

APPENDIX C: PASSENGER RAIL PERFORMANCE EVALUATION



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RIDERSHIP AND UTILIZATION OF AMTRAK SERVICES

Figure C-1 depicts the changes in total ridership on Virginia’s Amtrak regional and long-distance services serving Virginia. The table captures ridership information from Amtrak’s FY 2012 to the end of FY 2016. Virginia’s regional service trains’ ridership reached a high mark in FY 2013, with 887,850 passengers carried from, to or through Virginia.

Ridership for all trains serving Virginia actually increased two percent between FY 2012 and FY 2016, despite ridership losses on Virginia-supported trains. This is due to the Palmetto nearly doubling its ridership between 2012 and 2016.

The Palmetto service has made significant ridership gains of 92 percent between FY 2012 and FY 2016 attributable to the October 26, 2015 discontinuance and combination of the Palmetto with two other Northeast Regional trains between New York and Washington, D.C. and the addition of several station stops including New Brunswick, NJ, Princeton, NJ, BWI Airport and New Carrollton, MD, to the Palmetto’s schedule.

Changes in Amtrak ridership reporting methodology affected the ridership of the two daily round trips between the Northeast Corridor, Washington, D.C. and Newport News. This drop is attributable to the fact that until FY 2014, Amtrak counted the two daily round trips that terminate in Richmond as a part of this service. After the two Richmond trains were given their own route classification, ridership figures on the Newport News trains dropped by approximately one-half. Still ridership declined by approximately 100,000 riders on these combined services from FY 2012, attributable to the aforementioned trends, especially the rail capacity project at Acca Yard.

Amtrak also changed how they collected and accounted for multi-ride passes in FY 2014 due to the adoption of e-ticketing. To ensure accurate comparisons, the FY 2013 ridership figures shown are adjusted figures with data restated using this same method. (This change had no impact on ticket revenues.)

Figure C-1: Total Ridership on Amtrak Trains in Virginia

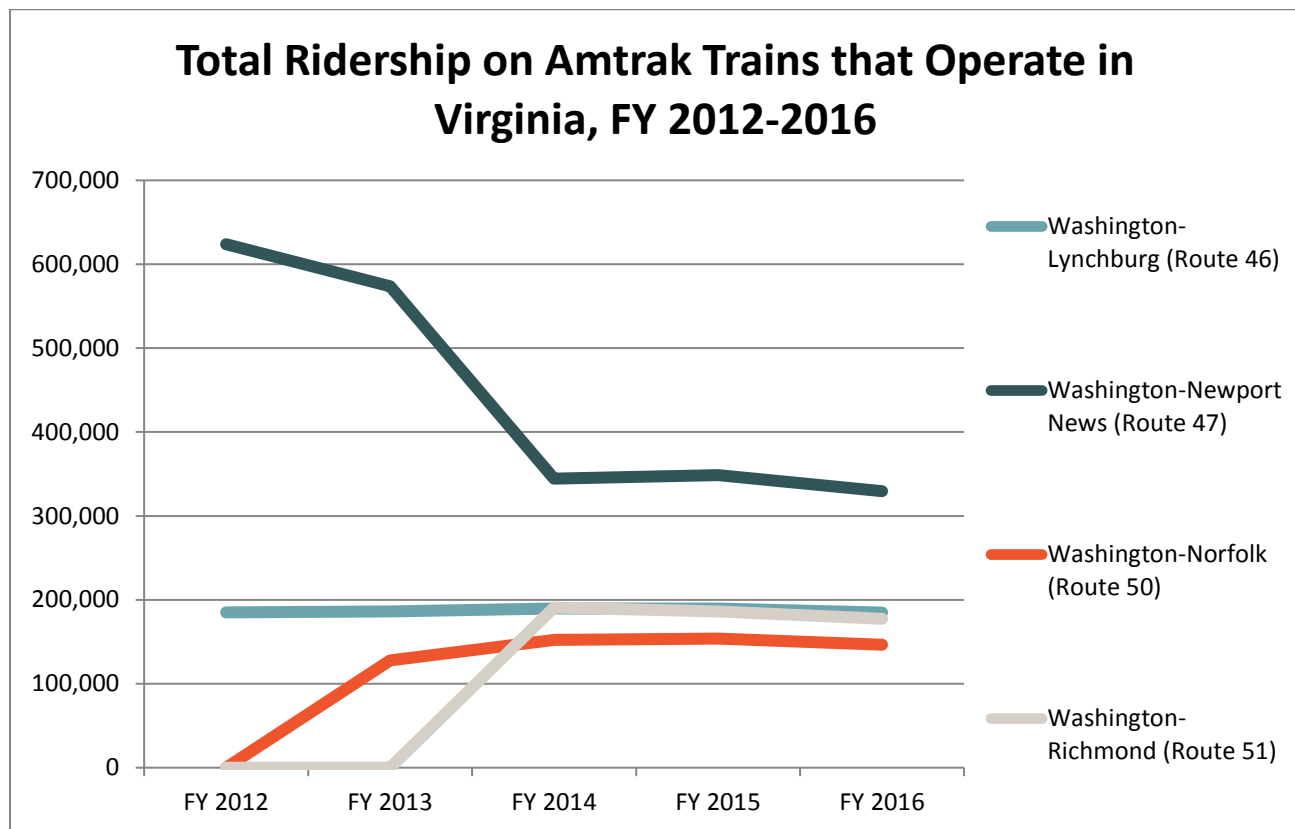


Table C-1 shows that intrastate ridership on Virginia regional service trains accounted for only 15 percent of total Virginia ridership in FY 2016. This figure has increased by roughly 2 percentage points since FY 2012. The vast majority of Virginia ridership (84 percent in FY 2016) ends or begins their journey in another state. This figure has decreased slightly from 86.7 percent to 84.9 percent between FY 2012 and FY 2016, indicating a larger share of intrastate trips occurred despite lower overall ridership. Virginia's share of Carolinian ridership has increased from 22 percent in FY 2012 to 25 percent in FY 2016.

Table C-1: Trip Characteristics of Riders on Virginia Regional Service Amtrak Trains (Including North Carolina's Carolinian) Serving Virginia, FY 2012-2016

Fiscal Year	Trip Characteristic	Washington-Lynchburg (Route 46)	Washington-Newport News (Route 47)	Washington-Norfolk (Route 50)	Washington-Richmond (Route 51)	Carolinian
	State Sponsor	Virginia	Virginia	Virginia	Virginia	North Carolina
2012	One endpoint in VA	163,651	532,891	n/a	n/a	62,205
	Both endpoints in VA	21,256	90,973	n/a	n/a	3,866
	Total VA ridership	184,907	623,864	n/a	n/a	66,071
	No endpoints in VA	0	0	n/a	n/a	240,348
	Total route ridership	184,907	623,864	n/a	n/a	306,419
	Percent from VA trips	100%	100%	n/a	n/a	22%
2013	One endpoint in VA	163,131	486,134	112,191	n/a	69,152
	Both endpoints in VA	22,994	92,234	15,746	n/a	4,037
	Total VA ridership	186,125	578,368	127,937	n/a	73,189
	No endpoints in VA	0	0	0	n/a	244,361
	Total route ridership	186,125	578,368	127,937	n/a	317,550
	Percent from VA trips	100%	100%	0	n/a	23%
2014	One endpoint in VA	165,219	276,718	130,622	174,348	66,158
	Both endpoints in VA	24,504	67,580	21,513	16,485	4,245
	Total VA ridership	189,723	344,298	152,135	190,833	69,403
	No endpoints in VA	0	37	0	0	233,198
	Total route ridership	189,723	344,335	152,135	190,833	302,601
	Percent from VA trips	100%	100%	100%	100%	23%
2015	One endpoint in VA	163,179	278,736	131,056	169,982	64,969
	Both endpoints in VA	25,573	69,845	22,801	16,286	4,790
	Total VA ridership	188,752	348,581	153,857	186,268	69,759
	No endpoints in VA	846	0	0	0	229,214
	Total route ridership	189,598	348,581	153,857	186,268	298,973
	Percent from VA trips	99.6%	100%	100%	100%	23%
2016	One endpoint in VA	159,181	260,739	123,486	161,552	66,222
	Both endpoints in VA	25,132	68,812	23,119	15,753	4,906
	Total VA ridership	184,313	329,551	146,605	177,305	71,128
	No endpoints in VA	555	0	0	0	214,673
	Total route ridership	184,868	329,551	146,605	177,305	285,801
	Percent from VA trips	99.7%	100%	100%	100%	25%

Source: Amtrak-provided data

Table C-2 shows that the vast majority (93.8 percent in FY 2016) of long-distance train ridership (excluding the Auto Train) had an endpoint outside of Virginia, with only 6.2 percent of FY 2016 riders traveling between two stations in Virginia. Intrastate travel on long-distance trains in Virginia has increased slightly (approximately 1 percent) since FY 2012. In FY 2016, only 17 percent of long-distance train ridership through Virginia either boarded or alighted at a Virginia station, with the vast majority



traveling through the state to other destinations. This is a roughly 3 percent increase from 2012, when only 14 percent of the train's passengers boarded or alighted at a station in Virginia. The Auto Train has seen a slight ridership decline of 10 percent since FY 2012, most likely caused by some of the similar trends affecting the Virginia regional service routes—especially decreases in the price of gasoline since 2013.

Table C-2: Trip Characteristics of Riders on Long-Distance Amtrak Trains Serving Virginia, FY 2012-2016

Fiscal Year	Trip Characteristic	Auto Train	Cardinal	Crescent	Palmetto	Silver Meteor	Silver Star
2012	One endpoint in VA	264,096	31,703	52,999	43,879	23,088	36,290
	Both endpoints in VA	0	2,998	3,288	2,830	522	1,449
	Total VA ridership	264,096	34,701	56,287	46,709	23,610	37,739
	No endpoints in VA	0	81,672	247,979	151,551	351,554	368,055
	Total route ridership	264,096	116,373	304,266	198,260	375,164	425,794
	Percent from VA trips	100%	30%	18%	24%	6%	9%
2013	One endpoint in VA	265,274	31,630	61,751	50,167	25,385	39,644
	Both endpoints in VA	0	3,250	3,739	3,217	427	1,574
	Total VA ridership	265,274	34,880	65,490	53,384	25,812	41,218
	No endpoints in VA	0	78,223	241,243	154,531	347,350	372,859
	Total route ridership	265,274	113,103	306,733	207,915	373,162	414,077
	Percent from VA trips	100%	31%	21%	26%	7%	10%
2014	One endpoint in VA	274,445	31,971	55,937	52,292	26,673	41,655
	Both endpoints in VA	0	3,587	3,240	3,641	418	1,677
	Total VA ridership	274,445	35,558	59,177	55,933	27,091	43,332
	No endpoints in VA	0	73,596	235,129	147,235	321,490	362,363
	Total route ridership	274,445	109,154	294,306	203,168	348,581	405,695
	Percent from VA trips	100%	33%	20%	28%	8%	11%
2015	One endpoint in VA	271,622	31,820	60,300	56,119	29,309	41,828
	Both endpoints in VA	0	3,768	3,121	4,356	616	1,933
	Total VA ridership	271,622	35,588	63,421	60,475	29,925	43,761
	No endpoints in VA	0	68,045	218,356	148,170	316,172	339,586
	Total route ridership	271,622	103,633	281,777	208,645	346,097	383,347
	Percent from VA trips	100%	34%	23%	29%	9%	11%
2016	One endpoint in VA	238,448	32,729	65,814	55,208	33,072	45,955
	Both endpoints in VA	0	3,928	3,609	4,898	802	2,243
	Total VA ridership	238,448	36,657	69,423	60,106	33,874	48,198
	No endpoints in VA	0	68,174	198,921	320,709	305,533	316,073
	Total route ridership	238,448	104,831	268,344	380,815	339,407	364,271
	Percent from VA trips	100%	35%	26%	16%	10%	13%

Source: Amtrak-provided data



Table C-3 shows boardings and alightings for each service type at each station in Virginia. Stations are ordered by their total boardings and alightings. Not counting the Auto Train station at Lorton, the top-five stations for boardings and alightings in FY 2016 were:

1. Richmond Staples Mill
2. Alexandria
3. Charlottesville
4. Fredericksburg
5. Newport News

Roughly three-fourths of the boardings and alightings at Virginia's two busiest stations were attributed to Virginia regional service passengers in FY 2016. At Charlottesville, the station's only round trip Virginia regional service train accounted for roughly 60 percent of all boarding and alightings, despite it being only one-third of the total number of trains that stop there daily.¹ Of the top 10 stations, seven are located in dense, central locations with multimodal transit access. Despite poor transit access and limited parking facilities, Richmond's Staples Mill Station consistently leads the state in boardings and alightings.

¹ The thrice-weekly Cardinal does not stop in Charlottesville daily, but is assumed to be a once-daily train for this illustrative comparison.

Table C-3: Station Activity (ons and offs) at Amtrak Stations in Virginia, FY 2016

Stat. Code	Station Name	WAS-LYH (46)	WAS-NPN (47)	WAS-NFK (50)	WAS-RVR (51)	Carolinian	Auto Train	Cardinal	Crescent	Palmetto	Silver Meteor	Silver Star	Total
RVR	Richmond Staples Mill		88,926	51,675	83,285	35,771				42,188	20,405	33,939	356,189
LOR	Lorton (Auto Train)						238,448						238,448
ALX	Alexandria	22,184	51,625	22,143	28,196	20,743		4,164	8,655	15,442	6,990	10,043	190,185
CVS	Charlottesville	82,684						22,922	32,021				141,827
FBG	Fredericksburg		27,134	27,246	52,089	10,153					3,653		120,275
NPN	Newport News		107,894										107,894
LYH	Lynchburg	68,385							14,401				82,786
WBG	Williamsburg		59,677										59,677
NFK	Norfolk			44,316									44,316
RVM	Richmond		42,702										42,702

Stat. Code	Station Name	WAS-LYH (46)	WAS-NPN (47)	WAS-NFK (50)	WAS-RVR (51)	Carolinian	Auto Train	Cardinal	Crescent	Palmetto	Silver Meteor	Silver Star	Total
	Main Street												
PTB	Petersburg			7,386		5,213				7,374	3,628	6,459	30,060
ASD	Ashland		9,527	6,597	11,951								28,075
MSS	Manassas	17,701						2,883	7,013				27,597
QAN	Quantico		9,262	4,170	7,888	4,154							25,474
WDB	Wood-bridge		1,616	6,191	9,649								17,456
CLP	Culpeper	9,390						1,965	3,733				15,088
BCV	Burke Centre	9,101											9,101
DAN	Danville								7,209				7,209
STA	Staunton							6,250					6,250
CLF	Clifton Forge							2,401					2,401
Total		209,445	398,363	169,724	193,058	76,034	238,448	40,585	73,032	65,004	34,676	50,441	1,553,010

Note: Charlottesville station count includes ridership of 4,200 that occurred as part of a special, one-time Amtrak train operation.

Source: Amtrak-provided data.



FINANCIAL PERFORMANCE OF AMTRAK SERVICES

Table C-4, Figure C-2 and Figure C-3 presents total ticket revenue for Virginia's Amtrak regional and long-distance trains serving Virginia between FY 2012 and FY 2016. Virginia regional services have seen modest revenue increases over the past five years compared to other Amtrak state-supported services, though revenues declined greater than the nationwide state-supported percentage change in FY 2016 (-3.5 percent in Virginia versus +0.3 percent nationwide). The major drop in revenue for the Newport News service between FY 2013 and FY 2014 is attributable to a change in the way Amtrak accounted for the Richmond-terminating trains, which were previously included in the Newport News service figures. Despite this, the combined Richmond/Newport News services still experienced a roughly \$3.5 million revenue decline over the past five years, which is explained by a decrease in ridership mentioned earlier in this chapter. In most years, Amtrak's East Coast long-distance trains had revenue increases less than the nationwide long-distance train average. As it has for many years, the Auto Train generated the highest revenue of any Amtrak long-distance service in FY 2016.

Table C-4: Total Ticket Revenue for Amtrak Trains that Operate in Virginia, FY 2012-2016

Service	FY 2012	Percent Change	FY 2013	Percent Change	FY 2014	Percent Change	FY 2015	Percent Change	FY 2016	Percent Change
Washington-Lynchburg (Route 46)	\$11,411,821	+16.1	\$11,744,966	+2.9	\$12,604,973	+7.3	\$12,561,970	-0.3	\$12,033,083	-4.2
Washington-Newport News (Route 47)	\$34,286,847	+15.5	\$32,916,626	-4.0	\$22,057,190	-33.0	\$22,447,498	+1.8	\$21,556,313	-4.0
Washington-Norfolk (Route 50)	n/a	n/a	\$6,233,871	n/a	\$7,748,910	+24.3	\$8,434,574	+8.8	\$8,594,582	+1.9
Washington-Richmond (Route 51)	n/a	n/a	n/a	n/a	\$9,594,953	n/a	\$9,836,686	+2.5	\$9,256,426	-5.9
All Virginia Regional Services	\$45,698,668	+15.7	\$50,895,463	+11.4	\$52,006,026	+2.2	\$53,280,728	+2.5	\$51,440,484	-3.5
Carolinian	\$18,652,552	+5.3	\$19,841,847	+6.4	\$19,136,311	-3.6	\$19,217,309	+0.4	\$18,120,733	-5.7
Amtrak System-wide Virginia Regional Services	\$458,062,196	+7.3	\$478,099,504	+4.4	\$486,572,424	+1.8	\$489,424,386	+0.6	\$490,733,603	+0.3
Auto Train	\$72,518,200	+5.7	\$73,505,625	+1.4	\$78,831,501	+7.2	\$81,607,535	+3.5	\$75,169,554	-7.9
Cardinal	\$7,536,903	+6.2	\$7,733,458	+2.6	\$7,763,143	+0.4	\$7,645,472	-1.5	\$7,658,608	+0.2
Crescent	\$32,584,682	+8.5	\$32,233,213	-1.1	\$33,336,475	+3.4	\$31,333,652	-6.0	\$29,505,818	-5.8



Service	FY 2012	Percent Change	FY 2013	Percent Change	FY 2014	Percent Change	FY 2015	Percent Change	FY 2016	Percent Change
Palmetto	\$17,342,317	+5.5	\$17,929,176	+3.4	\$17,083,752	-4.7	\$16,860,699	-1.3	\$27,208,372	+61.4
Silver Meteor	\$29,773,225	+1.9	\$39,558,152	-0.5	\$38,499,563	-2.7	\$38,455,934	-0.1	\$36,652,426	-4.7
Silver Star	\$35,080,321	+6.4	\$34,095,273	-2.8	\$34,557,675	+1.4	\$33,108,142	-4.2	\$29,261,496	-11.6
Total Long-Distance Services in Virginia	\$204,835,648	+5.5	\$205,054,897	+0.1	\$210,072,109	+2.4	\$209,011,434	-0.5	\$205,456,274	-1.7
Amtrak System-wide Long-Distance Services	\$516,030,313	+7.2	\$525,890,638	+1.9	\$510,657,526	-2.9	\$497,422,921	-2.6	\$492,260,807	-1.0

Source: Amtrak-provided data for individual trains and Virginia totals. System-wide totals included for comparison appear in Amtrak Monthly Performance Reports for September 2012 – 2016.

Figure C-2: Ticket Revenue for VA and NC State Supported Routes, 2012-2016

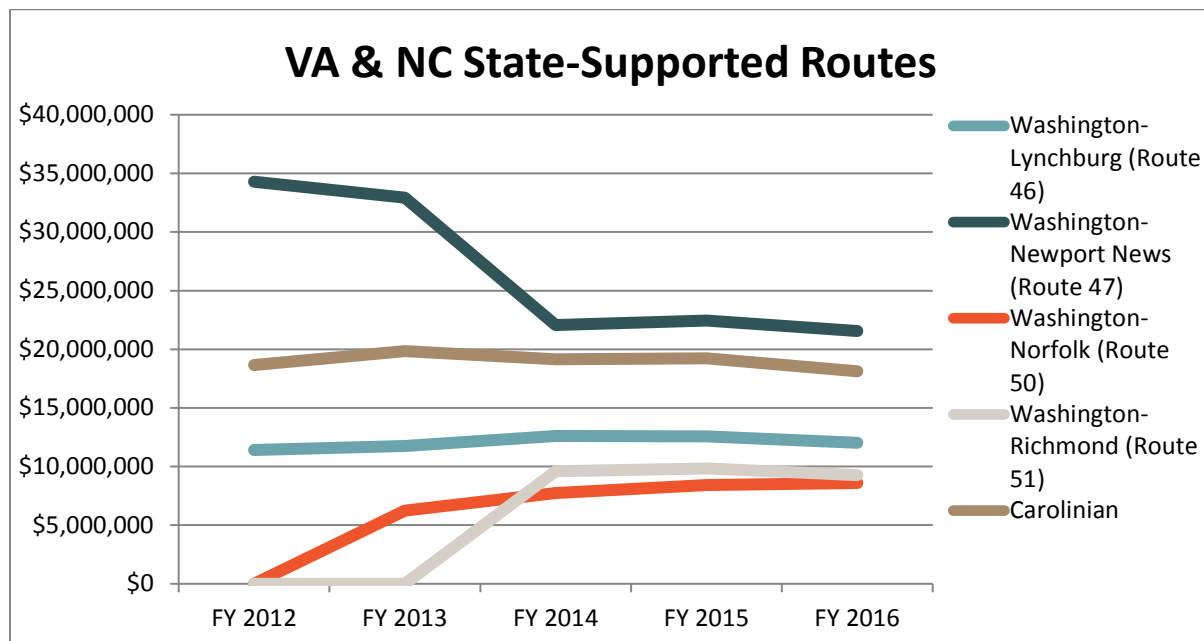


Figure C-3: Ticket Revenue of Long Distance Trains, 2012-2016

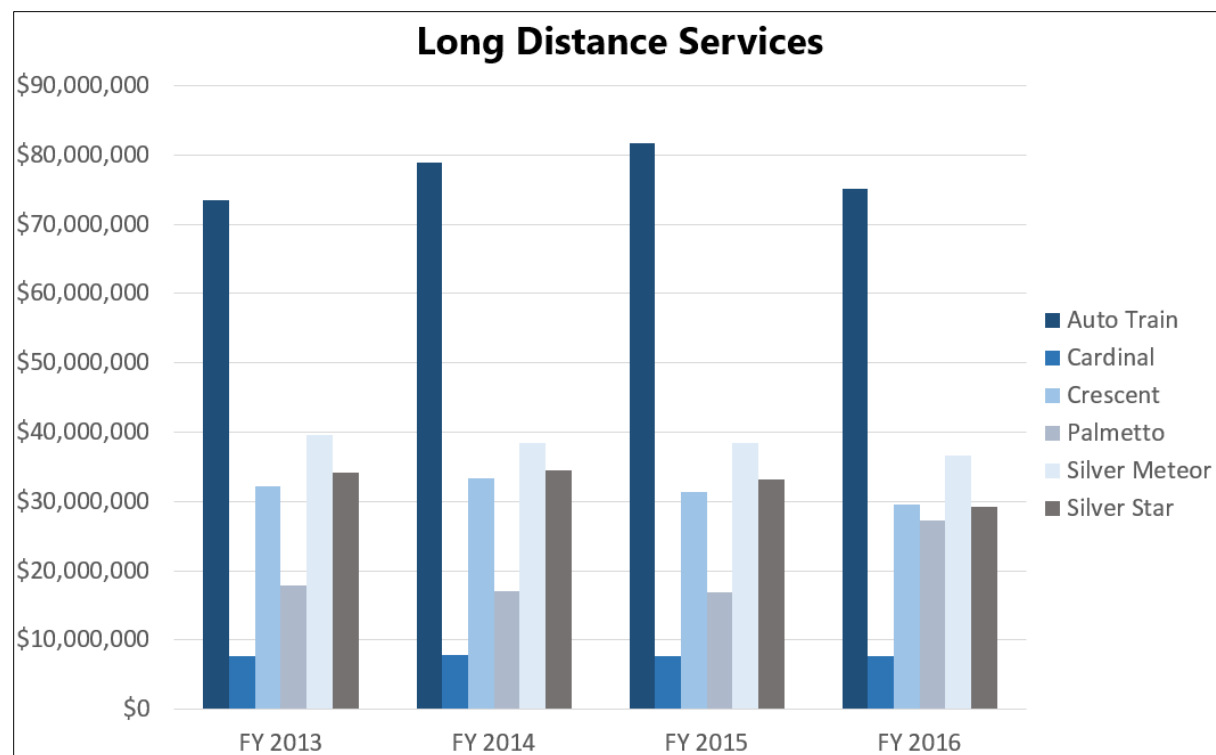


Table C-5 details Amtrak’s expenditures on goods and services in Virginia, including expenditures on salaries, as well as the number of Amtrak employees residing in Virginia from FY 2012 to 2016.

Table C-5: Amtrak expenditures of goods and services in Virginia, 2012-2016

Fiscal Year	2012	2013	2014	2015	2016
Total expenditures	\$102,631,078	\$107,759,453	\$119,258,616	\$117,068,250	\$113,513,935
Employees residing in Virginia	864	838	852	880	864
Wages paid to Amtrak employees residing in Virginia	\$73,658,997	\$73,209,481	\$77,156,249	\$82,499,163	\$82,476,047

Source: Amtrak Virginia Fact Sheets, 2012 – 2016

ON-TIME PERFORMANCE AND CUSTOMER SATISFACTION OF AMTRAK SERVICES

Amtrak defines on-time performance (OTP) as the total number of trains arriving on-time at a station divided by the total number of trains operated on that route. Amtrak records two different types of on-time measurements. “Endpoint OTP” measures the percentage of trains arriving at their endpoint terminal on time. “All Stations OTP” measures the percentage of trains arriving at all intermediate stations and the endpoint station on time. A train is considered on-time if it arrives at its final destination, or intermediate station in the case of “All Stations OTP”, within an allowed number of minutes, or tolerance, of its scheduled arrival time. Tolerances vary based on the length of a particular train route.

ENDPOINT ON-TIME PERFORMANCE

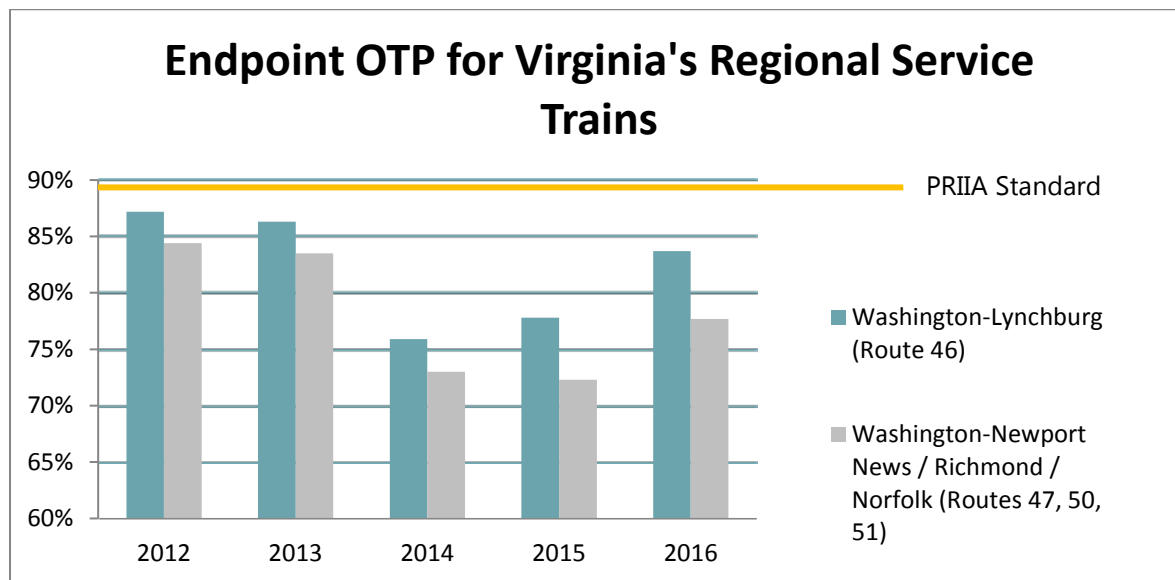
Figure C-4 shows endpoint OTP for Virginia regional services. A train is considered on time if it arrives at its final destination no more than five minutes for each 100 miles traveled (between 10 and 30 minutes total depending on route length). Over the past five years, Virginia regional service trains’ endpoint OTP declined through FY 2014 and has improved slightly, though not to FY 2012 levels. The Lynchburg service has maintained a higher endpoint OTP over the past five years than the combined



Richmond/Norfolk/ Newport News services. For this measure, only southbound trains serving Virginia are captured in endpoint OTP because there are no northbound Virginia trains that end their journey in Virginia.

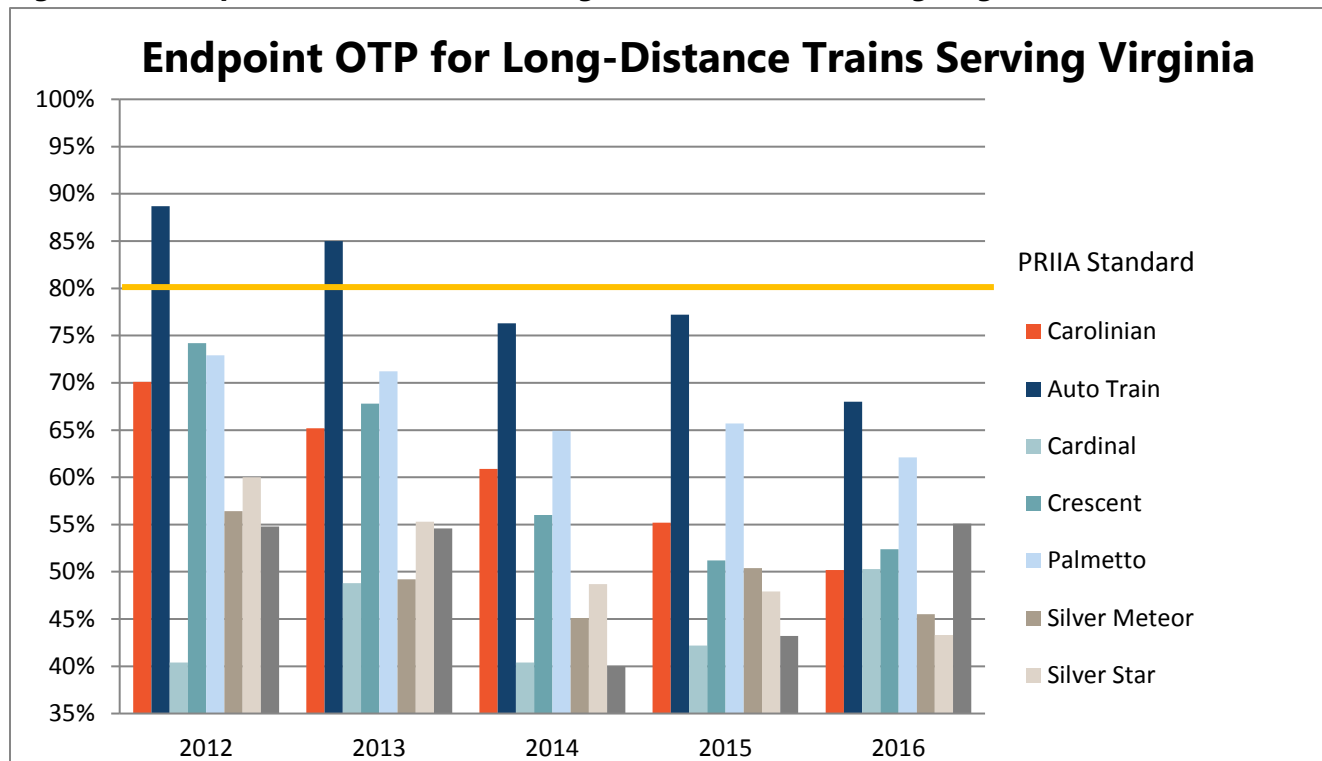
With the exception of the Auto Train, Amtrak's long-distance trains operating in Virginia do not have any endpoints in the state, however, for comparison; **Figure C-5** shows each train's endpoint OTP. Amtrak's system-wide average mirrored the Virginia trains pattern with a dip in endpoint OTP in FY 2014 and recovery to FY 2012 OTP by FY 2016. The Silver Meteor, Silver Star and Carolinian have seen significant declines in endpoint OTP in the past five years.

Figure C-4: Endpoint On-Time Performance for Virginia's Amtrak Regional Service Trains



Source: Amtrak Monthly Performance Reports for September 2012 – 2016.

Figure C-5: Endpoint OTP for Amtrak Long-Distance Trains Serving Virginia

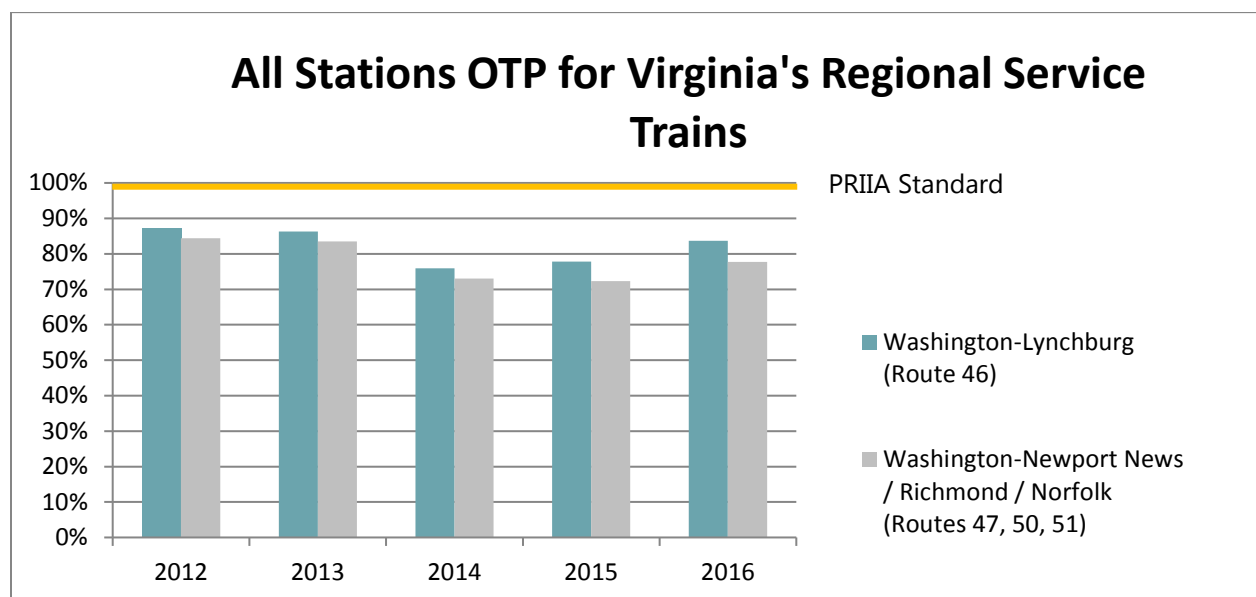


Source: Amtrak Monthly Performance Reports for September 2012 – 2016.

ALL STATIONS ON-TIME PERFORMANCE

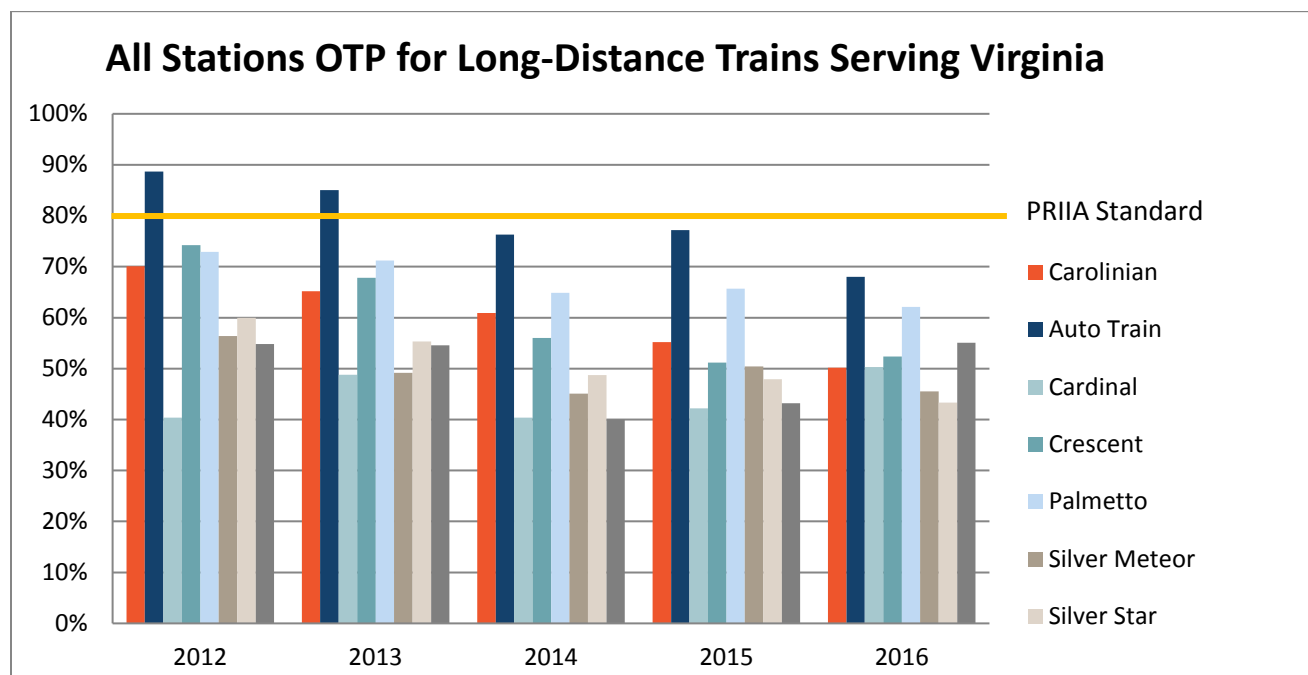
Figure C-6 shows all stations OTP for Virginia regional services. A train is considered on time if it arrives at each station no more than 15 minutes past its scheduled arrival time. All-stations OTP for all Virginia regional services declined through FY 2014, with a slight recovery through FY 2016. In FY 2016, only the Lynchburg service posted all-stations-OTP higher than the PRIIA standard for Northeast Regional services of 85 percent. **Figure C-7** shows that all long-distance trains serving Virginia, except the Cardinal, experienced declines in all-station OTP over the last five years. This is likely one of the causes of reduced ridership and revenue for the long-distance services serving Virginia discussed in a previous chapter.

Figure C-6: All Stations On-Time Performance for Virginia's Amtrak Regional Service Trains Serving Virginia



Source: Amtrak Monthly Performance Reports for September 2013 – 2016.

Figure C-7: All Stations On-Time Performance for Amtrak Long-Distance Trains Serving Virginia



Source: Amtrak Monthly Performance Reports for September 2013 – 2016.

CAUSES OF TRAIN DELAY

The primary causes of delay on all of the routes serving Virginia are train interference and track and signal problems. Within the Commonwealth, passenger trains use tracks owned and operated by freight railroads. **Table C-6, Figure C-8, and Figure C-9** show the leading causes of delay, by percentage of delay minutes, for each Virginia-served passenger route.

Virginia-bound trains may also be delayed by the high volume of train operations on the Northeast Corridor between Boston, New York and Washington, D.C. Operations are physically constrained by moveable bridges, tunnels and station platform requirements. In addition, trains serving Virginia must change locomotives from electric to diesel at Washington and in some cases add or subtract cars, adding potential for delay.

Table C-6: Primary Causes of Delay to Amtrak Trains Serving Virginia in September 2016

	Causes of Delay					
	Train Interference	Track and Signals	Operational	Equipment	Passenger	Other Delay
Washington-Lynchburg	35.0%	27.6%			14.4%	24%
Washington-Newport News	37.5%	30.9%	18.4%			13.2%
Washington-Norfolk	31.3%	28.5%	20.1%			20.1%
Washington-Richmond	36.3%	38.3%	10.0%			15.4%
Carolinian	32.7%	35.6%			11.5%	20.2%
Auto Train	37.9%	24.8%		13.6%		23.7%
Cardinal	26.8%	32.2%	16.2%			24.8%
Crescent	37.1%	23.6%	16.7%			22.6%
Silver Service (Palmetto, Silver Meteor, Silver Star)	30.0%	31.8%	12.1%			26.1%

Source: Amtrak On-Time Performance metrics posted on website

Note: Causes of delay for Regional trains measured for October 2016; all other trains measured for September 2016

Figure C-8: Sources of Delay for State Supported Virginia Service

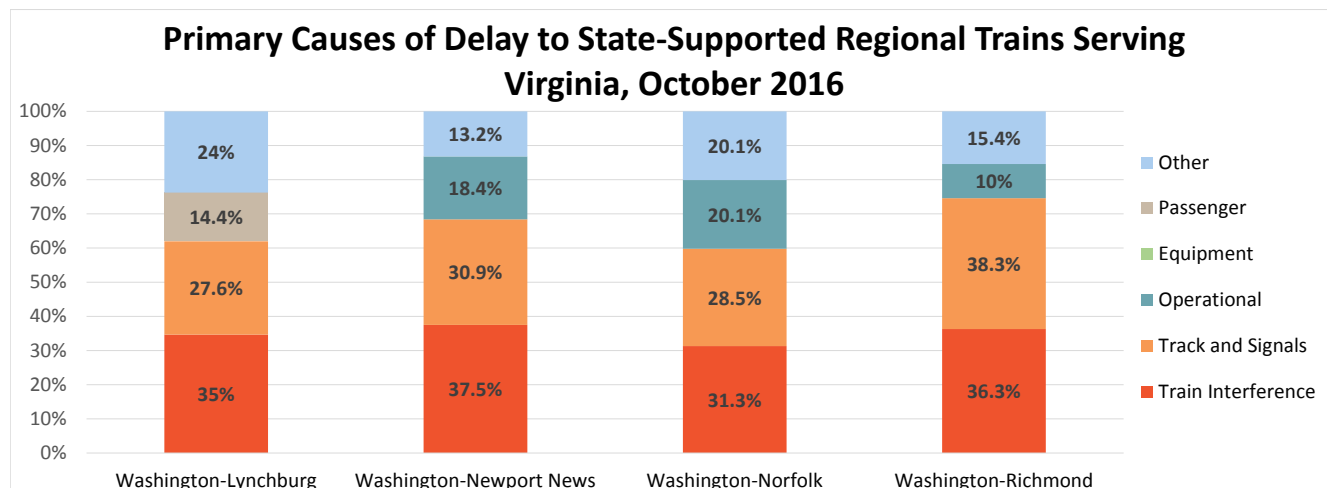
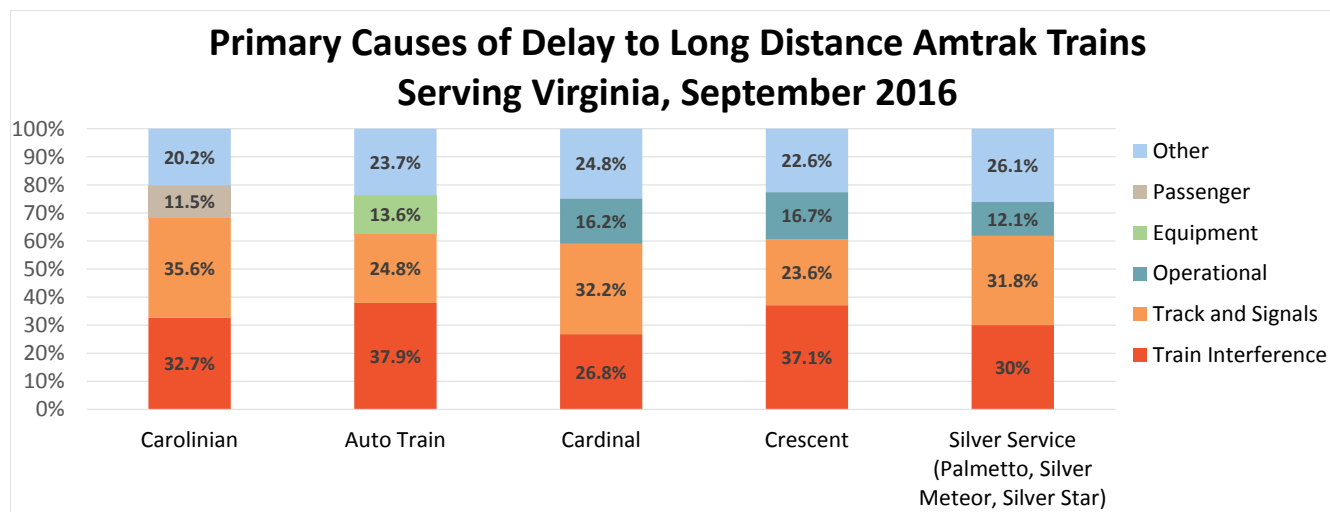


Figure C-9: Sources of Delay for Long Distance Trains



CUSTOMER SERVICE INDICATOR SCORES

Amtrak's Customer Service Indicator (CSI) scores measure the satisfaction of passengers on particular aspects of their trip. A CSI score of 80, for example, means 80 percent of respondents rated the aspect of their trip in the top three of the 11 steps of the scale. After completing a trip on Amtrak, customers are sent a survey² asking them to rate their satisfaction with the following aspects of service experienced during their journey. **Table C-7** shows that overall, Virginia's regional service trains have maintained CSI scores in the 80 range, despite not meeting Amtrak's standard of 90 for FY 2016. The data shows that for the past five years, both on-board comfort and on-board food service scored lowest among CSI metrics measured. On-board cleanliness for all Virginia services has greatly improved in the last five years.

Table C-7: Amtrak CSI Scores, Fourth Quarter of Each Fiscal Year

Service Category	2012	2013	2014	2015	2016
Virginia Regional Service Trains					
Overall Service (all scores out of 100)					
Washington-Lynchburg	86	87	87	89	83
Washington-Newport News	88	80	80	72	81
Washington-Norfolk	n/a	n/a	83	85	88
Washington-Richmond	n/a	n/a	83	77	81
Amtrak Standard	82	82	90	90	90
Amtrak Personnel					
Washington-Lynchburg	84	81	79	87	82
Washington-Newport News	87	79	81	83	86
Washington-Norfolk	n/a	n/a	82	88	86
Washington-Richmond	n/a	n/a	82	83	80
Amtrak Standard	80	80	90	90	90
Information Given					
Washington-Lynchburg	74	70	76	78	74
Washington-Newport News	75	66	71	68	71
Washington-Norfolk	n/a	n/a	69	78	75

²Overall Service is the measure for the respondents rating for their overall trip experience.

Amtrak Personnel is the measure for the respondents rating Amtrak reservations personnel, station personnel, train crew members, and on-board service crew members.

Information Given is the measure for the respondents rating all information they received pertaining to their trip.

On-Board Comfort is the measure for the respondents rating seat or sleeping compartment comfort, air temperature, and ride quality.

On-Board Cleanliness is the measure for the respondents rating the cleanliness of the train and on-board restroom facilities.

On-Board Food Service is the measure for the respondents rating the quality of the food and snacks purchased on-board the train.

Service Category	2012	2013	2014	2015	2016
Washington-Richmond	n/a	n/a	69	68	67
Amtrak Standard	80	80	90	90	90
On-Board Comfort					
Washington-Lynchburg	80	84	84	64	58
Washington-Newport News	85	78	83	57	56
Washington-Norfolk	n/a	n/a	84	67	61
Washington-Richmond	n/a	n/a	85	59	55
Amtrak Standard	80	80	90	90	90
On-Board Cleanliness					
Washington-Lynchburg	59	53	57	87	82
Washington-Newport News	58	52	55	79	83
Washington-Norfolk	n/a	n/a	58	84	85
Washington-Richmond	n/a	n/a	57	83	80
Amtrak Standard	80	80	90	90	90
On-Board Food Service					
Washington-Lynchburg	n/a	58	55	69	60
Washington-Newport News	60	60	65	63	70
Washington-Norfolk	n/a	n/a	59	69	68
Washington-Richmond	n/a	n/a	66	64	61
Amtrak Standard	80	80	90	90	90
Long-Distance Trains and Other Virginia Regional Service Trains Serving Virginia					
Overall Service Only					
Carolinian	79	79	76	71	74
Auto Train	86	87	73	79	75
Cardinal	70	71	66	67	66
Crescent	82	77	77	69	73
Palmetto	78	80	81	71	73
Silver Meteor	75	76	70	71	69
Silver Star	77	79	81	69	75
Amtrak Standard	82	82	90	90	90

Source: FRA Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations for September 2012 – 2016



PROJECTS TO IMPROVE SERVICE

Several projects and initiatives in recent years have been undertaken to improve service on Amtrak trains serving Virginia. **Table C-8** details some of the major service improvement initiatives implemented in recent years. Future improvements planned to improve the performance of Virginia's regional service passenger trains are discussed in **Chapter 3**, including rail infrastructure projects to improve the frequency and reliability of Amtrak trains.

Table C-8: Recent Service Improvement Initiatives on Amtrak Trains Serving Virginia

Improvement	Service
Amtrak Thruway bus connection from Charlottesville to Richmond Staples Mill Road and Richmond Main Street Station	Cardinal and Crescent (2014)
Additional stop in Fredericksburg	Silver Meteor (2015)
Checked bicycle service	Carolinian, Crescent, Palmetto, Silver Meteor, and Silver Star (2015); Washington-Newport News and Cardinal (2016)
Pets on Trains pilot program	Washington-Lynchburg / Newport News / Norfolk and Palmetto (2015); Carolinian, Silver Meteor, and Silver Star (2016)
Business Class service added	Auto Train, Cardinal, and Crescent (2016)

Source: Amtrak press releases announcing service initiatives

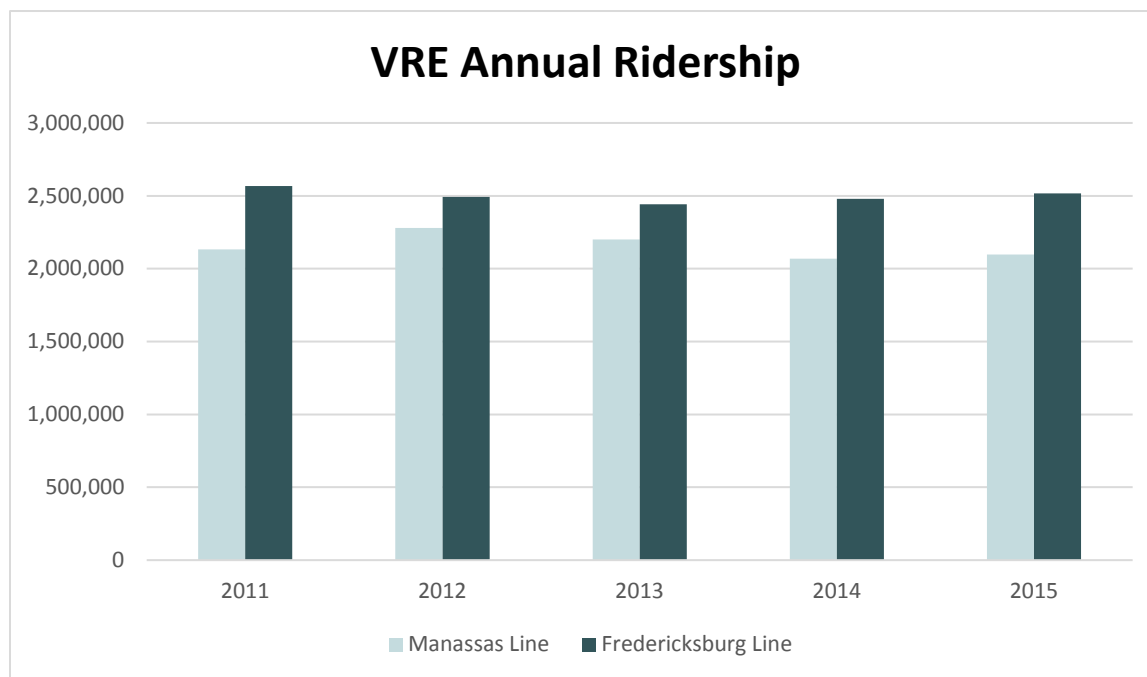


VIRGINIA RAILWAY EXPRESS

PERFORMANCE

Figure C-10 details the changes in annual on ridership on VRE commuter trains between 2011 and 2015. In November 2015, VRE extended its Fredericksburg Line service south to a new station in Spotsylvania County, and soon after added an eighth round trip on the line. While the Manassas Line has seen a gradual decline in ridership over the 2011-2015 time period, the Fredericksburg Line has seen modest increases after a three-year period of ridership decline between 2011 and 2014.

Figure C-10: VRE Annual Ridership, 2011-2015



YEAR	2011	2012	2013	2014	2015
Manassas Line	2,131,605	2,280,487	2,201,002	2,067,701	2,093,925
Fredericksburg Line	2,567,193	2,491,500	2,442,896	2,480,209	2,516,159
Total	4,698,798	4,771,987	4,643,898	4,547,909	4,610,084

Source: VRE

VRE currently operates with an annual overall on-time performance of more than 92 percent, as seen in **Table C-9**. Although on-time performance has declined slightly since 2013, when it was almost 96 percent, on-time performance remains higher than 2011, when system performance was 87 percent. Some of the recent declines in reliability can be attributed to rail capacity improvement projects on the Fredericksburg Line. Rather than suspend service altogether during construction, VRE, DRPT, and CSXT adopted construction methods that enabled rail service to continue while work was taking place, but with the potential for lower track speeds or delays at certain times.

Table C-9: VRE On-Time Performance, 2011-2015

Year	2011	2012	2013	2014	2015
Manassas Line	89.3%	95.8%	95.9%	94.4%	93.1%
Fredericksburg Line	84.8%	94.7%	95.5%	91.7%	91.7%
Total	87.2%	95.3%	95.7%	93.1%	92.4%

Source: VRE

Table C-10 shows the annual operating subsidy required between 2011 and 2015, and operating subsidy per rider. (Operating subsidies exclude capital grants and assistance.)

Table C-10: VRE Operating Subsidy and Operating Subsidy per Rider, 2011-2015

Year	2011	2012	2013	2014	2015
Total Operating Subsidy	\$39,482,330	\$40,281,215	\$44,522,696	\$47,693,613	\$40,987,125
Operating Subsidy per Rider	\$8.40	\$8.44	\$9.59	\$10.49	\$8.89

Source: VRE audited financial statement

VRE's improved performance can be attributed in part to key investments in track capacity to improve reliability, station parking and facility improvements to accommodate more riders, and new equipment for improved capacity and reliability. **Figure C-11** shows the increase in overall service quality between 2011 and 2015, as rated by VRE passengers in the agency's 2016 Customer Service Survey. Riders in 2016 gave VRE a service quality score of 89 percent—an 11 percent increase from 2011—the system's highest ever score.



Figure C-11: Overall Service Quality Percentage

