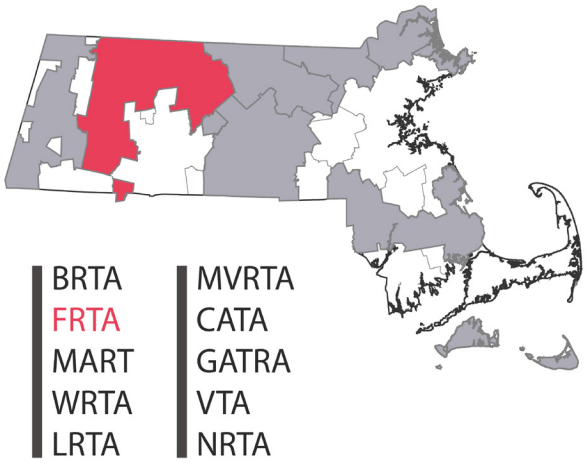

BRTA
FRTA
MART
WRTA
LRTA

MVRTA
CATA
GATRA
VTA
NRTA

Chapter 3

Perfromance Analysis

AECOM / URS
TMD
Burke & Company

FRTA

3. FRTA PERFORMANCE ANALYSIS

3.1 Service Overview

The Franklin Regional Transit Authority (FRTA) has the largest service area of the 15 RTAs in Massachusetts with 41 communities spanning nearly 1,100 square miles. Ten of the communities receive fixed route service in addition to two non-member communities. FRTA is responsible for fixed-route service within its service area as well as the coordination of paratransit services. All routes operate to and from Greenfield serving the John W. Olver Transit Center from Monday through Friday between 5:00am and 6:30pm, with no service provided on Saturday or Sunday. Table 2 provides a brief overview of the services provided by FRTA.

Route	Service Type	Description	Days Operated	Service Span	Service Frequency
21	Fixed-route	Greenfield Community	Weekdays	6:15am - 6:00pm	5 trips/day
22	Fixed-route	Montague – Greenfield	Weekdays	6:15am - 6:30pm	8 trips/day
23	Fixed-route	Amherst – Greenfield	Weekdays	6:45am - 4:10pm	2 trips/day
31	Fixed-route	Northampton – Greenfield	Weekdays	5:15am - 6:15pm	6 trips/day
32	Fixed-route	Orange – Greenfield	Weekdays	5:00am - 6:22pm	7 trips/day
41	Fixed-route	Charlemont – Greenfield	Weekdays	6:45am - 5:35pm	4 trips/day
Corp	Fixed-route	Corporate Center Shuttle	Weekdays	8:00am - 3:25pm	5 trips/day

Table 2: FRTA Route Overview

Ridership

3.21 System Ridership

FRTA's annual ridership in FY 2012 was 137,383 and has been on a steady decline with FY 2014 ridership at 123,303 passengers. Ridership dropped about 1.6 percent between FY 2012 and FY 2013 and 8.8 percent between FY 2013 and FY 2014. One of the reasons for this ridership decline is the reduction of service to Athol after the town joined the MART service area. FRTA averages approximately 11,000 passengers each month. Average monthly ridership has remained largely stable over the last three fiscal years with diminished ridership relative to previous years seen in January through March of 2014. Ridership drops slightly during the winter and summer months, due to the student populations, and is strongest in the spring and fall. Figure 4 shows FRTA ridership per month from FY 2012 to FY 2014.

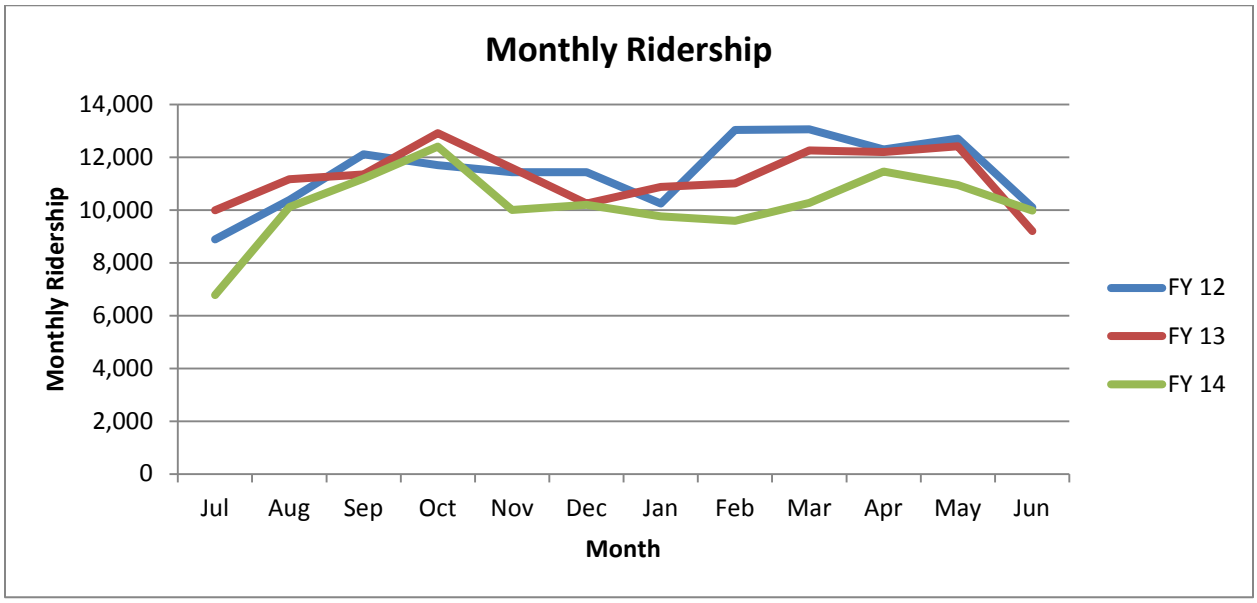

Figure 4: FRTA Monthly Ridership FY 2012 - FY 2014

3.22 Weekday Ridership

Average daily weekday system ridership for FY 2014 was 471 passengers. Average ridership per route among FRTA's six routes is 81 passengers per route. Routes 31 and 21 exhibit the highest ridership in the system with 126 and 118 daily passengers respectively. These figures are shown in Figure 5.

FRTA recently introduced a Corporate Center Shuttle route; however, complete data was not yet available for this route and as such it is not included in this analysis.

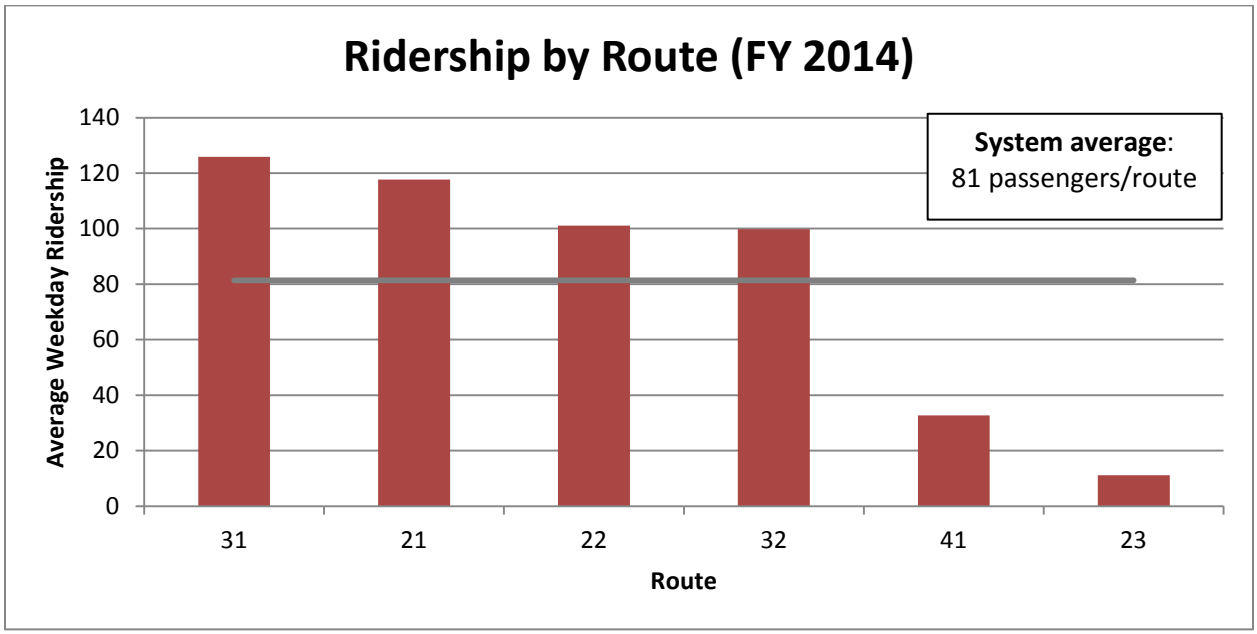

Figure 5: FRTA Ridership by Route FY 2014

Figure 6 shows the percent change in daily average ridership from FY 2012 to FY 2014 for individual routes. Of the six routes, two Routes (Routes 21 and 31) experienced growth in ridership. Routes 23 and 32 had the largest decreases in ridership, losing 47 and 36 percent of their riders respectively. Overall, weekday ridership decreased by about 11 percent. Fluctuations in ridership do not correlate with changes in service revenue hours as service hours remained unchanged between fiscal years 2012 and 2014, as discussed in Section 3.3 below. It is speculated that the drop in ridership on the 41 is because less students are traveling to the Academy of Charlemont. The drop in ridership on Route 32 is due to the reduction in service when Athol left FRTA to join MART. Route 23 has such low ridership that a minor change in ridership is magnified greatly in a percent change.

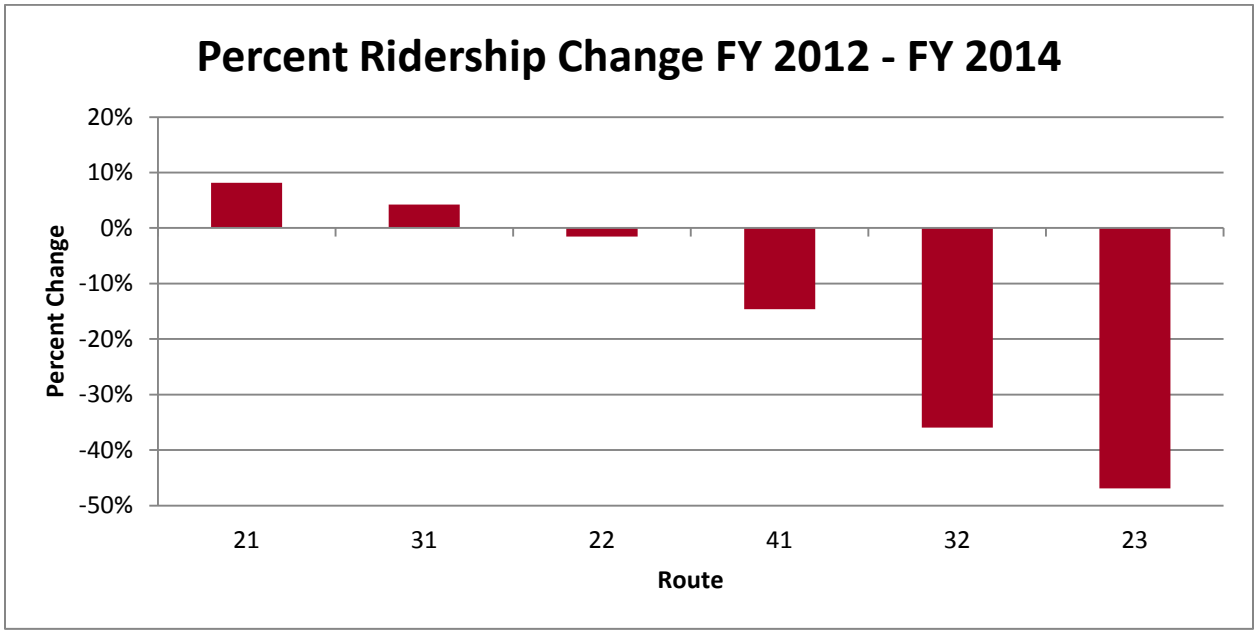

Figure 6: FRTA Percent Ridership Change by Route FY 2012 - FY 2014

3.23 Weekend Ridership

FRTA does not currently operate any weekend services.

3.3 Service Operations

3.31 Revenue Hours

FRTA runs approximately 14,200 revenue hours each year in regular fixed-route service with a monthly average of approximately 1,180 hours. No significant changes have taken place in the overall amount of annual fixed-route revenue hours operated by FRTA between FY 2012 and FY 2014. Figure 7 shows annual revenue hours from FY 2012 to FY 2014.

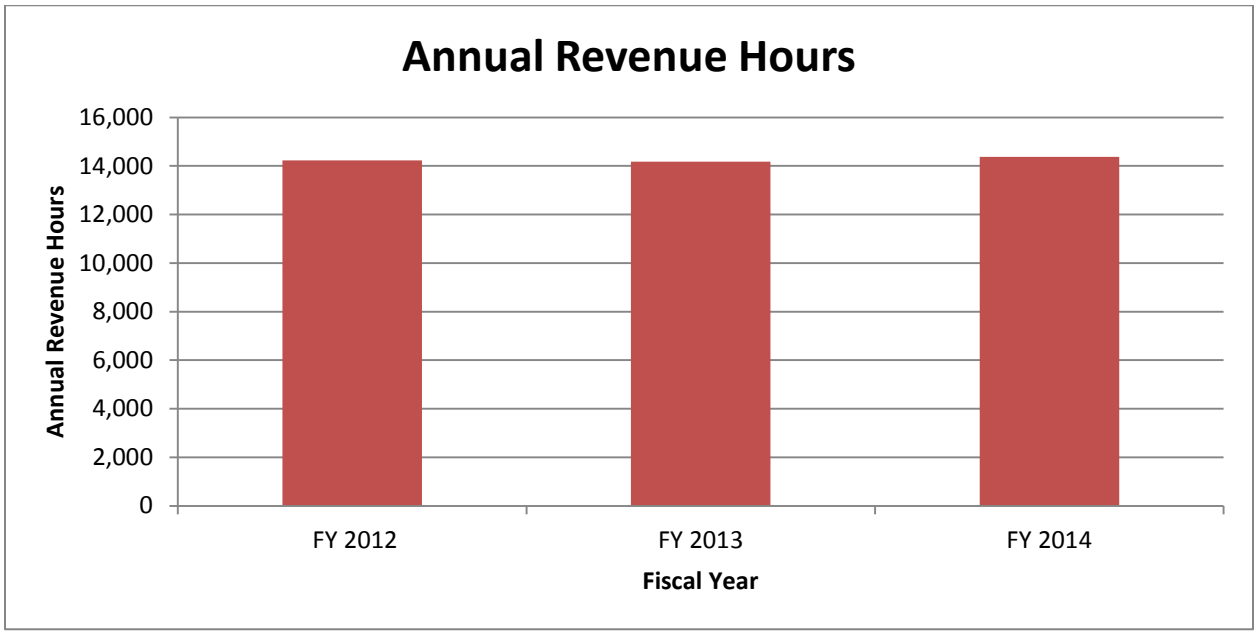

Figure 7: FRTA Annual Revenue Hours FY 2012 - FY 2014

3.32 Revenue Miles

FRTA operated approximately 335,000 regular fixed-route revenue miles annually in both FY 2012 and FY 2013, but decreased in FY 2014 to approximately 325,000 miles, averaging approximately 27,000 revenue miles per month. This is due to a 14.3 percent reduction in Route 32 mileage in FY 2014 from a revised routing now terminating at the Hannaford supermarket on the Orange/Athol town line rather than the Athol Memorial Hospital at Main Street and Mechanic Street in Athol following the departure of the Town of Athol from FRTA. This has also extended operator layover at the route's eastern terminus to 26 minutes. This change in route structure creates the potential for the introduction of greater service efficiencies in the service planning process through, for example, route restructuring or interlining to improve service efficiency.

Figure 8 shows annual revenue miles for FY 2012 to FY 2014.

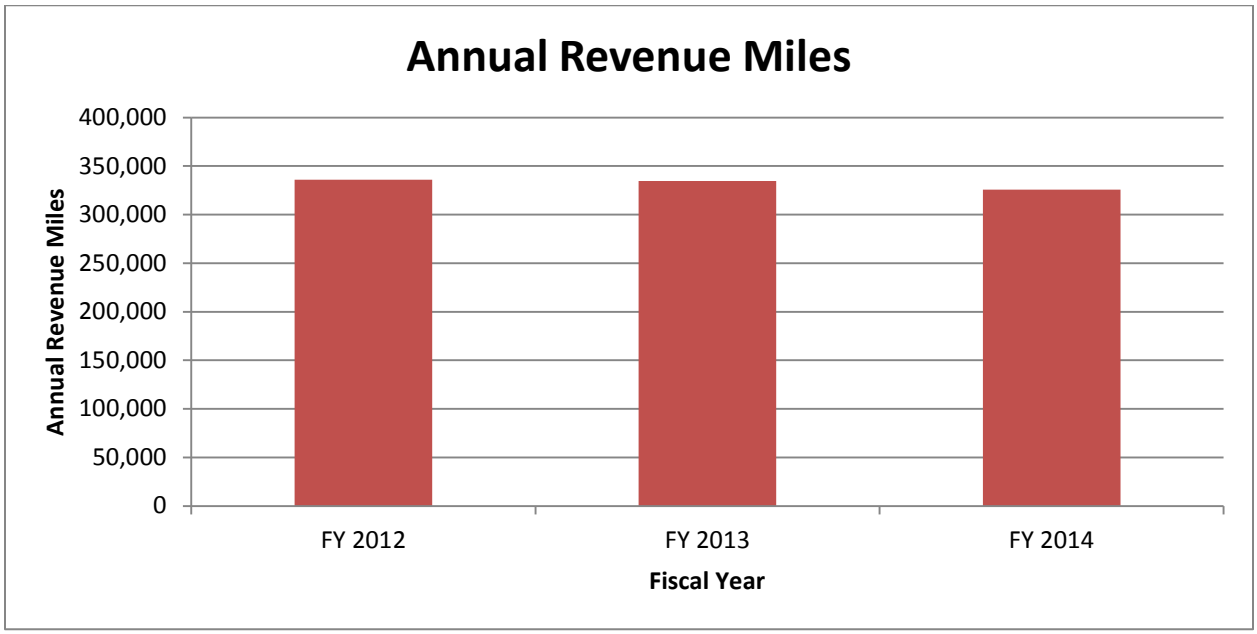

Figure 8: FRTA Annual Revenue Miles FY 2012 - FY 2014

3.33 Operating Costs

FRTA operations cost was $1.28 million annually in FY 2013, with a monthly average of about $106,000. FRTA had an hourly operating cost of $109.50 per revenue hour in FY 2013. FRTA's operating costs show an increase between FY 2012 and FY 2014 of 15 percent to $1.3 million, despite no significant increases in service taking place during that period. Figure 9 shows FRTA's annual operating costs between FY 2012 and FY 2014.

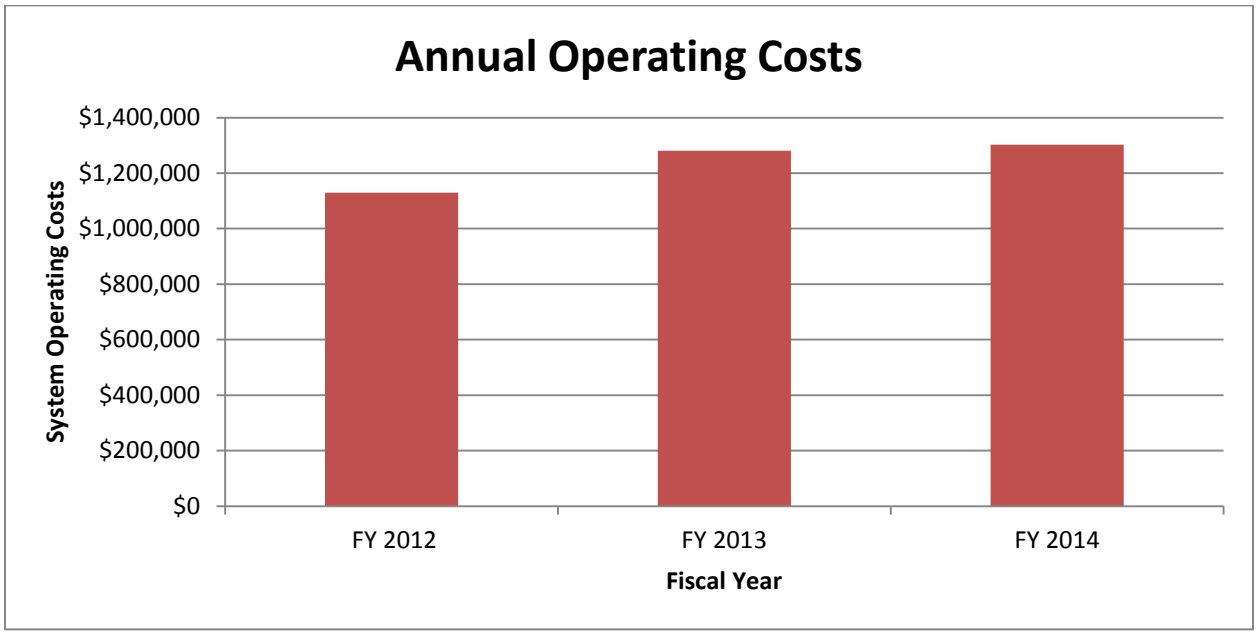

Figure 9: FRTA Annual Operating Costs FY 2012 - FY 2014

Service Productivity

3.41 System Productivity

Productivity measures the ridership generated per unit of service (revenue hours or revenue miles) and provides an understanding of the effectiveness of a route or transit network.

While revenue hours have stayed largely constant since FY2012, ridership has decreased, reducing FRTA's system productivity from 9.7 passengers per revenue hour in FY 2012 to 8.5 passengers per revenue hour in FY 2014, as shown in Figure 10.

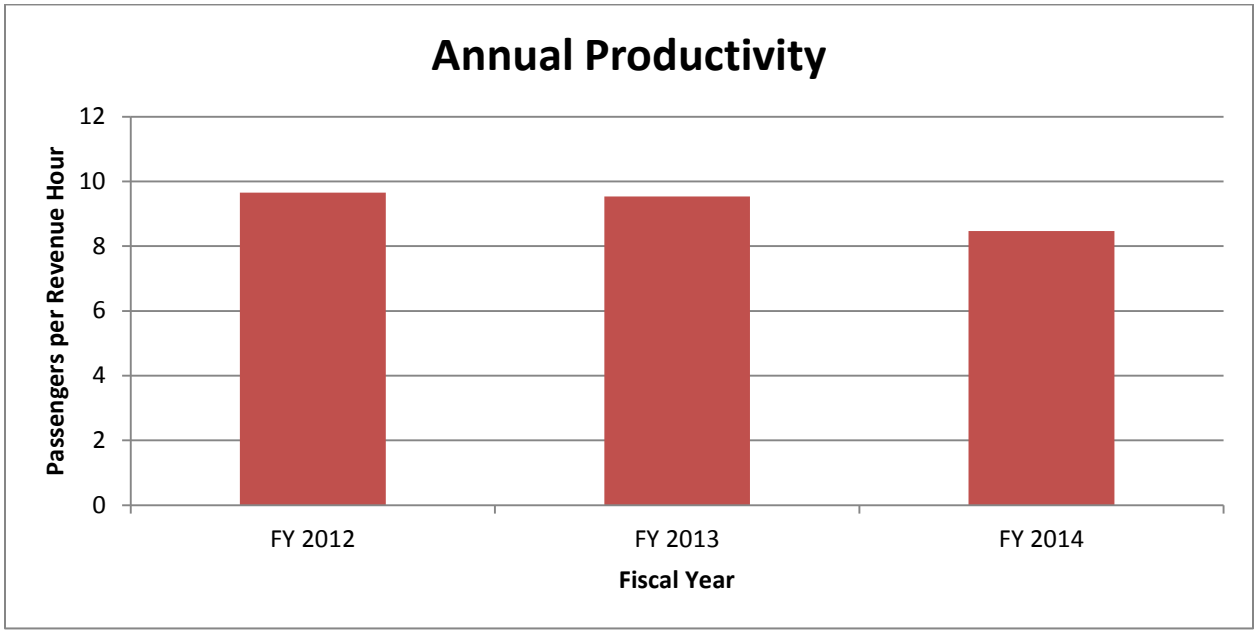

Figure 10: FRTA Annual Passengers per Revenue Hour FY 2012 - FY 2014

3.42 Weekday Productivity

FRTA routes exhibit a wide range of performance, as shown in Figure 11. The routes with the highest ridership in the FRTA system are also the routes with the greatest productivity. Route 22 is the best performing route in the system with approximately 13 passengers per revenue hour, while Routes 31 and 21 are both above ten passengers per revenue hour. Route 32, while previously performing among FRTA's better routes, has experienced a significant decrease in productivity due to its April 2013 truncation at the Orange/Athol town line, falling from 10 passengers per revenue hour to 6 between FY 2012 and FY 2014. Routes 41 and 23 are the least productive at 4.4 and 2.7 passengers per revenue hour respectively.

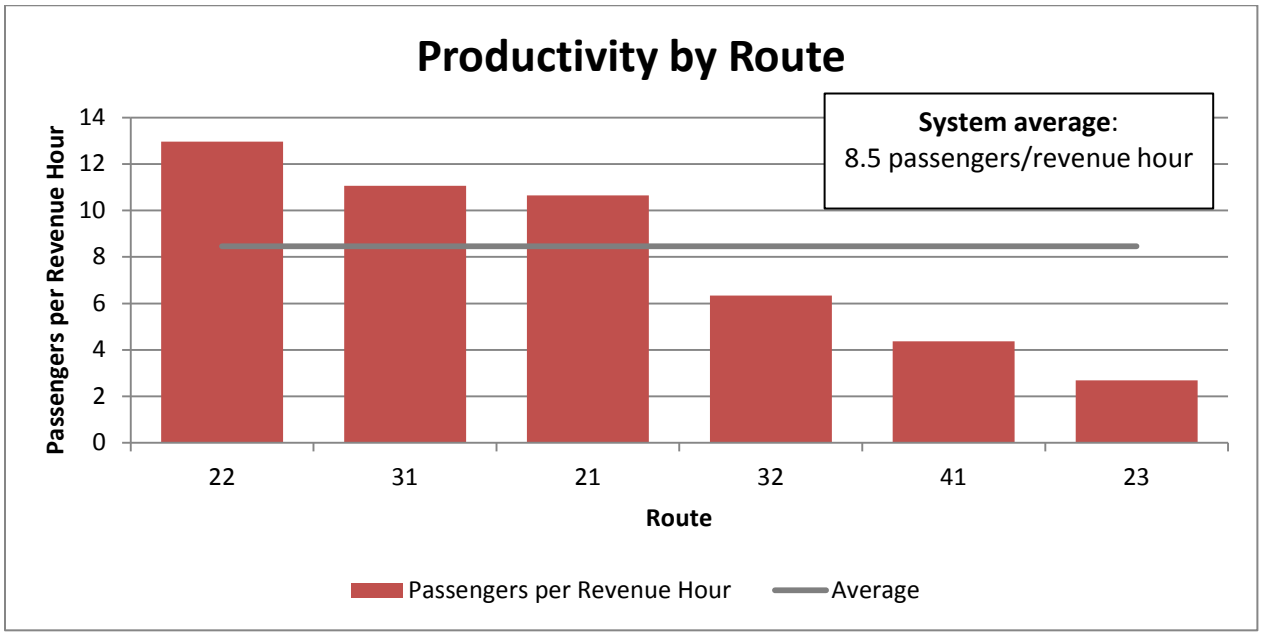

Figure 11: FRTA Productivity by Route FY 2012 - FY 2014

Figure 12 shows the percent change in productivity from FY 2012 to FY 2014 to date for all individual routes. Only Routes 21 and 31 experienced growth in ridership, while all other routes experienced losses. In particular, Routes 32 and 23 experienced losses in service productivity of 37 and 47 percent respectively. Route 32's decrease can likely be again attributed to the departure of Athol from FRTA and the resulting loss of its ridership, while the percent decrease on Route 23 can be attributed, in part, to its overall low ridership – with only eleven average daily passengers, the loss of a few passengers will magnify the losses in terms of a percentage.

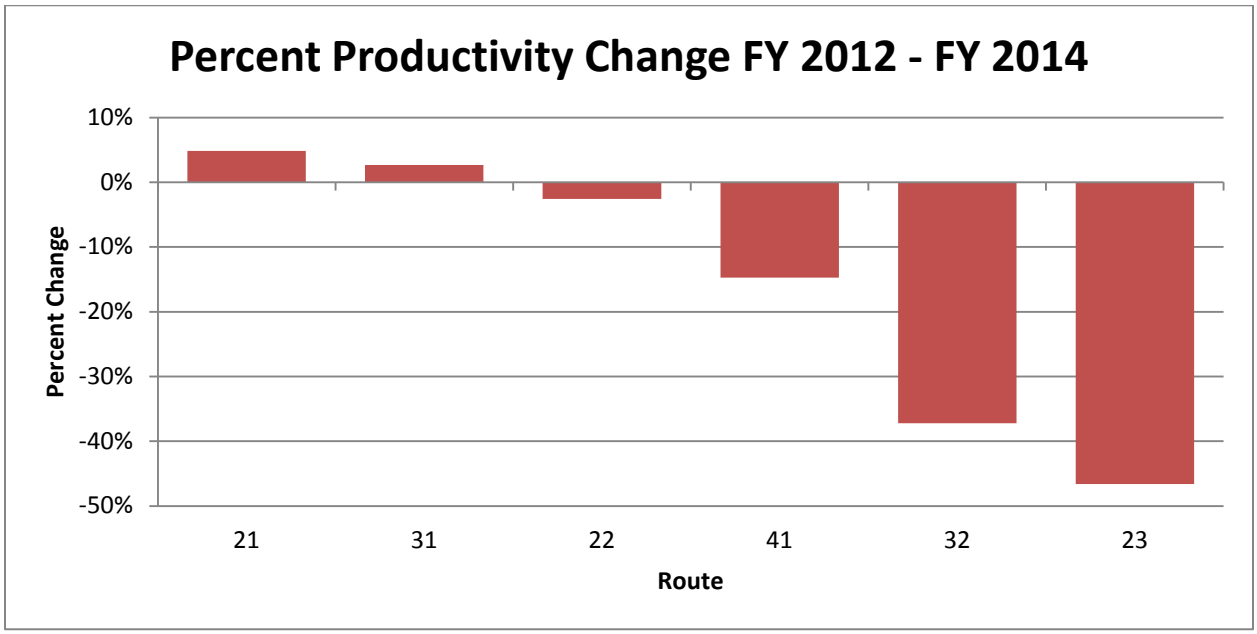

Figure 12: FRTA Percent Productivity Change FY 2012 - FY 2014

Financial Performance

3.51 Farebox Recovery Ratio

The farebox recovery ratio is the ratio of fare revenue to operating costs. Higher ratios indicate higher cost-effectiveness and measure the portion of operating costs covered by passenger fares. The higher the farebox ratio, the lower the subsidy a route needs to operate, leaving more funding available to operate more service.

FRTA's rural service offers few opportunities to maintain a competitive farebox recovery ratio while keeping fares affordable to customers. Fares are free for veterans and individuals registered with the Massachusetts Commission for the Blind. Other discounts include children under five riding for free (with a faer paying adult), and half fare prices for ADA and Statewide Access pass holders, and seniors over 60. As such farebox recovery ratios fell below five percent for the past three fiscal years, as shown in Figure 13. However, performance has diminished in that time from 10.7 percent in FY 2012 to 7.6 percent in FY2014 through March 31st. While operating costs have increased slightly since FY 2012, the decrease in financial efficiency is most strongly driven by decreases in passenger revenue.

While farebox recovery ratios for rural transit systems are typically low – according to 2011 figures from the Rural National Transit Database[1], eight percent of total operating expenses are covered through fare

[1] http://www.nctr.usf.edu/wp-content/uploads/2014/06/77060.pdf

revenue for all rural transit systems[2], while 14 percent of total operating expenses for medium-large rural systems such as FRTA are covered by fare revenue – FRTA's system wide farebox recovery ratio is still very low in comparison. However, the average farebox recovery ratio for other agencies in FTA Region I, encompassing the entirety of New England, is only five percent.

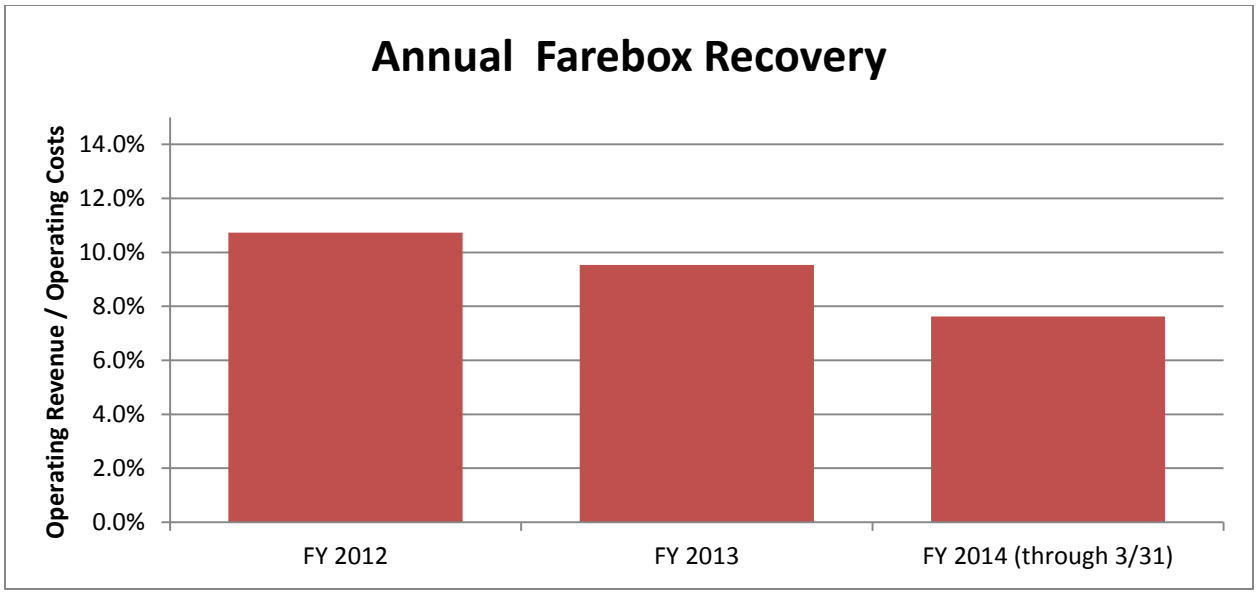

Figure 13: FRTA Annual Farebox Recovery FY 2012 - FY 2014

3.52 Subsidy per Passenger

Subsidy per passenger measures how much it costs to operate transit service on a "per passenger" basis. It is calculated by subtracting passenger revenue from operating cost and dividing by the total number of passengers. Lower passenger subsidy values indicate that a greater portion of operating costs are recovered through passenger fares, and are more desirable for financial sustainability.

Subsidy per passenger has increased over the past three fiscal years. The average subsidy per passenger was $7.29 in FY 2012, $8.57 in FY 2013, and $9.68 in FY 2014.

[2] Rural areas are defined by the NTD as areas receiving Section 5311 Non-Urbanized Area Formula Program funding.

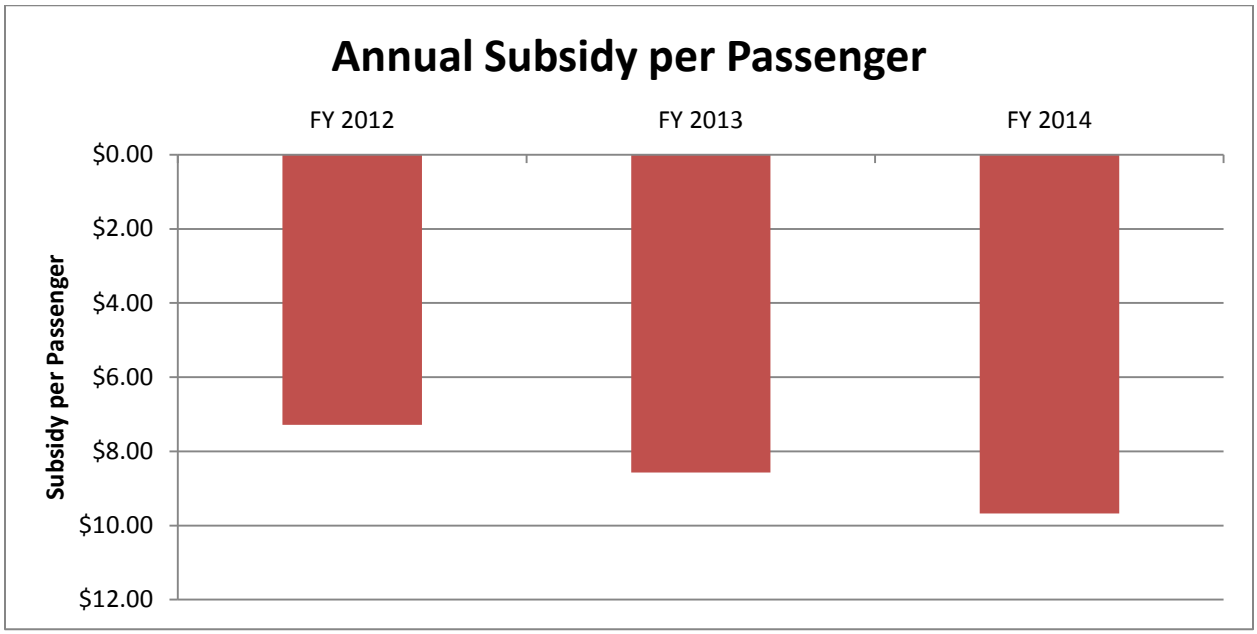

Figure 14: FRTA Annual Subsidy per Passenger FY 2012 - FY 2014

3.53 Weekday Subsidy per Passenger

Route 22 had the lowest weekday subsidy per passenger at $6.31. Route 23 to Amherst had the highest subsidy at $31.86 per passenger. Figure 15 shows average subsidy per passenger by route on weekdays.

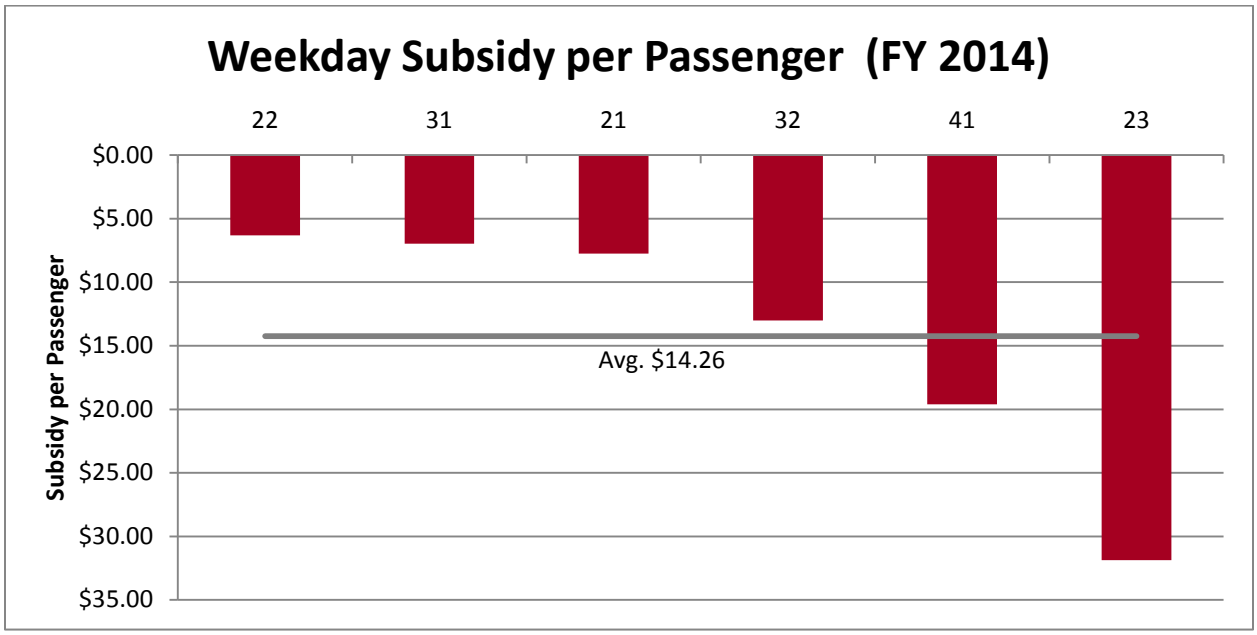

Figure 15: FRTA Weekday Subsidy per Passenger

Service Frequency

Frequency refers to how often a bus serves a particular route. Service frequencies affect how passengers use the system and the flexibility they can have when making travel plans.

FRTA routes operate infrequently, ranging from two to seven trips on each route per direction per day. Routes 22 and 32 run the most frequently with seven trips per direction per day, with frequencies of approximately 120 minutes between trips. Route 23 runs least frequently with two trips per direction per day, with one round trip during the morning peak period and one round trip in the evening peak period.

Service frequencies correspond somewhat well with passenger ridership within the FRTA system, with the most frequent routes carrying more passengers and the least frequent routes carrying considerably fewer passengers.

Ranking of Weekday Route Performance

In order to evaluate investment priorities, the routes were given a score based on how their performance compared with system averages. Routes were scored based on ridership, passengers per revenue hour, and subsidy per passenger. For each route, each performance indicator was evaluated as a percentage of the system average. For example, if the system average was 100 passengers and a given route has 200 passengers, it would score 200% for that category. The composite score was calculated by taking the averages of the percentages for each category. The routes were then divided into four tiers based on their composite score: Highest performers (150% or greater), above average performers (149%-100%), below average performers (99%-50%), poor performers (49% or lower).

Table 3: Ranking of FRTA Routes

Rank	Route	Route Description	Score
1	22	Montague – Greenfield	144%
2	31	Northampton – Greenfield	141%
3	21	Greenfield Community	130%
4	32	Orange – Greenfield	91%
5	41	Charlemont – Greenfield	48%
6	23	Amherst – Greenfield	26%

Investment strategies for routes will vary based on their performance tier. The six routes with the highest performances are top priorities for service investment and may benefit from increased service frequencies or service spans. The other routes that perform above average are candidates for further service investment as resources become available.

For routes that perform below average require further analysis to determine the cause of low performance. A more in depth analysis could look at inefficiencies in route alignments as well as service

frequencies and spans. Routes with exceptionally low performance may be candidates for discontinuation of service.

Key Findings

- Overall, ridership decreased between FY 2012 and FY 2014 as a result of Athol leaving the FRTA service area.
- Because of this reduction in ridership, service performance decreased between FY 2012 and FY 2014.
- Ridership loss is not an isolated event – two-thirds of routes on weekdays lost riders between FY 2012 and FY 2014.
- Routes 21, 22, 31, and 32 exhibit above-average ridership, while Routes 23 and 41 carry considerably fewer than average passengers.
- Routes with higher frequencies have higher productivities.

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