

JPB CAC

CORRESPONDENCE
AS OF

December 20, 2023

Caltrain/JPB Citizens Advisory Committee Meeting 20-December-2023

Agenda Item # 9: Caltrain Ridership Reporting Methodology

Comments by Jeff Carter

This is one of my long time hobbies, I have been studying/analyzing Caltrain ridership and ticket sales since the late 1970's, when Southern Pacific fare media sales were on hand written spreadsheets.

Historically, ridership has been based on ticket sales and an annual (weekday only) count conducted by SP staff usually in October. This continued when, in 1980, Caltrans (and the 3 counties) took over funding and management of the service through 1992 when the JPB took over. The service continued to be operated by SP. Monthly ridership or "rides sold" was calculated based on ticket sales as follows:

One-Way = 1 ride sold.

Round trip = 2 rides sold.

20-ride = 20 rides sold.

Weekly = 14 rides (2 rides sold for each day of the week). Good for unlimited rides for week issued.

5-day monthly = 2 rides sold per business day each month. Good for unlimited weekday rides.

7-day monthly = 2 rides sold per calendar day each month. Good for unlimited rides every day.

Student Weekly 2 sold rides per school day each week

Student Monthly 2 rides sold per school day each month.

Student tickets were available to students through age 26 attending college.

There were no TVM's or Clipper, tickets were sold at staffed stations and by conductors on trains, monthly tickets were also available through "ticket by mail." SP tracked and tabulated tickets by ticket type and between zones, (similar to today). The total number of rides sold added up to the total monthly ridership.

In 1982, Caltrans implemented fare changes which included merging the 5-day monthly and 7-day monthly into an unlimited ride monthly at the lower cost of the former 5-day monthly. This, however led SP to assume/calculate that the new monthly was equal to (2) rides for each calendar day of the month, so a 31 day month was equal to 62 rides, a 30 day month was equal to 60 rides and February was equal to 56 or 58 rides. This was not acceptable to Caltrans as it grossly overestimated monthly ridership since Caltrans paid SP \$0.10 per rider, leading to higher operating costs. This led to a compromise between Caltrans and SP whereas each monthly ticket sold is equal to 1.56 times the number of calendar days each month, for example:

31-day month = 48.36 rides sold.

30-day month = 48.36 rides sold.

28-day month = 43.68 rides sold.

29-day month = 45.24 rides sold.

There have been numerous fare changes over the years, i.e. tickets changed/eliminated, zone changes, etc. Through it all, monthly ridership has been calculated in the same manner. Comparing the annual counts with the monthly ridership (based on number of weekdays, Saturdays, Sundays, and holidays) showed the estimated monthly ridership to be higher than the annual count. Using the February 2017 weekday and weekend passenger count finds the monthly fare media ridership to be 5.5% to 6.3% higher for the months January, February, and March (see chart). Of course I had to make some assumptions about holidays (New Years observed, MLK Day and Presidents Day being Saturday ridership).

In 2018-2019, JPB Staff began to analyze and recalibrate fare media ridership estimation to be more accurate for both monthly ridership and average weekday ridership. Then the pandemic hit in March 2020, and forced Staff to again recalibrate the ridership model.

I will go into further details at a later date.

JPB Report Month	Average Weekday ridership	Total Monthly Ridership	February 2017 weekday/ weekend passenger count	Ridership based on Feb 2017 count
January 2017	55,271	1,477,362		
Weekdays	20		62,190	1,243,800
Saturdays Including Mon Jan 2 and MLK day Jan 16	6		15,612	93,672
Sundays	5		11,274	56,370
Total	31			1,393,842
JPB Report Monthly Ridership				1,477,362
Difference				83,520
Percent				5.7%
JPB Report Month	Average Weekday ridership	Total Monthly Ridership	February 2017 weekday/ weekend passenger count	Ridership based on Feb 2017 count
February 2017	57,618	1,392,561		
Weekdays	19		62,190	1,181,610
Saturdays Including Mon Feb 20 Presidents Day	5		15,612	78,060
Sundays	4		11,274	45,096
Total	28			1,304,766
JPB Report Monthly Ridership				1,392,561
Difference				87,795
Percent				6.3%
JPB Report Month	Average Weekday ridership	Total Monthly Ridership	February 2017 weekday/ weekend passenger count	Ridership based on Feb 2017 count
March 2017	58,991	1,629,054		
Weekdays	23		62,190	1,430,370
Saturdays no holidays	4		15,612	62,448
Sundays	4		11,274	45,096
Total	31			1,537,914
JPB Report Monthly Ridership				1,629,054
Difference				91,140
Percent				5.6%