

To: Operations and Scheduling

Date: 12/29/2017

From: Sean Hedgpeth, Manager of Planning

Reviewed by:

SUBJECT: Comprehensive Operations Analysis for Weekend and Supplemental School Routes

Background:

Staff has completed and presented the Comprehensive Operations Analysis (COA) for all weekday local and express routes. The next set of routes to be analyzed is the weekend routes (300 series) and the school supplemental trips (600s), see attachment.

This document intends to be reference material to inform possible service changes in the future with data driven planning. Ridership, route alignments, and service distribution are all covered in the COA. The weekend routes highlight our transit dependent communities and our 600s will show how many students use our system to get to school.

This 300/600 series analysis will close our comprehensive operations process, and a final document will be posted on our website.

Recommendation:

For information only.

Financial Implications:

To be determined.

County Connection



Photo

Central Contra Costa County Transit Authority Comprehensive Operations Analysis

Weekend Local Routes, FY 2016/17

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How to Use This Document (Key Performance Indicators)

This is a GPS derived number that also includes mid route layover, or time the bus sits at a stop. In Route 1's case it's seen as slower because the bus isn't moving at BART, yet is still in service.

Route Alignment, Speed, and Labor Statistics

Route 1: Rossmoor to Shadelands

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
89%	16.0	9.4	6.2
3%	0%	-27%	-57%

# Stops	Stop Spacing	# of Rights	# of Lefts
52	0.31	26	26
84%	-52%	85%	83%

In-Service Time	Layover	Deadhead	Total Hours
79%	16%	6%	27.9
15%	-26%	-45%	-11%

Stops per mile. Eg. 0.33 is a stop every 1/3 mile on average for the route

This indicator bar represents the difference from the route averages for all local routes. For example in this case, Route 1 has 84% more stops than an average local route.

In-service time is time when the bus is in revenue service or when passengers are allowed in the bus with a set schedule.

Layover is time when the bus is parked for either a required operator break or for recovery time for the bus to get back on schedule.

Deadhead is time when the bus is pulling out of the bus yard to make its first or last trip or when its not in service and starting another route.

Data derived from Remix transit planning software. This is not the ridership demographics, but rather the census derived demographics for residents with 1/4 mile of a transit stop.

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
30,379	14,370	44,749	2,793
52%	-24%	16%	-9%

Poverty	Limited English	Minority	Senior
8%	9%	32%	21%
-35%	-6%	-30%	63%

Disabled	No Car	Youth	(Legend)
11%	7%	18%	(route value)
1%	-13%	-13%	(% diff from AVG)

This number represents the total number of jobs and population per route mile. This is an indicator of density along the route.

Like the indicator bars above, this represents a difference from the route averages. In this case, Route 1 has 63% more Seniors within 1/4 mile of a stop than an average CCCTA local route.

These numbers are important when comparing demographics for Title VI civil rights compliance. If service changes occur these numbers are used to determine if there are disparate impacts to protected populations. The numbers are also a good indication of transit dependent populations within 1/4 mile of a stop.

Weekend Route Averages: A Typical CCCTA Route

Route Alignment, Speed, and Labor Statistics

Weekend Route Avg

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
86%	15.2	13.7	14.3
0%	0%	0%	0%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
60	0.24	7	7
0%	0%	0%	0%

In-Service Time	Layover	Deadhead	Total Hours
70%	24%	7%	16.7
0%	0%	0%	0%

300's AVG

Census Population, Jobs, and Demographics by Route

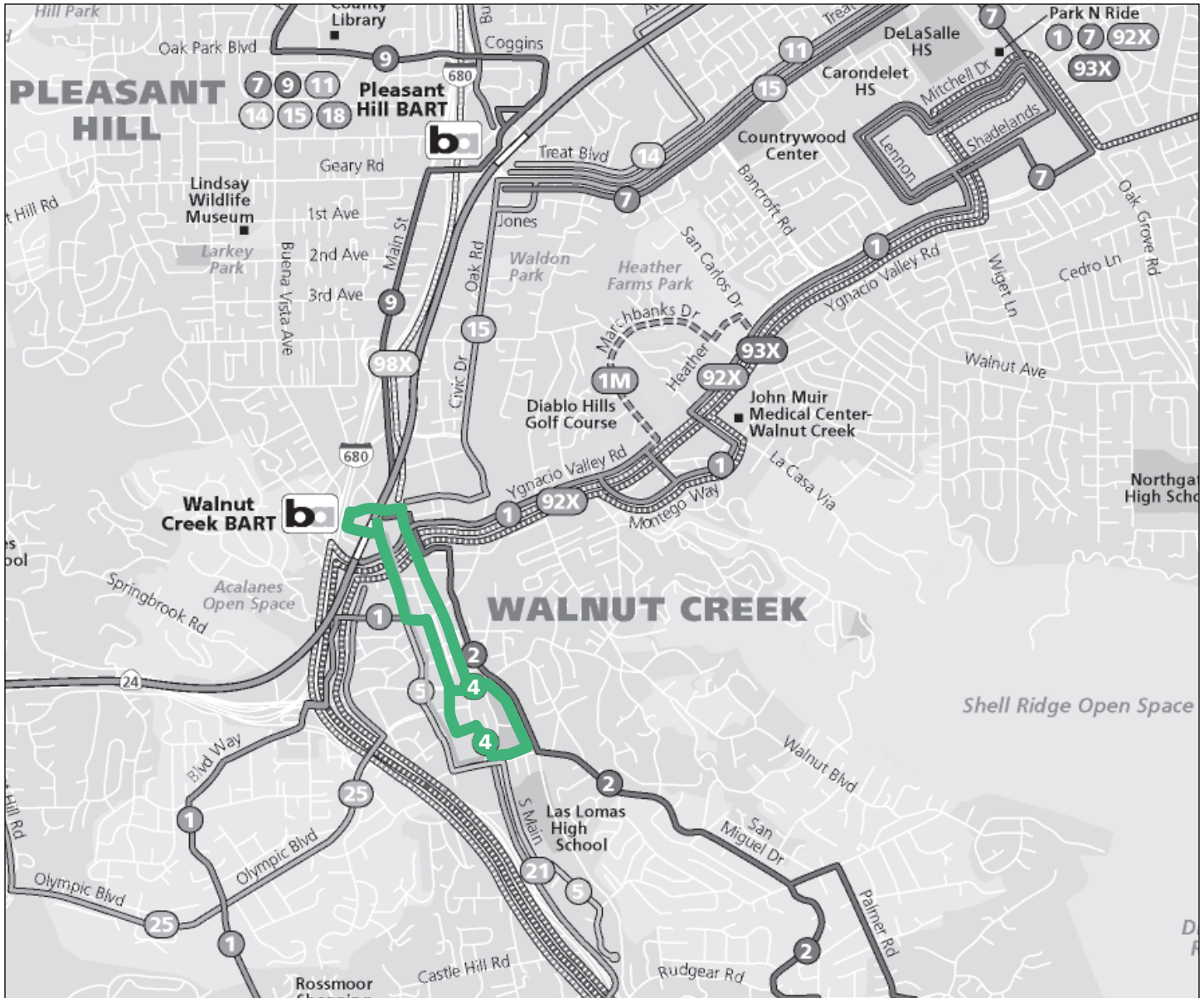
Jobs	Population	Jobs+Pop	J+P/mile
17,055	18,852	35,907	3,179
0%	0%	0%	0%

Poverty	Limited English	Minority	Senior
13%	11%	47%	14%
0%	0%	0%	0%

Disabled	No Car	Youth	(Legend)
12%	9%	21%	(route value)
0%	0%	0%	(% diff from AVG)

Route 4: Broadway Plaza/BART Walnut Creek

Every 20 Minutes, 9:20am to 6:51am



Origin and Recent Service Changes

Route 4 was created in 2009 from Route 104, which had exactly the same alignment. This route has been the free Downtown Trolley for Walnut Creek for decades. Most recently the route was electrified with new battery electric buses in early 2017. No major changes to the weekday schedule have occurred since 2009.

Alignment Statistics and Connections

Route 4's northern terminus is at the Walnut Creek BART Station, with regional connections to the Pittsburg Bay Point BART line, SolTrans (78), as well as CCCTA routes (301, 311, 321). Private shuttle connections to the Rossmoor Bus Line. The route travels on California, Civic Dr, Locust St, Mt Diablo, Broadway Plaza. The route then travels S Main St, Mt Diablo, Main St, Pringle Ave to the Walnut Creek BART Station.

Route 4: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 4: Walnut Creek BART to Broadway Plaza

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
98%	3.0	6.2	8.1
13%	-80%	-55%	-43%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
18	0.17	4	5
-70%	-31%	-43%	-26%

In-Service Time	Layover	Deadhead	Total Hours
64%	26%	11%	20.5
-9%	9%	60%	23%

Route 4: Walnut Creek BART to Broadway Plaza

Census Population, Jobs, and Demographics by Route

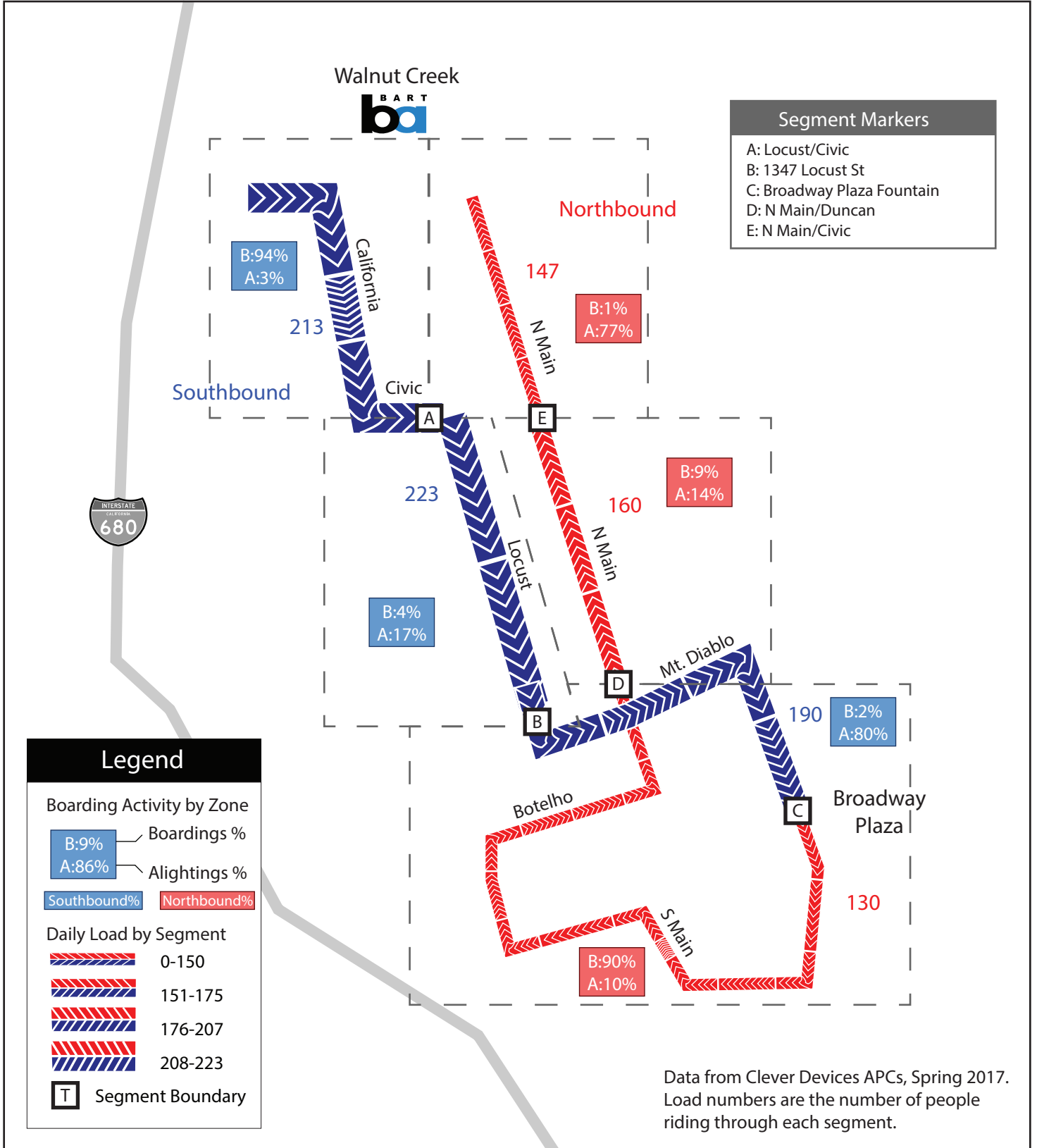
Jobs	Population	Jobs+Pop	J+P/mile
22,793	5,229	28,022	9,403
34%	-72%	-22%	196%

Poverty	Limited English	Minority	Senior
10%	15%	44%	15%
-23%	44%	-6%	8%

Disabled	No Car	Youth	(Legend)
12%	10%	16%	(route value)
6%	15%	-22%	(% diff from AVG)

Route 4 Segment Map

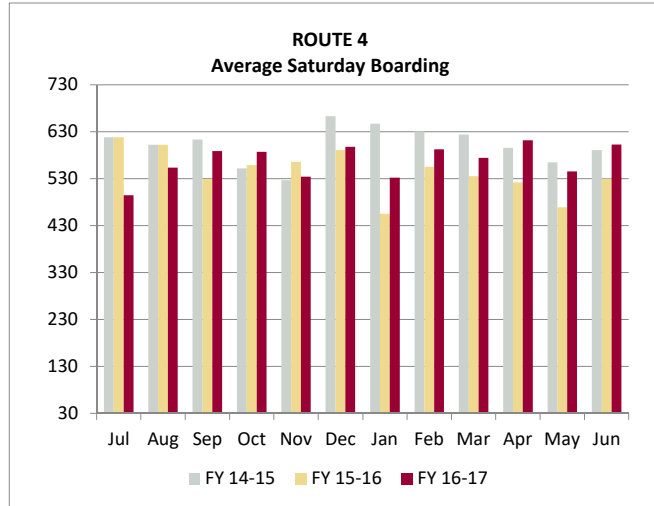
Average Weekend Ridership % and Load by Timepoint and Direction



ROUTE 4

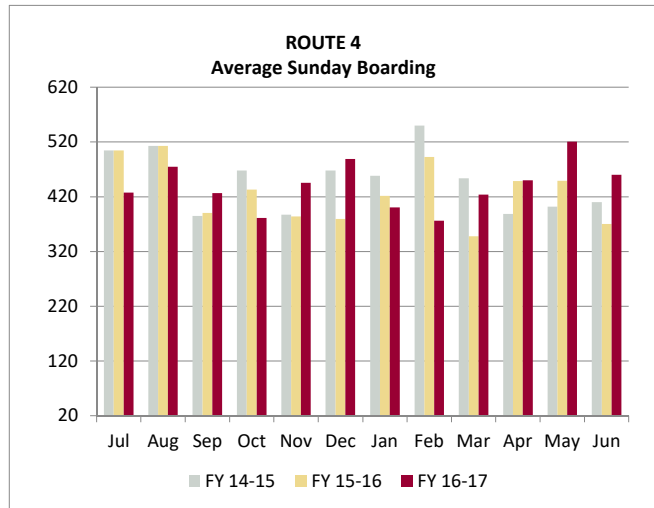
Avg Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	618	618	495
Aug	602	602	554
Sep	613	530	589
Oct	552	559	587
Nov	527	566	535
Dec	663	591	598
Jan	647	455	532
Feb	631	555	593
Mar	624	535	574
Apr	596	522	612
May	565	469	546
Jun	591	530	603
FY AVG	601	544	568

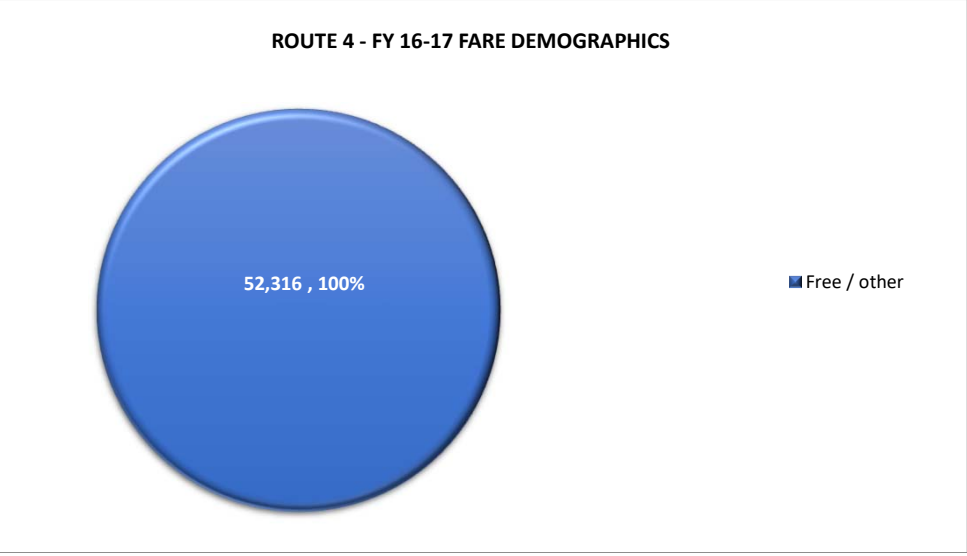
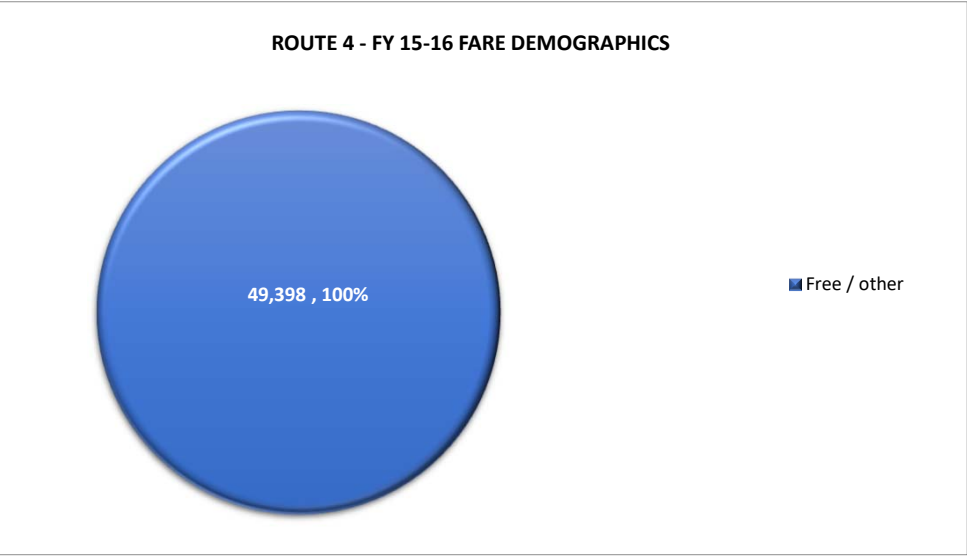
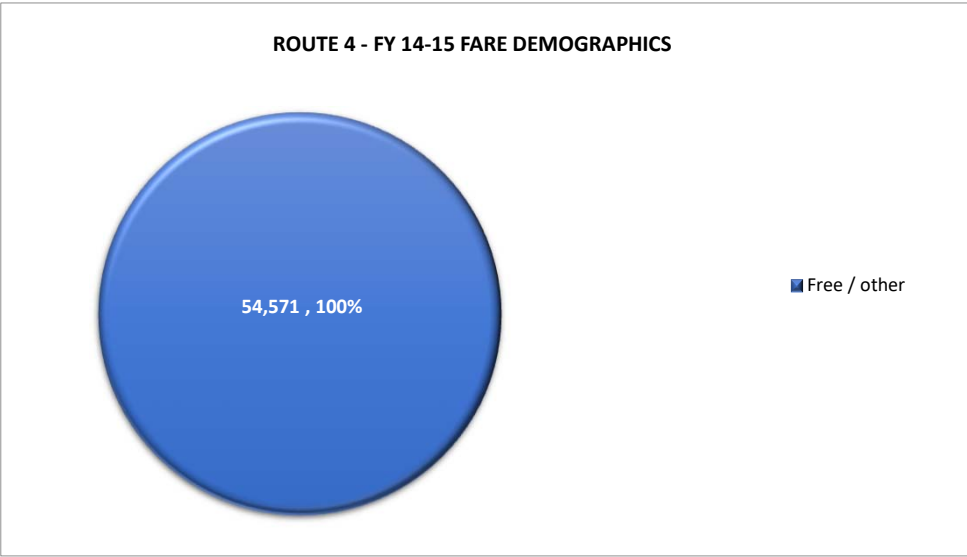


Avg Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	505	505	427
Aug	513	513	475
Sep	385	391	427
Oct	468	433	381
Nov	387	384	445
Dec	468	379	489
Jan	458	422	400
Feb	550	493	376
Mar	454	348	424
Apr	389	449	450
May	402	449	520
Jun	410	370	460
FY AVG	448	429	438

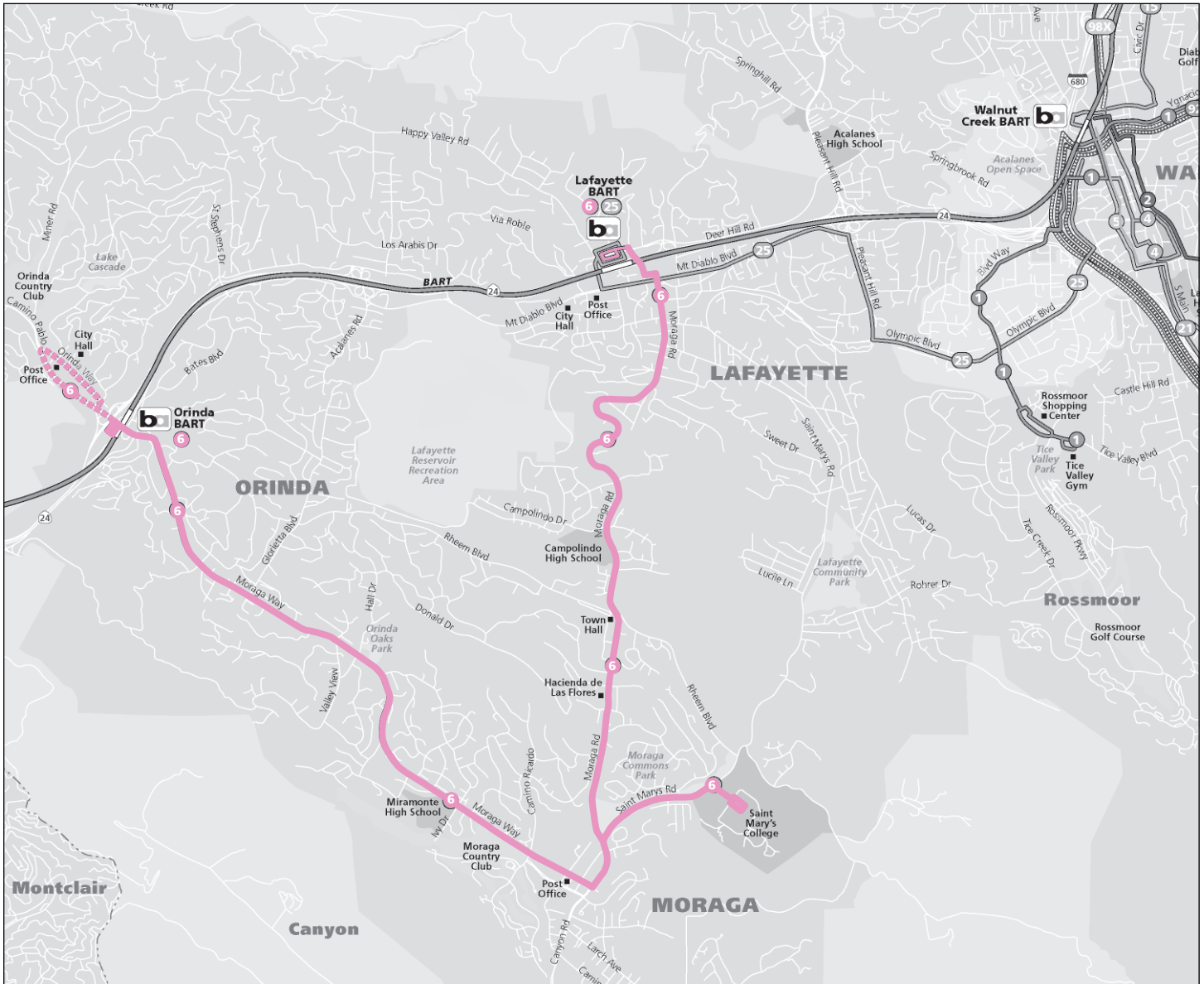


FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE
This is a FREE Route



Route 6: Lafayette/Moraga/Orinda

Every 80 minutes, 9:24am to 6:09pm



Origin and Recent Service Changes

Route 6 was created in 2009 from Route 106, following the same route. Route 6 eliminated a few 106 deviations and also added a short North Orinda 'community loop' to the library north of BART. This loop serves the Orinda Library, and covered a small portions of the old 126 route. Portions of 106 deviations and the 126 are covered in the 600's routes. Since 2009, 6L was folded into the 6 in 2011, two new loop trips were added in 2013, and one new AM trip was added in 2016.

Alignment Statistics and Connections

Route 6's southern terminus at the Orinda BART Station with regional connections to the Pittsburg Bay Point BART line. The route travels on Moraga Way, Moraga Rd, St Mary's Rd, St Mary's College, Moraga Rd, Mt Diablo Blvd to Lafayette BART, with regional connections to the Pittsburg Bay Point BART line.

Route 6: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 6: Orinda BART to Lafayette BART via St Mary's

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
96%	24.7	21.8	24.7

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
75	0.33	7	6

In-Service Time	Layover	Deadhead	Total Hours
70%	20%	9%	9.7

Route 6: Orinda BART to Lafayette BART via St Mary's

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
7,296	8,937	16,233	#DIV/0!

Poverty	Limited English	Minority	Senior
5%	2%	29%	18%

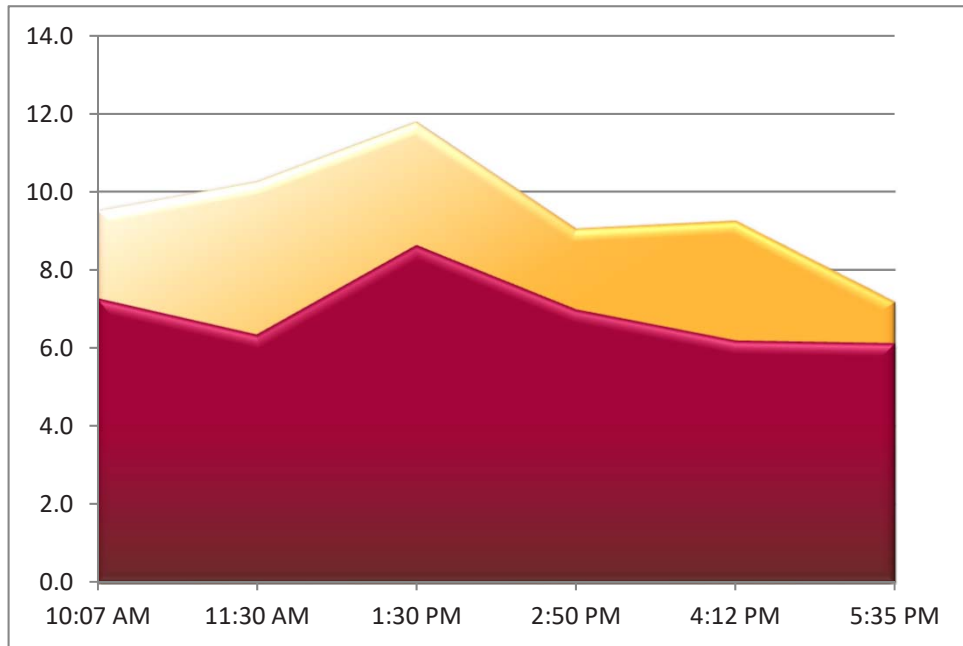
Disabled	No Car	Youth	(Legend)
7%	3%	22%	(route value)
			(% diff from AVG)

ROUTE 6 TRIP LEVEL RIDERSHIP FY2015-2017

Trip Start '15 '16 '17

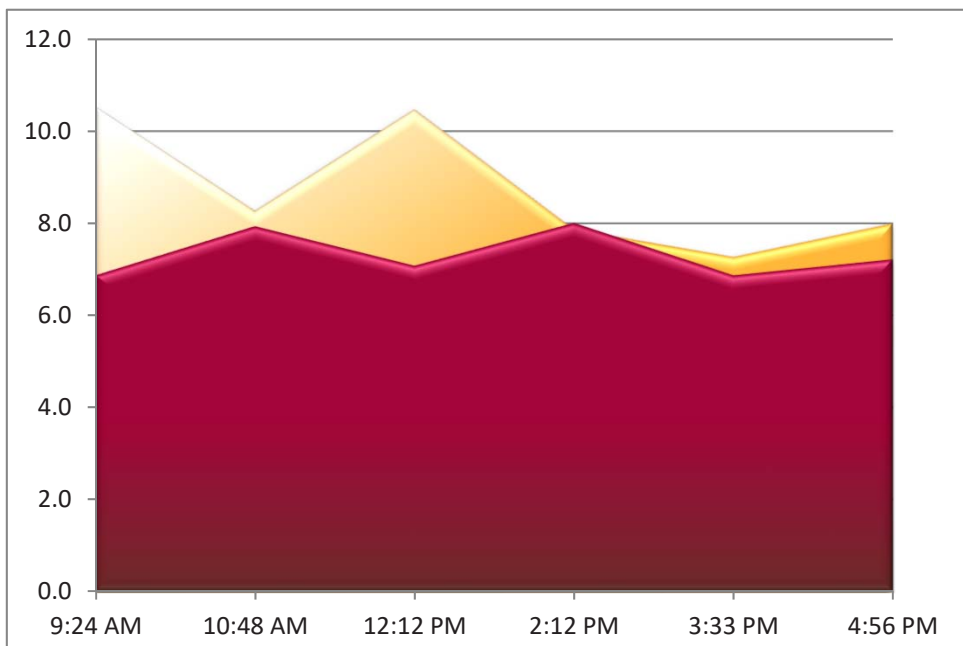
Route #6	'15	'16	'17
10:07 AM	9.5	7.3	
11:30 AM	10.3	6.4	
1:30 PM	11.8	8.6	
2:50 PM	9.1	7.0	
4:12 PM	9.3	6.2	
5:35 PM	7.2	6.1	

Eastbound to Lafayette BART



Route #6	'15	'16	'17
9:24 AM	10.5	6.9	
10:48 AM	8.3	7.9	
12:12 PM	10.5	7.1	
2:12 PM	7.9	8.0	
3:33 PM	7.3	6.9	
4:56 PM	8.0	7.2	

Westbound to Orinda BART

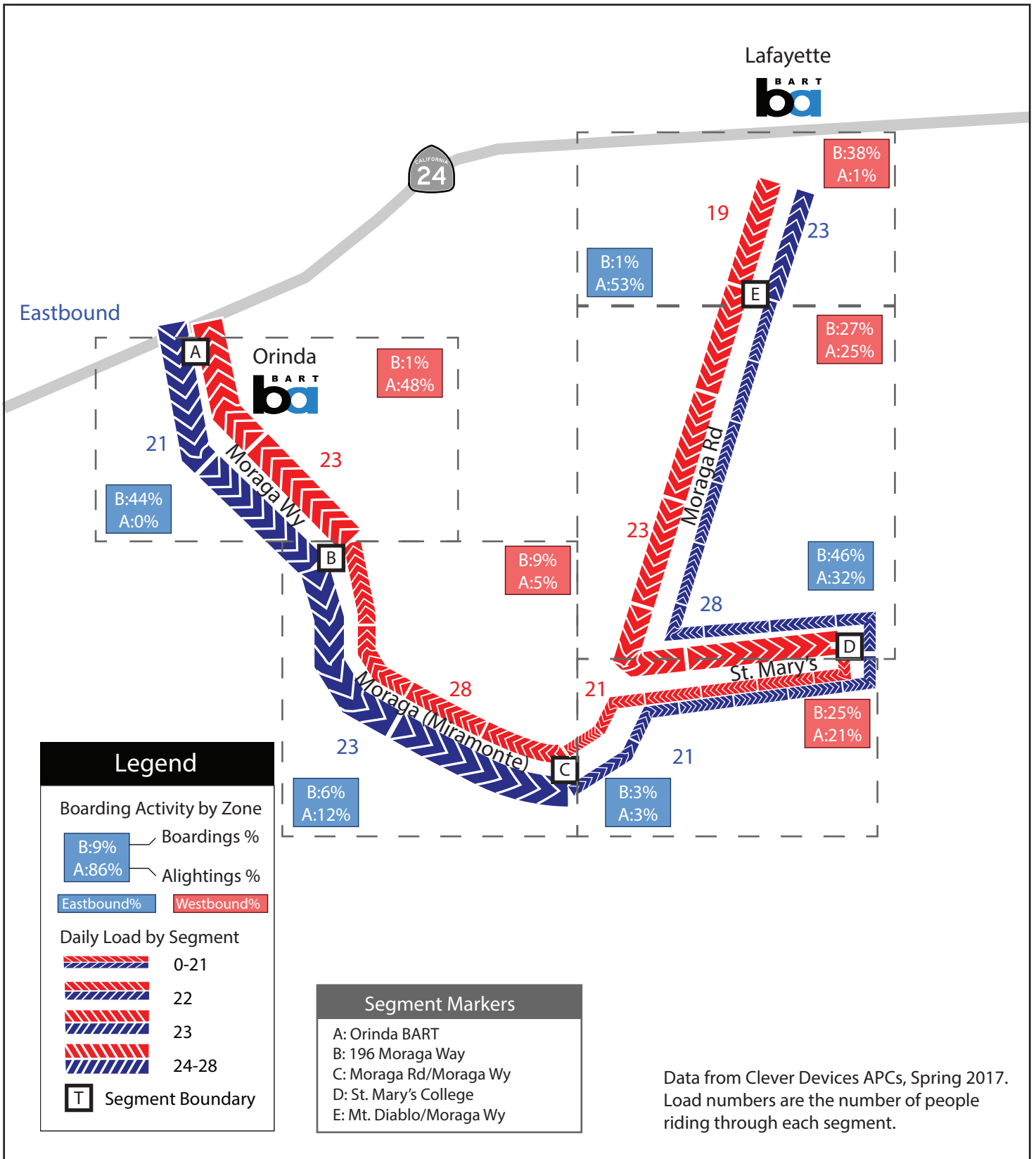


Saturday
 Sunday

Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 6 Segment Map

Average Weekend Ridership % and Load by Timepoint and Direction

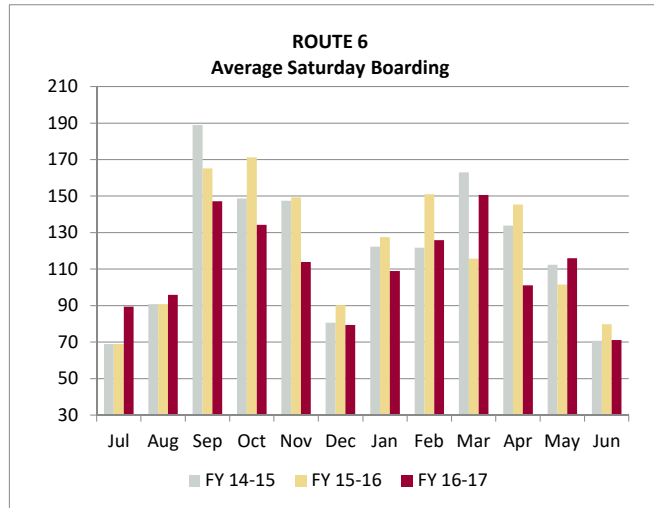


Data from Clever Devices APCs, Spring 2017. Load numbers are the number of people riding through each segment.

ROUTE 6

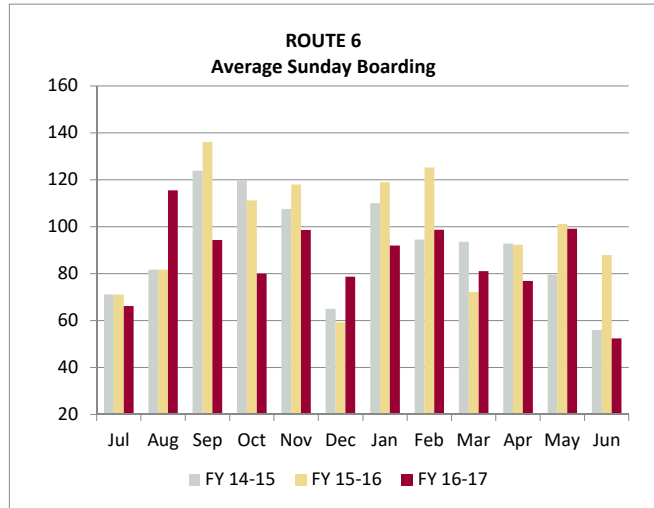
Avg Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	69	69	89
Aug	91	91	96
Sep	189	165	147
Oct	149	171	134
Nov	147	149	114
Dec	81	90	79
Jan	122	127	109
Feb	122	151	126
Mar	163	116	151
Apr	134	145	101
May	112	102	116
Jun	71	80	71
FY AVG	121	122	110



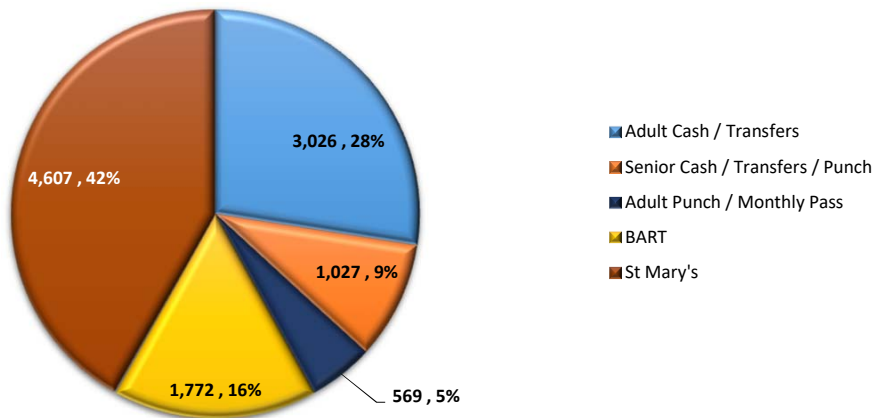
Avg Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	71	71	66
Aug	82	82	116
Sep	124	136	94
Oct	120	111	80
Nov	108	118	99
Dec	65	59	79
Jan	110	119	92
Feb	95	125	99
Mar	94	72	81
Apr	93	92	77
May	80	101	99
Jun	56	88	52
FY AVG	91	98	86

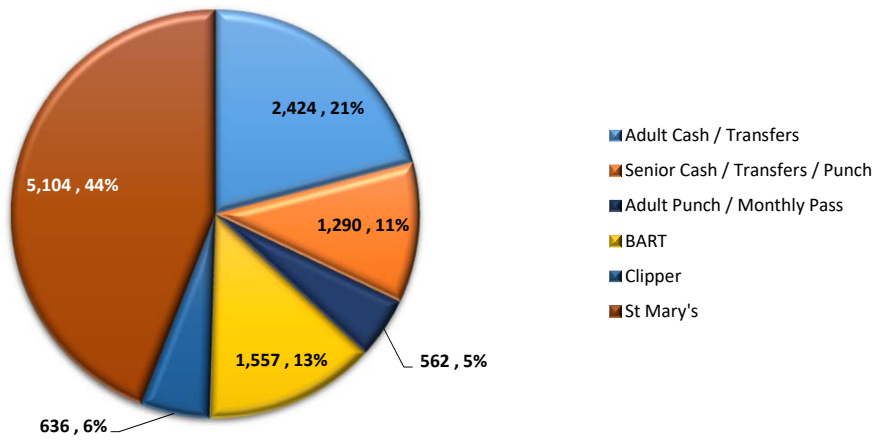


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**

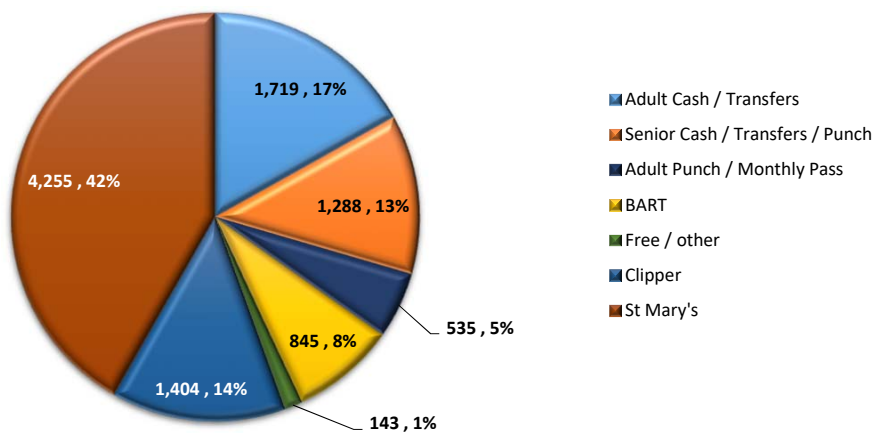
ROUTE 6 - FY 14-15 FARE DEMOGRAPHICS



ROUTE 6 - FY 15-16 FARE DEMOGRAPHICS

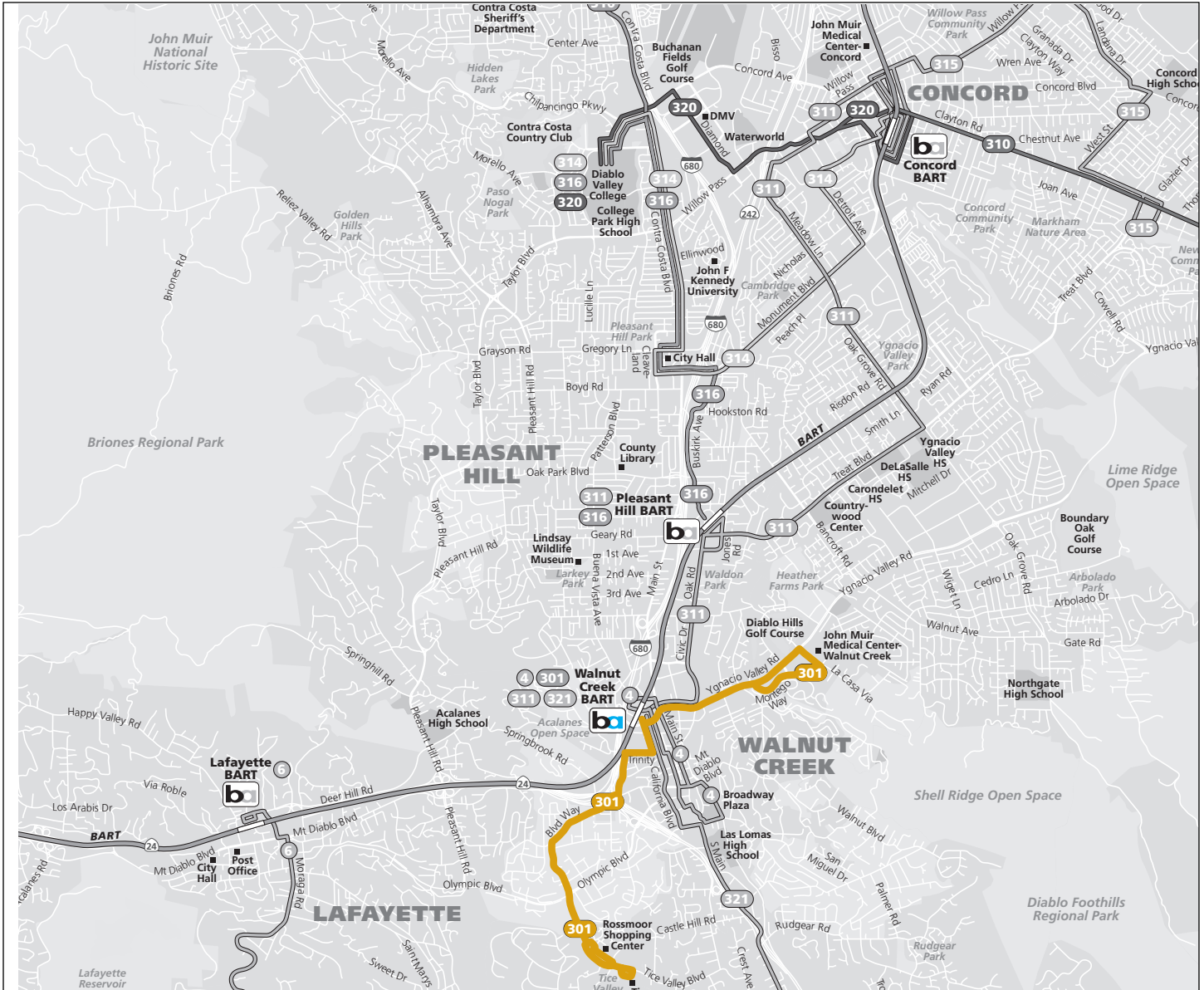


ROUTE 6 - FY 16-17 FARE DEMOGRAPHICS



Route 301: Rossmoor/Ygnacio Valley

Every 90 Minutes from 9:25am to 6:19pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 301 was created in 2009 as part of a large service restructuring. Route 301 is a reduced version of the Route 1. The route operates between Rossmoor Shopping Center, with private shuttle connections to the Rossmoor Bus Line and John Muir Medical Center via BART Walnut Creek, with regional connections to the Pittsburg Bay Point BART line, SolTrans (78), as well as CCCTA routes (4, 311, 321). Private shuttle connections to the Rossmoor Bus Line. No major changes since 2009.

Route 301: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 301: Rossmoor/Ygnacio Valley

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
86%	10.2	10.3	9.2
0%	-33%	-25%	-36%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
45	0.23	10	9
-25%	-4%	43%	32%

In-Service Time	Layover	Deadhead	Total Hours
65%	27%	8%	9.7
-7%	16%	18%	-42%

Route 301: Rossmoor/Ygnacio Valley

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
15,271	11,303	26,574	2,595
-10%	-40%	-26%	-18%

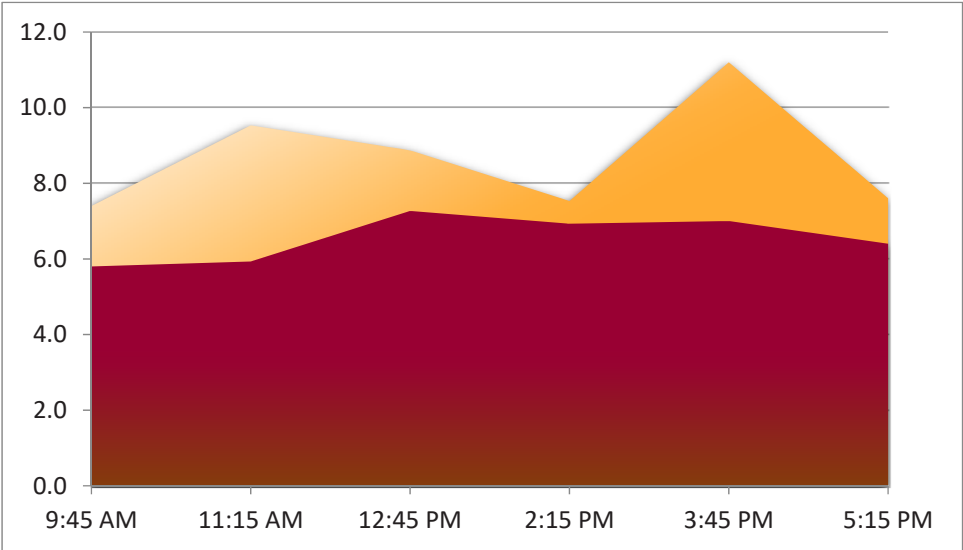
Poverty	Limited English	Minority	Senior
9%	10%	34%	20%
-34%	-11%	-28%	40%

Disabled	No Car	Youth	(Legend)
11%	8%	18%	(route value)
-9%	-13%	-12%	(% diff from AVG)

ROUTE 301 TRIP LEVEL RIDERSHIP FY2015-2017

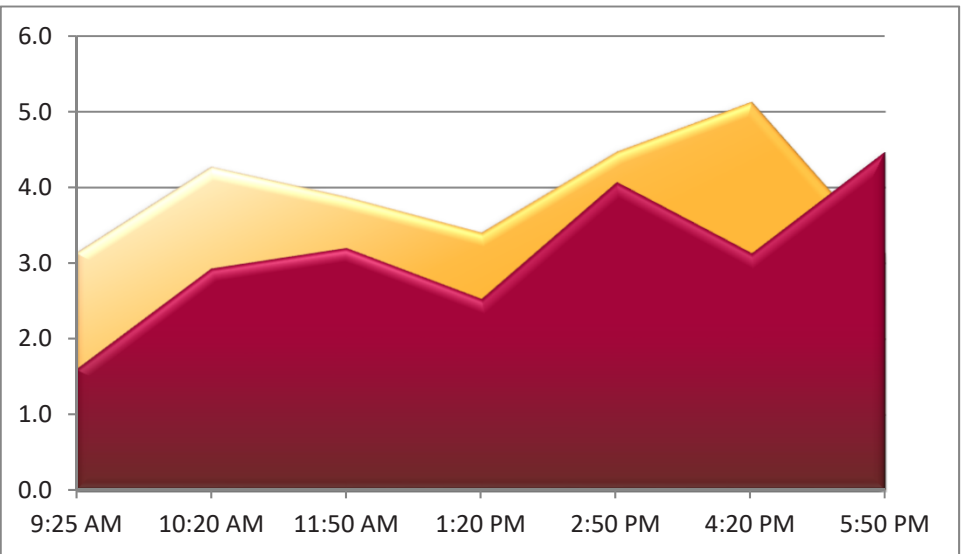
Trip Start	Sat	Sun
Route #301	52	39
9:45 AM	7.4	5.8
11:15 AM	9.5	5.9
12:45 PM	8.9	7.3
2:15 PM	7.5	6.9
3:45 PM	11.2	7.0
5:15 PM	7.6	6.4

Eastbound to John Muir Medical Center



Trip Start	Sat	Sun
Route #301	27	22
9:25 AM	3.1	1.6
10:20 AM	4.3	2.9
11:50 AM	3.9	3.2
1:20 PM	3.4	2.5
2:50 PM	4.5	4.1
4:20 PM	5.1	3.1
5:50 PM	3.1	4.5

Westbound to Rossmoor

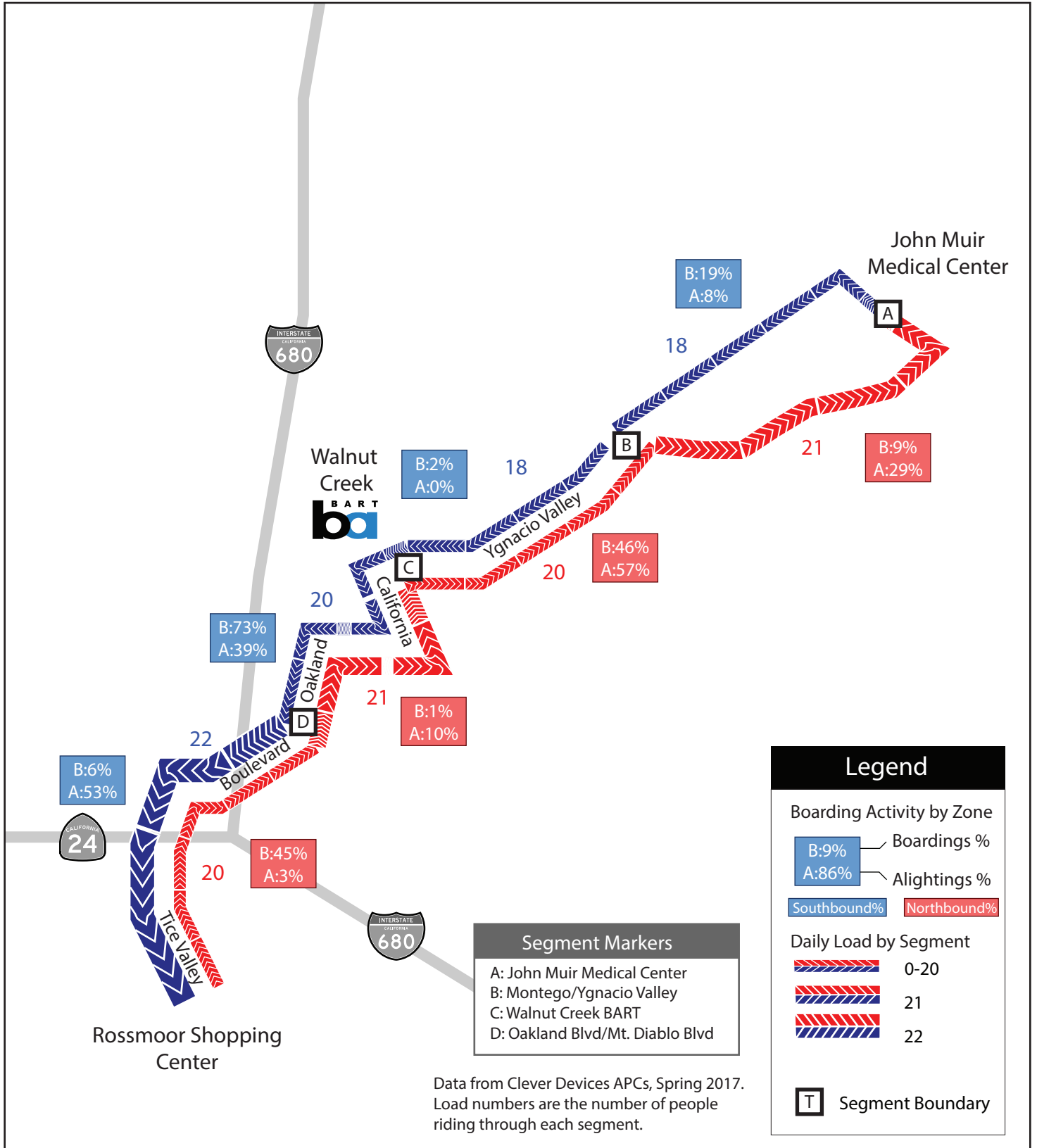


Saturday
 Sunday

Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 301 Segment Map

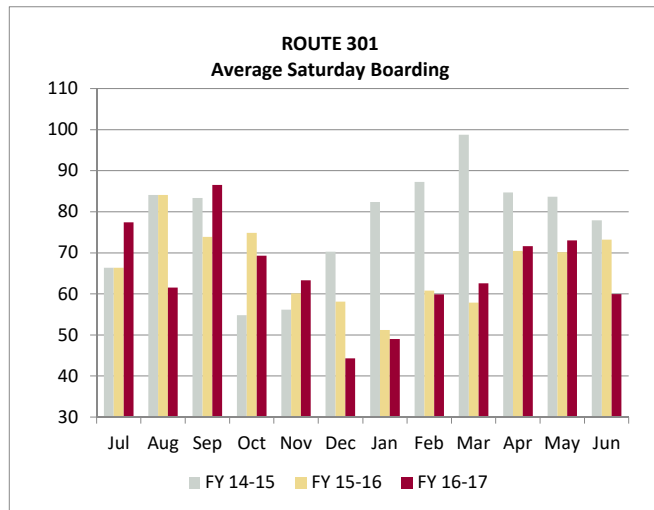
Average Ridership % and Load by Segment and Direction



ROUTE 301

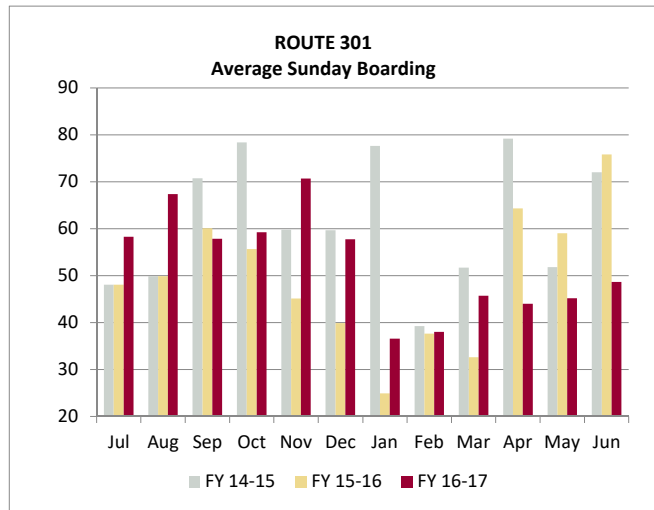
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	66	66	77
Aug	84	84	62
Sep	83	74	87
Oct	55	75	69
Nov	56	60	63
Dec	70	58	44
Jan	82	51	49
Feb	87	61	60
Mar	99	58	63
Apr	85	70	72
May	84	70	73
Jun	78	73	60
FY AVG	77	67	65

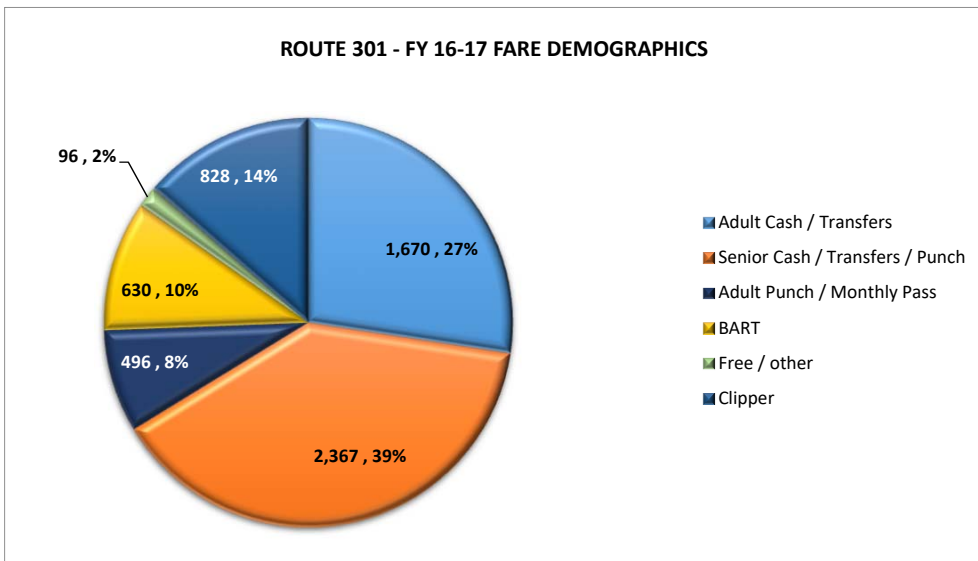
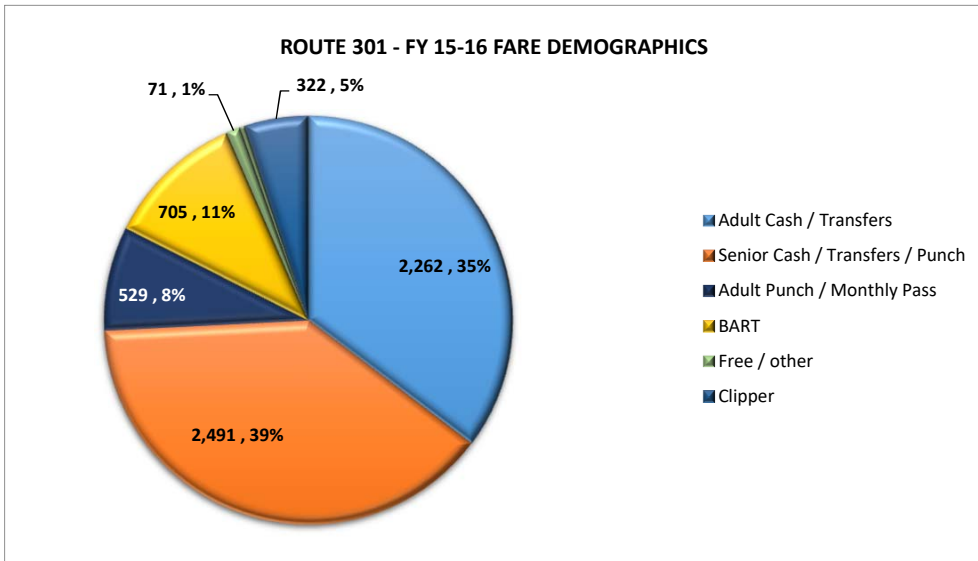
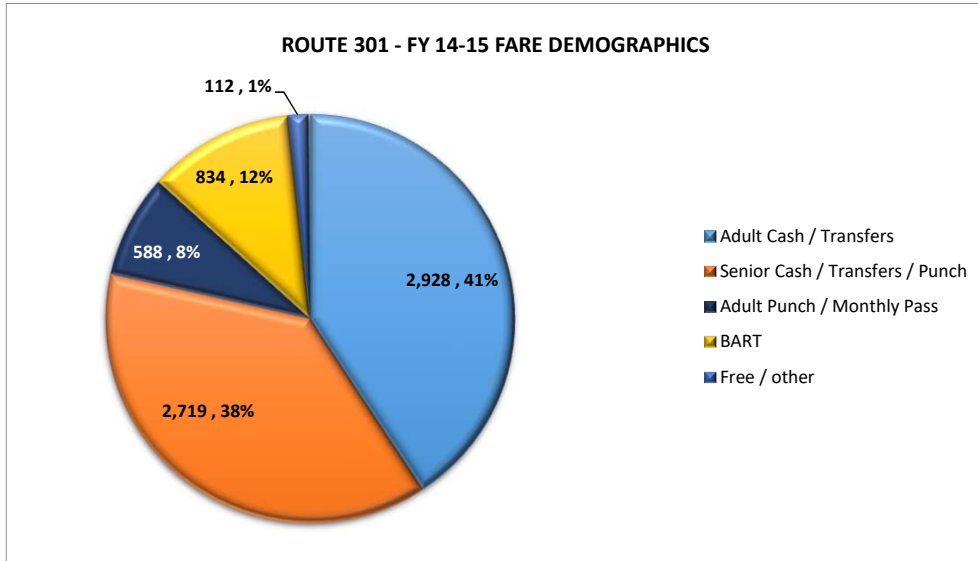


Average Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	48	48	58
Aug	50	50	67
Sep	71	60	58
Oct	78	56	59
Nov	60	45	71
Dec	60	40	58
Jan	78	25	37
Feb	39	38	38
Mar	52	33	46
Apr	79	64	44
May	52	59	45
Jun	72	76	49
FY AVG	61	49	52

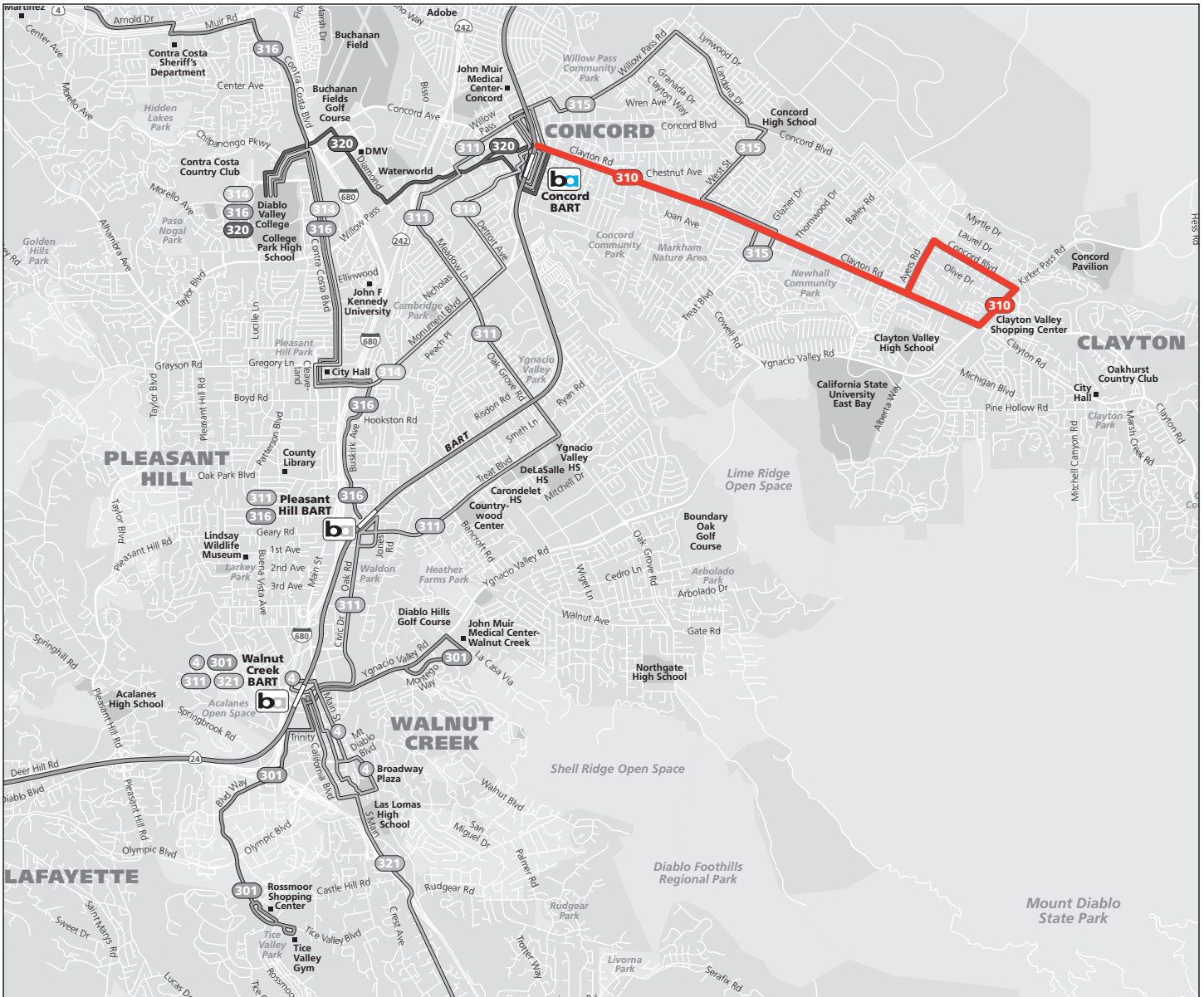


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Route 310: Clayton Rd/BART Concord

Every 40 Minutes from 7:25am to 9:26pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 310 was created in 2011 Fall from the Route 314 to reduce the confusion of Passengers travelling in the wrong direction. This route operates between BART Concord with regional connections to the Pittsburg Bay Point BART line, as well as CCCTA routes (311, 314, 315, 320) and Kirker Pass Rd and Clayton Rd via Clayton Rd and Ayers Rd, Concord Blvd, and Kirker Pass Rd. In 2012 Winter and 2015 Fall additional trips were added. Route 310 is interlined with the Route 314 at BART Concord and Route 320 at DVC.

Route 310: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 310: Clayton Rd/BART Concord

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
82%	10.0	16.9	17.5
-5%	-34%	24%	23%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
49	0.21	2	1
-19%	-13%	-71%	-85%

In-Service Time	Layover	Deadhead	Total Hours
74%	22%	5%	17.9
6%	-8%	-29%	7%

Route 310: Clayton Rd/BART Concord

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
4,352	19,223	23,575	2,350
-74%	2%	-34%	-26%

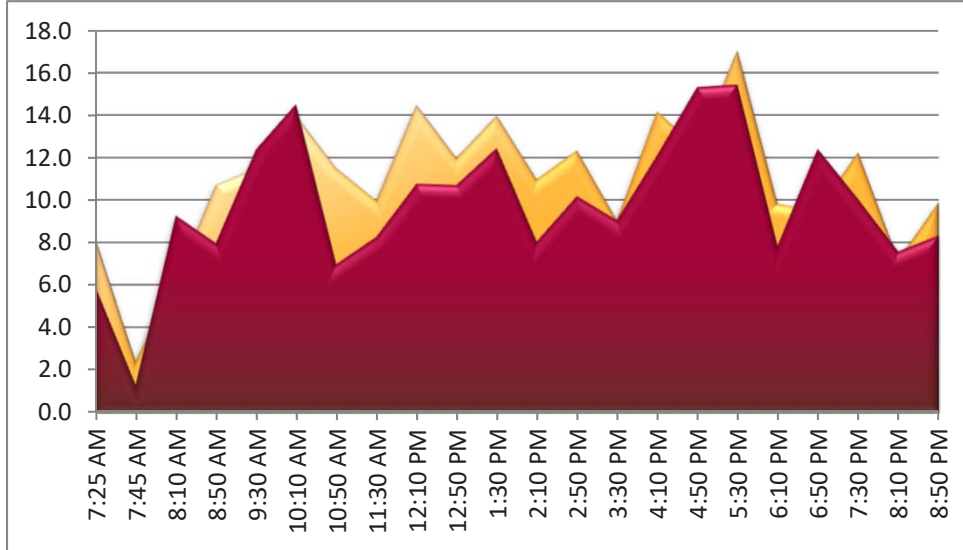
Poverty	Limited English	Minority	Senior
11%	6%	43%	15%
-15%	-47%	-7%	4%

Disabled	No Car	Youth	(Legend)
13%	8%	22%	(route value)
9%	-13%	6%	(% diff from AVG)

ROUTE 310 TRIP LEVEL RIDERSHIP FY2015-2017

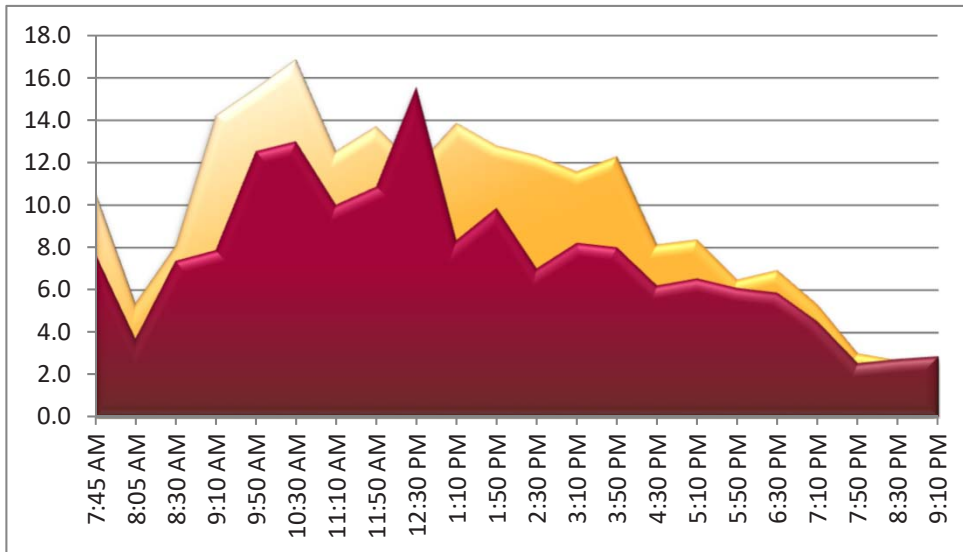
Trip Start	Sat	Sun
Route #310	240	217
7:25 AM	8.2	5.9
7:45 AM	2.4	1.3
8:10 AM	6.3	9.3
8:50 AM	10.7	8.0
9:30 AM	11.5	12.4
10:10 AM	14.0	14.5
10:50 AM	11.5	7.0
11:30 AM	10.0	8.3
12:10 PM	14.5	10.8
12:50 PM	12.0	10.7
1:30 PM	14.0	12.5
2:10 PM	11.0	8.1
2:50 PM	12.4	10.2
3:30 PM	9.1	9.1
4:10 PM	14.2	12.1
4:50 PM	12.5	15.3
5:30 PM	17.1	15.5
6:10 PM	9.9	7.9
6:50 PM	9.5	12.4
7:30 PM	12.3	10.1
8:10 PM	7.2	7.6
8:50 PM	9.9	8.4

Eastbound to Clayton/Kirker



Route #310	215	167
7:45 AM	10.6	7.7
8:05 AM	5.4	3.7
8:30 AM	8.1	7.4
9:10 AM	14.2	7.9
9:50 AM	15.5	12.5
10:30 AM	16.9	13.0
11:10 AM	12.5	10.0
11:50 AM	13.7	10.9
12:30 PM	11.8	15.6
1:10 PM	13.9	8.3
1:50 PM	12.8	9.9
2:30 PM	12.3	7.0
3:10 PM	11.6	8.2
3:50 PM	12.3	8.0
4:30 PM	8.1	6.2
5:10 PM	8.4	6.5
5:50 PM	6.5	6.1
6:30 PM	6.9	5.9
7:10 PM	5.3	4.5
7:50 PM	3.0	2.5
8:30 PM	2.7	2.7
9:10 PM	2.8	2.9

Westbound to Concord BART

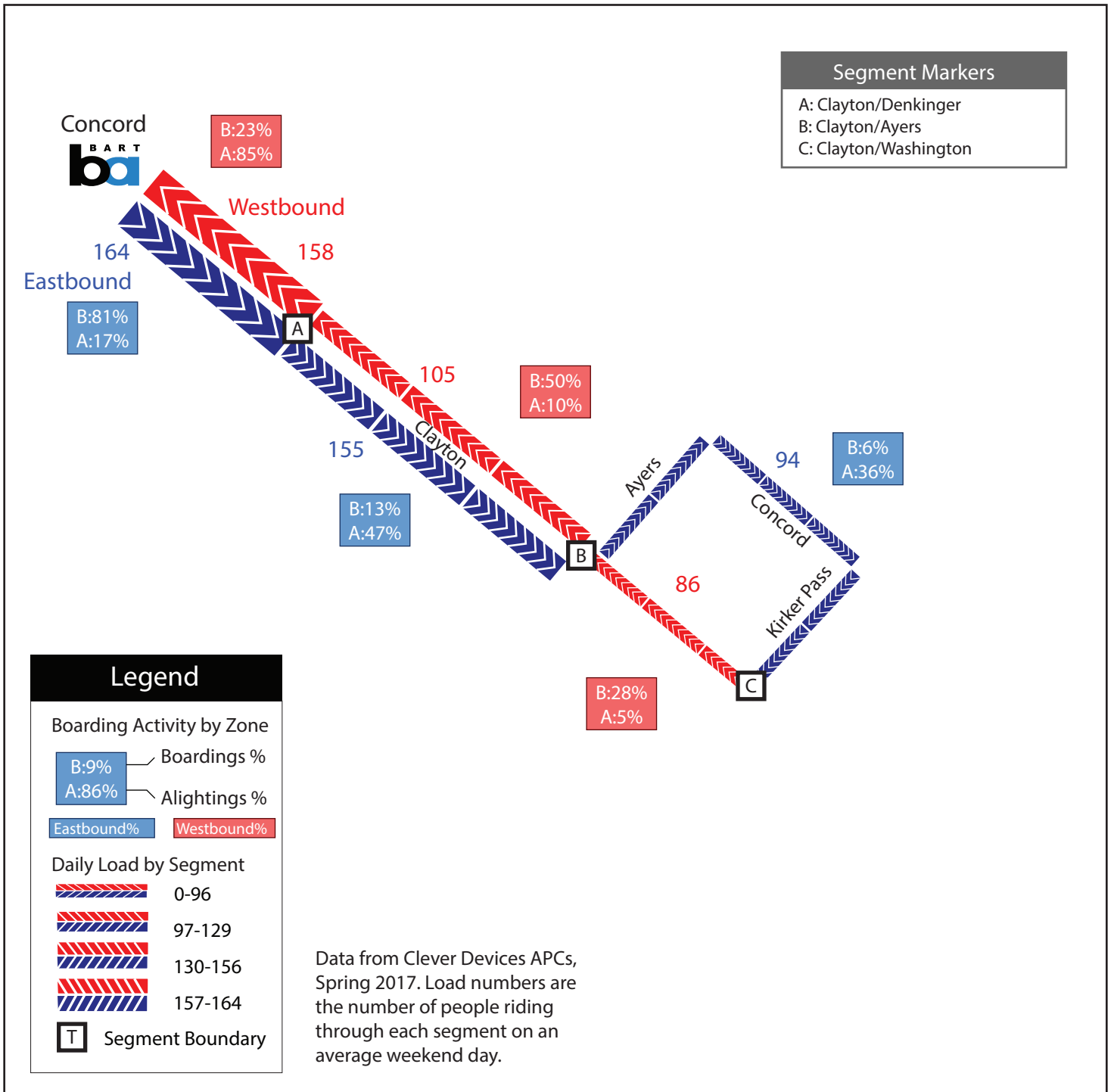


Saturday
 Sunday

Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 310 Segment Map

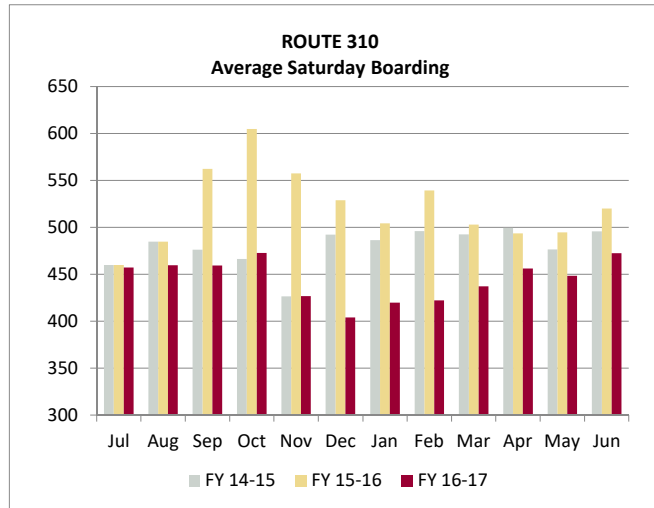
Average Ridership % and Load by Segment and Direction



ROUTE 310

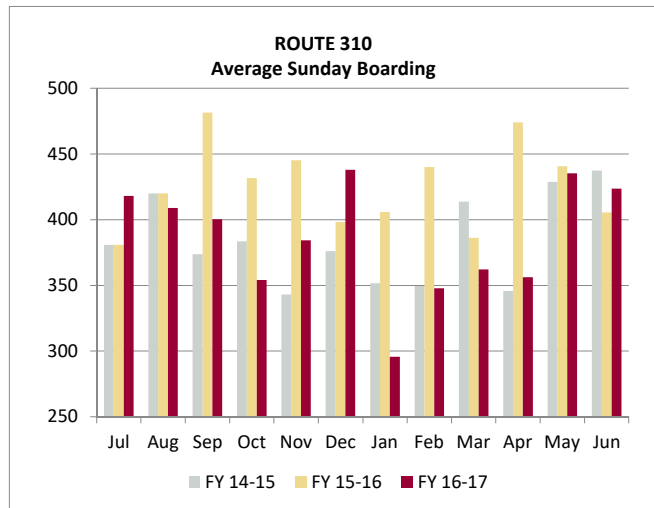
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	460	460	457
Aug	485	485	460
Sep	476	562	459
Oct	466	605	473
Nov	427	558	427
Dec	492	529	404
Jan	486	504	420
Feb	496	539	422
Mar	492	503	437
Apr	499	494	456
May	476	495	449
Jun	496	520	473
FY AVG	479	521	445

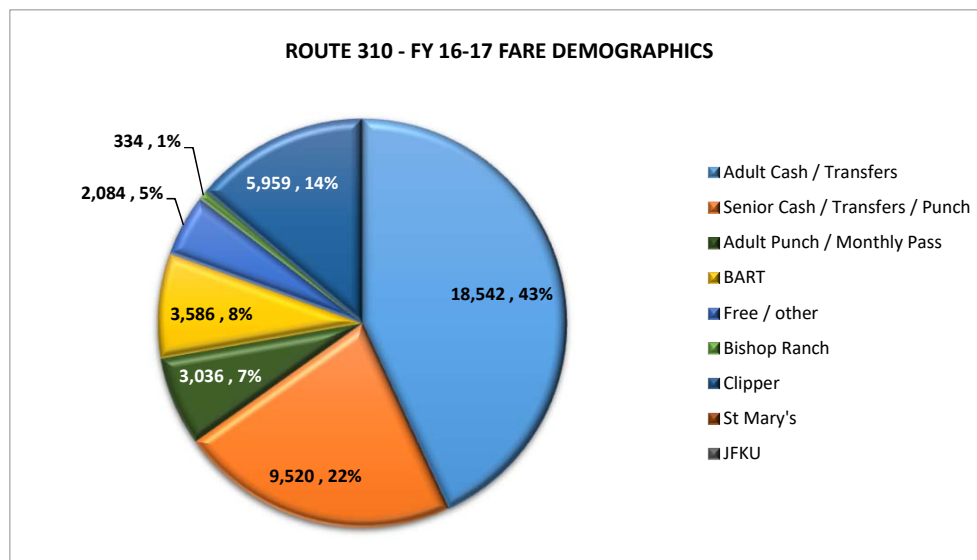
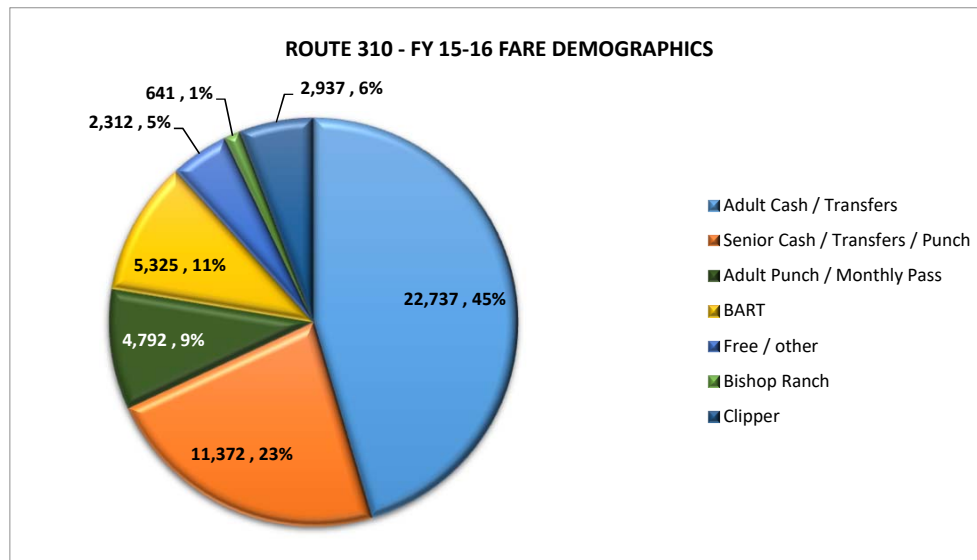
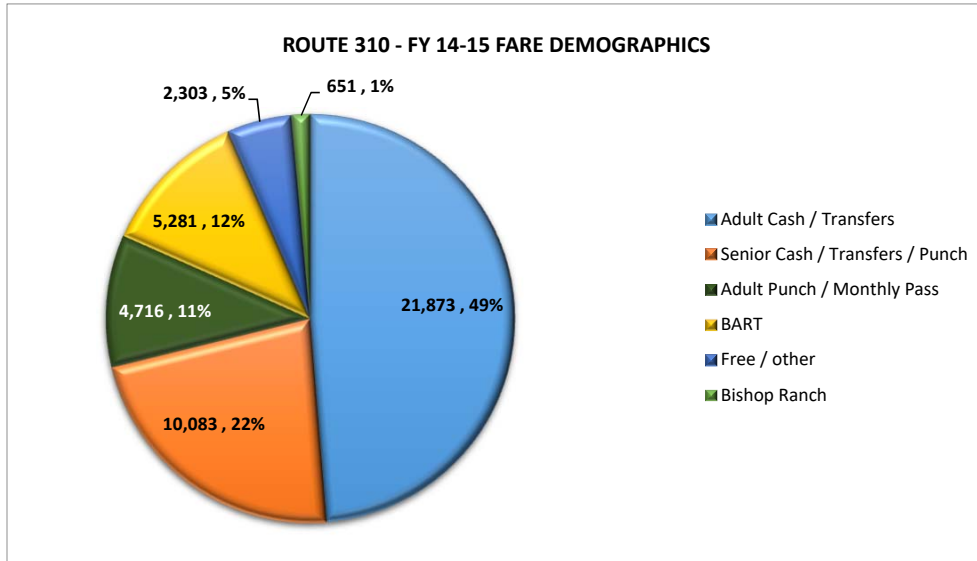


Average Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	381	381	418
Aug	420	420	409
Sep	374	482	400
Oct	384	432	354
Nov	343	445	384
Dec	376	398	438
Jan	352	406	296
Feb	350	440	348
Mar	414	386	362
Apr	346	474	356
May	429	441	435
Jun	437	406	424
FY AVG	385	426	383

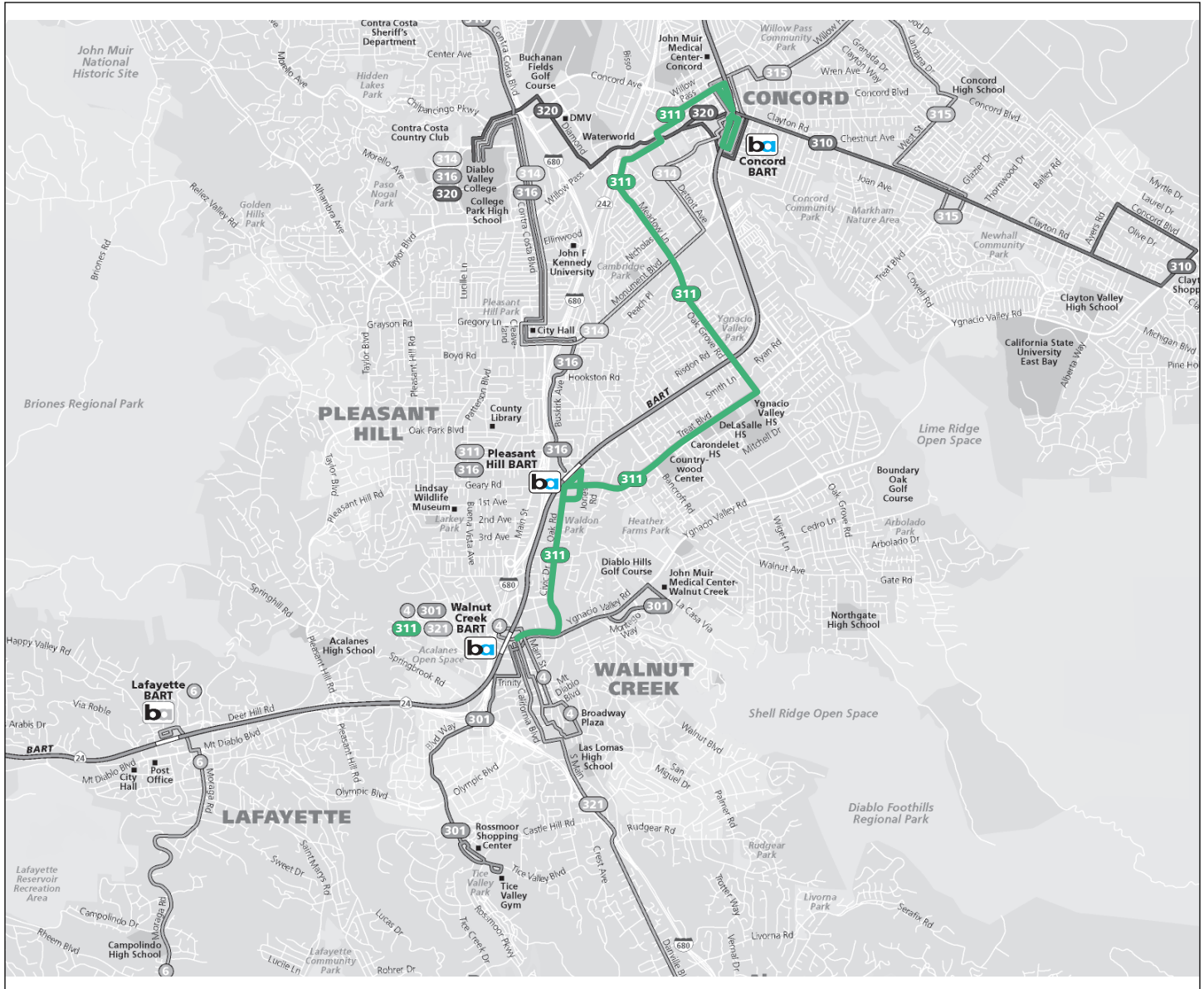


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Route 311: BART Concord/BART Pleasant Hill/BART Walnut Creek

Every 80 Minutes 7:19am to 7:08pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 311 was created in 2009 as part of a large service restructuring. It is a combination of segments of the Route 11 and Route 15. The route travels from BART Concord with regional connections to the Pittsburg Bay Point BART line, as well as CCCTA routes (310, 314, 315, 320) to BART Walnut Creek, with regional connections to the Pittsburg Bay Point BART line, SolTrans (78), as well as CCCTA routes (4, 301, 321) and private shuttle connections to the Rossmoor Bus Line, via Salvio St, Market, Meadow Ln, Oak Grove Rd, Treat Blvd, BART Pleasant Hill, with regional connections to the Pittsburg Bay Point BART line, as well as CCCTA Route 316, Oak Rd, N Civic Dr, Ygnacio Valley Rd. In 2014 Winter the schedule was rewritten. Route 311 is interlined with the Route 315 at BART Concord.

Route 311: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 311 - BART Concord/BART PH/BART WC

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
89%	17.9	10.9	11.9
3%	17%	-20%	-17%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
71	0.25	10	10
18%	4%	43%	47%

In-Service Time	Layover	Deadhead	Total Hours
74%	19%	7%	16.6
6%	-18%	-1%	-1%

Route 311 - BART Concord/BART PH/BART WC

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
29,065	32,826	61,891	3,465
70%	74%	72%	9%

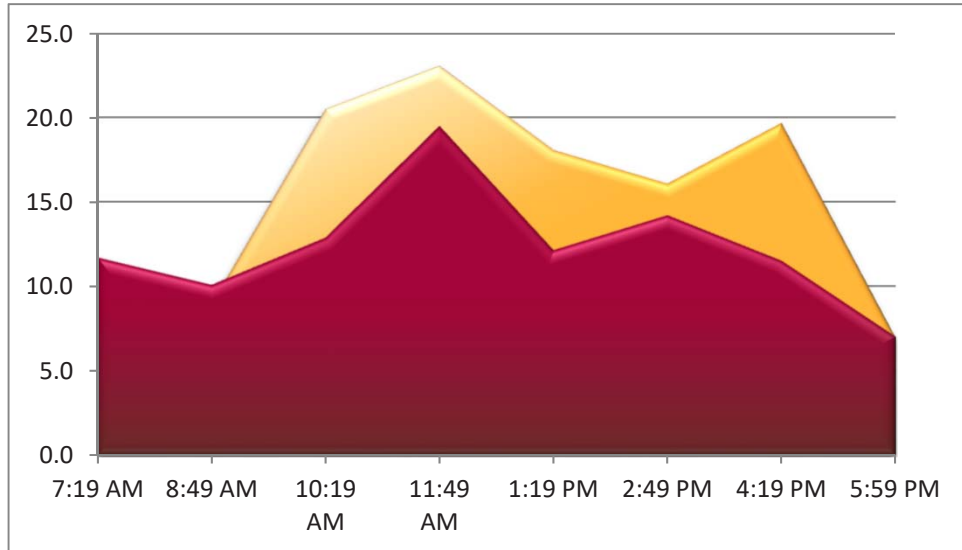
Poverty	Limited English	Minority	Senior
17%	15%	56%	13%
25%	41%	19%	-11%

Disabled	No Car	Youth	(Legend)
12%	10%	21%	(route value)
3%	20%	1%	(% diff from AVG)

ROUTE 311 TRIP LEVEL RIDERSHIP FY2015-2017

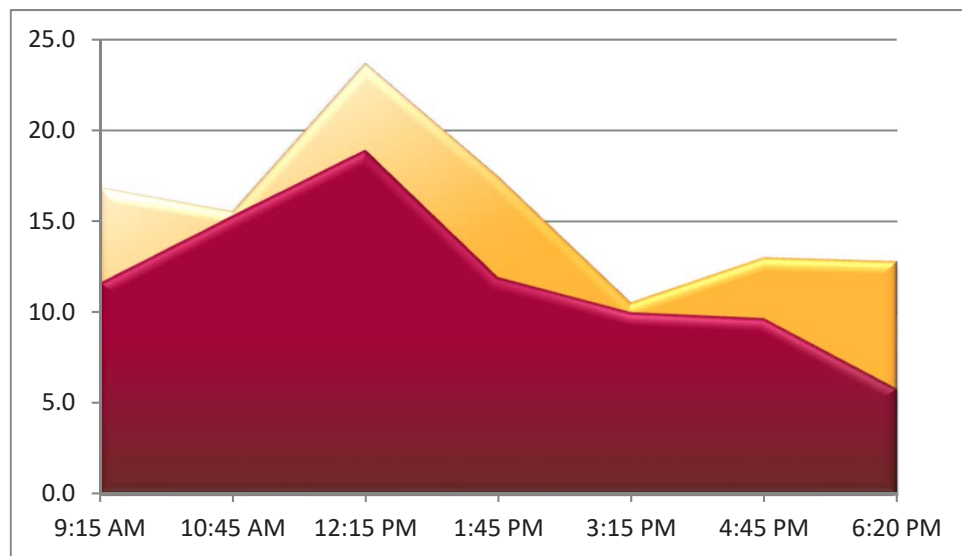
Trip Start	Sat	Sun
Route #311	125	99
7:19 AM	11.7	11.7
8:49 AM	8.9	10.1
10:19 AM	20.5	12.9
11:49 AM	23.1	19.5
1:19 PM	18.1	12.1
2:49 PM	16.1	14.2
4:19 PM	19.7	11.5
5:59 PM	6.9	7.0

Northbound to Concord BART



Trip Start	Sat	Sun
Route #311	110	83
9:15 AM	16.9	11.6
10:45 AM	15.5	15.3
12:15 PM	23.7	18.9
1:45 PM	17.5	11.9
3:15 PM	10.5	10.0
4:45 PM	13.0	9.7
6:20 PM	12.8	5.8

Southbound to Walnut Creek BART

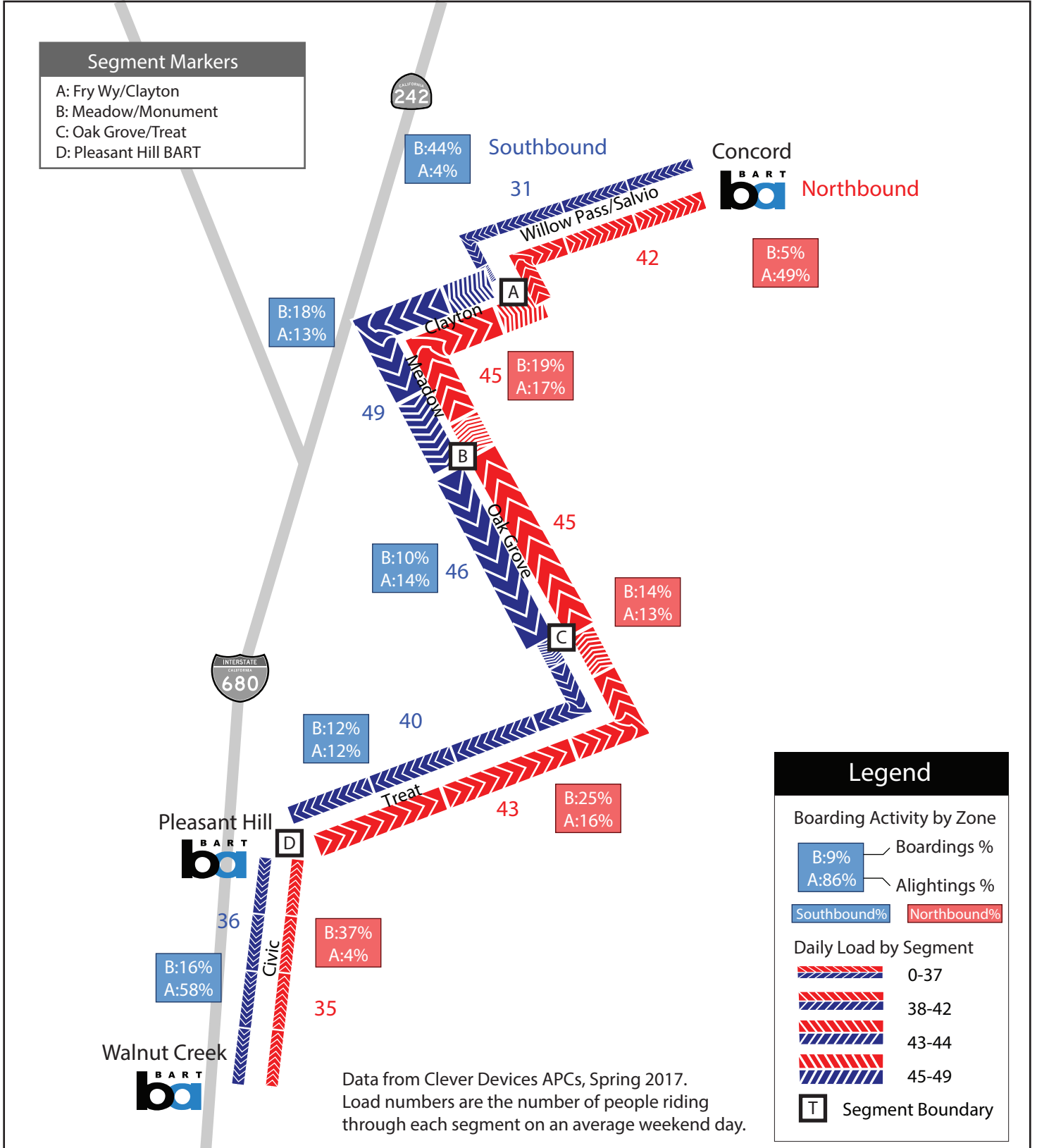


Saturday
 Sunday

Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 311 Segment Map

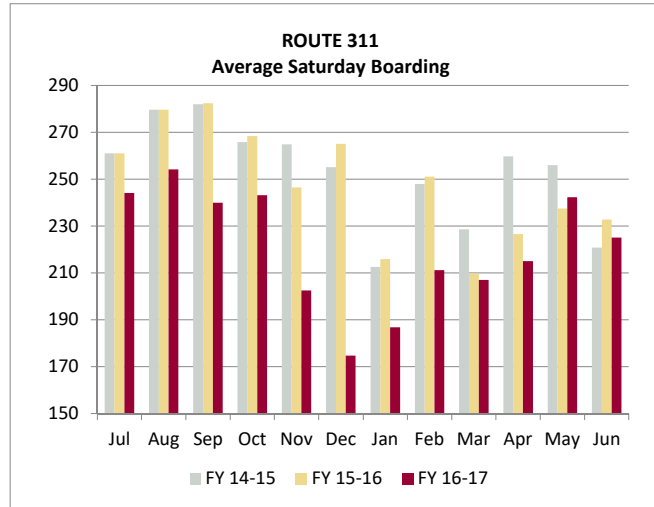
Average Ridership % and Load by Segment and Direction



ROUTE 311

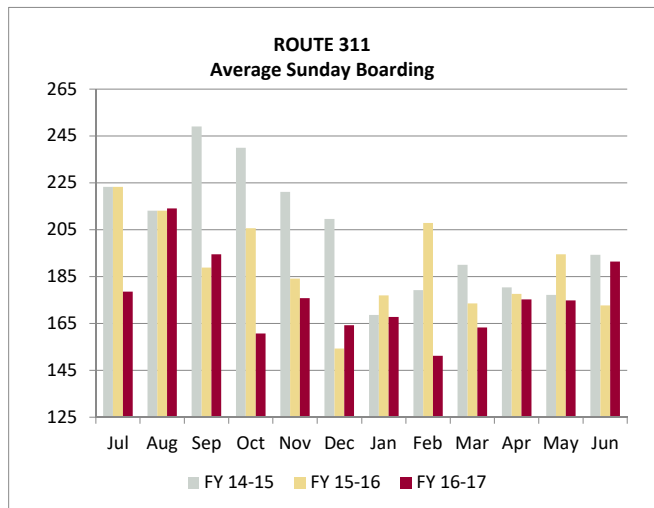
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	261	261	244
Aug	280	280	254
Sep	282	282	240
Oct	266	268	243
Nov	265	246	202
Dec	255	265	175
Jan	213	216	187
Feb	248	251	211
Mar	229	210	207
Apr	260	227	215
May	256	237	242
Jun	221	233	225
FY AVG	253	248	220

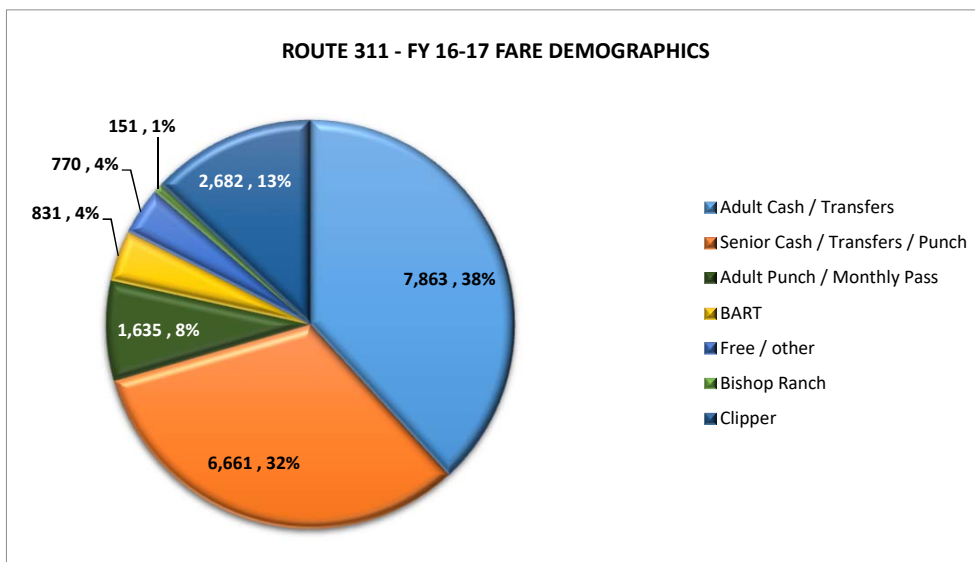
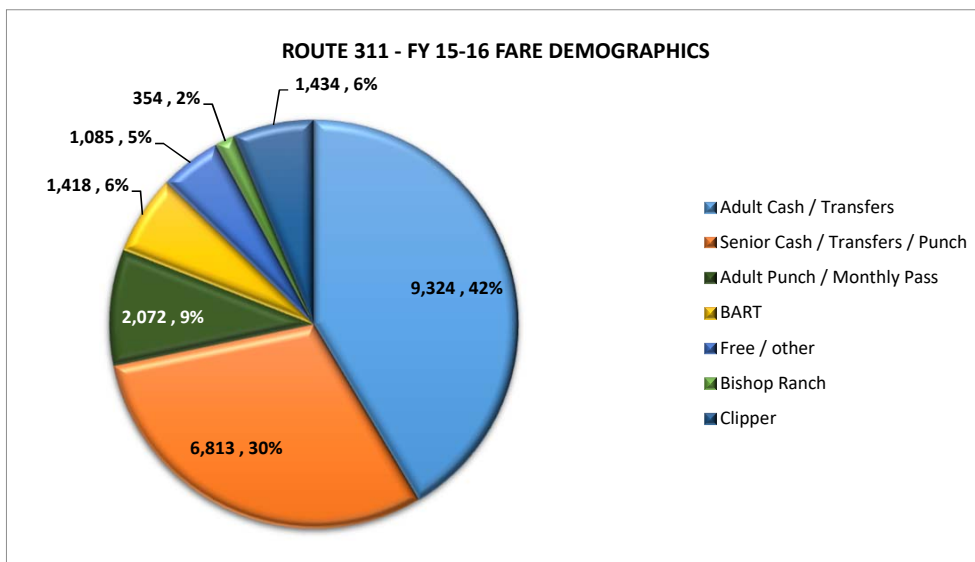
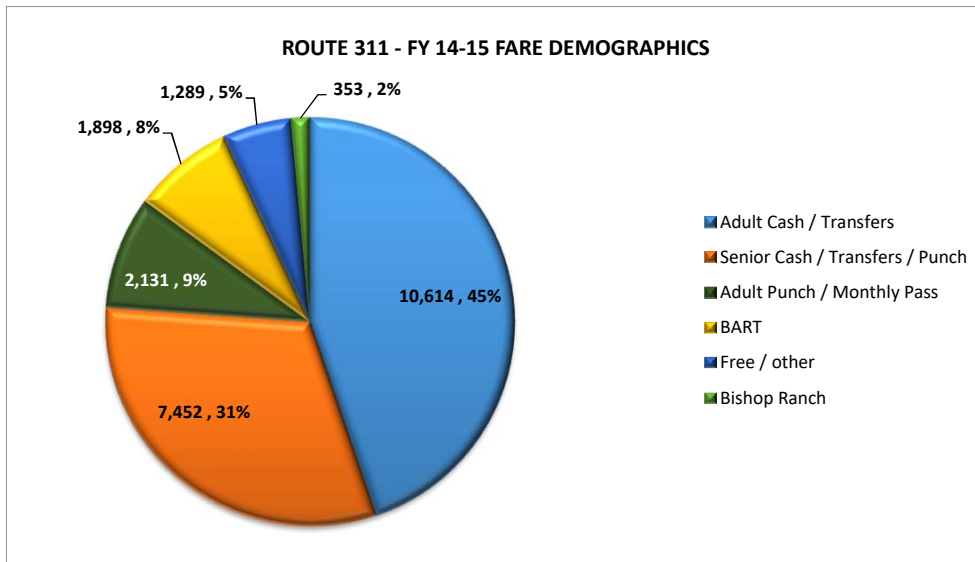


Average Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	223	223	179
Aug	213	213	214
Sep	249	189	195
Oct	240	206	161
Nov	221	184	176
Dec	210	154	164
Jan	169	177	168
Feb	179	208	151
Mar	190	174	163
Apr	180	178	175
May	177	195	175
Jun	194	173	191
FY AVG	204	190	176

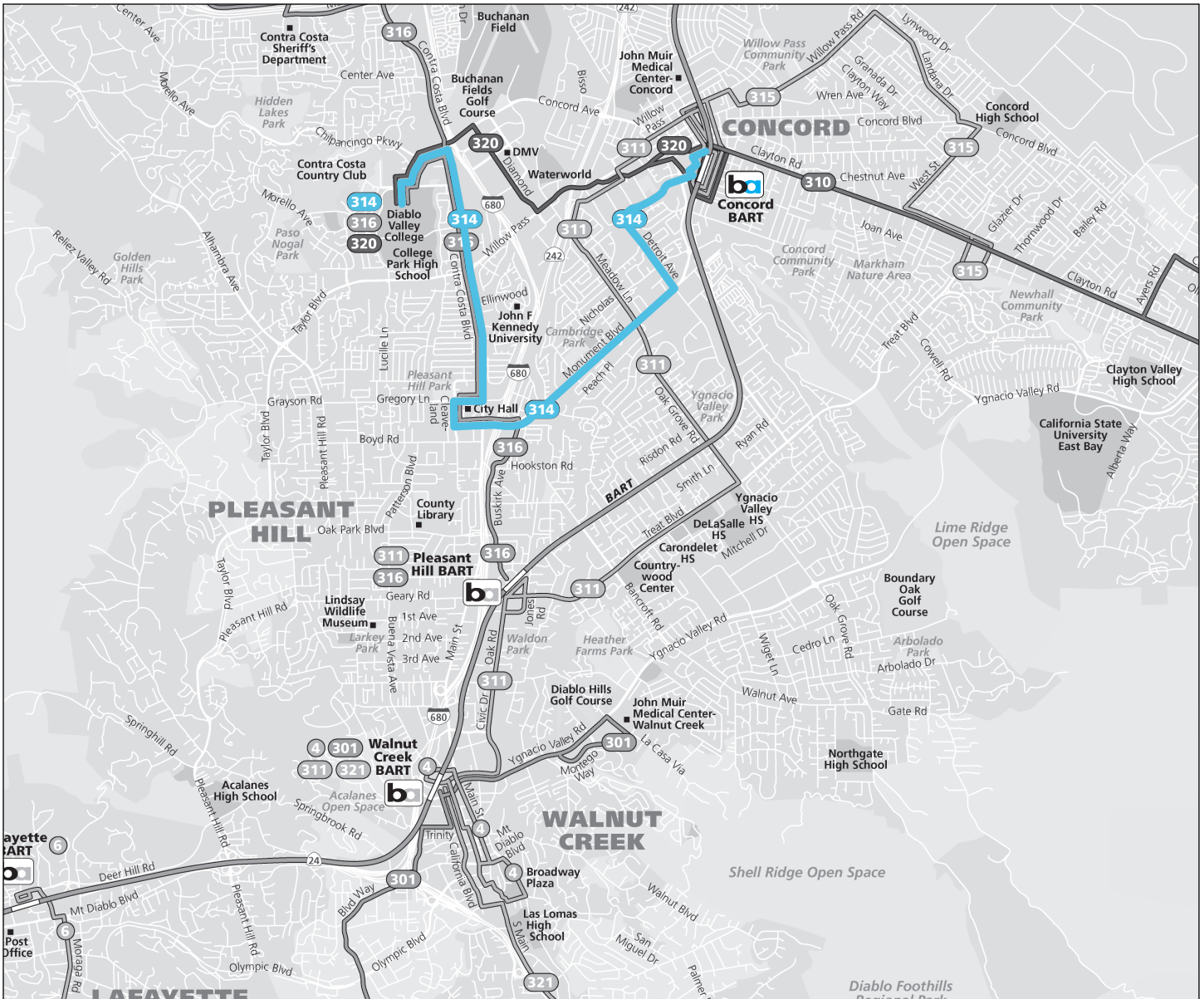


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Route 314: DVC to Concord BART via Monument

Every 80 minutes, 6:50am to 8:41pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 314 was created in 2001 Summer as a Sunday Only Route. It was a combination of segments of the Routes 110, 114, and 109, serving the Clayton Rd, Monument Blvd, Crescent Plaza and Contra Costa Blvd Corridors. In 2009 as part of the large service restructuring, the Route 314 operated on Saturday and Sundays with a new schedule. In 2011 Fall the Clayton Rd corridor segment was moved onto the new Route 310. The Route 314 currently travels from BART Concord with regional connections to the Pittsburg Bay Point BART line, as well as CCCTA routes (310, 311, 315, 320) to DVC with connections to CCCTA routes (316, 320) via the Monument Blvd, Crescent Plaza and Contra Costa Blvd corridors. In 2015 Fall an additional trip was added to leave DVC in the evening. Route 314 is interlined with the Route 310 at BART Concord and Route 320 at DVC.

Route 314: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 314 - BART Concord/Monument Blvd/DVC

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
84%	12.9	12.0	12.5
-3%	-15%	-12%	-12%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
57	0.23	5	5
-5%	-4%	-29%	-26%

In-Service Time	Layover	Deadhead	Total Hours
68%	28%	4%	29.2
-3%	18%	-35%	75%

Route 314 - BART Concord/Monument Blvd/DVC

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
11,932	31,522	43,454	3,358
-30%	67%	21%	6%

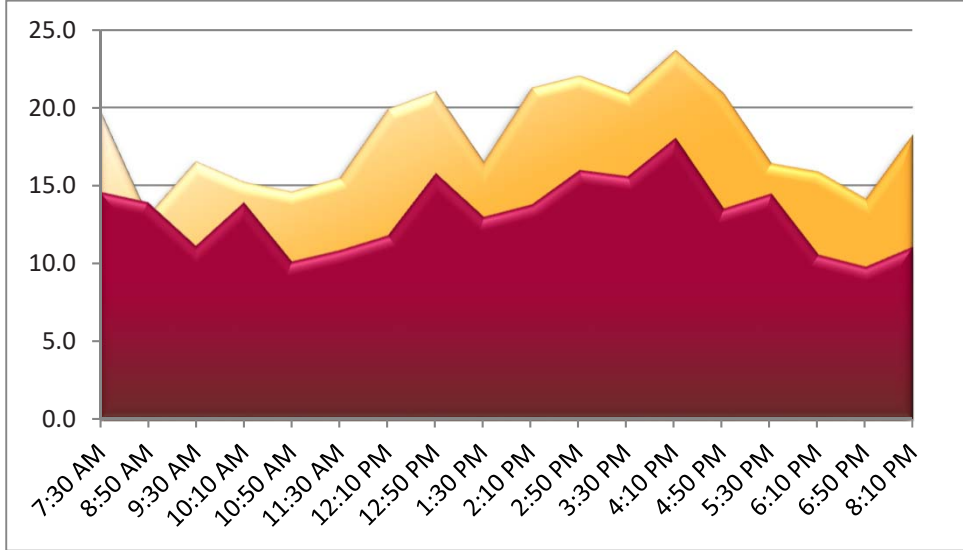
Poverty	Limited English	Minority	Senior
26%	20%	69%	7%
89%	83%	48%	-48%

Disabled	No Car	Youth	(Legend)
11%	10%	26%	(route value)
-5%	16%	24%	(% diff from AVG)

ROUTE 314 TRIP LEVEL RIDERSHIP FY2015-2017

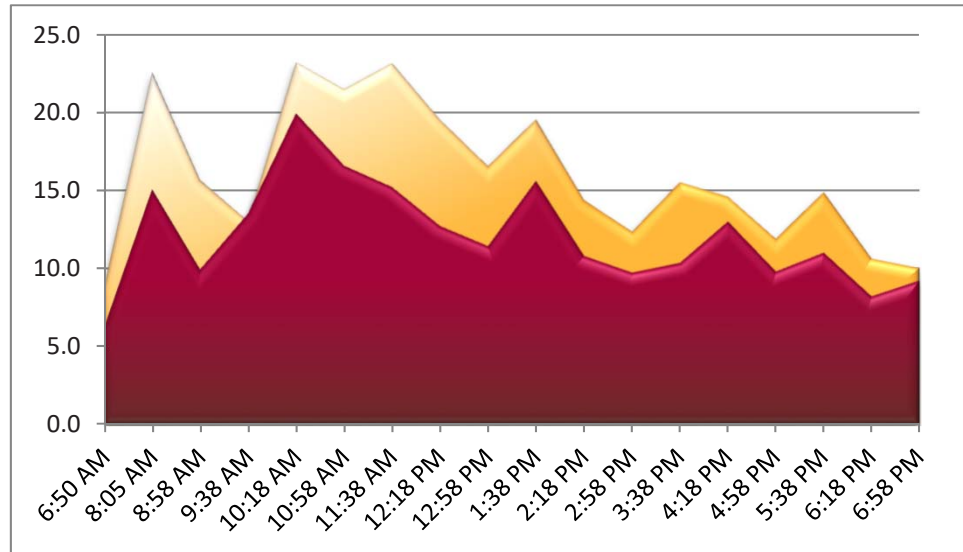
Trip Start	Sat	Sun
Route #314	327	238
7:30 AM	19.9	14.6
8:50 AM	13.1	13.9
9:30 AM	16.6	11.1
10:10 AM	15.3	13.9
10:50 AM	14.6	10.1
11:30 AM	15.5	10.9
12:10 PM	19.9	11.8
12:50 PM	21.1	15.8
1:30 PM	16.6	13.0
2:10 PM	21.3	13.8
2:50 PM	22.1	16.0
3:30 PM	20.9	15.6
4:10 PM	23.7	18.1
4:50 PM	20.9	13.5
5:30 PM	16.5	14.5
6:10 PM	15.9	10.6
6:50 PM	14.2	9.8
8:10 PM	18.3	11.1

Northbound to Concord BART



Trip Start	Sat	Sun
Route #314	287	218
6:50 AM	8.8	6.2
8:05 AM	22.6	15.1
8:58 AM	15.6	9.9
9:38 AM	13.0	13.5
10:18 AM	23.2	19.9
10:58 AM	21.5	16.6
11:38 AM	23.1	15.2
12:18 PM	19.5	12.7
12:58 PM	16.5	11.4
1:38 PM	19.5	15.6
2:18 PM	14.4	10.8
2:58 PM	12.3	9.7
3:38 PM	15.5	10.4
4:18 PM	14.6	13.0
4:58 PM	11.9	9.8
5:38 PM	14.9	11.0
6:18 PM	10.6	8.2
6:58 PM	10.0	9.2

Southbound to DVC

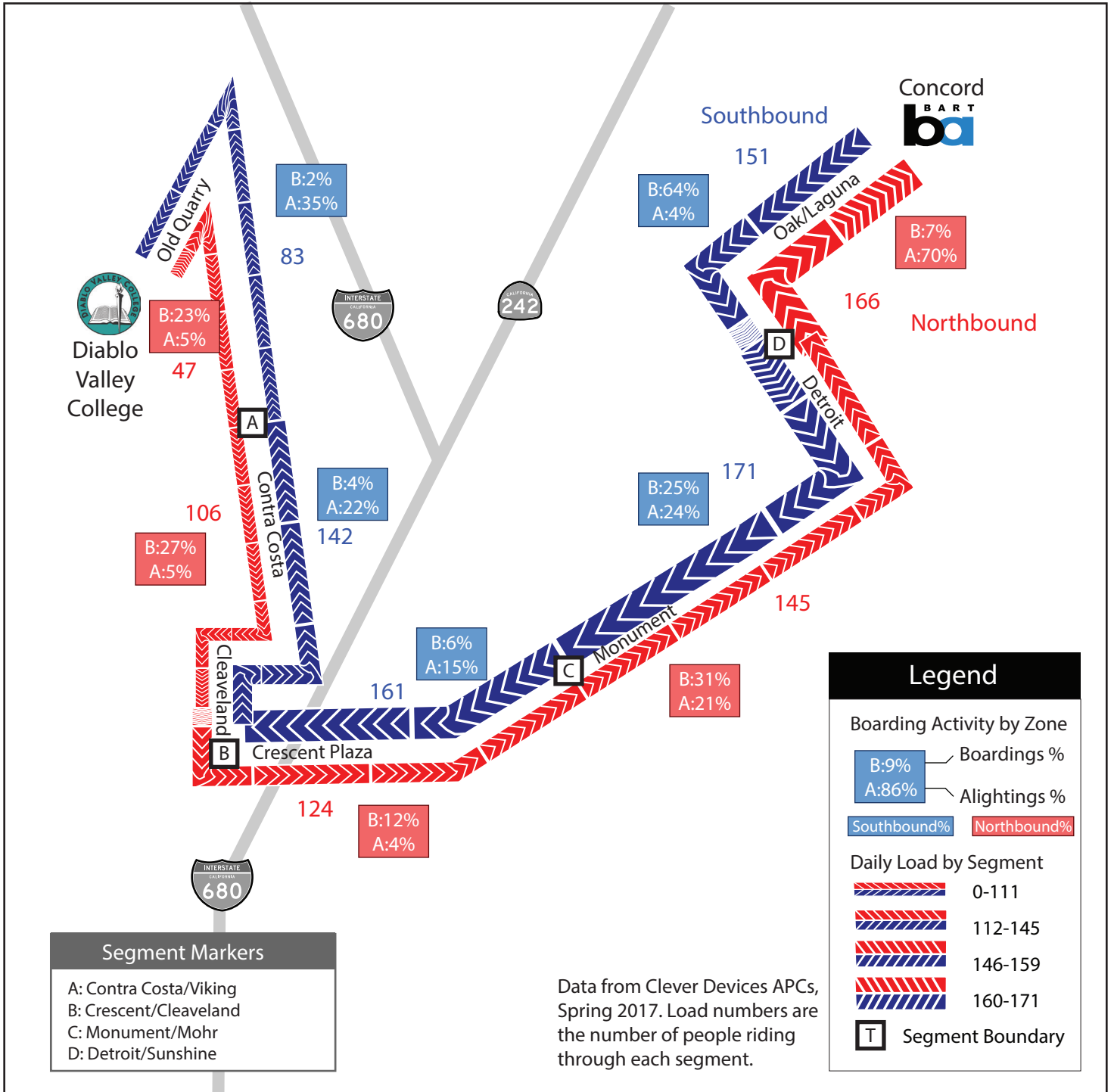


Saturday
 Sunday

Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 314 Segment Map

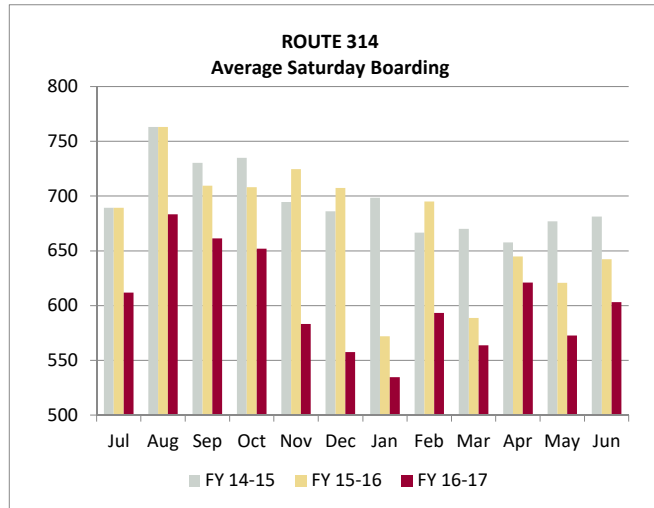
Average Ridership % and Load by Segment and Direction



ROUTE 314

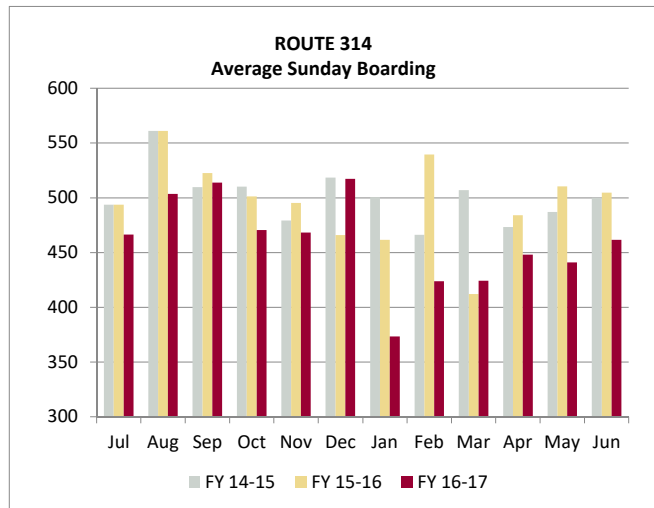
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	689	689	612
Aug	763	763	683
Sep	730	710	661
Oct	735	708	652
Nov	695	725	583
Dec	686	707	558
Jan	699	572	535
Feb	667	695	593
Mar	670	589	564
Apr	658	645	621
May	677	621	573
Jun	681	642	603
FY AVG	697	672	604

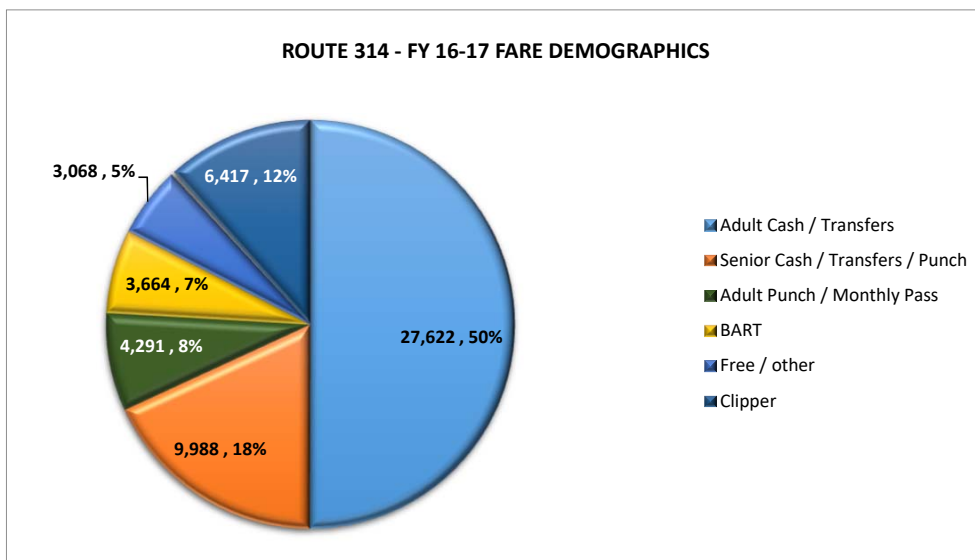
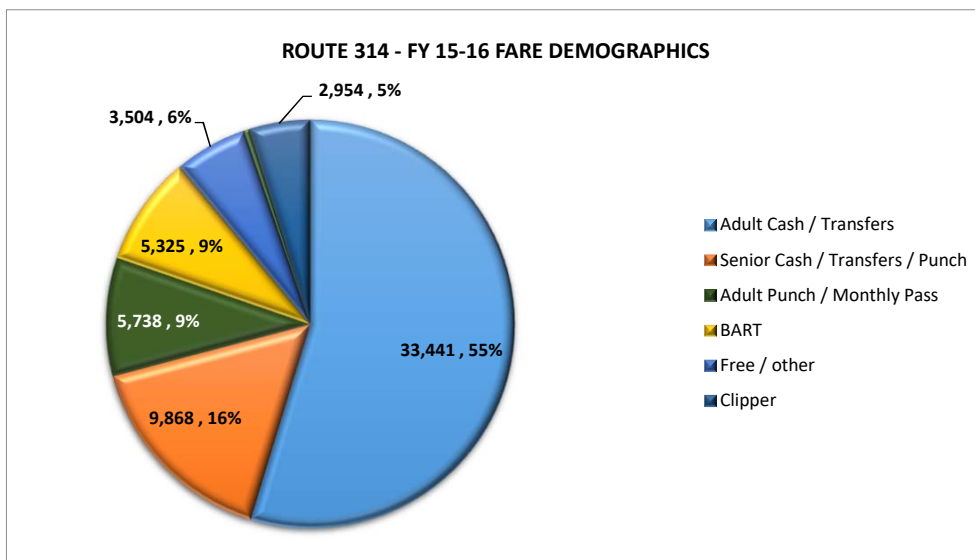
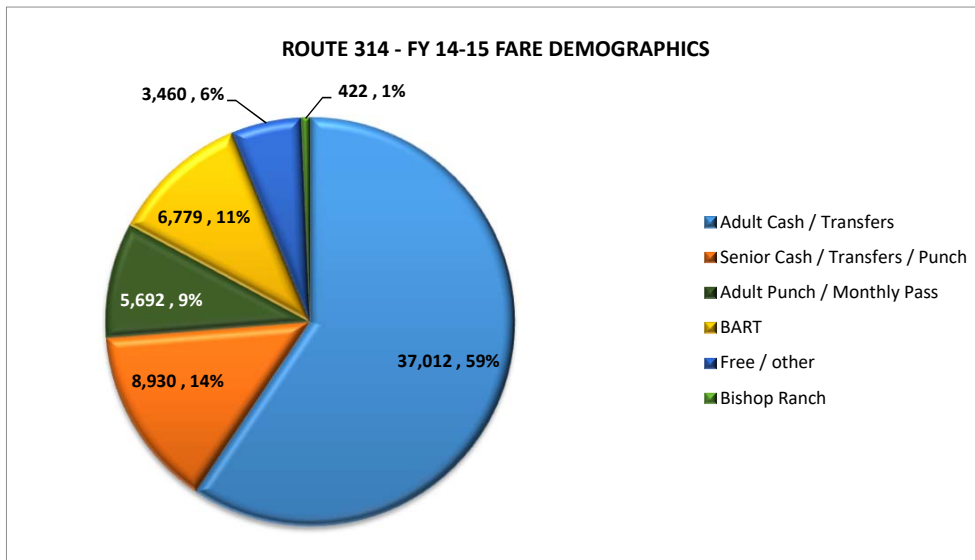


Average Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	494	494	466
Aug	561	561	503
Sep	510	523	514
Oct	510	501	470
Nov	479	495	468
Dec	519	466	517
Jan	500	462	373
Feb	466	539	424
Mar	507	412	424
Apr	473	484	448
May	487	510	441
Jun	500	505	462
FY AVG	501	497	458

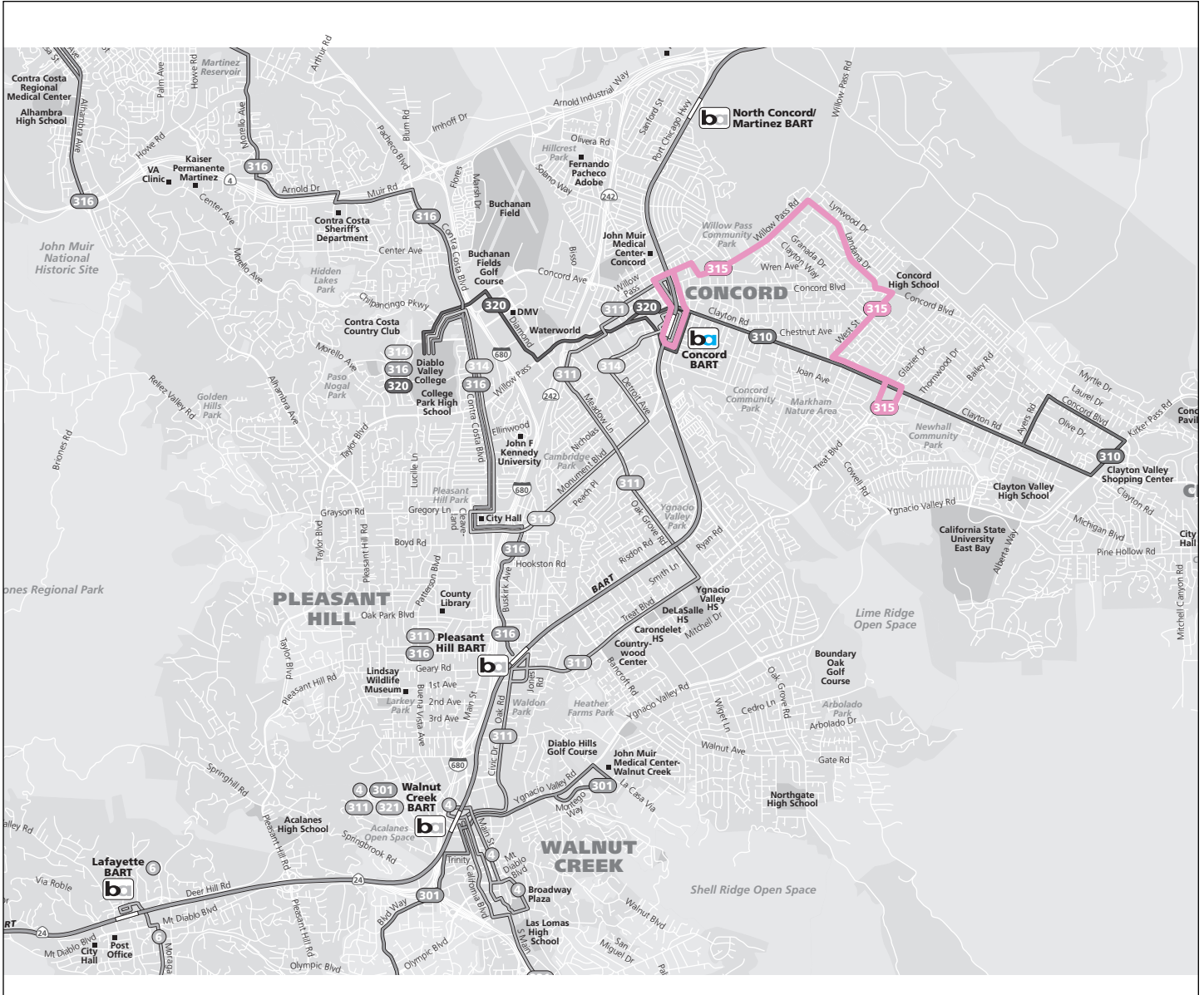


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Route 315: BART Concord/Landana

Every 80 Minutes, 8:20am to 6:15pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 315 was created in 2009 as part of a large service restructuring. The Route is a segment of the Route 15. The route travels from BART Concord with regional connections to the Pittsburg Bay Point BART line, as well as CCTA routes (310, 311, 314, 320) along East St, Salvio St, Parkside Dr, Willow Pass Rd, Landana Dr, West St, and Clayton Rd and turns around on Bel Air Dr and Treat Blvd. In 2014 Winter the schedule was rewritten. Route 315 is interlined with the Route 311 at BART Concord.

Route 315: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 315 - BART Concord/Landana

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
87%	10.6	14.4	15.3
1%	-30%	5%	7%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
47	0.22	5	4
-22%	-9%	-29%	-41%

In-Service Time	Layover	Deadhead	Total Hours
83%	17%	0%	6.3
19%	-28%	-100%	-62%

Route 315 - BART Concord/Landana

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
6,078	16,442	22,520	2,123
-64%	-13%	-37%	-33%

Poverty	Limited English	Minority	Senior
14%	8%	45%	16%
5%	-30%	-3%	14%

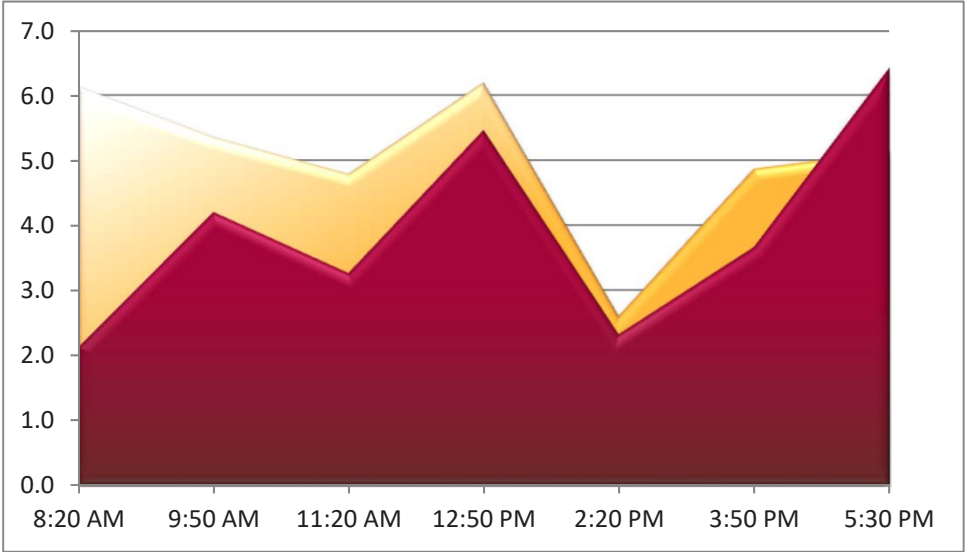
Disabled	No Car	Youth	(Legend)
15%	8%	21%	(route value)
26%	-6%	3%	(% diff from AVG)

ROUTE 315 TRIP LEVEL RIDERSHIP FY2015-2017

Trip Start Sat Sun

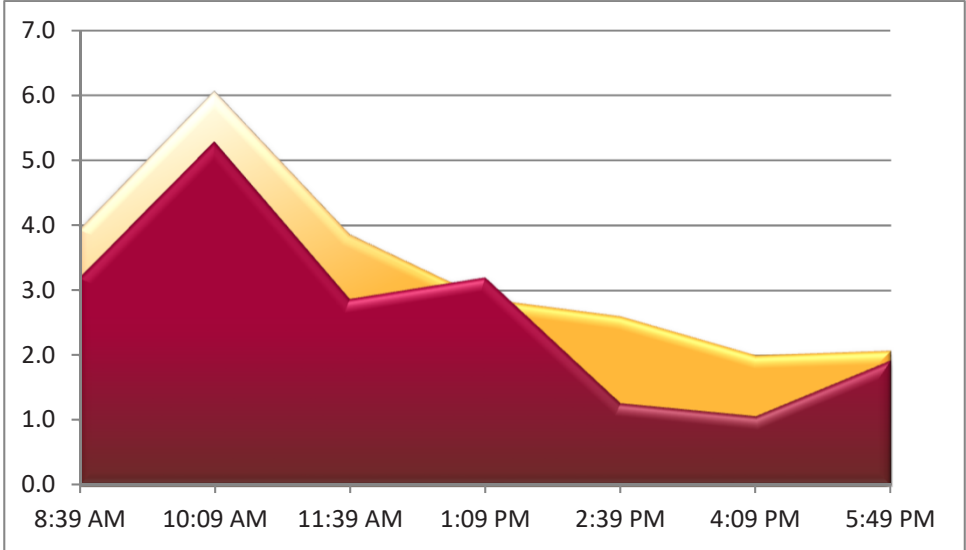
Route #315	35	28
8:20 AM	6.1	2.1
9:50 AM	5.4	4.2
11:20 AM	4.8	3.3
12:50 PM	6.2	5.5
2:20 PM	2.6	2.3
3:50 PM	4.9	3.7
5:30 PM	5.1	6.4

Northbound to Concord BART



Route #315	23	19
8:39 AM	3.9	3.2
10:09 AM	6.1	5.3
11:39 AM	3.9	2.9
1:09 PM	2.9	3.2
2:39 PM	2.6	1.3
4:09 PM	2.0	1.1
5:49 PM	2.1	1.9

Southbound to Clayton/Treat

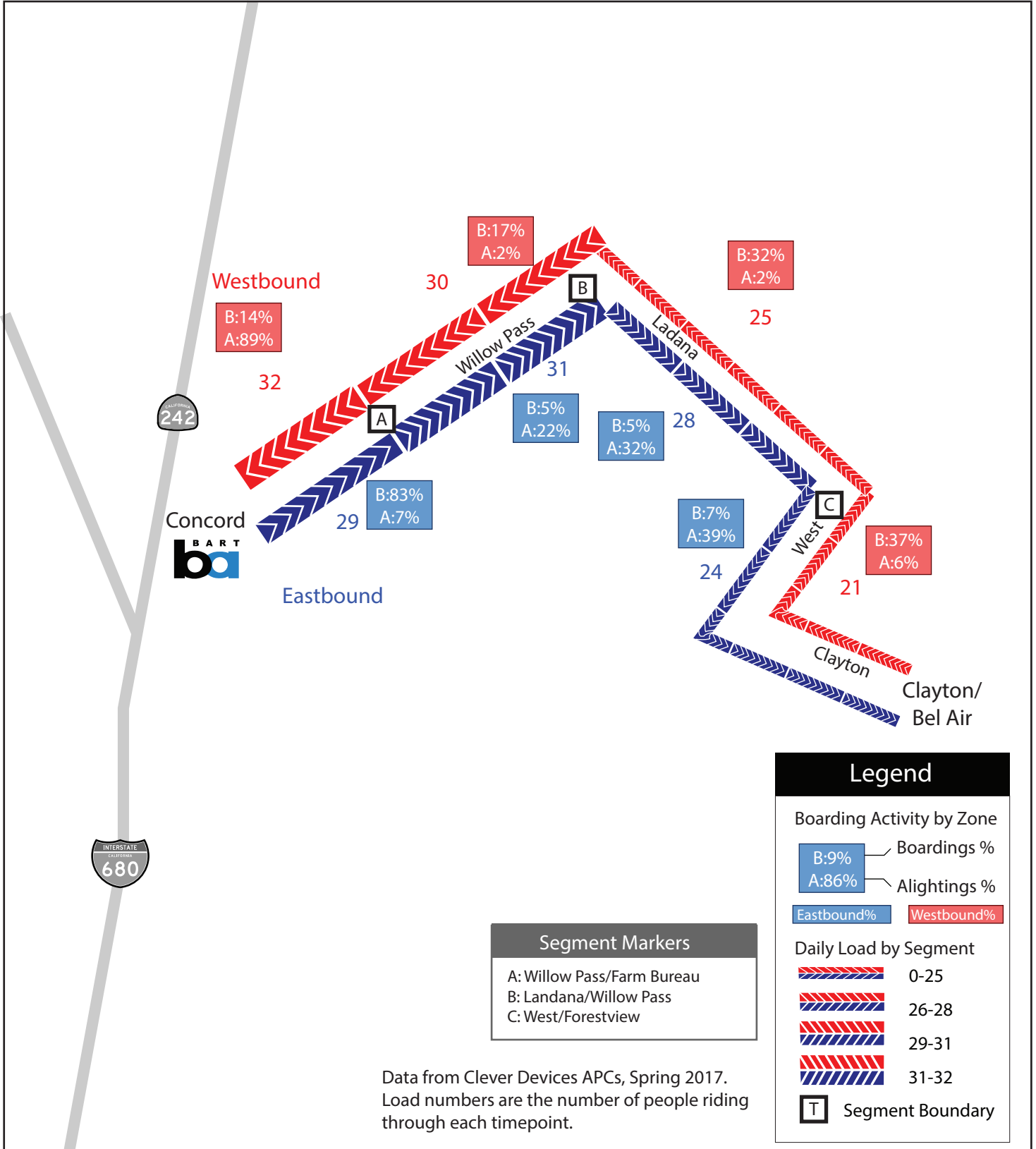


Saturday Sunday

Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 315 Segment Map

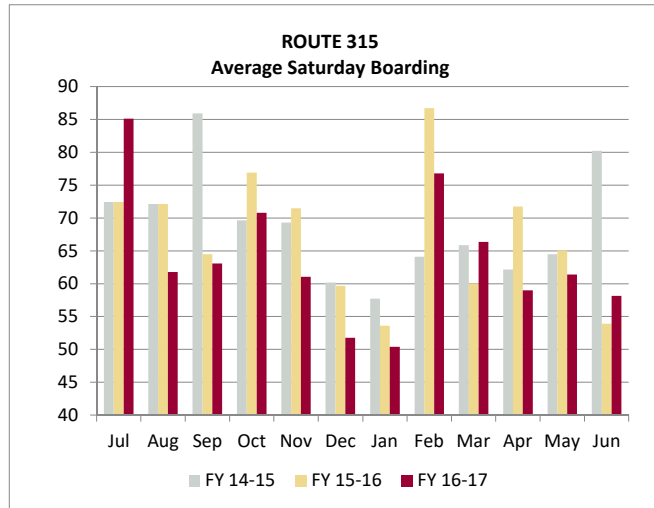
Average Ridership % and Load by Segment and Direction



ROUTE 315

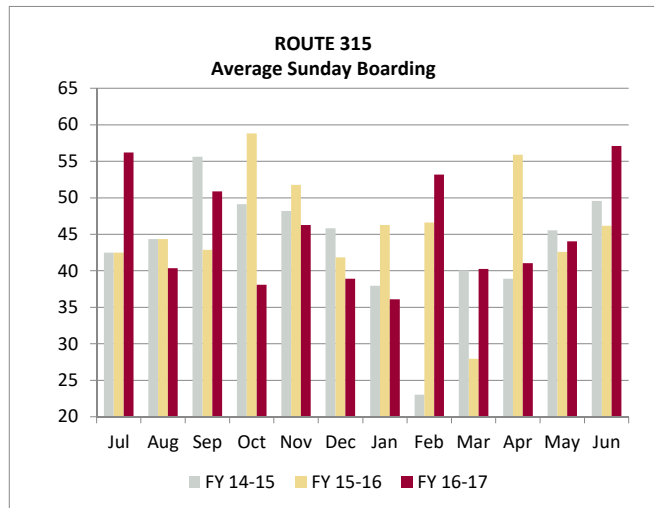
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	72	72	85
Aug	72	72	62
Sep	86	64	63
Oct	70	77	71
Nov	69	71	61
Dec	60	60	52
Jan	58	54	50
Feb	64	87	77
Mar	66	60	66
Apr	62	72	59
May	64	65	61
Jun	80	54	58
FY AVG	68	67	64

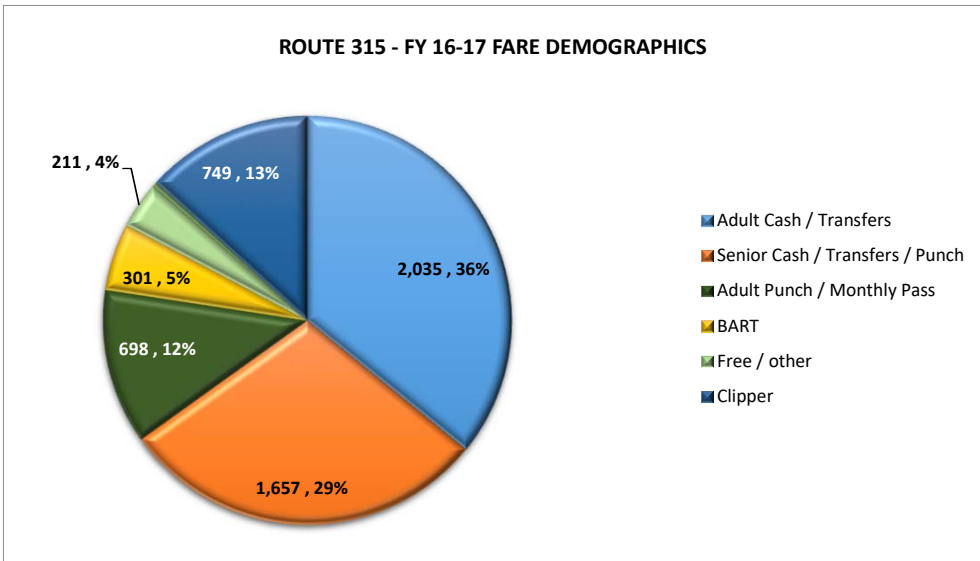
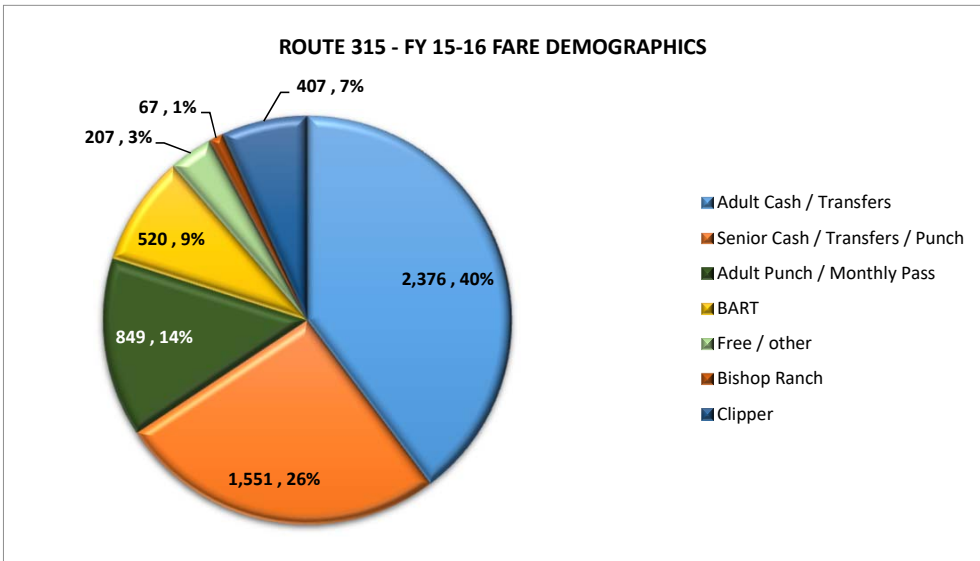
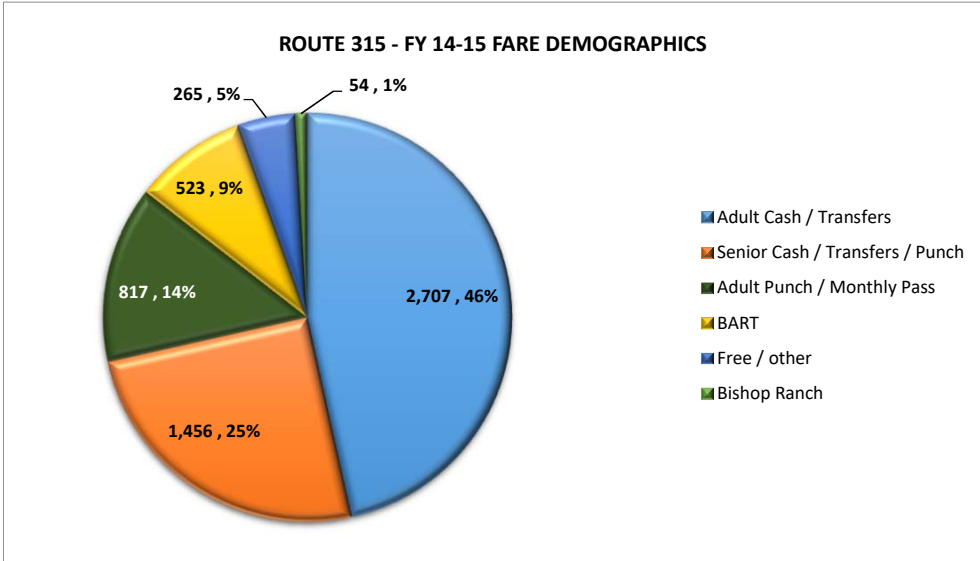


Average Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	43	43	56
Aug	44	44	40
Sep	56	43	51
Oct	49	59	38
Nov	48	52	46
Dec	46	42	39
Jan	38	46	36
Feb	23	47	53
Mar	40	28	40
Apr	39	56	41
May	46	43	44
Jun	50	46	57
FY AVG	43	46	45

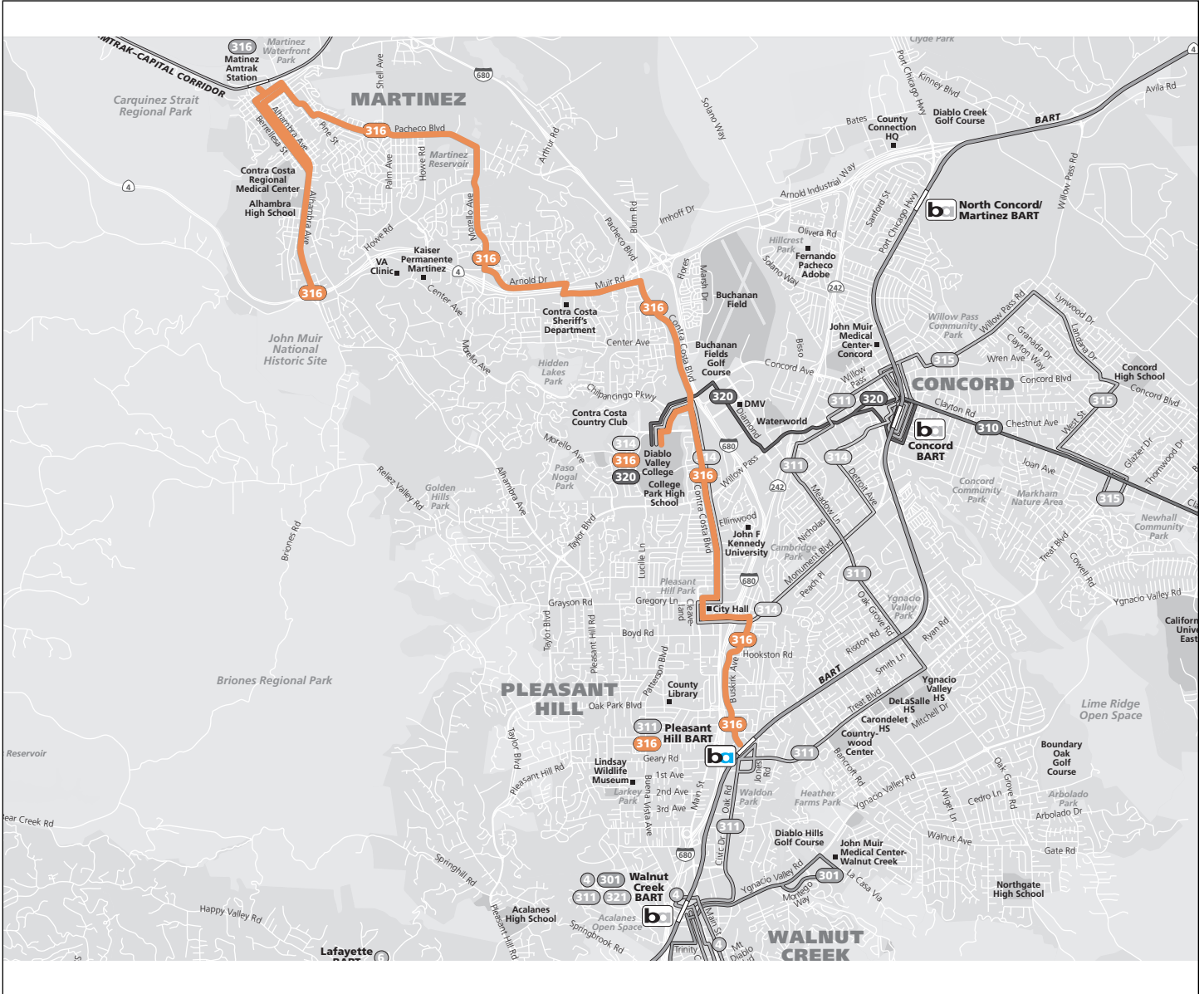


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Route 316: Martinez / BART Pleasant Hill

Every 80 Minutes, 8:20am to 6:15pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 316 was created in 2009 as part of a large service restructuring. It is a combination of segments of the Route 9, Route 16 and Route 18. The route travels from BART Pleasant Hill, with regional connections to the Pittsburg Bay Point BART line and CCCTA Route 311, Las Juntas, Oak Rd, Buskirk Ave, Crescent Plaza, Cleaveland Rd, Gregory Ln, Contra Costa Blvd, DVC, with connections to CCCTA routes (314, 320), Old Quarry Rd, Chilpancingo Pkwy, Pacheco Blvd, Muir Rd, Arnold Dr, Morello Ave, Pacheco Blvd, Court St, Martinez Amtrak, with regional connections to Amtrak (commuter trains: Capital Corridor and San Joaquin, and once daily Coast Starlight and California Zephyr), Berrellesa St, Alhambra Ave to Walnut Ave. The route uses Highway 4 to turn around to go back in the other direction. In 2010 Spring and 2010 Summer the schedule was rewritten. In 2012 Summer one additional Southbound trip and one additional Northbound trip were added in the AM.

Route 316: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 316 - Martinez AMTRAK/BART Pleasant Hill

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
86%	28.4	13.2	13.0
0%	87%	-3%	-9%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
115	0.25	10	12
91%	4%	43%	76%

In-Service Time	Layover	Deadhead	Total Hours
79%	14%	7%	21.5
13%	-41%	11%	29%

Route 316 - Martinez AMTRAK/BART Pleasant Hill

Census Population, Jobs, and Demographics by Route

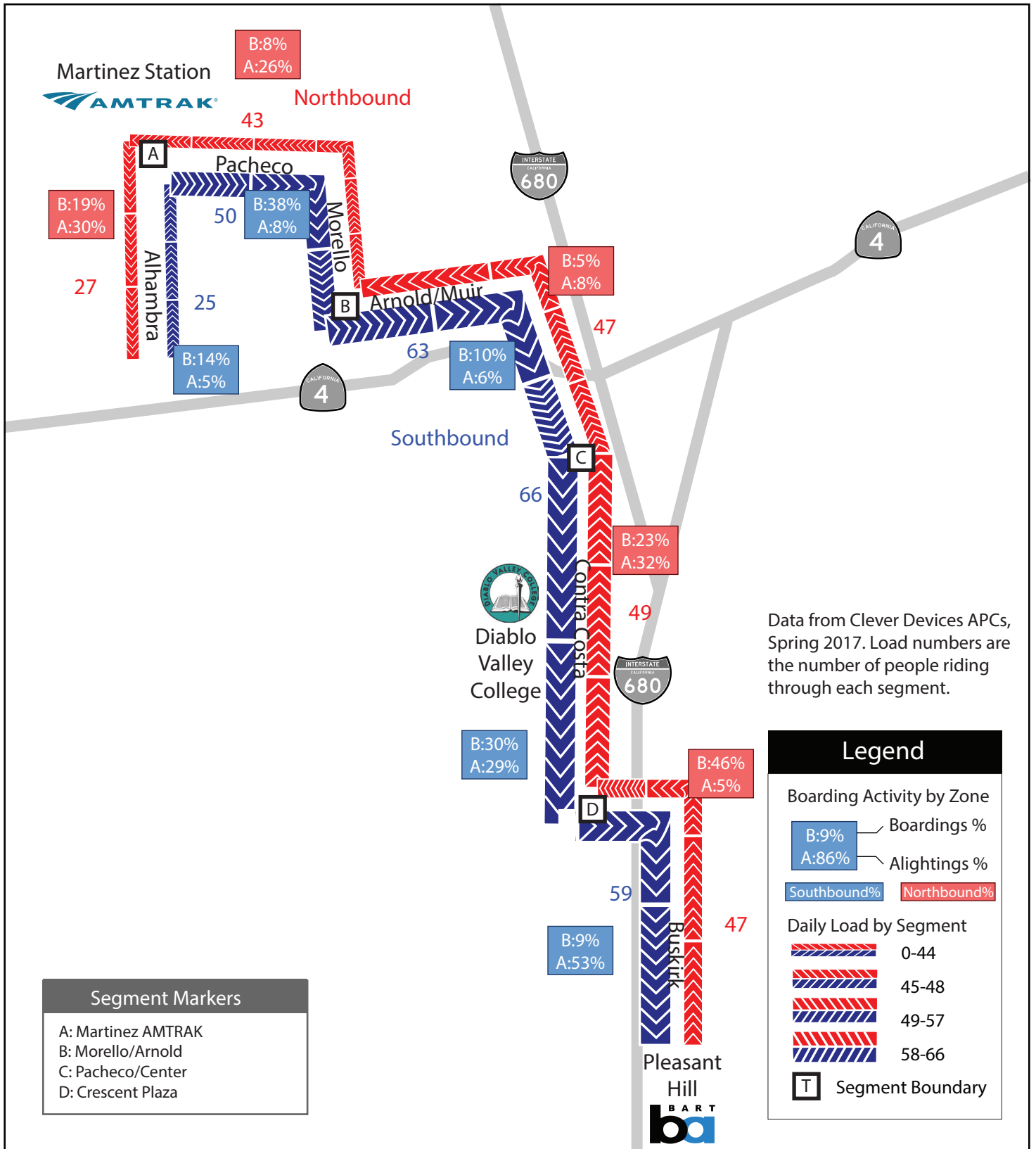
Jobs	Population	Jobs+Pop	J+P/mile
22,103	31,287	53,390	1,877
30%	66%	49%	-41%

Poverty	Limited English	Minority	Senior
12%	7%	40%	12%
-15%	-33%	-15%	-14%

Disabled	No Car	Youth	(Legend)
12%	7%	18%	(route value)
5%	-19%	-14%	(% diff from AVG)

Route 316 Segment Map

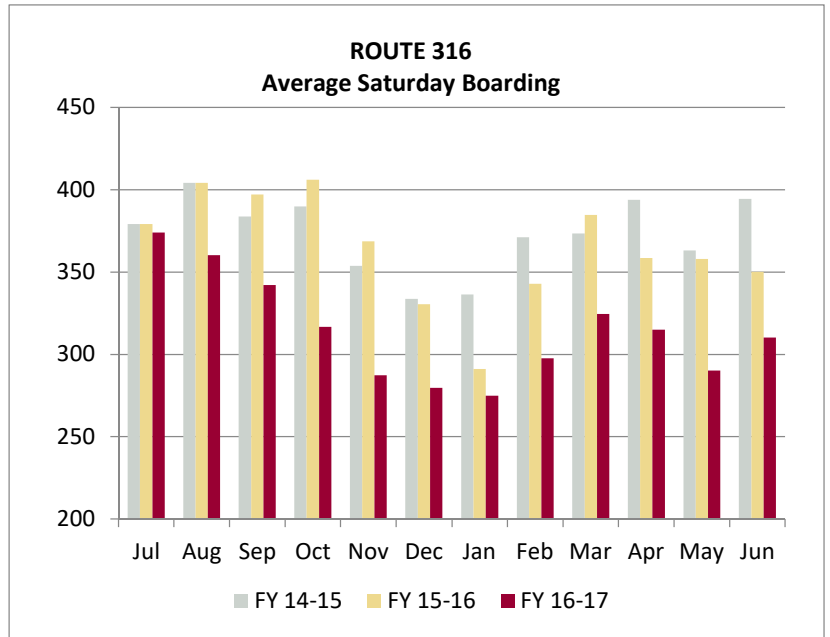
Average Ridership % and Load by Segment and Direction



ROUTE 316

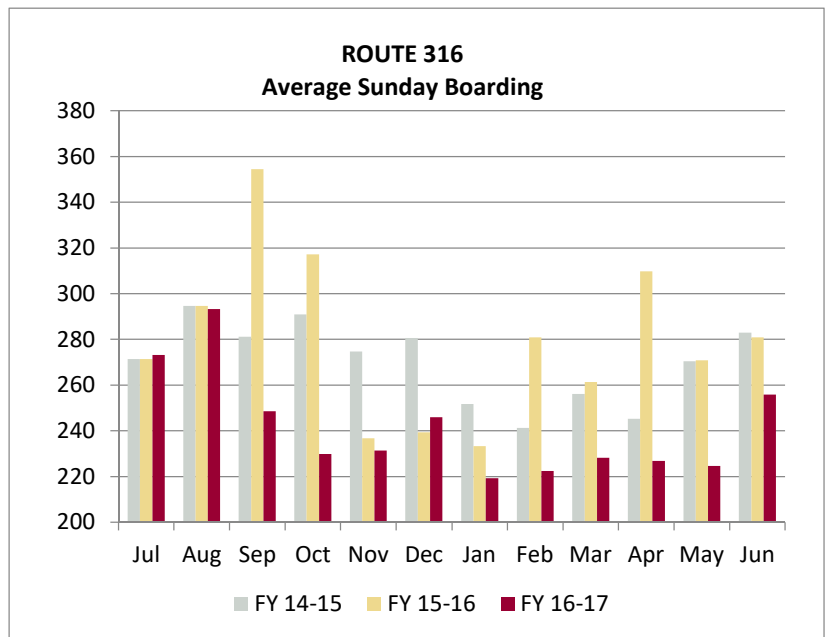
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	379	379	374
Aug	404	404	360
Sep	384	397	342
Oct	390	406	317
Nov	354	369	287
Dec	334	330	280
Jan	336	291	275
Feb	371	343	298
Mar	373	385	325
Apr	394	359	315
May	363	358	290
Jun	394	350	310
FY AVG	372	364	315

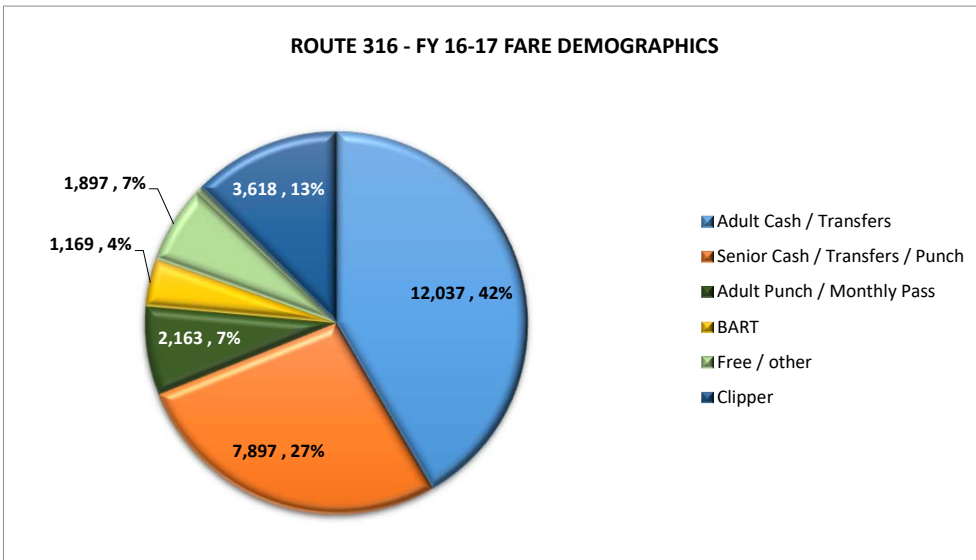
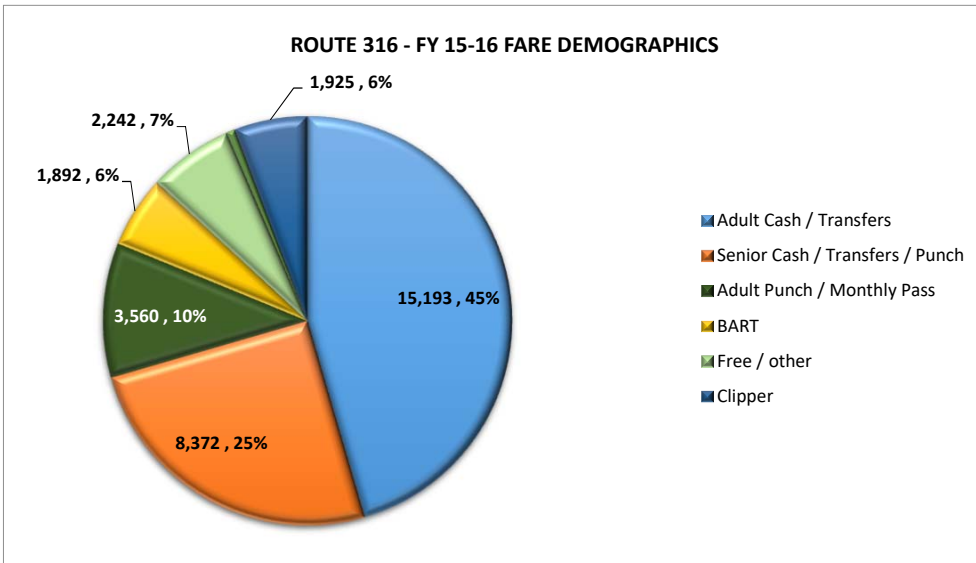
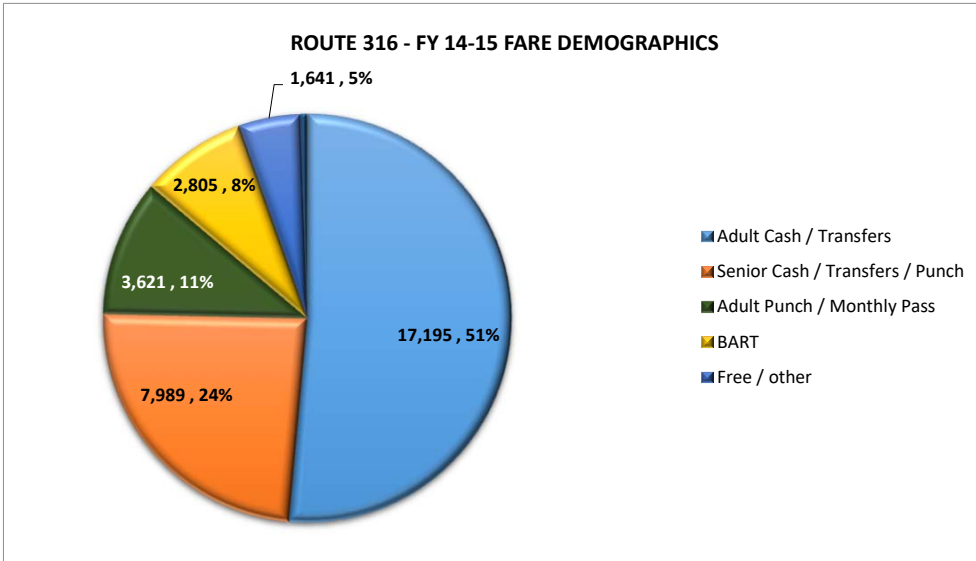


Average Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	271	271	273
Aug	295	295	293
Sep	281	354	249
Oct	291	317	230
Nov	275	237	231
Dec	281	239	246
Jan	252	233	219
Feb	241	281	222
Mar	256	261	228
Apr	245	310	227
May	270	271	225
Jun	283	281	256
FY AVG	270	278	241

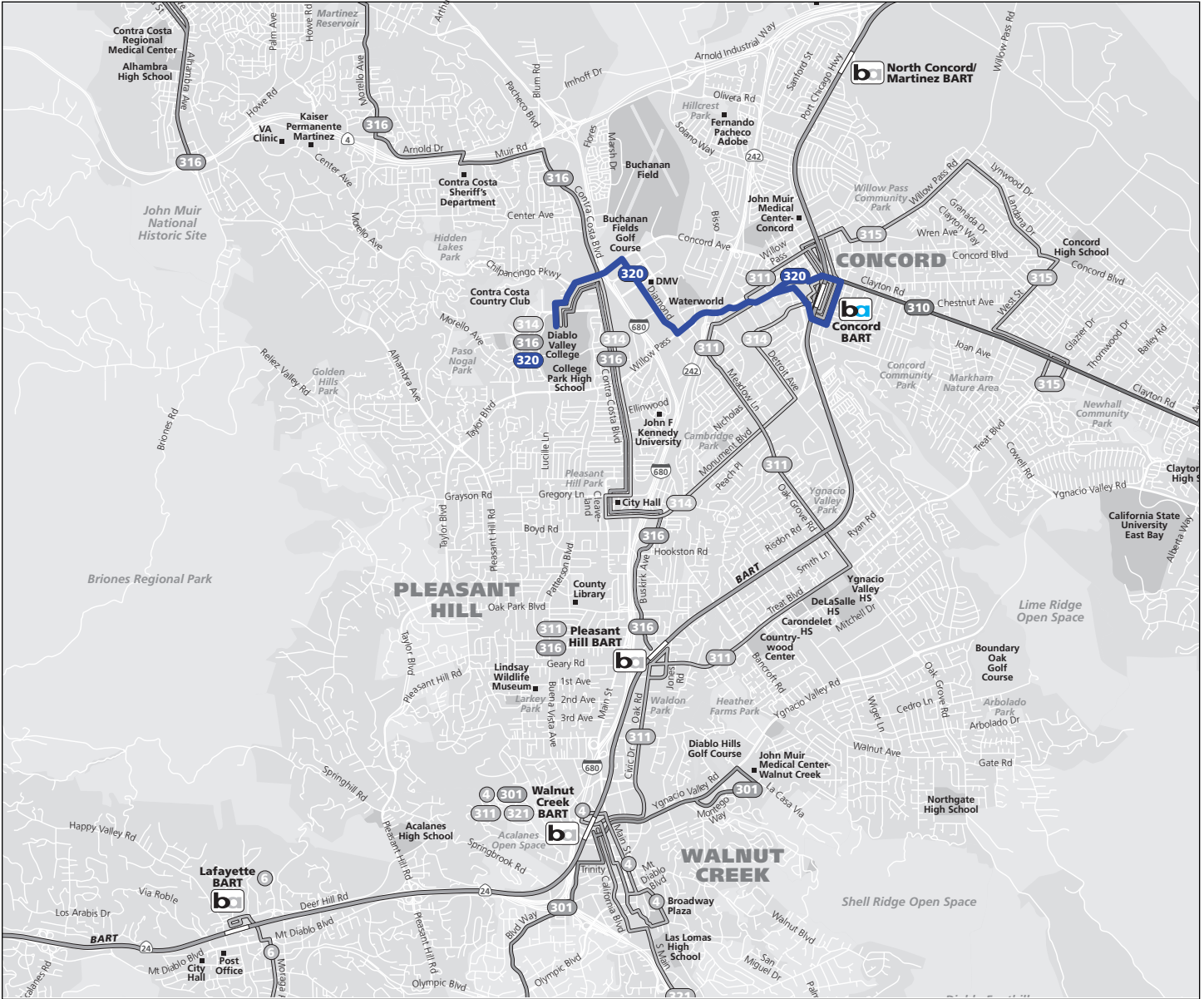


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Route 320: DVC/BART Concord

Every 45 Minutes, 9:45am to 6:59pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 320 was created in 2009 as part of a large service restructuring. The route travels between BART Concord with regional connections to the Pittsburg Bay Point BART line, as well as CCCTA routes (310, 311, 314, 315) and DVC with connections to CCCTA routes (314, 316) along the Clayton Rd, Willow Pass Rd, and Diamond Blvd corridors. In 2009 Fall the schedule was adjusted. Route 320 is interlined with the Route 314 at DVC and the Route 310 at BART Concord.

Route 320: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 320 - DVC/BART Concord

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
77%	6.3	12.5	11.2
-11%	-59%	-8%	-22%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
27	0.24	5	4
-55%	0%	-29%	-41%

In-Service Time	Layover	Deadhead	Total Hours
54%	45%	1%	13.0
-23%	91%	-81%	-22%

Route 320 - DVC/BART Concord

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
12,114	12,025	24,139	3,856
-29%	-36%	-33%	21%

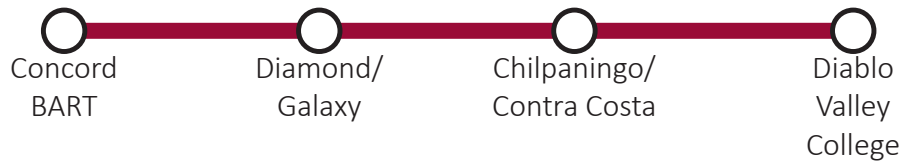
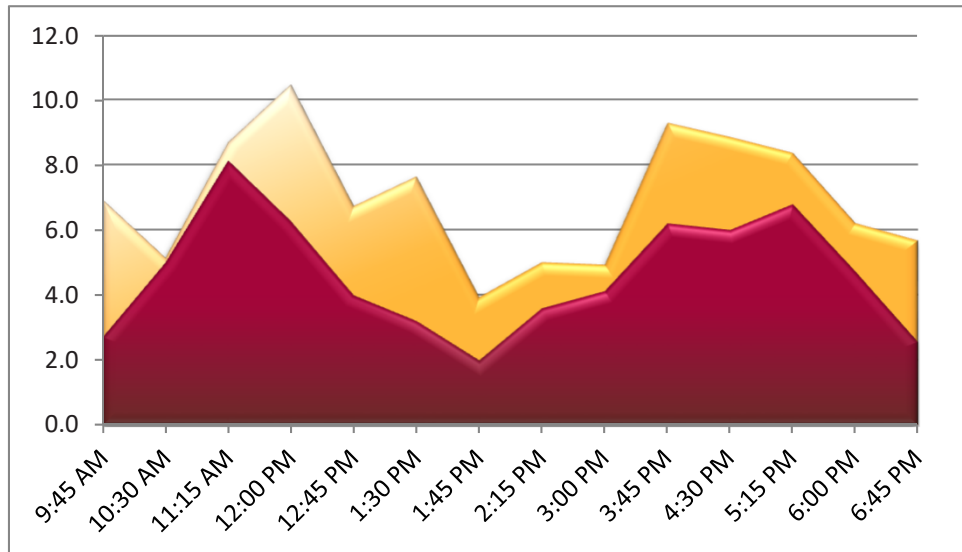
Poverty	Limited English	Minority	Senior
27%	19%	75%	10%
100%	73%	60%	-27%

Disabled	No Car	Youth	(Legend)
15%	16%	19%	(route value)
29%	87%	-6%	(% diff from AVG)

ROUTE 320 TRIP LEVEL RIDERSHIP FY2015-2017

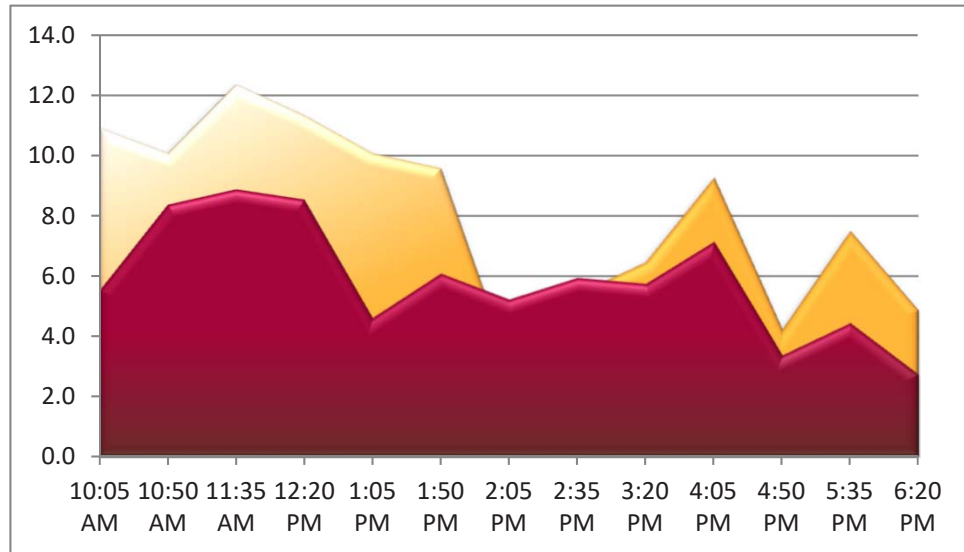
Trip Start	Sat	Sun
Route #320	98	65
9:45 AM	6.9	2.7
10:30 AM	5.1	5.0
11:15 AM	8.7	8.1
12:00 PM	10.5	6.3
12:45 PM	6.7	4.0
1:30 PM	7.6	3.2
1:45 PM	3.9	2.0
2:15 PM	5.0	3.6
3:00 PM	4.9	4.1
3:45 PM	9.3	6.2
4:30 PM	8.9	6.0
5:15 PM	8.4	6.8
6:00 PM	6.2	4.7
6:45 PM	5.7	2.6

Eastbound to Diablo Valley College



Route #320	105	76
10:05 AM	10.9	5.5
10:50 AM	10.1	8.4
11:35 AM	12.4	8.9
12:20 PM	11.3	8.5
1:05 PM	10.1	4.6
1:50 PM	9.6	6.1
2:05 PM	3.1	5.2
2:35 PM	5.4	5.9
3:20 PM	6.5	5.7
4:05 PM	9.3	7.1
4:50 PM	4.2	3.4
5:35 PM	7.5	4.4
6:20 PM	4.9	2.7

Westbound to Concord BART

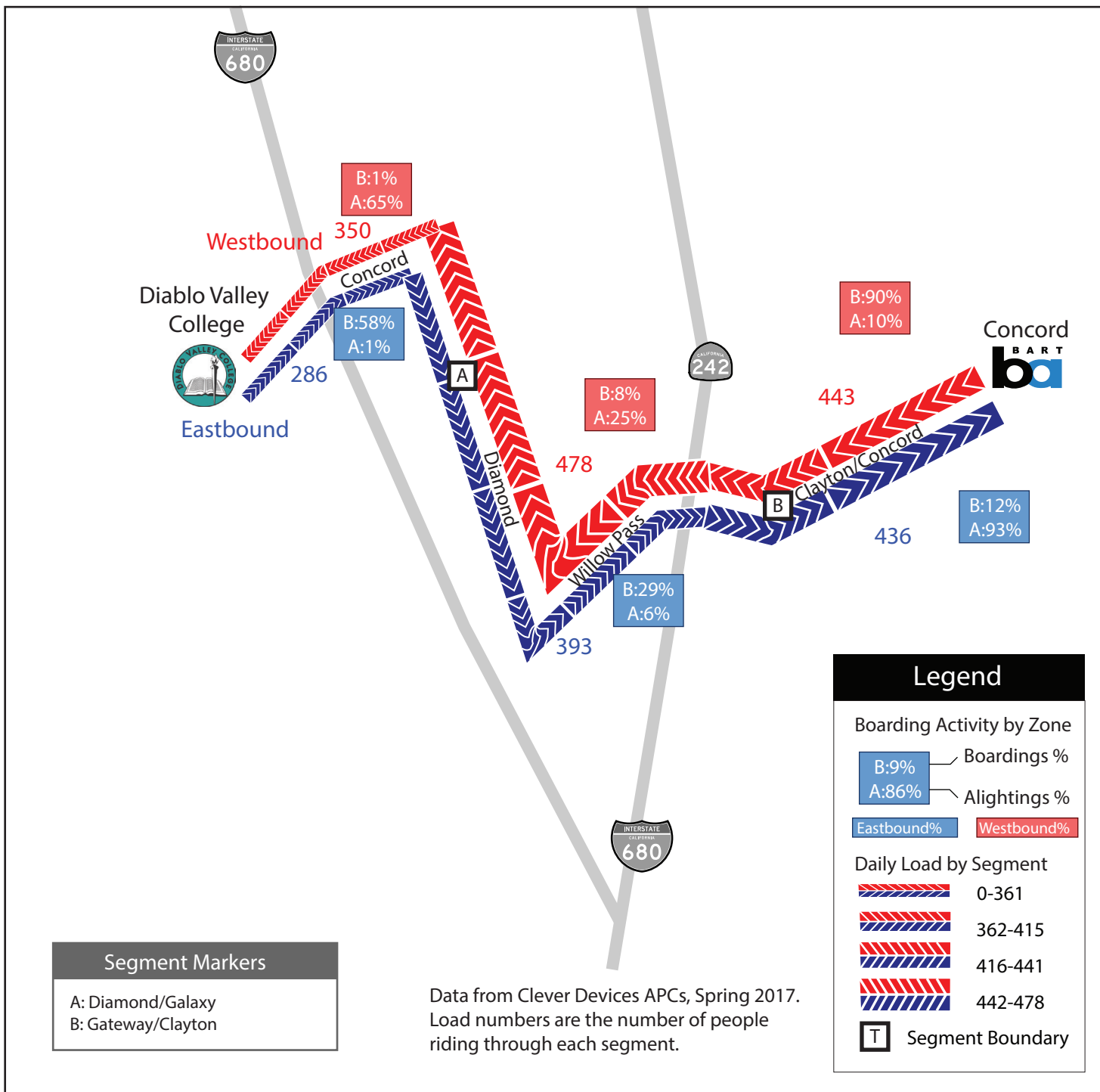


Saturday
 Sunday

Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 320 Segment Map

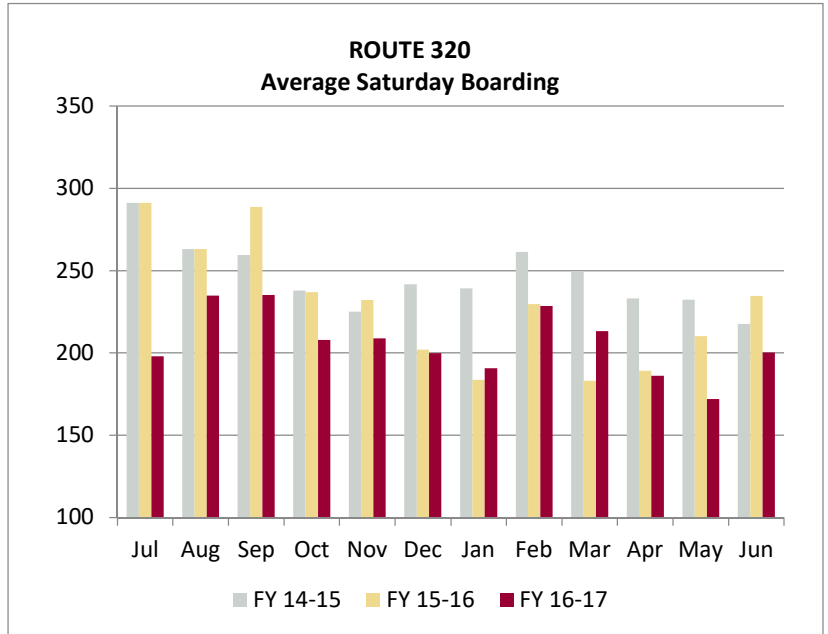
Average Ridership % and Load by Segment and Direction



ROUTE 320

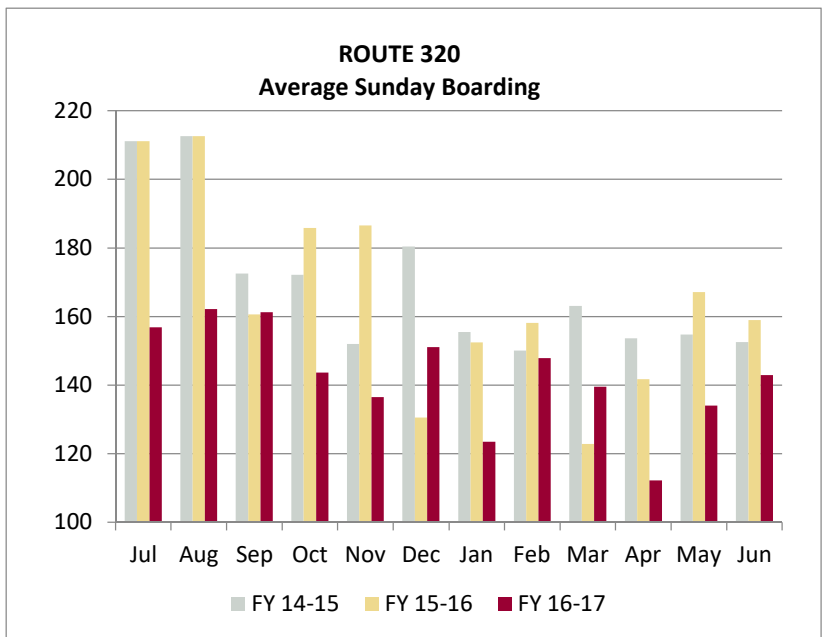
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	291	291	198
Aug	263	263	235
Sep	259	289	235
Oct	238	237	208
Nov	225	232	209
Dec	242	202	200
Jan	239	184	191
Feb	261	230	229
Mar	249	183	213
Apr	233	189	186
May	232	210	172
Jun	218	235	200
FY AVG	246	228	206

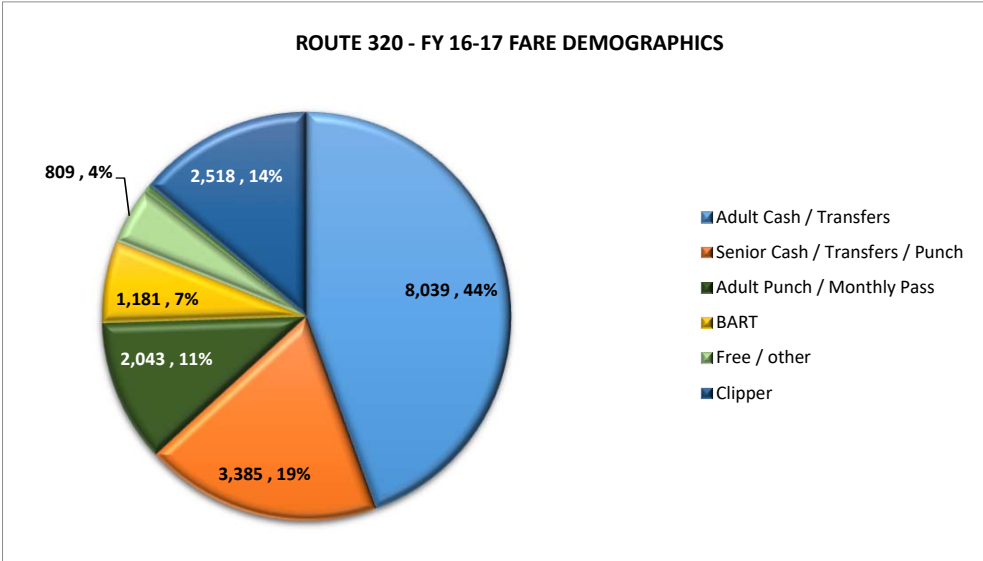
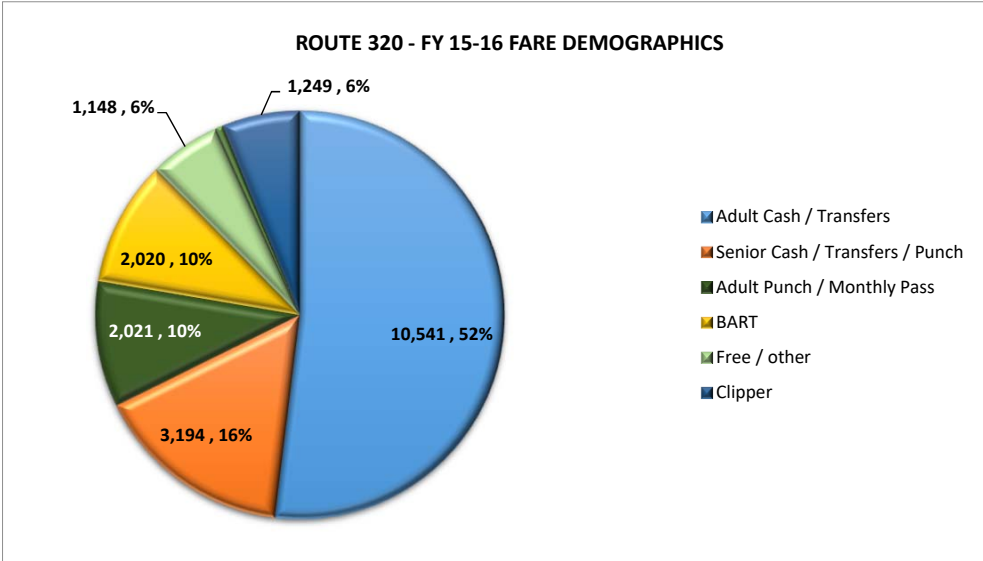
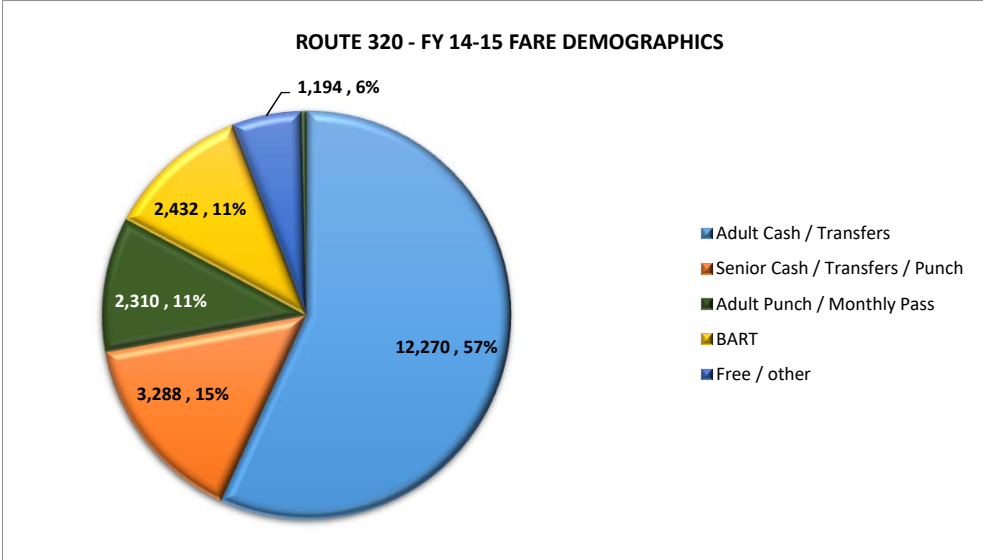


Average Sunday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	211	211	157
Aug	213	213	162
Sep	173	161	161
Oct	172	186	144
Nov	152	187	137
Dec	180	131	151
Jan	156	152	123
Feb	150	158	148
Mar	163	123	139
Apr	154	142	112
May	155	167	134
Jun	153	159	143
FY AVG	169	167	142

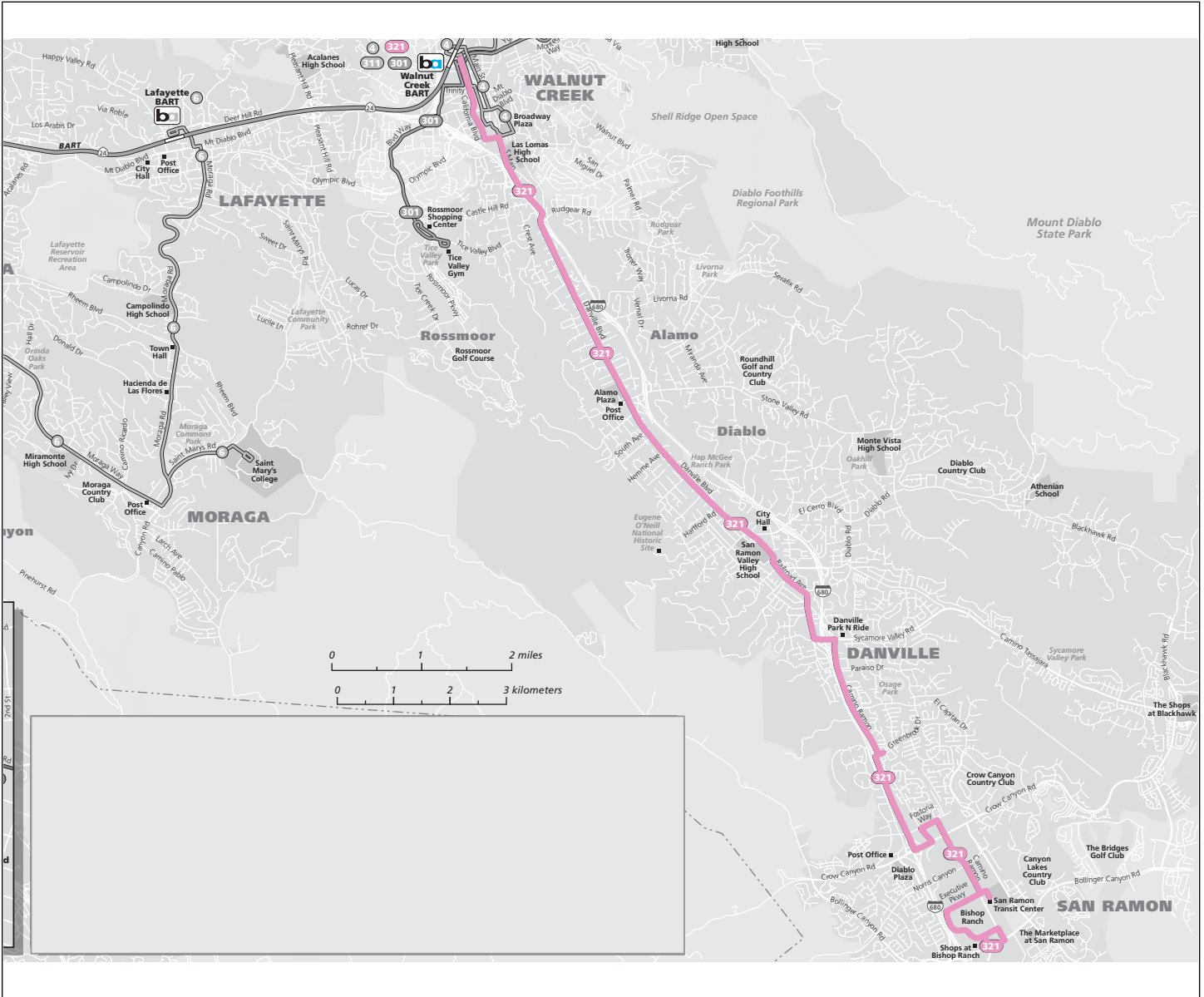


**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Route 321: BART Walnut Creek/San Ramon

Every 60-120 Minutes, 7:20am to 10:29pm



Origin and Recent Service Changes

Alignment Statistics and Connections

Route 321 was created in 2009 as part of a large restructuring. The route travels a modified alignment of the Route 21, It does not serve the Danville Park and Ride and is extended past the San Ramon Transit Center to Sunset Dr and Bishop Dr. The route travels from BART Walnut Creek, with regional connections to the Pittsburg Bay Point BART line, SolTrans (78), as well as CCCTA routes (4, 301, 311) and private shuttle connections to the Rossmore Bus Line, along California, Newell Ave, S Main St, Danville Blvd, Railroad Ave, San Ramon Valley Blvd, Camino Ramon, San Ramon Valley Blvd, Fostoria Way, Camino Ramon to the San Ramon Transit Center, Executive Pkwy, Bishop Dr, Sunset Dr. In 2011 Fall the schedule was rewritten. In 2012 Summer two additional Southbound trips and one additional Northbound trip were added in the AM.

Route 321: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Route 321 - BART Walnut Creek/San Ramon

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
79%	28.1	18.4	19.4
-9%	85%	35%	36%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
99	0.28	12	12
64%	16%	71%	76%

In-Service Time	Layover	Deadhead	Total Hours
70%	19%	10%	22.5
1%	-18%	52%	35%

Route 321 - BART Walnut Creek/San Ramon

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
39,545	19,730	59,275	2,109
132%	5%	65%	-34%

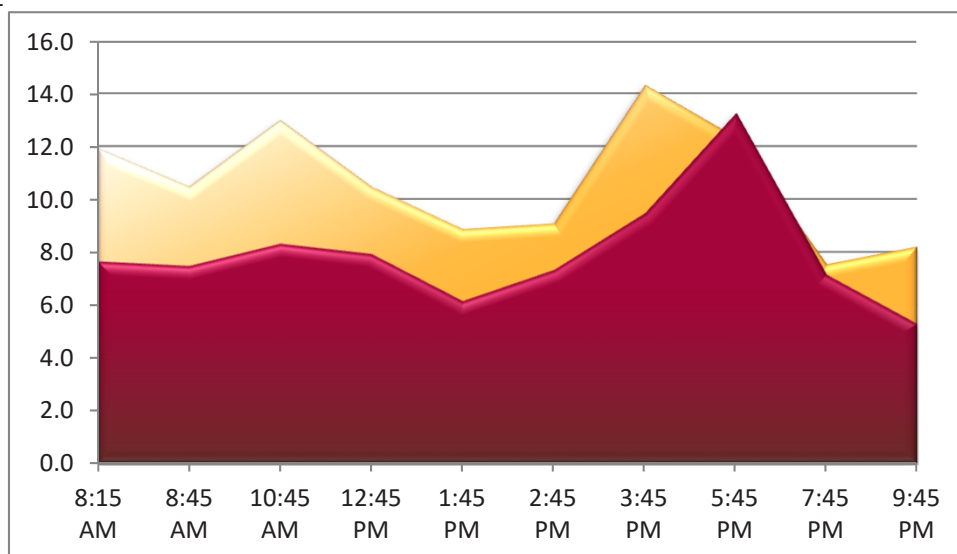
Poverty	Limited English	Minority	Senior
5%	7%	32%	15%
-66%	-38%	-31%	5%

Disabled	No Car	Youth	(Legend)
9%	7%	23%	(route value)
-21%	-22%	12%	(% diff from AVG)

ROUTE 321 TRIP LEVEL RIDERSHIP FY2015-2017

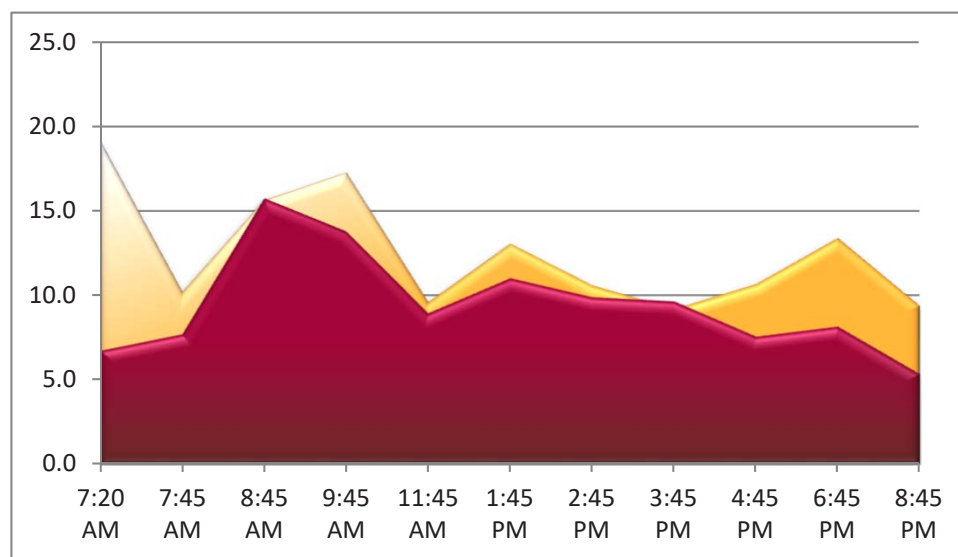
Trip Start	Sat	Sun
Route #321	106	80
8:15 AM	11.9	7.6
8:45 AM	10.5	7.5
10:45 AM	13.0	8.3
12:45 PM	10.5	7.9
1:45 PM	8.9	6.1
2:45 PM	9.1	7.3
3:45 PM	14.3	9.5
5:45 PM	12.3	13.3
7:45 PM	7.5	7.1
9:45 PM	8.2	5.3

Northbound to Walnut Creek BART



Route #321	138	104
7:20 AM	19.1	6.7
7:45 AM	10.2	7.7
8:45 AM	15.6	15.7
9:45 AM	17.3	13.8
11:45 AM	9.6	8.9
1:45 PM	13.1	11.0
2:45 PM	10.6	9.9
3:45 PM	9.2	9.6
4:45 PM	10.7	7.5
6:45 PM	13.4	8.1
8:45 PM	9.4	5.3

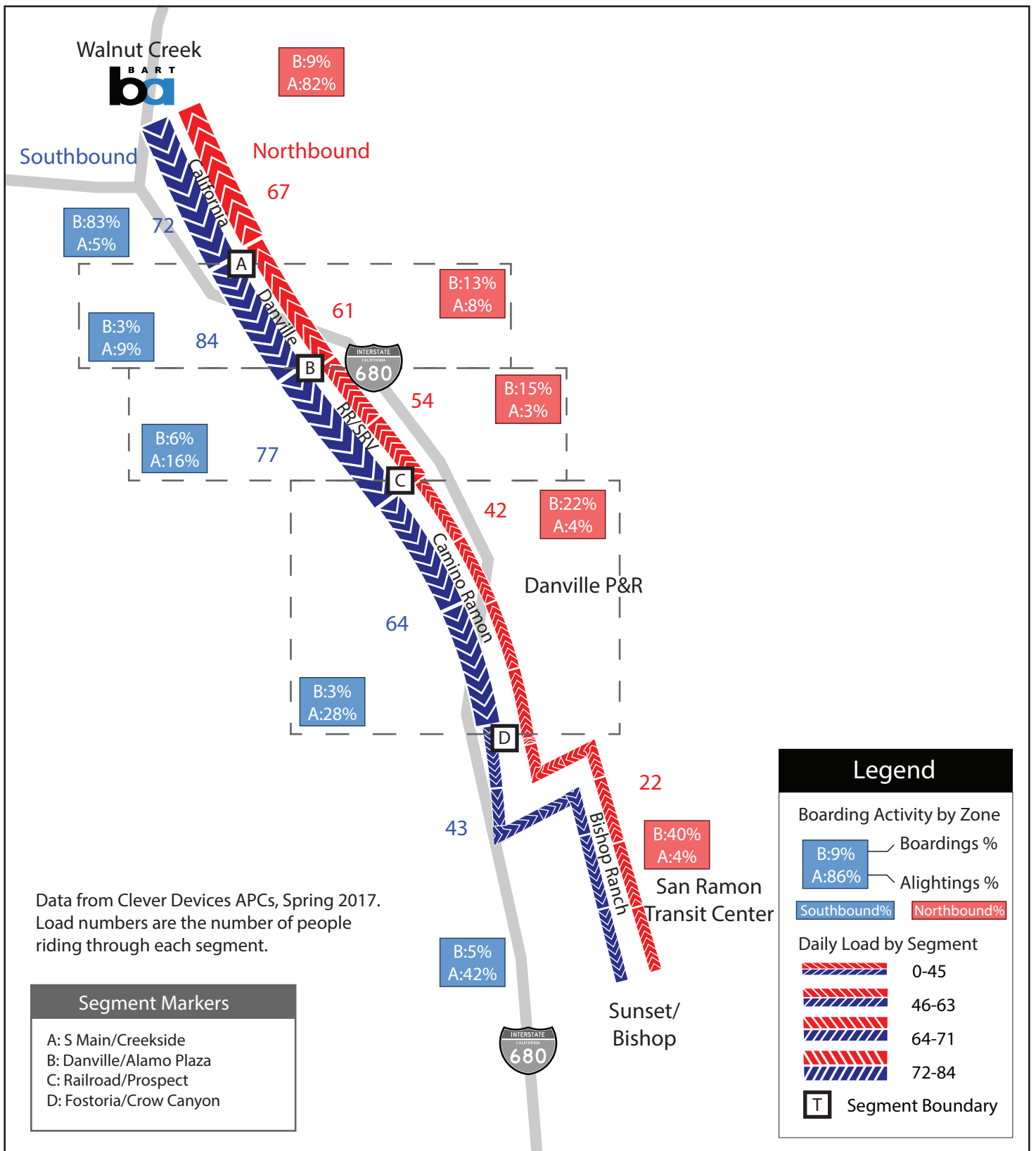
Southbound to San Ramon Transit Center



Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Route 321 Segment Map

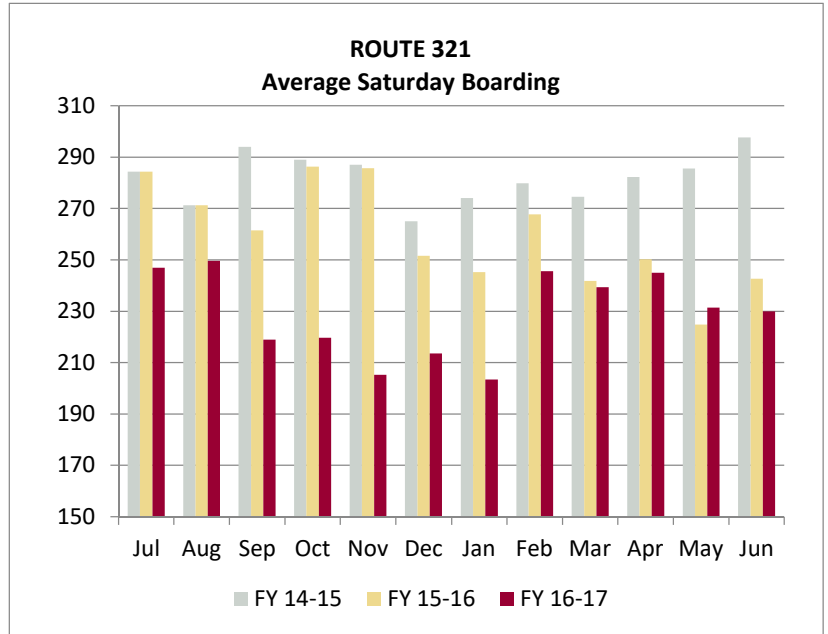
Average Ridership % and Load by Segment and Direction



ROUTE 321

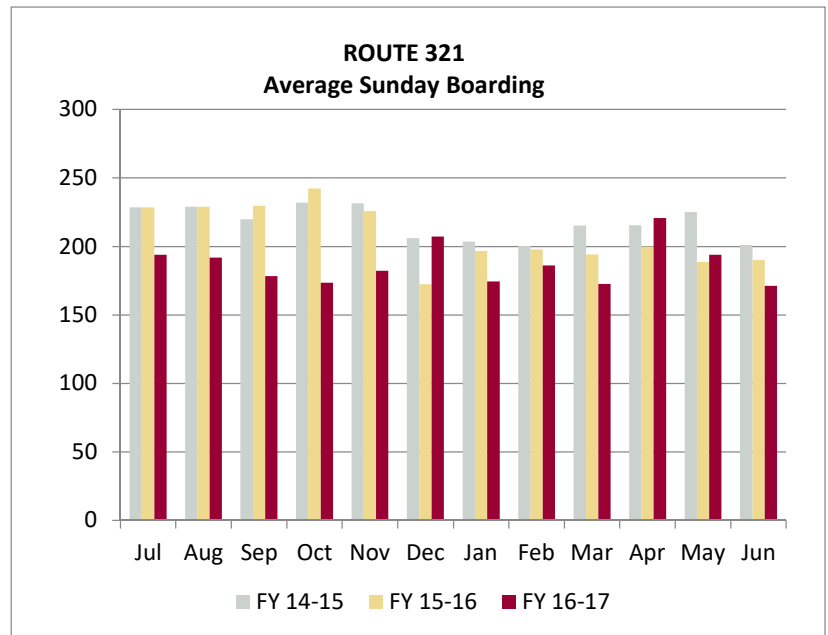
Average Saturday Boardings

	FY 14-15	FY 15-16	FY 16-17
Jul	284	284	247
Aug	271	271	250
Sep	294	262	219
Oct	289	286	220
Nov	287	286	205
Dec	265	252	214
Jan	274	245	203
Feb	280	268	246
Mar	275	242	239
Apr	282	250	245
May	286	225	231
Jun	298	243	230
FY AVG	282	260	229

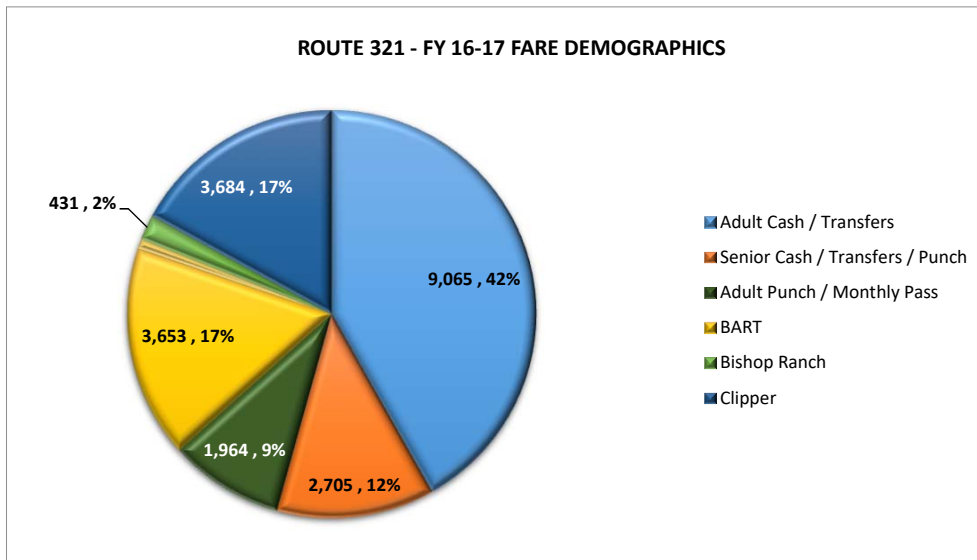
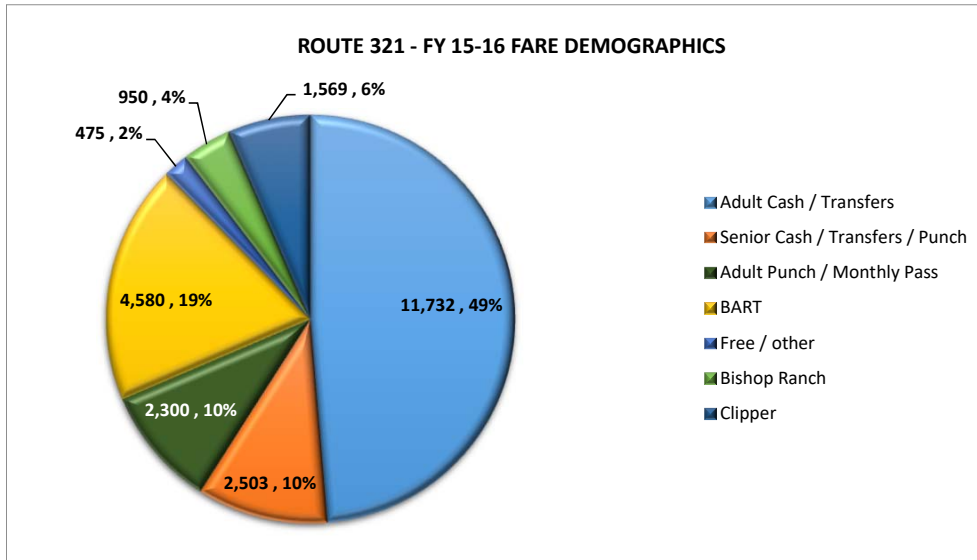
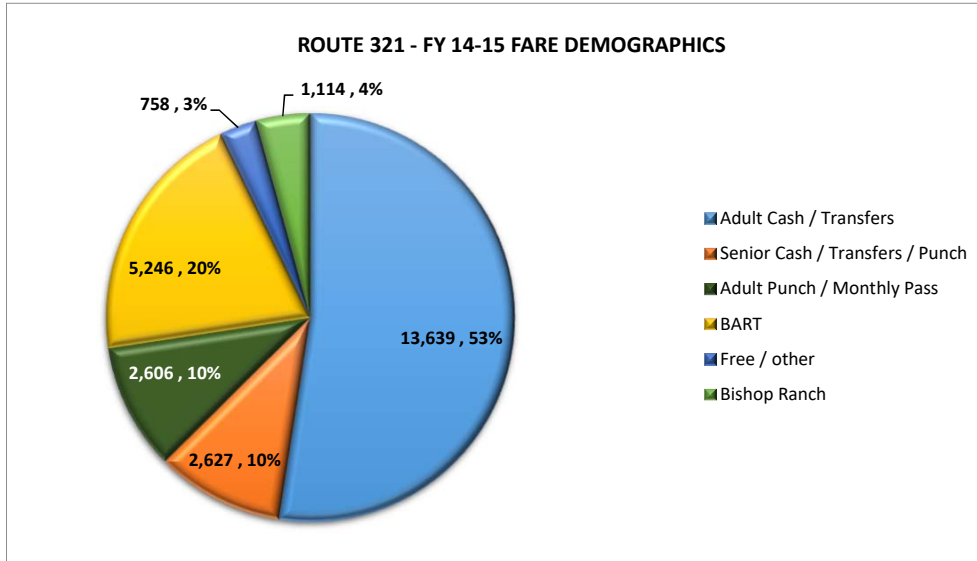


Average Sunday Boardings

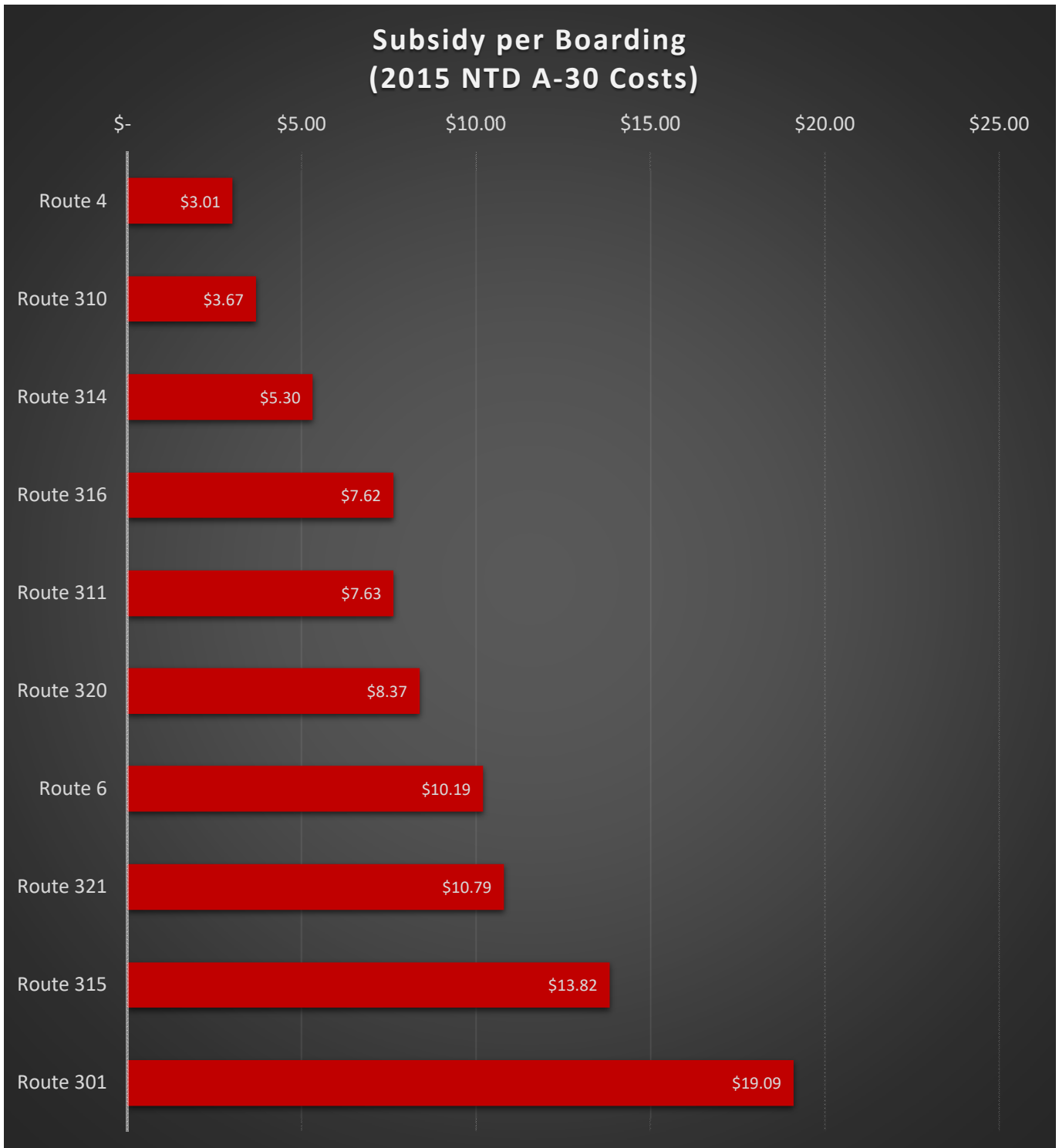
	FY 14-15	FY 15-16	FY 16-17
Jul	228	228	194
Aug	229	229	192
Sep	220	230	178
Oct	232	242	174
Nov	232	226	182
Dec	206	172	207
Jan	203	197	174
Feb	200	198	186
Mar	215	194	173
Apr	216	200	221
May	225	189	194
Jun	201	190	171
FY AVG	218	208	187



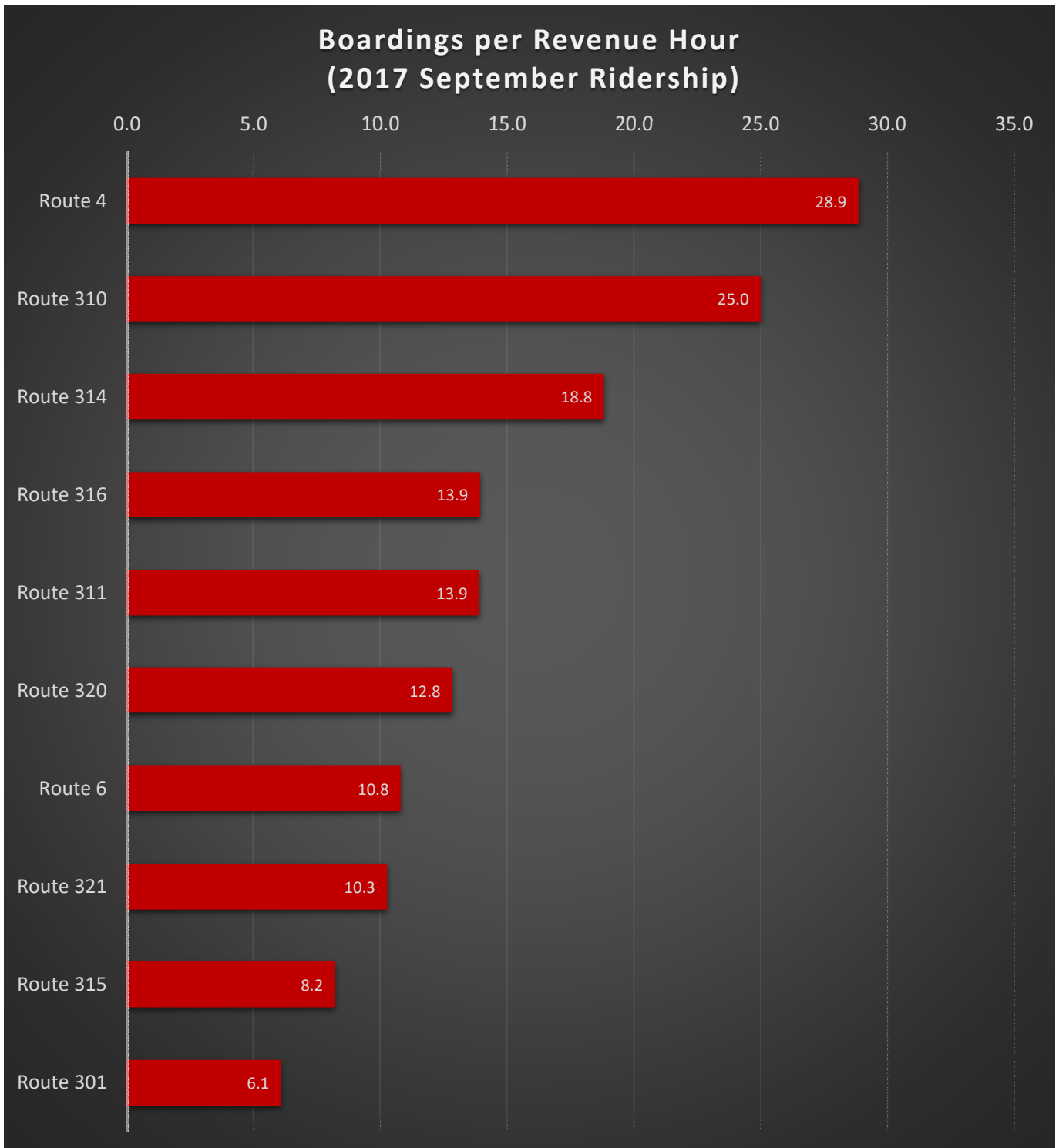
**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKEND SERVICE**



Subsidy Per Boarding by Route



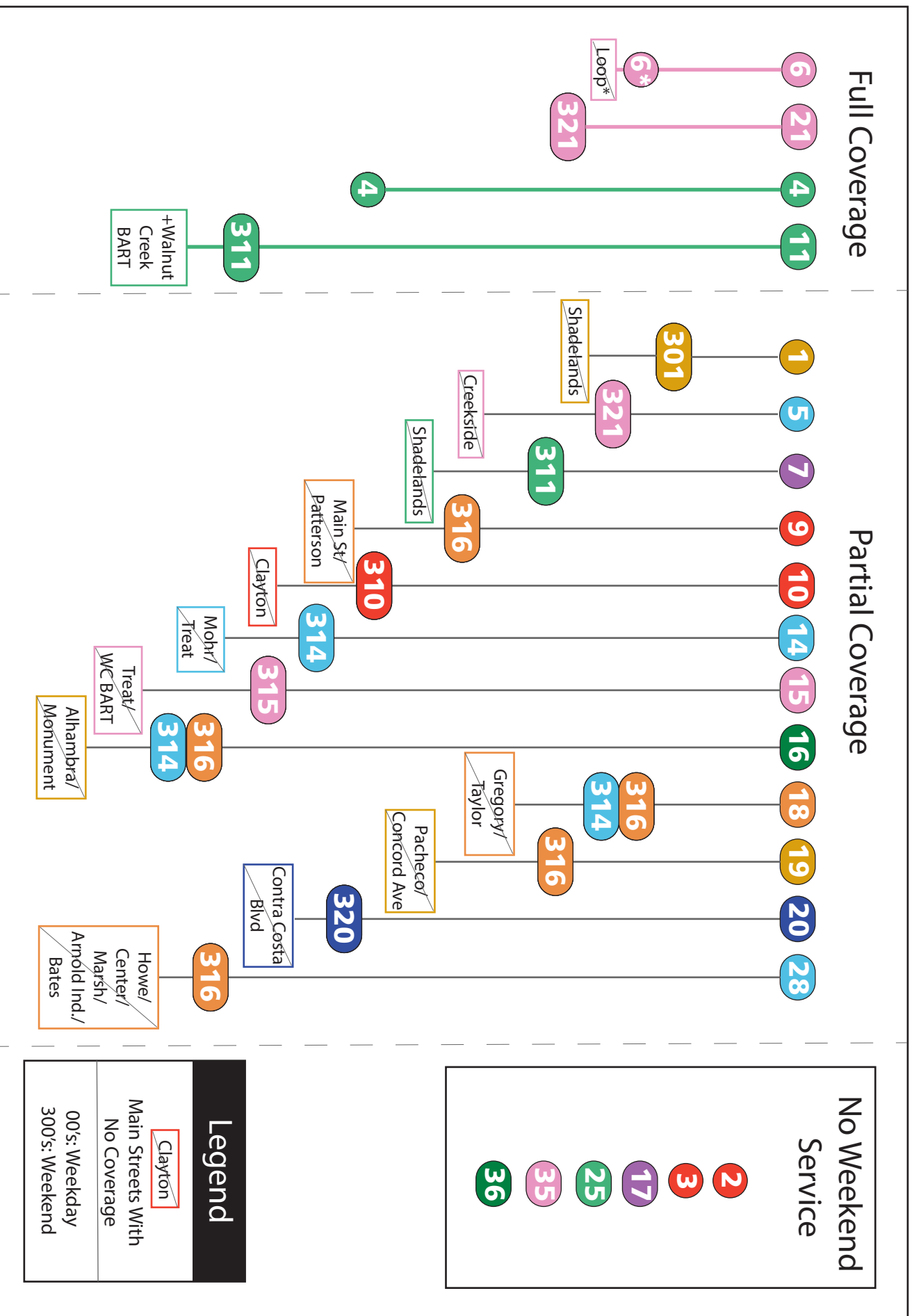
Boardings Per Revenue Hour per Route



Weekend Span of Service

Span of Service	4 Walnut Creek	6 Lamorinda	301 Rossmoor, Walnut Creek	310 Concord, Clayton	311 Concord, PH, WC	314 Concord, PH	315 Concord	316 Concord, PH Martinez	320 Concord, PH	321 WC, DV, San Ramon
7:00 AM										
7:30 AM										
8:00 AM										
8:30 AM										
9:00 AM										
9:30 AM										
10:00 AM										
10:30 AM										
11:00 AM										
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10:00 PM										
10:30 PM										
11:00 PM										

Weekend Route Coverage of Weekday Service



Sources

Cover Page Photo: Howard Der, bus fan

Reference Maps: County Connection System Map as of August 2015. Credit: Lohnes+Wright

Alignment, Speed and Labor Statistics: Trapeze scheduling software, Fall 2017 Statistics

Census Population, Jobs, and Demographics by Route: Remix planning software, derived from 2010 Census tracts divided into a 1/4 buffer from bus stops. Retrieved October 2017

Trip Level Ridership: Ridecheck Plus software from Clever Devices Automatic Person Counters, (APCs) Spring service change data FY15-FY17

Route Segment Maps: Ridecheck Plus software from Clever Devices Automatic Person Counters, (APCs) Spring service change data FY15-FY17

Route Level Ridership by Month: Monthly O&S Board Reports FY15-FY17 (route level worksheets)

Route Fare Demographics: Monthly O&S Board Reports FY15-FY17 (route level worksheets), data derived from bus operator input onboard bus. Totals may not equal APC data due to sampling methodology.

Subsidy per Boarding per Route: Costs from the 2015 A-30 National Transit Database (NTD) form. Fare revenue is the average fare per boarding as per the 2015 NTD submittal. Data is presented to roll up into total costs and may not represent marginal costs for specific routes.

Boardings per Revenue Hour: Hours are derived from a typical Monday in the Fall 2017 booking from Trapeze software. Ridership is the average weekday ridership from September 2017.

Span of Service Chart: Span retrieved from schedules as of Fall 2017. Times are rounded up to the closest 1/2 hour.

Weekend Route Coverage of Weekday Routes: Based upon County Connection route map as of December 2017. Not all streets that are not served are listed for brevity.

Central Contra Costa County Transit Authority

Comprehensive Operations Analysis

Weekend Local Routes, FY 2016/17

County Connection Administrative Offices
2477 Arnold Industrial Way
Concord, CA 94520
Office: 925-676-1976
countyconnection.com

Customer Service: 925-676-7500
customerservice@countyconnection.com

Although the data is derived from sources believed to be reliable, no warranty, expressed or implied, is made regarding accuracy, adequacy, completeness, legality, reliability or usefulness of any information. This disclaimer applies to both isolated and aggregate uses of the information. The information is provided on an “as is” basis.

Report prepared in December 2017

County Connection



Central Contra Costa County Transit Authority Comprehensive Operations Analysis

School Routes, FY 2016/17

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How to Use This Document (Key Performance Indicators)

This is a GPS derived number that also includes mid route layover, or time the bus sits at a stop. In Route 1's case it's seen as slower because the bus isn't moving at BART, yet is still in service.

Route Alignment, Speed, and Labor Statistics

Route 1: Rossmoor to Shadelands

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
89%	16.0	9.4	6.2
3%	0%	-27%	-57%

# Stops	Stop Spacing	# of Rights	# of Lefts
52	0.31	26	26
84%	-52%	85%	83%

In-Service Time	Layover	Deadhead	Total Hours
79%	16%	6%	27.9
15%	-26%	-45%	-11%

Stops per mile. Eg. 0.33 is a stop every 1/3 mile on average for the route

This indicator bar represents the difference from the route averages for all local routes. For example in this case, Route 1 has 84% more stops than an average local route.

In-service time is time when the bus is in revenue service or when passengers are allowed in the bus with a set schedule.

Layover is time when the bus is parked for either a required operator break or for recovery time for the bus to get back on schedule.

Deadhead is time when the bus is pulling out of the bus yard to make its first or last trip or when its not in service and starting another route.

Data derived from Remix transit planning software. This is not the ridership demographics, but rather the census derived demographics for residents with 1/4 mile of a transit stop.

Census Population, Jobs, and Demographics by Route

Jobs	Population	Jobs+Pop	J+P/mile
30,379	14,370	44,749	2,793
52%	-24%	16%	-9%

Poverty	Limited English	Minority	Senior
8%	9%	32%	21%
-35%	-6%	-30%	63%

Disabled	No Car	Youth	(Legend)
11%	7%	18%	(route value)
1%	-13%	-13%	(% diff from AVG)

This number represents the total number of jobs and population per route mile. This is an indicator of density along the route.

Like the indicator bars above, this represents a difference from the route averages. In this case, Route 1 has 63% more Seniors within 1/4 mile of a stop than an average CCCTA local route.

These numbers are important when comparing demographics for Title VI civil rights compliance. If service changes occur these numbers are used to determine if there are disparate impacts to protected populations. The numbers are also a good indication of transit dependent populations within 1/4 mile of a stop.

School Route Averages: A Typical CCCTA Route

Route Alignment, Speed, and Labor Statistics

Average School District

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
71%	52.8	13.6	13.5
0%	0%	0%	0%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
115	0.30	24	25
0%	0%	0%	0%

In-Service Time	Layover	Deadhead	Total Hours
39%	17%	44%	18.9
0%	0%	0%	0%

600 Series AVG

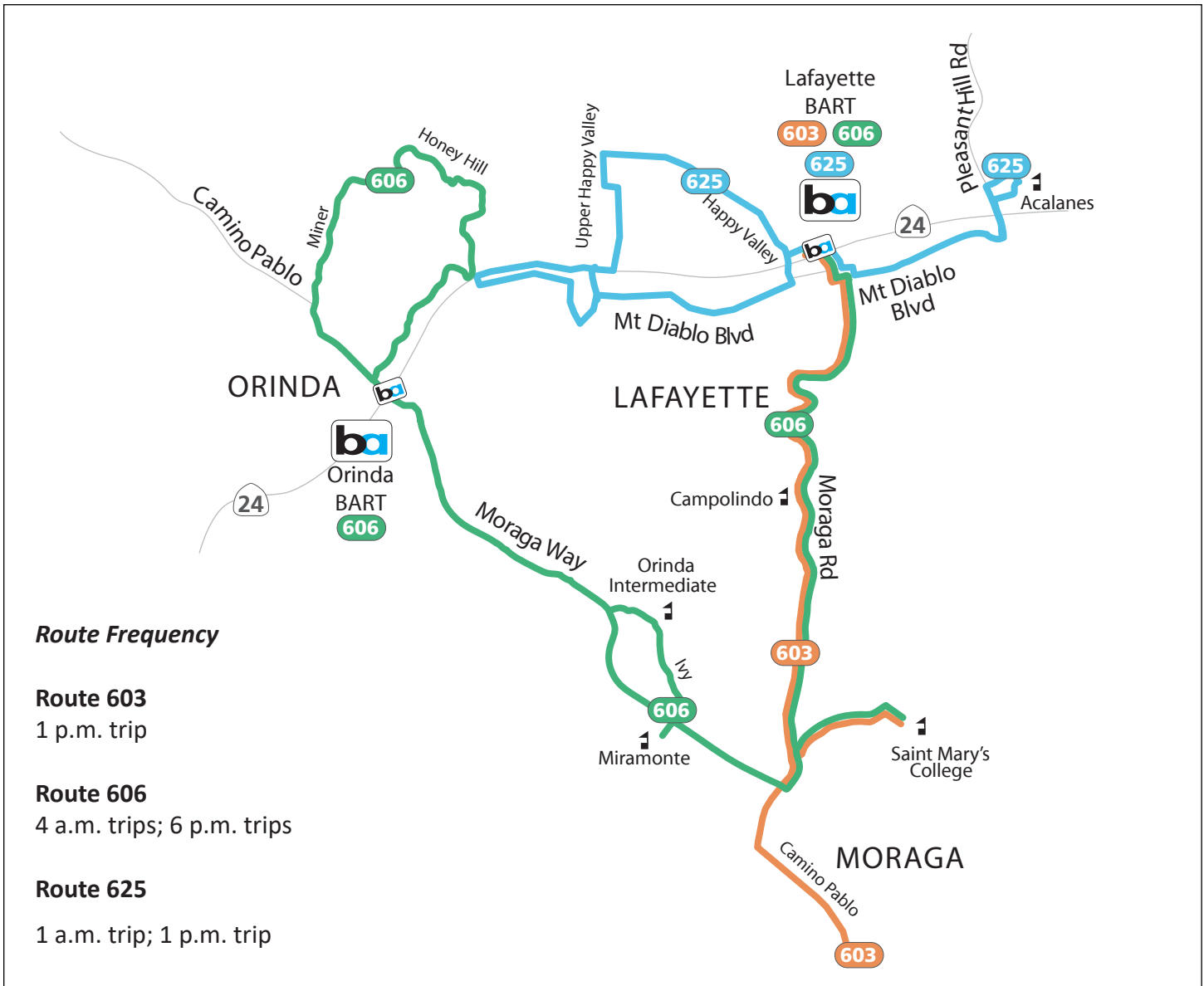
Census Population, Jobs, and Demographics by Route

Population	Youth	Youth/mi	Poverty
32,630	7,604	566	7%
0%	0%	0%	0%

Limited English	Minority	Disabled	No Car
6%	36%	8%	5%
0%	0%	0%	0%

Youth %			(Legend)
23%			(route value)
0%			(% diff from AVG)

Acalanes & Orinda School Districts



Origin and Recent Service Changes

Alignment Statistics and Connections

The routes 603, 606, 625 were created in 2009 as part of a large service restructuring from the Routes 106, 206A & 206L to primarily serve Campolindo HS, Miramonte HS, Orinda Intermediate, & Acalanes HS. Route 603 Serves the Moraga Rd, St Mary's Rd, St Mary's College, Camino Pablo to Larch Ave. In 2016 Fall the AM trips were removed from service. Route 606 serves the BART Orinda, Miner Rd, Honey Hill, Via Las Cruces, Saint Stephens Dr, Moraga Way, Ivy Dr (OIS variation). In the AM trips continue to BART Lafayette, Moraga Rd, St Mary's Rd, St Mary's College, Mt Diablo Blvd. PM trips start on Ivy Dr (OIS variation) and Miramonte towards BART Orinda to the Miner Rd area. Route 625 travels from Stanley Blvd, Mt Diablo Blvd, BART Lafayette, Happy Valley Rd, Upper Happy Valley Rd, El Nido Ranch Rd, Hidden Valley Rd, Acalanes Rd. The route originally provided service to Rossmoor Shopping Center which was removed in 2010 Fall.

Acalanes & Orinda School Districts: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Acalanes & Orinda School District

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
54%	58.1	14.6	15.6
-23%	10%	7%	16%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
126	0.29	28	27
10%	-3%	16%	6%

In-Service Time	Layover	Deadhead	Total Hours
39%	4%	58%	27.2
1%	-79%	30%	44%

Acalanes & Orinda School Districts

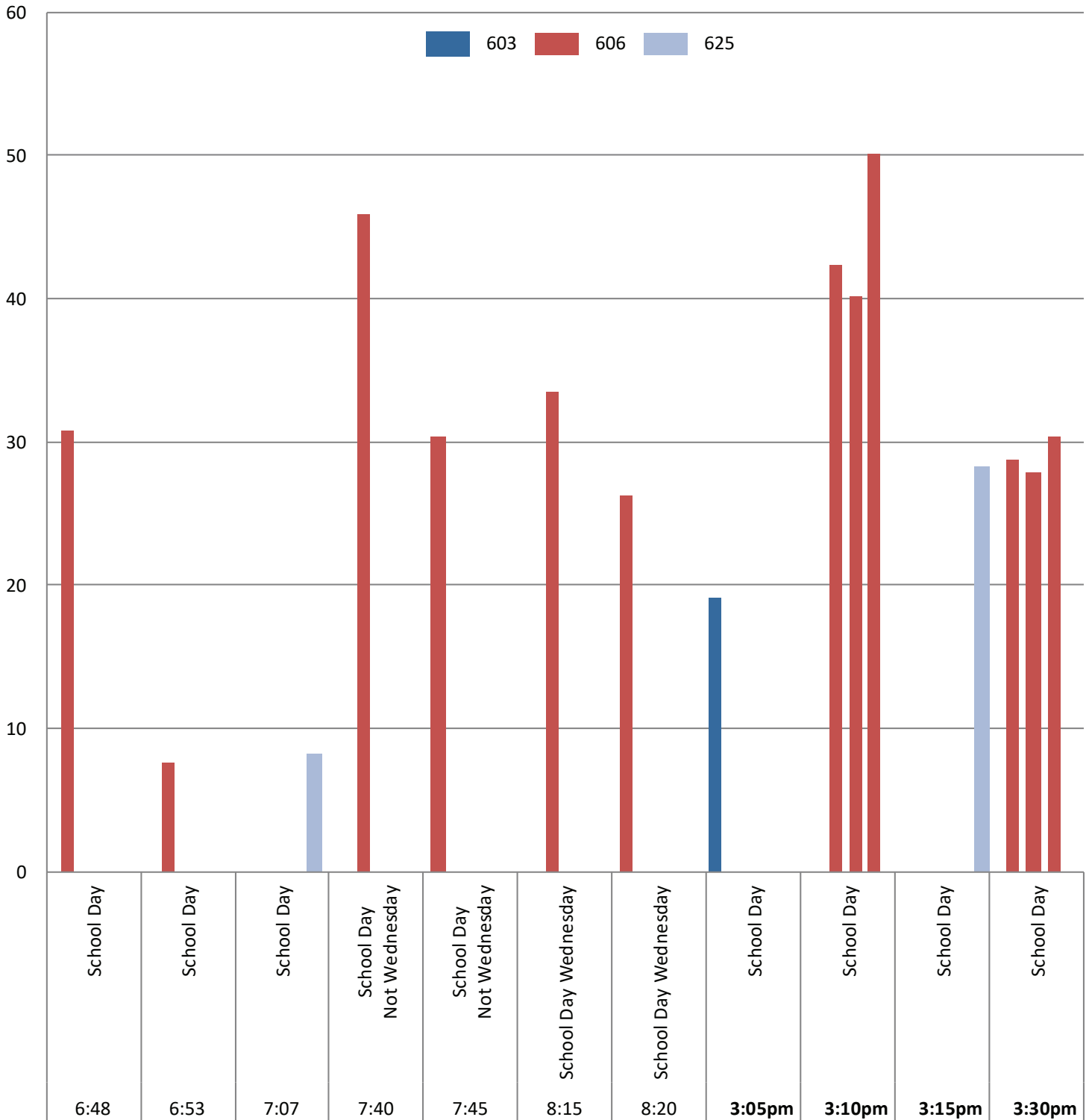
Census Population, Jobs, and Demographics by Route

Population	Youth	Youth/mi	Poverty
17,723	4,059	70	5%
-46%	-47%	-88%	-34%

Limited English	Minority	Disabled	No Car
2%	26%	7%	4%
-59%	-26%	-21%	-32%

Youth %	(Legend)		
23%	(route value)		
-1%	(% diff from AVG)		

ACALANES & ORINDA SCHOOL DISTRICTS TRIP LEVEL RIDERSHIP FALL 2017

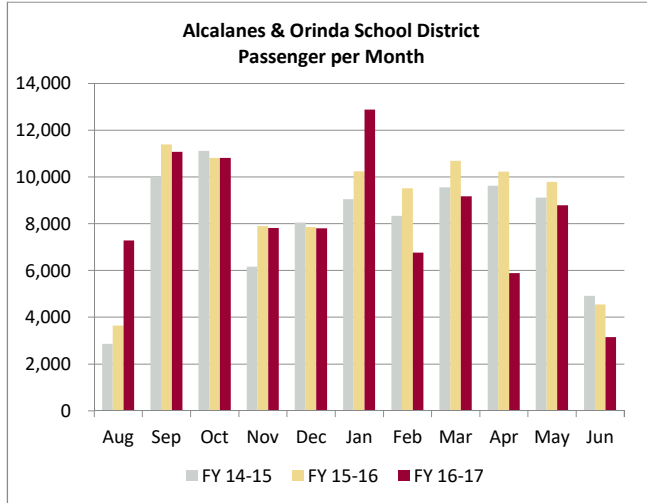


Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Alcalanes & Orinda School District

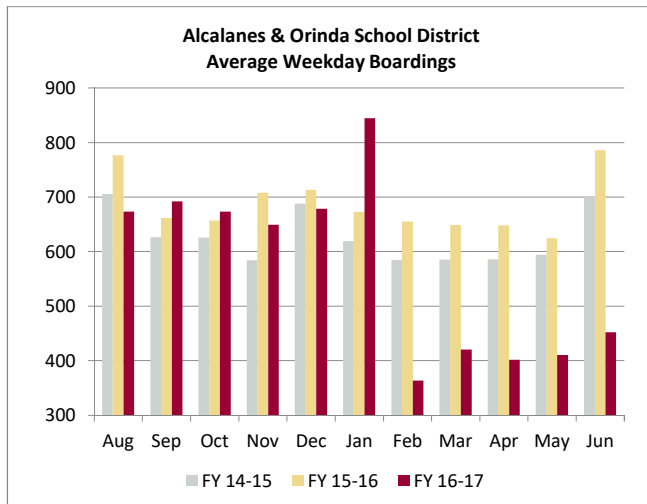
Passenger per Month

	FY 14-15	FY 15-16	FY 16-17
Aug	2,863	3,636	7,284
Sep	10,018	11,377	11,073
Oct	11,107	10,806	10,814
Nov	6,162	7,891	7,818
Dec	8,050	7,849	7,799
Jan	9,047	10,236	12,878
Feb	8,327	9,502	6,754
Mar	9,547	10,684	9,161
Apr	9,615	10,214	5,887
May	9,117	9,780	8,789
Jun	4,904	4,540	3,145

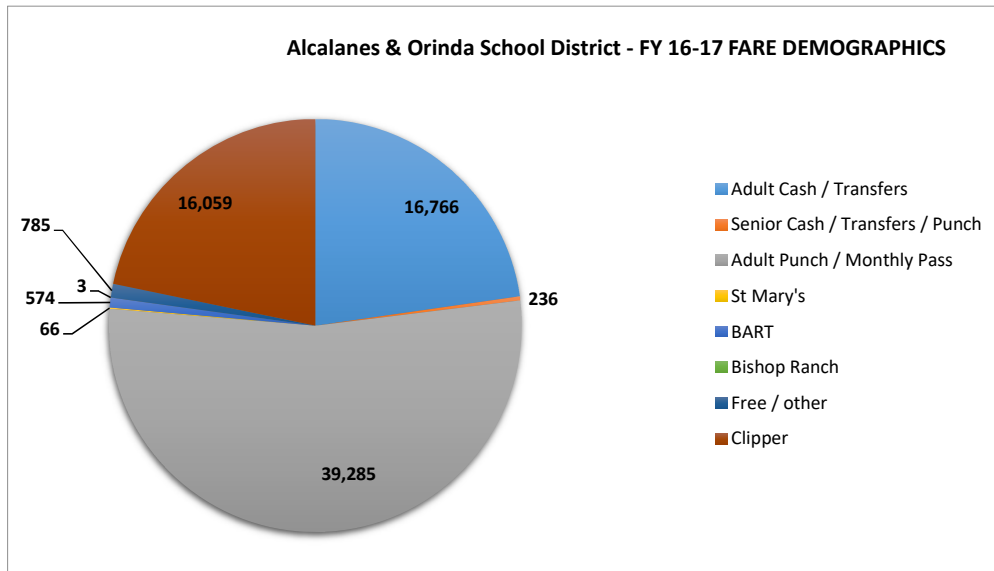
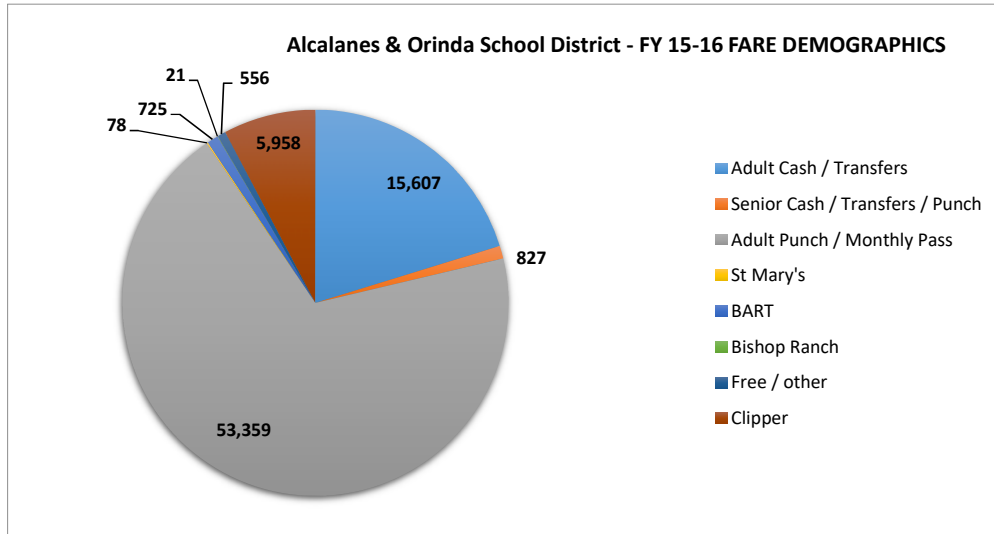
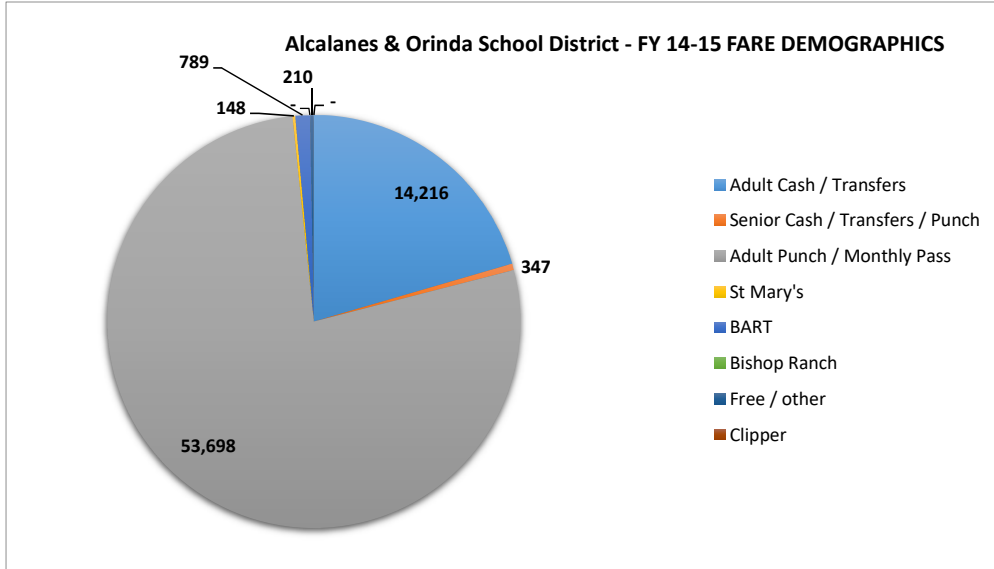


Avg Wkdy Boardings

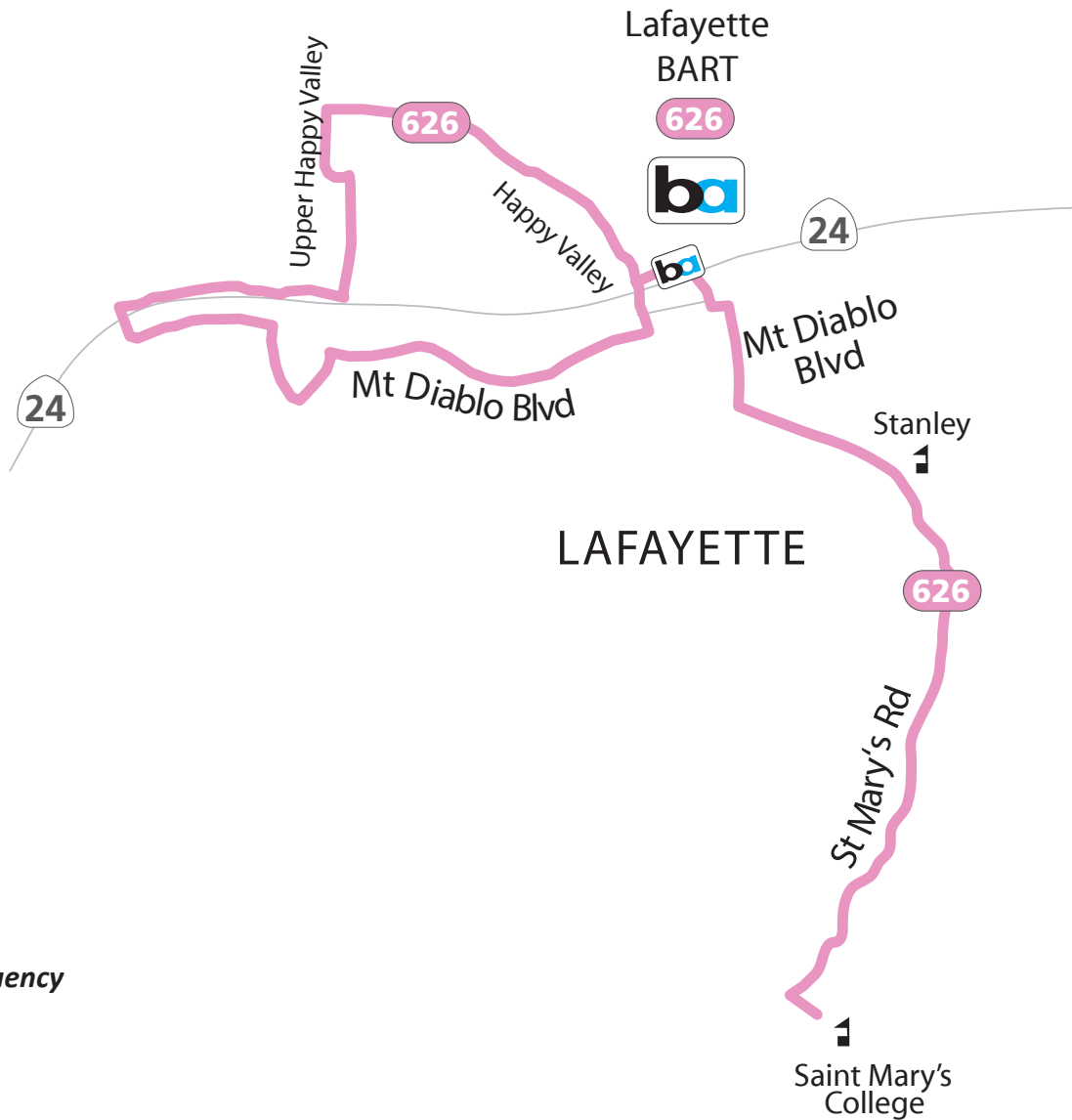
	FY 14-15	FY 15-16	FY 16-17
Aug	705	776	673
Sep	626	661	692
Oct	625	657	673
Nov	584	708	649
Dec	688	713	678
Jan	619	672	844
Feb	585	655	364
Mar	585	649	420
Apr	585	648	401
May	594	624	410
Jun	701	786	452



**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKDAY SELECT SERVICE**



Lafayette School District



Route Frequency

Route 626
2 p.m. trips

Origin and Recent Service Changes

Alignment Statistics and Connections

Route 626 was created in 2009 as part of a large service restructuring from the Route 206A and 206L to primarily serve Stanley Middle School. The route travels from St Mary's College, St Mary's Rd, Rohrer Dr, Moraga Rd, Mt Diablo Blvd, BART Lafayette, Happy Valley Rd, Upper Happy Valley Rd, El Nido Ranch Rd, Hidden Valley Rd, Acalanes Rd. In 2010 Fall the AM trips were removed from service.

Lafayette School District: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Lafayette School District

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
67%	20.9	13.7	11.6
-6%	-60%	1%	-14%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
15	0.42	5	8
-87%	39%	-79%	-69%

In-Service Time	Layover	Deadhead	Total Hours
37%	18%	45%	3.9
-4%	4%	2%	-79%

Lafayette School District

Census Population, Jobs, and Demographics by Route

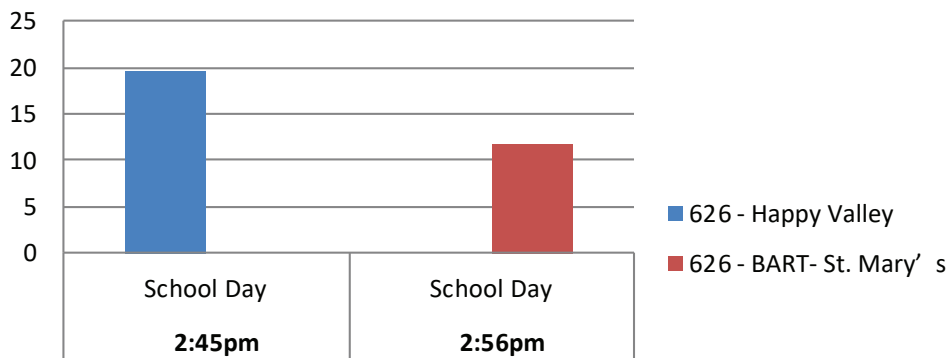
Population	Youth	Youth/mi	Poverty
8,478	2,094	405	4%
-74%	-72%	-28%	-46%

Limited English	Minority	Disabled	No Car
1%	24%	6%	4%
-80%	-34%	-31%	-30%

Youth %			(Legend)
25%			(route value)
7%			(% diff from AVG)

LAFAYETTE SCHOOL DISTRICT TRIP LEVEL RIDERSHIP FALL 2017

Lafayette School District Average Daily Boardings

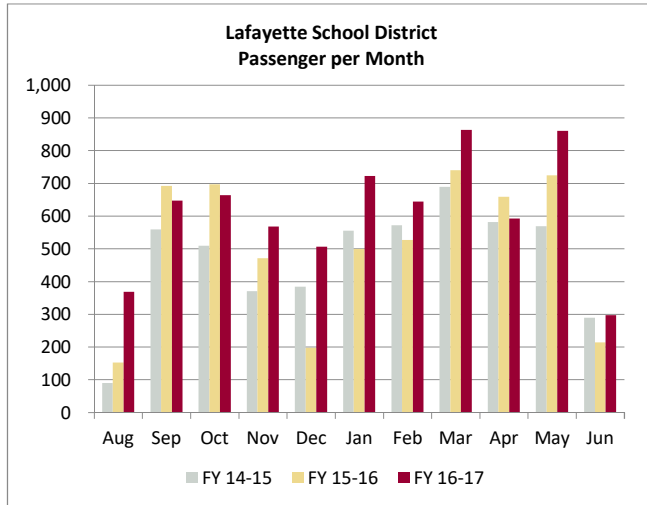


Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Lafayette School District

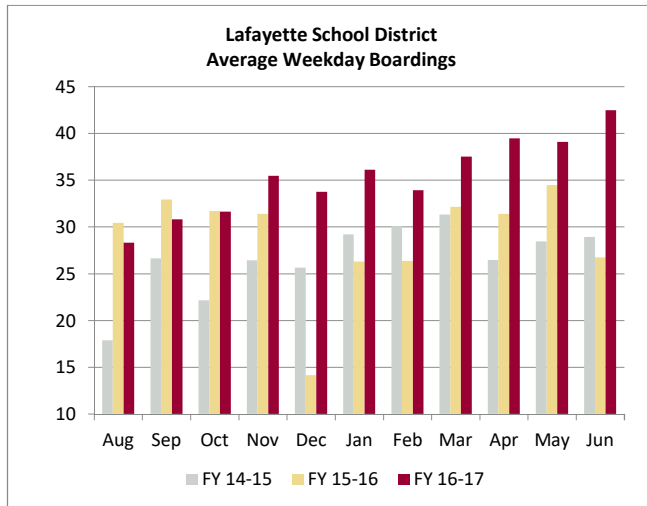
Passenger per Month

	FY 14-15	FY 15-16	FY 16-17
Aug	89	152	368
Sep	559	692	647
Oct	509	697	664
Nov	370	471	567
Dec	384	198	506
Jan	555	499	722
Feb	571	527	644
Mar	689	739	863
Apr	582	659	592
May	569	724	860
Jun	289	214	297

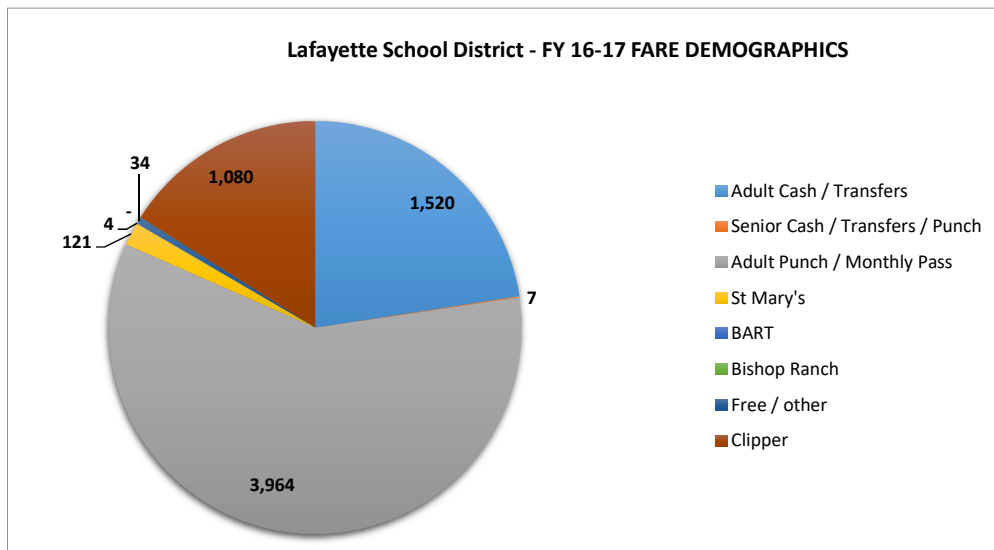
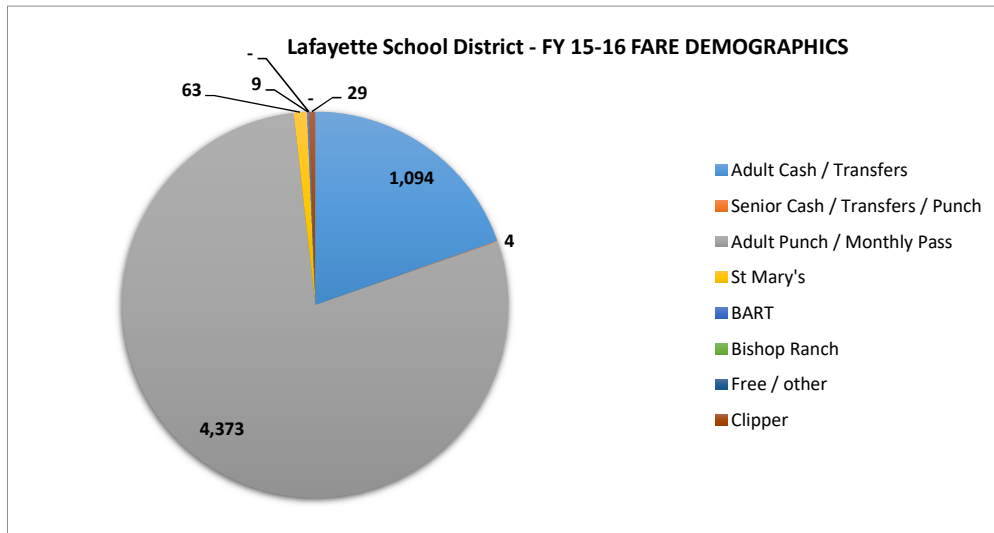
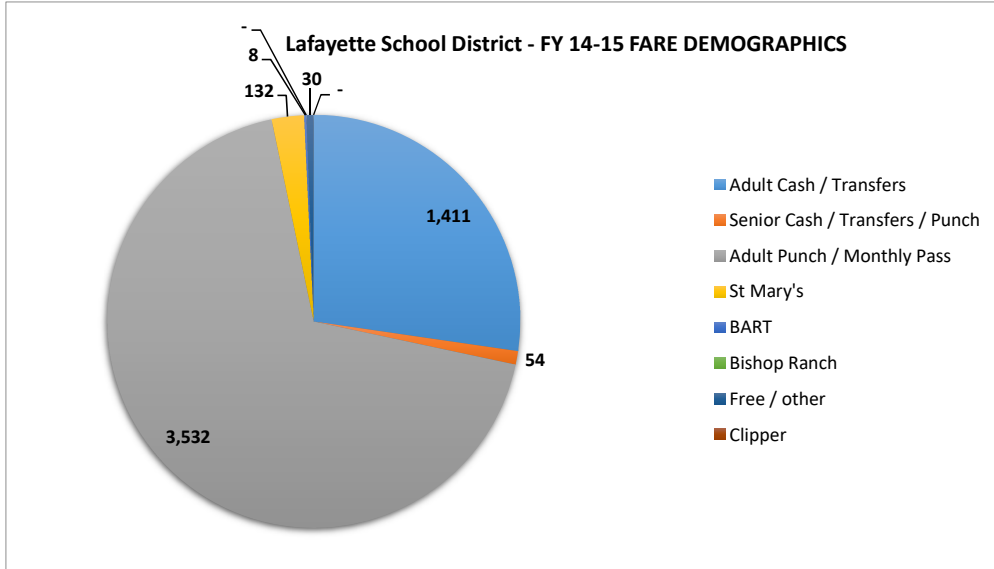


Avg Wkdy Boardings

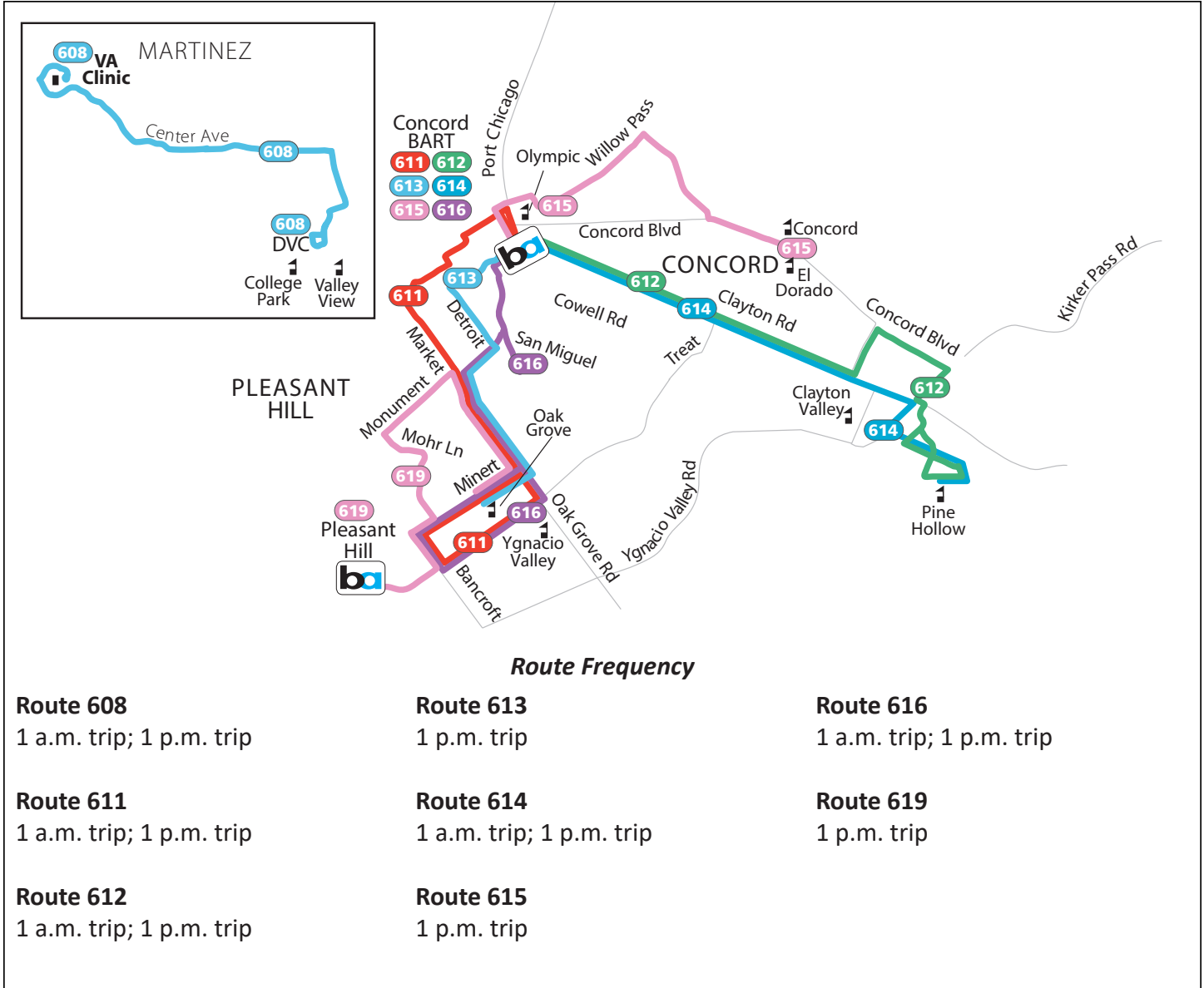
	FY 14-15	FY 15-16	FY 16-17
Aug	18	30	28
Sep	27	33	31
Oct	22	32	32
Nov	26	31	35
Dec	26	14	34
Jan	29	26	36
Feb	30	26	34
Mar	31	32	38
Apr	26	31	39
May	28	34	39
Jun	29	27	42



**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKDAY SELECT SERVICE**



Mt. Diablo School District



Origin and Recent Service Changes

Alignment Statistics and Connections

The routes 608, 611, 612, 613, 614, 615, 616, 619 were created in 2009 as part of a large service restructuring from the Routes 108, 110, 111, & 115 to primarily serve College Park HS, Valley View, Oak Grove, Pine Hollow Middle Schools, and Concord HS. Route 608 serves the VA Clinic, Center Ave, Pacheco Blvd, Contra Costa Blvd, Chilpancingo Pkwy, Old Quarry Rd, and DVC. Routes 612 & 614 serve the Pine Hollow area, Clayton Rd, Concord Blvd, Ayers Rd, BART Concord. Routes 611, 613, 616, 619 serve the Minert Rd, Oak Grove Rd, then Route 611 continues Meadow, Market, Clayton Rd, Fry, Salvio, Route 613 continues Monument, Detroit, Laguna, Route 616 continues Monument, Systron, San Miguel Rd, Galindo, all three go to BART Concord. Route 619 continues Monument, Mohr Ln, David, Bancroft, Treat to BART Pleasant Hill.

Mt. Diablo School District: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Mt. Diablo School District

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
77%	67.6	12.5	12.3
8%	28%	-8%	-9%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
177	0.22	35	33
54%	-27%	45%	30%

In-Service Time	Layover	Deadhead	Total Hours
28%	28%	33%	26.4
-27%	67%	-27%	40%

Mt Diablo School District

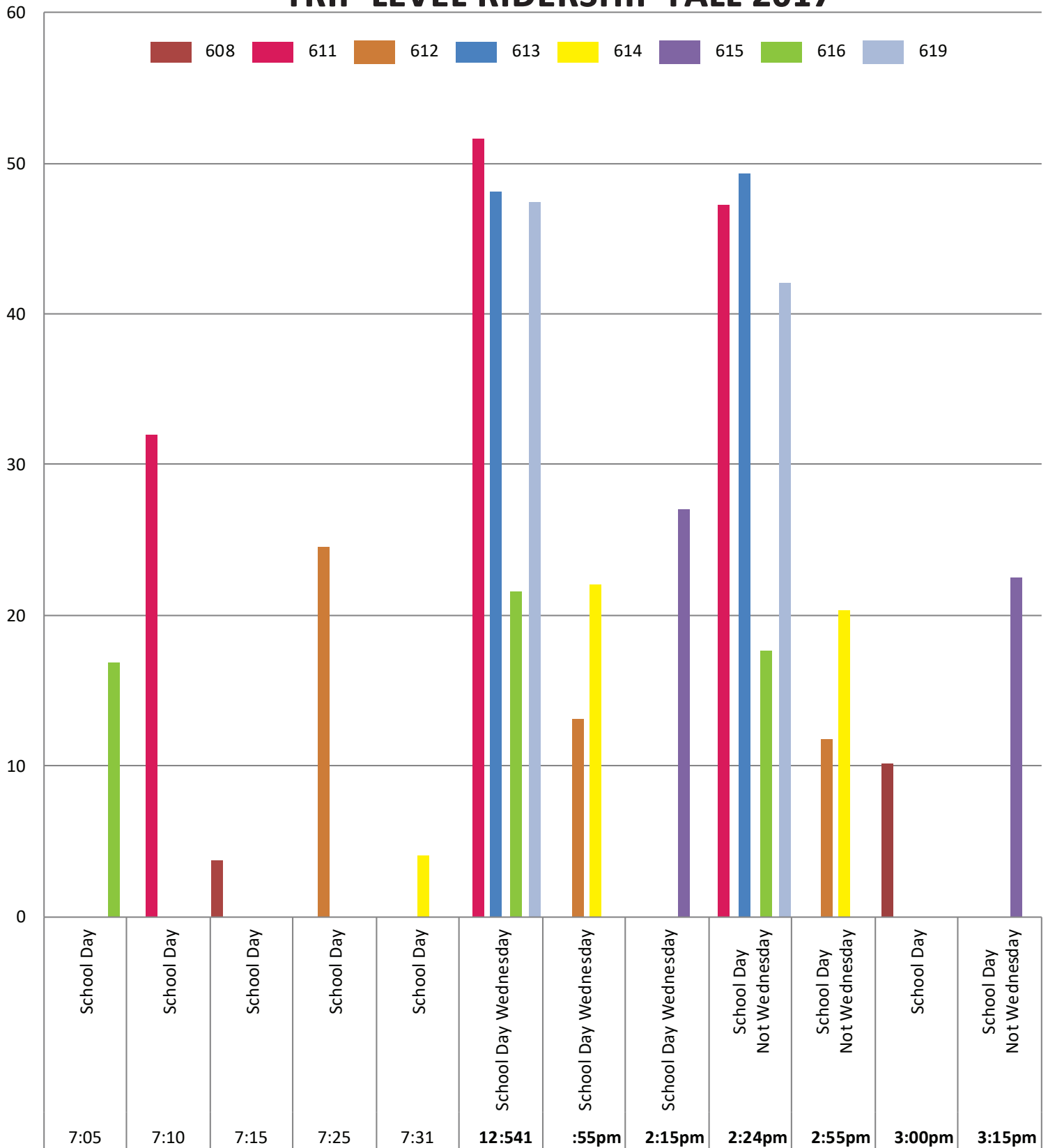
Census Population, Jobs, and Demographics by Route

Population	Youth	Youth/mi	Poverty
68,387	15,114	1,096	16%
110%	99%	94%	117%

Limited English	Minority	Disabled	No Car
10%	52%	12%	8%
81%	46%	48%	39%

Youth %			(Legend)
22%			(route value)
-4%			(% diff from AVG)

MT. DIABLO SCHOOL DISTRICT TRIP LEVEL RIDERSHIP FALL 2017

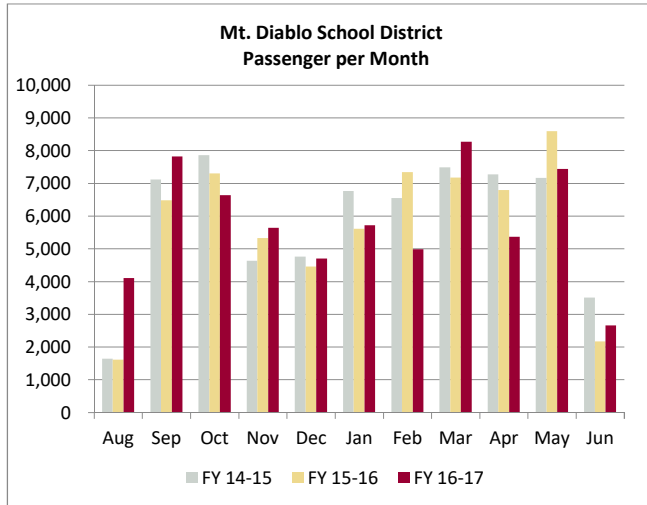


Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Mt. Diablo School District

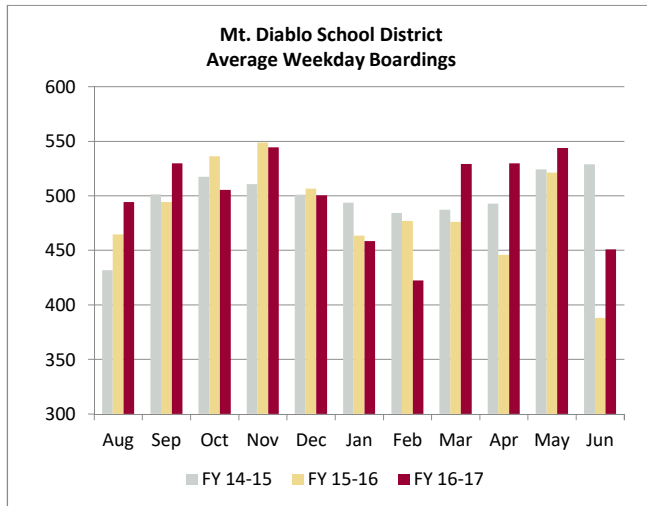
Passenger per Month

	FY 14-15	FY 15-16	FY 16-17
Aug	1,641	1,614	4,098
Sep	7,118	6,484	7,823
Oct	7,858	7,301	6,637
Nov	4,631	5,326	5,642
Dec	4,756	4,455	4,701
Jan	6,759	5,609	5,718
Feb	6,547	7,342	4,987
Mar	7,486	7,169	8,270
Apr	7,270	6,795	5,367
May	7,167	8,589	7,435
Jun	3,508	2,163	2,652

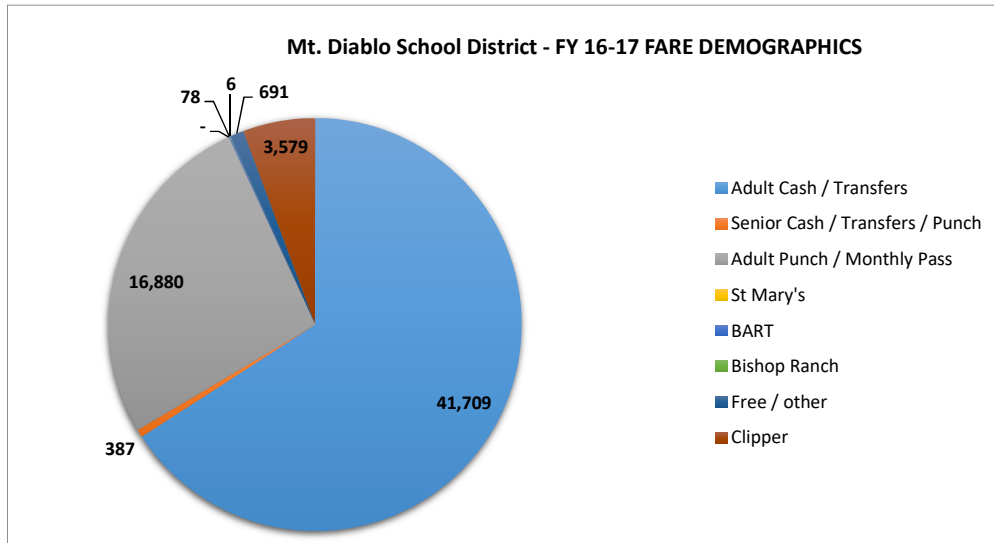
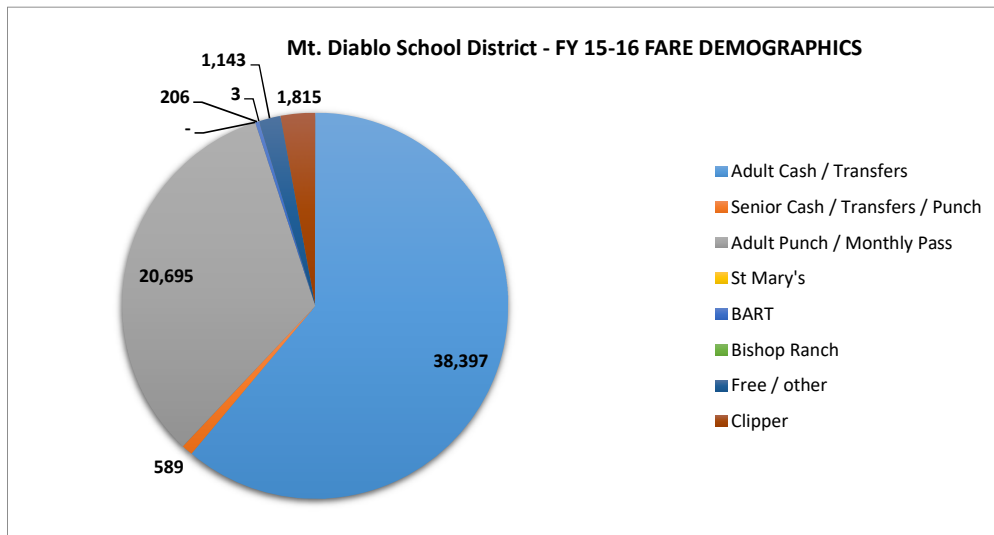
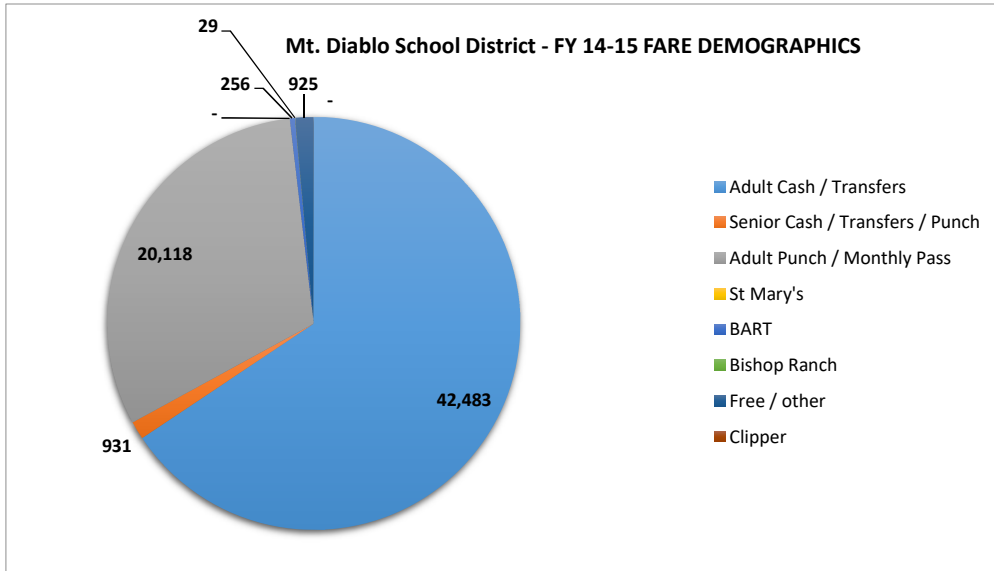


Avg Wkdy Boardings

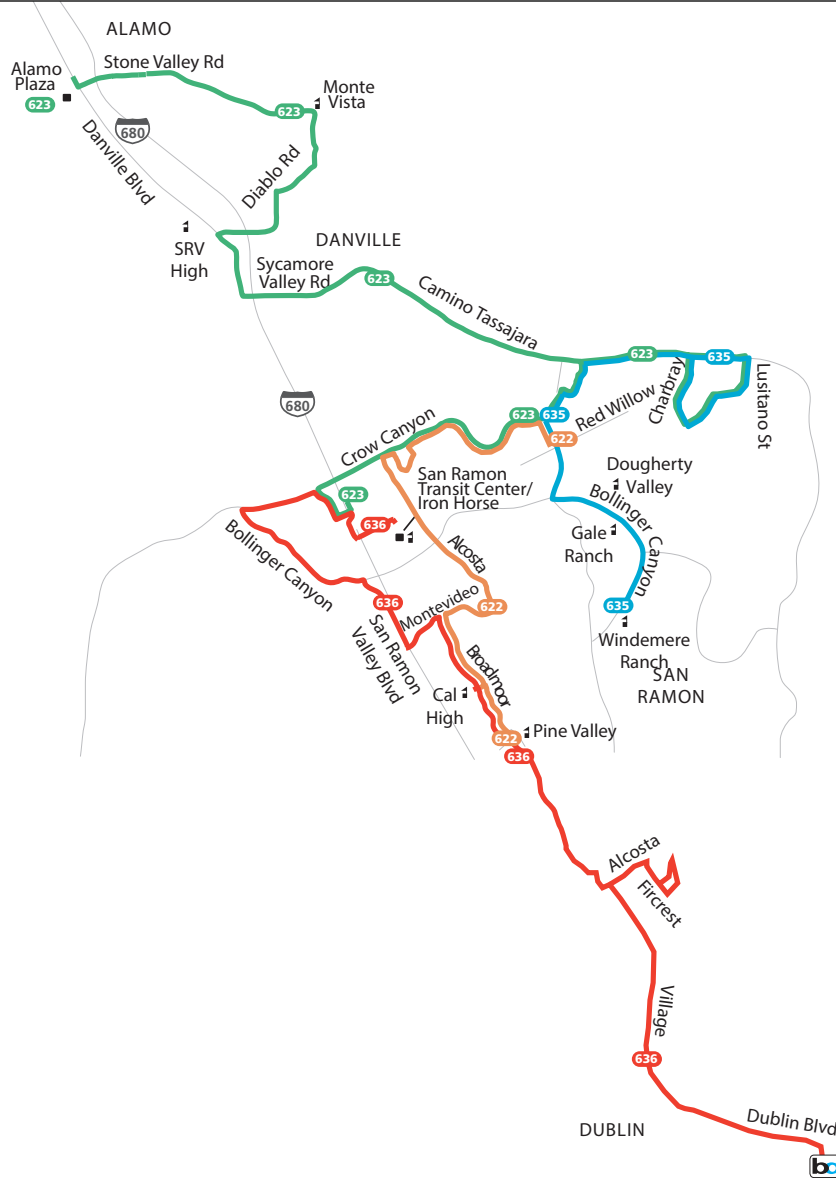
	FY 14-15	FY 15-16	FY 16-17
Aug	432	464	494
Sep	501	494	530
Oct	517	536	505
Nov	511	549	544
Dec	501	507	500
Jan	494	463	458
Feb	484	477	422
Mar	487	476	529
Apr	493	446	530
May	524	521	544
Jun	529	388	451



**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKDAY SELECT SERVICE**



San Ramon School District



Route Frequency

Route 622

1 p.m. trip

Route 623

1 p.m. trip

Route 635

1 p.m. trip

Route 636

2 p.m. trips

Origin and Recent Service Changes

Alignment Statistics and Connections

The routes 622, 623, 635, 636 were created in 2009 as part of a large service restructuring from the Routes 221, 135, & 121 to primarily serve California HS, Monte Vista HS, Dougherty Valley HS, Iron Horse Middle School. Route 622 serves the Pine Valley Rd, Broadmoor Dr, Montevideo Dr, Alcosta Blvd, Crow Canyon Rd, Dougherty Rd & Red Willow. In 2012 Spring route was modified to serve Tahiti Dr. Route 623 serves the Danville Blvd, Stone Valley Rd, Green Valley Rd, Diablo Rd, Hartz Ave, San Ramon Valley Blvd, Sycamore Valley Rd, Camino Tassajara, Lusitano St, Charbray St, Tassajara Ranch Rd, Crow Canyon Rd, Anabel Ln. In 2011 Fall route was extended to Lusitano St, Charbray St. Route 635 serves Bollinger Canyon Rd, Dougherty Rd, Crow Canyon Rd, Tassajara Ranch Rd, Camino Tassajara, Lusitano St, Charbray St. In 2009 Fall route was extended to Lusitano St, Charbray St. Route 636 serves the San Ramon Transit Center, Executive Pkwy, Crow Canyon Rd, Bollinger Canyon Rd, San Ramon Valley Blvd, Broadmoor Dr, Alcosta Blvd, Fircrest Ln, Village Pkwy, Dublin Blvd, BART Dublin. In 2010 Fall the AM trips were removed from service.

San Ramon School District: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

San Ramon School District

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
70%	69.1	14.3	15.4
-1%	31%	5%	14%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
156	0.34	27	32
36%	13%	12%	26%

In-Service Time	Layover	Deadhead	Total Hours
42%	18%	40%	19.1
10%	6%	-11%	1%

San Ramon School District

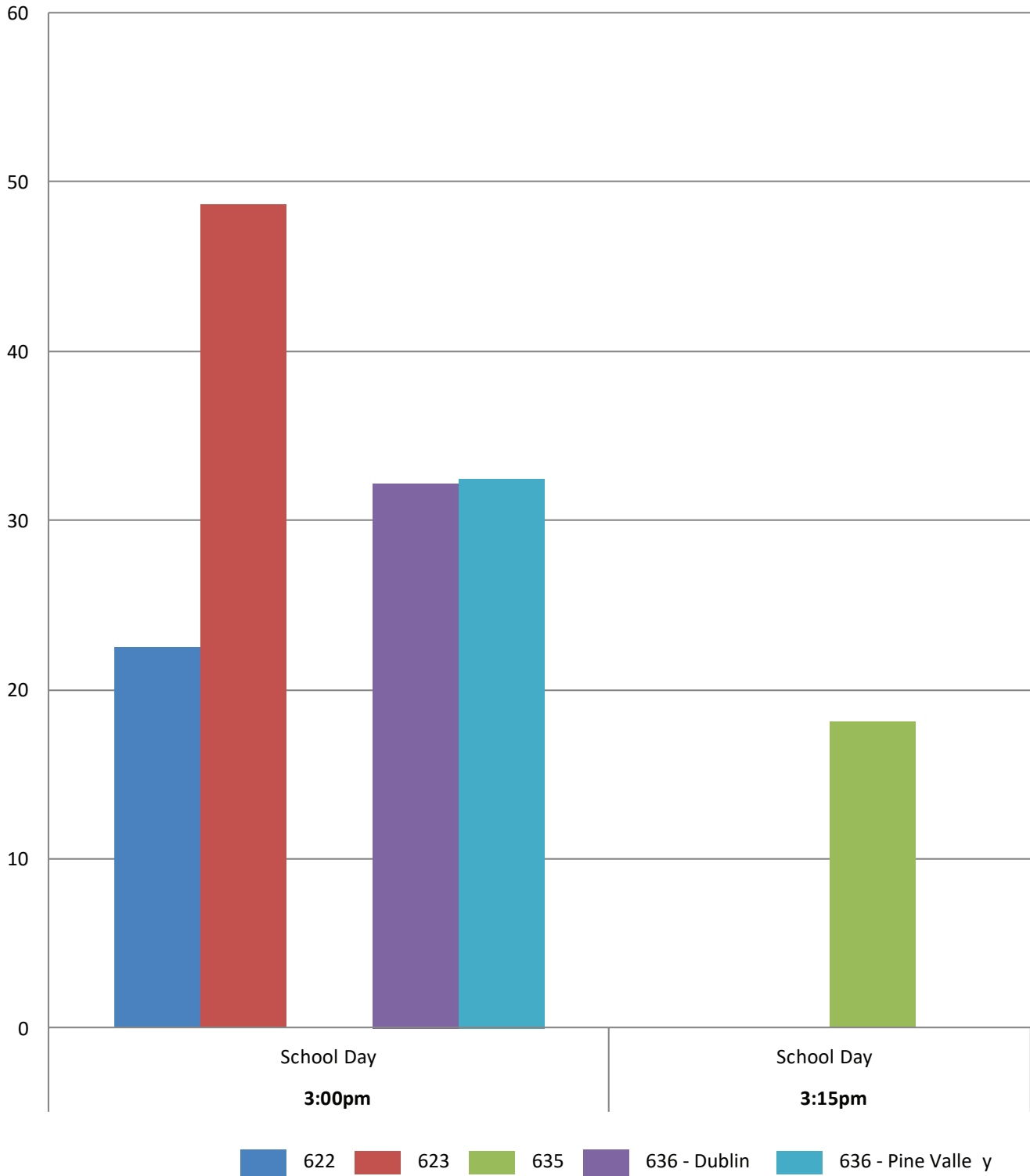
Census Population, Jobs, and Demographics by Route

Population	Youth	Youth/mi	Poverty
47,055	12,799	813	4%
44%	68%	44%	-39%

Limited English	Minority	Disabled	No Car
6%	45%	6%	3%
3%	25%	-24%	-40%

Youth %	(Legend)		
27%	(route value)		
18%	(% diff from AVG)		

SAN RAMON SCHOOL DISTRICT TRIP LEVEL RIDERSHIP FALL 2017

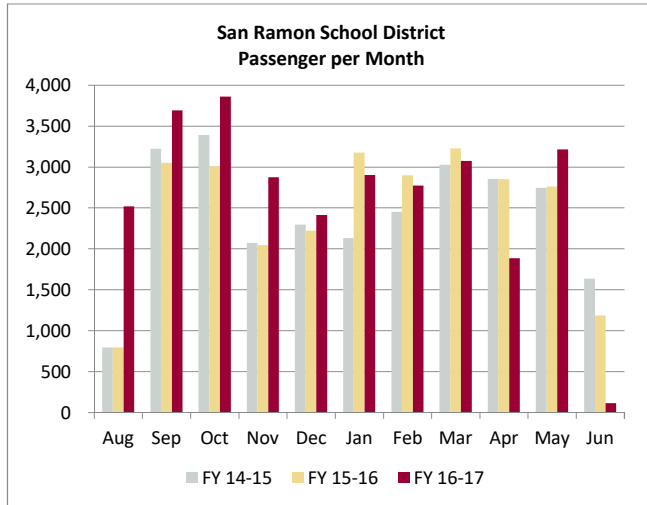


Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

San Ramon School District

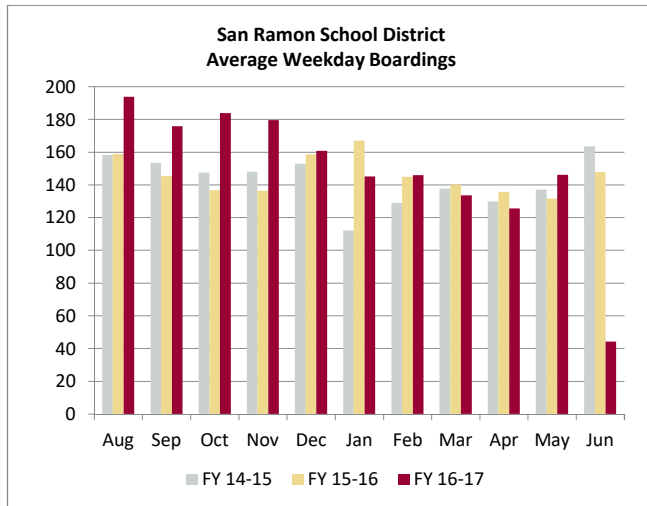
Passenger per Month

	FY 14-15	FY 15-16	FY 16-17
Aug	791	794	2,518
Sep	3,220	3,049	3,690
Oct	3,390	3,006	3,859
Nov	2,073	2,045	2,871
Dec	2,293	2,220	2,412
Jan	2,130	3,174	2,902
Feb	2,449	2,898	2,772
Mar	3,026	3,224	3,073
Apr	2,855	2,851	1,883
May	2,742	2,761	3,213
Jun	1,634	1,183	112

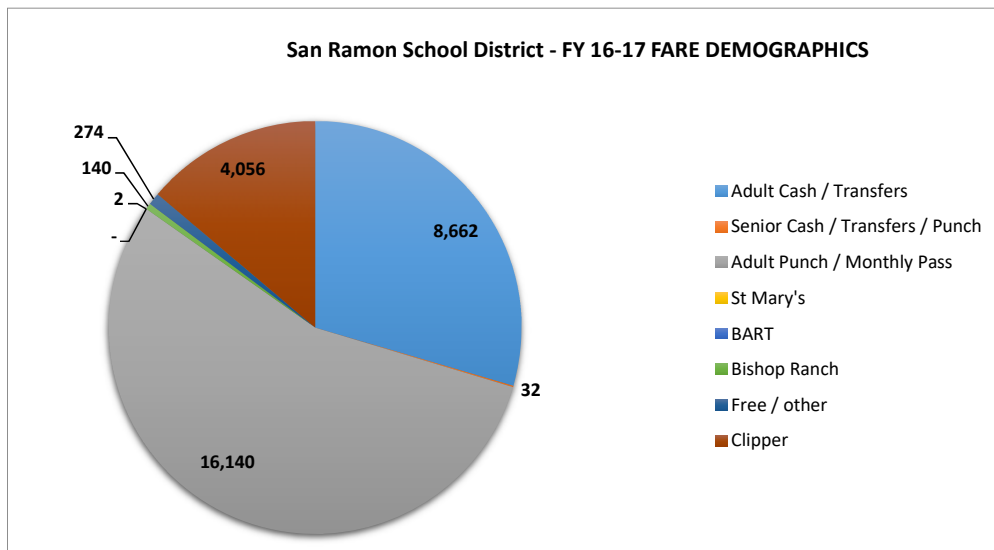
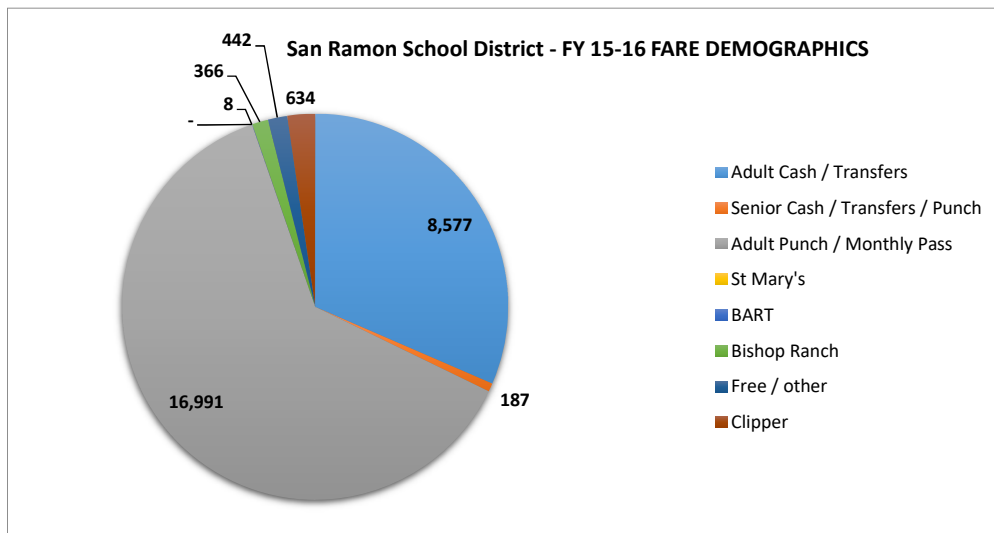
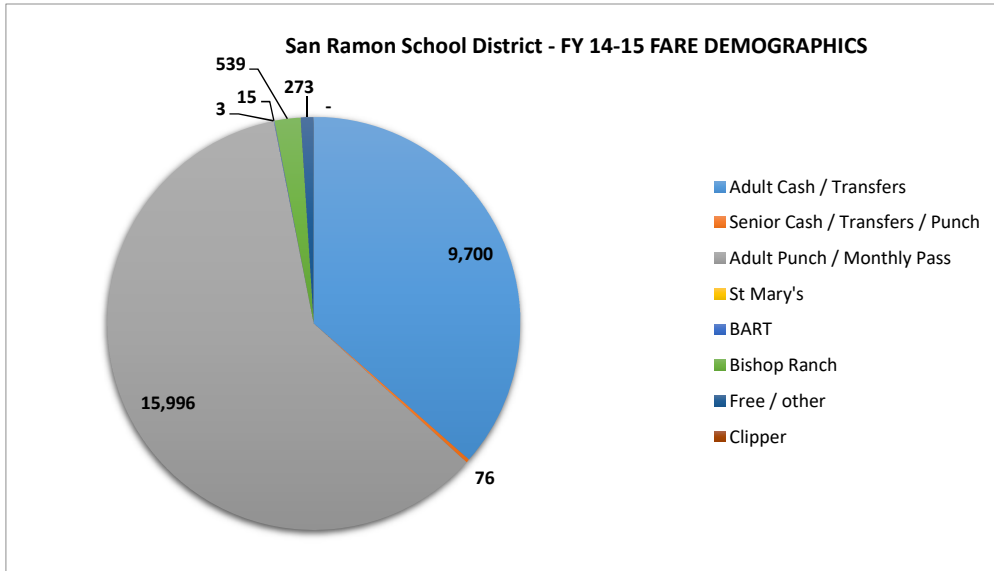


Avg Wkdy Boardings

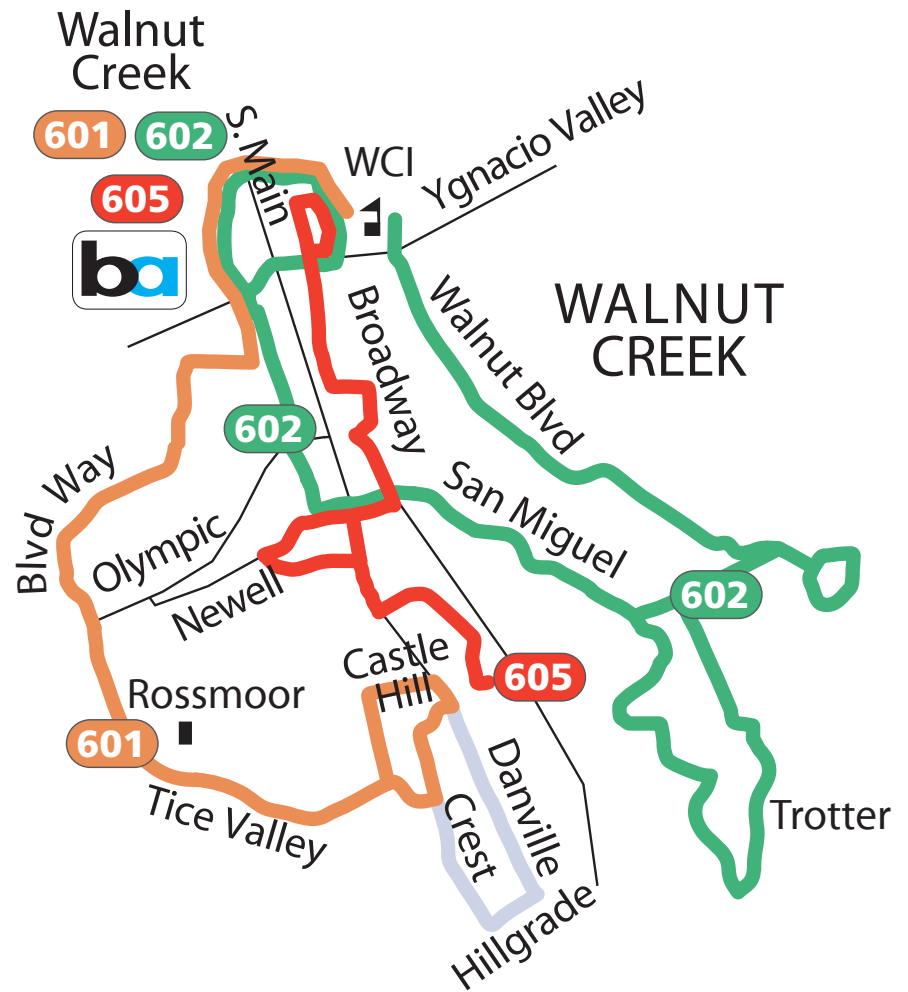
	FY 14-15	FY 15-16	FY 16-17
Aug	158	159	194
Sep	153	145	176
Oct	147	137	184
Nov	148	136	179
Dec	153	159	161
Jan	112	167	145
Feb	129	145	146
Mar	138	140	134
Apr	130	136	126
May	137	131	146
Jun	163	148	44



**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKDAY SELECT SERVICE**



Walnut Creek School District



Route Frequency

Route 601

2 a.m. trips; 2 p.m. trips

Route 602

1 a.m. trip; 3 p.m. trips

Route 605

1 a.m. trip; 2 p.m. trips

Origin and Recent Service Changes

Alignment Statistics and Connections

The routes 601, 602, 605 were created in 2009 as part of a large service restructuring from the Routes 101, 102, & 105 to primarily serve Walnut Creek Intermediate School. Route 601 serves the N Civic, BART Walnut Creek, Trinity Ave, Oakland Blvd, Boulevard Way, Tice Valley, Meadow, Castle Hill, Danville Blvd, Hillgrade and Crest Ave, Rossmoor Shopping Center. Route 602 serves the Walnut Blvd, Oro Valley, Rudgear, Trotter, Dapplegray, Palmer, Mountain View, San Miguel, California and BART Walnut Creek. Route 605 serves the N Civic, N Broadway, Lincoln, Mt Pisgah, Newell, Lilac, and Creekside Dr.

Walnut Creek School District: Key Performance Indicators

Route Alignment, Speed, and Labor Statistics

Walnut Creek School District

FY17 On Time	Length (mi)	Scheduled Speed	Actual Speed
87%	48.4	13.0	12.5
22%	-8%	-5%	-7%

# Stops	Stop Spacing (mi)	# of Rights	# of Lefts
101	0.24	26	27
-12%	-22%	7%	6%

In-Service Time	Layover	Deadhead	Total Hours
36%	11%	54%	17.7
-8%	-37%	21%	-6%

Walnut Creek School District

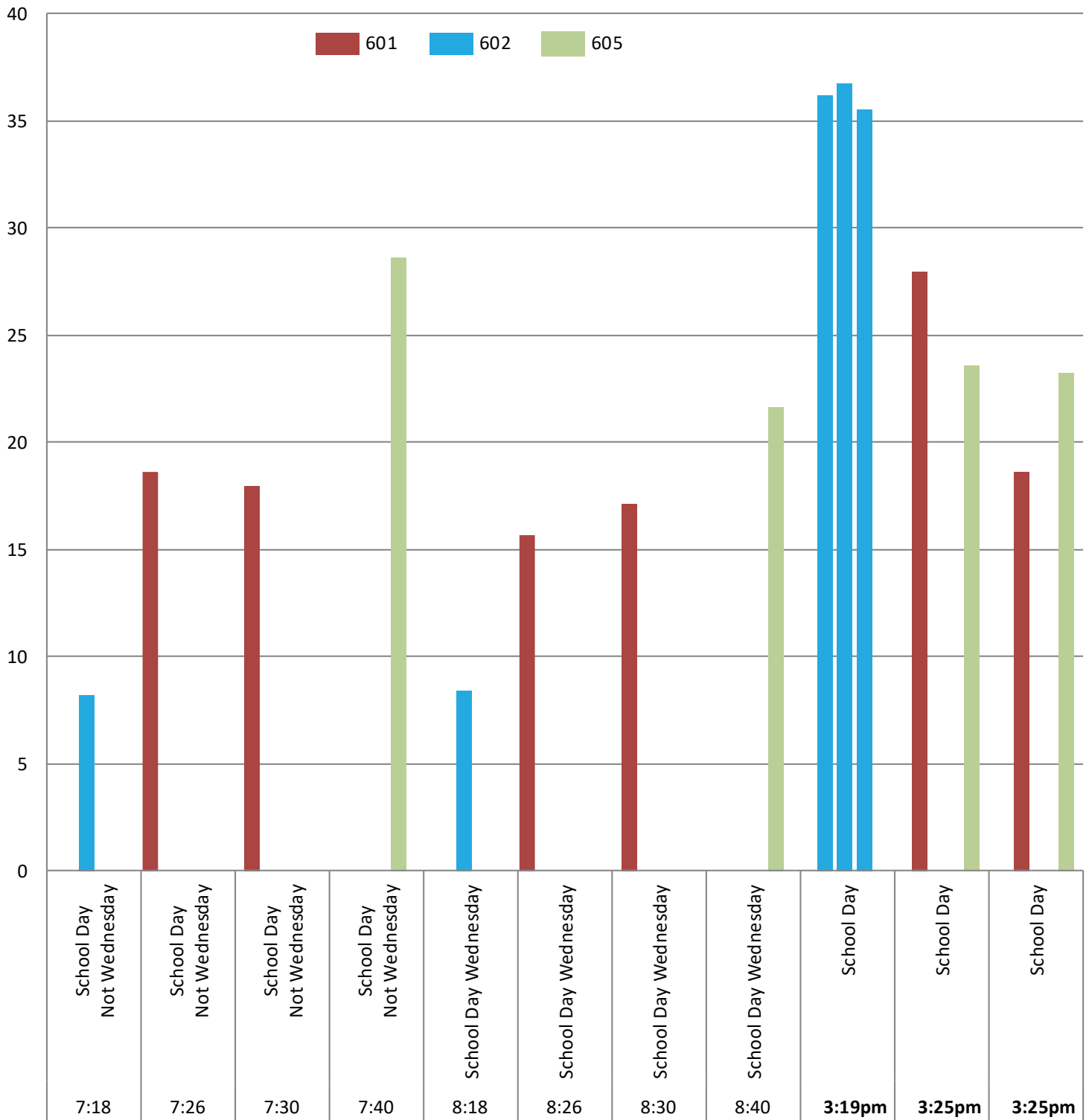
Census Population, Jobs, and Demographics by Route

Population	Youth	Youth/mi	Poverty
21,507	3,957	445	7%
-34%	-48%	-21%	2%

Limited English	Minority	Disabled	No Car
9%	32%	11%	9%
56%	-11%	29%	63%

Youth %			(Legend)
18%			(route value)
-20%			(% diff from AVG)

WALNUT CREEK SCHOOL DISTRICT TRIP LEVEL RIDERSHIP FALL 2017

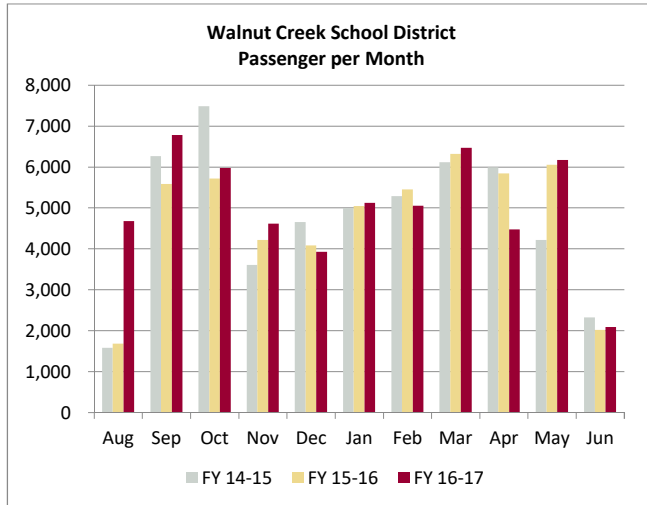


Data derived from Clever Devices APCs. Trip totals may not add up to monthly ridership due to sampling methodology.

Walnut Creek School District

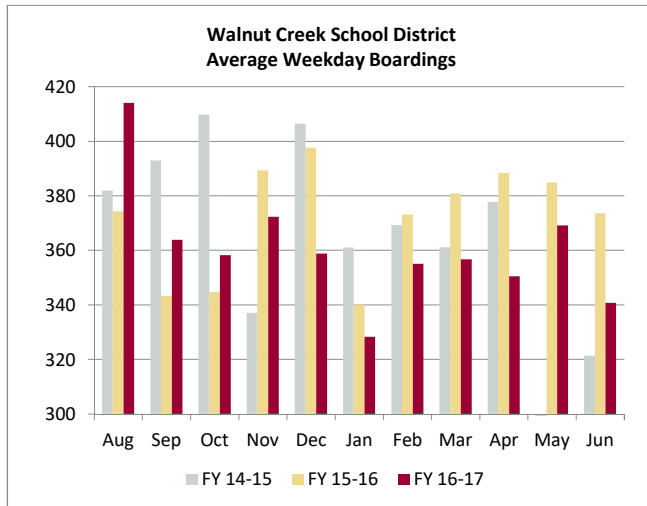
Passenger per Month

	FY 14-15	FY 15-16	FY 16-17
Aug	1,580	1,680	4,675
Sep	6,259	5,583	6,781
Oct	7,479	5,715	5,976
Nov	3,601	4,211	4,614
Dec	4,651	4,077	3,923
Jan	4,995	5,039	5,121
Feb	5,284	5,449	5,049
Mar	6,110	6,317	6,467
Apr	5,991	5,840	4,474
May	4,214	6,051	6,168
Jun	2,319	2,018	2,084

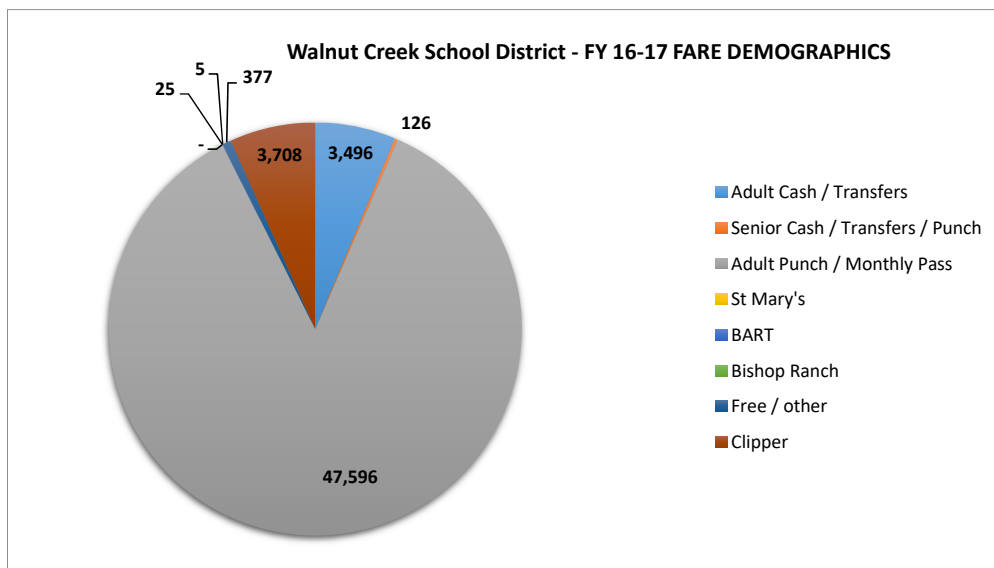
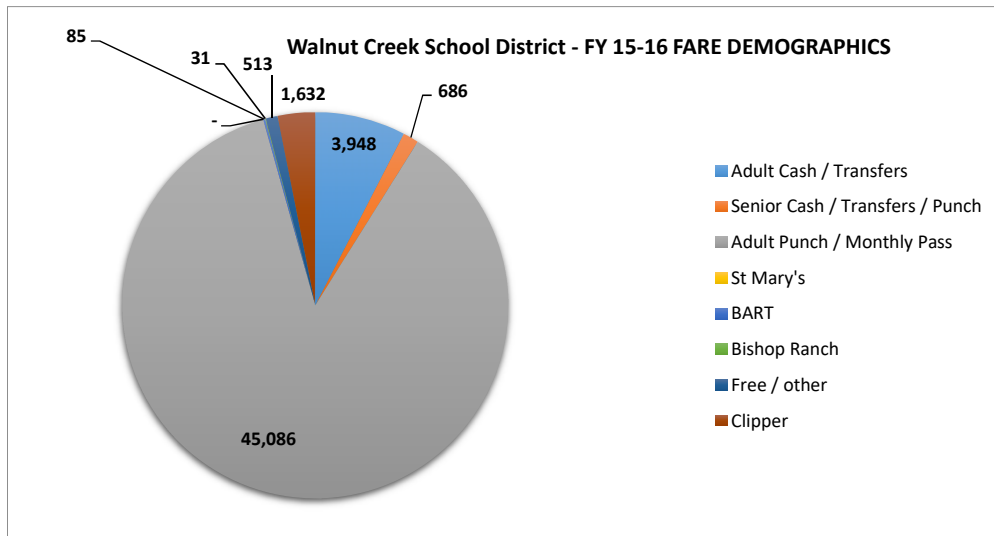
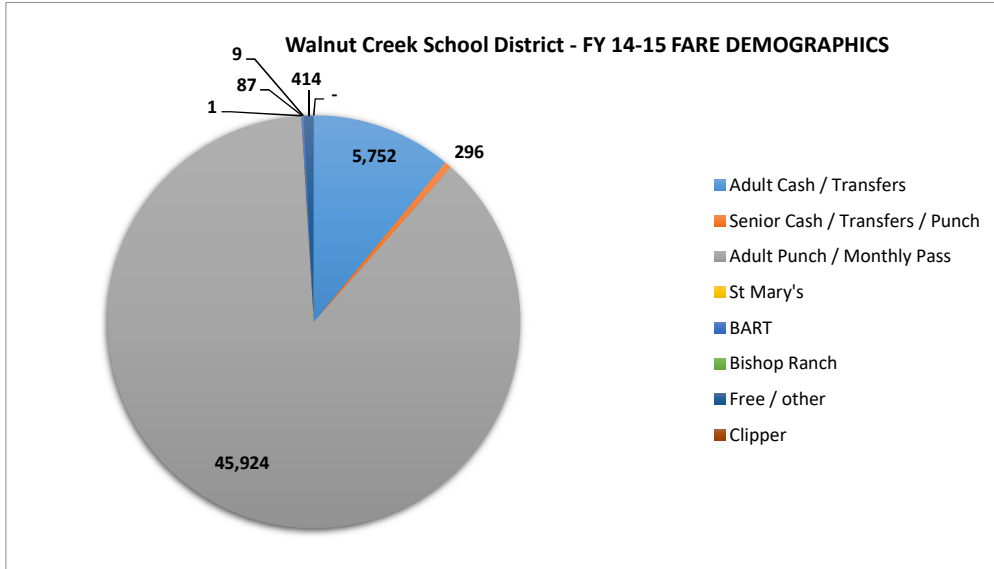


Avg Wkdy Boardings

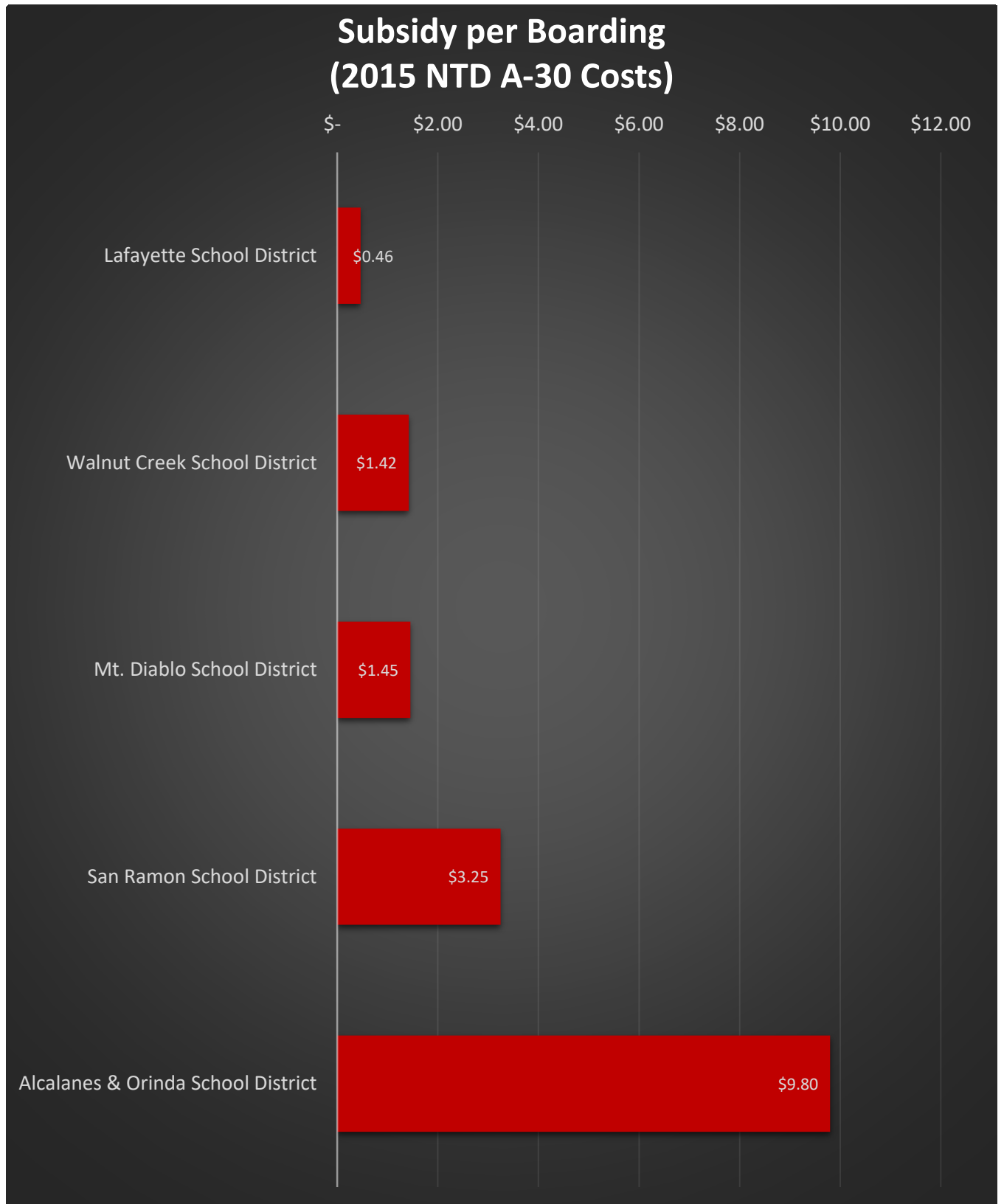
	FY 14-15	FY 15-16	FY 16-17
Aug	382	374	414
Sep	393	343	364
Oct	410	345	358
Nov	337	389	372
Dec	406	398	359
Jan	361	340	328
Feb	369	373	355
Mar	361	381	357
Apr	378	388	350
May	273	385	369
Jun	321	374	341



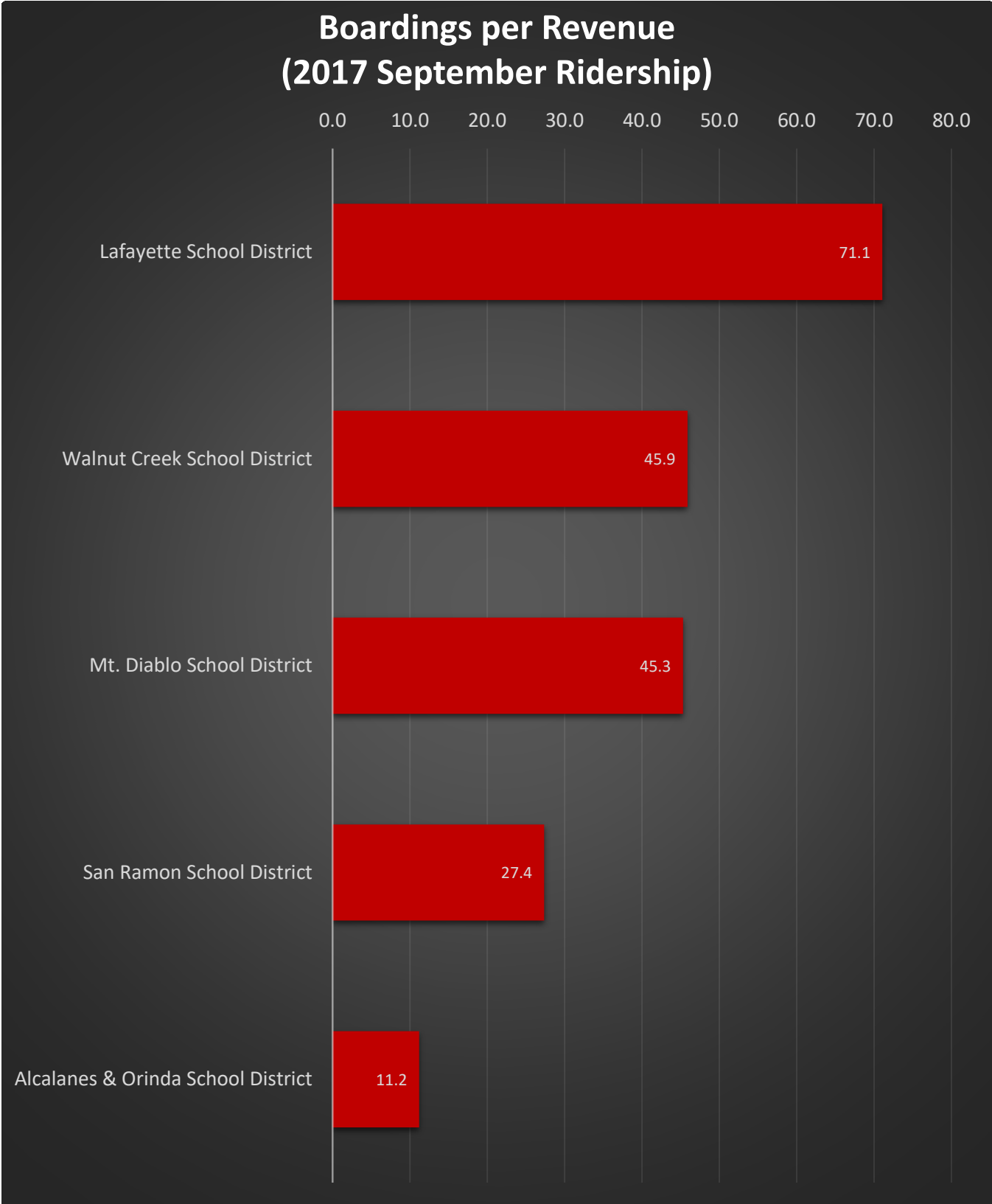
**FARE DEMOGRAPHIC CHART by Fiscal Year
WEEKDAY SELECT SERVICE**



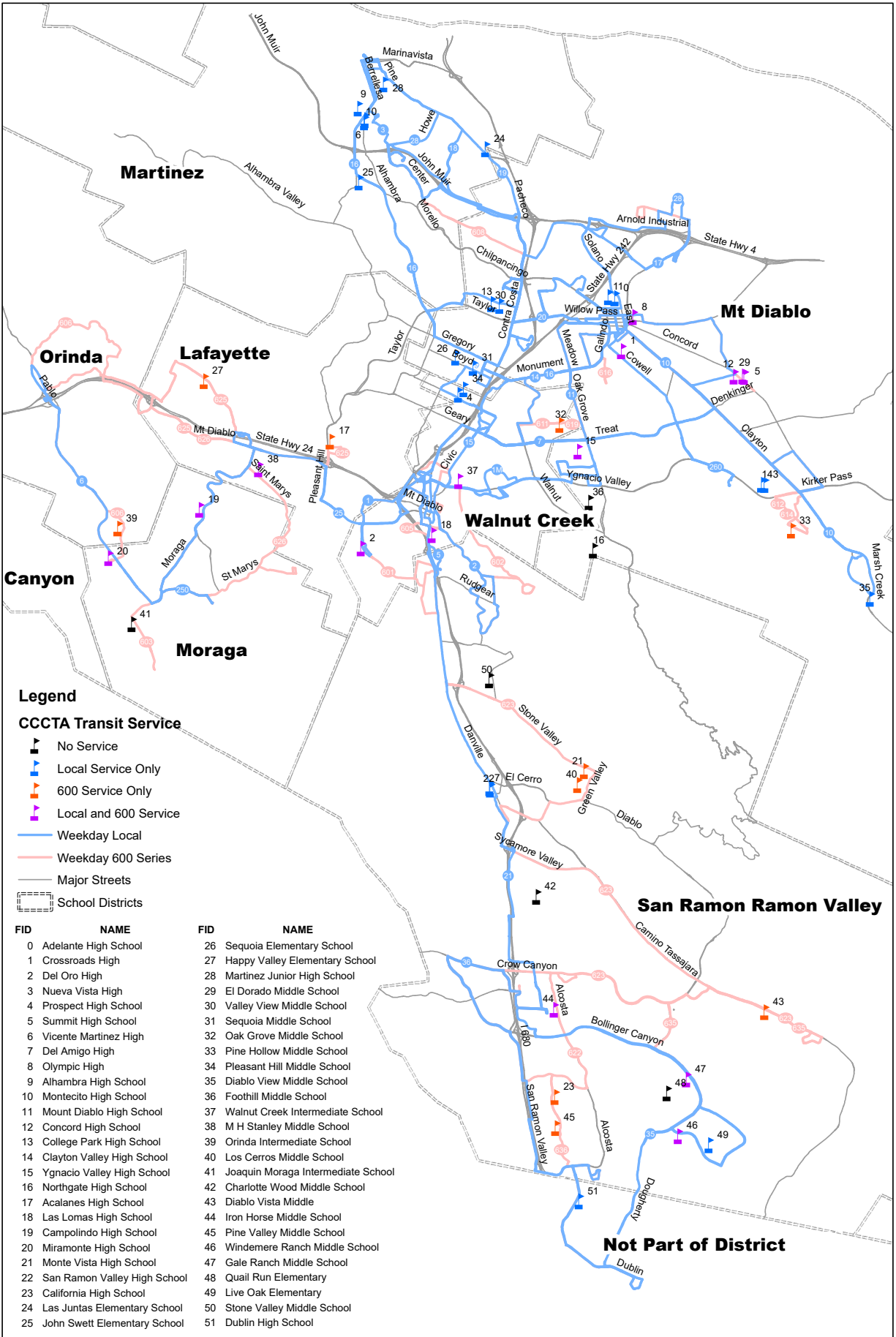
Subsidy Per Boarding by District



Boardings Per Revenue Hour per District



School Service Map



Sources

Reference Maps: County Connection System Map as of August 2015. Credit: Lohnes+Wright

Alignment, Speed and Labor Statistics: Trapeze scheduling software, Fall 2017 Statistics

Census Population, Jobs, and Demographics by Route: Remix planning software, derived from 2010 Census tracts divided into a 1/4 buffer from bus stops. Retrieved October 2017

Trip Level Ridership: Ridecheck Plus software from Clever Devices Automatic Person Counters, (APCs) Spring service change data FY15-FY17

Route Segment Maps: Ridecheck Plus software from Clever Devices Automatic Person Counters, (APCs) Spring service change data FY15-FY17

Route Level Ridership by Month: Monthly O&S Board Reports FY15-FY17 (route level worksheets)

Route Fare Demographics: Monthly O&S Board Reports FY15-FY17 (route level worksheets), data derived from bus operator input onboard bus. Totals may not equal APC data due to sampling methodology.

Subsidy per Boarding per Route: Costs from the 2015 A-30 National Transit Database (NTD) form. Fare revenue is the average fare per boarding as per the 2015 NTD submittal. Data is presented to roll up into total costs and may not represent marginal costs for specific routes.

Boardings per Revenue Hour: Hours are derived from a typical Monday in the Fall 2017 booking from Trapeze software. Ridership is the average weekday ridership from September 2017.

Schools Served Map: As of Fall 2017 local and 600 series routes. School data from respective districts.

Central Contra Costa County Transit Authority

Comprehensive Operations Analysis

School Routes, FY 2016/17

County Connection Administrative Offices
2477 Arnold Industrial Way
Concord, CA 94520
Office: 925-676-1976
countyconnection.com

Customer Service: 925-676-7500
customerservice@countyconnection.com

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Report prepared in December 2017