250

Source: BARTA September 2016 31 Day, ADP, 10-Ride Sales Summary

Table 16: RRTA October 2016 Pass Sales by Zone

Pass Type			TOTAL	Base	Zone 1	Zone 2	Zone 3	Zone 4
31-Day Pass	# Pass Sales	Adult	973	246	349	107	197	74
	Revenue	Adult	\$43,170	\$8,610	\$13,960	\$5,029	\$10,835	\$4,736
	% Sales by Zone	Adult	100%	25%	36%	11%	20%	8%
10-Ride Ticket	# Pass Sales	Adult	2,244	513	859	292	415	165
		Half Fare	387	156	127	53	37	14
	Revenue	Adult	\$33,504	\$6,156	\$11,597	\$4,526	\$7,678	\$3,548
		Half Fare	\$2,697	\$936	\$857	\$411	\$342	\$151
	% Sales by Zone	Adult	19%	33%	11%	16%	6%	19%
		Half Fare	6%	5%	2%	1%	1%	6%
One-Day Pass	# Pass Sales		1,986			1,579		407
	Revenue		\$7,504			\$5,368		\$2,136
	% Sales by Zone					80%		20%
TOTAL	Revenue		\$86,874					

Source: RRTA October 2016 31 Day, ADP, 10-Ride Sales Summary

Pass utilization by zone was extracted from the GFI Token, Ticket and Pass Count by Route reports for the year 2016 to determine the number of rides activated by pass holders on an annual basis. This is summarized in Table 16 for both BARTA and RRTA. The overall patterns and proportions of usage relative to each other, is comparative to the 2016/17 fare revenue for those pass types presented in Table 1. Note however that the comparisons are being made between a fiscal year of data and a calendar year of data, and so the total numbers may not be comparative.

Table 17: BARTA and RRTA 2016 Pass Usage

Pass Type	BARTA	RRTA
31-Day Pass	717,411	880,452
10-Ride Ticket	37,945	606,925
One-Day Pass	687,407	31,7184
TOTAL	1,442,763	1,804,561

Source: RRTA 2016 GFI Token, Ticket and Pass Count, Weekday, Saturday and Sunday Reports

Using the pass sales data from September/October 2016 and the utilization data from 2016 we conducted sensitivity testing on multiple scenarios, which will be described below.

Due to a lack of data on cash fares, the sensitivity testing was conducted for passes only. We could have utilized the zone to zone data results from the TDP survey as a general assumption that's representative of the riders to determine the number of riders traveling to and from each zone and pay cash (by subtracting the pass counts from the total ridership from the GFI Revenue and Ridership by Route Report). However, there was no basis from which to determine the composition of those riders i.e. the breakdown of adult, student and reduced fare riders. Furthermore, since an impact analysis for fixed route cash fares was not conducted, a corresponding impact analysis on paratransit was not undertaken.

For BARTA we assumed removal of the \$31 Park-N-Ride pass, which in effect would be replaced by the current \$47 adult 31-day pass, the 10-ride ticket was reduced from \$17.30 to \$16, to provide a small discount on the equivalent cost of 10 base fares (student 10-ride ticket remained the same), and the daily passes were set at \$4.

The sensitivity testing for scenario 1A assumed no change in the number of passes sold, i.e. sales and thereby utilization would remain constant. A second option – scenario 1B assumed a 10% decrease in sales and utilization, where fares increased, and a 10% increase in sales & utilization where fares decreased.

For RRTA both scenarios assumed removal of the zone structure. A more in-depth analysis would be required to determine the utilization impacts of fare changes on a route by route basis, and there is a lack of data on revenue by route by zone. Therefore, the analysis did not account for the fact that the city routes (1, 2, 3, 5 and 20) only operate in the base zone. Also, even though the county routes (11, 13, 17 and 18) operate to zone 4, they also service other zones, and the GFI data does not provide a breakdown of pass use by zone, except for unreadable fare cards that are manually recorded by the bus operator.

Scenario one assumed a pass price that is set based on the average cost of each of the current passes as follows:

- 31-Day pass range from \$35 to \$64; the average cost is roughly \$48.
- 10-Ride tickets range from \$12 and \$6, for full and half fare respectively, to \$21.50 and \$11; the average cost is just over \$16 and \$8.
- Day pass is \$3.40 or \$5.25; the average cost is approximately \$4.

However, it is the highest-use zones (base and zone 1) that are affected by this type of change in fares – 60% of 31-day passes and 50% of 10-ride tickets are base or zone 1 riders, and 80% of one-day passes are for zone 2. As such, Scenario 2 assumed a single pass fare that was less than the average and more sensitive to the majority of riders who purchase that pass, as follows:

- 31-day pass at \$42
- 10-ride tickets at \$15 for full fare and \$7.50 for half fare
- Day pass at \$4

The sensitivity testing firstly assumed no change in the number of passes sold, i.e. sales and thereby utilization would remain constant (option A). A second option assumed a 10% decrease in sales and utilization (option B).

Analysis Results

BARTA Scenario 1A (Fare adjustment; No change in sales)

Overall the monthly increase in revenue was about 10% (\$15,000). With September assumed to represent the average sales for the year, the total annual sales impacted by the 15% increase in revenue could equate to a \$184,000 pass revenue increase per year.

There were modest changes in the Park-N-Ride pass and adult 10-ride ticket fare, which resulted in minor decreases in revenue. However, a significant change in the revenue of day-passes occurred with the assumed potential fare increase.

BARTA Scenario 1B (Fare adjustment; 10% reduction/increase in sales/ridership)

Despite the assumed 10% decline/increase in pass sales where fares changed, and a corresponding 5% (72,000) reduction in ridership, overall there was still a 4% (\$5,000) increase in revenue, corresponding to approximately \$65,000 annually. Note, due to a lack of data on day passes purchased onboard, an assumption of two thirds the advance purchase sales was assumed.

Although the adult 10-ride fare was reduced, the assumed corresponding increase in the number of sales, by 10% per month, ultimately resulted in an overall slight increase in revenue. Similarly, despite the \$1 increase in the day-pass, and 10% reduction in sales, revenue overall still increased. There would have to be a 25% reduction in sales to experience a loss in revenue, with the proposed fare increase, and based on the assumptions made.

RRTA Scenario 1 (Average Cost of Existing Fare)

Scenario 1A results in a monthly increase in pass revenue of about 9% (\$8,000), while scenario 1B results in a decrease in revenue of 2% (-\$1,000). With October assumed to represent the average sales for the year, the total annual sales impacted by the 9% increase in revenue could equate to a \$97,000 pass revenue increase per year, while a 2% decrease could equate to a loss of around \$17,000.

In terms of pass utilization and thereby ridership, we assumed no change in scenario 1A, while in scenario 1B, a 10% reduction in pass sales with a corresponding 10% reduction in ridership may result in an overall loss of about 181,000 passenger trips over the course of the year.

RRTA Scenario 2 (Below Average Cost of Existing Fare)

Scenario 2A results in a monthly decrease in revenue of about 2% (-\$2,000), while scenario 1B results in a decrease in revenue of 12% (-\$10,000). With October assumed to represent the average sales for the year, the total annual sales impacted by the 2% decrease in revenue

could equate to a loss of \$18,000 in pass revenue per year, while a 12% decrease could equate to a loss of around \$120,000.

In terms of pass utilization and thereby ridership, we assumed no change in scenario 2A, while in scenario 2B, a 10% reduction in pass sales with a corresponding 10% reduction in ridership may result in an overall loss of almost 181,000 passenger trips over the course of the year.

Next Steps

Further analysis of different pass rates and assumed percentage change in ridership can be conducted utilizing the calculation sheets provided to SCTA. Analyzing a reduced, rather than eliminated, zone structure for RRTA could also be analyzed with some modifications to the calculation sheets.

The analysis does not account for Title VI equity analysis, which would most likely be undertaken when one or two new fare structures are agreed upon and can be analyzed for the service areas.

Should additional information on cash, transfers and other fare information become available, a more robust fare structure analysis could be undertaken.

Recommendations

A number of short and long-term recommendations for SCTA's consideration are provided below.

Short-Term Recommendations

Conduct an in-depth fare analysis. As noted in this document, both BARTA and RRTA lack detailed fare data. As a result, these recommendations are based on a generalized approach. BARTA and RRTA should consider pursuing a more robust impact analysis. This should include a thorough data collection effort to ensure ridership and fare data is available by fare type, fare zone, day of the week, and by route. A more in-depth fare analysis would provide additional support for the recommendations developed as part of this study.

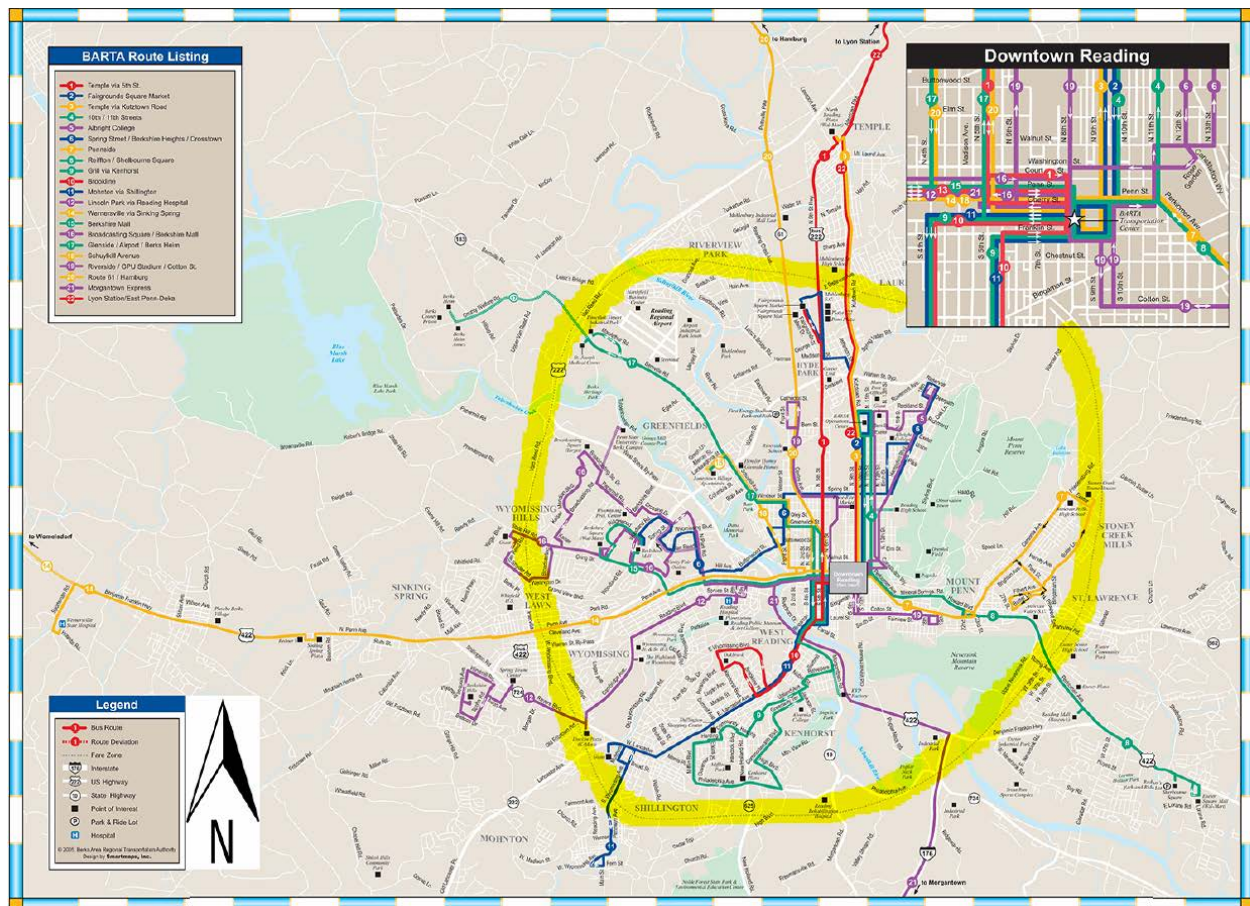
Rename Fare Products. Subtle differences exist between fare products offered by BARTA and RRTA. For example, Ten Trip Tickets are offered by BARTA, while RRTA refers to them as 10-Ride Passes. From a customer standpoint and for ease of navigating the two systems, streamlining the product names, where applicable, would be helpful. Furthermore, utilizing the same product names would make SCTA reporting much easier.

Discontinue BARTA zone structure. The surcharge to travel beyond the base zone is only 25 cents, but maintaining the zone structure entails monitoring/enforcement by operators, extended dwell time for depositing the zone fare when exiting the bus, customer inconvenience, and additional financial oversight/tracking and management costs. Three bus routes (Routes 11, 12 and 16) travel approximately two miles or less beyond the base zone. Depending on the ridership of Routes 8, 14, 20, 21, and 22, the application of a systemwide fare that incorporates a small fare increase for all riders (to total less than the base fare plus the zone fare) may help to offset removal of the zone fare. Many of these routes are also designed to service the park n' ride lots, and a separate monthly pass is offered for these riders. Table 17 represents the fare structure proposed in the preferred scenario test.

Table 18: Proposed BARTA Fare Structure

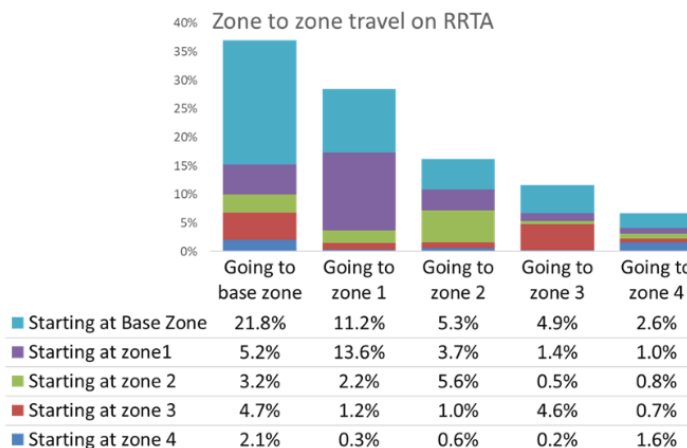
Fare Type	Current	Proposed
Cash	\$1.70	No change
Zone fare	\$0.25	Discontinued
Transfers	\$0.25	No change
Day pass	\$3.00/\$4.00	\$4.00
10-ride ticket	\$17.30	\$16.00
31-day pass	\$47.00	No change
Park-N-Ride pass	\$31.00	Discontinued

Figure 1: BARTA System Map with Zone Highlighted



Discontinue RRTA zone structure. According to the rider survey, 22% of RRTA riders are traveling within the base zone. 14% of riders are traveling within zone 1, and another 11% start in the base zone to travel to zone 1. Therefore, almost 50% of riders have an origin and or destination within the base zone or zone 1 (Figure 2). Unlike BARTA, who has outlined their zone on their system map (Figure 1), RRTA zones are unclear in their relationship to routes and or bus stops (Figure 3). In the conducted scenario testing it was determined that pass revenues would range from -\$18,000 to -\$120,000 if existing fares were reduced based on the weighted average of ridership (primarily in the base zone and zone 1). While this represents a net revenue loss, the additional benefits of a consolidated zone structure outweigh these costs. Table 18 represents the fare structure proposed in the preferred scenario test.

Figure 2: RRTA Ridership by Zone

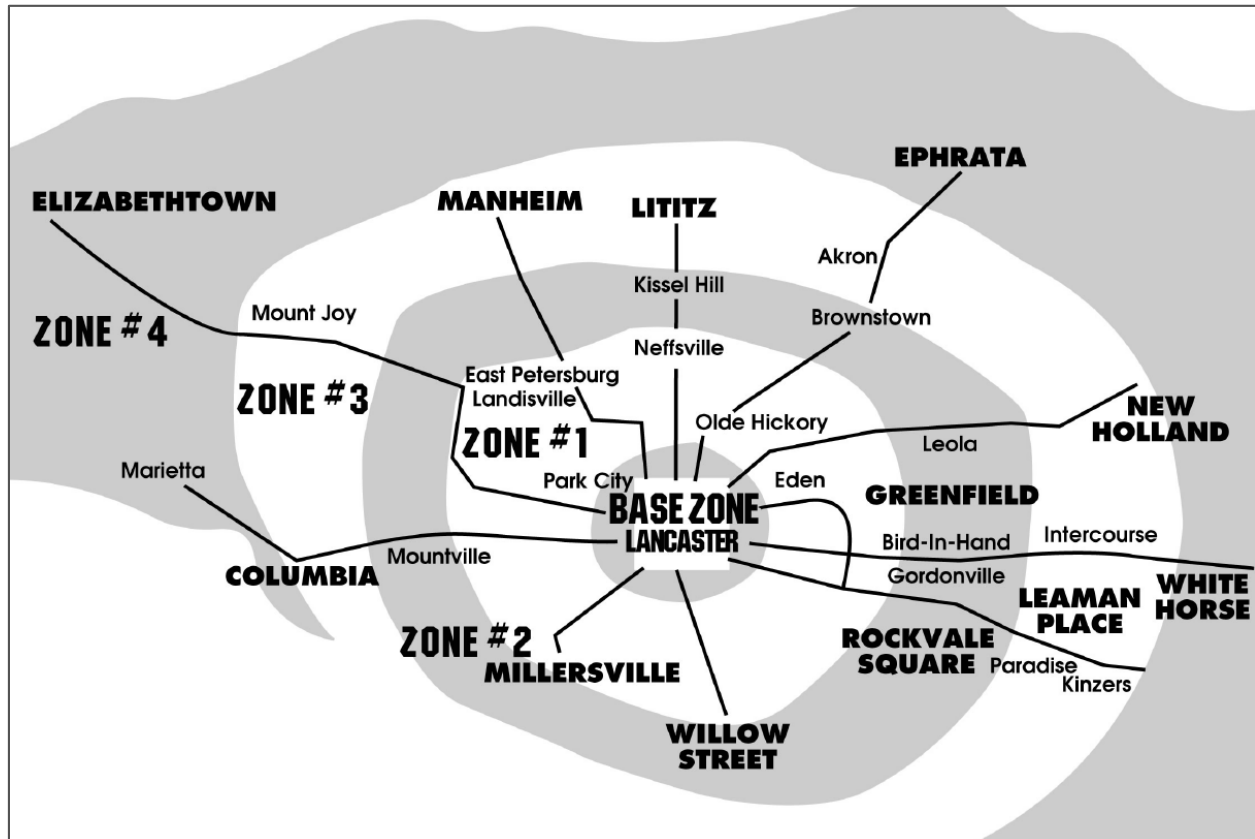


Source: RRTA Onboard Customer Survey

Table 19: Proposed RRTA Fare Structure

	Current	Proposed
Cash	\$1.70	No change
Zone fare	One Zone - \$1.85 Two Zones - \$2.15 Three Zones - \$2.50 Four Zones - \$2.90	Discontinued
Transfers	Base Zone - \$0.05 Zone 1 - \$0.20 Zone 2 - \$0.50 Zone 3 - \$0.85 Zone 4 - \$1.25	\$0.25
Day pass	\$3.40 (up to Zone 2) \$5.25 (all Zones)	\$4.00
10-ride ticket	Base Zone - \$6.00 Zone 1 - \$6.75 Zone 2 - \$7.75 Zone 3 - \$9.25 Zone 4 - \$10.75	\$15.00
31-day pass	Base Zone - \$35.00 Zone 1 - \$40.00 Zone 2 - \$47.00 Zone 3 - \$55.00 Zone 4 - \$64.00	\$42.00

Figure 3: RRTA Zone Map



Collect transfer fare on first bus. BARTA riders pay for their transfer on their first bus and receive a transfer pass to board the second bus. RRTA riders, in contrast, receive a transfer on their first bus but pay for the transfer on the second bus, thereby requiring interactions with two bus operators. While the RRTA system may be in place to monitor more closely the zones paid for and actual distance riders travel, the additional interaction affects dwell time and therefore overall service. Accordingly, collecting transfer payment and distributing the transfer pass on the first bus should be considered.

Remove transfer fees. At a rider cost of between 5 and 25 cent per ride for transfers at BARTA and RRTA base and zone 1, it would seem that the fares collected through transfers, may largely outweigh the true actual cost – in terms of bus operators managing and monitoring transfers, service impacts on this added operator-rider interaction, and cash handling of the transaction by the farebox and the money room. Increasing the base fare by the transfer amount would result in a small fare increase experienced by riders, and no revenue loss of the agency. For BARTA this would represent a 15% increase in the base fare. For RRTA it would also result in a 15% increase in the base fare for trips within the base and zone 1. The revenue impacts of removing the transfer fees on subsequent zone would require additional analysis.

Reassess BARTA Park-N-Ride monthly pass. Although park-n-ride passes offer discounted rides the sales are low, generally less than 5 per month, although in 2017 one month sold as many as 16 passes. Including such a low use pass in an already complicated fare structure is worth reassessing. Is the park-n-ride location underutilized by patrons and or underserved by bus service, hence the low sales? The administration costs of a different pass type for such low usage is inefficient and therefore should be evaluated for additional promotion and if unsuccessful,

should be considered for elimination. If parking charges exist, consider reducing them, even temporarily, to offset the increased transit cost. Changes in parking fees are generally less sensitive than changes in transit fares because driving and parking is more often a choice, than a necessity, whereas many transit riders take transit because they have to.

Introduce a weekly pass. Since day pass sales are significantly high and monthly pass sales much lower in comparison, this is most likely due to the inability of riders to pay for a higher-priced pass in advance, than manage their expenses on a short-term basis due to budgetary concerns. A weekly or 7-day pass may therefore be appealing to riders.

Replace paper tickets with a more durable product. Surveyed BARTA riders suggested that the existing paper tickets fare media are ineffective. Utilizing alternative more durable options such as magnetic plastic tickets should be explored.

Consider a small discount on or eliminating the BARTA 10-ride ticket. BARTA 10-ride ticket sales are very low. This is likely due to the fact that 10-ride tickets cost slightly more than the base cash fare. Providing a small discount to the 10-ride ticket may boost this pass options sales, but it may also have a negative impact on other pass sales. RRTA on the other hand, who discount their 10-ride ticket, experience higher sales than either the day or monthly passes. Alternatively, it may be considered for removal, since there is much more value in the monthly pass for the step-up cost from a 10-ride ticket.

Expand student fare options. Both transit agencies offer a student rate for single ride fares from kindergarten/grade 1 through grade 12. To streamline the structure between BARTA and RRTA, BARTA may consider expanding their student fare to include kindergarteners, which is currently offered by RRTA. To minimize confusion for students dealing with a complex zone structure and students having no choice but to pay for their rides on a daily basis, RRTA should consider offering a student monthly pass, and ideally one pass that is a systemwide unlimited pass, without zone barriers. While a student 10-ride pass may also be considered, it would be less appealing with the current complex zone structure. Also consider a discounted student summer pass that enables students to get to/from their summer jobs, camps and activities. This mobility benefit subsequently helps support the local tourist economy. Citilink offers unlimited rides with their Youth Summer Fun Pass for \$25.

Explore (additional) college and other partnerships. RRTA has an existing partnership with Millersville University, while there was no indication of similar partnerships with BARTA. Several of the peer agencies (COLTS, Citilink, and SCT) also have partnerships with local colleges. Colleges are in the education business, while transit agencies are in the transportation business. Increasingly financial partnerships are being arranged between local transit agencies and colleges so that transit agencies can provide convenient transit options for students, staff and faculty and do away with the need for colleges to manage shuttle operations and contracts themselves. This type of arrangement could be applied to other large institutions or employers such as hospitals.

Children under age five. RRTA should clarify their policy (FREE (with a paying adult)) for these riders. Without a defined limit, typically two or three children per paying adult, it may be interpreted as unlimited children under 5 ride for free with a paying adult, which may or may not be the case.

Promote Transportation Demand Management (TDM) techniques. RRTA accepts RideECO, the region's commuter benefit program, for purchasing passes, and has a program (Sales Outlet Program) that allows employers to provide employees with passes. RRTA should continue to promote and expand these programs and BARTA should consider implementing similar TDM techniques.

Confirm and assess pass sales at private retailers. Evaluate the effectiveness of pass sales at private retail locations. Confirm that the reported sales are accurate. Develop a simple marketing strategy to inform customers of pass sales locations. Explore other retail options where riders are likely to visit more often than department stores, such as grocery, convenience and drug stores.

Explore promotions for military personnel/veterans. Riders commented through the TDP survey that military personnel should have a discount every day. ECAT provides free rides for military in uniform and offers a \$1 fare with ID, and SCT offers free rides for veterans with ID. While it may be cost prohibitive to offer free or discounted rides on a daily basis, exploring promotions to honor existing and former military personnel may be worth exploration.

Long-Term Recommendations

Explore a reloadable smart fare card. This option would continue to maintain flexibility for riders in terms of payments for occasional trips, would allow riders to register their card and protect their balance in the event of loss or theft. A small fee to cover the cost of the card, discourage misplacement and or hoarding of multiple cards. The card could have the option of storing both a pass and or value for occasional rides.

Investigate regional fare card options. If a smart fare card is adopted by SCTA, it will present an opportunity to develop a fare product and structure that would allow interoperability between BARTA and RRTA, and potentially other neighboring transit agencies, as the Clipper Card has done for the San Francisco Bay Area. A single card that is usable on multiple transit system can encourage more ridership and offers convenience for riders, while enabling more opportunities for regional collaboration and connectivity.

Develop a long-term plan for fare pricing. Riders are generally very sensitive to changes in fares, so developing a plan for smaller more regular incremental increases in fares, and one that can be anticipated by riders from year to year, are likely to be more palatable to riders.

Upgrade the existing fare system by introducing new fare technologies. With increased usage of smartphones and advancements in fare and other technologies, the farebox as we currently know it, and is effective at SCTA, is likely to become dormant in the near term. Transit systems are moving to mobile based systems, off-board fare collection with the use of fare validators, and contactless media, and cash payments may be eliminated in some cases with the availability of alternative payment methods and more dynamic pricing. 74% of BARTA riders and 72% of RRTA riders have smartphones, based on the TDP survey, and these percentages are only likely to increase over time, so riders will be equipped to utilize more innovative fare payment techniques.

Consider more dynamic pricing with changes in technology. Distance based fares may be implemented for a more equitable system – pay only for how long/far you ride. Reduced off-peak pricing could be considered to alleviate congested peak periods and encourage more ridership during periods of less demand.

Explore an account-based system. This will offer riders more flexibility in allowing riders to monitor their account, help with recovery in the event of loss or theft, and ideally have more control on how and where they purchase their fares.