



***June 2, 2022***

***To:*** Members of the Technical Advisory Committee

***From:*** Jason Jewell, Interim Managing Director

***Subject:*** Fiscal Year 2021-22 Second Quarter Amtrak Pacific Surfliner On-Time Performance Analysis

### ***Overview***

On-time performance reflects the quality and dependability of the Pacific Surfliner service, and has a considerable effect on repeat ridership, based on the customer travel experience. This report summarizes the On-time performance of the Amtrak Pacific Surfliner service during the second quarter of state fiscal year 2021-22, covering the months of **October, November, and December 2021**.

In June 2022, Los Angeles – San Diego – San Luis Obispo Agency Rail Corridor Agency staff begins to provide the quarterly Amtrak Pacific Surfliner On-time performance analysis in a written staff report format. With June staff reports, the LOSSAN Planning and Analysis Department transitions from reporting based on the Amtrak fiscal year period ending in September, to the state fiscal year period ending in June.

### ***Recommendation***

Receive and file as an information item.

### ***Background***

The Amtrak Pacific Surfliner route operates in a complex environment, along the 351-mile Los Angeles – San Diego – San Luis Obispo (LOSSAN) rail corridor, which traverses through a six-county coastal region in Southern California. As illustrated in Figure 1 below, the rail right-of-way along the corridor is hosted by four different host railroads, including the Union Pacific Railroad (UP), the Burlington Northern Santa Fe Railway (BNSF), the Southern California Regional Rail Authority (SCRRA), and North County Transit District (NCTD).

Figure 1: Pacific Surfliner Route



In addition to the Amtrak Pacific Surfliner intercity passenger rail service, Amtrak long-distance trains, Metrolink commuter trains, and COASTER commuter trains also operate along the north-south corridor.

Before rail operators implemented service reductions in late March 2020 due to the COVID-19 pandemic, service along the LOSSAN Rail Corridor included over 150 daily one-way trains and 41 stations. Of those, 27 trains and 27 stations comprised the Pacific Surfliner service. Currently, the Pacific Surfliner serves 29 stations and operates 21 daily one-way trains (or 10 round trips). In FY 2018-2019 (the last full fiscal year prior to the COVID-19 pandemic), there were nearly 2.8 million passenger trips on Pacific Surfliner trains alone, and an

additional 5.4 million passenger trips were taken on the two commuter rail services combined (Metrolink and COASTER).

#### Impacts of COVID-19 Pandemic

Shortly after Governor Newsom's safer-at-home order became effective on March 15, 2020, the Pacific Surfliner, COASTER, and Metrolink implemented temporary service reductions on their respective intercity and commuter passenger rail services. The Pacific Surfliner and COASTER began service reductions on March 23, 2020, and Metrolink reduced its service on March 26, 2020.

After over a year of operating on reduced service schedules, in spring 2020, health and social conditions allowed for an initial transition into recovery from the COVID-19 pandemic, and rail operators along the LOSSAN rail corridor began to restore service. Starting on May 29, 2021 (Memorial Day weekend), COASTER returned to full service, and Metrolink launched new Saturday service on its Ventura County Line. Then, on June 28, 2021, the Pacific Surfliner increased its service from 12 daily one-way trips (six round trips) to 18 daily one-way trips (nine round trips). Later, on October 25, 2021, the Pacific Surfliner increased its service further, to its current service level of 21 daily one-way trains (or 10 round trips). On April 4, 2022, Metrolink increased its commuter rail service further, by adding 26 trains to its commuter rail system.

#### ***Discussion***

This report provides an update on the average systemwide OTP of the Amtrak Pacific Surfliner, for the second quarter of FY 2021-22 (Q2 FY 2021-22). The following metrics give an overview of the Pacific Surfliner route OTP score for the reporting quarter, as well as information about delay causes:

- Endpoint On-Time Performance (OTP)
- Total Trains Operated
- Total Trains Cancelled or Suspended
- Customer OTP
- Ridership
- Endpoint OTP by Train
- Total Train Miles
- Systemwide Delays by Responsible Party, Per 10,000 Train Miles
- Systemwide Delays by Delay Type, Per 10,000 Train Miles
- Host-Responsible Delays, Per 10,000 Train Miles
- Total Delays Around Stations (or Other Specific Locations)

#### Endpoint OTP

Endpoint OTP represents the percentage of trains arriving to their final station within 15 minutes of their scheduled arrival time. This metric is part of the Uniform Performance Standards that the LOSSAN Agency is required to report to the California State Transportation Agency (CalSTA), who sets a 90 percent endpoint OTP standard.

*Figure 2: Endpoint OTP by Total Trains Operated*

All Trains	FY 2022 Q1	FY 2022 Q2	% Change
Lost	266	366	37.6%
On-Time	1,455	1,489	2.3%
Operated	1,721	1,855	7.8%
Endpoint OTP	84.5%	80.3%	-5.1%

For Q2 FY 2021-22, **1,489** of **1,855** operated Pacific Surfliner trains arrived at their endpoint station on-time, while **366** trains arrived late. This results in a **systemwide endpoint OTP score of 80.3 percent** for Q2 FY 2021-22, representing a 5.1 percent decrease from 84.5 percent endpoint OTP in the previous quarter.

On any given date, an incident can lead Amtrak to either cancel or suspend one or more scheduled trains. Cancelled trains are treated as late trains, and are reflected in endpoint and customer OTP calculations, but suspended trains are not. A cancellation means that Amtrak decided not to operate the train less than four hours before its scheduled departure. The top reasons for the increase in train cancellations from Q1 to Q2 FY 2021-22 were trespasser and vehicle strikes, followed by equipment failures.

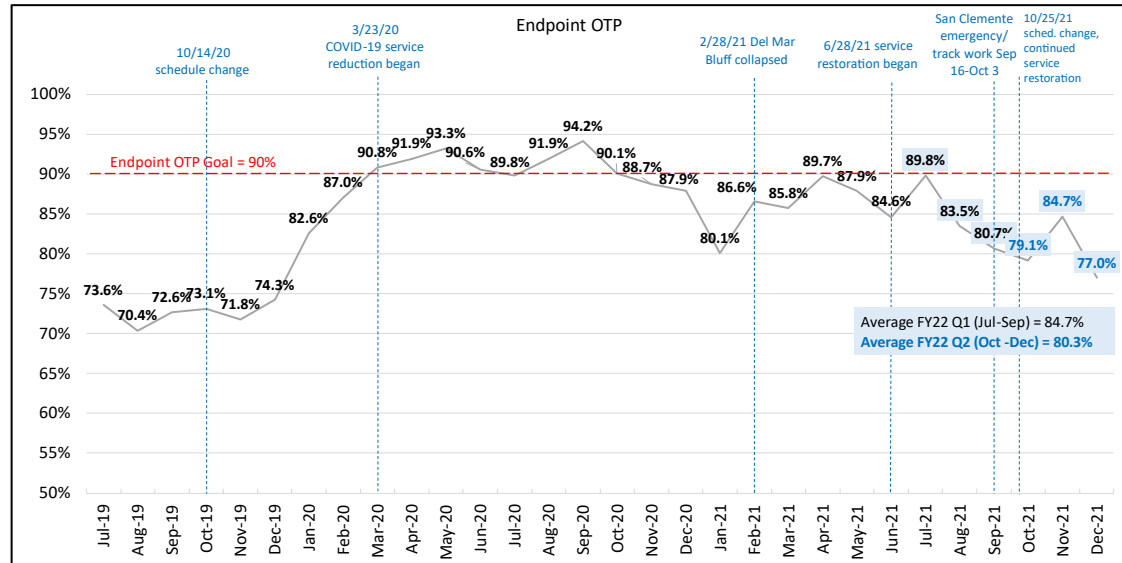
A suspension means that Amtrak decided not to operate the train at least four hours before its scheduled initial terminal departure. The table in Figure 3 shows that for Q2 FY 2021-22, 32 trains were either cancelled or suspended, representing a 58.4 percent decrease, or improvement, from the previous quarter.

*Figure 3: Total Trains Cancelled or Suspended*

All Trains	FY 2022 Q1	FY 2022 Q2	% Change
Cancelled	3	19	533.3%
Suspended	74	13	-82.4%
Total	77	32	-58.4%

Figure 4 shows historical monthly systemwide endpoint OTP from July 2019 to present. Notes within the chart highlight the events that have had significant impacts on OTP.

Figure 4: Endpoint OTP

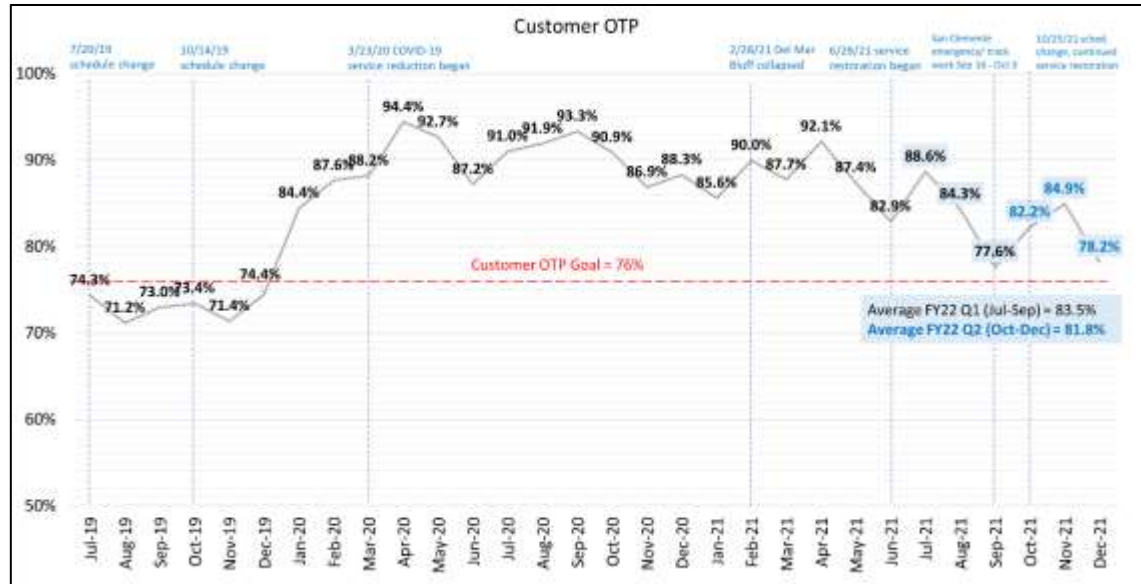


## Customer OTP

Customer OTP measures the on-time arrival of every passenger, including those who detrain at intermediate stops along a route and those who ride the entire route.

The 76 percent goal shown in red on Figure 5 is set by Amtrak. The metric has remained above the 76 percent goal for 24 months, from January 2020 through December 2021. For Q2 FY 2021-22, **customer OTP averaged 81.8 percent, representing a 2.1 percent decrease** from 83.5 percent in the previous quarter.

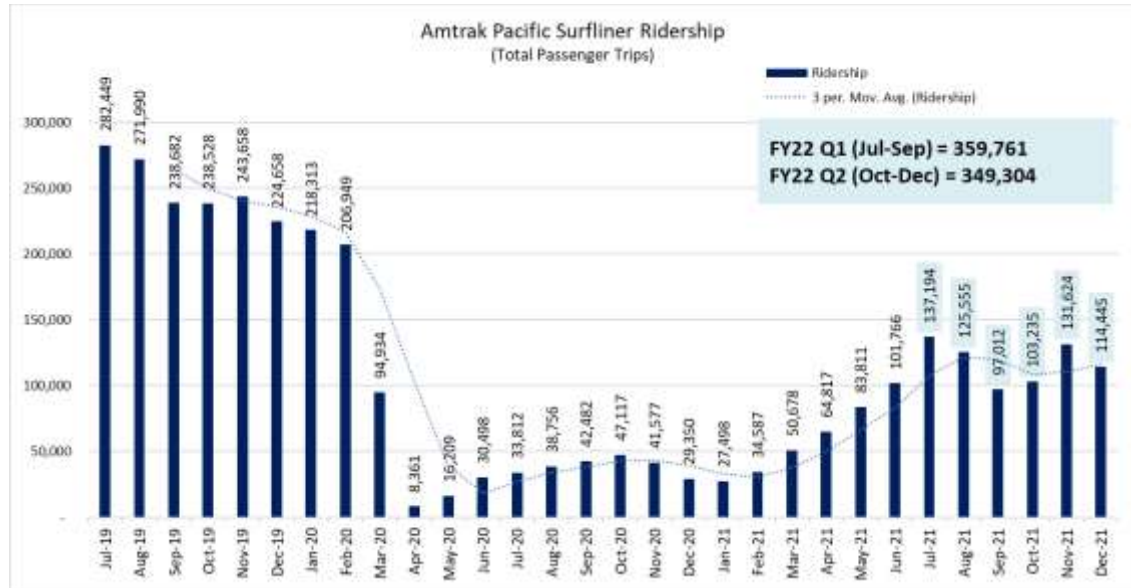
Figure 5: Customer OTP



## Ridership

Various passenger related delays may impact train OTP. In general, the higher the systemwide ridership, the higher the incidences of passenger related delays. The chart in Figure 6 shows historical monthly ridership. For Q2 FY 2021-22, there were a **total of 349,304 passenger trips** on the Pacific Surfliner, representing a 2.9 percent increase from 359,761 passenger trips for Q1 FY 2021-22.

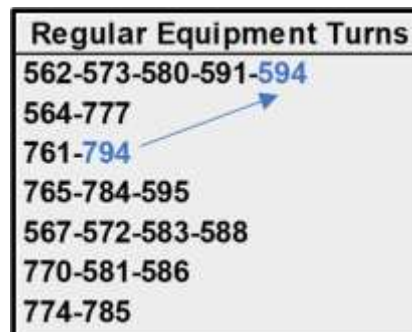
Figure 6: Total Monthly Ridership



### Endpoint OTP by Train

One major delay incident can result in cascading delays that impact multiple trains throughout the day. One factor is that individual train consists are normally used by multiple trains throughout the day. For context, the figure below shows how multiple Pacific Surfliner trains operating on the regular service schedule implemented on October 25, 2021, are connected through their planned equipment turn patterns.

Figure 7: Equipment Turn Patterns



For example, train 562 is the first leg of a daily equipment route, and four additional trains (trains 573, 580, 591, and 594) use the same equipment on the same day. Therefore, any delays experienced by train 594 could be caused by delays on previous trains.

The table below shows individual endpoint OTP for each of the 21 trains currently operating as part of the regular Pacific Surfliner service schedule implemented

Figure 8: Endpoint OTP by Train

Origin-					Month	# Trains
Train	Destination	Oct-21	Nov-21	Dec-21	Avg	Operated
1790	Emergency only.	100.0%	NA	NA	100.0%	1
1793	Emergency only.	100.0%	NA	NA	100.0%	1
1784	Emergency only.	100.0%	NA	100.0%	100.0%	2
1796	Emergency only.	100.0%	NA	NA	100.0%	2
1763	Emergency only.	100.0%	NA	NA	100.0%	3
1564	LAX-SAN	100.0%	NA	NA	100.0%	8
1567	SAN-LAX	100.0%	NA	NA	100.0%	8
590	LAX-SAN	91.7%	NA	NA	91.7%	24
1584	LAX-SAN	87.5%	NA	NA	87.5%	8
584	LAX-SAN	81.3%	NA	NA	81.3%	16
579	SAN-LAX	79.2%	NA	NA	79.2%	24
768	GTL-SAN	79.2%	NA	NA	79.2%	24
796	GTL-SAN	79.2%	NA	NA	79.2%	24
1572	LAX-SAN	75.0%	NA	NA	75.0%	4
593	SAN-LAX	75.0%	NA	NA	75.0%	24
569	SAN-LAX	73.7%	NA	NA	73.7%	19
1768	Emergency only.	66.7%	NA	NA	66.7%	3
1774	Emergency only.	66.7%	NA	NA	66.7%	3
763	SAN-GTL	58.3%	NA	NA	58.3%	24
1785	Emergency only.	100.0%	NA	0.0%	50.0%	4
1777	Emergency only.	66.7%	NA	0.0%	33.3%	4
1761	Emergency only.	NA	NA	0.0%	0.0%	1
Regular Service Trains						
562	LAX-SAN	87.1%	93.3%	93.3%	91.3%	91
794	SLO-LAX	85.7%	93.3%	80.6%	86.6%	68
770	GTL-SAN	100.0%	83.3%	74.2%	85.8%	68
573	SAN-LAX	85.7%	82.1%	87.1%	85.0%	66
581	SAN-LAX	85.7%	93.3%	74.2%	84.4%	68
586	LAX-SAN	85.7%	80.0%	86.7%	84.1%	67
761	SAN-SLO	71.4%	100.0%	80.6%	84.0%	68
567	SAN-LAX	78.3%	86.7%	87.1%	84.0%	84
564	LAX-SAN	69.6%	93.3%	87.1%	83.3%	84
784	GTL-SAN	85.7%	86.7%	77.4%	83.3%	68
595	SAN-LAX	82.8%	80.0%	86.7%	83.1%	89
572	LAX-SAN	81.0%	90.0%	76.7%	82.5%	81
583	SAN-LAX	84.0%	93.3%	69.0%	82.1%	84
580	LAX-SAN	90.3%	80.0%	67.7%	79.4%	92
765	SAN-GTL	71.4%	73.3%	90.3%	78.4%	68
774	SLO-SAN	90.3%	76.7%	64.5%	77.2%	92
785	SAN-GTL	64.5%	86.7%	67.7%	73.0%	92
777	SAN-SLO	71.0%	63.3%	77.4%	70.6%	92
594	LAX-SAN	57.1%	80.0%	67.7%	68.3%	68
588	LAX-SAN	28.6%	86.7%	73.3%	62.9%	67
591	SAN-LAX	57.1%	75.9%	54.8%	62.6%	67
System Average		79.1%	84.7%	77.0%	80.3%	1,855
*Emergency service trains operated from September 20th - October 3rd.						
*Schedule change with 21 trains effective October 25, 2021.						



Systemwide Delays by Responsible Party, Per 10,000 Train Miles

Delay minutes are attributed to a variety of causes, or delay types, using a three-letter coding system. In addition, each delay type is categorized under one of three responsibility groups: Host, Amtrak, or Third Party.

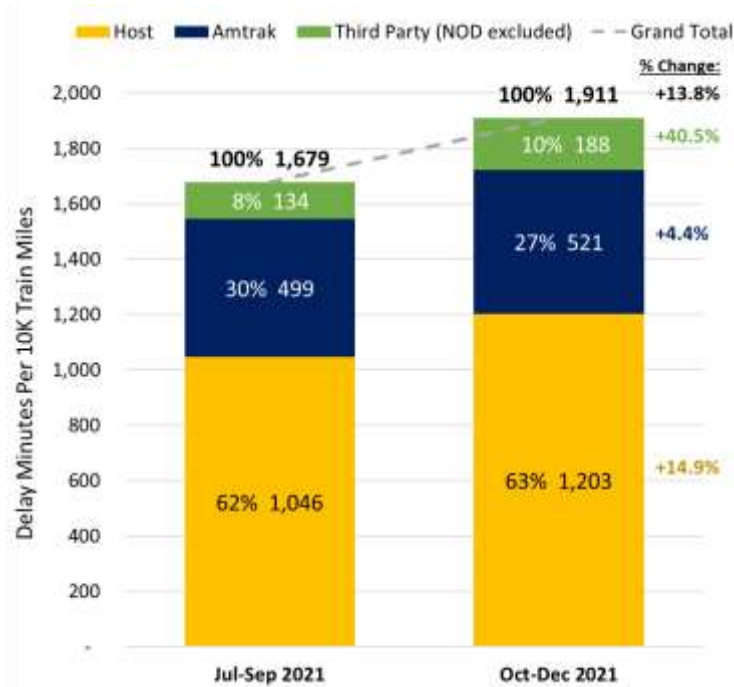
The rate metric of **minutes of delay by responsible party per 10,000 train miles** is useful for comparing levels of delay for periods or territories that may have differing levels of Pacific Surfliner service. The measure is normalized by dividing the total minutes of delay for all operated trains, by the total number of miles traveled by all trains, then multiplying the decimal result by 10,000.

For Q2 FY 2021-22, the Pacific Surfliner service operated a total of **382,588 train miles, representing a 39.4 percent** increase from the 274,425 train miles operated in Q1.

**Host-responsible delay types** (shown in yellow in Figure 9) continue to be the **largest category of delay types** for the entire Pacific Surfliner route, followed by Amtrak-related delays (shown in blue), then third party (shown in green). While minutes of unused recovery time (coded as NOD) are included in the raw data set used for delay analyses, they are excluded from delay analyses, since NOD is not actually a delay, and just represents the minutes a train spends killing time to avoid operating ahead of schedule.

Overall, for Q2 FY 2021-22, there were **1,911 minutes of delay per 10,000 train miles, representing a 13.8 percent increase** in the overall delay rate compared to Q1 FY 2021-22. The rate of host-responsible delays increased by 14.9 percent, the rate of Amtrak-responsible delays increased by 4.4 percent, and the rate of third party-responsible delays increased by 40.5 percent.

Figure 9: Systemwide Delays by Responsible Party, Per 10,000 Train Miles



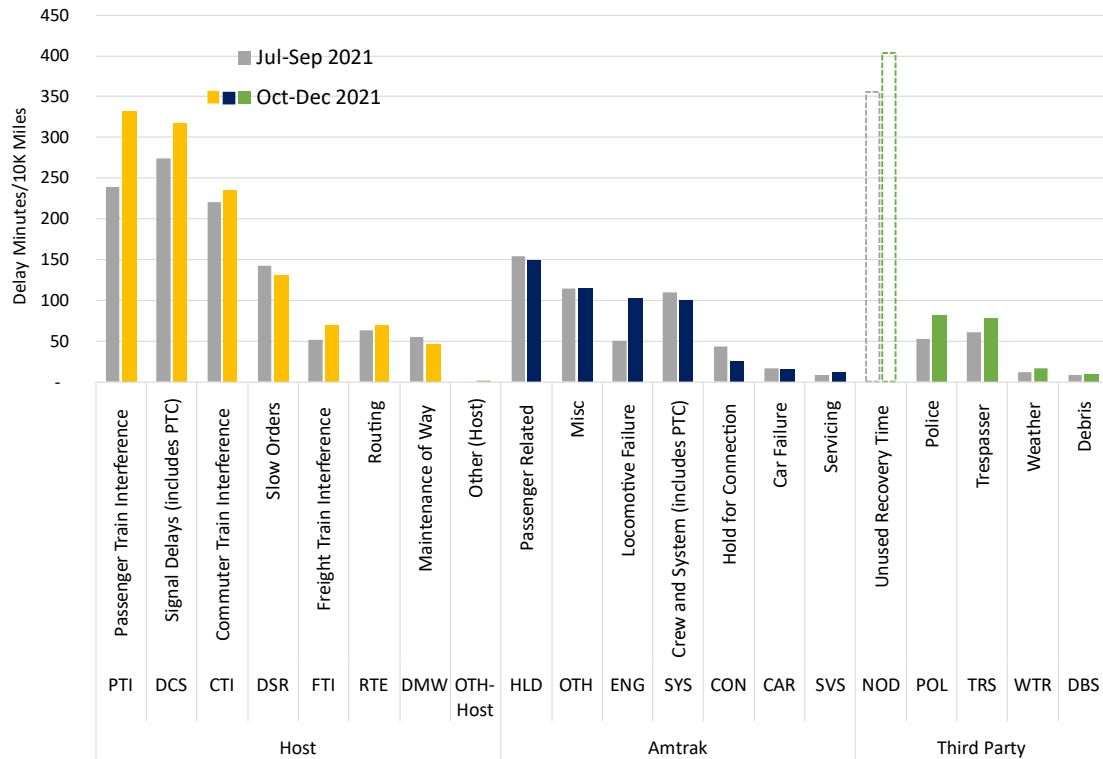
#### Systemwide Delays by Delay Type, Per 10,000 Train Miles

For Q2 FY 2021-22, under the host-responsible category, the rate of nearly all delay types increased, partly due to more trains operating along the corridor. The top delay type under this category was passenger train interference, closely followed by signal delays. The host-responsible delay type that increased the most was passenger train interference.

Under the Amtrak-responsible category, the top delay type was passenger related delays, and the delay type that increased the most was locomotive failures. The amount of passenger related delays usually aligns with the level of train service and ridership. Regarding locomotive failures, there were 17 instances of locomotive failures in Q2 FY 2021-22, which resulted in 17 delayed trains and 8 cancelled trains. The Amtrak and LOSSAN operations and maintenance teams are continually coordinating to quickly identify and address issues related to locomotive reliability.

Regarding third party-responsible delays, the top delay type was police activity, closely followed by trespassers. The third party-responsible delay type that increased the most was police activity. Unfortunately, these type of incidents tend to result in hours long delays that cascade into many other types of delays systemwide, and can lead to the cancelations of multiple trains.

Figure 10: Systemwide Delays by Delay Type, Per 10,000 Train Miles



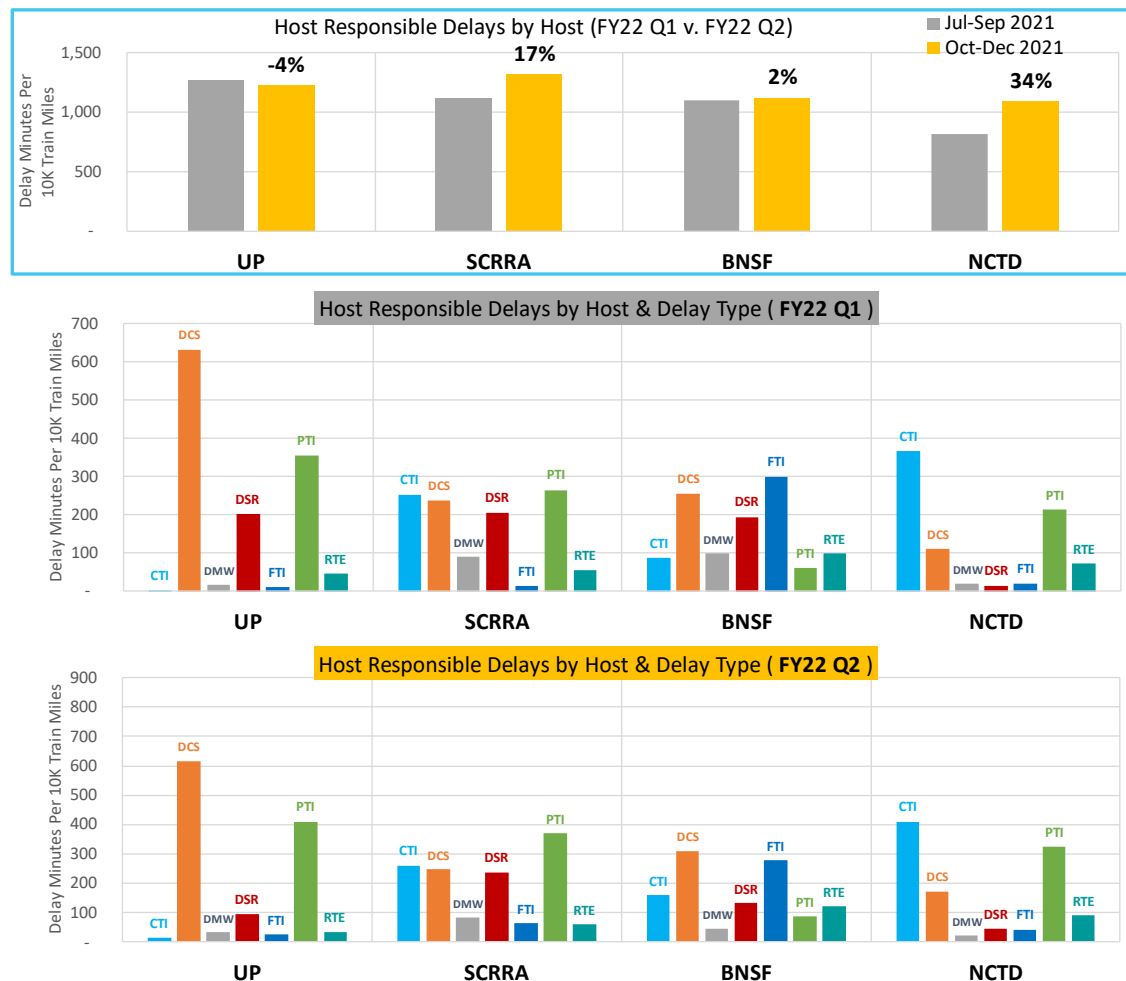
### Host-Responsible Delays, Per 10,000 Train Miles

Each host territory location is unique, and has its own pattern of challenges to be monitored. Figure 11 has three charts showing only host-responsible delays per 10,000 train miles, by host railroad. Overall, for Q2 FY 2021-22, the host-responsible delay rate decreased by **four percent** within UP territory, but increased by **17 percent** within SCRRA territory, increase by **two percent** within BNSF territory, and increased by **34 percent** within NCTD territory.

Focusing just on the bottom chart showing recent Q2 FY 2021-22 data, you can clearly see what the large delay contributors were within each host territory. Although signal issues remain the top delay type within UP territory, they significantly decreased, or improved, for Q2, compared to Q1. Signal related delays in UP territory also led to a significant amount of passenger train interferences. In SCRRA territory, the top delay type was passenger train interferences. In BNSF territory, there were high rates of signal issues and freight train interferences. Moreover, the top delay type in NCTD territory was commuter train interferences, which frequently occur with COASTER service, and sometimes, with Metrolink trains that serve the Oceanside Station. The increase from the previous quarter is attributable to many more trains operating in

San Diego County, since multiple operators furthered their COVID-19 service restorations in October 2021.

Figure 11: Host-Responsible Delays, Per 10,000 Train Miles



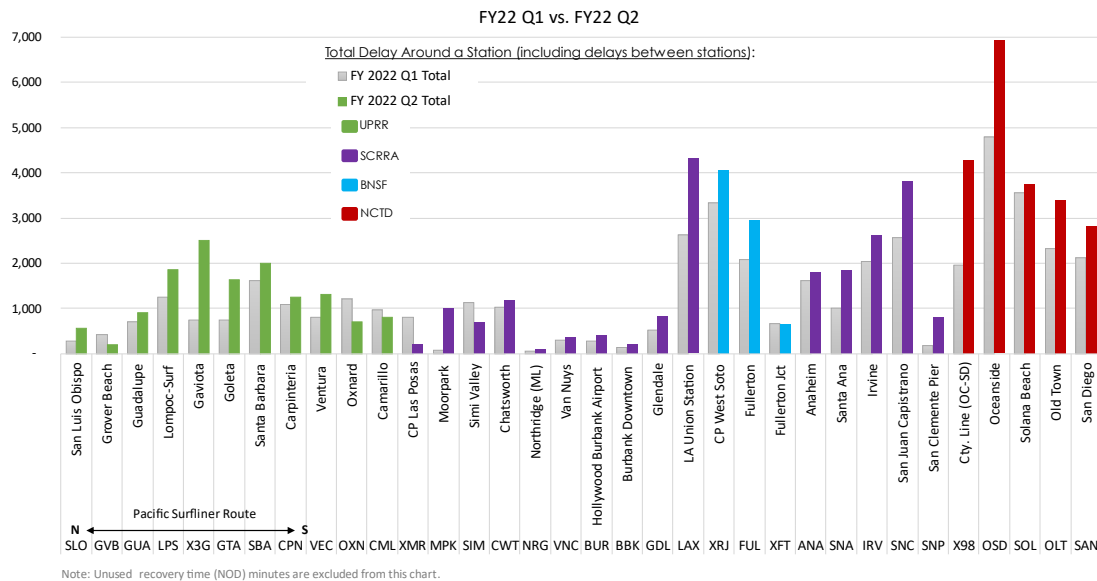
### Total Delays Around Stations (or Other Specific Locations)

Figure 12 below shows total minutes of delay along the entire 351-mile route, for all Pacific Surfliner trains combined. The bars in colors represent total minutes of delay around a station for Q2 FY 2021-22, and the grey bars show the same for the previous quarter. Delays between stations were allocated to the starting station of the delay. For example, whether a train was traveling northbound from Solana Beach to Oceanside, or southbound from Solana Beach to San Diego-Old Town, the delay minutes in both examples would be allocated to Solana Beach.

Overall, **total minutes of delay systemwide increased by 39.4 percent**, from 45,021 in Q1 FY 2021-22, to **62,779 in Q2 FY 2021-22**. The top three delay

locations were Oceanside Station, Los Angeles Union Station, and the Orange County-San Diego County Line.

*Figure 12: Total Delays Around Stations (or Other Specific Locations)*



### Summary

For Q2 FY 2021-22, the Amtrak Pacific Surfliner achieved an average systemwide endpoint on-time performance score of 80.3 percent, which is below the 90 percent standard. Most delay types fell under the host responsibility category. The top three delay types, regardless of responsibility category, were passenger train interference, signal delays, and commuter rail interference.

### Attachment

None.

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