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*Connecting all points of the Triangle*

## **FY 2015 Annual Bus Performance Report**

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Prepared by Jon Dodson  
Transit Service Planner  
Regional Services Development

## Introduction

In September 2003, Triangle Transit's Board of Trustees adopted the Regional Bus Service Standards to establish performance expectations for the agency's fixed-route services. The intent was to drive improvements in productivity by routinely and systematically evaluating bus service performance against quantifiable indicators. The Board of Trustees amended the Regional Bus Service Standards in 2004 and 2007. In addition, staff includes on-time performance as an unofficial measure.

The Triangle Transit performance indicators presented in this report are:

- Customer boardings per revenue hour
- On-time performance

Several indicators are included in the report for informational purposes. These indicators are total revenue hours and total customer boardings.

This report provides a summary of Triangle Transit's regional bus service performance during Fiscal Year 2015, with comparisons to Fiscal Year 2014 and prior years in order to illustrate changes and trends in performance.

## Summary of Key Findings

- Despite a fare increase in August 2014 and the lowest gas prices since 2009, system wide ridership increased by 1% compared to the previous fiscal year.
- New Sunday service has performed well and has grown steadily since it was introduced in August 2014.
- The on-time performance target was met with 87% of trips arriving to end-of-line timepoints on-time.
- Despite an overall increase in ridership, system wide productivity, measured by customer boardings per revenue hour, decreased by 9% as compared to the previous fiscal year. This indicates that the new services introduced in FY15 have not yet reached the productivity of GoTriangle's more established routes.

## System and Service Category Performance

The table below summarizes the system averages for total customer boardings and customer boardings per revenue hour for all of FY 2015 compared to all of FY 2014. Service days, on-time performance, and revenue hours are also provided. Customer boardings per revenue hour is a productivity measure and shows how much service is consumed given the amount of service provided.

Performance Measure	FY 2015	FY 2014	% change *
<b>Service consumption</b> Customer Boardings ( <b>with NCDOT Fortify services</b> )	1,837,127	1,822,441	<b>1%</b>
<b>Service effectiveness</b> Boardings per revenue hour ( <b>with NCDOT Fortify services</b> )	14.3	15.8	<i>-9%</i>
<b>Service consumption</b> Customer Boardings ( <b>without NCDOT Fortify services</b> )	1,815,710	1,817,588	<i>0%</i>
<b>Service effectiveness</b> Boardings per revenue hour ( <b>without NCDOT Fortify services</b> )	15.2	16.0	<i>-5%</i>
<b>Service reliability</b> On-time arrivals to end of line (weekday)	87%	87%	<b>Goal: More than 85%</b>
<b>Weekdays</b>	252	250	
<b>Saturdays</b>	54	56	
<b>Sundays</b>	48	29	
<b>Revenue hours</b>	128,583	115,699	

\* **BOLD** values show measures that have improved since the previous fiscal year; Values in *ITALICS* show measures that have decreased.

Ridership on the GoTriangle system increased to 1,837,127 boardings in FY 2015 from 1,822,441 in FY 2014, a 1% increase in customer boardings. New service was added between Mebane, Efland, Hillsborough, and Durham on the Orange-Durham Express and on GoTriangle's core routes between Chapel Hill, Durham, Raleigh and RTP on Saturday evenings and on Sundays, making the system a seven-day-per-week operation. These services were paid by new revenues in the Orange-Durham Tax District, with the exception of the route between Raleigh and RTP. New service was also added on the Clayton-Raleigh Express, Downtown Cary-Raleigh Express, South

Cary –Raleigh Express, and Fuquay-Varina – Raleigh Express. These services were paid by NCDOT as part of the Fortify project.

Despite the ridership increase and perhaps in part due to the introduction of new services, boardings per hour declined from 15.8 in FY 2014 to 14.3 in FY 2014, a decrease of 9%. If the Fortify services were removed from the calculations, the percent change in effectiveness decreased by 5%.

The chart below includes the system-level performance data as well as the average price per gallon of fuel for FY 2015 and the previous four years. As shown in the table below, gas prices have significantly dropped. In FY 2014, the average price of a gallon of fuel was \$3.38 compared to an average of \$2.70 in FY 2015 – this is represented by the red line in Figure 1.

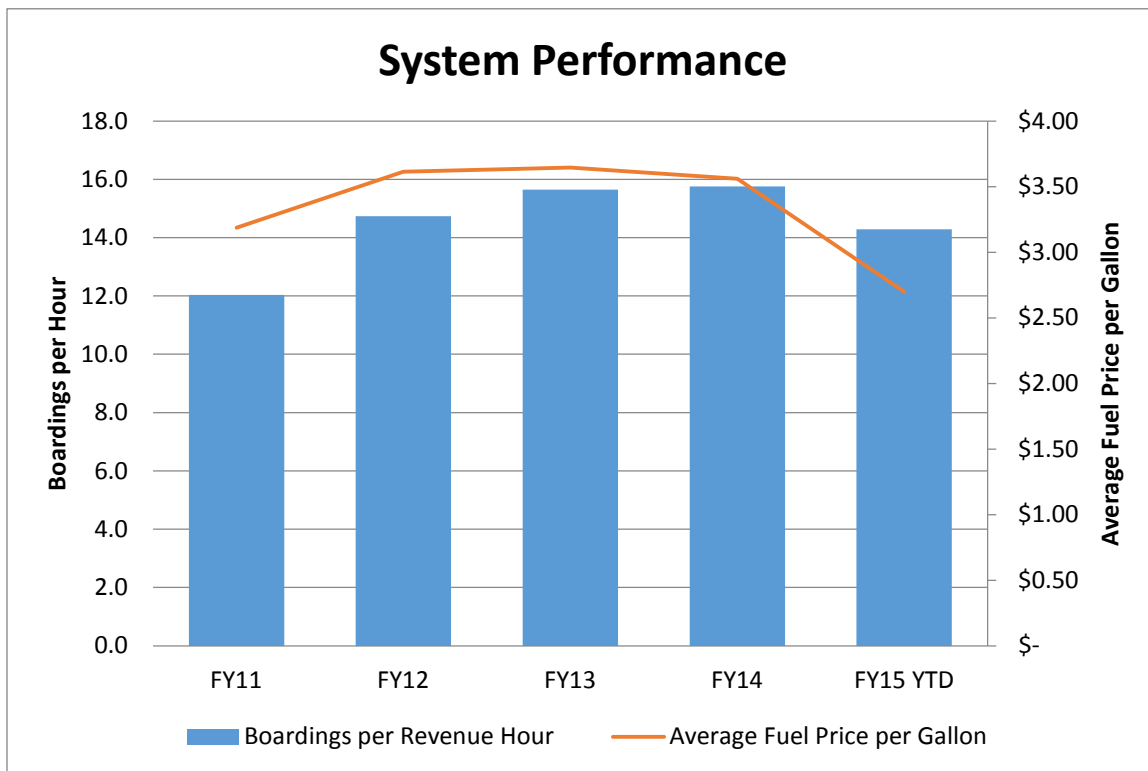


Figure 1: GoTriangle System Performance and Average Fuel Price Per Gallon

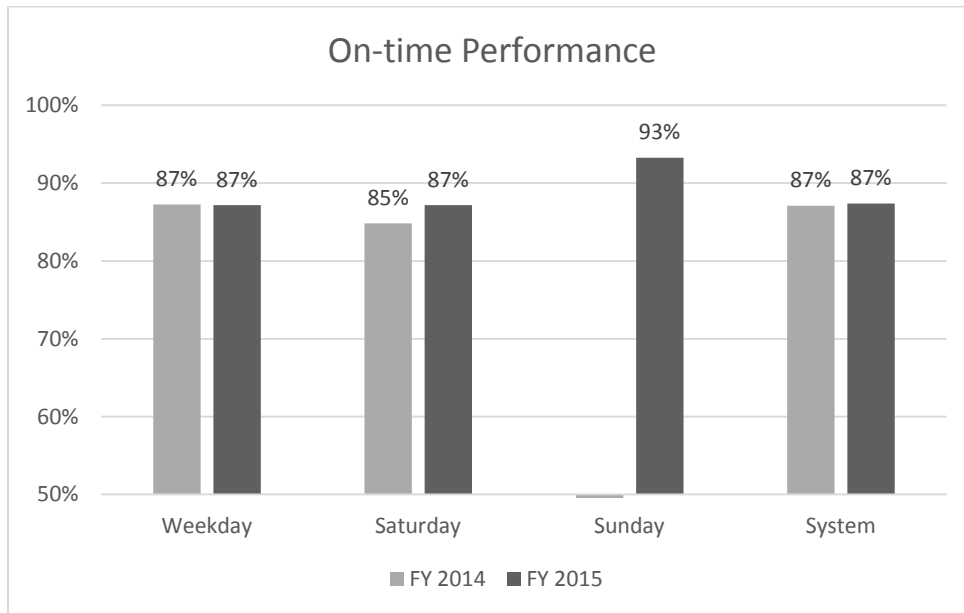
In August 2014, GoTriangle increased fares to \$2.25 for a one way trip from \$2.00. Express fares increased to \$3 for a one way trip from \$2.50.

The addition of Fortify routes in January 2015 have also not proven productive, which has resulted in part of the decrease in service effectiveness.

Additional decreases may be due to the increased fares, the low cost of fuel, and the other new services added in FY15. While staff is pleased with initial performance of the other bus services added, new services take time to develop. In addition, the new Saturday evening and Sunday service, while extremely valuable to our customers, is unlikely to compete with the productivity of weekday peak hour service.

## On-Time Performance

Staff includes on-time performance as an unofficial performance indicator. Arriving “On-time” is defined as arriving at the end-of-line (EOL) timepoint within five minutes of the schedule. GoTriangle has a goal of more than 85% of trips arriving on-time. In FY 2015, GoTriangle met the goal with 87% of trips arriving on-time to the EOL timepoints.



Despite the system wide on-time performance being more than 85%, some routes do not meet the standard for on-time performance. These routes include:

- Weekdays: Shuttle 49, 201, 303/300X, 305, 420, 805, CRX, KRX, CTX
- Saturdays: 303, 800, RSX
- Sundays: RSX

### What is being done to improve on-time performance?

Since August, Shuttle 49, Routes 201, 303/300X, and the CRX received schedule adjustments and added time to accurately reflect trip times. The pattern for Route 300/300X also changed in August. Staff continues to evaluate the impact of those adjustments on the on-time performance.

All routes not meeting the 85% on-time arrival threshold that have not yet already received schedule improvements are all above 80%. Staff will continue to monitor routes not meeting on-time performance standards and make minor adjustments as necessary for the upcoming service changes.

## Route-Level Performance

Staff investigated the performance of routes within the system compared to the average for the routes within their service category. Service categories include Regional Peak, Regional Midday, Shuttles, and Express. GoTriangle's Regional Bus Service Standards determine that a route is a "high performer" if it is 125% above the system average in terms of boardings per hour.

### High performing routes and service categories

The following routes showed high performance in FY 2015 compared to service category averages in FY 2014:

- Route 405 (Durham – Chapel Hill) and Route 700 (Durham – RTC) during the peak period
- CRX (Chapel Hill – Raleigh Express) and DRX (Durham – Raleigh Express)
- Shuttle 47 (NC 54 – Alexander Dr – Cornwallis Dr – Miami Blvd) and Shuttle 49 (South RTP)
- Midday service operating between Durham, Chapel Hill, Raleigh, and RTP (Routes 100, 400, 700, and 800)

### Weekend Service

In August 2014, Saturday service was extended by 4 hours until 11 PM. For FY 2015, the ridership increased on Routes 100, 700, and 800, but decreased on Route 400. This is likely due to the elimination of the stop on Route 400 at New Hope Commons, a change that improved reliability tremendously, but reduced the number of riders on the route. GoDurham Route 10 continues to serve New Hope Commons.

Sunday service also began in August 2014. Ridership on Sunday has exceeded staff's expectations. Ridership increased from 812 daily average boardings in Q1 and Q2 of FY15 to 1073 daily average boardings in Q3 and Q4, an increase of 32%. This indicates that awareness of the new day of service has increased. Job shifts that were out of reach due to the lack of regional Sunday service may now be available.

### Low performing routes and service categories

Several routes in the GoTriangle system are under-performing compared to the others. Because performance is measured relative to similar routes in the GoTriangle system, it is likely that some routes will always be identified as under-performers. Despite having lower productivity, most of these services still provide utility to our customers. The following routes performed below 75% of their service category average and represent areas where staff may be able to improve the system:

The underperforming routes by service category include:

- Regional Peak – Routes 100, 201, 305, and 311
- Regional Midday – Routes 805 and RSX
- Express – 300X, CLX, CTX, FRX, JCX, KRX, ODX, RSX, WRX, and ZWX
- Shuttles – Shuttle 42 and 46

## Opportunities for productivity improvements on these routes

### Addressed:

- Route 300X – Changed in August of 2015 to a non-express route. It now provides service between Raleigh, Cary, and the RTC during peak times and between Raleigh and Cary at all other times.
- Route 805- Midday service was eliminated for the August 2015 changes due to low ridership.

### Need to be addressed:

- **Regional peak** services that are underperforming all primarily operate in Wake County. The results of the Wake County Transit Plan will provide guidance on any major future changes to these routes.
- For **regional midday** services, Route 805 was eliminated for the August 2015 service changes. In addition, the Robertson Scholars Express also underperformed. Staff will continue to work with the Robertson Scholars Foundation to discuss options and methods to increase ridership. The Robertson Scholars Foundation provides the funding for the route that is not collected through fares.
- Many **express** routes were low performers. Some of this can be attributed to the fact that many of GoTriangle's express routes have a distinct peak direction. Off-peak direction trips, necessary to get buses back to the origin points, negatively impacting the overall performance. This also explains why the CRX and DRX are high performers in this category. In addition to serving the cities with the largest populations in the Triangle, both routes serve strong anchors in both directions, so every trip is a peak-direction trip. Fortify is a joint planning effort with the NCDOT to assist in minimizing congestion due to road re-construction on I-40/440. Staff continues to work with the NCDOT to place both permanent and temporary wayfinding signs to bring attention to both the services as well as the park-and-ride locations. Service between South Cary and Raleigh is being considered for elimination due to low ridership.
- The RTP **shuttles** continue to underperform. Shuttle 42, which mostly serves IBM's main campus, only has five customer hours per hour, while Shuttle 46 has less than 7 customer boardings per hour. The system average is 14.3. While Shuttles 47 and 49 do not qualify as low performers, it is noteworthy that both have fewer customer boardings per hour than the overall system average. Staff is beginning to work with the Research Triangle Foundation to identify ways to lower the public subsidy required to provide these last-mile connections within the Park.

## Work plan for FY16

The service planning team has a number of exciting projects on its work plan for FY16. These include:

- Changes to the bus service provided in the 15-501 corridor to simplify the service, reduce travel times, and improve mid-day frequency
- Continued development of the Wake County Transit Plan
- Support new capital projects planner (former service planner, Jenny Green) with several capital projects, including new Park-and-Ride lots in Hillsborough and Rougemont, and a potential move of the Regional Transit Center to Park Center in RTP

	Boardings			Revenue Hours			Boardings per hour		
	FY14	FY15	% change	FY14	FY15	% change	FY14	FY15	% change
<b>Weekday Peak Total</b>	997,571	979,432	-2%	62,884	61,308	-3%	15.86	15.98	1%
<b>Express Total</b>	334,202	328,419	-2%	21,289	30,745	44%	15.70	10.68	-32%
<b>Shuttles Total</b>	44,453	44,240	0%	4,699	4,662	-1%	9.46	9.49	0%
<b>Weekday Midday Total</b>	281,066	282,564	1%	13,851	13,825	0%	20.29	20.44	1%
<b>Weekday Night Total</b>	76,332	79,327	4%	7,020	7,066	1%	10.87	11.23	3%
<b>Saturday Total</b>	86,860	87,619	1%	5,662	6,955	23%	15.34	12.60	-18%
<b>Sunday Total</b>	n/a	35,526	n/a	n/a	4,022	n/a	n/a	8.83	n/a
<b>Weekday Total</b>	1,733,624	1,713,982	-1%	109,742	117,606	7%	15.80	14.57	-8%
<b>System Total</b>	1,822,441	1,837,127	1%	115,699	125,702	9%	15.75	14.29	-9%



FY 2015 Performance Measures by Route			Boardings			Revenue Hours			Boardings per Hour		
Route	Route Name		FY14	FY15	Δ	FY14	FY15	Δ	FY14	FY15	Δ
<b>Weekday Peak</b>	100	Raleigh - RDU - Regional Transit Center	67,281	66,219	↓-2%	6,026	5,873	↓-3%	11	11	↑1%
	102	Raleigh - Garner	18,972	18,135	↓-4%	1,500	1,488	↓-1%	13	12	↓-4%
	105	Raleigh - Regional Transit Center	76,572	74,962	↓-2%	4,480	4,422	↓-1%	17	17	↓-1%
	201	North Raleigh - RTP	19,560	19,788	↑1%	1,855	1,820	↓-2%	11	11	↑3%
	301	Raleigh - Cary Train Station - RTP	102,802	102,423	↓0%	7,418	7,353	↓-1%	14	14	↑1%
	305	Raleigh - Cary Train Station - Apex	37,324	33,144	↓-11%	2,930	2,907	↓-1%	13	11	↓-10%
	311	Apex - RTP - Regional Transit Center	33,707	25,782	↓-24%	5,013	3,848	↓-23%	7	7	↓0%
	400	Chapel Hill - New Hope Commons - Durham	122,697	114,829	↓-6%	7,456	7,254	↓-3%	16	16	↓-4%
	405	Chapel Hill - Durham	134,071	119,166	↓-11%	5,517	5,512	↓0%	24	22	↓-11%
	420	Hillsborough - Chapel Hill	49,082	43,816	↓-11%	3,458	3,430	↓-1%	14	13	↓-10%
	700	Durham - Regional Transit Center	86,453	90,208	↑4%	3,333	3,306	↓-1%	26	27	↑5%
	800	Chapel Hill - Southpoint Mall - Regional Transit Center	136,330	149,187	↑9%	7,337	7,597	↑4%	19	20	↑6%
	805	Chapel Hill - Woodcroft - Regional Transit Center	112,720	121,773	↑8%	6,563	6,498	↓-1%	17	19	↑9%
<b>Express Peak</b>	CRX	Chapel Hill - Raleigh Express	118,024	107,877	↓-9%	6,195	6,320	↑2%	19	17	↓-10%
	DRX	Durham - Raleigh Express	128,487	115,662	↓-10%	5,283	5,374	↑2%	24	22	↓-12%
	300X	Cary - Raleigh Express (Fortify)	n/a	3,944	n/a	n/a	1,587	n/a	n/a	2	n/a
	CLX	Clayton - Raleigh Express (Fortify)	n/a	2,978	n/a	n/a	1,624	n/a	n/a	2	n/a
	CTX	South Cary - Raleigh Express (Fortify)	n/a	307	n/a	n/a	1,157	n/a	n/a	0	n/a
	FRX	Fuquay-Varina - Raleigh Express (Fortify)	n/a	4,591	n/a	n/a	1,604	n/a	n/a	3	n/a
	JCX	Johnston County Express (Fortify)	4,853	9,597	↑98%	1,876	3,472	↑85%	3	3	↑7%
	KRX	Knightdale - Raleigh Express	9,823	11,379	↑16%	1,405	1,394	↓-1%	7	8	↑17%
	KRX	Peak direction	7,911	9,068	↑15%	913	905	↓-1%	9	10	↑16%
	KRX	Off-peak direction	1,912	2,311	↑21%	493	489	↓-1%	4	5	↑22%
	ODX	Orange-Durham Express	n/a	12,293	n/a	n/a	1,843	n/a	n/a	7	n/a
	RSX	Robertson Express	23,597	15,374	↓-35%	1,621	1,506	↓-7%	15	10	↓-30%
	WRX	Wake Forest - Raleigh Express	19,753	19,633	↓-1%	2,458	2,438	↓-1%	8	8	↓0%
	WRX	Peak direction	15,519	14,697	↓-5%	1,563	1,550	↓-1%	10	9	↓-5%
	WRX	Off-peak direction	4,234	4,936	↑17%	895	888	↓-1%	5	6	↑18%
	ZWX	Zebulon/Wendell - Raleigh Express	29,665	24,784	↓-16%	2,452	2,428	↓-1%	12	10	↓-16%
	ZWX	Peak direction	27,093	21,622	↓-20%	1,972	1,980	↑0%	14	11	↓-21%
	ZWX	Off-peak direction	2,572	3,162	↑23%	480	447	↓-7%	5	7	↑32%
<b>RTP Shuttles</b>	42	North - Central RTP	8,320	5,966	↓-28%	1,199	1,195	↓0%	7	5	↓-28%
	46	East RTP	8,680	7,874	↓-9%	1,151	1,136	↓-1%	8	7	↓-8%
	47	NC54 - Alexander Dr - Cornwallis Dr - Miami Blvd	11,576	15,065	↑30%	1,188	1,178	↓-1%	10	13	↑31%
	49	South RTP	15,877	15,335	↓-3%	1,161	1,153	↓-1%	14	13	↓-3%
<b>Weekday Midday</b>	100	Raleigh - RDU - Regional Transit Center	63,977	63,842	↓0%	2,982	2,955	↓-1%	21	22	↑1%
	303	Raleigh - Cary Train Station	26,851	25,633	↓-5%	1,480	1,555	↑5%	18	16	↓-9%
	400	Chapel Hill - New Hope Commons - Durham	66,278	64,349	↓-3%	2,428	2,397	↓-1%	27	27	↓-2%
	700	Durham - Regional Transit Center	43,873	45,219	↑3%	1,563	1,550	↓-1%	28	29	↑4%
	800	Chapel Hill - Southpoint Mall - Regional Transit Center	60,370	63,047	↑4%	2,942	2,922	↓-1%	21	22	↑5%
	805	Chapel Hill - Woodcroft	3,855	3,447	↓-11%	708	702	↓-1%	5	5	↓-10%
	RSX	Robertson Express	15,862	20,131	↑27%	1,749	1,612	↓-8%	9	10	↑8%
<b>Weekday Night</b>	100	Raleigh - RDU - Regional Transit Center	18,490	20,131	↑9%	1,619	1,612	↓0%	11	12	↑9%
	400	Chapel Hill - New Hope Commons - Durham	22,519	22,031	↓-2%	1,980	1,964	↓-1%	11	11	↓-1%
	700	Durham - Regional Transit Center	13,487	14,717	↑9%	1,000	992	↓-1%	13	15	↑10%
	800	Chapel Hill - Southpoint Mall - Regional Transit Center	16,842	18,140	↑8%	1,619	1,612	↓0%	10	11	↑8%
	RSX	Robertson Express	4,994	4,308	↓-14%	801	886	↑11%	6	5	↓-22%
<b>Saturday</b>	100	Raleigh - RDU - Regional Transit Center	21,257	22,559	↑6%	1,350	1,710	↑27%	16	13	↓-16%
	303	Raleigh - Cary Train Station	7,606	7,115	↓-6%	668	656	↓-2%	11	11	↓-5%
	400	Chapel Hill - New Hope Commons - Durham	23,177	20,788	↓-10%	1,330	1,686	↑27%	17	12	↓-29%
	700	Durham - Regional Transit Center	12,283	13,089	↑7%	668	847	↑27%	18	15	↓-16%
	800	Chapel Hill - Southpoint Mall - Regional Transit Center	19,226	21,149	↑10%	1,298	1,658	↑28%	15	13	↓-14%
	RSX	Robertson Express	3,311	2,919	↓-12%	349	397	↑14%	9	7	↓-23%
<b>Sunday</b>	100	Raleigh - RDU - Regional Transit Center	n/a	10,197	n/a	n/a	1,157	n/a	n/a	9	n/a
	400	Chapel Hill - New Hope Commons - Durham	n/a	9,691	n/a	n/a	1,018	n/a	n/a	10	n/a
	700	Durham - Regional Transit Center	n/a	5,943	n/a	n/a	513	n/a	n/a	12	n/a
	800	Chapel Hill - Southpoint Mall - Regional Transit Center	n/a	8,134	n/a	n/a	996	n/a	n/a	8	n/a
	RSX	Robertson Express	1,957	1,561	↓-20%	295	338	↑15%	7	5	↓-31%
<b>Weekday Peak Total</b>			997,571	979,432	↓-2%	62,884	61,308	↓-3%	16	16	↑1%
<b>Express Total</b>			334,202	328,419	↓-2%	21,289	30,745	↑44%	16	11	↓-32%
<b>Shuttles Total</b>			44,453	44,240	↓0%	4,699	4,662	↓-1%	9	9	↓0%
<b>Weekday Midday Total</b>			281,066	282,564	↑1%	13,851	13,825	↓0%	20	20	↑1%
<b>Weekday Night Total</b>			76,332	79,327	↑4%	7,020	7,066	↑1%	11	11	↑3%
<b>Saturday Total</b>			86,860	87,619	↑1%	5,662	6,955	↑23%	15	13	↓-18%
<b>Sunday Total</b>			n/a	35,526	n/a	n/a	4,022	n/a	n/a	9	n/a
<b>Weekday Total</b>			1,733,624	1,713,982	↓-1%	109,742	117,606	↑7%	16	15	↓-8%
<b>System Total</b>			1,822,441	1,837,127	↑1%	115,699	128,583	↑11%	16	14	↓-9%

**Legend**

text	High Performer - Routes performing 125% greater than the service category average
text	Under Performer - Routes performing 75% lower than the service category average

On Time Performance					
Day	Route	Description	FY 2014	FY 2015	
Weekday	42	North - central RTP	93%	93%	
	46	East RTP	91%	80%	
	47	54/Alexander/Cornwallis/Miami Loop	95%	92%	
	49	South RTP	82%	81%	
	100	Raleigh - RDU - Regional Transit Center	93%	93%	
	102	Raleigh - Garner	n/a	n/a	
	105	Regional Transit Center - Raleigh	89%	86%	
	201	North Raleigh - Regional Transit Center	90%	81%	
	301	Raleigh - Cary Train Station - Regional Transit Center	95%	94%	
	303/300X	Raleigh - Cary Train Station	81%	83%	
	305	Raleigh - Cary Train Station - Apex	89%	82%	
	311	Apex - Regional Transit Center	94%	92%	
	400	Chapel Hill - New Hope Commons - Durham	77%	85%	
	405	Chapel Hill - Durham	85%	90%	
	420	Hillsborough - Chapel Hill	87%	83%	
	700	Durham - Regional Transit Center	91%	92%	
	800	Chapel Hill - Southpoint Mall - Regional Transit Center	85%	86%	
	805	Chapel Hill - Woodcroft - Regional Transit Center	79%	82%	
	CRX	Chapel Hill - Raleigh Express	76%	79%	
	DRX	Durham - Raleigh Express	78%	87%	
	KRX	Knightdale - Raleigh Express	92%	84%	
	ODX	Orange-Durham Express	n/a	95%	
	RSX	Robertson Express	n/a	88%	
	WRX	Wake Forest - Raleigh Express	90%	89%	
	ZWX	Zebulon/Wendell - Raleigh Express	94%	92%	
	CTX	South Cary -Tryon	n/a	81%	
	FRX	Fuquay Varina Raleigh Express	n/a	86%	
	JCX	Johnston County Express	n/a	86%	
	Saturday	100	Raleigh - RDU - Regional Transit Center	92%	91%
		300/303	Raleigh - Cary Train Station	88%	76%
400		Chapel Hill - New Hope Commons - Durham	73%	86%	
700		Durham - Regional Transit Center	92%	97%	
800		Chapel Hill - Southpoint Mall - Regional Transit Center	80%	83%	
RSX		Robertson Express	n/a	82%	
Sunday	100	Raleigh - RDU - Regional Transit Center	n/a	96%	
	400	Chapel Hill - New Hope Commons - Durham	n/a	91%	
	700	Durham - Regional Transit Center	n/a	99%	
	800	Chapel Hill - Southpoint Mall - Regional Transit Center	n/a	90%	
	RSX	Robertson Express	n/a	80%	
Weekday Average			87%	87%	
Saturday Average			85%	87%	
Sunday Average			n/a	93%	
System Average			87%	87%	