



2019 Annual Passenger Count

Citizens Advisory Committee (CAC)

June 19th, 2019

Agenda Item #8

OVERVIEW

1. Purpose of Annual Count
2. Count Methodology
3. 2019 Challenges
4. 2019 Count Results
5. Summary
6. Next Steps

ANNUAL PASSENGER COUNT PURPOSE

- Obtain accurate count of Caltrain passengers to be used for various operations planning activities
 - Data for evaluating service changes
 - Identify trends: station, time, train, direction
 - Allocate resources to address capacity issues
 - Calibrate revenue-based ridership estimates
 - Data for future service planning

METHODOLOGY

- Boardings and alightings headcount on total of 184 trains
 - Count at each door on each cars at each station
 - Each train counted twice on mid-weekdays (Tue, Wed, Thu)
- Weekday count presented as Mid-Weekday Average
- “Bikes denied boarding” count (“bike bump” – 8th year)

CHALLENGES

- Survey in mixed-fleet environment
 - Gallery Car consist – 1 door/car; 5 or 6 cars
 - Bombardier Car consist – 2 doors/car; 6 cars
- Count during SF Weekend Service Closure
 - Decided not to conduct weekend count as a part of Annual Count because likely alter customer behavior and counts
 - Bus bridge between Bayshore and San Francisco
 - Caltrain promoted use of other transit alternatives
 - However: Passenger count at Bayshore performed for all trains on every weekends during the Closure

TERMINOLOGY – PASSENGER CATEGORY

- “Passengers”
 - All customers boarding/alighting
- “Bicycles”
 - Customers bringing bicycles as boarding/alighting
- “Passengers Needing Assistance” (PNA)
 - Customers assisted by crews when boarding and/or alighting (e.g. use of wheelchair lift)

TERMINOLOGY – TIME OF DAY

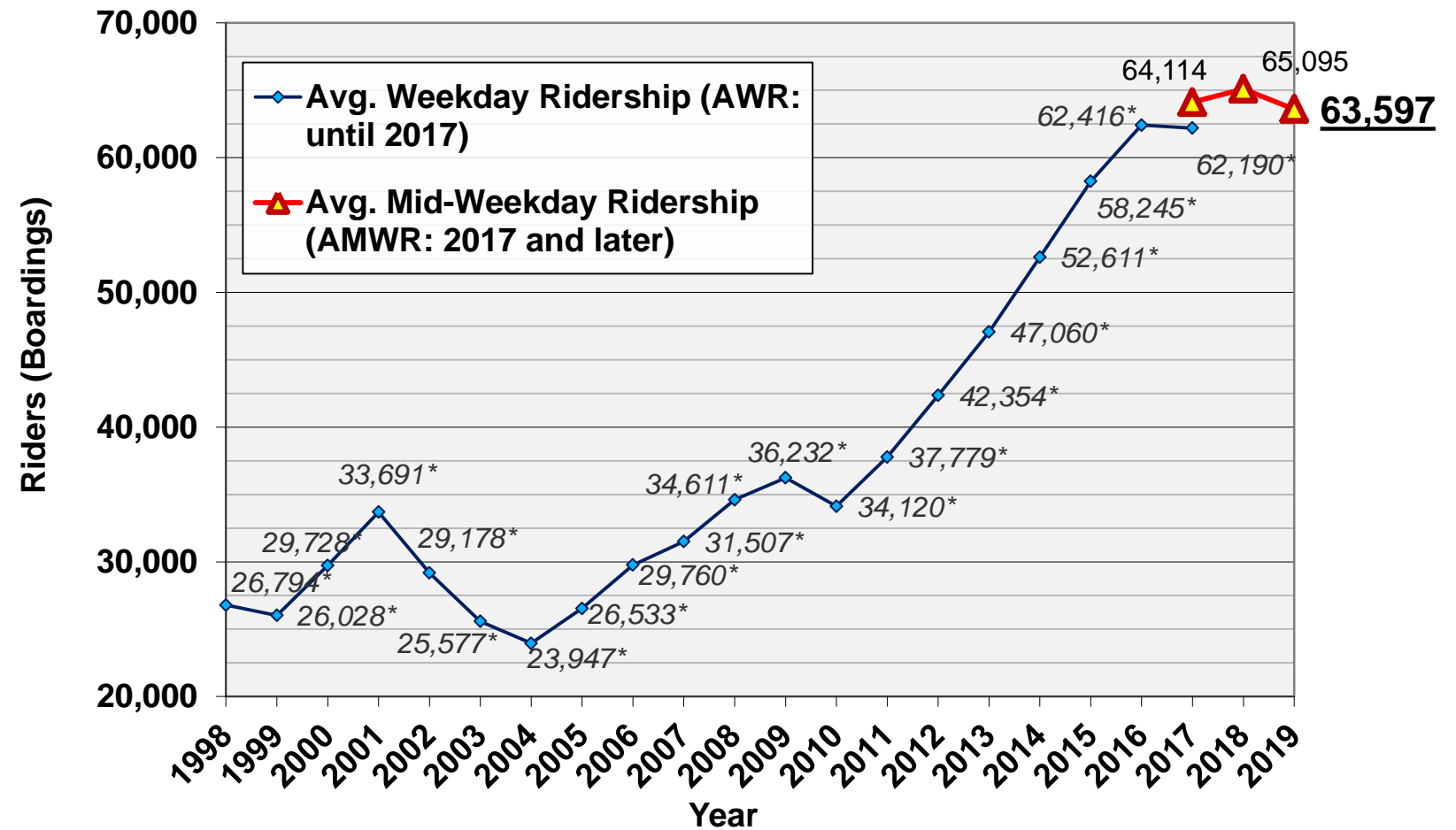
- AM peak trains: leaving the scheduled origin from beginning of service day to 8:59 AM
- PM peak trains: leaving the scheduled origin from 3:00 PM to 6:59 PM
- Off-Peak trains:
 - Midday trains: leaving the scheduled origin between the end of AM peak period and the beginning of PM peak period
 - Evening trains: leaving the scheduled origin after the end of PM peak period

TERMINOLOGY – PEAK DIRECTION

- Traditional peak: northward commuting
 - Northbound in AM
 - Southbound in PM
- Reverse peak: southward commuting
 - Southbound in AM
 - Northbound in PM

AVERAGE (MID-) WEEKDAY RIDERSHIP

- 63,597 AMWR
 - 2.3% decrease from 2018



BOARDINGS BY TIME PERIOD ('18 vs '19)

Market	2018 AMWR	2019 AMWR	Difference	% Change
Traditional Peak (AM Peak NB + PM Peak SB)	34,373	34,552	179	0.5%
Midday	6,642	7,010	368	5.5%
Reverse Peak (AM Peak SB + PM Peak NB)	20,745	19,247	-1,498	-7.2%
Evening	3,335	2,789	-546	-16.4%
TOTAL	65,095	63,597	-1,498	-2.3%

Note: Ridership Ons and Offs are averaged over two days and rounded which may lead to single-digit discrepancies in Total Ons and Offs.

BOARDINGS BY TRAIN TYPE ('18 vs '19)

Service Type	Boardings - Peak Periods			
	2018 AMWR	2019 AMWR	Change	% Change
Baby Bullet	914	902	-11	-1.2%
Limited	856	832	-25	-2.9%
Local	412	421	9	2.1%
All Trains	835	817	-18	-2.2%

Note: Ridership Ons and Offs are averaged over two days and rounded which may lead to single-digit discrepancies in Total Ons and Offs.

STATION BOARDINGS

- 11 stations with all day boardings increased ('18 to '19)

STATION	2018 AMWR	2019 AMWR	18-'19 Change	Change%
Tamien	1,286	1,422	136	10.6%
San Antonio	943	1,017	74	7.9%
San Bruno	695	751	56	8.0%
Lawrence	949	1,004	55	5.8%
San Mateo	2,291	2,324	33	1.4%
Burlingame	1,104	1,131	28	2.5%
Bayshore	247	260	14	5.5%
Morgan Hill	237	251	14	5.7%
Blossom Hill	146	159	13	8.6%
San Carlos	1,331	1,341	10	0.7%
Redwood City	4,212	4,220	8	0.2%

Note: Ridership Ons and Offs are averaged over two days and rounded which may lead to single-digit discrepancies in Total Ons and Offs.

STATION BOARDINGS

- 18 stations with all day boardings decreased ('18 to '19)

STATION	2018 AMWR	2019 AMWR	'18-'19 Change	% Change
San Martin	87	84	-3	-3.4%
College Park	108	103	-6	-5.1%
Capitol	78	71	-8	-9.6%
Hillsdale	3,229	3,217	-12	-0.4%
South San Francisco	468	453	-15	-3.2%
Santa Clara	1,097	1,074	-23	-2.1%
California Avenue	1,693	1,634	-59	-3.5%
Belmont	780	718	-62	-8.0%
Gilroy	252	187	-66	-26.0%

STATION	2018 AMWR	2019 AMWR	'18-'19 Change	% Change
Hayward Park	583	506	-77	-13.2%
San Jose Diridon	4,876	4,795	-81	-1.7%
Menlo Park	1,728	1,639	-89	-5.1%
22nd Street	1,977	1,872	-106	-5.3%
Millbrae	3,340	3,194	-146	-4.4%
Sunnyvale	3,364	3,208	-156	-4.6%
Mountain View	4,810	4,560	-251	-5.2%
Palo Alto	7,764	7,384	-380	-4.9%
San Francisco	15,427	15,027	-400	-2.6%

Note: Ridership Ons and Offs are averaged over two days and rounded which may lead to single-digit discrepancies in Total Ons and Offs.

BOARDINGS BY COUNTY

County	2018 AMWR	% of Total AMWR	2019 AMWR	% of Total AMWR	Difference '18 vs '19	% Change '18 vs '19
San Francisco	17,651	27.1%	17,159	27.0%	-492	-2.8%
San Mateo	19,757	30.4%	19,491	30.6%	-267	-1.3%
Santa Clara	27,687	42.5%	26,948	42.4%	-739	-2.7%
TOTAL	65,095	100.0%	63,597	100.0%	-1,498	-2.3%

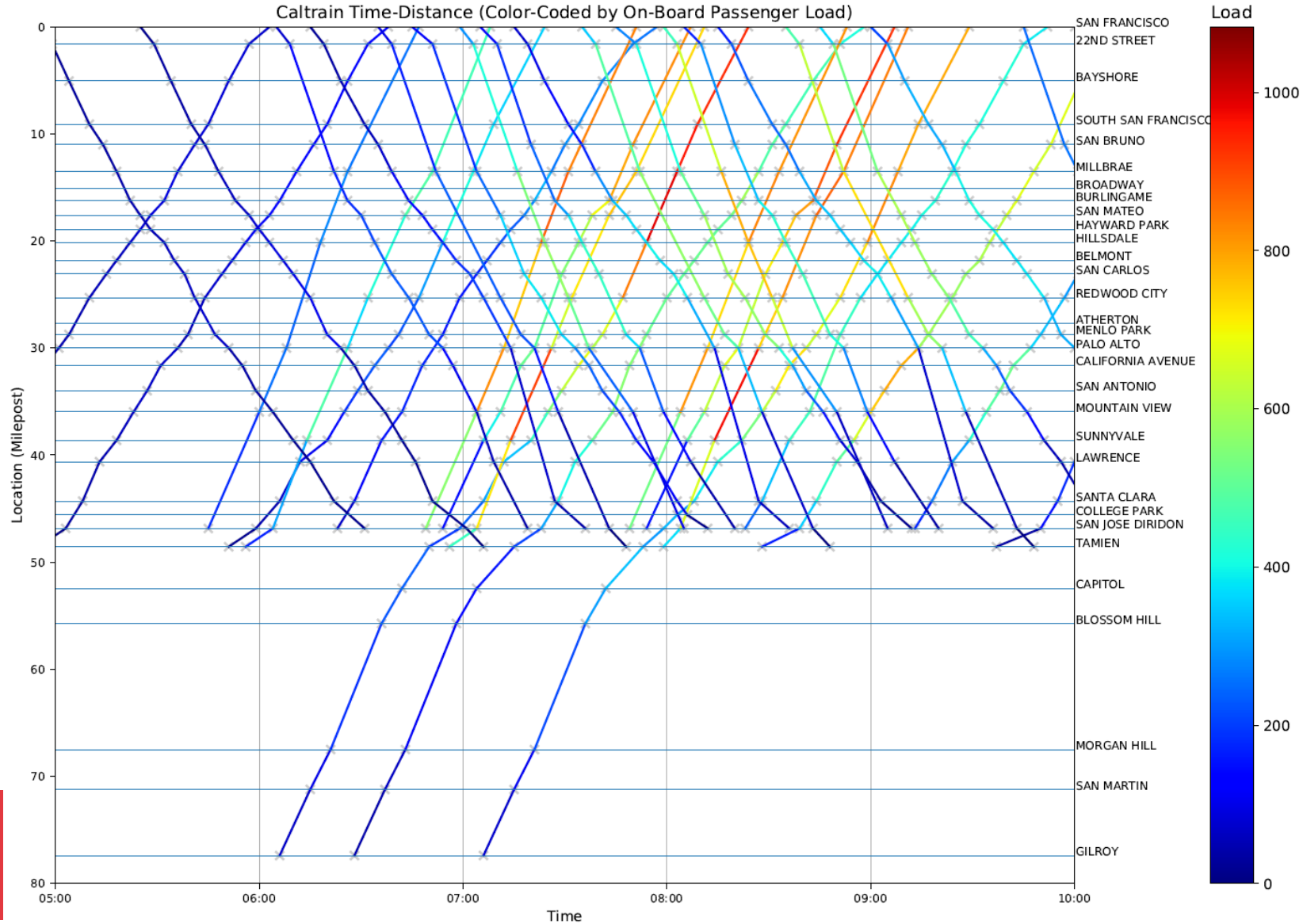
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TOP 10 BOARDING STATIONS

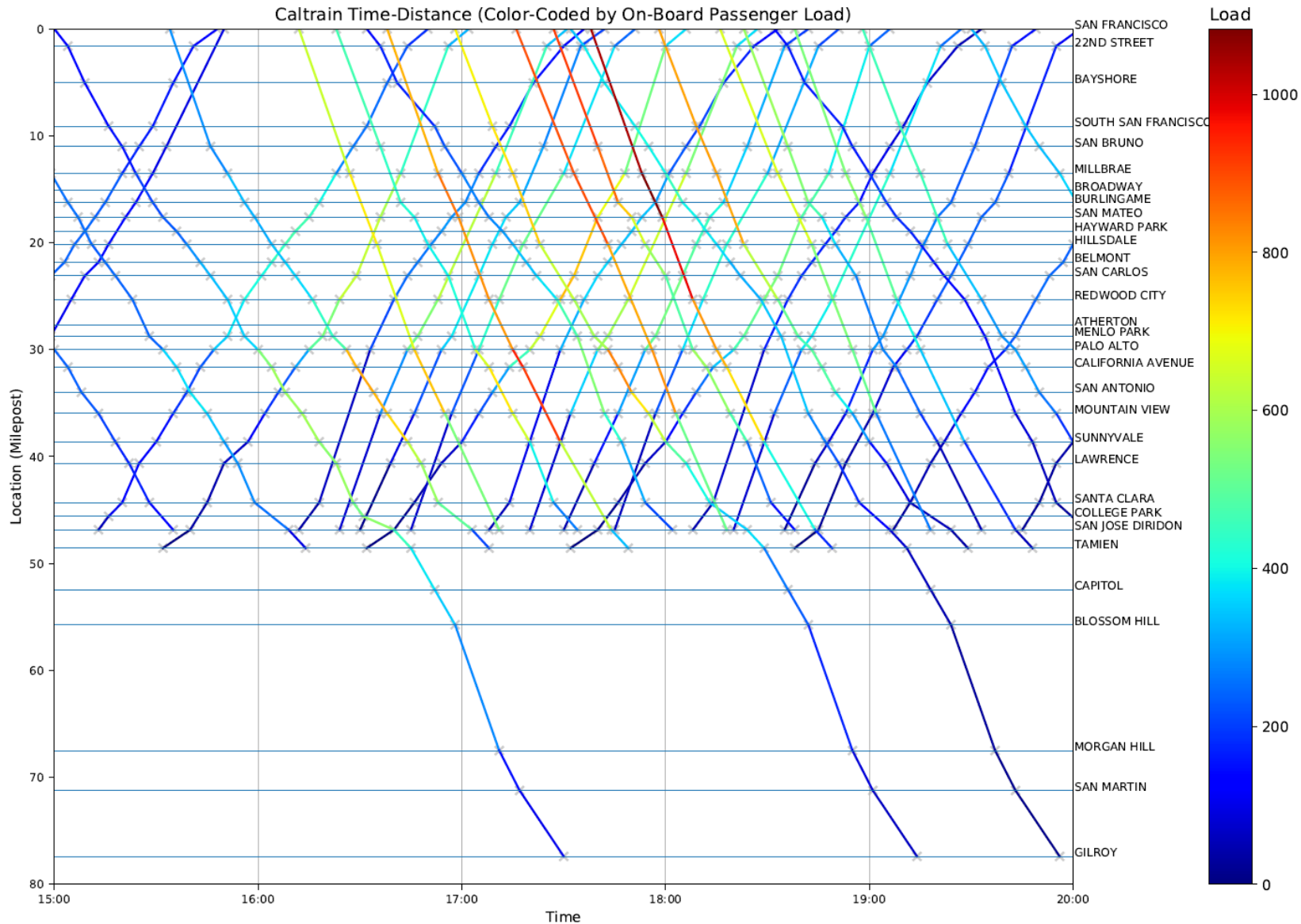
Station	2018		2019		Change in AMWR
	Rank	AMWR	Rank	AMWR	
San Francisco	1	15,427	1	15,027	-400
Palo Alto	2	7,764	2	7,384	-380
San Jose Diridon	3	4,876	3	4,795	-81
Mountain View	4	4,810	4	4,560	-251
Redwood City	5	4,212	5	4,220	8
Hillsdale	8	3,229	6	3,217	-12
Sunnyvale	6	3,364	7	3,208	-156
Millbrae	7	3,340	8	3,194	-146
San Mateo	9	2,291	9	2,324	33
22nd Street	10	1,977	10	1,872	-106

Note: Ridership Ons and Offs are averaged over two days and rounded which may lead to single-digit discrepancies in Total Ons and Offs.

PASSENGER LOADS – AM PEAK



PASSENGER LOADS – PM PEAK



BUSIEST NB TRAINS: MAX. LOAD

- 10 trains at $\geq 95\%$ seating capacity at max. load location

Northbound						
	Train #	Depart SJ	Leaving Station	Max Load	Train Capacity	Percent of Capacity
g	217	6:59 AM	Hillsdale	989	760	130%
b	329	8:04 AM	Sunnyvale	970	760	128%
	225	7:54 AM	San Bruno	925	760	122%
b	319	7:04 AM	Sunnyvale	908	760	119%
b	313	6:49 AM	Hillsdale	874	760	115%
b	323	7:49 AM	Hillsdale	826	760	109%
g	227	7:59 AM	Hillsdale	823	760	108%
	215	6:54 AM	San Bruno	820	760	108%
	233	8:39 AM	San Antonio	790	760	104%
	269	4:40 PM	Redwood City	766	760	101%

b = Baby Bullet; g = Gilroy train; Light orange = AM (“traditional peak”); Light blue = PM (“reverse peak”)

BUSIEST SB TRAINS: MAX. LOAD

- 12 trains at $\geq 95\%$ seating capacity at max. load location

Southbound						
	Train #	Depart SF	Leaving Station	Max Load	Train Capacity	Percent of Capacity
b	376	5:38 PM	Millbrae	1,083	760	143%
b	366	4:38 PM	Palo Alto	948	760	125%
	258	3:34 PM	California Avenue	789	650	121%
	272	5:27 PM	San Francisco	913	760	120%
b	370	5:16 PM	San Francisco	890	760	117%
	262	4:23 PM	California Avenue	718	650	110%
g	268	4:58 PM	Palo Alto	830	760	109%
	278	5:58 PM	South San Francisco	796	760	105%
b	324	7:59 AM	Millbrae	781	760	103%
b	380	6:16 PM	Millbrae	666	650	102%
b	360	4:12 PM	Palo Alto	757	760	100%
b	330	8:35 AM	Millbrae	724	760	95%

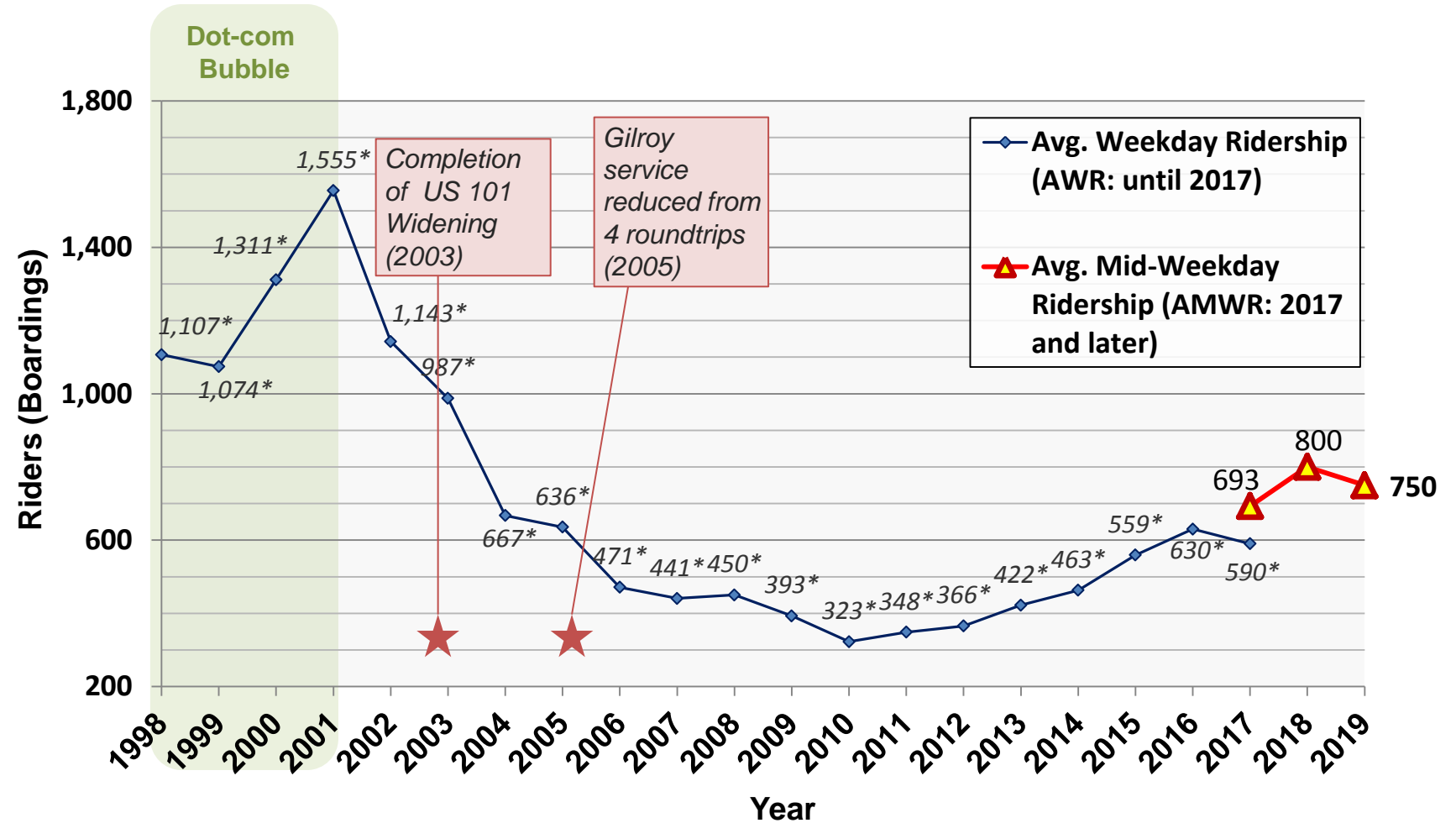
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BUSIEST TRAINS: 2018 vs. 2019

- Trains with $\geq 95\%$ seating capacity at max. load location decreased
 - NB: 11 trains in 2018 → 10 trains in 2019
 - SB: 14 trains in 2018 → 12 trains in 2019
- Likely factors:
 - Reverse peak ridership decrease
 - Increased 6-car consist runs
 - Implemented in December 2018
 - 3 more 6-car consists on fleet roaster
 - 54 trains scheduled to operate in 6-car consist (+12 from pre Dec. 2018)

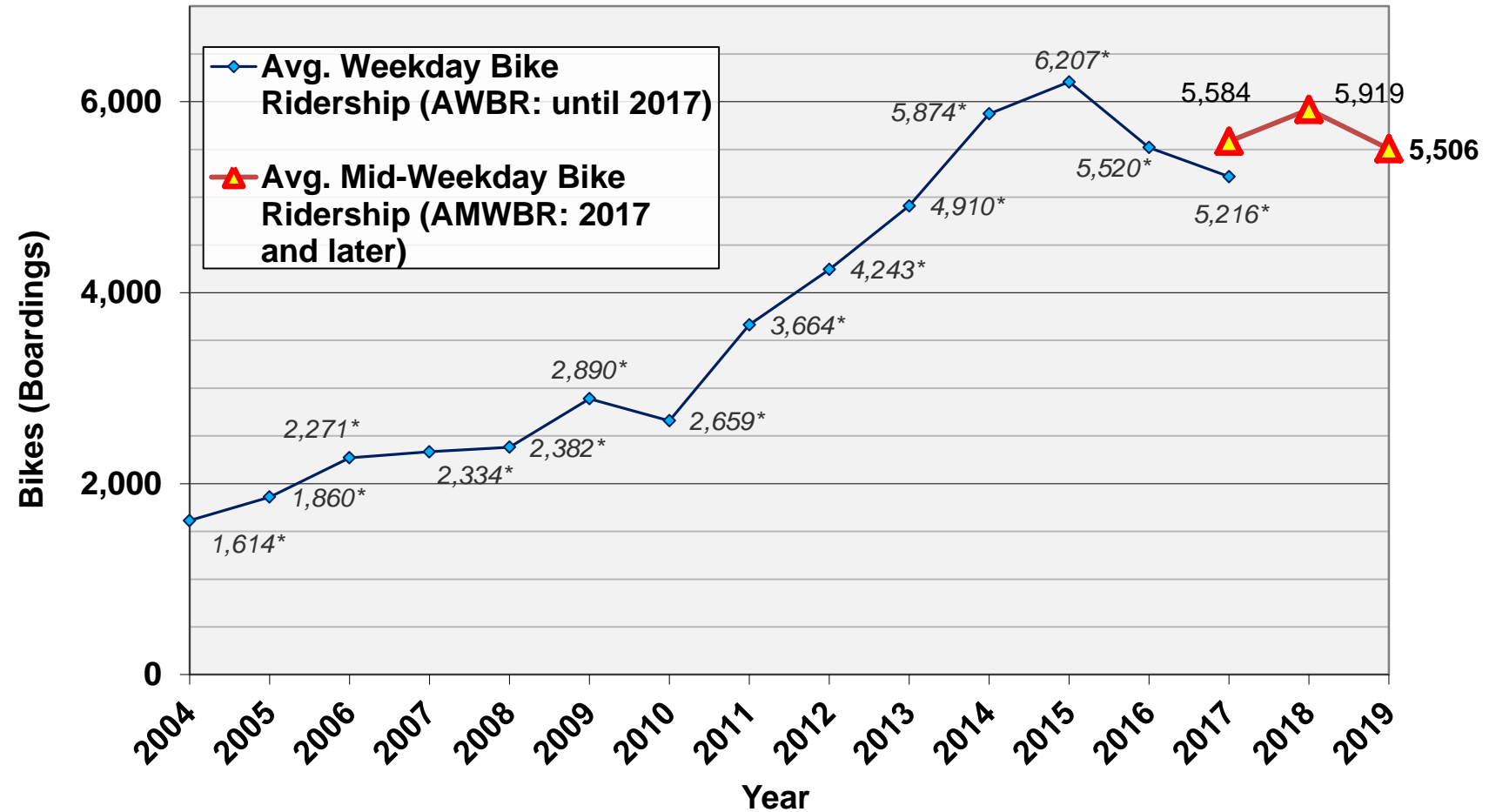
GILROY AVG. (MID-) WEEKDAY RIDERSHIP

- 750 AMWR
 - 6.3% decrease from 2018



AVG. (MID-) WEEKDAY BIKE RIDERSHIP

- 5,506 AMWBR
 - 7.0% decrease from 2018
 - 8.7% of all passengers



BICYCLE BOARDINGS: TOP 10 STATIONS

Station	2018		2019		Change in AMWBR
	Rank	AMWBR	Rank	AMWBR	
San Francisco	1	1,442	1	1,225	-217
Palo Alto	2	796	2	760	-36
Mountain View	3	551	3	447	-105
San Jose Diridon	5	359	4	360	1
Redwood City	4	407	5	351	-56
Sunnyvale	6	303	6	262	-41
22nd Street	8	251	7	225	-26
Hillsdale	7	257	8	220	-37
California Avenue	9	225	9	216	-9
Menlo Park	11	203	10	191	-12

Note: San Mateo Station was the 10th busiest station by average weekday boarding volume (218) last year.

DENIED BIKE BOARDINGS (“BIKE BUMP”)

- Eighth year counted with annual count
- 16 bikes bumped (21 bikes bumped in 2018)
- Equiv. comparison:
 - Bumps observed per 1,000 bikes boarded decreased to 1.5 (1.6 in 2018)
 - Rate fell below 2014 level
- Observed at 7 stations, 6 trains (all NB; no SB)

PASSENGER NEEDING ASSISTANCE (PNA) BOARDINGS

- 39 Mid-Weekday Avg. PNA boardings (+4 from 2018)
 - 9 trains with >1 maximum PNA loads
 - Stations with the highest PNA boardings:
 - San Francisco (8)
 - Redwood City (6)
 - San Jose Diridon (6)
 - Palo Alto (5)

SUMMARY

- No weekend count conducted due to SF Weekend Closure
- Avg. mid-weekday ridership decreased from 2018 in all categories
 - All day ridership: -2.3% to 63,597
 - Gilroy ridership: -6.3% to 750
 - Bike ridership: -7.0% to 5,506
- Bike bump also decreased both in numbers and rate

NEXT STEPS

- Calibrate revenue-based ridership model based on Annual Count result
- Incorporate data w/ Caltrain Business Plan efforts to strategize for future scheduling and passenger capacity
- Plan and prepare for future Annual Counts
- Continue working on count methodology improvements
 - Automatic Passenger Counters (APCs) on EMUs

2019 Annual Passenger Count **QUESTIONS**

For additional information

Key Findings Report & raw data (excel) posted by mid-summer to:

<http://www.caltrain.com/about/statsandreports/Ridership.html>