

## BROADWAY BOULEVARD CITIZEN PLANNING TASK FORCE

### MEMORANDUM

TO: Broadway Boulevard Citizens Task Force  
FROM: Broadway Boulevard Project Team  
DATE: November 2, 2012  
RE: Follow-up to Questions Asked at October 18, 2012 CTF Meeting

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The following information provides answers to questions posed during discussions at the October 18, 2012 CTF meeting.

**1) How many bike and pedestrian accidents are reflected in the crash data [in the 2012 Broadway traffic study]? (See page 3 and page 5 of the draft 10/18/2012 meeting summary)**

Jim Schoen, Kittelson & Associates, pulled together crash data from different sources. That table is attached.

**2) On the Broadway segment have you identified any annual increases in that route over time? (See page 6 of the draft 10/18/2012 meeting summary)**

Davita Mueller, planning analyst at Sun Tran, developed the attached data. The bar charts reflect the number of riders (boardings) per year since Fiscal Year 1999-2000, system-wide, on Route 8 (which travels South 6<sup>th</sup> Ave and Broadway), and on Route 8, just the Broadway portion. The Load Factor tables provide ridership totals for Fiscal Year 2011-2012 for all routes, except express routes, in general, Monday-Friday, Saturday, and Sunday. Route 8 has consistently high ridership in comparison to all other routes.

**3) Does the PAG model account for the high ridership numbers on Broadway (2.1 percent mode split)? (See page 6 of the draft 10/18/2012 meeting summary)**

Jim Schoen, Kittelson & Associates, researched the answer. PAG's travel demand model is regional and estimates mode share for each traffic analysis zone (TAZ) in the model. A sub-model estimates mode share for four types of trips:

- home to/from work
- home to/from school
- home to/from all other destinations (i.e. shopping, etc)
- non-home (i.e. at work or school) to/from other destinations (i.e. shopping, etc.)

The mode share sub-model essentially considers two primary factors in estimating how many trips are assigned to pedestrian, transit, and bicycle modes – travel time and income level. The travel time for a transit trip includes the time to walk to/from a transit stop, waiting time at the transit stop, in-vehicle travel time, and potential transfer waiting time. Bike and pedestrian travel times

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are calculated for each origin-destination trip based on an assumed travel speed for each mode. The sub-model also considers car-pooling. Three annual household income levels are currently defined in the model : less than \$20K, \$20K-\$60K, and greater than \$60K.

A series of parameters in the model produce thresholds by which a trip will be assigned to a given mode type. Information gathered from the household travel survey conducted by PAG is used to help set the model parameters. Currently, the transit mode share estimate generated by the model on Broadway Blvd is approximately 4 to 5%. Regionally, the transit mode share is 1 to 1.5%. Bicycle mode share regionally is 1.5%. Bicycle mode share along Broadway Blvd was not available.

With the exception for areas considered to be a CBD (of which we have one), the PAG mode choice sub-model does not include parameters that influence mode choice for other area types (i.e. suburb, urban residential, etc).

## Pedestrian/Bicycle Crash History

Pedestrian and bicycle crash data was obtained from the database created and maintained by Collin Forbes (<http://bikecolli.info>). The crash data included in this database is gathered from the Tucson Police Department Crime Statistics Database and active traffic incident information posted on City of Tucson, Transview.org website. These databases are cross referenced and compared to pedestrian/bicycle crash reports reviewed by the Tucson-Pima County Bicycle Advisory Committee to remove duplicate crashes.

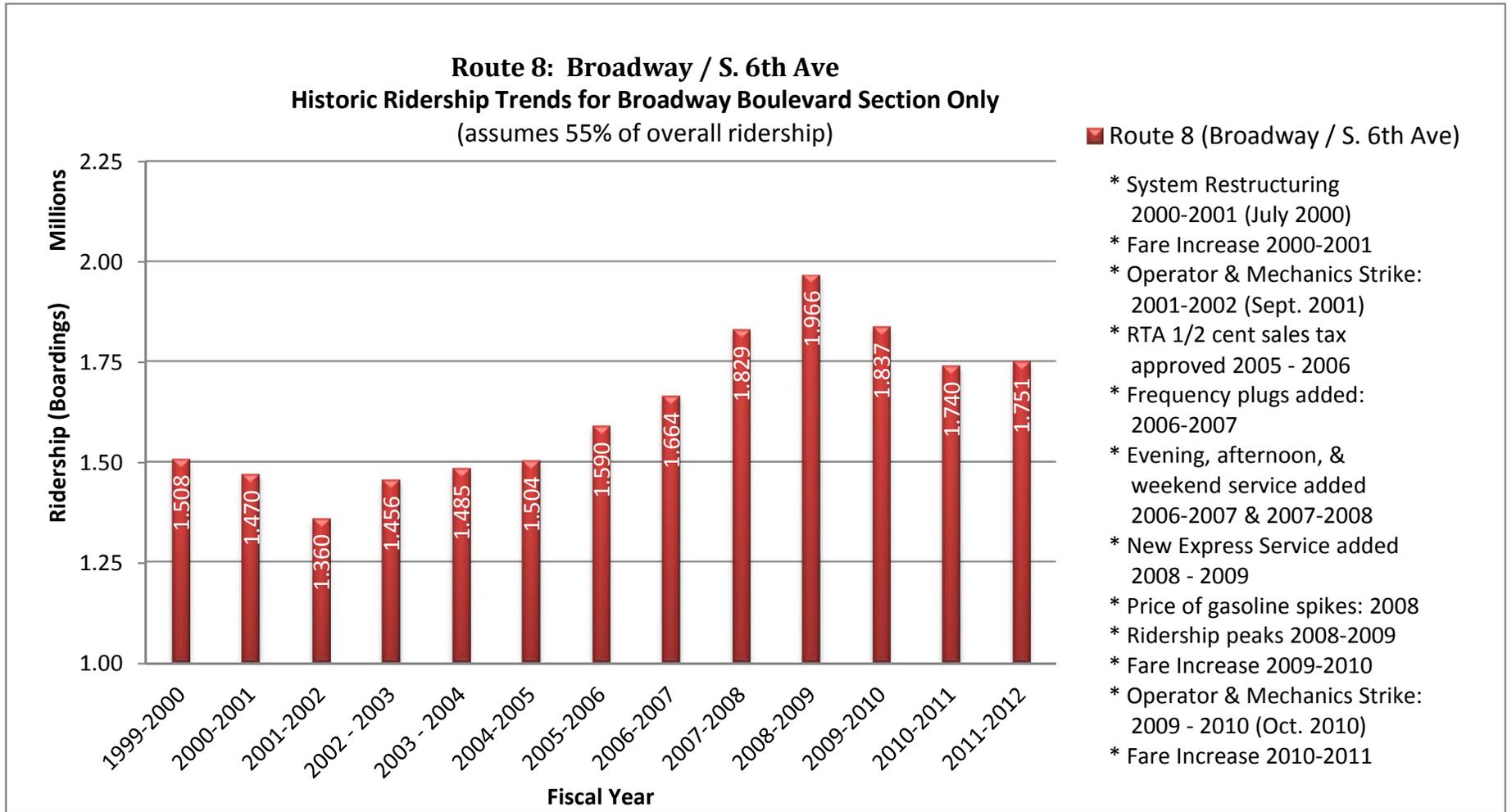
The pedestrian and bicycle crashes occurring on Broadway Blvd, Euclid Ave to Country Club Rd are summarized in the table below. Also included for comparative purposes, is the crash data for the same limits on Speedway Blvd.

	2007	2008	2009	2010	2011	2012 (1)
Pedestrian Crashes						
Broadway Blvd	NA	NA	3	3	6	2
Speedway Blvd	NA	NA	5	8	2	2
Bicycle Crashes						
Broadway Blvd	4	4	9	6	8	3
Speedway Blvd	4	10	7	10	7	4

1. Thru July 2012

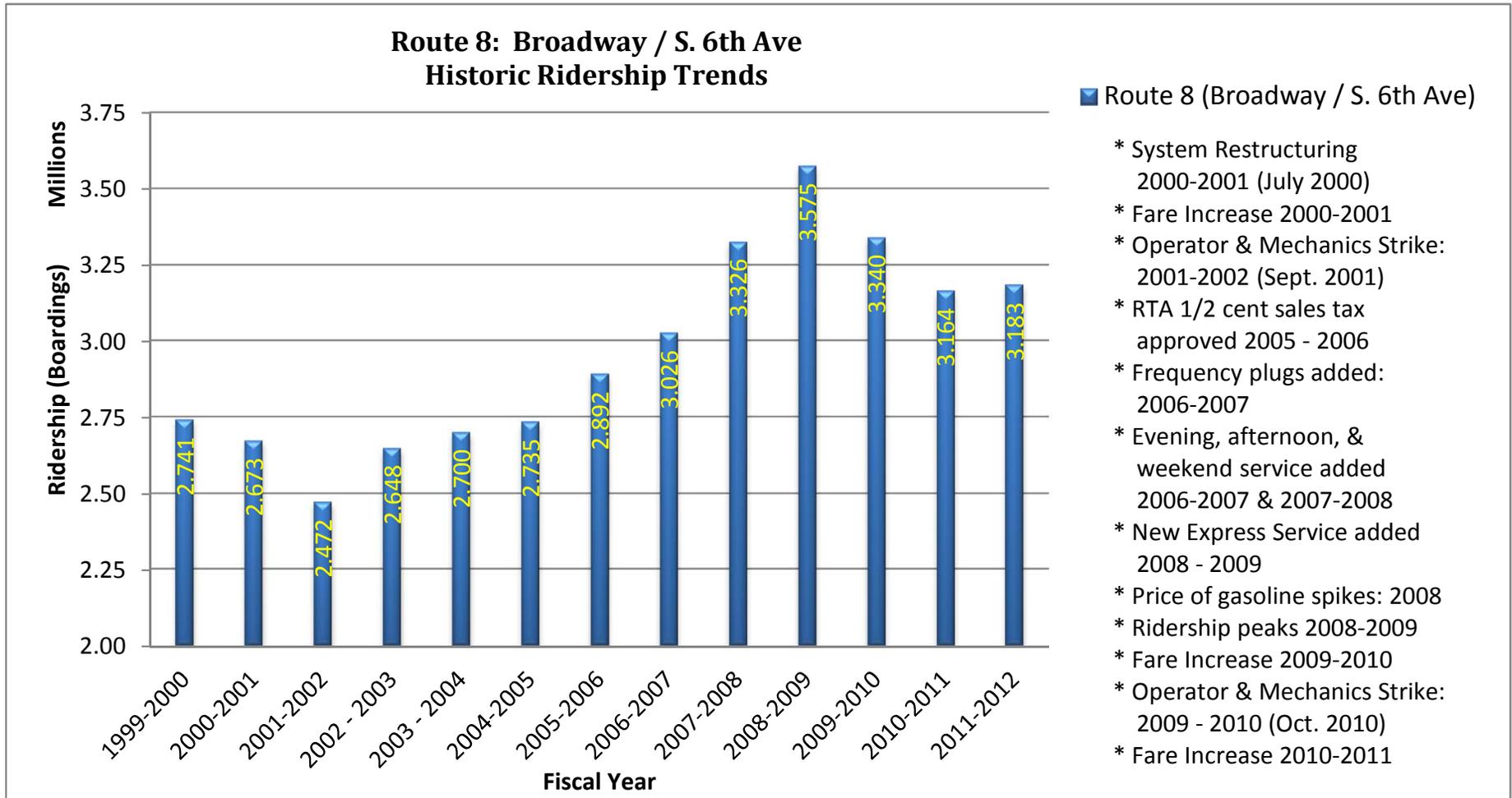


Route 8 (Broadway/6th Ave)  
Broadway Boulevard Section Only



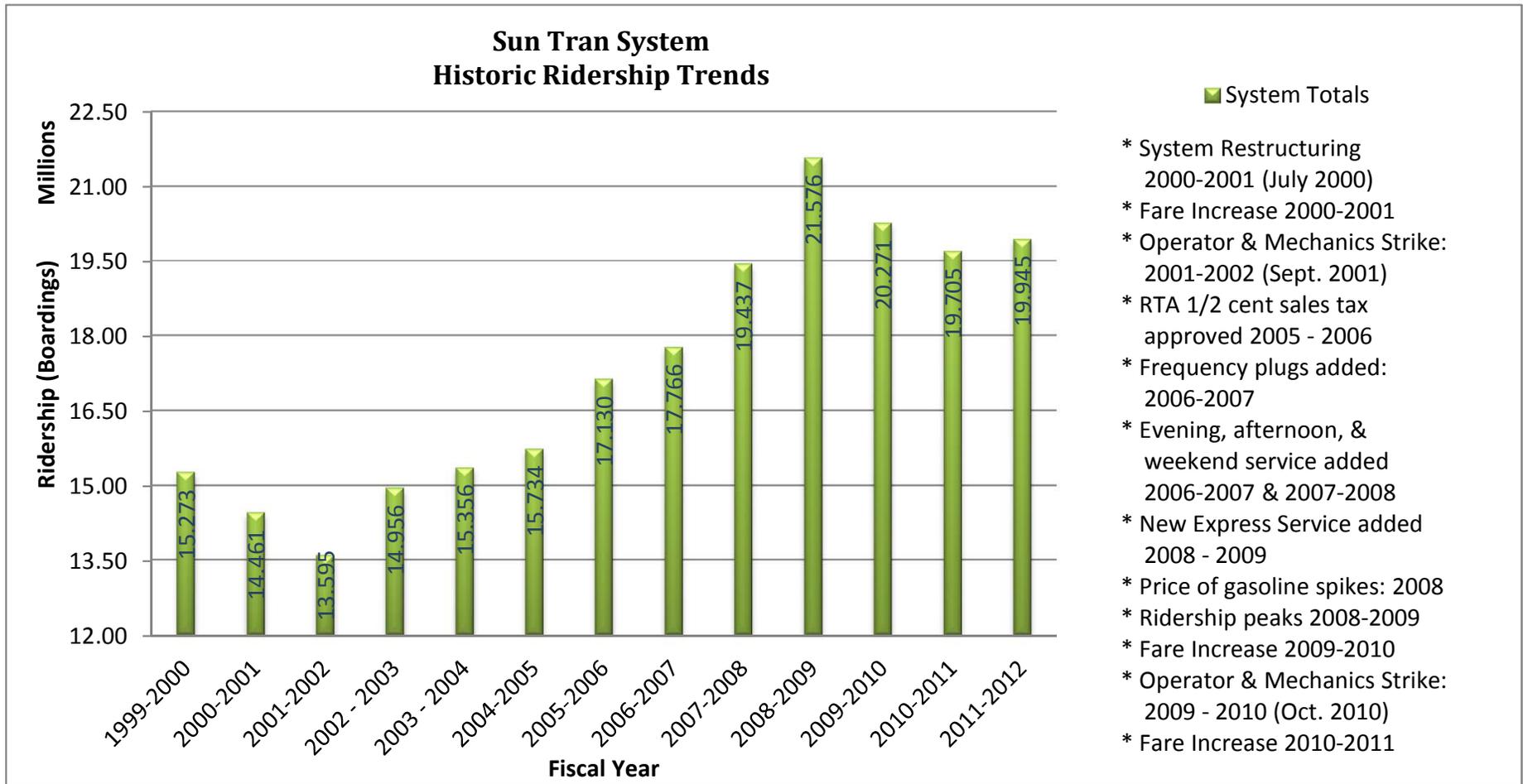


# Route 8 (Broadway/6th Ave)





## Sun Tran System Totals Historic Ridership Trends



 <b>Total Load Factor 2012</b> FY 2011-12				
Route	Annual Passengers	Annual Trips	Ave. Pass. Per Trip	Load Factor
1	630,001	18,944	33.26	0.87
2	403,468	18,553	21.75	0.57
3	929,625	25,450	36.53	0.96
4	1,614,785	45,475	35.51	0.93
5	381,528	16,424	23.23	0.61
6	1,283,986	28,474	45.09	1.19
7	778,644	19,456	40.02	1.05
8	3,182,791	57,198	55.65	1.46
9	782,526	23,097	33.88	0.89
10	486,906	20,082	24.25	0.64
11	1,339,851	35,279	37.98	1.00
15	582,875	31,488	18.51	0.49
16	1,919,850	38,010	50.51	1.33
17	951,923	19,200	49.58	1.30
19	502,556	21,045	23.88	0.63
20	138,889	14,579	9.53	0.25
21	209,731	21,288	9.85	0.26
22	209,382	19,367	10.81	0.28
23	523,536	20,061	26.10	0.69
24	257,443	18,741	13.74	0.36
26	374,306	19,659	19.04	0.50
27	427,890	27,908	15.33	0.40
29	487,238	25,454	19.14	0.50
34	687,899	18,432	37.32	0.98
37	232,767	17,302	13.45	0.35
50	136,697	18,041	7.58	0.20
61	191,779	16,940	11.32	0.30
<b>Fixed</b>	<b>19,648,873</b>	<b>655,947</b>	<b>29.95</b>	<b>0.79</b>

 <b>Weekday Load Factor 2012</b> FY 2011-12				
Route	Annual Passengers	Annual Trips	Ave. Pass. Per Trip	Load Factor
1	549,483	15,872	34.62	0.91
2	352,730	15,872	22.22	0.58
3	832,931	22,272	37.40	0.98
4	1,388,783	39,168	35.46	0.93
5	347,122	13,568	25.58	0.67
6	1,102,544	23,808	46.31	1.22
7	676,010	16,384	41.26	1.09
8	2,682,362	46,592	57.57	1.51
9	689,167	19,968	34.51	0.91
10	409,838	16,896	24.26	0.64
11	1,140,932	29,184	39.09	1.03
15	520,632	28,416	18.32	0.48
16	1,625,844	31,744	51.22	1.35
17	827,883	16,128	51.33	1.35
19	430,198	16,640	25.85	0.68
20	120,487	11,776	10.23	0.27
21	173,204	15,360	11.28	0.30
22	187,500	16,128	11.63	0.31
23	458,852	17,152	26.75	0.70
24	212,738	15,616	13.62	0.36
26	328,697	16,640	19.75	0.52
27	370,964	24,832	14.94	0.39
29	413,648	22,272	18.57	0.49
34	584,169	15,360	38.03	1.00
37	206,604	14,336	14.41	0.38
50	120,530	15,360	7.85	0.21
61	164,489	14,080	11.68	0.31
<b>Fixed</b>	<b>16,918,341</b>	<b>551,424</b>	<b>30.68</b>	<b>0.81</b>

 <b>Saturday Load Factor 2012</b> FY 2011-12				
Route	Annual Passengers	Annual Trips	Ave. Pass. Per Trip	Load Factor
1	45,938	1,590	28.89	0.76
2	30,310	1,484	20.42	0.54
3	56,613	1,696	33.38	0.88
4	132,211	3,286	40.23	1.06
5	19,426	1,431	13.58	0.36
6	115,824	3,127	37.04	0.97
7	58,859	1,590	37.02	0.97
8	296,488	5,989	49.51	1.30
9	53,805	1,590	33.84	0.89
10	41,897	1,590	26.35	0.69
11	117,669	3,074	38.28	1.01
15	34,965	1,590	21.99	0.58
16	162,070	3,074	52.72	1.39
17	69,090	1,590	43.45	1.14
19	47,479	2,809	16.90	0.44
20	10,305	1,378	7.48	0.20
21	20,115	3,021	6.66	0.18
22	13,266	1,643	8.07	0.21
23	35,840	1,484	24.15	0.64
24	25,170	1,643	15.32	0.40
26	25,388	1,537	16.52	0.43
27	33,112	1,537	21.54	0.57
29	40,751	1,643	24.80	0.65
34	57,371	1,590	36.08	0.95
37	14,969	1,484	10.09	0.27
50	9,457	1,484	6.37	0.17
61	16,019	1,378	11.62	0.31
<b>Fixed</b>	<b>1,584,407</b>	<b>55,332</b>	<b>28.63</b>	<b>0.75</b>

 <b>Sunday Load Factor 2012</b> FY 2011-12				
Route	Annual Passengers	Annual Trips	Ave. Pass. Per Trip	Load Factor
1	34,580	1,482	23.33	0.61
2	20,427	1,197	17.07	0.45
3	40,081	1,482	27.05	0.71
4	93,791	3,021	31.05	0.82
5	14,980	1,425	10.51	0.28
6	65,617	1,539	42.64	1.12
7	43,775	1,482	29.54	0.78
8	203,939	4,617	44.17	1.16
9	39,555	1,539	25.70	0.68
10	35,172	1,596	22.04	0.58
11	81,250	3,021	26.90	0.71
15	27,278	1,482	18.41	0.48
16	131,936	3,192	41.33	1.09
17	54,950	1,482	37.08	0.98
19	24,879	1,596	15.59	0.41
20	8,096	1,425	5.68	0.15
21	16,413	2,907	5.65	0.15
22	8,616	1,596	5.40	0.14
23	28,845	1,425	20.24	0.53
24	19,535	1,482	13.18	0.35
26	20,222	1,482	13.65	0.36
27	23,814	1,539	15.47	0.41
29	32,838	1,539	21.34	0.56
34	46,358	1,482	31.28	0.82
37	11,195	1,482	7.55	0.20
50	6,710	1,197	5.61	0.15
61	11,271	1,482	7.61	0.20
<b>Fixed</b>	<b>1,146,123</b>	<b>49,191</b>	<b>23.30</b>	<b>0.61</b>