

JPB CAC

CORRESPONDENCE
AS OF

August 19, 2020

Givens, Patrice

From: Jeff Carter <jcartrain@aol.com>
Sent: Tuesday, July 14, 2020 7:16 PM
To: cacsecretary [@caltrain.com]
Cc: JCARTRAIN@aol.com
Subject: Comments From Jeff Carter Ridership Raw Data
Attachments: Caltrain Key Performance Statistics December 2018 With Notes Jeff Carter.pdf; feb_2020_ridership_report_standalone Notes By Jeff Carter Revised 14-July-2020.pdf; Mobile Tickets Feb Through Dec 2018 Revised 14-July-2020.pdf; 01 January 2000.pdf

Follow Up Flag: Follow up
Flag Status: Completed

To Caltrain/JPB Citizens Advisory Committee, July 14, 2020.

I submitted the following to the Joint Powers Bard earlier this month. I have made a few minor adjustments to some the attached documents since then...

Each month the board agenda packet includes a monthly Key Performance Statistics Report. This includes a written staff report and several graphs/charts of ridership and ticket sales data. Most recently, staff has produced a chart showing the effects of COVID/shelter in place on ridership. These charts are most likely created from an Excel spreadsheet. I am requesting that the spreadsheet raw data be included as part of the monthly "Key Performance Statistics Report," or as backup data available through the Caltrain website. I would note that some past reports included the raw data used to create the graph showing "Caltrain Mobile Ticketing-Monthly Sales by Ticket Type," I have attached the December 2018 report which appeared in the February 2019 PCJPB Agenda packet, I have noted such in the attached report, plus additional notes on other graphs.

I have entered the data presented in "Graph C", creating my own Excel spreadsheet and graph, (also attached) which is almost identical to "Graph C" in the December 2018 Key Performance Statistics Report. Why can't staff include the spreadsheet with the graph? Why can't staff provide spreadsheet data for all graphs?

Ideally, Caltrain should provide a breakdown by type of fare product i. e:

TVM one-way.

TVM ED one-way.

TVM day-pass

TVM ED day-pass.

TVM Zone upgrade.

Clipper one-way.

Clipper ED one-way.

Clipper monthly.

Clipper ED monthly.

Go-Pass eligible users.

Go-Pass participating companies.

Actual/estimated Go-Pass riders.

Mobile one-way.

Mobile ED one-way.

Mobile day-pass

Mobile ED day-pass.

Mobile Zone upgrade.

Clipper tag-on/tag-off O&D station pairs.

TVM Station of origin to destination zone.

The written monthly staff report goes into some details about monthly usage of fare product changes from year to year and the graphs provide a nice visual representation of usage trends. However, there are some of us transit enthusiasts who like to delve further into the raw data. Caltrain has in fact, posted online, the raw spreadsheet data for the annual passenger counts and most recently posted the raw spreadsheet data from the May 2019 Customer Satisfaction Survey on the Caltrain website. I see no valid reason why ticket sales data can not be posted to the Caltrain website.

I would also note that Caltrain did provide 5 years of raw data with charts some 20 years ago in the monthly performance report, I have attached the 01 January 2000 report for reference.

When BART opened the extension to SFO/Millbrae in 2003, I would have to request ridership data. Subsequently, one of my requests was answered that ridership data is now available on the BART website due to lots of public interest in ridership data. BART ridership can be found here: <https://www.bart.gov/about/reports/ridership>

I would also note that the Metra Rail system in Chicago produces an extensive ridership report each month. I have made notes on the February 2020 "Ridership Trends" and attached for reference. Metra ridership reports can be found here: <https://metrarail.com/about-metra/reports-documents/operations-ridership-data/monthlyannual-ridership>

I do understand the difficult situations at the agency due to COVID. However, I am hoping for a quick reply as I have asked for this numerous times during written and verbal public comments at many board meetings. I am not asking for anything special, this is all data that should be readily available within the agency that is used by staff to create all the reports, presentations, and charts we see in each months agenda packet and Board Meetings.

My Best Regards,

Jeff Carter

AGENDA ITEM # 5(d)
FEBRUARY 7, 2019

**PENINSULA CORRIDOR JOINT POWERS BOARD
STAFF REPORT**

TO: Joint Powers Board

THROUGH: Jim Hartnett
Executive Director

FROM: Michelle Bouchard
Chief Operating Officer, Rail

SUBJECT: **KEY CALTRAIN PERFORMANCE STATISTICS – DECEMBER 2018**

ACTION

Staff Coordinating Council recommends that the Board receive the Performance Report for December 2018.

SIGNIFICANCE

Staff will provide monthly updates to Key Caltrain Performance Statistics, Caltrain Shuttle Ridership, Caltrain Promotions, Special Event Updates and Social Media Analytics.

BUDGET IMPACT

There is no budget impact.

MONTHLY UPDATE

In December 2018, Caltrain's Average Weekday Ridership (AWR) decreased 4.2 percent to 53,258 from December 2017 AWR of 55,574. The total number of passengers who rode Caltrain in December 2018 decreased 4.6 percent to 1,356,071 from 1,422,012 in December 2017. In December 2018, Caltrain ridership was impacted by the Weekend SF Caltrain Closure (effective Saturday, October 6, 2018 through late Spring 2019). In comparing the weekend train counts at Bayshore Station with the 2018 Annual Count baseline, there was a decrease in ridership at Bayshore station by 33.3 percent in December 2018. AWR and Total Monthly ridership has trended down for the previous three months coincident with the weekend shutdowns. Staff has long reported that the current ridership estimating methodology that has been in use since the inception of the Caltrain service does not accurately differentiate between weekday and weekend riders. A new methodology will be implemented in the coming months to more accurately reflect ridership trends for the purpose of monthly reporting. A complete description of the calculation methodology will also be provided.

This month ticket sales for One Way tickets (up 2.4 percent) and ED One Way tickets (up 1.7 percent), increased from December 2017. Ticket sales for Day Passes (down 12.4 percent), ED Day Passes (down 19.8 percent), Monthly Passes (down 8.3 percent) and ED Monthly Passes (down 12.9 percent) decreased from December 2017. Ridership was

also likely impacted by Christmas Eve, Christmas Day, New Year's Eve and Christmas Day falling on back to back Mondays and Tuesdays leading to customers taking longer winter breaks during the holiday season and the shift in fare product usage to One Way tickets (Clipper cash) due to the Monthly Pass fare increase from 28 one-way rides to 30 one-way rides effective July 2018. The implementation of Caltrain Mobile Ticketing (which includes One Way, ED One Way, Day Pass, ED Day Pass, Zone Upgrades and Joint Caltrain + VTA Day Pass purchases) accounted for approximately 2.9 percent (39,498 rides) of December 2018 rides and 4.1 percent (\$287,409) of December 2018 Monthly Ticket Sales Revenue. The number of Eligible Go Pass Employees decreased 2.5 percent to 81,683 from 83,781 from December 2017. The number of participating Go Pass Companies increased to 132 from 125 from December 2017. Farebox Revenue decreased 1.4 percent to \$7,370,371 from \$7,478,583 in December 2017.

On-time performance (OTP) for December 2018 was 92.2 percent compared to 93.9 percent OTP for December 2017. In December 2018 there were 343 minutes of delay due to mechanical issues compared to 499 minutes in December 2017.

Looking at customer service statistics, there were 6.8 complaints per 100,000 passengers in December 2018 which decreased from 8.1 in December 2017.

Shuttle ridership for December 2018 decreased 7.2 percent from December 2017. For the station shuttles, the Millbrae-Broadway shuttle averaged 149 daily riders. The weekend Tamien-San Jose shuttle averaged 16 daily riders. When the Marguerite shuttle was removed, the impact to ridership was a decrease of 13.3 percent. Shuttle routes continue to have DNOs (Did Not Operate) trips, but the loss of shuttle service has leveled off. With support from the shuttle contractor's (MV Transportation) corporate management and new shuttle contractor management, there is renewed a commitment to improve shuttle service and address shuttle staffing shortages. FastTrack efforts to streamline training processes for qualified Class B licensed drivers have been implemented. The Belmont-Hillsdale shuttle and Menlo Park Midday Shuttle remain temporarily discontinued.

Please provide raw spreadsheet data used to create these numbers and graph below.

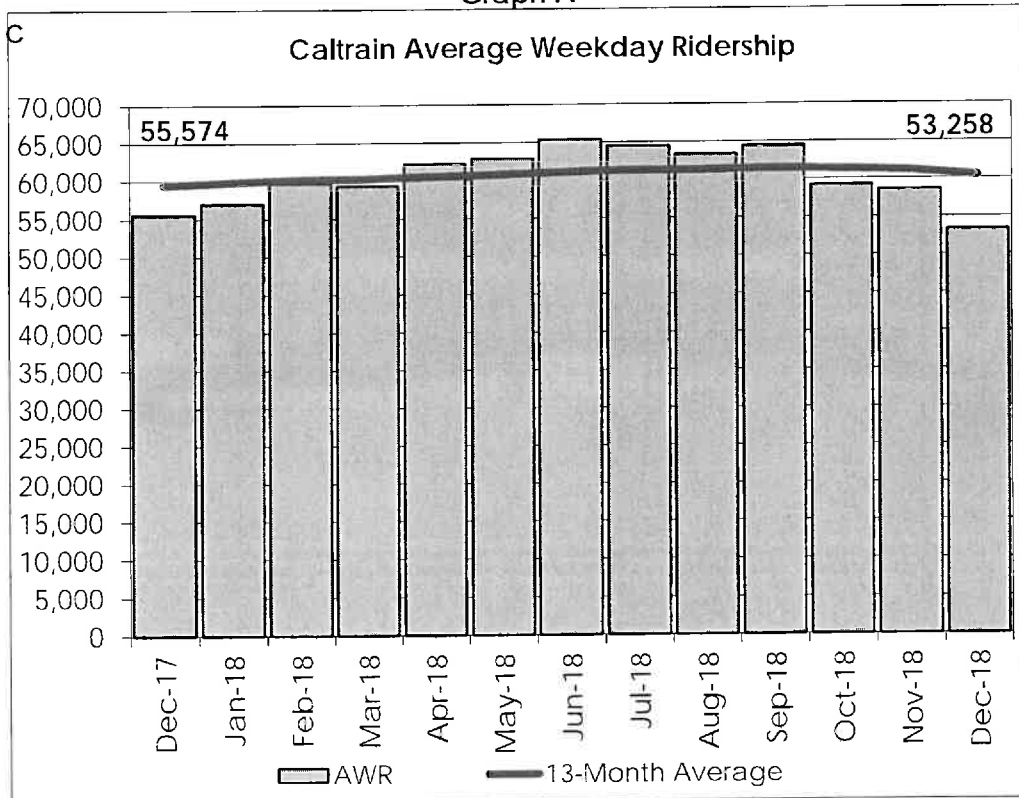
Table A
December 2018

	FY2018	FY2019	% Change
Total Ridership	1,422,012	1,356,071	-4.6%
Average Weekday Ridership	55,574	53,258	-4.2%
Total Farebox Revenue	\$7,478,583	\$7,370,371	-1.4%
On-time Performance	93.9%	92.2%	-1.8%
Average Caltrain Shuttle Ridership	7,200	6,682	-7.2%

Year to Date

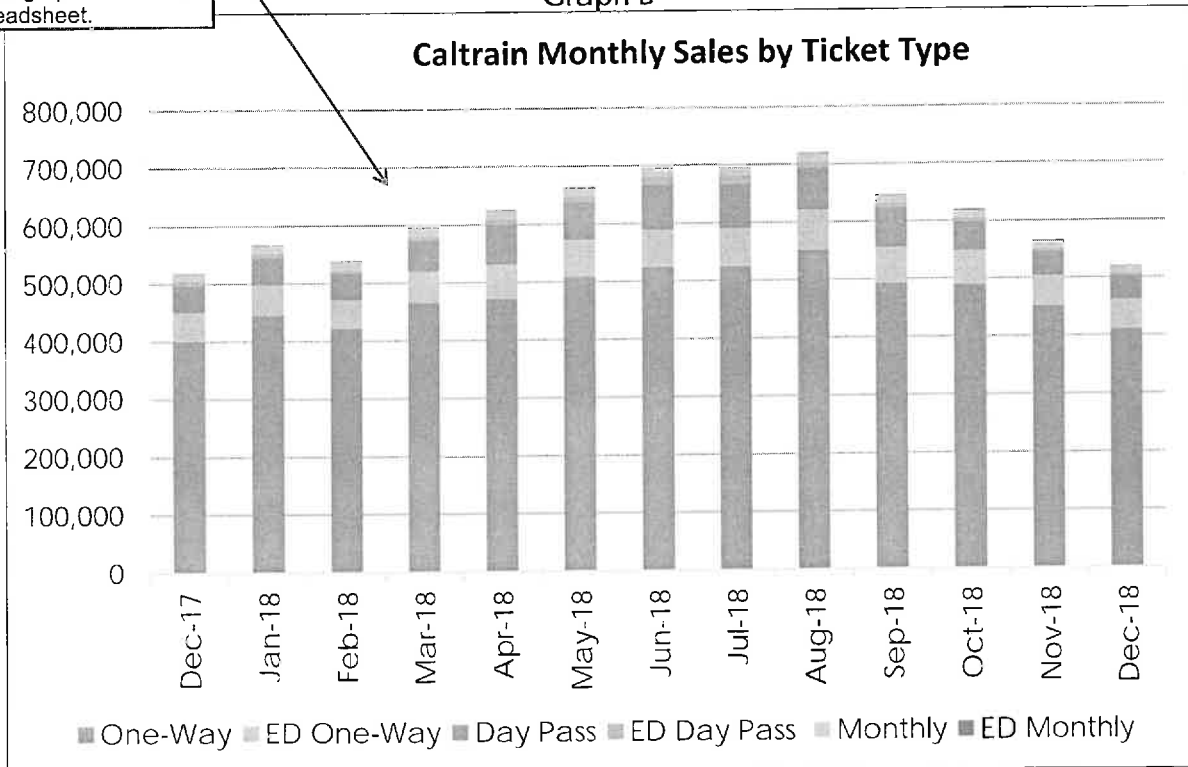
	FY2018	FY2019	% Change
Total Ridership	9,476,324	9,387,686	-0.9%
Average Weekday Ridership	60,915	60,520	-0.6%
Total Farebox Revenue	\$47,977,614	\$51,084,660	6.5%
On-time Performance	94.8%	92.9%	-2.0%
Average Caltrain Shuttle Ridership	8,726	8,110	-7.1%

Graph A



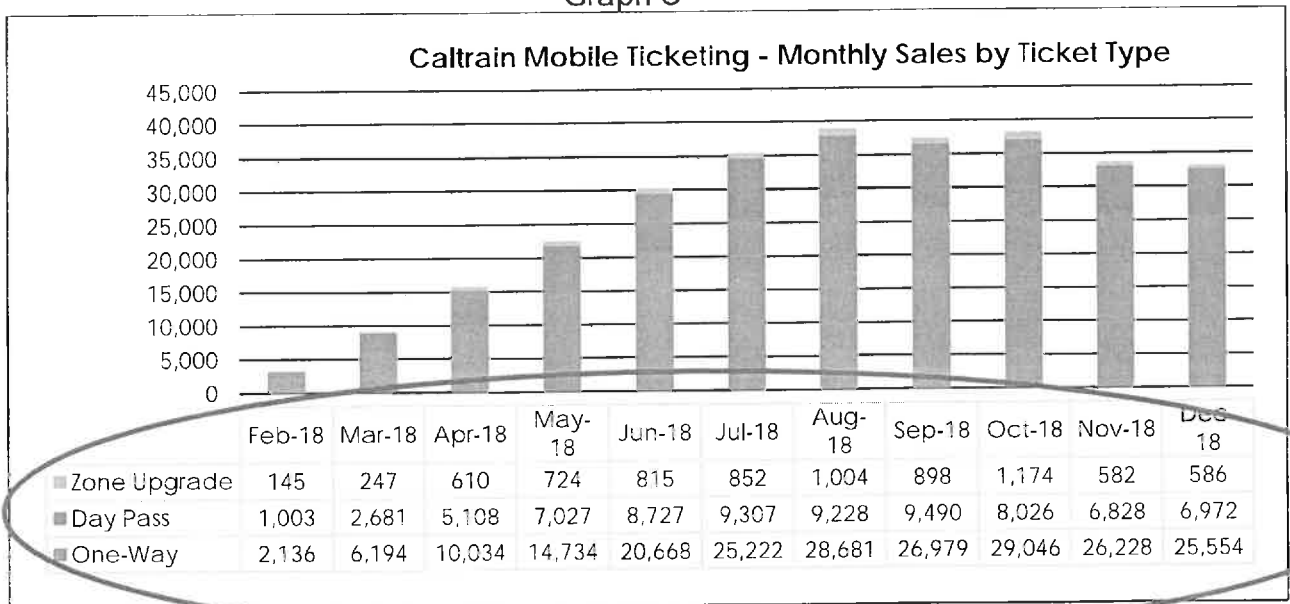
Please provide raw data used to create ALL these graphs a backup spreadsheet.

Graph B



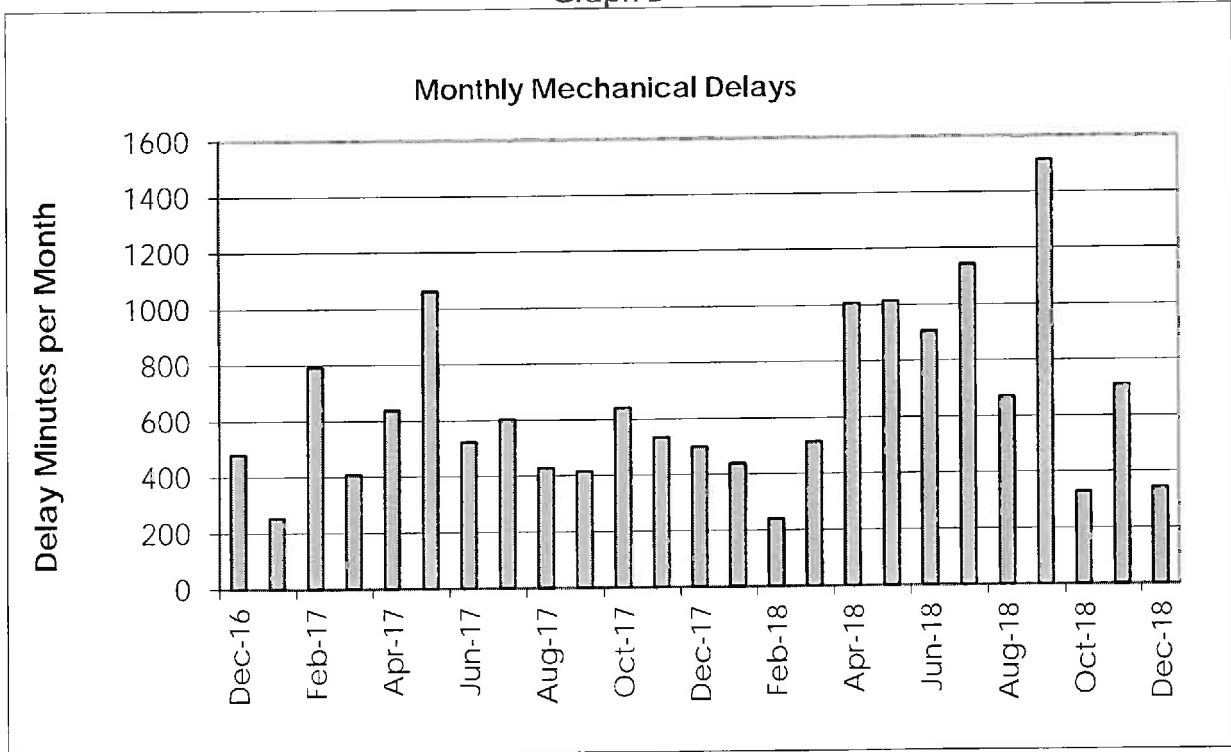
*Go Passes tracked by Monthly Number of Eligible Employees (not by Sales)

Graph C

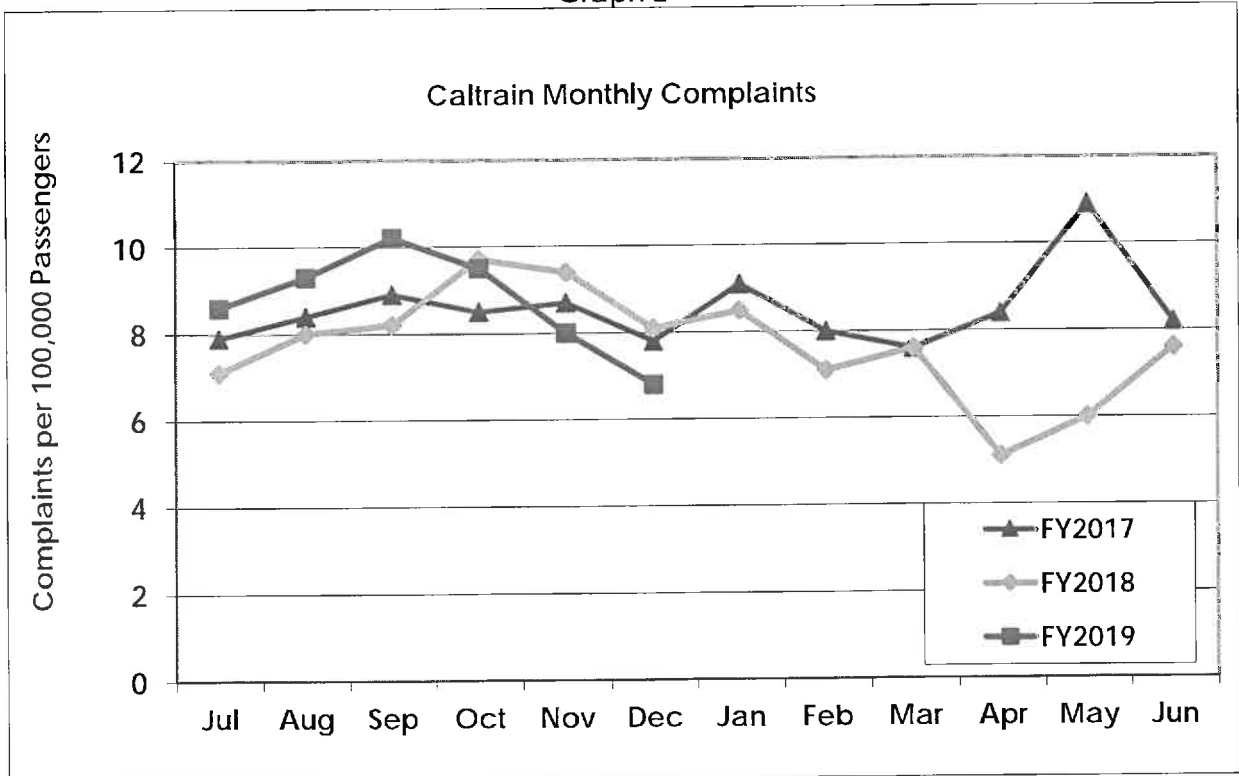


Please provide this raw data such as this or in separate spreadsheet.

Graph D



Graph E



Caltrain Promotions – December 2018

Holiday Train – Caltrain ran the 2018 Holiday Train in partnership with Silicon Valley Community Foundation on Saturday, December 1, and Sunday, December 2. This family-friendly event brings the spirit of joy and giving to the community. The glittering show train, decorated with more than 70,000 lights, brought thousands of holiday revelers out to selected stations to see costumed characters and holiday carolers. All toy and monetary donations collected were in benefit of the Salvation Army's Season of Sharing Program and the U.S. Marine Corps Reserve's Toys for Tots program. The event was heavily promoted using both internal and paid communications. Paid promotions included 30 second Comcast Spotlight TV commercials covering San Mateo, San Francisco and parts of Santa Clara Counties, geo-targeted YouTube pre-roll videos, print ads in local papers covering all three counties, e-mail blasts, and sponsored Facebook ads on the Mercury News feed. Internal communications included organic and paid Facebook/Twitter ads, a dedicated Web page on the Caltrain website, news releases/blogs and VMS/Conductor announcements. Posters were displayed at local businesses throughout the county and inside information cases at stations. More than 3,000 toys were collected for both nights.

Red Bowl at Levi's Stadium – The Red Bowl, formerly known as the Foster Farms Bowl was held at Levi's Stadium on Monday, December 31, at noon. This year's matchup included the Oregon Ducks, who took on Michigan State. No extra pre- or post-game service was provided, but the game was promoted using internal communication channels via Caltrain website, Special Events page and all organic social media posts. Total ridership alighting and boarding at Mountain View station was 815, a 12 percent increase compared to 2017.

New Year's Eve – Caltrain operated two pre-firework special trains and five additional post-fireworks special trains departing San Francisco. The communications plan included information on the Caltrain website, news releases/blogs, organic social media and VMS/Conductor announcements. Service was also promoted through paid geo-targeted Facebook and display ads. News media outlets heavily urged NYE revelers to use public transportation in order to avoid traffic. Total ridership alighting and boarding at San Francisco station was 11,001, an increase of 9 percent. Post-fireworks service carried 5,913 riders, which represents a 14 percent increase compared to 2017 ridership.

On-going Promotions

49ers at Levi's® Stadium – In December, the 49ers hosted three games against Denver, Seattle and Chicago. Total ridership alighting and boarding for the three games was 4,768. Pre- and regular season total additional ridership alighting and boarding at Mountain View station was 16,061, a 13 percent decrease compared to 2017 as they failed to make the playoffs and a season ending injury to the starting quarterback in the third game of the season.

San Jose Sharks at Sap Center – For the month of December there were seven home games played. Promotions include sponsored Facebook engagement ads through the end of January. Caltrain carried an additional 917 customers for the month.

Caltrain Digital Metrics - DEC 2018



New Followers

+858

Dec 18 - 175,873

Nov 18 - 175,015

Dec 17 - 171,165

Top Tagged Issues

1. Delay

2. Holiday Train

3. Conductor Complimnt

4. Bike Car

5. CalMod

Caltrain.com Sessions

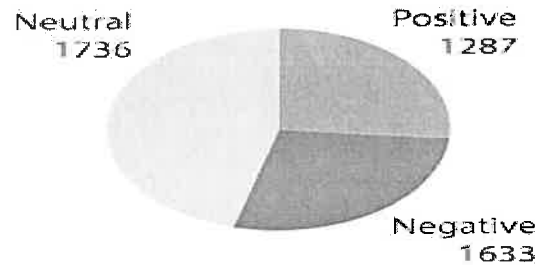
Dec 18 - 669,471

Nov 18 - 708,983

Dec 17 - 697,213

Social Sentiment

Social Mentions by Sentiment



Monthly Yelp & FB Rating



(3 Dec reviews)

Mobile App - DEC 18

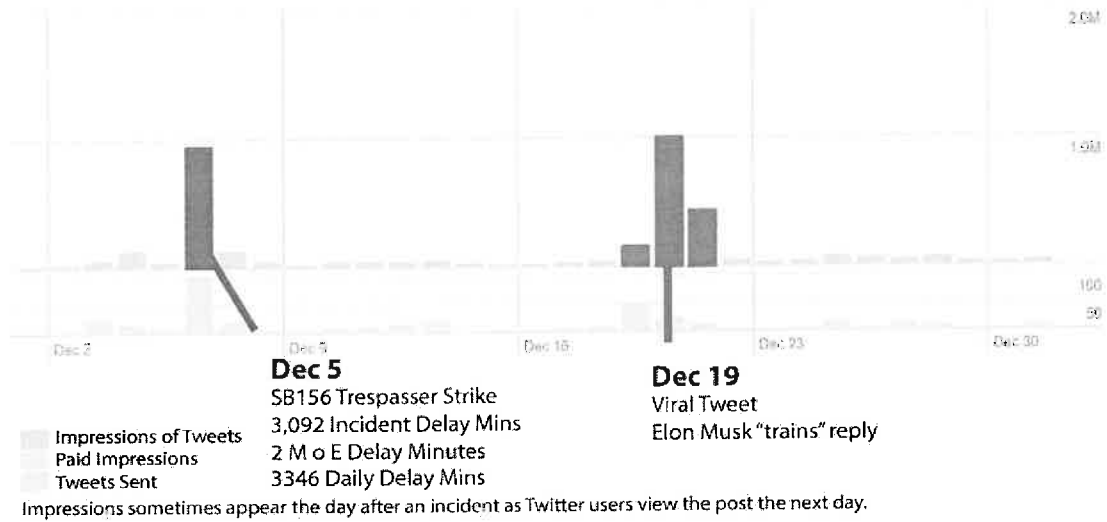
- Downloads

- Active Users

2.0 (+0.1) - 78 reviews - iTunes Rating

Twitter Impression Spikes December, 2018

Your Tweets earned **4.0M impressions** over this **31 day** period



Prepared by: Patrice Givens, Data Specialist
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Typical Monthly Ridership Report from Chicago Metra commuter rail system.

See pages 1 and 2 for ridership raw data and ridership graph.
See page 3 for methodology used to estimate ridership, which is similar to Caltrain.
See page 4 for ridership by zone pairs.
See page 5 for ridership by type of ticket.
See additional pages for various ridership and revenue details based on ticket sales.

RIDERSHIP TRENDS

February 2020



Prepared by the Division of Strategic Planning & Performance
April 2020

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Executive Summary

Estimated passenger trips increased 1.1 percent in February 2020 compared to February 2019. February 2020 had the same number of weekday and Sundays/holidays. February 2020 had a leap day, with one additional Saturday compared to February 2019.

February 2019 saw prolonged service disruptions on the Metra Electric due to ice storms and a Canadian National Freight derailment. In response to this disruption and a polar vortex event in January 2019, Metra offered free rides on the weekend of February 16-17, 2019. Since no tickets were issued, these rides were not included in overall ridership calculations. There was no sustained service disruption in February 2020. There was also no free ride weekend promotion.

Estimated passenger trips increased 1.1 percent in the last three months compared to 2019. Estimated passenger trips have decreased 1.5 percent in the last 12 months compared to the previous 12 months.

Table 1: Estimated Passenger Trips by Month ¹

Month	Estimated Passenger Trips (Thousands)					Change	
	2016	2017	2018	2019	2020	2016-2020	2019-2020
Jan	6,513	6,762	6,661	5,850	5,957	-8.5%	1.8%
Feb	6,310	5,985	5,651	5,729	5,793	-8.2%	1.1%
Mar	6,666	6,474	6,176	6,040			
Apr	6,497	6,305	6,162	6,205			
May	6,681	6,618	6,426	6,276			
Jun	7,066	6,941	6,607	6,400			
Jul	7,110	6,759	6,623	6,526			
Aug	6,866	7,055	6,742	6,487			
Sep	6,766	6,530	6,347	6,244			
Oct	6,832	6,740	6,694	6,504			
Nov	6,943	6,475	6,261	6,024			
Dec	6,153	5,976	5,739	5,760			
Year-to-date	12,823	12,747	12,312	11,579	11,751	-8.4%	1.5%
Last 3 Months	19,207	18,900	18,288	17,318	17,511	-8.8%	1.1%
Last 12 Months	81,391	80,326	78,186	75,356	74,215	-8.8%	-1.5%

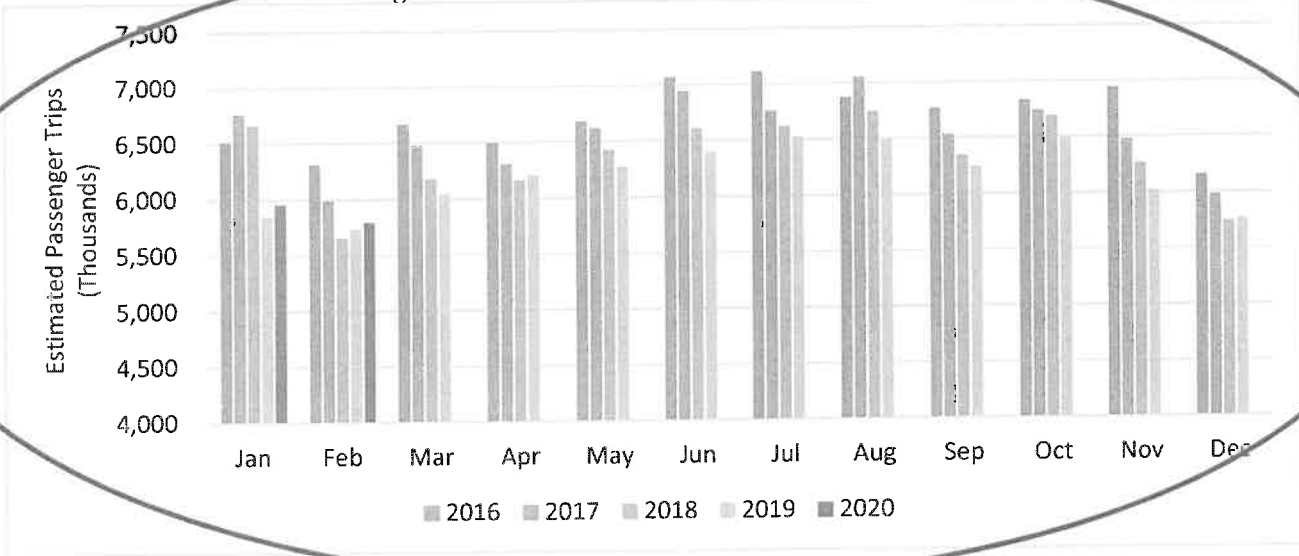
¹ Values are rounded to the thousand. Change is calculated based on the unrounded values.

Raw data used to create the graph below /on next page



Note that this data shows five years of ridership data compared to just one year for Caltrain.

Figure 1: Estimated Passenger Trips by Month



For the 2020 budget year, Metra estimated total annual passenger trips to be 73.8 million. To track how well ridership is comparing to this budgeted amount, monthly estimates have been calculated by distributing the budgeted trips throughout the year based on the distribution in previous years. Unanticipated differences in holiday and special event travel are common explanations for variations between the monthly budget distribution and actual ridership. These effects are less pronounced at the quarterly and annual level. Table 2 shows the estimated monthly passenger trips compared to this distribution.

Table 2: Estimated vs. Budget Passenger Trips ¹

Month	Estimated Passenger Trips (Thousands)		Variance
	Budget (2020)	Actual (2020)	
Jan	5,900	5,957	1.0%
Feb	5,750	5,793	0.8%
Mar	6,060		
1st Quarter	17,710		
Apr	6,200		
May	5,905		
Jun	6,685		
2nd Quarter	18,790		
Jul	6,430		
Aug	6,270		
Sep	6,375		
3rd Quarter	19,075		
Oct	6,320		
Nov	5,980		
Dec	5,885		
4th Quarter	18,185		
Year-to-date	11,650	11,751	0.9%
Total	73,760		

¹ Values are rounded to the thousand. Variance is calculated based on the unrounded values.

Note that Caltrain estimates ridership in a similar manner.



Ridership

Estimated ridership figures are based on the number of ticket sales multiplied by a standard ridership factor unique to each ticket type, in addition to the number of RTA Ride Free Permit passenger trips reported by conductors.

Estimated Passenger Trips by Line

Table 3 shows estimated passenger trips by line for the current month, the last three months, and the last 12 months. Estimated passenger trips increased by 1.1 percent in the last three months compared to the previous year and decreased 1.5 percent in the last 12 months compared to the previous year.

Table 3: Estimated Passenger Trips by Line

Line	February			Last 3 Months			Last 12 Months		
	2019	2020	Change	2019	2020	Change	2019	2020	Change
BNSF	1,208,521	1,213,309	0.4%	3,603,241	3,658,629	1.5%	15,685,844	15,507,969	-1.1%
HC	59,192	62,575	5.7%	169,815	182,766	7.6%	724,975	743,598	2.6%
MD-N	498,435	502,566	0.8%	1,516,588	1,535,742	1.3%	6,556,897	6,559,242	0.0%
MD-W	460,715	457,686	-0.7%	1,382,334	1,380,604	-0.1%	6,084,707	5,904,148	-3.0%
ME	541,673	581,179	7.3%	1,707,127	1,721,825	0.9%	7,575,375	7,322,563	-3.3%
NCS	127,969	123,730	-3.3%	373,792	369,987	-1.0%	1,621,355	1,585,456	-2.2%
RI	590,473	575,420	-2.5%	1,758,461	1,746,809	-0.7%	7,515,829	7,325,374	-2.5%
SWS	194,450	191,845	-1.3%	572,020	564,319	-1.3%	2,403,858	2,354,433	-2.1%
UP-N	647,712	674,305	4.1%	1,948,967	2,019,095	3.6%	8,593,205	8,607,957	0.2%
UP-NW	794,175	802,709	1.1%	2,439,795	2,466,105	1.1%	10,526,728	10,407,046	-1.1%
UP-W	605,481	608,137	0.4%	1,846,251	1,865,165	1.0%	8,066,777	7,897,662	-2.1%
Total	5,728,794	5,793,460	1.1%	17,318,389	17,511,044	1.1%	75,355,546	74,215,444	-1.5%

Estimated Passenger Trips by Fare Zone Pair

Table 4 shows estimated passenger trips by fare zone pair for the current month, the last three months, and the last 12 months.

- The long-term decline in No Zone Pair passenger trips is expected to continue as data collection improvements and the shift to the Ventra App cause fewer trips to be reported without a zone pair.
- In July 2018, year-long testing of the zone consolidation policy began. All tickets for Zones K through M were capped to the price of Zone J tickets. This caused an increase in passenger trips for Zone A-J, and a decrease for passenger trips for Zones A-K and A-M. There are no stations in Zone L.

Table 4: Estimated Passenger Trips by Fare Zone Pair ¹

Zone Pair	February (Thousands)			Last 3 Months (Thousands)			Last 12 Months (Thousands)		
	2019	2020	Change	2019	2020	Change	2019	2020	Change
A-A	19	24	25.2%	54	67	24.7%	237	261	10.4%
A-B	432	461	6.8%	1,280	1,354	5.8%	5,474	5,549	1.4%
A-C	830	850	2.4%	2,456	2,531	3.1%	10,412	10,502	0.9%
A-D	995	993	-0.2%	2,925	2,960	1.2%	12,561	12,428	-1.1%
A-E	1,286	1,271	-1.2%	3,801	3,790	-0.3%	16,080	16,044	-0.2%
A-F	744	730	-1.9%	2,187	2,176	-0.5%	9,676	9,259	-4.3%
A-G	466	458	-1.7%	1,362	1,356	-0.5%	5,870	5,785	-1.5%
A-H	363	362	-0.2%	1,082	1,097	1.3%	4,737	4,645	-1.9%
A-I	124	120	-3.1%	371	368	-0.7%	1,619	1,558	-3.8%
A-J	51	49	-3.6%	155	155	0.2%	515	662	28.7%
A-K	-	-	-	-	-	-	125	-	-
A-M	-	-	-	-	-	-	32	-	-
A-J, K, & M	51	49	-3.6%	155	155	0.2%	671	662	-1.3%
Intermediate	171	171	0.2%	507	505	-0.4%	2,274	2,175	-4.3%
No Zone Pair	248	304	22.6%	1,137	1,151	1.3%	5,745	5,349	-6.9%
Total	5,729	5,793	1.1%	17,318	17,511	1.1%	75,356	74,215	-1.5%

¹ Values are rounded to the thousand. Change is calculated based on the unrounded values.

Estimated Passenger Trips by Ticket Type

Table 5 shows estimated passenger trips by ticket type for the current month, the last three months, and the last 12 months. Special event tickets and other data irregularities can affect month-to-month comparisons of passenger trips by ticket type:

- There was no fare increase in 2019 and 2020. 10-ride ticket sales were not impacted by stockpiling.

Table 5: Estimated Passenger Trips by Ticket Type ¹

Ticket Type	February (Thousands)					Last 3 Months (Thousands)				
				Share					Share	
	2019	2020	Change	2019	2020	2019	2020	Change	2019	2020
Monthly Pass	3,625	3,583	-1.1%	63.2%	61.9%	10,396	10,100	-2.8%	60.1%	57.8%
10-Ride Ticket	1,407	1,397	-0.7%	24.5%	24.1%	4,241	4,498	6.0%	24.5%	25.7%
One-Way Ticket	554	607	9.4%	9.7%	10.5%	1,946	2,121	9.0%	11.3%	12.1%
Weekend Pass	89	141	59.0%	1.5%	2.4%	513	532	3.8%	3.0%	3.0%
Special Passes	-	0		0.0%	0.0%	-	19		0.0%	0.1%
RTA Ride Free Permit	59	65	8.9%	1.0%	1.1%	189	200	5.9%	1.1%	1.1%
Total ²	5,734	5,793	1.0%			17,285	17,469	1.1%		

Ticket Type	Last 12 Months (Thousands)				
				Share	
	2019	2020	Change	2019	2020
Monthly Pass	44,199	42,928	-2.9%	58.6%	57.9%
10-Ride Ticket	18,016	18,160	0.8%	23.9%	24.5%
One-Way Ticket	9,496	9,568	0.8%	12.6%	12.9%
Weekend Pass	2,698	2,554	-5.3%	3.6%	3.4%
Special Passes	90	102	13.2%	0.1%	0.1%
RTA Ride Free Permit	872	869	-0.4%	1.2%	1.2%
Total ²	75,372	74,182	-1.6%		

¹ Values are rounded to the thousand. Change and share are calculated based on the unrounded values.

² Passenger trip totals differ from those presented in other tables in this report, due to adjustments made for group sales, marketing sales, and refunds.

Passenger Loads

Table 6 shows the average daily passenger loads by service period for the current month, the last three months, and the last 12 months, derived from conductor counts. Average peak-peak direction passenger loads decreased 2.0 percent in the current month, and average total weekday passenger loads decreased 2.9 percent in the same period.

Table 6: Average Daily Passenger Loads ¹

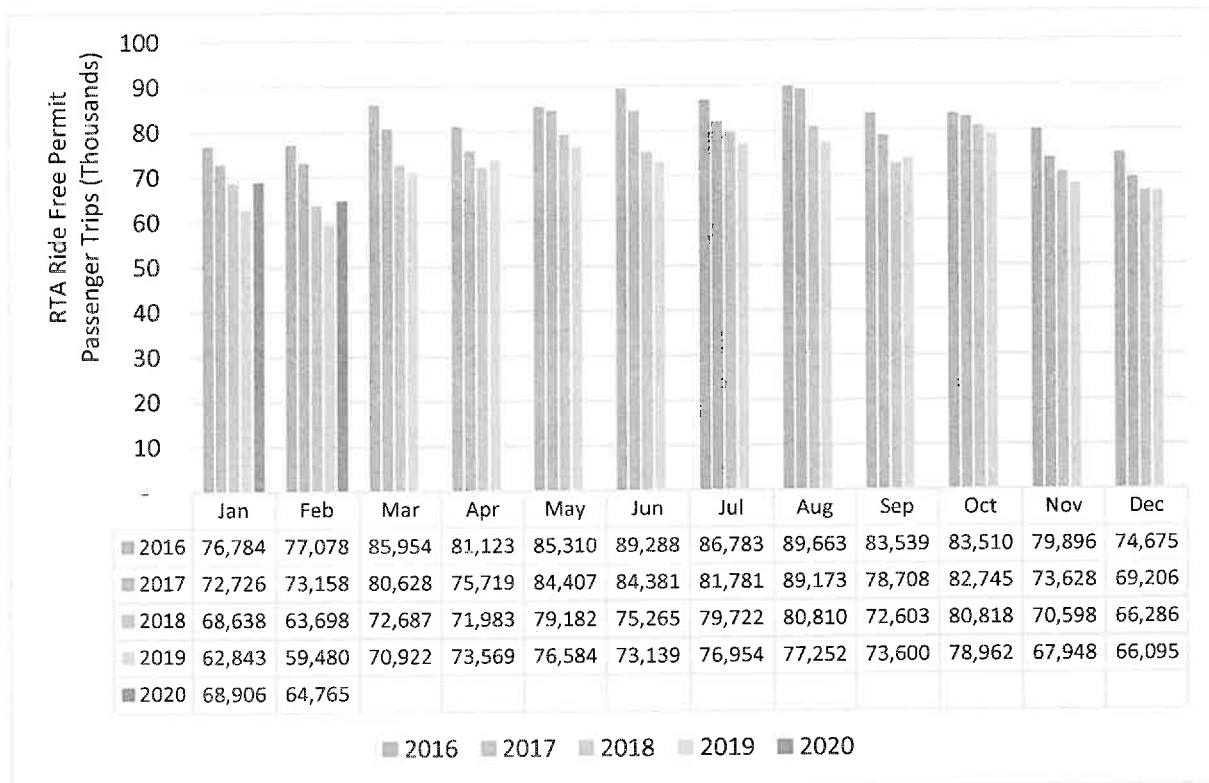
Service Period	February (Thousands)			Last 3 Months (Thousands)			Last 12 Months (Thousands)		
	2019	2020	Change	2019	2020	Change	2019	2020	Change
Peak - Peak Direction	212	208	-2.0%	195	196	0.8%	209	209	0.0%
Peak - Reverse Direction	17	16	-7.5%	17	16	-2.4%	19	19	-2.1%
Midday	27	26	-3.0%	28	28	0.2%	31	31	-0.7%
Evening	13	12	-10.3%	14	13	-3.0%	16	15	-3.7%
Weekday	269	261	-2.9%	253	254	0.4%	275	274	-0.4%
Saturday	48	44	-8.2%	52	50	-5.2%	59	61	2.6%
Sunday	31	28	-7.1%	33	31	-6.4%	39	37	-3.2%

¹ Values are rounded to the thousand. Change is calculated based on the unrounded values.

RTA Ride Free Permit Free Trips

Figure 2 shows the number of RTA Ride Free Permit passenger trips for the last five years. Trips are included in ridership estimates because Metra is eligible for reimbursement for the number provided.

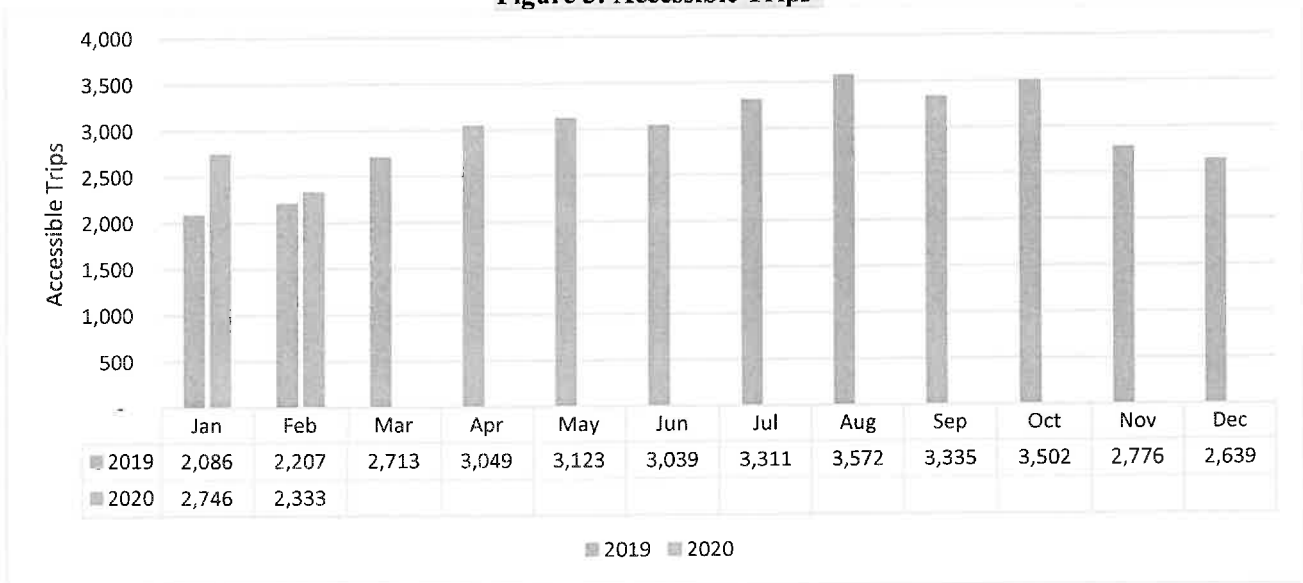
Figure 2: RTA Ride Free Permit Passenger Trip



Accessible Trips

Figure 3 shows the number of trips provided using accessible equipment. Accessible equipment consists of bridge plates on the Metra Electric Line and wheelchair lifts on all other lines.

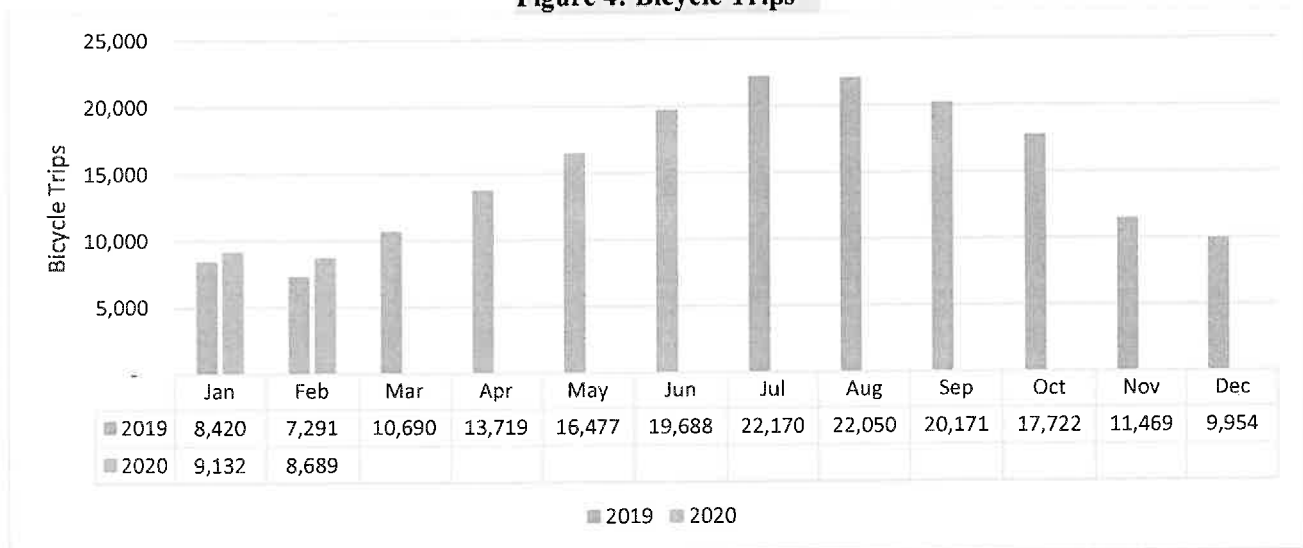
Figure 3: Accessible Trips



Bicycle Trips

Figure 4 shows the number of trips provided where the passenger transported a bicycle.

Figure 4: Bicycle Trips



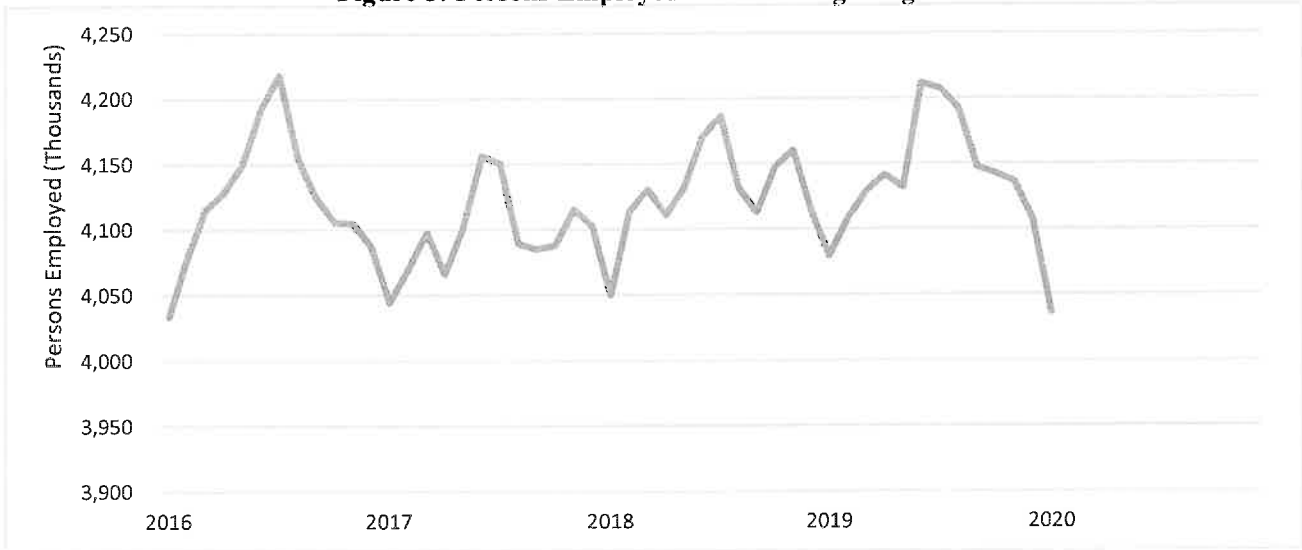
Ridership Influences

Many different factors (such as the employment, gas prices, road construction, service changes, and special events) can influence ridership trends.

Employment

Figure 5 shows the number of persons employed in the six-county Chicago Region. The number of persons employed decreased 1.1 percent in January 2020 compared to January 2019.

Figure 5: Persons Employed in the Chicago Region ¹



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year-to-date Average
2016	4,033	4,078	4,115	4,128	4,150	4,192	4,218	4,155	4,125	4,106	4,105	4,087	4,033
2017	4,044	4,070	4,098	4,066	4,102	4,156	4,151	4,089	4,085	4,088	4,115	4,102	4,044
2018	4,050	4,113	4,130	4,111	4,131	4,171	4,187	4,131	4,113	4,147	4,161	4,113	4,050
2019	4,079	4,108	4,129	4,141	4,132	4,212	4,207	4,192	4,147	4,142	4,136	4,107	4,079
2020	4,036												4,036
Change 2019-2020	-1.1%												-1.1%

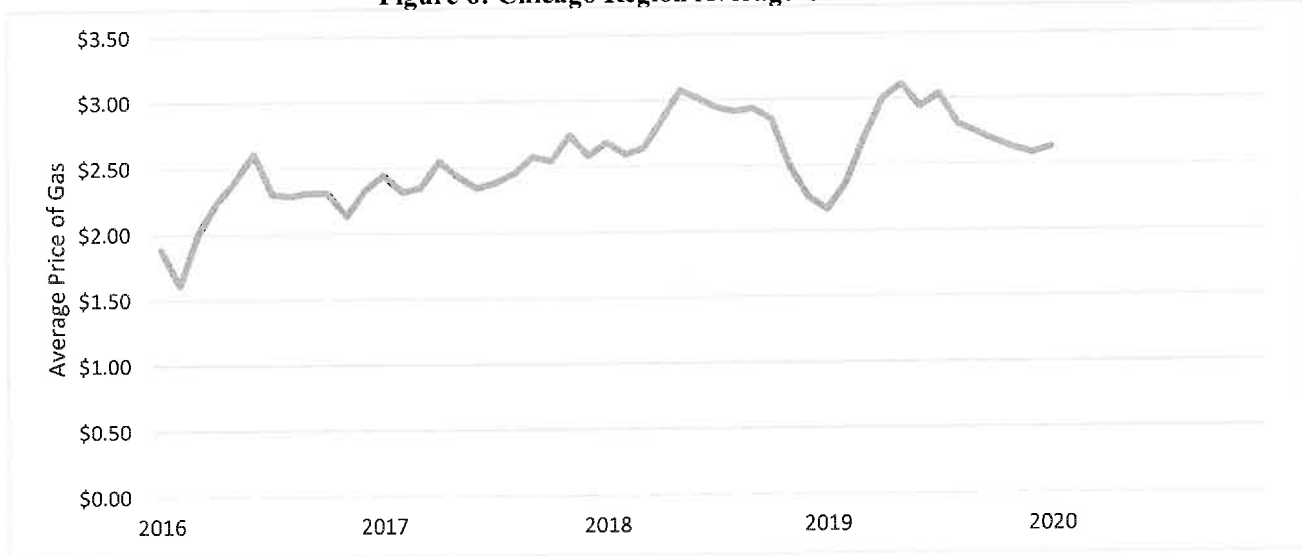
¹ Values are rounded to the thousand. Change is calculated based on the unrounded values.

Source: Illinois Department of Employment Security

Gas Prices

Figure 6 shows the average price of unleaded regular gas for the Chicago-Naperville-Elgin area. The average price of a gallon of regular unleaded gas was \$2.58 in February 2020, a \$0.22 increase compared to February 2019.

Figure 6: Chicago Region Average Gas Prices



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year-to-date Average
2016	\$1.89	\$1.61	\$2.00	\$2.24	\$2.40	\$2.61	\$2.30	\$2.29	\$2.31	\$2.31	\$2.14	\$2.33	\$1.75
2017	\$2.45	\$2.32	\$2.35	\$2.55	\$2.43	\$2.34	\$2.38	\$2.45	\$2.58	\$2.54	\$2.74	\$2.58	\$2.38
2018	\$2.69	\$2.59	\$2.64	\$2.85	\$3.08	\$3.01	\$2.94	\$2.92	\$2.94	\$2.85	\$2.49	\$2.26	\$2.64
2019	\$2.16	\$2.36	\$2.71	\$3.01	\$3.11	\$2.94	\$3.04	\$2.81	\$2.74	\$2.68	\$2.62	\$2.58	\$2.26
2020	\$2.63	\$2.58											\$2.60
Change 2019-2020	\$0.47	\$0.22											\$0.34

Source: Bureau of Labor Statistics

Road Construction

No new roadway construction projects of regional significance began in February. The following projects are either under construction or were recently completed:

- Jane Byrne Interchange Reconfiguration – In 2015, work began on a major reconfiguration of the Jane Byrne Interchange. Work is expected to continue through 2022.

Service Changes

On June 1, weekend service on the BNSF, Rock Island, and UP-NW lines was increased as part of a pilot project to increase weekend ridership. The pilot project was continued for the BNSF and UP-NW after September 3 with minor adjustments to run times and scheduled stops. The pilot project was discontinued for the Rock Island Line as of September 3, although one additional Saturday morning train was retained on the schedule.

A two-year reverse-commute pilot project began March 4 on the Milwaukee District-North. The Milwaukee District-North schedule was adjusted to add two outbound morning express trains between Union Station and Lake Forest, and one inbound evening train.

Special Events and Promotions

On February 8-9 and February 15-16, Metra added hourly weekend express trains on the Metra Electric and Rock Island lines for travel to the Chicago Auto Show. Metra sold a \$5 special event pass valid for two days on either weekend. The pass was available from ticket agents and conductors. 168 passes were sold. The NBA All Star Weekend occurred February 14-16.

Passenger Revenue and Ticket Sales

Changes in fares, ticket policies, and ticket sales channels can affect passenger revenue and ticket sales trends:

- In June 2018, Metra stopped selling Monthly Passes and 10-Ride Tickets from vending machines at 15 non-downtown stations on the Metra Electric Line.
- In June 2018, Metra ended its Ticket-by-Internet program.
- In July 2018, yearlong testing of the zone consolidation policy began. All tickets from Zone A to Zones K through M were capped at the price of Zone J tickets.
- In July 2018, select stations with perceived inconsistencies in distance from downtown were reassigned to closer zones. Ashland, Racine, West Pullman, Stewart Ridge, and State Street stations moved from Zone D to C. On the Metra Electric mainline, the 83rd Street and 87th Street stations were moved from Zone C to B. On the Rock Island Beverly Branch, the 123rd Street Station was moved from Zone D to C.
- In December 2018, an update to the Ventra app ended the option for purchasing mobile tickets without creating a Ventra account.
- Customers on the Metra Electric Line received a 15 percent discount on their April 2019 Monthly Pass. The discount was offered as compensation for two weeks of service disruptions in January and February, including all or part of six days without any service, caused by unusually severe weather conditions and damage from the derailment of a CN train.
- On the weekend of February 16-17, 2019 Metra offered free rides on all trains. Ridership from the weekend of February 16-17 is not included in the quantity of Weekend Passes sold in February 2019 as passengers were not required to purchase a ticket.
- On June 1, 2019 Metra began allowing monthly pass holders to use their ticket to travel anywhere in the system on weekends, where previously travel was restricted to the zones on the ticket.

Special event tickets and other data irregularities can affect month-to-month comparisons of passenger revenue and ticket sales figures:

- Stockpiling of 10-Ride Tickets occurred in advance of the 2017 and 2018 fare increases. As a result, 10-Ride Ticket passenger revenue and ticket sales were overstated in January 2018 and understated in subsequent months. As there was no fare increase in 2019, May 10-Ride Ticket sales were not reduced by stockpiling in January 2019 as they have been in previous years.

Passenger Revenue

Table 7 shows passenger revenue by line for the current month, the last three months, and the last 12 months.

Table 7: Passenger Revenue by Line ¹

Line	February (Thousands)			Last 3 Months (Thousands)			Last 12 Months (Thousands)		
	2019	2020	Change	2019	2020	Change	2019	2020	Change
BNSF	\$6,079	\$6,092	0.2%	\$18,163	\$18,548	2.1%	\$79,142	\$78,499	-0.8%
HC	\$309	\$328	6.3%	\$889	\$964	8.4%	\$3,805	\$3,916	2.9%
MD-N	\$2,524	\$2,539	0.6%	\$7,707	\$7,857	1.9%	\$33,506	\$33,549	0.1%
MD-W	\$2,317	\$2,293	-1.0%	\$6,963	\$6,988	0.3%	\$30,708	\$29,862	-2.8%
ME	\$2,437	\$2,587	6.1%	\$7,672	\$7,741	0.9%	\$34,103	\$32,721	-4.1%
NCS	\$727	\$707	-2.8%	\$2,129	\$2,135	0.3%	\$9,274	\$9,101	-1.9%
RI	\$2,783	\$2,702	-2.9%	\$8,293	\$8,257	-0.4%	\$35,547	\$34,697	-2.4%
SWS	\$908	\$900	-0.9%	\$2,684	\$2,671	-0.5%	\$11,296	\$11,086	-1.9%
UP-N	\$2,894	\$2,995	3.5%	\$8,762	\$9,090	3.7%	\$38,795	\$38,946	0.4%
UP-NW	\$4,077	\$4,097	0.5%	\$12,570	\$12,737	1.3%	\$54,471	\$53,836	-1.2%
UP-W	\$3,011	\$3,016	0.2%	\$9,217	\$9,353	1.5%	\$40,472	\$39,672	-2.0%
Total	\$28,067	\$28,257	0.7%	\$85,050	\$86,340	1.5%	\$371,118	\$365,886	-1.4%

¹ Values are rounded to the thousand. Change is calculated based on the unrounded values.

Table 8 shows passenger revenue by ticket type for the current month, the last three months, and the last 12 months.

Table 8: Passenger Revenue by Ticket Type ¹

Ticket Type	February (Thousands)					Last 3 Months (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Monthly Pass	\$15,841	\$15,603	-1.5%	56.4%	55.2%	\$45,367	\$43,929	-3.2%	53.4%	50.9%
10-Ride Ticket	\$8,400	\$8,297	-1.2%	29.9%	29.4%	\$25,314	\$26,780	5.8%	29.8%	31.0%
One-Way Ticket	\$3,495	\$3,790	8.4%	12.4%	13.4%	\$12,288	\$13,383	8.9%	14.5%	15.5%
Weekend Pass	\$355	\$565	59.1%	1.3%	2.0%	\$2,050	\$2,127	3.8%	2.4%	2.5%
Special Passes	-	\$1		0.0%	0.0%	-	\$46		0.0%	0.1%
Total ²	\$28,091	\$28,255	0.6%			\$85,019	\$86,265	1.5%		

Ticket Type	Last 12 Months (Thousands)				
	2019	2020	Change	Share 2019	Share 2020
Monthly Pass	\$193,207	\$186,999	-3.2%	52.0%	51.1%
10-Ride Ticket	\$107,245	\$108,073	0.8%	28.9%	29.5%
One-Way Ticket	\$59,656	\$60,111	0.8%	16.1%	16.4%
Weekend Pass	\$10,792	\$10,211	-5.4%	2.9%	2.8%
Special Passes	\$469	\$448	-4.5%	0.1%	0.1%
Total ²	\$371,369	\$365,842	-1.5%		

¹ Values are rounded to the thousand. Change and share are calculated based on the unrounded values.

² Passenger revenue totals differ from those presented in other tables in this report, due to adjustments made for group sales, marketing sales, and refunds.

Table 9 shows passenger revenue by ticket type and sales channel for the current month 2019 and 2020.

Table 9: Passenger Revenue by Ticket Type and Sales Channel (Current Month) ¹

Sales Channel	Monthly Pass (Thousands)					10-Ride Ticket (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	\$4,965	\$4,573	-7.9%	31.3%	29.3%	\$630	\$606	-4.0%	7.5%	7.3%
Conductor	-	-		0.0%	0.0%	-	-		0.0%	0.0%
Ticket Agent	\$4,782	\$4,433	-7.3%	30.2%	28.4%	\$2,301	\$1,880	-18.3%	27.4%	22.7%
Vending Machine	\$475	\$435	-8.4%	3.0%	2.8%	\$333	\$284	-14.9%	4.0%	3.4%
Ventra App	\$5,619	\$6,162	9.7%	35.5%	39.5%	\$5,136	\$5,528	7.6%	61.1%	66.6%
Total	\$15,841	\$15,604	-1.5%			\$8,400	\$8,297	-1.2%		
Sales Channel	One-Way Ticket (Thousands)					Weekend, Special, Ravinia Passes (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	-	-		0.0%	0.0%	-	-		0.0%	0.0%
Conductor	\$599	\$562	-6.1%	17.1%	14.8%	\$156	\$211	35.0%	44.0%	37.2%
Ticket Agent	\$882	\$806	-8.7%	25.2%	21.3%	\$33	\$52	58.0%	9.3%	9.2%
Vending Machine	\$103	\$105	1.6%	3.0%	2.8%	\$11	\$22	101.9%	3.1%	3.9%
Ventra App	\$1,910	\$2,317	21.3%	54.7%	61.1%	\$155	\$281	81.2%	43.7%	49.7%
Total	\$3,495	\$3,790	8.4%			\$355	\$566	59.4%		

Sales Channel	All Ticket Types (Thousands)				
	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	\$5,595	\$5,179	-7.4%	19.9%	18.3%
Conductor	\$755	\$773	2.4%	2.7%	2.7%
Ticket Agent	\$7,998	\$7,171	-10.3%	28.5%	25.4%
Vending Machine	\$923	\$846	-8.3%	3.3%	3.0%
Ventra App	\$12,820	\$14,288	11.4%	45.6%	50.6%
Total ²	\$28,091	\$28,256	0.6%		

¹ Values are rounded to the thousand. Change and share are calculated based on the unrounded values.

² Passenger revenue totals differ from those presented in other tables in this report, due to adjustments made for group sales, marketing sales, and refunds

Ticket Sales

Table 10 shows ticket sales by ticket type for the current month, the last three months, and the last 12 months. Monthly Pass sales decreased by 1.1 percent in the current month compared to the previous year, and 10-Ride Ticket sales decreased by 0.7 percent in the same period.

Table 10: Ticket Sales by Ticket Type ¹

Ticket Type	February (Thousands)					Last 3 Months (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Monthly Pass	84	83	-1.1%	10.3%	9.4%	242	235	-2.8%	8.6%	7.8%
10-Ride Ticket	141	140	-0.7%	17.3%	15.8%	424	450	6.0%	15.1%	14.9%
One-Way Ticket	554	607	9.4%	68.0%	68.4%	1,946	2,121	9.0%	69.1%	70.0%
Weekend Pass	36	56	59.0%	4.4%	6.4%	205	213	3.8%	7.3%	7.0%
Special Passes	-	0		0.0%	0.0%	-	9		0.0%	0.3%
Total	815	886	8.8%			2,817	3,027	7.5%		

Ticket Type	Last 12 Months (Thousands)				
	2019	2020	Change	Share 2019	Share 2020
Monthly Pass	1,028	998	-2.9%	7.6%	7.4%
10-Ride Ticket	1,802	1,816	0.8%	13.4%	13.5%
One-Way Ticket	9,496	9,568	0.8%	70.6%	71.1%
Weekend Pass	1,079	1,022	-5.3%	8.0%	7.6%
Special Passes	40	45	14.8%	0.3%	0.3%
Total	13,445	13,450	0.0%		

¹ Values are rounded to the thousand. Change and share are calculated based on the unrounded values.

Tables 11 details ticket sales by line and ticket type.

Table 11: Ticket Sales by Ticket Type and Line (Current Month)

Monthly Pass				10-Ride Ticket			
Line	2019	2020	Change	Line	2019	2020	Change
BNSF	18,679	18,414	-1.4%	BNSF	29,970	29,727	-0.8%
HC	1,011	1,073	6.1%	HC	1,249	1,318	5.5%
MD-N	6,804	6,663	-2.1%	MD-N	14,296	14,376	0.6%
MD-W	6,935	6,779	-2.2%	MD-W	9,506	9,072	-4.6%
ME	7,777	8,029	3.2%	ME	11,171	11,071	-0.9%
NCS	1,940	1,875	-3.4%	NCS	3,190	3,038	-4.8%
RI	9,809	9,491	-3.2%	RI	10,799	10,161	-5.9%
SWS	3,313	3,196	-3.5%	SWS	3,771	3,877	2.8%
UP-N	7,835	8,053	2.8%	UP-N	21,251	21,440	0.9%
UP-NW	11,466	11,188	-2.4%	UP-NW	19,796	19,924	0.6%
UP-W	8,723	8,573	-1.7%	UP-W	15,668	15,660	-0.1%
Total	84,292	83,334	-1.1%	Total	140,667	139,664	-0.7%
One-Way Ticket (Mobile & Station)				One-Way Ticket (Conductor)			
Line	2019	2020	Change	Line	2019	2020	Change
BNSF	73,159	82,797	13.2%	BNSF	9,313	9,913	6.4%
HC	2,621	2,913	11.1%	HC	335	148	-55.8%
MD-N	40,414	44,831	10.9%	MD-N	10,261	8,739	-14.8%
MD-W	39,865	42,958	7.8%	MD-W	10,863	9,750	-10.2%
ME	63,058	80,593	27.8%	ME	15,363	15,440	0.5%
NCS	8,584	9,357	9.0%	NCS	3,597	2,662	-26.0%
RI	41,816	43,944	5.1%	RI	8,242	7,310	-11.3%
SWS	10,915	12,225	12.0%	SWS	2,056	1,912	-7.0%
UP-N	58,773	67,483	14.8%	UP-N	19,747	18,911	-4.2%
UP-NW	62,521	70,829	13.3%	UP-NW	15,331	13,618	-11.2%
UP-W	47,982	51,635	7.6%	UP-W	9,537	8,609	-9.7%
Total	449,708	509,565	13.3%	Total	104,645	97,012	-7.3%
Weekend, Special, Ravinia Passes (Mobile & Station)				Weekend, Special, Ravinia Passes (Conductor)			
Line	2019	2020	Change	Line	2019	2020	Change
BNSF	4,035	6,666	65.2%	BNSF	1,887	2,278	20.7%
HC	-	-		HC	-	3	
MD-N	1,972	3,573	81.2%	MD-N	1,458	2,448	67.9%
MD-W	1,977	3,389	71.4%	MD-W	1,599	2,590	62.0%
ME	1,892	4,485	137.1%	ME	665	1,316	97.9%
NCS	-	-		NCS	-	-	
RI	1,277	2,038	59.6%	RI	1,227	1,548	26.2%
SWS	52	69	32.7%	SWS	86	36	-58.1%
UP-N	2,099	3,636	73.2%	UP-N	2,284	2,955	29.4%
UP-NW	3,791	7,164	89.0%	UP-NW	4,091	5,190	26.9%
UP-W	2,790	4,498	61.2%	UP-W	2,332	2,768	18.7%
Total	19,885	35,518	78.6%	Total	15,629	21,132	35.2%

Tables 12 and 13 show ticket sales by ticket type, sales channel, and tender type for the current month and year-to-date 2019 and 2020. Tables 14 and 15 show total ticket sales by sales channel and tender type for the current month and year-to-date 2019 and 2020.

Table 12: Ticket Sales by Ticket Type, Sales Channel, and Tender Type (Current Month)^{1, 2}

Sales Channel	Monthly Pass (Thousands)					10-Ride Ticket (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	26	24	-7.7%	30.7%	28.7%	10	9	-4.4%	7.0%	6.8%
Conductor	-	-				-	-			
Ticket Agent	26	24	-7.0%	30.7%	28.9%	40	33	-17.4%	28.5%	23.7%
<i>Cash & Other</i>	4	3	-14.0%			6	5	-22.1%		
<i>Credit Card</i>	22	21	-5.8%			34	29	-16.6%		
Vending Machine	3	2	-9.0%	3.0%	2.8%	5	5	-13.8%	3.9%	3.4%
Ventra App	30	33	10.3%	35.5%	39.6%	85	92	8.4%	60.6%	66.1%
<i>Credit Card</i>	28	31	13.1%			81	88	8.7%		
<i>Mixed & Other</i>	1	0	-68.3%			1	0	-53.1%		
<i>Ventra</i>	1	1	25.0%			4	4	15.1%		
Total	84	83	-1.1%			141	140	-0.7%		
Sales Channel	One-Way Ticket (Thousands)					Weekend, Special, Ravinia Passes (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	-	-				-	-			
Conductor	105	97	-7.3%	18.9%	16.0%	16	21	35.2%	44.0%	37.3%
Ticket Agent	135	125	-7.6%	24.4%	20.6%	3	5	58.6%	9.2%	9.2%
<i>Cash & Other</i>	75	69	-9.2%			2	3	47.1%		
<i>Credit Card</i>	60	56	-5.6%			2	3	71.2%		
Vending Machine	16	17	3.4%	2.9%	2.7%	1	2	101.7%	3.1%	3.9%
Ventra App	298	368	23.3%	53.8%	60.7%	16	28	81.2%	43.7%	49.6%
<i>Credit Card</i>	270	335	24.0%			14	26	82.9%		
<i>Mixed & Other</i>	2	1	-29.0%			0	0	7.8%		
<i>Ventra</i>	27	32	19.3%			1	2	62.4%		
Total	554	607	9.4%			36	57	59.5%		

¹ Values are rounded to the thousand. Change and share are calculated based on the unrounded values.

² As of July 1, 2019, the Mixed & Other category no longer includes transactions with multiple credit cards. These transactions are now included in "Credit Card".

Table 13: Ticket Sales by Ticket Type, Sales Channel, and Tender Type (Year-to-date) ¹

Sales Channel	Monthly Pass (Thousands)					10-Ride Ticket (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	52	48	-7.9%	31.1%	29.5%	20	19	-5.2%	6.9%	6.1%
Conductor	-	-				-	-			
Internet	-	-				-	-			
Ticket Agent	52	49	-6.5%	31.3%	30.1%	79	72	-9.2%	27.6%	23.5%
<i>Cash & Other</i>	8	6	-17.4%			12	10	-15.7%		
<i>Credit Card</i>	45	43	-4.7%			68	62	-8.1%		
Vending Machine	5	4	-16.7%	3.1%	2.7%	11	10	-10.9%	3.9%	3.2%
Ventra App	58	61	6.0%	34.5%	37.7%	176	206	16.7%	61.6%	67.2%
<i>Credit Card</i>	53	58	9.0%			167	195	16.8%		
<i>Mixed & Other</i>	2	1	-70.2%			2	1	-51.7%		
<i>Ventra</i>	2	3	17.9%			8	10	27.4%		
Total	167	162	-2.9%			287	306	6.9%		
Sales Channel	One-Way Ticket (Thousands)					Weekend, Special, Ravinia Passes (Thousands)				
	2019	2020	Change	Share 2019	Share 2020	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	-	-				-	-			
Conductor	236	211	-10.6%	20.1%	16.3%	50	48	-3.5%	51.6%	41.3%
Internet	-	-				-	-			
Ticket Agent	289	268	-7.1%	24.5%	20.7%	9	11	31.2%	8.9%	9.7%
<i>Cash & Other</i>	163	147	-9.6%			4	6	31.6%		
<i>Credit Card</i>	126	121	-4.0%			4	5	30.7%		
Vending Machine	34	33	-3.7%	2.9%	2.6%	3	3	34.2%	2.7%	3.0%
Ventra App	618	781	26.4%	52.5%	60.4%	36	54	50.6%	36.9%	46.0%
<i>Credit Card</i>	560	713	27.2%			33	50	51.5%		
<i>Mixed & Other</i>	3	2	-27.3%			0	0	5.4%		
<i>Ventra</i>	54	66	21.2%			2	3	40.1%		
Total	1,177	1,293	9.9%			96	116	20.5%		

¹ As of July 1, 2019, the Mixed & Other category no longer includes transactions with multiple credit cards. These transactions are now included in "Credit Card".

Table 14: Total Ticket Sales by Sales Channel and Tender Type (Current Month) ^{1,2}

Sales Channel	All Ticket Types (Thousands)				
	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	36	33	-6.8%	4.4%	3.8%
Conductor	120	118	-1.8%	14.8%	13.3%
Ticket Agent	205	187	-8.4%	25.1%	21.1%
<i>Cash & Other</i>	87	79	-9.2%		
<i>Credit Card</i>	118	109	-7.8%		
Vending Machine	25	26	2.7%	3.1%	2.9%
Ventra App	429	521	21.6%	52.6%	58.8%
<i>Credit Card</i>	393	481	22.3%		
<i>Mixed & Other</i>	4	2	-46.2%		
<i>Ventra</i>	32	39	20.2%		
Total	815	886	8.8%		

¹ Values are rounded to the thousand. Change and share are calculated based on the unrounded values.

² As of July 1, 2019, the Mixed & Other category no longer includes transactions with multiple credit cards. These transactions are now included in "Credit Card".

Table 15: Total Ticket Sales by Sales Channel and Tender Type (Year-to-date) ^{1,2}

Sales Channel	All Ticket Types (Thousands)				
	2019	2020	Change	Share 2019	Share 2020
Commuter Benefit	72	67	-7.1%	4.2%	3.5%
Conductor	286	259	-9.4%	16.6%	13.8%
Internet	0	-			
Ticket Agent	429	400	-6.7%	24.8%	21.3%
<i>Cash & Other</i>	186	169	-9.3%		
<i>Credit Card</i>	242	231	-4.7%		
Vending Machine	53	51	-4.7%	3.1%	2.7%
Ventra App	887	1,101	24.1%	51.4%	58.6%
<i>Credit Card</i>	814	1,016	24.9%		
<i>Mixed & Other</i>	7	4	-45.2%		
<i>Ventra</i>	66	81	22.4%		
Total	1,727	1,878	8.7%		

¹ Values are rounded to the thousand. Change and share are calculated based on the unrounded values.

² As of July 1, 2019, the Mixed & Other category no longer includes transactions with multiple credit cards. These transactions are now included in "Credit Card".

Link-Up and PlusBus Sales

Sales of CTA Link-Up passes decreased by 4.3 percent in the current month compared to the previous year, and sales of Pace PlusBus passes decreased by 6.1 percent in the same period. Table 16 shows Link-Up and PlusBus sales by month for 2019 and 2020.

Table 16: Link-Up and PlusBus Sales

Month	2019		2020		Change		Mobile Share (2020)	
	Link-Up	PlusBus	Link-Up	PlusBus	Link-Up	PlusBus	Link-Up	PlusBus
Jan	2,836	1,057	2,643	973	-6.8%	-7.9%	29.4%	25.5%
Feb	2,867	1,046	2,743	982	-4.3%	-6.1%	32.7%	28.2%
Mar	2,873	1,062						
Apr	2,843	1,053						
May	2,759	1,012						
Jun	2,658	1,020						
Jul	2,636	965						
Aug	2,668	998						
Sep	2,615	998						
Oct	2,641	1,020						
Nov	2,707	1,011						
Dec	2,454	899						
Year-to-date	5,703	2,103	5,386	1,955	-5.6%	-7.0%	31.1%	26.9%
Last 3 Months	8,402	3,025	7,840	2,854	-6.7%	-5.7%	31.3%	26.9%
Last 12 Months	34,688	12,878	32,240	11,993	-7.1%	-6.9%	29.7%	25.7%

Reduced Fare Sales

Seniors, some Medicare recipients, some persons with disabilities, primary and secondary school students, children, and military personnel are eligible for reduced fares on Metra. Table 17 shows the number of reduced fare tickets sold by month for 2019 and 2020.

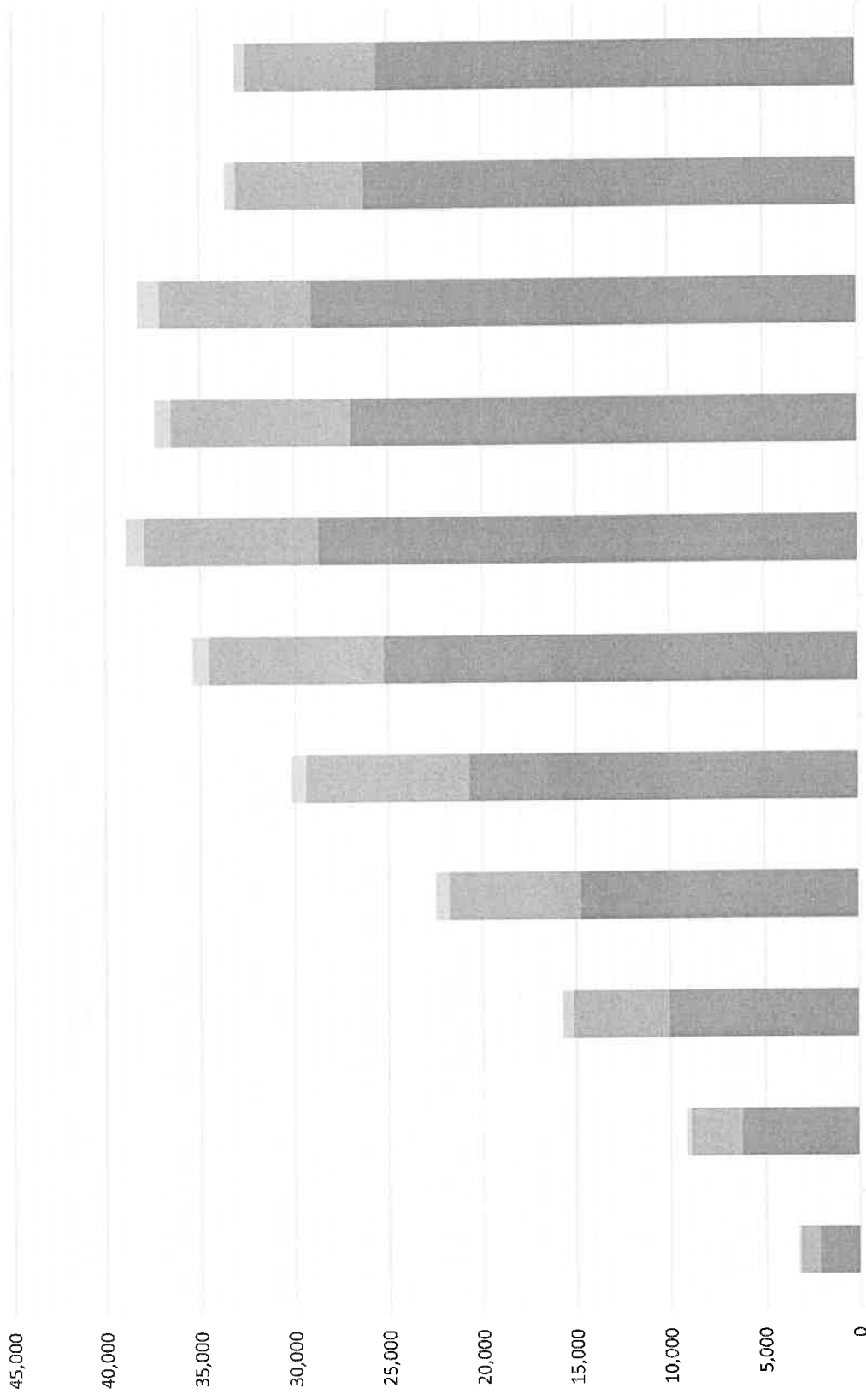
Table 17: Reduced Fare Ticket Sales

Month	2019				2020			
	Monthly Pass	10-Ride Ticket	One-Way Ticket Mobile & Station	One-Way Ticket Conductor	Monthly Pass	10-Ride Ticket	One-Way Ticket Mobile & Station	One-Way Ticket Conductor
Jan	2,752	11,168	42,613	19,183	2,789	12,340	49,779	18,015
Feb	2,838	10,771	33,924	14,399	2,905	10,835	44,569	16,388
Mar	2,940	11,587	63,580	21,353				
Apr	2,991	11,919	47,792	17,705				
May	2,972	12,896	59,546	26,328				
Jun	2,809	12,175	76,946	33,644				
Jul	2,780	12,334	91,136	35,997				
Aug	2,627	12,208	87,632	29,854				
Sep	3,154	12,687	52,159	22,283				
Oct	3,265	13,586	56,308	22,069				
Nov	3,044	11,695	58,922	20,528				
Dec	2,611	11,358	71,444	25,662				
Year-to-date	5,590	21,939	76,537	33,582	5,694	23,175	94,348	34,403
Last 3 Months	8,265	32,968	134,376	58,348	8,305	34,533	165,792	60,065
Last 12 Months	35,330	146,735	697,852	307,356	34,887	145,620	759,813	289,826

Month	Change			
	Monthly Pass	10-Ride Ticket	One-Way Ticket Mobile & Station	One-Way Ticket Conductor
Jan	1.3%	10.5%	16.8%	-6.1%
Feb	2.4%	0.6%	31.4%	13.8%
Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				
Year-to-date	-1.4%	-19.6%	-0.8%	-13.1%
Last 3 Months	-0.6%	-16.7%	1.7%	-8.1%
Last 12 Months	-1.6%	-7.5%	1.4%	-7.3%

Prepared by Jeff Carter July 2020, to demonstrate the simplicity of including the raw data used to create graph.

Caltrain Mobile Ticket Sales By Ticket Type



	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
Zone Upgrade	145	247	610	724	815	852	1,004	898	1,174	582	586
Day Pass	1,003	2,681	5,108	7,027	8,727	9,307	9,228	9,490	8,026	6,828	6,972
One-Way	2,136	6,194	10,034	14,734	20,668	25,222	28,681	26,979	29,046	26,228	25,554

Prepared by Jeff Carter, July 2020, to demonstrate the simplicity of including the raw data used to create graph.

	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
Mobile Ticketing											
One-Way	2,136	6,194	10,034	14,734	20,668	25,222	28,681	26,979	29,046	26,228	25,554
Day Pass	1,003	2,681	5,108	7,027	8,727	9,307	9,228	9,490	8,026	6,828	6,972
Zone Upgrade	145	247	610	724	815	852	1,004	898	1,174	582	586

**AGENDA ITEM 7.A.
MARCH 2, 2000**

**PENINSULA CORRIDOR JOINT POWERS BOARD
STAFF REPORT**

TO: Joint Powers Board

THROUGH: Michael Scanlon
Executive Director

FROM: Howard Goode
Director, Planning and Engineering

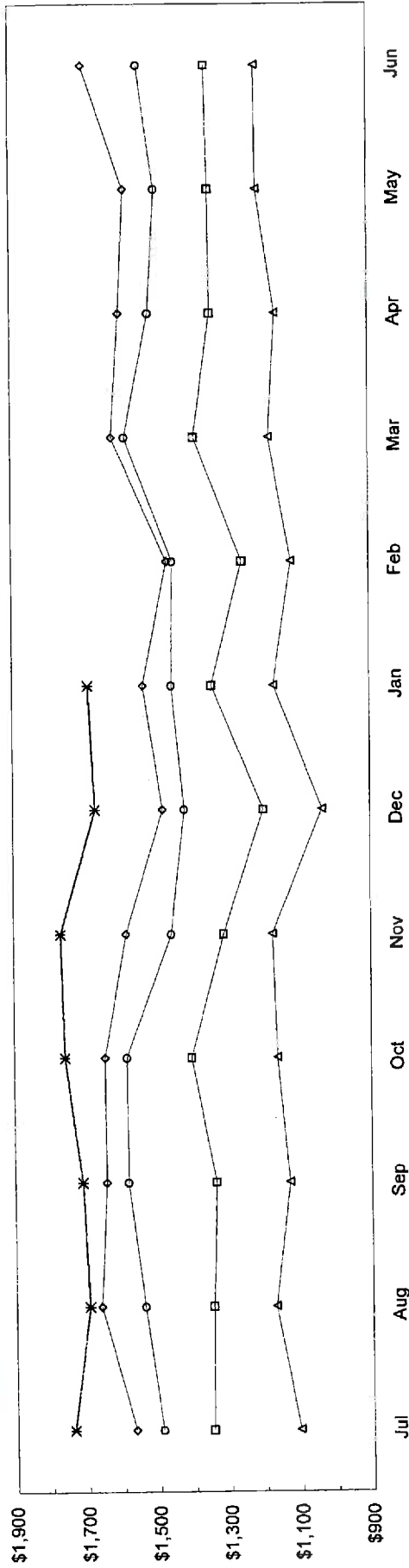
SUBJECT: **PERFORMANCE REPORT**

January reports on Caltrain ridership, revenue and equipment availability are attached.

Prepared by John Nemeth, Associate Planner – 650 – 508-6306

**JOINT
POWERS
BOARD**

FARE REVENUE
FY 95/96 to FY 99/00

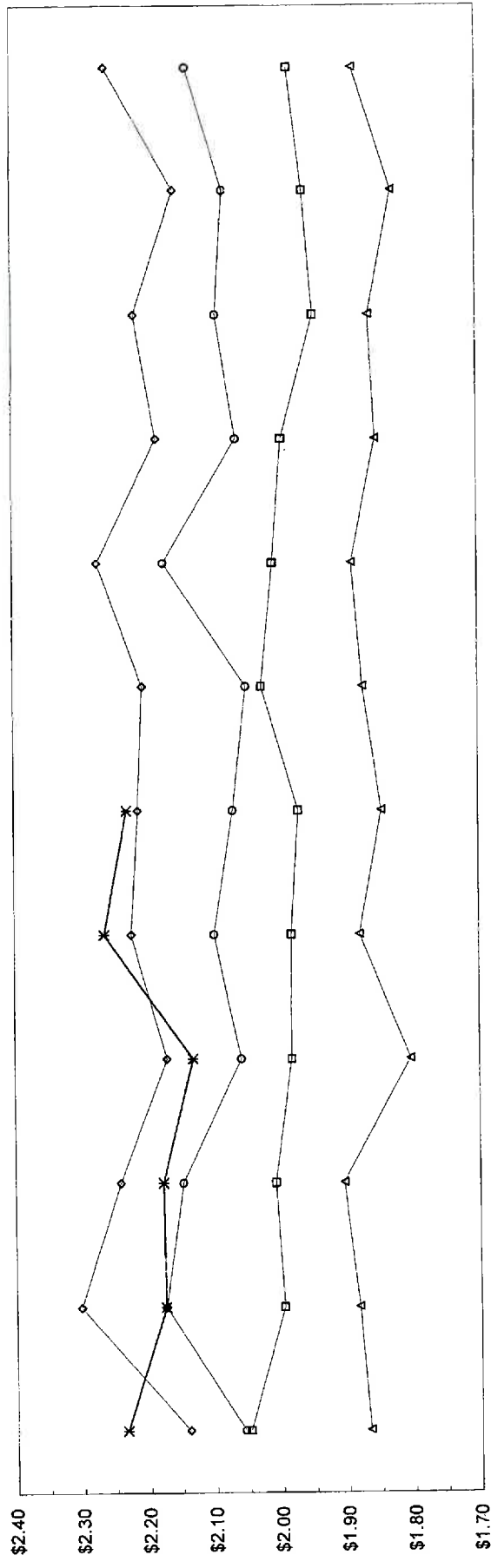


▲ FY 95/96 ■ FY 96/97 ○ FY 97/98 ◇ FY 98/99 * FY 99/00

Weekdays	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
FY 98/99	22	21	21	22	20	22	20	20	23	22	20	22	---
FY 99/00	21	22	21	21	21	22	20	21	23	20	22	22	---
Fare Revenue													
FY 95/96	\$1,106,541	\$1,172,240	\$1,131,395	\$1,163,291	\$1,176,330	\$1,035,409	\$1,170,397	\$1,120,033	\$1,181,259	\$1,161,798	\$1,213,203	\$1,216,993	\$1,154,074
FY 96/97	\$1,349,579	\$1,347,067	\$1,337,125	\$1,404,231	\$1,312,614	\$1,200,611	\$1,344,390	\$1,257,576	\$1,390,083	\$1,343,472	\$1,346,087	\$1,354,338	\$1,332,264
FY 97/98	\$1,491,958	\$1,539,722	\$1,584,033	\$1,587,233	\$1,459,752	\$1,421,856	\$1,456,122	\$1,451,946	\$1,583,997	\$1,516,369	\$1,497,312	\$1,543,390	\$1,511,141
FY 98/99	\$1,567,782	\$1,661,925	\$1,645,145	\$1,647,441	\$1,586,911	\$1,482,676	\$1,536,123	\$1,468,238	\$1,620,011	\$1,598,552	\$1,583,434	\$1,697,344	\$1,591,298
FY 99/00	\$1,739,028	\$1,695,406	\$1,711,759	\$1,758,420	\$1,769,351	\$1,671,830	\$1,689,577						\$1,719,339
% Change	10.9%	2.0%	4.0%	6.7%	11.5%	12.8%	10.0%						---
Cumulative Year-to-Date													
FY 95/96	\$1,106,541	\$2,278,781	\$3,410,175	\$4,573,466	\$5,749,796	\$6,785,205	\$7,955,602	\$9,075,635	\$10,256,893	\$11,418,691	\$12,631,894	\$13,848,887	---
FY 96/97	\$1,349,579	\$2,696,646	\$4,033,771	\$5,438,002	\$6,750,616	\$7,951,227	\$9,295,617	\$10,553,193	\$11,943,275	\$13,286,747	\$14,632,834	\$15,987,172	---
FY 97/98	\$1,491,958	\$3,031,680	\$4,615,713	\$6,202,946	\$7,662,698	\$9,084,553	\$10,540,675	\$11,992,621	\$13,576,618	\$15,092,987	\$16,590,299	\$18,133,689	---
FY 98/99	\$1,567,782	\$3,229,707	\$4,874,852	\$6,522,293	\$8,109,204	\$9,591,880	\$11,128,003	\$12,596,241	\$14,216,252	\$15,814,804	\$17,398,238	\$19,095,582	---
FY 99/00	\$1,739,028	\$3,434,434	\$5,146,193	\$6,904,613	\$8,673,964	\$10,345,794	\$12,035,371						---
% Change	10.9%	6.3%	5.6%	5.9%	7.0%	7.9%	8.2%						---

REVENUE PER PASSENGER

FY 95/96 to FY 99/00



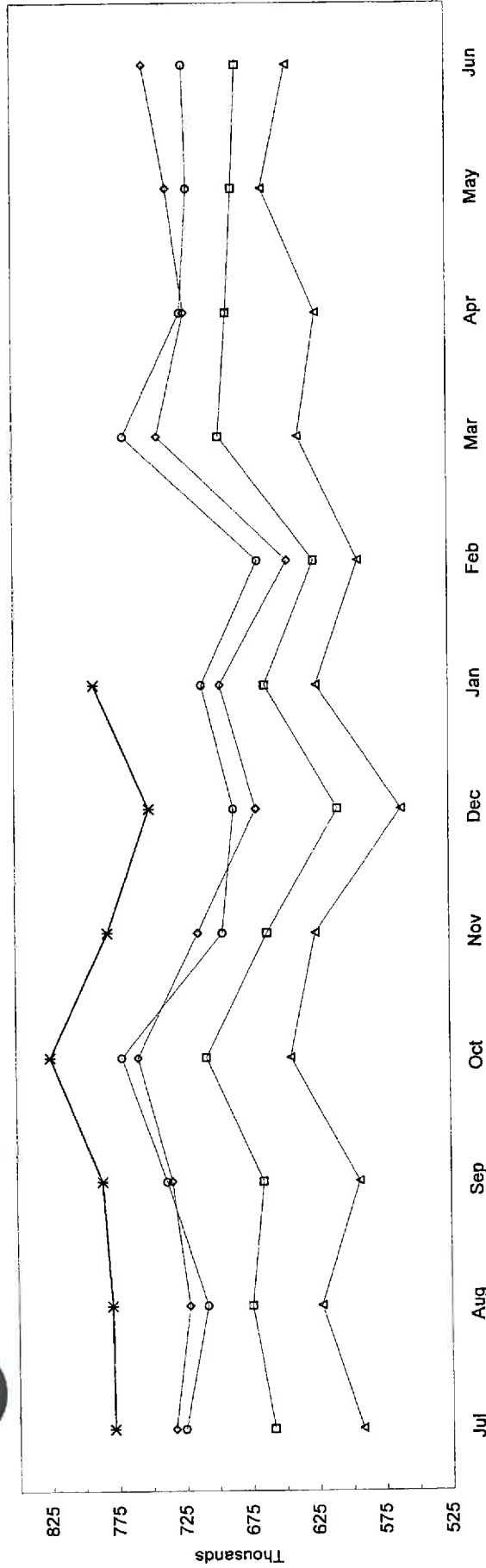
—▲— FY 95/96 —□— FY 96/97 —○— FY 97/98 —◇— FY 98/99 —*— FY 99/00

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
Revenue Per Passenger													
FY 95/96	\$1.87	\$1.88	\$1.91	\$1.80	\$1.88	\$1.85	\$1.87	\$1.89	\$1.85	\$1.86	\$1.83	\$1.89	\$1.86
FY 96/97	\$2.05	\$2.00	\$2.01	\$1.98	\$1.98	\$1.97	\$2.03	\$2.01	\$2.00	\$1.95	\$1.96	\$1.98	\$1.99
FY 97/98	\$2.06	\$2.17	\$2.15	\$2.06	\$2.10	\$2.07	\$2.05	\$2.17	\$2.06	\$2.09	\$2.08	\$2.14	\$2.10
FY 98/99	\$2.14	\$2.30	\$2.24	\$2.17	\$2.22	\$2.21	\$2.21	\$2.27	\$2.18	\$2.22	\$2.16	\$2.26	\$2.21
FY 99/00	\$2.23	\$2.18	\$2.18	\$2.13	\$2.27	\$2.23	\$2.14						\$2.19
% Change	4.4%	-5.5%	-2.9%	-1.8%	1.9%	0.8%	-3.1%						---
Cumulative Year-to-Date													
FY 95/96	\$1.87	\$1.88	\$1.89	\$1.86	\$1.87	\$1.86	\$1.87	\$1.87	\$1.87	\$1.87	\$1.86	\$1.86	---
FY 96/97	\$2.05	\$2.02	\$2.02	\$2.01	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.99	\$1.99	---
FY 97/98	\$2.06	\$2.12	\$2.13	\$2.11	\$2.11	\$2.10	\$2.09	\$2.10	\$2.10	\$2.10	\$2.10	\$2.10	---
FY 98/99	\$2.14	\$2.22	\$2.23	\$2.21	\$2.22	\$2.22	\$2.21	\$2.22	\$2.22	\$2.22	\$2.21	\$2.21	---
FY 99/00	\$2.23	\$2.21	\$2.20	\$2.18	\$2.20	\$2.20	\$2.19						---
% Change	4.4%	-0.7%	-1.4%	-1.6%	-0.9%	-0.6%	-1.0%						---



RIDERSHIP
FY 95/96 to FY 99/00

**JOINT
POWERS
BOARD**



-A- FY 95/96 -□- FY 96/97 -○- FY 97/98 -◇- FY 98/99 -*-* FY 99/00

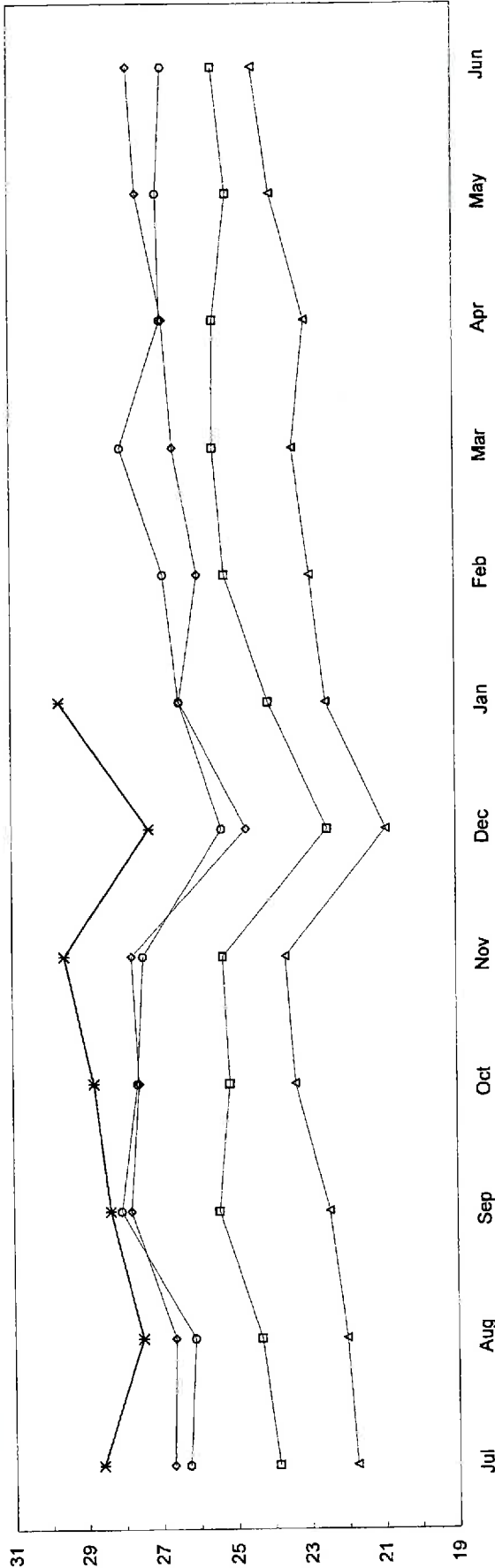
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
Ridership													
FY 95/96	592,299	622,415	593,788	644,835	625,681	560,838	624,618	592,627	637,353	623,722	664,059	645,353	618,966
FY 96/97	658,579	674,616	665,661	707,863	661,916	608,748	663,132	625,869	696,442	690,265	686,148	682,545	668,482
FY 97/98	725,181	707,958	737,589	770,694	695,248	686,612	710,128	668,053	767,474	724,338	719,283	722,204	719,564
FY 98/99	732,555	721,573	733,714	758,607	713,543	669,865	696,451	645,927	742,034	721,469	734,532	751,571	718,487
FY 99/00	778,318	779,220	785,987	824,767	781,116	749,472	790,623						784,215
% Change	6.2%	8.0%	7.1%	8.7%	9.5%	11.9%	13.5%						
Cumulative Year-to-Date													
FY 95/96	592,299	1,214,714	1,808,502	2,453,337	3,079,018	3,639,856	4,264,474	4,857,101	5,494,454	6,118,176	6,782,235	7,427,588	
FY 96/97	658,579	1,333,195	1,998,856	2,706,719	3,368,635	3,977,383	4,640,515	5,266,384	5,962,826	6,653,091	7,339,239	8,021,784	
FY 97/98	725,181	1,433,139	2,170,728	2,941,422	3,636,670	4,323,282	5,033,410	5,701,463	6,468,937	7,193,275	7,912,558	8,634,762	
FY 98/99	732,555	1,454,128	2,187,842	2,946,449	3,659,992	4,329,857	5,026,308	5,672,235	6,414,269	7,135,738	7,870,270	8,621,841	
FY 99/00	778,318	1,557,538	2,343,525	3,168,292	3,949,408	4,698,880	5,489,503						
% Change	6.2%	7.1%	7.1%	7.5%	7.9%	8.5%	9.2%						



AVERAGE WEEKDAY RIDERSHIP

FY 95/96 to FY 99/00

JOINT POWERS BOARD



▲ - FY 95/96 □ - FY 96/97 ○ - FY 97/98 ◆ - FY 98/99 * - FY 99/00

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
Average Weekday Ridership													
FY 95/96	21,779	22,032	22,477	23,383	23,647	20,893	22,526	22,944	23,406	23,051	23,966	24,446	22,879
FY 96/97	23,873	24,325	25,449	25,148	25,317	22,495	24,074	25,227	25,523	25,500	25,133	25,508	24,798
FY 97/98	26,289	26,124	28,070	27,620	27,450	25,333	26,453	26,864	28,002	26,904	27,001	26,846	26,913
FY 98/99	26,704	26,642	27,806	27,577	27,761	24,679	26,446	25,964	26,590	26,851	27,533	27,777	26,861
FY 99/00	28,609	27,516	28,369	28,796	29,596	27,282	29,702						
% Change	7.1%	3.3%	2.0%	4.4%	6.6%	10.5%	12.3%						
Cumulative Year-to-Date													
FY 95/96	21,779	21,906	22,096	22,418	22,664	22,369	22,391	22,460	22,565	22,614	22,737	22,879	---
FY 96/97	23,873	24,099	24,549	24,699	24,822	24,435	24,383	24,489	24,604	24,693	24,733	24,798	---
FY 97/98	26,289	26,206	26,827	27,026	27,111	26,814	26,763	26,775	26,912	26,911	26,919	26,913	---
FY 98/99	26,704	26,673	27,051	27,182	27,298	26,861	26,802	26,697	26,685	26,702	26,778	26,861	---
FY 99/00	28,609	28,062	28,164	28,322	28,577	28,361	28,553						---
% Change	7.1%	5.2%	4.1%	4.2%	4.7%	5.6%	6.5%						---



RIDERSHIP BY TICKET TYPE

FY 98/99 vs FY 99/00

JOINT
POWERS
BOARD

TICKET TYPE	MONTHLY RIDERS			% Change	BREAKDOWN BY TICKET TYPE		TOTAL RIDERS YEAR-TO-DATE		
	Jan. '99	Jan. '00	Jan. '00		Jan. '99	Jan. '00	FY 98/99	FY 99/00	% Change
Full OW/RT	159,294	186,897	17.3%	22.9%	23.6%	1,223,326	1,283,258	4.9%	
Half OW/RT	34,479	32,635	-5.3%	5.0%	4.1%	283,481	261,638	-7.7%	
DOP	43,957	45,822	4.2%	6.3%	5.8%	332,608	352,955	6.1%	
Monthly	330,589	377,885	14.3%	47.5%	47.8%	2,332,959	2,565,025	9.9%	
10-Ride	89,390	107,910	20.7%	12.8%	13.6%	606,640	675,460	11.3%	
Y/D Mon	31,920	31,710	-0.7%	4.6%	4.0%	195,964	189,298	-3.4%	
Weekend	6,822	7,764	13.8%	1.0%	1.0%	51,330	161,869	215.3%	
TOTAL:	696,451	790,623	13.5%	100.0%	100.0%	5,026,308	5,489,503	9.2%	

DEFINITION OF TICKET TYPES

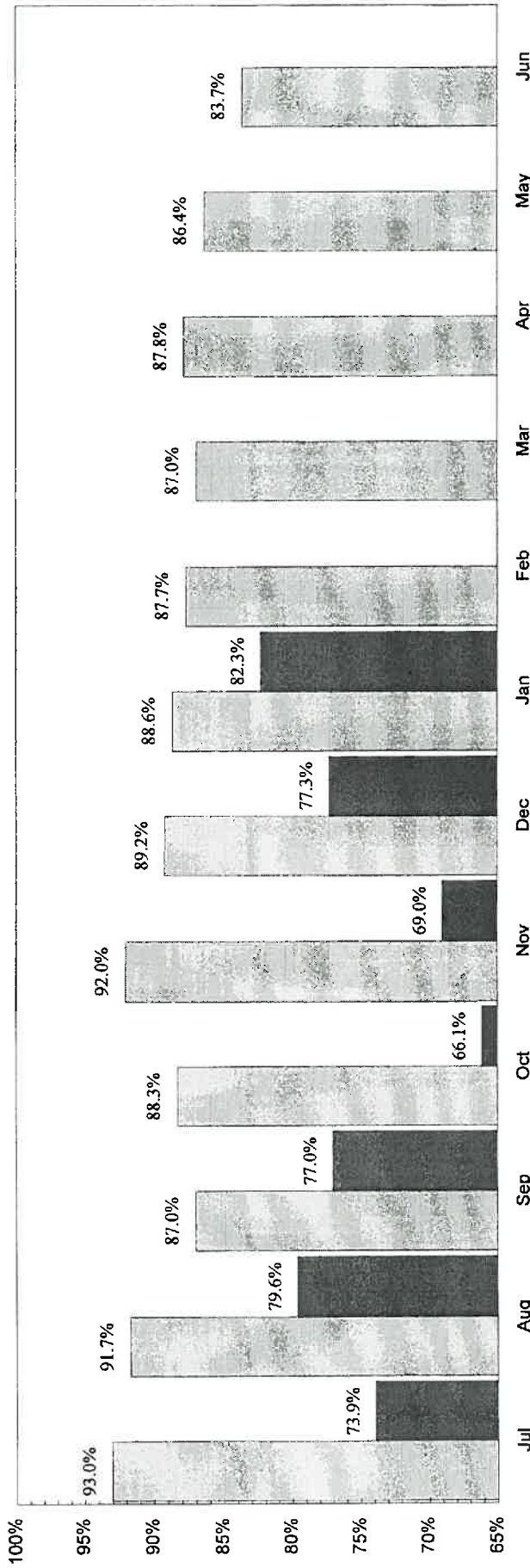
Full OW/RT: Full Fare one way & round trip tickets.
 Half OW/RT: Youth, elderly & disabled one way & round trip tickets.
 DOP: Discount off-peak ticket, instituted 7/31/95.
 Monthly: Monthly pass good for unlimited travel between zones indicated.
 10-Ride: 10-Ride Ticket valid for 60 days.
 Y/D Mon: Youth, elderly & disabled discount monthly pass.
 Weekend: Good for unlimited travel on weekends, instituted 7/93.



ON-TIME PERFORMANCE

FY 98/99 to FY 99/00

JOINT
POWERS
BOARD



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
On Time Performance													
FY 95/96	91.4%	90.1%	85.2%	79.3%	84.3%	81.6%	87.1%	87.3%	90.0%	88.4%	88.4%	86.0%	86.6%
FY 96/97	93.6%	95.9%	94.5%	94.4%	96.2%	95.3%	90.8%	94.4%	95.0%	95.6%	94.5%	91.3%	94.3%
FY 97/98	91.2%	91.7%	82.6%	88.0%	90.0%	91.7%	90.5%	85.9%	86.0%	88.0%	90.2%	91.0%	88.9%
FY 98/99	93.0%	91.7%	87.0%	88.3%	92.0%	89.2%	88.6%	87.7%	87.0%	87.8%	86.4%	83.7%	88.5%
FY 99/00	73.9%	79.6%	77.0%	66.1%	69.0%	77.3%	82.3%						75.0%
Equipment Availability													
FY 95/96	99.9%	99.8%	99.8%	99.8%	99.8%	99.8%	99.6%	99.8%	99.8%	99.8%	99.9%	99.8%	99.8%
FY 96/97	99.8%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.8%	99.8%	99.9%	99.9%	99.9%	99.9%
FY 97/98	99.8%	99.9%	99.9%	99.9%	99.9%	99.8%	99.5%	99.9%	99.8%	99.8%	99.9%	99.9%	99.8%
FY 98/99	99.9%	99.9%	99.9%	99.1%	98.7%	99.3%	99.5%	99.8%	99.1%	99.1%	99.4%	99.6%	99.5%
FY 99/00	99.0%	99.1%	98.5%	98.0%	98.0%	98.9%	99.2%						

Givens, Patrice

From: Jeff Carter <jcartrain@aol.com>
Sent: Tuesday, July 14, 2020 10:06 PM
To: cacsecretary [@caltrain.com]
Cc: JCARTRAIN@aol.com
Subject: Comments from Jeff Carter On 70 Train Schedule
Attachments: S P Timetable Aug 1977 016 Notes Jeff Carter 8-July-2020.pdf

Follow Up Flag: Follow up
Flag Status: Completed

To Caltrain JPB Citizens Advisory Committee July 14 2020,

Additional Public comments for the July 15, 2020 meeting from Jeff Carter:

At the June 17, 2020 CAC meeting there was some concern raised about the asymmetry and excessive padding in the 70-train schedule. Some local trains take 95 minutes, some take 104 minutes to serve 21 stations, trains 101 and 139 respectively, note that I'm including SF and SJ stations. Limited 205 serves 12 stations with a run time of 77 minutes and limited 207 serves 13 stations with a run time of 83 minutes.

I dug up a Southern Pacific timetable, dated August 6, 1977 and it shows train 122 (4:15 pm) taking 95 minutes to serve 24 stations SF to SJ. This was my regular afternoon train, it was 5 or 6 Harriman Subs, and had a lot of ons and offs for its run, I recall the October 1979 passenger count showing this train had a total of 1006 passengers, I believe the maximum peak load was in the neighborhood of 350-400, which indicates a lot of intermediate ridership, this train was a workhorse. The typical run time for trains serving 21 stations was 80 minutes, for example, train 120, leaving SF at 3:00 pm. Granted, 1977 was much different as most ridership was to SF in the morning and out of SF in the evening, there was little reverse commute and intermediate station activity, however, this was beginning to change. Of course, there were no bicycles or wheelchairs and not the heavy pre-COVID ridership we have in recent times. However, given the low ridership numbers currently on Caltrain, revision of the padding/run-times could result in time savings for Caltrain customers, and possibly a cost savings in on-board crew time. The service would be more attractive and encourage more ridership and revenue.

I have attached the 1977 SP timetable for reference.

Jeff Carter

New Address: 49 South Van Ness, Suite 1000

| sfpublicworks.org | twitter.com/sfpublicworks | [instagram.com/sfpublicworks](https://www.instagram.com/sfpublicworks)

Note that I'm working remotely during business hours. If you need to reach me, I'm available by e-mail, mobile phone at 415-728-5170, or Microsoft Teams.

From: Roland Lebrun <ccss@msn.com>

Sent: Tuesday, July 21, 2020 10:30 AM

To: Dea, Michelle (DPW) <michelle.dea@sfdpw.org>

Subject: DTX Executive Steering Committee

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Good Morning Michelle,

Could you please add me to the list of folks who get notified when the agendas are posted?

I was not aware of last Friday's meeting until yesterday afternoon and am unable to locate the video recording on SFGOVTV.

Can you point me to WebEx video archive?

Thanks again.

Roland.

Givens, Patrice

From: Roland Lebrun <ccss@msn.com>
Sent: Monday, July 27, 2020 3:28 PM
To: Board (@caltrain.com)
Cc: VTA Board Secretary; SFCTA Board Secretary; MTC Info; cacsecretary [@caltrain.com]; SFCTA CAC
Subject: Re: Restoring Caltrain ridership
Attachments: Restoring Caltrain ridership.pdf

Dear Chair Davis,

Every question you asked about directioning and physical distancing onboard trains was addressed in my attached 5/11 letter to the Board, specifically:

- *6-foot distancing on Gallery car upper decks is physically impossible, making it mandatory to **close off all Gallery car upper decks during the pandemic.***
- *6-foot distancing is achievable on the remaining 2+2 seating by eliminating every isle seat and every other window seat for a 75% reduction in capacity (6 out of every 8 seats).*
- ***Stair access must be restricted to a single direction (either up or down).***
- *Face masks must be worn at all times (no exceptions). Transit Police will carry spares for passengers needing assistance.*
- ***Standees will not be allowed on any train except in the Gallery bicycle storage areas (maximum 8 standees per bicycle car: total 16 standees).***

Sincerely,

Roland Lebrun

From: Roland Lebrun
Sent: Monday, May 11, 2020 11:15 AM
To: Caltrain Board <board@caltrain.com>
Cc: VTA Board Secretary <board.secretary@vta.org>; SFCTA Board Secretary <clerk@sfcta.org>; MTC Info <info@bayareametro.gov>; Caltrain CAC Secretary <cacsecretary@caltrain.com>; SFCTA CAC <cac@sfcta.org>
Subject: Restoring Caltrain ridership

Dear Chair Pine and Board members,

Further to SamTrans staff's catastrophic decision to achieve physical distancing through the termination of the popular Baby Bullet service and the ensuing disappearance of 98% of the Caltrain ridership, the purpose of the attached letter is to:

- 1) Follow up on Director Collins' request for the implementation of rigid physical distancing protocols on trains.
- 2) Propose a schedule focused on restoring ridership during the pandemic.

Thank you in advance for your consideration

Roland Lebrun

cc

SFCTA Commissioners
VTA Board of Directors
MTC Commissioners
Caltrain CAC
SFCTA CAC
VTA CAC

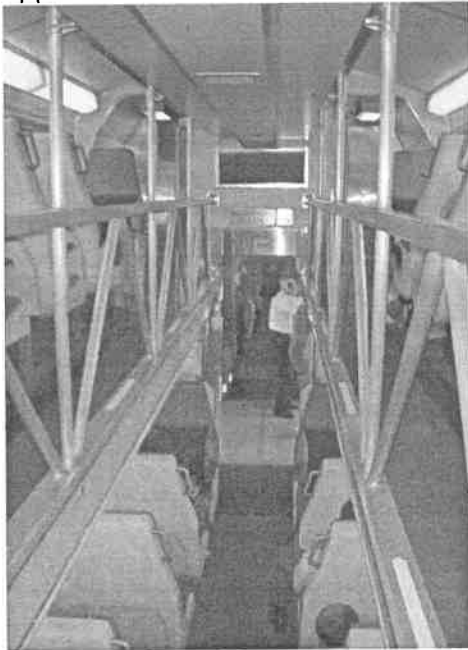
Dear Chair Pine and Board members,

Further to SamTrans staff's catastrophic decision to achieve physical distancing through the termination of the popular Baby Bullet service and the ensuing disappearance of 98% of the Caltrain ridership, the purpose of this letter is to:

- 1) Follow up on Director Collins' request for the implementation of **rigid physical distancing protocols** on trains.
- 2) Propose a schedule focused on restoring ridership during the pandemic.

Background

Caltrain currently operates two kinds of railcars:
"Gallery" cars with a single high entrance door and two single rows of seats on the upper deck.



"Bombardier" cars with dual door entrances at opposite ends and 2+2 seating on both the upper and lower decks.



Physical Distancing

- 6-foot distancing on Gallery car upper decks is physically impossible, making it mandatory to **close off all Gallery car upper decks during the pandemic.**
- 6-foot distancing is achievable on the remaining 2+2 seating by **eliminating every isle seat and every other window seat** for a 75% reduction in capacity (6 out of every 8 seats).
- **Stair access must be restricted to a single direction** (either up or down).
- Face masks must be worn at all times (no exceptions). **Transit Police will carry spares for passengers needing assistance.**
- **Standees will not be allowed on any train except in the Gallery bicycle storage areas** (maximum 8 standees per bicycle car; total 16 standees).
- Conductors will walk the trains between stations to ensure that all protocols are being adhered to and may request Transit Police assistance.

Revised Schedule

- Hourly local (all stops) **Gallery trains** will continue during hours of operations.
- **Hourly Bullet Bombardier trains** will make stops at San Jose, Sunnyvale, Mountain View, Palo Alto, Redwood City, San Mateo, Millbrae and San Francisco **during all hours of operations.**
- Buses will be timed to provide connections with Bullet trains.
- Bullet service frequency will be increased to match demand.
- **Hourly local service will be terminated if it interferes with Bullet traffic.**
- **Two Bombardier trains will be on standby at Redwood Junction during peak to relieve overcrowding as necessary.**

Respectfully submitted for your consideration.

Roland Lebrun

Givens, Patrice

From: Roland Lebrun <ccss@msn.com>
Sent: Wednesday, July 29, 2020 12:49 PM
To: Board (@caltrain.com)
Cc: VTA Board Secretary; MTC Info; SFCTA Board Secretary; SFCTA CAC; cacsecretary
[@caltrain.com]
Subject: Real-time Vehicle and Platform Occupancy Information

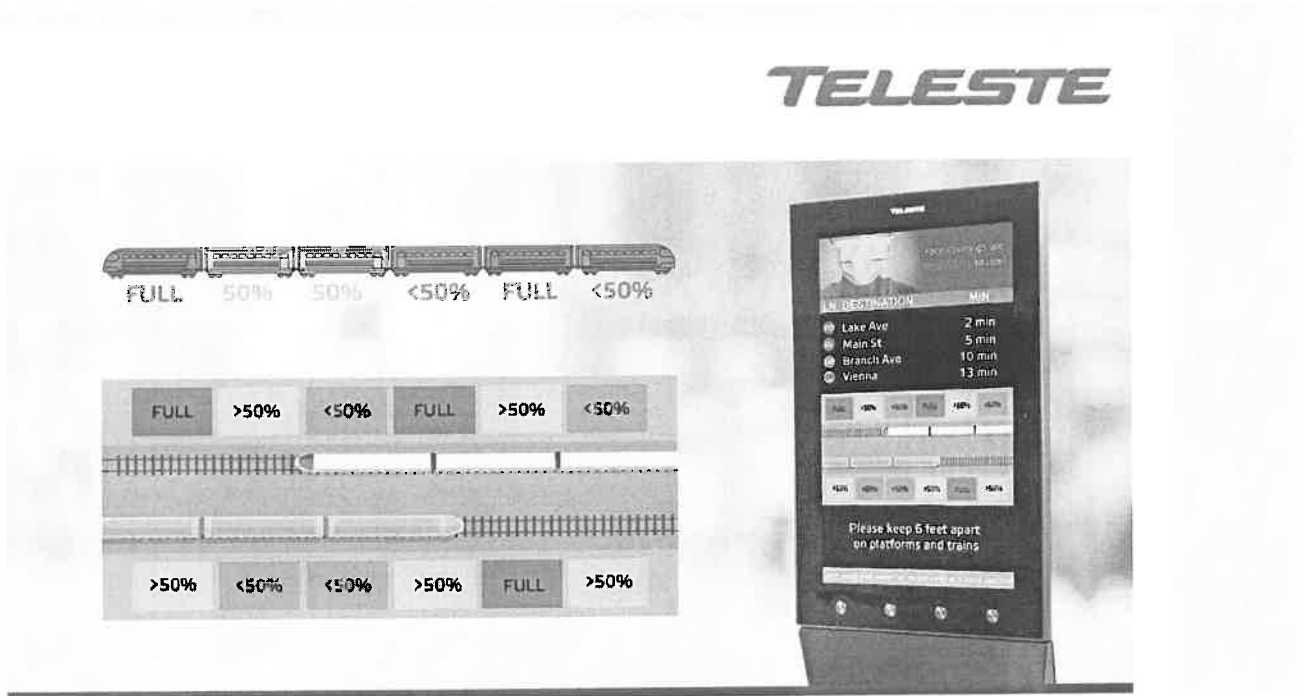
Dear Chair Pine and Board members,

Please consider distributing this information to assist returning riders in observing safe distancing protocols

Thank You

Roland Lebrun

CC
SFCTA Board of Directors
VTA Board of Directors
MTC Commissioners
SFCTA CAC
Caltrain CAC



Real-time Vehicle and Platform Occupancy Information

Transit agencies are looking to deploy solutions to safely guide returning ridership. A large piece of this is providing them with informative tools on where to go in order to observe social distancing guidelines. The key to this is incorporating vehicle and platform occupancy information that is displayed with departure tables and PSA's.

Teleste's Passenger Information and Content Management System manages all of these tools and can be rapidly deployed into existing systems. The information can be shared with mobile apps and other emerging technologies in order to enhance the rider's travel experience.

Agencies can also combine Teleste's PIS/CMS system with our Digital Signage products (Wayside, Stops and On-board) for a fully integrated passenger experience solution.

For more information on our Information Management Solutions, please contact us at solutions.usa@teleste.com



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Address source: Customer register of Teleste LLC, 440 Forsgate Drive, Cranbury, NJ 08512

Click [here](#) if you are having trouble viewing this message.

Givens, Patrice

From: Roland Lebrun <ccss@msn.com>
Sent: Wednesday, August 05, 2020 2:34 AM
To: Board (@caltrain.com)
Cc: SFCTA Board Secretary; MTC Info; cacsecretary [@caltrain.com]; SFCTA CAC
Subject: Item 5f Balfour Beatty breach of contract
Attachments: Item 5f Electrification RFP.pdf

Dear Chair Pine and Board members,

Please be aware of serious issues with the staff report which states that "*shunt wires are required to protect the safety of the public and rail or utility facilities in case the utility lines crossing the Overhead Contact System (OCS) should fall and make contact with the OCS*", when the real reason for this \$9.5M change order is a **flagrant breach of contract by Balfour Beatty**, not new CPUC safety requirements.

Background

Utility clearances are covered in Section 9.6 of Volume III of the RFP (attached).
Section 9.6.4 deals with overhead utilities and specifies the following:

"Where electrical lines with voltage less than 30 kV and communication lines cannot be accommodated in an overpass structure, they shall be relocated underground"

Recommendation

Please consider initiating a full investigation into how overhead utilities ended up getting raised instead of undergrounded and make the responsible parties accountable for their actions as continued mismanagement of this project will result in cost escalations into the **hundreds of millions of dollars in excess of remaining contingency**.

Thank you in advance for your consideration

Roland Lebrun

CC
SFCTA Commissioners
MTC Commissioners
VTA Board of Directors
Caltrain CAC
SFCTA CAC

A level of service equivalent to the existing service shall be maintained for adjacent properties, residents, and businesses throughout construction by supporting utilities in place, diverting if necessary, interruption of existing utilities service shall be minimized. Service shall not be interrupted without the prior written consent of utility owners.

9.6 Utility Clearances

The minimum requirements for utility clearances shall be as defined by the CPUC GOs as applicable, Caltrans HDM and PDPM, AREMA, utility owner's requirements, and these Design Criteria. The Design-Builder shall use the most stringent and conservative clearance requirements as determined from these documents. These requirements apply to Caltrain Systems related facilities as well as those owned by others. In addition, High Risk and Low Risk utilities shall comply with the following requirements:

9.6.1 High Risk and Low Risk Utilities

High-risk utilities include: fiber optic cable, utilities conducting toxic or flammable gases or liquids, pressurized greater than 60 psi normal operating pressure or in pipelines greater than 6 inches in diameter, and underground electrical supply lines that have potential to ground more than 300 volts, either directly buried or in a duct bank or conduit which do not have concentric grounded or effectively grounded metal shields or sheath.

All other utilities are considered Low Risk utilities.

9.6.2 High Risk Utilities

- Maintain 5 feet minimum horizontal separation from other Low Risk utilities
- Maintain 5 feet minimum horizontal separation from non-load carrying and load carrying structural elements, including OCS pole foundations and down guys

9.6.3 Low Risk Utilities

- Maintain 3 feet minimum horizontal separation from other Low Risk utilities
- Maintain 5 feet minimum horizontal separation from load carrying structural elements, including OCS pole foundations and down guys, and 3-foot minimum horizontal separation from other structures
- Maintain 3 feet minimum vertical separation from drainage pipes
- The above clearances are minimum requirements. Where such condition is impractical, a design variance shall be submitted to the Authority.

Electrical and communication lines within the Authority's right-of-way must comply with the above requirements except that a concrete encased duct bank can be used in lieu of steel casing pipe. All underground electrical utilities and supporting facilities within the planned construction area must meet the minimum clearance requirements as defined in CPUC GOs.

9.6.4 Overhead Utilities

Overhead utilities shall cross the tracks at local, street, or highway overpasses. Such utilities shall either be contained within the overpass structure, or if attached to the outside of the overpass

structure, shall be encased in a steel casing sleeve, which shall be grounded and bonded in accordance with the Grounding and Bonding Requirements chapter. Where electrical lines with voltage less than 30 kV and communication lines cannot be accommodated in an overpass structure, they shall be relocated underground per clearance requirements established in this chapter. Clearances for overhead electrical lines with voltage higher than 30 kV shall be governed by CPUC GO No. 95 or wire to wire clearance requirements, whichever is more stringent, and shall be modified to a higher class of construction.

9.7 Miscellaneous Utilities and Supporting Facilities

9.7.1 Railroad Utilities

Signals and communication lines belonging to railroad companies may be affected by construction of the Caltrain Electrification Project. The design and rearrangement of such utilities and supporting facilities that conflict with Caltrain Electrifications Project may be performed by the Design-Builder or by the facility owner in accordance with owner's standards.

Where Caltrain utilities and supporting facilities impact railroad utility facilities or where rearrangement of other utility facilities will impact or potentially affect the operation of railroad utility facilities, the Design-Builder shall coordinate its work with the Authority so that adequate data can be furnished to the railroad to complete its work. The Design-Builder shall include the rearrangement of railroad utilities in the utilities plan.

9.7.2 Street Lights and Traffic Control Devices

Traffic control devices and street lighting facilities belonging to municipal agencies may be affected by construction. Any facility affected or impacted by the construction shall be replaced in-kind, unless otherwise indicated in the agreement between the Authority and the affected agencies.

9.7.3 Fire Alarm and Police Communication Systems

Protection, relocation, and support-in-place of the fire alarm and police communication systems within construction limits shall be in strict conformance with the current standards of the governing agency or municipality.

The Design-Builder shall indicate which emergency communication lines is to be maintained complete in-place, removed, protected and supported, temporarily relocated and replaced after construction is complete. The lines to be abandoned or are already abandoned shall also be indicated.

9.7.4 Vaults

Private vaults surrounding the project area that do not conflict with the proposed shall be protected in place. Vaults that are found to be in conflict with the proposed construction shall be subject to demolition and/ or relocation.

END OF CHAPTER

Givens, Patrice

From: Roland Lebrun <ccss@msn.com>
Sent: Thursday, August 13, 2020 2:05 PM
To: CHSRA Board
Cc: Board (@caltrain.com); MTC Info; SFCTA Board Secretary; VTA Board Secretary; Nila Gonzales; cacsecretary [@caltrain.com]; TJPA CAC; SFCTA CAC
Subject: CHSRA 8/13 Board meeting Public comment

Good morning Vice chair Richards and board members,

This is Roland Lebrun in San Jose. Thank you for the opportunity. I would like to touch on a couple of items this morning:

First, I would like to inform you that a requirement for members of the public to pre-register to address this body constitutes a violation of Government code section 54953.3.

https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV§ionNum=54953.3.

Law section - California Legislative Information

54953.3. A member of the public shall not be required, as a condition to attendance at a meeting of a legislative body of a local agency, to register his or her name, to provide other information, to complete a questionnaire, or otherwise to fulfill any condition precedent to his or her attendance.

leginfo.legislature.ca.gov

The second item is more serious and relates to the July 1st 2019 letter from the FRA to Governor Newsom which granted NEPA assignment to the Authority, specifically section 4 which deals with “certifications and acceptance of jurisdictions” and in particular section 4.2.3 which concludes with the following:

“If the State is unable to obtain adequate organizational and staff capability, the State will inform FRA and the MOU will be amended to assign only the responsibilities that are commensurate with the available organizational and staff capability, as determined appropriate by FRA”

<https://railroads.dot.gov/elibrary/assignment-nepa-certain-environmental-review-responsibilities-state-california>

Assignment of NEPA Certain Environmental Review Responsibilities to the State of California - | FRA

DOT is committed to ensuring that information is available in appropriate alternative formats to meet the requirements of persons who have a disability.

railroads.dot.gov

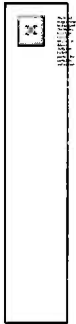
In closing, here are a couple of examples of why this is a serious issue:

First, Network Rail have no high-speed rail expertise whatsoever other than the operations and maintenance contract for the Channel Tunnel Rail Link, now known as High Speed One (HS1) which, coincidentally, was designed, built and FINANCED by the same Bechtel/Arup/Systra consortium that the authority rejected at the June 2015 Board meeting (material no longer available on the Authority's web site) in favor of Parsons Brinckerhoff.

You will be hearing more next month about emerging issues with Network Rail's oversight of the Caltrain electrification and signaling issues at grade crossings in particular.

Last but not least, I once asked the gentleman who will be giving the Central Valley Wye presentation if he had any high-speed rail experience and his answer was "Yes, *this one*" which I knew to be the correct answer because I had invested a couple of minutes looking up Mr. Kennerley's bio on LinkedIn before asking the question.

<https://www.linkedin.com/in/gary-kennerley-8ab30128>



Gary Kennerley - Engineering Manager - WSP USA | LinkedIn

Director jobs in San Mateo, CA. 45,959 open jobs. Software Engineering Manager jobs. 2,126 open jobs. San Francisco jobs in San Mateo, CA. 21,487 open jobs

www.linkedin.com

Thank You

Roland Lebrun

CC
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SFCTA Commissioners
VTA Board of Directors
TJPA Board of Directors
Caltrain CAC
TJPA CAC
SFCTA CAC

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54953.3. A member of the public shall not be required, as a condition to attendance at a meeting of a legislative body of a local agency, to register his or her name, to provide other information, to complete a questionnaire, or otherwise to fulfill any condition precedent to his or her attendance.

If an attendance list, register, questionnaire, or other similar document is posted at or near the entrance to the room where the meeting is to be held, or is circulated to the persons present during the meeting, it shall state clearly that the signing, registering, or completion of the document is voluntary, and that all persons may attend the meeting regardless of whether a person signs, registers, or completes the document.

(*Amended by Stats. 1981, Ch. 968, Sec. 28.*)



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

July 1, 2019

The Honorable Gavin Newsom
Governor
State of California
1303 10th Street, Suite 1173
Sacramento, CA 95814

Dear Governor Newsom,

I write today in response to the State of California's January 31, 2018, application to assume the Federal Railroad Administration's environmental review responsibilities under the National Environmental Policy Act, and other Federal environmental laws, for certain projects relating to the California High-Speed Rail System.

After carefully reviewing California's application and considering public input, I determined that California met the applicable statutory and regulatory requirements, so I now approve the application. Enclosed, please find a Memorandum of Understanding (MOU) with my signature. Upon your signature of the MOU, California's assumption of FRA's environmental review responsibilities will be effective, and California will be solely responsible for carrying out those responsibilities.

Once you have returned the signed MOU, my staff will contact the California High-Speed Rail Authority regarding administration of the MOU requirements.

Sincerely,



Ronald L. Batory
Administrator

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE FEDERAL RAILROAD ADMINISTRATION AND THE STATE OF CALIFORNIA,
ACTING THROUGH ITS CALIFORNIA STATE TRANSPORTATION AGENCY AND ITS
CALIFORNIA HIGH -SPEED RAIL AUTHORITY,
FOR THE STATE OF CALIFORNIA'S PARTICIPATION IN THE SURFACE TRANSPORTATION
PROJECT DELIVERY PROGRAM PURSUANT TO 23 U.S.C. 327**

THIS MEMORANDUM OF UNDERSTANDING (MOU) is entered into by and between the FEDERAL RAILROAD ADMINISTRATION (FRA), an administration in the UNITED STATES DEPARTMENT OF TRANSPORTATION (USDOT), and the State of CALIFORNIA (the State), acting by and through its CALIFORNIA STATE TRANSPORTATION AGENCY (CalSTA) and its CALIFORNIA HIGH SPEED RAIL AUTHORITY (CHSRA), and hereby provides as follows:

WITNESSETH

Whereas, Section 327 of Title 23 of the U.S. Code (U.S.C.) establishes the Surface Transportation Project Delivery Program (Project Delivery Program), which allows the Secretary of the United States Department of Transportation (USDOT Secretary) to assign, and states to assume, the USDOT Secretary's responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.) (NEPA), and all or part of the USDOT Secretary's responsibilities for environmental review, consultation, or other actions required under any other Federal environmental laws, with respect to highway, railroad, public transportation, or multimodal projects within the state; and

Whereas, the USDOT Secretary's responsibilities to administer the Project Delivery Program have been delegated to the Administrators of the Federal Highway Administration (FHWA) (49 C.F.R. 1.85(a)(21)), FRA (49 C.F.R. 1.89(q)), and the Federal Transit Administration (49 C.F.R. 1.91(c)).

Whereas, on July 1, 2007, FHWA and the California Department of Transportation (Caltrans) entered into a Memorandum of Understanding under which Caltrans assumed certain duties and responsibilities of FHWA under NEPA and other Federal environmental laws as authorized by a pilot program established under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Pub. L. 109-59, Aug. 10, 2005) (Pilot Program); and

Whereas, on August 10, 2011, FHWA and Caltrans entered into an Amended Memorandum of Understanding; and

Whereas, Section 1313 of the Moving Ahead for Progress in the 21st Century Act (Pub. L 112-141, July 6, 2012) made the Pilot Program permanent and expanded its scope to include railroad, public transportation, and multimodal projects; and

Whereas, on September 25, 2012, FHWA and Caltrans entered into another Memorandum of Understanding allowing Caltrans to continue to participate in the Project Delivery Program under the terms of the Original and Amended Memorandum of Understandings; and

Whereas, on December 23, 2016, FHWA and Caltrans entered into a revised Memorandum of Understanding allowing Caltrans to continue to participate in the Project Delivery Program; and

Whereas, 23 U.S.C. 327(a)(2)(B)(ii) authorizes USDOT to assign the duties and responsibilities of the FRA under NEPA and other Federal environmental laws to a State for one or more railroad projects if the State has been assigned such duties and responsibilities for highway projects; and

Whereas, in a May 12, 2017, letter to the President of the United States, the Governor of the State of California expressed an interest in participating in the Project Delivery Program with respect to the California High-Speed Rail (HSR) System; and

Whereas, in a June 16, 2017, letter to the USDOT Secretary, the Secretary of CalSTA requested that USDOT initiate the process to allow the State to participate in the Project Delivery Program with respect to the California HSR System; and

Whereas, pursuant to 23 C.F.R. 773.107(b), on November 9, 2017, the State gave public notice of its intention to participate in the Project Delivery Program for railroad projects and provided the public with an opportunity to comment;

Whereas, pursuant to 23 U.S.C. 327(a)(2)(B)(ii) and (b)(2) and 23 C.F.R. 773.109(c), on January 31, 2018, the State submitted an application to FRA to participate in the Project Delivery Program and assume FRA's responsibilities for certain railroad projects within the State; and

Whereas, on May 2, 2018, FRA published a *Federal Register* notice and provided an opportunity for comment on the State's application and a draft of this MOU and solicited the views of the public and other Federal agencies concerning these materials as required by 23 C.F.R. 773.111(a); and

Whereas, the USDOT Secretary, acting by and through FRA, has considered the application and comments received as a result of the *Federal Register* notice as required by 23 C.F.R. 773.111(a) and has determined that the State's application package meets all the requirements of 23 U.S.C. 327 and 23 C.F.R. part 773.

Now, therefore, FRA and the State agree as follows:

PART 1. PURPOSE OF MEMORANDUM OF UNDERSTANDING

1.1 Purpose

This MOU officially approves the State's application to participate in the Project Delivery Program and is the written agreement required pursuant to 23 U.S.C. 327(a)(2)(B)(ii) and (c). FRA's decision to execute this MOU is based upon the information, representations, and commitments contained in the State's January 31, 2018, application package and consideration of comments received during the comment period.

PART 2. EFFECTIVE DATE

This MOU is effective upon final execution by both parties (the Effective Date).

PART 3. ASSIGNMENTS AND ASSUMPTIONS OF RESPONSIBILITY

3.1 Assignments and Assumptions of NEPA Responsibilities

3.1.1 Pursuant to 23 U.S.C. 327(a)(2)(B)(ii), on the Effective Date, FRA assigns, and the State assumes, subject to the terms and conditions set forth in 23 U.S.C. 327 and this MOU, all of FRA's responsibilities for compliance with NEPA with respect to the railroad projects identified in subpart 3.3. This assignment includes statutory provisions, regulations, policies, and guidance related to the implementation of NEPA for assigned projects, such as 23 U.S.C. 139, 49 U.S.C. 24201, 40 C.F.R. parts 1500-1508, 23 C.F.R. part 771, USDOT Order 5610.1C (Jul. 30, 1985), and FRA's Procedures for Considering Environmental Impacts (published at 64 Fed. Reg. 28545 (May 26, 1999) and 78 Fed. Reg. 2713 (Jan. 14, 2013)), as applicable.

3.1.2 On the cover page of each environmental assessment (EA), finding of no significant impact (FONSI), environmental impact statement (EIS), and record of decision (ROD) and in any

documentation corresponding to a categorical exclusion (CE) determination, prepared for a railroad project assigned under this MOU, the State will insert the following language:

“The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated _____, and executed by the Federal Railroad Administration and the State of California.”

The State will provide the same or substantially similar disclosure to the public and agencies as part of initial agency outreach and public involvement, including in any notice of intent or scoping meeting notice and as otherwise appropriate.

3.2 Assignments and Assumptions of Responsibilities to Comply with Federal Environmental Laws Other Than NEPA

- 3.2.1 Pursuant to 23 U.S.C. 327(a)(2)(B), on the Effective Date, FRA assigns, and the State assumes, subject to the terms and conditions set forth in 23 U.S.C. 327 and this MOU, all of FRA's responsibilities for environmental review, consultation, or other action required or arising under the following Federal environmental laws for the assigned railroad projects described in subpart 3.3:

Environmental Review Process

- Efficient environmental reviews for project decisionmaking, 23 U.S.C. 139
- Efficient environmental reviews, 49 U.S.C. 24201

Air Quality

- Clean Air Act, 42 U.S.C. 7401–7671q, except to the extent 23 U.S.C. 327 requires FRA to retain responsibility for conformity determinations required under Section 176 of the Clean Air Act (42 U.S.C. 7506)¹

Noise

- Noise Control Act of 1972, 42 U.S.C. 4901–4918

Wildlife

- Endangered Species Act of 1973 (ESA), 16 U.S.C. 1531–1544
- Marine Mammal Protection Act, 16 U.S.C. 1361–1423h
- Anadromous Fish Conservation Act, 16 U.S.C. 757a–757f
- Fish and Wildlife Coordination Act, 16 U.S.C. 661–667d
- Migratory Bird Treaty Act, 16 U.S.C. 703–712
- Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended, 16 U.S.C. 1801–1891d

¹ Under 23 U.S.C. 327(a)(2)(B)(iv)(II), FRA may not assign its responsibility for making air quality conformity determinations. If the statute is amended to remove this prohibition, the State may seek to assume FRA's responsibility for conformity determinations consistent with 23 C.F.R. 773.113.

Hazardous Materials Management

- Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601–9675
- Superfund Amendments and Reauthorization Act, 42 U.S.C. 9671–9675
- Resource Conservation and Recovery Act, 42 U.S.C. 6901–6992k

Historic and Cultural Resources

- National Historic Preservation Act of 1966, as amended, 54 U.S.C. 306101–307108, et seq., except to the extent 23 C.F.R. 773.105(b)(4) requires FRA to retain responsibility for government-to-government consultation with Indian tribes
- Archeological Resources Protection Act, 16 U.S.C. 470aa– 479mm
- Title 54, Chapter 3125 – Preservation of Historical and Archeological Data, 54 U.S.C. 312501–312508
- Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001– 3013; 18 U.S.C. 1170

Social and Economic Impacts

- American Indian Religious Freedom Act, 42 U.S.C. 1996
- Farmland Protection Policy Act, 7 U.S.C. 4201–4209

Water Resources and Wetlands

- Clean Water Act, 33 U.S.C. 1251–1387 (Sections 401, 402, 404, 408, and Section 319)
- Safe Drinking Water Act, 42 U.S.C. 300f–300j-26
- Rivers and Harbors Act of 1899, 33 U.S.C. 401 and 403
- Wild and Scenic Rivers Act, 16 U.S.C. 1271–1287
- Emergency Wetlands Resources Act, 16 U.S.C. 3901–3902 and 3921
- Flood Disaster Protection Act, 42 U.S.C. 4001–4133
- General Bridge Act of 1946, 33 U.S.C. 525–533
- Coastal Barrier Resources Act, 16 U.S.C. 3501–3510
- Coastal Zone Management Act, 16 U.S.C. 1451–1466

Parklands and Other Special Land Uses

- 49 U.S.C. 303 (Section 4(f))
- Land and Water Conservation Fund Act, 54 U.S.C. 200301–200310

Executive Orders

- E.O. 11990, Protection of Wetlands
- E.O. 11988, Floodplain Management
- E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low -Income Populations
- E.O. 13112, Invasive Species as amended by E.O. 13751, Safeguarding the Nation from the Impacts of Invasive Species
- E.O. 13807, Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects

3.2.2 In accordance with 23 U.S.C. 327(a)(2)(D), any FRA environmental review responsibility not explicitly listed in subpart 3.1 and this subpart 3.2 will remain the responsibility of FRA unless the parties add new responsibilities through the process established in Part 14 of this MOU and consistent with 23 C.F.R. 773.113(b).

- 3.2.3 Nothing in this MOU abrogates the State's responsibility to comply with the requirements of any Federal environmental law (e.g., Section 404 of the Clean Water Act) that may apply directly to the State independent of FRA's involvement.
- 3.2.4 The FRA's responsibilities for Government-to-Government consultation with Indian tribes, as defined in 36 C.F.R. 800.16(m) and Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, are not assigned to or assumed by the State under this MOU. The FRA remains responsible for such Government-to-Government consultation, including initiation of consultation. A notice from the State to an Indian tribe advising the tribe of a proposed activity is not considered "Government-to-Government consultation" within the meaning of this MOU. If an Indian tribe raises a concern or issue to FRA related to a project or projects assigned under this MOU during Government-to-Government consultation, and FRA, in consultation with the tribe, determines the State will not satisfactorily resolve the issue or concern, then FRA may withdraw the assignment of all or part of the responsibilities assigned for the project or projects pursuant to the provisions of subpart 9.1. This MOU does not abrogate, or prevent future entry into, any agreement among the State, FRA, and a tribe under which the tribe agrees to permit the State to administer Government-to-Government consultation activities for FRA. However, such agreements are administrative in nature and do not relieve the FRA of its legal responsibility for Government-to-Government consultation.
- 3.2.5 In accordance with 23 U.S.C. 327(a)(2)(B)(iv), this MOU does not permit the State to assume the FRA's responsibilities for conformity determinations required under Section 176 of the Clean Air Act (42 U.S.C. 7506) or any responsibility for the transportation planning process under 23 U.S.C. 134 or 135 and 49 U.S.C. 5303 or 5304.
- 3.2.6 On the cover page of each biological evaluation or assessment, historic properties or cultural resources report, Section 4(f) evaluation, or other such reports prepared under the authority granted by this MOU and distributed to other agencies or the public, the State will insert the following language:
- "The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated _____, and executed by the Federal Railroad Administration and the State of California."
- The State will provide the same or substantially similar disclosure to the public and agencies as part of agency outreach and public involvement procedures.
- 3.2.7 The State will continue to adhere to the terms of Biological Opinions (BOs) issued by the United States Fish and Wildlife Service or National Marine Fisheries Service (together, the Services) prior to the Effective Date, to the extent that the terms of those BOs remain in effect. The State is responsible for reinitiating consultation, if required under a BO issued prior to the Effective Date, and will comply with any revisions or amendments to a BO made after the Effective Date. The State will assume FRA's ESA Section 7 (16 U.S.C. 1536) responsibilities for consultations (formal and informal) ongoing as of the Effective Date with respect to the projects described in subpart 3.3. The State will assume FRA's environmental review role and responsibilities as identified in existing interagency agreements among the State, the Services, and FRA, or negotiate new agreements with the Services, if needed.
- 3.2.8 The State will not make any determination that an action constitutes a constructive use of a publicly owned park, public recreation area, wildlife refuge, waterfowl refuge, or historic site under Section 4(f) without first consulting with FRA and obtaining FRA's views on such determination. The State will provide FRA written notice of any proposed constructive use determination, and FRA will have thirty (30) calendar days to review and provide comment. If

FRA objects to the constructive use determination, the State will not proceed with the determination.

3.3 Assigned Railroad Projects

3.3.1 Except as provided by section 3.3.2 below, the assignments and assumptions of the FRA's responsibilities under subparts 3.1 and 3.2 apply to the environmental review, consultation, or other action pertaining to the environmental review of the following railroad projects located within the State. As applicable, the State's responsibilities for a particular railroad project could be as the lead agency, cooperating agency, or participating agency. As necessary, the State will be responsible for reevaluating railroad projects, as may be necessary from time to time under the laws and rules listed in subparts 3.1 and 3.2, for which construction is not completed prior to the Effective Date.

A. Projects necessary for the design, construction, and operation of the California HSR System, including the following project sections and any ancillary facilities (including, but not limited to, electrical interconnections and network upgrades):

1. Merced to Sacramento
2. San Francisco to San Jose
3. San Jose to Merced
4. Merced to Fresno (including the Central Valley Wye Supplemental EIS)
5. Fresno to Bakersfield (including the Supplemental EIS for the Locally Generated Alternative)
6. Bakersfield to Palmdale
7. Palmdale to Burbank
8. Burbank to Los Angeles
9. Los Angeles to Anaheim
10. Los Angeles to San Diego

B. Projects directly connected to stations on the California HSR System, including the following Los Angeles County Metropolitan Transportation Authority projects:

1. Link Union Station
2. West Santa Ana Branch Transit Corridor

The FRA or the State, acting through CalSTA and CHSRA, may identify additional projects that fall within this class of projects and, by mutual agreement, the FRA and the State may determine that such projects are appropriate for assignment under this MOU. In such circumstances, no amendment to this MOU would be necessary.

C. The ACEforward project within the Altamont Corridor Express system.

3.3.2 Projects that cross state boundaries or that cross or are adjacent to international boundaries are excluded from the railroad projects for which FRA environmental review responsibilities are being assumed by the State. For purposes of this MOU, a project is considered "adjacent to international boundaries" if it requires the issuance of a new, or modification of an existing, Presidential Permit by the United States Department of State.

3.3.3 As provided in 23 U.S.C. 327(a)(2)(D), any railroad project that is not assumed by the State under this subpart 3.3 remains the responsibility of the FRA.

3.4 Effect of Assumption

3.4.1 For purposes of carrying out the responsibilities assigned under this MOU, and subject to the limitations contained in 23 U.S.C. 327 and this MOU, following the Effective Date, the State will

be deemed to be acting as FRA with respect to the environmental review, consultation, and other action required under those responsibilities.

- 3.4.2 Pursuant to 23 U.S.C. 327(c)(3)(B)–(C) and subpart 4.3 of this MOU, third parties may challenge the State's actions in carrying out environmental review responsibilities assigned under this MOU. Except as provided in 23 U.S.C. 327(c)(3)(B)–(C) and subpart 4.3 of this MOU, this MOU is not intended to, and does not, create any new right or benefit, substantive or procedural, enforceable at law or in equity by any third party against the State, its departments, agencies, or entities, its officers, employees, or agents. This MOU is not intended to, and does not, create any new right or benefit, substantive or procedural, enforceable at law or in equity by any third party against the United States or its departments, agencies, entities, officers, employees, or agents.

PART 4. CERTIFICATIONS AND ACCEPTANCE OF JURISDICTION

4.1 Certifications

The State hereby makes the following certifications in accordance with 23 U.S.C. 327(c)(3)(C):

- A. The State has the legal authority to accept all the assignments of responsibility identified in Part 3 of this MOU;
- B. The State has the legal authority to take all actions necessary to carry out the responsibilities it has assumed under this MOU;
- C. The Governor of the State has the legal authority to execute this MOU on behalf of the State;
- D. The State currently has laws in effect that are comparable to 5 U.S.C. 552, and those laws are located at California Government Code § 6250, et seq.; and
- E. Any decision by a California state agency regarding the public availability of a document under California Government Code § 6250, et seq. is reviewable by a California court of competent jurisdiction.

4.2 The State's Commitments

- 4.2.1 The State will exercise the powers and authorities granted under this MOU through CalSTA and/or CHSRA, as appropriate.
- 4.2.2 As provided at 23 U.S.C. 327(c)(3)(D), the State will maintain and commit the financial resources necessary to carry out the responsibilities it has assumed under this MOU. The State believes, and FRA agrees, that the summary of financial resources contained in the State's application, dated January 31, 2018, appears to be adequate for this purpose. Should FRA determine, after consultation with the State, that those financial resources are inadequate to carry out FRA's responsibilities, the State will take appropriate action to obtain and commit the additional financial resources needed to carry out these responsibilities. If the State is unable to obtain or commit the necessary additional financial resources, the State will inform FRA, and this MOU will be amended to assign only the responsibilities that are commensurate with the State's available financial resources, as determined appropriate by FRA.
- 4.2.3 The State will maintain adequate organizational and staff capability at CHSRA, including competent and qualified consultants and outside counsel where necessary or desirable, to effectively carry out the responsibilities it has assumed under this MOU. Should the State choose

to meet these requirements, in whole or in part, with consultant services and/or outside counsel, the State will maintain an adequate number of trained and qualified state employees, including counsel, to oversee the consulting work. The State's commitment includes, without limitation:

- A. Using appropriate environmental, technical, legal, and managerial expertise;
- B. Devoting adequate staff resources; and
- C. Demonstrating, in a consistent manner, the capacity to perform the State's assumed responsibilities under this MOU and applicable Federal laws.

In approving the State's application for assignment, FRA relied upon the State's representations in Section 5.1 and 5.2 of the assignment application regarding CalSTA's and CHSRA's current organizational structure related to NEPA assignment, and the State's representations in Section 6.1 of the assignment application regarding the updated organizational structure related to NEPA assignment to be adopted prior to the Effective Date (NEPA Assignment Organizational Structure). Before adopting any material changes to the NEPA Assignment Organizational Structure, the State will provide FRA with written notice of the proposed changes for a 30-day review period before implementing the changes. If FRA has concerns with such proposed changes, the FRA will inform the State of those concerns during such review period, and FRA and the State will confer to resolve any such concerns. Without amending this MOU, FRA may agree to shorten or waive such review period.

Should FRA determine, after consultation with the State, that CHSRA's staff capability and/or NEPA Assignment Organizational Structure is inadequate to carry out the responsibilities the State assumes under this MOU, the State will take appropriate action to obtain adequate organizational and staff capability to carry out these responsibilities. If the State is unable to obtain adequate organizational and staff capability, the State will inform FRA, and the MOU will be amended to assign only the responsibilities that are commensurate with the available organizational and staff capability, as determined appropriate by FRA.

4.2.4 The State will ensure CHSRA maintains and implements policies and procedures to effectively carry out the responsibilities the State has assumed under this MOU. The State asserts, and FRA agrees, that the policies and procedures described in Sections 5.3 through 5.11 (Existing Procedures) and Sections 6.2 through 6.4 (Proposed Modifications) of the State's application for assignment, submitted January 31, 2018, are adequate for these purposes.

- A. The State will ensure that, within six (6) months of the Effective Date, CHSRA will revise the Existing Procedures to reflect the Proposed Modifications, resulting in an updated set of policies and procedures for carrying out the responsibilities assigned under this MOU (Updated Procedures).
- B. The State will provide FRA with a copy of the Updated Procedures (via email or other electronic means) 30 days before implementing the Updated Procedures. If FRA has concerns with the Updated Procedures, the State and FRA will confer to resolve any such concerns.
- C. After adopting the Updated Procedures pursuant to paragraph A of this section 4.2.4, the State may at any time modify those procedures, provided that the State provides FRA with a copy of any proposed modification (via email or other electronic means) for a 30-day review period before implementing the modification. If FRA has concerns with any proposed modification, the FRA will inform the State of those concerns during the 30-day review period, and FRA and the State will confer to resolve any such concerns. Without amending this MOU, FRA may agree to shorten or waive the 30-day review period.

- D. Should FRA determine, after consultation with the State, that the then-most-recent Updated Procedures are no longer adequate to carry out the responsibilities assigned under this MOU, the State will direct CHSRA to take appropriate action to amend or revise the Updated Procedures to remedy the identified deficiencies. If CHSRA is unable to revise or amend the Updated Procedures to adequately address the identified deficiencies, the State will inform FRA, and the MOU will be amended to assign only the responsibilities that are commensurate with the acceptable portions of the Updated Procedures, as determined appropriate by FRA.
- 4.2.5 When carrying out the requirements of Section 106 of the National Historic Preservation Act, as amended, the State will comply with 36 C.F.R. 800.2(a)(1). All actions that involve the identification, evaluation, analysis, recording, treatment, monitoring, or disposition of historic properties, or that involve the reporting or documentation of such actions in the form of reports, forms, or other records, will be carried out by or under the direct supervision of a person or persons who meet the Secretary of Interior's Professional Qualification Standards (published at 48 Fed. Reg. 44716, 44738-39, Sept. 29, 1983). The State will ensure that all documentation required under 36 C.F.R. 800.11 is reviewed and approved by a staff member or consultant who meets the Professional Qualification Standards.

4.3 Federal Court Jurisdiction

As provided at 23 U.S.C. 327(c)(3)(B), and pursuant to Section 13979.2 of the California Government Code, the State hereby expressly consents to accept the jurisdiction of the Federal courts for the compliance, discharge, and enforcement of any responsibility assigned to the State under this MOU. This consent to Federal court jurisdiction will remain valid for any decision or approval made by the State pursuant to any responsibility assigned under this MOU, even after termination of the State's participation in the Project Delivery Program or FRA's withdrawal of assignment.

PART 5. APPLICABILITY OF FEDERAL LAW

5.1 Procedural and Substantive Requirements

- 5.1.1 As provided at 23 U.S.C. 327(a)(2)(C), in assuming the FRA's responsibilities under this MOU with respect to the railroad projects assigned described in subpart 3.3, the State will be subject to the same procedural and substantive requirements that apply to the FRA in carrying out these responsibilities. Such procedural and substantive requirements include Federal statutes and regulations; Executive Orders issued by the President of the United States; USDOT Orders; Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 C.F.R. parts 1500-1508); FRA Orders; official guidance and policy issued by the CEQ, Office of Management and Budget (OMB), USDOT, or the FRA (e.g., OMB Memorandum M-15-20, Guidance Establishing Metrics for the Permitting and Environmental Review of Infrastructure Projects); any applicable Federal court decisions; and, subject to section 5.3.2 below, interagency agreements such as programmatic agreements, memoranda of understanding, memoranda of agreement, and other similar documents that relate to the environmental review process (e.g., the 2015 Red Book – Synchronizing Environmental Reviews for Transportation and Other Infrastructure Projects).
- 5.1.2 After the Effective Date, FRA will use its best efforts to notify the State of any new or revised final Federal policies and guidance applicable to FRA's responsibilities under NEPA and other environmental laws assumed by the State under this MOU within fourteen (14) calendar days of issuance. FRA may accomplish such notification by e-mail, web posting (with email or mail to the State notifying of web posting), mail, or publication in the Federal Register (with email or mail to the State notifying of publication). In the event that FRA does not notify the State of a new or

revised Federal policy or guidance as described in this section 5.1.2, and if the State had no actual knowledge of such policy or guidance, then a failure by the State to comply with such Federal policy or guidance will not be a basis for termination of the State's participation in the Project Delivery Program.

5.2 Rulemaking

Consistent with 23 U.S.C. 327(f), nothing in this MOU permits the State to assume any rulemaking authority of the USDOT Secretary or FRA. Additionally, nothing in this MOU permits the State to establish policy and guidance on behalf of the USDOT Secretary or FRA. The State's authority to establish State regulations, policy, and guidance concerning the State environmental review of railroad projects will not supersede applicable Federal environmental review regulations, policy, or guidance established by or applicable to the USDOT Secretary or FRA.

5.3 Other Federal Agencies

5.3.1 The State will work with all other appropriate Federal agencies concerning the laws, guidance, and policies that such other Federal agencies are responsible for administering.

5.3.2 For interagency agreements among FRA, the State, and another Federal or state agency, six (6) months after the Effective Date, FRA and the State will contact the other agency to determine whether any action should be taken with respect to such agreement. Such actions may include:

- A. Consulting with the other agency to obtain written consent to the continuation of the interagency agreement in its existing form, but with the substitution through assignment of the State for FRA; or
- B. Negotiating with the other agency to amend the interagency agreement as needed so that the interagency agreement continues but that the State assumes FRA's responsibilities.

If the other agency does not agree to the assignment or amendment of the interagency agreement, then to the extent permitted by applicable law and regulation, the State will carry out the assumed environmental review, consultation, or other related activity in accordance with applicable laws and regulations but without the benefit of the interagency agreement.

5.3.3 Upon termination of the State's participation in the Project Delivery Program, FRA and the State will contact the signatory to any interagency agreement and determine whether the interagency agreement should be amended or reinstated as it was on the Effective Date of this MOU.

5.3.4 As provided at 23 U.S.C. 327(a)(2)(E), nothing in this MOU preempts or interferes with any power, jurisdiction, responsibility, or authority of an agency other than USDOT (including FRA), under applicable statutes and regulations with respect to a project.

PART 6. LITIGATION

6.1 Responsibility and Liability

As provided in 23 U.S.C. 327(e), the State will be solely responsible and solely liable for carrying out all of FRA's responsibilities it has assumed under this MOU, in lieu of and without further approval of the FRA. The FRA and USDOT will have no responsibility or liability for the performance of the responsibilities assumed by the State, including any decision or approval made by the State while participating in the Project Delivery Program.

6.2 Litigation

- 6.2.1 Nothing in this MOU affects the United States Department of Justice's (hereinafter USDOJ) authority to litigate claims, including the authority to approve a settlement on behalf of the United States if either FRA or another agency of the United States is named in such litigation, or if the United States intervenes pursuant to 23 U.S.C. 327(d)(3). In the event FRA or any other Federal agency is named in litigation related to matters under this MOU, or the United States intervenes in the litigation, the State agrees to coordinate with FRA and any USDOJ or Federal agency attorneys in the defense of that action.
- 6.2.2 The State will defend all claims brought against the State in connection with its discharge of any responsibility assumed under this MOU. In the event of litigation, the State will provide qualified and competent legal counsel, including outside counsel if necessary. The State will provide the defense at its own expense, subject to any applicable Federal law concerning the use of Federal funds for attorney's fees for outside counsel hired by the State. The State will be responsible for opposing party's attorney's fees and court costs if a court awards those costs to an opposing party, or in the event those costs are part of a settlement agreement.
- 6.2.3 The State will notify the FRA and USDOJ's Assistant Attorney General for the Environment and Natural Resources Division within seven (7) calendar days of the State's Legal Division's receipt of service of process of any complaint concerning discharge of any responsibility assumed under this MOU. The State will notify FRA and USDOJ prior to its response to the complaint. In addition, the State will notify FRA within seven (7) calendar days of receipt of any notice of intent to sue concerning its discharge of any responsibility assumed under this MOU.
- 6.2.4 The State will provide FRA and USDOJ copies of any motions, pleadings, briefs, or other such documents filed in any case concerning its discharge of any responsibility assumed under this MOU. The State will provide such copies to the FRA and DOJ within seven (7) calendar days of service of any document, or in the case of any documents filed by or on behalf of the State, within seven (7) calendar days of the date of filing.
- 6.2.5 The State will notify the FRA and USDOJ prior to settling any lawsuit, in whole or in part, and will provide the FRA and USDOJ with a reasonable amount of time of at least ten (10) calendar days, to be extended, if feasible based on the context of the lawsuit, up to a maximum of thirty (30) total calendar days, to review and comment on the proposed settlement. The State will not execute any settlement agreement until: (1) FRA and USDOJ have provided comments on the proposed settlement; (2) FRA and USDOJ have indicated that they will not provide comments on the proposed settlement; or (3) the review period has expired, whichever occurs first.
- 6.2.6 Within seven (7) calendar days of receipt by the State, the State will provide notice to FRA and USDOJ of any court decision on the merits, judgment, and notice of appeal arising out of or relating to the responsibilities the State has assumed under this MOU. The State will notify FRA and USDOJ within five (5) days of filing a notice of appeal of a court decision. The State will confer with FRA and USDOJ regarding the appeal at least forty-five (45) days before filing an appeal brief in the case.
- 6.2.7 The State's notification to FRA and USDOJ in sections 6.2.3, 6.2.4, 6.2.5, and 6.2.6, will be made by electronic mail to FRALegal327@dot.gov and NRSDOT.enrd@doj.gov, unless otherwise specified by FRA and USDOJ. For copies of motions, pleadings, briefs, and other documents filed in a case, as identified in section 6.2.4, the State may opt to either send the materials to the email addresses identified above, send hardcopies to the mail address below, or add to the distribution list in the court's electronic filing system (e.g., PACER) the following two email addresses: FRALegal327@dot.gov and efile_nrs.enrd@usdoj.gov. FRA and USDOJ's comments under section 6.2.5 and 6.2.6 will be made by electronic mail to legal@hsr.ca.gov unless otherwise specified by the State. In the event that regular mail is determined necessary, mail should be sent by overnight mail service to:

For USDOJ: Assistant Attorney General for the Environment and Natural Resources Division at 950 Pennsylvania Avenue, NW, Room 2143, Washington, DC 20530.

For FRA: Chief Counsel, Federal Railroad Administration, 1200 New Jersey Avenue, SE, West Building, Washington, DC 20590.

For the State: Chief Counsel, California High-Speed Rail Authority, 770 L Street, Suite 620, Sacramento, California 95814.

6.3 Conflict Resolution

- 6.3.1 In discharging any of the FRA's responsibilities under this MOU, the State agrees to comply with the requirements of any statute, regulation, guidance, or policy regarding conflict resolution applicable to USDOT or FRA.
- 6.3.2 The State agrees to follow 40 C.F.R. part 1504 in the event of pre-decision referrals to CEQ for Federal actions determined to be environmentally unsatisfactory. The State also agrees to coordinate and work with CEQ on matters brought to CEQ with regard to the environmental review responsibilities for the railroad projects for which the State has assumed the FRA's environmental review responsibilities under this MOU.

PART 7. INVOLVEMENT WITH OTHER AGENCIES

7.1 Coordination

The State will seek early and appropriate coordination with all appropriate Federal, State, and local agencies in carrying out any of the responsibilities assigned under this MOU.

7.2 Processes and Procedures

- 7.2.1 The State will ensure CHSRA maintains appropriate processes and procedures providing proactive and timely consultation, coordination, and communication with all appropriate Federal agencies in order to carry out any of the responsibilities assigned under this MOU. The State will formally document these processes and procedures in the form of an executed interagency agreement or in other such form as appropriate.
- 7.2.2 The State will submit environmental impact statements together with comments and responses to the Environmental Protection Agency (EPA) as required by 40 C.F.R. 1506.9 and for EPA's review as required by Section 309 of the Clean Air Act (42 U.S.C. 7609).

PART 8. INVOLVEMENT WITH FRA

8.1 Generally

- 8.1.1 Except as specifically provided otherwise in this MOU, FRA will not provide any project-level assistance to the State in carrying out any of the responsibilities the State has assumed under this MOU. Project-level assistance includes any advice, consultation, or document review with respect to the discharge of such responsibility for a particular assumed project. However, project-level assistance does not include process or program-level assistance as provided for in section 8.1.4, discussions concerning issues addressed in prior projects, interpretations of any applicable law for which responsibility is assumed under this MOU or other laws contained in

Title 23 U.S.C. or Title 49 U.S.C., interpretations of any FRA or USDOT regulation, or interpretations of FRA or USDOT policies or guidance.

- 8.1.2 The FRA will not intervene, broker, act as intermediary, or be otherwise involved in any issue involving the State's consultation or coordination with another Federal agency with respect to the State's discharge of any of the responsibilities assigned under this MOU. However, the FRA may attend meetings between the State and other Federal agencies and submit comments to the State and the other Federal agency in the following extraordinary circumstances:
- A. FRA reasonably believes that the State is not in compliance with this MOU;
 - B. FRA determines that an issue between the State and the other Federal agency concerns emerging national policy issues under development by the FRA or USDOT; or
 - C. Upon request by either the State or the other Federal agency and agreement by FRA.

The FRA will notify both the State and the relevant Federal agency prior to attending any meetings between the State and such other Federal agency.

- 8.1.3 Other Federal agencies may raise concerns regarding the State's compliance with this MOU to FRA, and FRA will review the concerns and any information provided by the Federal agency to FRA. Following FRA's review, if FRA and the Federal agency still have concerns about the State's compliance with this MOU, FRA will notify the State of the concern and will coordinate with the State and the relevant Federal agency to resolve the issue. FRA may also take appropriate actions as otherwise permitted under this MOU to ensure the State's compliance.
- 8.1.4 At the State's request, FRA will assist the State in evaluating its environmental program and in developing or modifying any of its processes or procedures to carry out the responsibilities it has assumed under this MOU, including, but not limited to, those processes and procedures concerning the State's consultation, coordination, and communication with other Federal agencies.

8.2 Record Retention

- 8.2.1 The State will retain project files and general administrative files pertaining to its discharge of the responsibilities it has assumed under this MOU in accordance with applicable legal requirements (e.g., 2 C.F.R. 200.333, 49 C.F.R. part 18²), and the provisions below.
- 8.2.2 The State will maintain copies of all RODs, Draft and Final EISs, EAs, FONSI, CE determinations, and Section 4(f) evaluations and determinations issued or approved by the State as lead agency under this assignment MOU for a period of eight (8) years after approval of the document. After eight (8) years, the State will transmit such documents (in paper or electronic form, at the State's discretion) to FRA to be managed in accordance with FRA records retention and disposal policies and procedures.
- 8.3.3 Nothing contained in this MOU is intended to relieve the State of its recordkeeping responsibilities under 2 C.F.R. 200.333–200.337 or other applicable laws.

² FRA and CHSRA are parties to a cooperative agreement funding, among other things, the environmental review for Phase I of the California HSR System. Because the cooperative agreement was executed before the adoption of 2 C.F.R. part 200, CHSRA is still subject to the requirements of 49 C.F.R. part 18 for the environmental reviews conducted under that agreement.

8.3 Federal Register

For any documents that are proposed by the State to be published by FRA in the *Federal Register*, such as a Notice of Intent under 40 C.F.R. 1501.7 or a Notice of Final Agency Action under 23 U.S.C. 139(f) (to the extent applicable), the State will transmit such document to the FRA. FRA will promptly submit such document to be published in the *Federal Register* on behalf of the State. The State will, upon request by FRA, reimburse FRA for the expenses associated with publishing such documents in the *Federal Register* (excluding FRA's overhead). If and when permitted by the operating procedures of the Government Printing Office and the *Federal Register*, the State will take over the procedures described above from the FRA.

8.4 Participation in Resource Agency Reports

8.4.1 The State will provide all reasonable data and information requested by FRA and resource agencies for the preparation of national reports in a timely manner to the extent that the information relates to determinations, findings, and proceedings associated with projects assumed under this MOU. Such reports include but are not limited to:

- A. Information on the completion of and duration to complete environmental documentation for EIS, EA, and documented CE projects assumed under this MOU;
- B. Archeology reports requested by the National Park Service;
- C. ESA Expenditure Reports requested by the Services;
- D. NEPA litigation reports requested by CEQ; and
- E. Environmental conflict resolution reports requested by OMB and CEQ.

8.4.2 The State will directly submit project schedules and any other required data regarding EAs and EISs for posting on the searchable website maintained under Section 41003(b) of the Fixing America's Surface Transportation Act (42 U.S.C. 4370m-2(b)) and 23 U.S.C. 139(o), commonly known as the "Federal Permitting Dashboard".

8.5 Conformity Determinations

The State will, for any railroad project located in air quality nonattainment and maintenance area, with respect to the National Ambient Air Quality Standards, and prior to approving any CE determination, FONSI, or ROD, ensure and document that the project satisfies air quality conformity requirements under 42 U.S.C. 7506(c) and 40 C.F.R. Part 93, Subpart B. Pursuant to 23 U.S.C. 327(a)(2)(B)(iv)(II), for any project requiring a project-level conformity determination under the Federal Clean Air Act and its implementing regulations, the FRA will make the project level conformity determination. FRA will restrict its review to data, analyses, applicable comments and responses, and other relevant documentation that enable FRA to make the project-level conformity determination. FRA may request that the State consolidate this information and documentation in a memorandum to facilitate FRA's decisionmaking.

8.6 Enforcement

If FRA determines that the State is not in compliance with this MOU, then FRA will take appropriate action to ensure the State's compliance, including withdrawing assignment of any responsibilities that have been assumed as provided in Part 9 of this MOU or terminating the State's participation in the Project Delivery Program as provided in Part 13 of this MOU.

PART 9. WITHDRAWAL OF ASSIGNED RESPONSIBILITIES

9.1 FRA-Initiated Withdrawal of Assigned Projects

- 9.1.1 The FRA may, at any time, withdraw the assignment of all or part of the FRA's responsibilities that have been assumed by the State under this MOU for any project or projects upon FRA's determination that:
- A. With respect to that project or projects, the State is not in compliance with a material term of this MOU or applicable Federal laws or policies, and, after having been given reasonable notice and an opportunity to take corrective action, the State has not taken corrective action to the satisfaction of FRA;
 - B. The project or projects involve significant or unique national policy interests for which the State's assumption of the FRA's responsibilities would be inappropriate; or
 - C. The State cannot satisfactorily resolve an issue or concern raised in a Government-to-Government consultation process with an Indian tribe, as provided in section 3.2.4.
- 9.1.2 FRA will notify the State in writing if it makes a preliminary determination to withdraw assignment of the FRA's responsibilities under section 9.1.1. FRA's notification will include the reasons for its determination. Upon receipt of this notice, the State may submit any comments or objections to FRA within thirty (30) calendar days, unless FRA agrees to an extension. Upon receipt of the State's comments or objections, FRA will make a final determination within thirty (30) calendar days, unless extended by FRA for cause, and notify the State of its decision. In making its final determination, FRA will consider the following: the State's comments or objections, the effect the withdrawal will have on FRA's program, the amount of disruption to the project or projects concerned, the effect on other projects, confusion the withdrawal of assignment may cause to the public, the potential burden to other Federal agencies, and the overall public interest.
- 9.1.3 The FRA will withdraw assignment of the responsibilities the State has assumed for any railroad project when the preferred alternative identified in the EA or Final EIS is a railroad project that is specifically excluded in section 3.3.2. In such case, section 9.1.2 will not apply.

9.2 State-Initiated Withdrawal of Assignment of Projects

- 9.2.1 The State may, at any time, request FRA withdraw all or part of the FRA's responsibilities that the State has assumed under this MOU for any existing or future project or projects.
- 9.2.2 Upon the State's decision to request that FRA withdraw the assignment of all or part of the FRA's responsibilities under section 9.2.1, the State will informally notify FRA of its desire for FRA to withdraw assignment of its responsibilities. No less than 30 days after providing FRA with informal notice, the State will provide FRA with a formal written notice explaining the reasons the State is requesting to withdraw assignment of the responsibilities. Upon receipt of this notice, the FRA will have 30 calendar days, unless extended by FRA for cause, to determine whether it will withdraw assignment of the responsibilities requested and communicate its determination to the State in writing. In making its determination, FRA will consider the reasons the State desires FRA to withdraw assignment of the responsibilities, the effect the withdrawal of assignment will have on FRA's program, the amount of disruption to the project or projects concerned, the effect on other projects, confusion the withdrawal of assignment may cause to the public, the potential burden to other Federal agencies, and the overall public interest.

9.3 Effect of Withdrawal On the Right to Terminate

FRA and the State agree that (1) nothing in this Part shall affect either party's ability to terminate this MOU in accordance with Part 13; and (2) the withdrawal of all or part of FRA's responsibilities under this Part does not effectuate termination of this MOU.

PART 10. PERFORMANCE MEASURES

10.1 General

10.1.1 FRA and the State have established performance measures that the State will seek to attain and that FRA will consider when evaluating the State's administration of the responsibilities it has assumed under this MOU during FRA's audits, which are required under 23 U.S.C. 327(g).

10.1.2 The State will collect and maintain all necessary and appropriate data related to the attainment of the performance measures. In collecting these data, the State will monitor its progress toward meeting the performance measures and include its progress in the self-assessment summary provided under section 11.1.5 of this MOU, which will be made available to the FRA.

10.2 Performance Measures

The performance measures applicable to the State in carrying out the responsibilities it has assumed under this MOU are as follows:

A. Compliance with NEPA and other Federal environmental statutes and regulations:

- i. Maintain documented compliance with procedures and processes set forth in this MOU for the environmental responsibilities assigned under this MOU.
- ii. Maintain documented compliance with the requirements of all applicable Federal statutes and regulations for which responsibility is assigned under this MOU.

B. Quality Control and Assurance for NEPA decisions:

- i. Maintain and apply internal quality control and assurance measures and processes, including a record of:
 - a. Involvement of legal counsel as appropriate during the environmental review process, including legal sufficiency reviews in accordance with the FRA's Environmental Procedures or FRA regulations, as applicable;
 - b. Compliance with FRA's and the State's environmental document content standards and procedures, including those related to quality control and quality assurance (QA/QC); and,
 - c. Completeness and adequacy of documentation of project records for projects done under the Project Delivery Program.

- C. Relationships with agencies and the general public:
- i. Ensure effective communication among the State, Federal and State resource agencies, and the public resulting from assumption of responsibilities under this MOU.
 - ii. Maintain effective responsiveness to substantive comments received from the public, agencies, and interest groups on NEPA documents and environmental concerns.
 - iii. Maintain effective NEPA conflict resolution processes whenever appropriate.

PART 11. AUDITS AND MONITORING

11.1 General

- 11.1.1 The FRA will monitor and oversee the State's compliance with this MOU. In years one (1) through four (4) of this MOU's term, FRA's annual audits, conducted pursuant to 23 U.S.C. 327(g), will be the primary mechanism to (1) oversee the State's compliance with this MOU and applicable Federal laws and policies, (2) determine the State's attainment of the performance measures identified in Part 10, and (3) collect information needed for the USDOT Secretary's annual report to Congress pursuant to 23 U.S.C. 327(i). Pursuant to 23 U.S.C. 327(h), after the fourth year of the State's participation in the Project Delivery Program, the FRA will monitor the State's compliance with the MOU and with applicable Federal laws and policies, and assess whether the State is attaining the performance measures listed in Part 10 of this MOU. The FRA's monitoring and oversight may also include submitting requests for information to the State and other relevant Federal agencies, verifying the State's financial and personnel resources dedicated to carrying out the responsibilities assigned under this MOU, and reviewing documents and other information.
- 11.1.2 Pursuant to 23 U.S.C. 327(c)(4), the State is responsible for providing FRA any information FRA reasonably considers necessary to ensure that the State is adequately carrying out the responsibilities assigned. When requesting information subject to 23 U.S.C. 327(c)(4), FRA will provide the request to the State in writing, and the request will identify with reasonable specificity the information required, the reason such information is deemed necessary, and indicate a deadline for CHSRA to provide the information. The State will, in good faith, work to ensure the information requested is provided by the deadline. The State's response to an information request under this paragraph will include, where appropriate, making relevant employees and consultants available at their work location (including in-person meeting, teleconference, videoconference, or other electronic means as may be available).
- 11.1.3 The State will make project files and general administrative files pertaining to its discharge of the responsibilities it has assumed under this MOU reasonably available for inspection by FRA at the files' locations (including, where applicable, through an electronic portal or website) upon reasonable notice, which is not less than five (5) business days. These files will include, but are not limited to, all letters and comments received from governmental agencies, the public, and others with respect to the State's discharge of the responsibilities assigned under this MOU. As used in this paragraph, the terms "project files" and "general administrative files" include only documents in the custody and control of the State (whether paper or electronic).
- 11.1.4 In carrying out the responsibilities assigned under this MOU, the State will carry out regular QA/QC activities to ensure that the assigned responsibilities are being conducted in accordance with applicable law and this MOU. At a minimum, the State's QA/QC activities will include the review and monitoring of its processes and performance relating to project decisions.

environmental analysis, project file documentation, checking for errors and omissions, legal sufficiency reviews, and taking appropriate corrective action as needed. Within six (6) months of the Effective Date, the State will finalize a QA/QC process that satisfies the requirements of this section 11.1.4. In developing and implementing the QA/QC process, the State will consult with the FRA. The State will cooperate with FRA to address recommendations FRA may have with respect to its QA/QC process.

- 11.1.5 The State will perform regular self-assessments of its QA/QC process and performance to determine whether its process is working as intended, to identify any areas needing improvements in the process, and to timely take any corrective actions necessary to address the areas needing improvement. At least one (1) month prior to the date of a scheduled FRA audit, the State will transmit a summary of its self-assessment(s) to the FRA. The summary will include: a description of the scope of the self-assessment(s) conducted and the areas reviewed; a description of the process followed in conducting the self-assessment; a list of the areas identified as needing improvement; any corrective actions that have been or will be implemented; a statement from the Director of Environmental Services concerning whether the processes are ensuring that the responsibilities the State has assumed under this MOU are being carried-out in accordance with this MOU and all applicable Federal laws and policies; and a summary of the State's progress toward attaining the performance measures listed in Part 10 of this MOU. The State will conduct its self-assessments at least once annually.
- 11.1.6 Every three (3) months after the Effective Date for a period of two (2) years, the State will provide a report to the FRA listing any approvals and decisions the State has made with respect to the responsibilities the State has assumed under this MOU. After the second year, the State will submit its approval and decision report to the FRA at least once every six months. At its discretion, the State may satisfy the requirement of this paragraph by giving FRA access to a searchable on-line database that contains records of approvals and decisions made by the State under this MOU.

11.2 Auditing

- 11.2.1 Pursuant to 23 U.S.C. 327(g)(3), each audit carried out under this MOU will be carried out by an audit team, consisting of members that FRA designates in consultation with the State. Such consultation will include a reasonable opportunity for the State to review and provide comments on the proposed members of the audit team.
- 11.2.2 Pursuant to 23 U.S.C. 327(g)(1)(A), FRA and the State will meet, no later than 180 days after the Effective Date, to review implementation of the MOU and discuss plans for the first annual audit.
- 11.2.3 Pursuant to 23 U.S.C. 327(c)(4), the State will provide FRA any information FRA reasonably considers necessary to ensure that the State is adequately carrying out the responsibilities assigned. In accordance with this Part, the State will make documents and records available for review by FRA and will provide FRA with copies of any such documents and records as may be requested by FRA.
- 11.2.4 The State will cooperate with FRA in conducting audits, including providing FRA with information consistent with this Part and making all employees (including consultants) available at reasonable times. The State will make employees (including consultants) available either in-person at their normal place of business or by telephone, at the discretion of FRA.
- 11.2.5 The State and the FRA will each designate an audit coordinator who will be responsible for coordinating audit schedules, requests for information, and arranging audit meetings.
- 11.2.6 The FRA audits will include, but not be limited to, consideration of the State's technical competency and organizational capacity, compliance with the commitments in subpart 4.2, the

adequacy of the financial resources committed by the State to administer the responsibilities assigned, quality control and quality assurance process, attainment of performance measures, compliance with this MOU's requirements, and compliance with applicable Federal laws and policies in administering the responsibilities assigned.

11.3 Scheduling of Audits

- 11.3.1 For each annual audit, the designated audit coordinators for FRA and the State will work to establish general audit schedules at least three (3) months prior to the semiannual or annual anniversary dates of the Effective Date. The general audit schedules will include the dates that FRA will conduct the audit.
- 11.3.2 The State's audit coordinator will make all reasonable efforts to ensure all necessary employees (including consultants) are available to FRA during the specified dates on the general audit schedule. The State will also ensure that all of its documents and records are made reasonably available to FRA as needed during the general audit schedule.
- 11.3.3 After the general audit schedule is established, the audit coordinators will work to establish specific audit schedules at least two weeks prior to the scheduled audit. The specific audit schedules will include the dates, times, and locations during which FRA will meet with the State's employees (including consultants) and review documents and records.
- 11.3.4 To the maximum extent practicable, the specific audit schedule will identify all employees (including consultants) and documents and other records that the State will make available to FRA during the audit. With respect to employees, the State will work with FRA to specifically identify each employee. With respect to documents and other records, the State and FRA will try to be as specific as possible, although a general description of the types of documents will be acceptable.
- 11.3.5 Should FRA determine that it needs access to an employee or a document or other record that is not identified in the specific audit schedule, the State will make reasonable efforts to produce such employee or document or other record on the specified dates.

11.4 Other Federal or State Agency Involvement

The FRA may invite other Federal or State agencies as deemed appropriate, including State Historic Preservation Officers (SHPOs), to assist FRA in conducting an audit under this MOU by sitting in on interviews, reviewing documents obtained by FRA, and making recommendations to FRA. FRA will advise the State of the Federal or State agency's role in the audit.

11.5 Audit Report and Findings

- 11.5.1 Upon completing each audit, FRA will transmit to the State a draft of the audit report and allow the State a period of fourteen (14) calendar days within which to submit written comments to FRA. The FRA will grant any reasonable request by the State to extend the deadline to comment on the draft audit report. That extension will not exceed a total of thirty (30) calendar days. The FRA will review the comments and revise the draft audit report as may be appropriate.
- 11.5.2 As required by 23 U.S.C. 327(g)(2), FRA will make the draft audit report available for public comment. In carrying out this requirement and following the process described in section 11.5.1, FRA will publish the audit report in the *Federal Register* and allow a comment period of thirty (30) calendar days. The FRA will then respond to the public comments by incorporating the comments and responses into the final audit report. FRA will publish the final audit report in the *Federal Register* not later than sixty (60) calendar days after the comment period closes.

- 11.5.3 As required by 23 U.S.C. 327(g)(1)(C), FRA will ensure that the time period for completing an annual audit, from initiation to completion (including public comment and responses to those comments) does not exceed 180 days. The schedule prepared pursuant to section 11.3.1 will identify the date the audit is initiated.

PART 12. TRAINING

Within ninety (90) days after the Effective Date of this MOU, the State and FRA, in consultation with other Federal agencies as deemed appropriate, will assess the State's need for training and develop a training plan. The State will implement the training plan and will have all appropriate employees (including consultants hired for the purpose of carrying out FRA's responsibilities assigned under this MOU) attend applicable training. The training plan will be updated by the State and FRA, in consultation with other Federal agencies as appropriate, annually during the term of this MOU. While the State and FRA may take other agencies' recommendations into account in determining training needs, the State and FRA will jointly determine the training required under this part. Training may be provided by FRA, another Federal agency, or other parties, as appropriate.

PART 13. TERM, TERMINATION, AND RENEWAL

13.1 Term

This MOU has a term of five (5) years from the Effective Date.

13.2 Termination by the FRA

- 13.2.1 As provided by 23 U.S.C. 327(j)(1), FRA may terminate the State's participation in the Project Delivery Program, in whole or in part, at any time subject to the procedural requirements in 23 U.S.C. 327 and this Part 13.
- 13.2.2 If FRA determines that the State is not adequately carrying out the responsibilities assigned to the State under this MOU, FRA will provide to the State a written notification of its determination and provide the State a period of at least 120 calendar days to take such corrective action as the FRA determines is necessary to comply with this MOU, as identified in the FRA's written notification.
- 13.2.3 If, after notification and the corrective action period provided under this subpart, 3.2, the State fails to take satisfactory corrective action, as determined by FRA, FRA will provide the State with its written determination whether to terminate the State's participation in the Project Delivery Program in whole or in part. Any responsibilities terminated by FRA that have been assumed by the State through this MOU will transfer back to FRA.
- 13.2.4 The State's failure to adequately carry out the responsibilities assigned to the State may include, but is not be limited to:
- A. Persistent neglect of, or noncompliance with, any Federal laws, regulations, or policies;
 - B. Failure to cooperate with FRA in conducting an audit or any oversight or monitoring activity;
 - C. Failure to secure or maintain adequate personnel and financial resources to carry out the responsibilities assigned;
 - D. Substantial noncompliance with this MOU; or

- E. Persistent failure to adequately consult, coordinate, and/or take the concerns of other Federal agencies, as well as SHPOs, into account in carrying out the responsibilities assigned.

13.3 Termination by the State

- 13.3.1 The State may terminate its participation in the Project Delivery Program, in whole or in part, at any time by providing to FRA a notice at least 120 calendar days prior to the date that the State seeks to terminate its participation in this Project Delivery Program, and subject to such terms and conditions as FRA may provide.
- 13.3.2 Any such withdrawal of assignment which FRA and the State have agreed to under a transition plan will not be subject to the procedures or limitations provided for in Part 9 of this MOU and will be valid as agreed to in the transition plan.

13.4 Effect of Termination of Assignment for Highway Projects

Consistent with 23 U.S.C. 773.117(d), if the State's assumption of FHWA's responsibilities for the environmental review of highway projects is terminated, the State's responsibilities assigned under this MOU will automatically terminate.

13.5 Transition Plan

In the event of termination under subparts 13.3, 13.4, or 13.5 of this Part, FRA and the State will develop a transition plan consistent with 23 C.F.R. 773.117(c) to transition the responsibilities that the State has assumed back to FRA to minimize disruption to projects, minimize confusion to the public, and minimize burdens to other affected Federal, State, and local agencies.

13.6 Validity of State Actions

Any environmental approvals made by the State pursuant to the responsibilities the State has assumed under this MOU will remain valid after termination of the State's participation in the Project Delivery Program or withdrawal of assignment by FRA. As among the USDOT Secretary, FRA, and the State, the State will remain solely liable and solely responsible for any decision or approval it makes pursuant to any of the responsibilities it has assumed while participating in the Project Delivery Program.

13.7 Suspension

The State's consent to Federal court jurisdiction and waiver of sovereign immunity under this MOU currently expires on January 1, 2021. Affirmative action by the State of California will be necessary to extend the State's consent and waiver. If the State does not extend the consent to Federal court jurisdiction and waive sovereign immunity, then the State's participation in the Program will be suspended on January 1, 2021, for three months, which may be extended after consulting with the State. If the State does not provide adequate certification as required by 23 C.F.R. 773.109(a)(6) and 773.115(c)(2) within this time period, then this MOU and the State's participation in the Program under this MOU will be terminated.

A. During the period of suspension, the State will not make any NEPA decisions or implement any of the environmental review responsibilities assigned under this MOU.

B. If, during the period of suspension, the necessary actions are taken to authorize a new consent to Federal court jurisdiction and waiver of sovereign immunity, then the State's participation in the Program will resume on the day the FRA acknowledges receipt of adequate certification provided by the State as required by 23 C.F.R. 773.109(a)(6) and 773.115(c)(2).

13.8 Renewal

This MOU is renewable in accordance with 23 U.S.C. 327 and implementing regulations, as in effect at the time of the renewal.

PART 14. AMENDMENTS

14.1 Generally

This MOU may be amended at any time upon mutual agreement by both the FRA and the State pursuant to 23 C.F.R. 773.113(b).

14.2 Additional Projects, Classes of Projects and Environmental Review Responsibilities

14.2.1 The FRA may assign, and the State may assume, responsibility for additional projects, and additional environmental review responsibilities, beyond those identified in Part 3 of this MOU in accordance with 23 C.F.R. 773.113(b).

14.2.2 Should the State decide to request responsibility for additional projects or classes of projects, or additional environmental review responsibilities, beyond those identified in Part 3 of this MOU, such request will be treated as an amendment to the State's original application that was submitted to FRA pursuant to 23 U.S.C. 327(b) and 23 C.F.R. part 773. In developing the application supplement, the State will identify the additional projects, classes of projects, and environmental review responsibilities it wishes to assume and make any appropriate adjustments to the information contained in the State's original application, including the verification of personnel and financial resources.

PART 15. AGENCY CONTACTS

15.1 Administrative Contacts

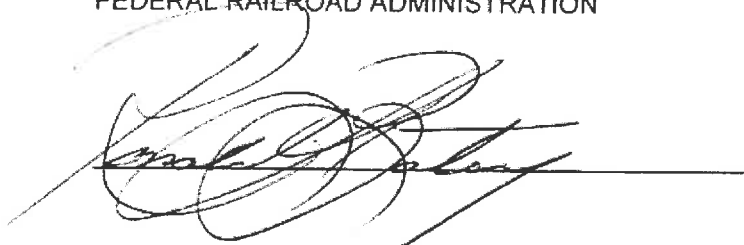
FRA and the State have established agency contacts who are responsible for administering the requirements of this MOU for their respective agencies. Unless otherwise provided for, all written notices or other documents required by this MOU should be sent to the agency contact.

For FRA: Ms. Stephanie Perez, Lead Environmental Protection Specialist, 1200 New Jersey Avenue, S.E., West Building, Washington, DC 20590

For the State: Mr. Mark McLoughlin, Director of Environmental Services, California High-Speed Rail Authority, 770 L Street, Suite 620, Sacramento, California, 95814

IN WITNESS THEREOF, the parties hereto have caused this MOU to be duly executed in duplicate as of the date of the last signature written below.

FEDERAL RAILROAD ADMINISTRATION



STATE OF CALIFORNIA

July 1, 2019
Date

Date

Givens, Patrice

From: Adrian Brandt <adrian.brandt@gmail.com>
Sent: Friday, August 14, 2020 9:29 AM
To: cacsecretary [@caltrain.com]
Cc: Navarro, Joe
Subject: BART air circulation & filtration cuts onboard COVID transmission risk

BART air circulation & filtration cuts onboard COVID transmission risk

Caltrain ought to prepare and publicize a similar info-graphic!

Givens, Patrice

From: Adrian Brandt <adrian.brandt@gmail.com>
Sent: Friday, August 14, 2020 9:50 AM
To: cacsecretary [@caltrain.com]
Cc: Navarro, Joe
Subject: Re: BART air circulation & filtration cuts onboard COVID transmission risk

Also, the following article shows how & where BART would install UV lights inside the ventilation system to kill airborne virus particles. Caltrain's ventilation system surely has areas where such sterilizing UV lights could also be installed. Epidemiologists remind us that COVID-19 will certainly not be the world's last viral pandemic, so this would be a wise investment in future onboard rider safety — key to restoring and keeping normal ridership now and in the future!

Ventilation on BART: What you need to know about airflow and more

<https://www.bart.gov/news/articles/2020/news20200813>



Denser air filters like the one shown above are capable of blocking more particles

Story by MELISSA JORDAN | Photos by MARIA J. AVILA
BART Communications

The air you breathe while riding BART is filtered more effectively than that in the typical office or indoor setting like a grocery store or pharmacy, with an entire train car's air being replaced about every 70 seconds.

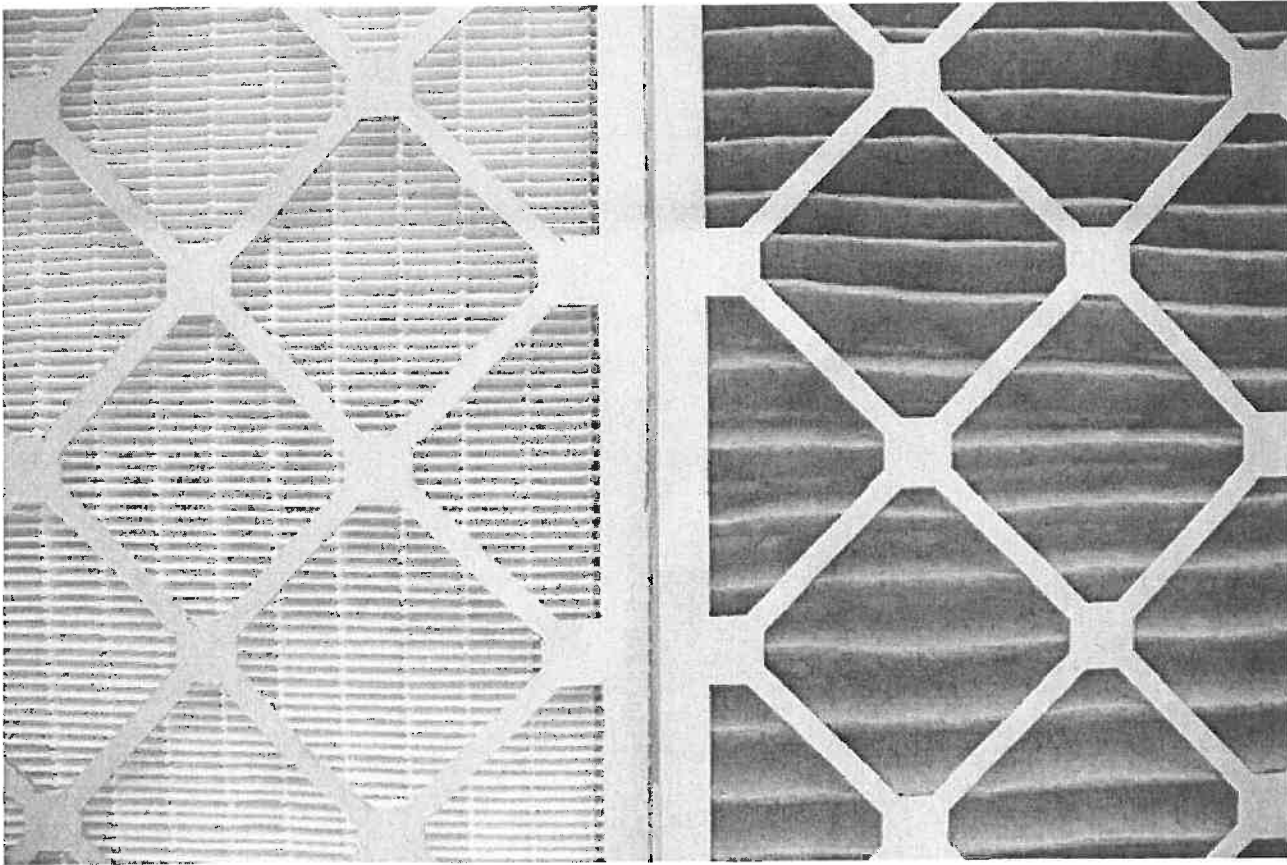
That was the case before the Covid-19 pandemic, and it's even more important now, as BART implements a 15-step Welcome Back Plan with a raft of new health and safety measures.

Because the coronavirus spreads through droplets in the air when a person coughs, sneezes or even just talks, air filtration is key to stopping transmission. Wearing a mask is a first line of protection; BART's Heating, Ventilation and Air Conditioning (HVAC) system provides another safety layer.

"The BART fleet's ventilation systems provide passengers with about 4,000 cubic feet per minute of air per car, or about 50 air changes per hour, which is substantial when compared with other public spaces," said Daniel Cheng, Senior Vehicle Systems Engineer. "All the air is filtered before entering the passenger area."

BART is also pushing the envelope on what is possible in the area of filtration, with air exchange that compares favorably to other transit systems. Two new pilot projects are being tested at BART in August: a higher-grade, denser filter panel that will trap smaller particles, and an ultraviolet (UV-C) light source inside the HVAC unit that can zap a virus.

Filters in air conditioning systems are rated by their ability to block different-sized particles, a rating known as their minimum efficiency reporting value, or MERV, on a scale from 1 to 20. BART cars currently use MERV-8 filters, which can trap particles between 3 and 10 microns in size and are changed out approximately every three months.



The MERV-14 at left has denser folds than the MERV-8 at right

One of the pilot projects, in five train cars, will test new filters rated at MERV-14 – a denser, tighter weave of materials that will choke off even smaller particles. It's a careful calculus because if filters are too dense, the air can't get through without overworking the underlying machinery, which would defeat the purpose if the trains can't run.

Ben Holland, Manager of Vehicle Systems Engineering, said the MERV-14s passed a component test in the controlled atmosphere of the maintenance shop, and will now be testing in moving train cars.

“What we're going to evaluate is how quickly do these denser filters become clogged,” he said. “We'll be asking, ‘How long do they hold up? How long are they effective? Can we stay on the schedule for their preventive maintenance?’ “

The science is not settled on the potential role of particles called aerosols that are smaller than most respiratory droplets. That's where the ultraviolet light pilot – along with enhanced cleaning and a mask requirement – can help even more.

There's a solid track record for using ultraviolet light in the ventilation ducts of health care settings to kill microorganisms, Holland said. UV-C light is being tested in one train car.

“UV-C is a proven technology, it's just not been proven in a dynamic environment,” like a moving BART train, Holland said. HVAC units on BART cars are situated in the undercarriage of the trains and are subject to wear and tear on the rails.

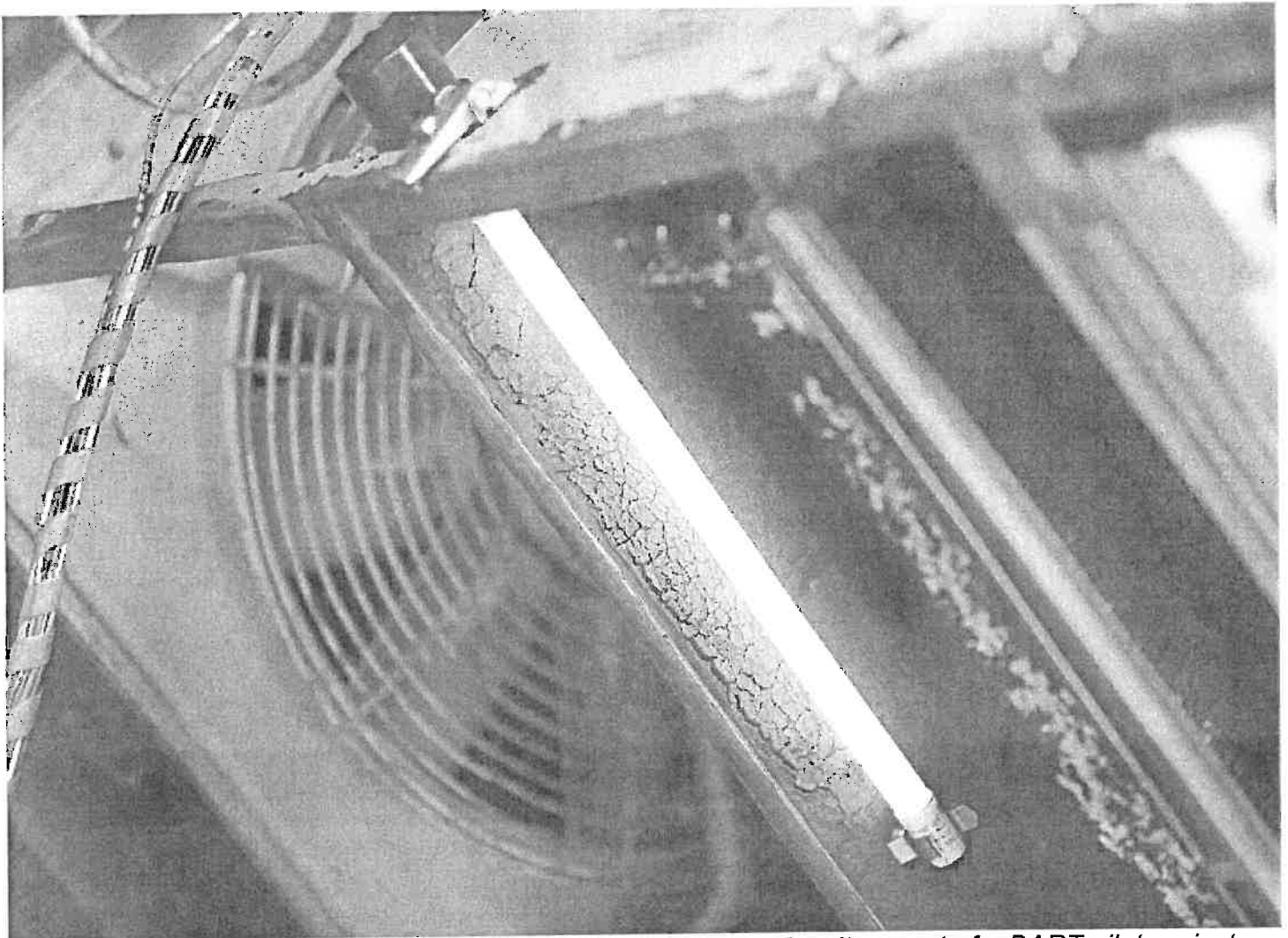


Photo at right: ultraviolet light (UV-C) mounted inside an HVAC unit as part of a BART pilot project

“All of the equipment is underneath the car,” he said. “When the UV lights get bumped around on our rails, are they going to survive?” Crews will monitor the pilot car’s performance over coming weeks and months.

Passengers will not be able to see the new filters or UV-C light on the pilot cars because of their placement underneath the train. (And workers must use personal protective equipment when working with the ultraviolet light, which can damage eyes and skin if left unprotected.)

Overall, the air in BART trains at a given moment is about 75% filtered and 25% fresh air drawn from outside the car (it’s 80/20% on legacy trains and 70/30% on Fleet of the Future trains).

Intake vents draw in air from the outside the car and treat it in the HVAC units, then push the mixed, filtered, cooled air (or warmed during winter) back into the train via vents in the window frame on legacy cars or in the ceiling on new trains. The idea is that larger respiratory drops will be dragged down to fall on floors or other surfaces thanks to gravity. BART’s stepped-up cleaning and disinfecting of surfaces in cars helps further to reduce the chances of transmission.

BART’s not stopping there in the search for good ideas.

“We’ve basically opened the door to talk to anybody and everybody” who has technologies to

consider, Holland said. "Going to MERV-14 is more expensive, but it's not impossible. Installing UV bulbs in HVAC units is relatively expensive, but also highly effective. We're looking to do things that are practical and effective."

Fleet of the Future trains have a modernized HVAC system which, in addition to other benefits, includes: total air flow increased from 4000 cubic feet per minute to 4300; supply air ducts on the ceiling for better air flow and more cooling for standees; improved design against refrigerant leakage; and switching from an ozone-depleting refrigerant to an environmentally friendly one.

The modern HVAC units also continually communicate their performance status to the train operator and can provide fault logs and diagnostic functions to help with troubleshooting.

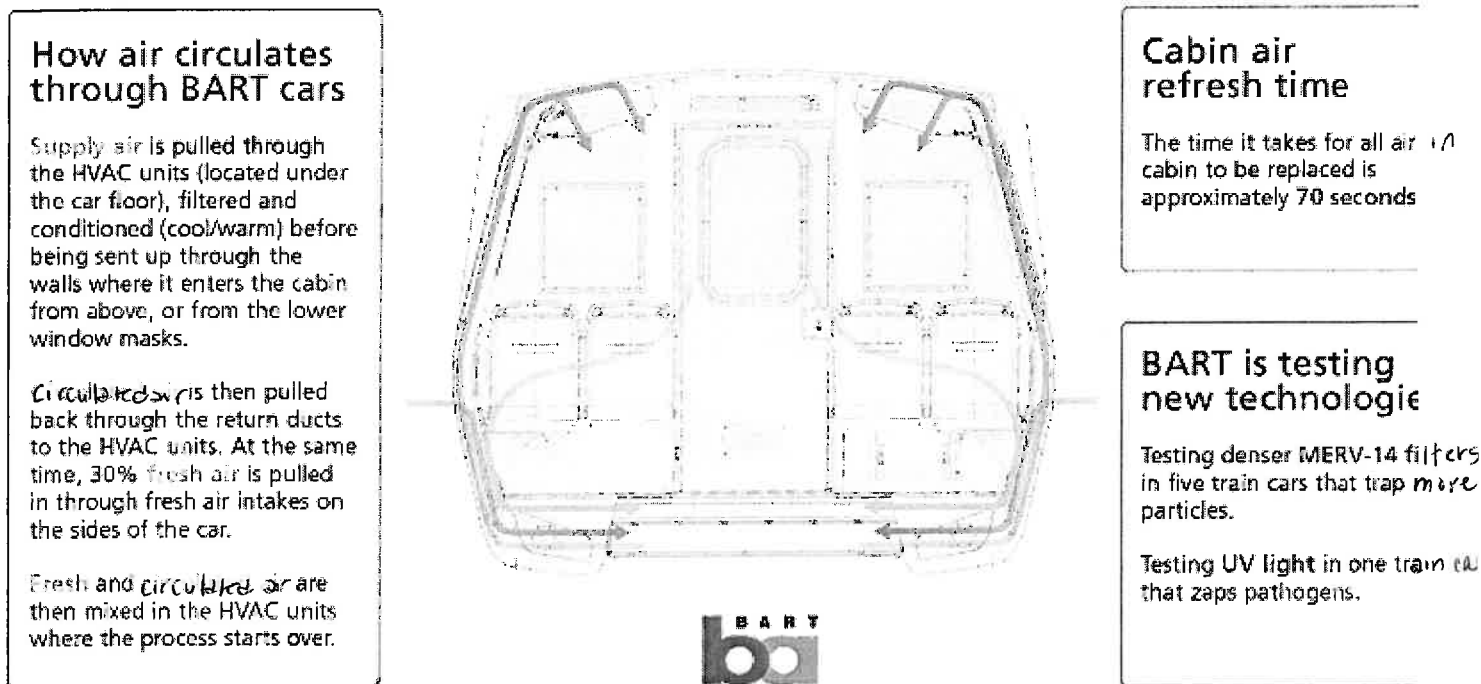


Diagram above: How ventilation works on BART cars, with air being fully exchanged about every 70 seconds

BART, which travels in five different counties with different jurisdictional health orders, requires face coverings for anyone on the trains. Station Agents, BART Police Officers, Civilian Ambassadors and more are handing out free masks to anyone who needs one.

Ridership is slowly creeping up again, after dropping to less than 10% of ridership before the pandemic hit. BART publishes crowding charts every week based on historical data that show social distancing is possible on most trains.

ASHRAE, the professional society for HVAC engineers, has issued guidance that aligns with what BART is testing; the group says MERV-14 filters are preferred in transportation settings, but must first be tested.

"Increased filter efficiency generally results in increased pressure drop through the filter," ASHRAE says. "Ensure HVAC systems can handle filter upgrades without negative impacts to pressure

differentials and/or air flow rates prior to changing filters.”

“A higher pressure drop (from a denser filter) puts more strain on the system; the ventilation system requires more effort to push air through it,” said Moana Reynau, Project Manager at PAE of San Francisco and the communications chair for the Golden Gate ASHRAE chapter.

BART also is keeping in mind worker safety, as employees who install, inspect or replace HVAC filters must have adequate personal protective equipment, or PPE, to keep them safe, as well.

“We are very open to new ideas,” Holland said. “One of the takeaways (of Covid-19) is that we are constantly looking at new technologies and evaluating them.”

On Fri, Aug 14, 2020 at 09:29 Adrian Brandt <adrian.brandt@gmail.com> wrote:

BART air circulation & filtration cuts onboard COVID transmission risk

Caltrain ought to prepare and publicize a similar info-graphic!

How air circulates through BART cars

Supply air is pulled through the HVAC units (located under the car floor), filtered and conditioned (cool/warm) before being sent up through the walls where it enters the cabin from above, or from the lower window masks.

Circulated air is then pulled back through the return ducts to the HVAC units. At the same time, 30% fresh air is pulled in through fresh air intakes on the sides of the car.

Fresh and circulated air are then mixed in the HVAC units

Givens, Patrice

From: Givens, Patrice on behalf of cacsecretary [@caltrain.com]
Sent: Tuesday, August 18, 2020 10:14 AM
To: 'Susaj Curtis'
Subject: RE: Public Question for Citizens Advisory Committee Meeting August 19, 2020

Hi Susan,

If there is any future decrease or termination to Caltrain services there will be advance notice to riders.

Thank you,

Patrice

From: Susaj Curtis [mailto:mssusajc324@gmail.com]
Sent: Monday, August 17, 2020 6:17 PM
To: cacsecretary [@caltrain.com]
Subject: Public Question for Citizens Advisory Committee Meeting August 19, 2020

Good Evening CalTrain Representatives,

I am so grateful and appreciative of CalTrain and the comfort of commuting. CalTrain is critical to my ability to commute to my place of employment.

My question: If there is any future decrease or termination in CalTrain Services due to the decrease in ridership and budget, will there be any advance notice to riders?

Thank you,

Susan C.