



August 4, 2022

To: Members of the Technical Advisory Committee

From: Jason Jewell, Interim Managing Director

Subject: Fiscal Year 2021-22 Third 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 third quarter of state fiscal year 2021-22, covering the months of January, February, and March 2022.

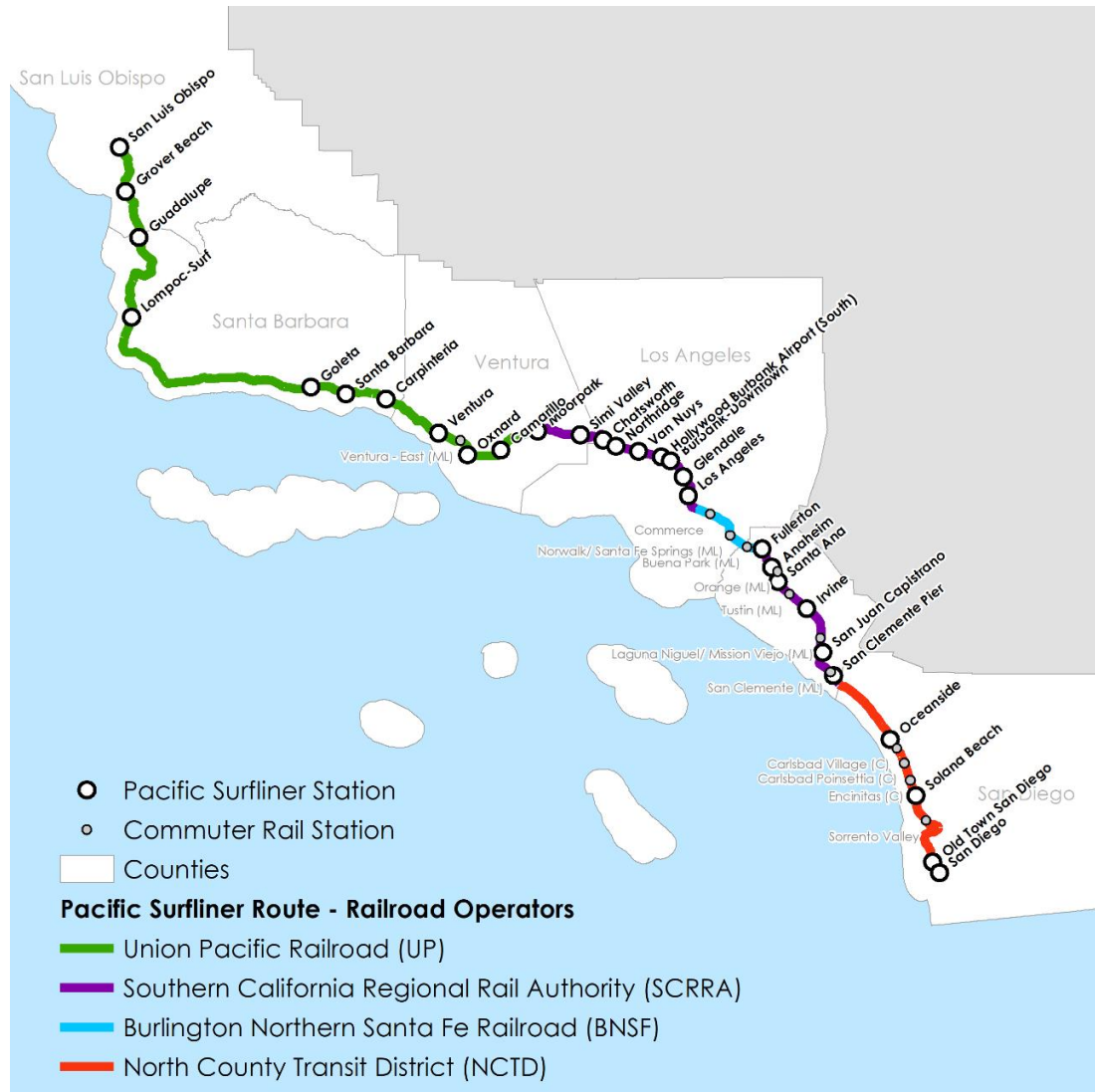
Recommendation

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 on the next page, 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 ten round trips). In fiscal year (FY) 2018-2019 (the last full FY 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 ten 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 third quarter (Q3) of 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 Q2	FY 2022 Q3	% Change
Late	366	306	-16.4%
On-Time	1,489	1,548	4.0%
Operated	1,855	1,854	-0.1%
Endpoint OTP	80.3%	83.5%	4.0%

For Q3 FY 2021-22, **1,548** of **1,854** operated Pacific Surfliner trains arrived at their endpoint station on-time, while **306** trains arrived late. This results in a **systemwide endpoint OTP score of 83.5 percent** for Q3 FY 2021-22, representing a 4.0 percent increase from 80.3 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 Q2 to Q3 FY 2021-22 were trespasser strikes, followed by locomotive engine failures.

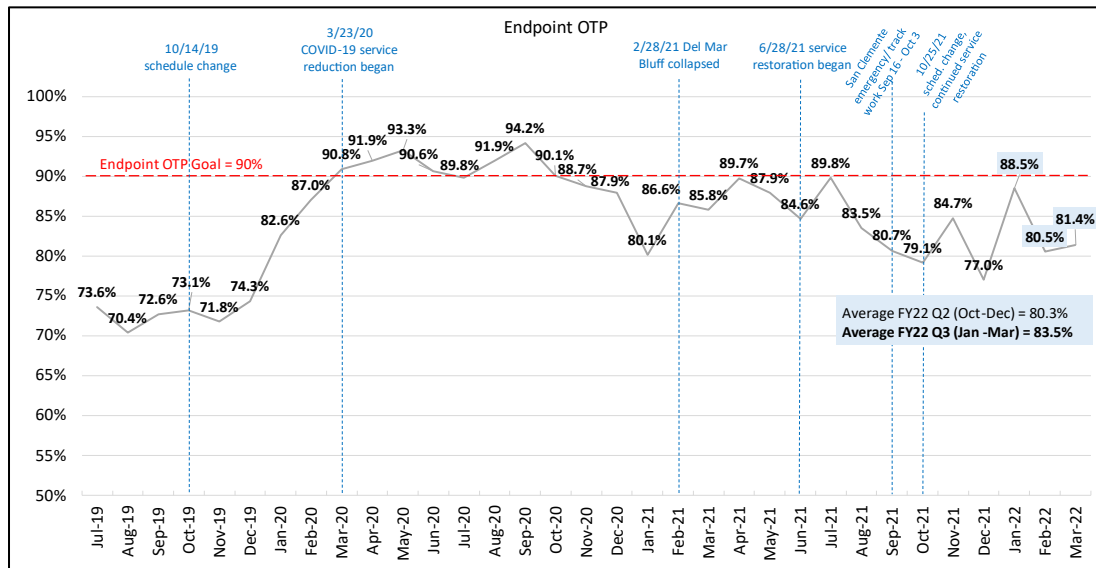
A suspension means that Amtrak decided not to operate the train at least four hours before its scheduled initial terminal departure. The table in Figure 3 shows that for Q3 FY 2021-22, 45 trains were either cancelled or suspended, representing a 40.6 percent increase from the previous quarter.

Figure 3: Total Trains Cancelled or Suspended

Status	FY 2022 Q2	FY 2022 Q3	% Change
Cancelled	19	39	105.3%
Suspended	13	6	-53.8%
Total	32	45	40.6%

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

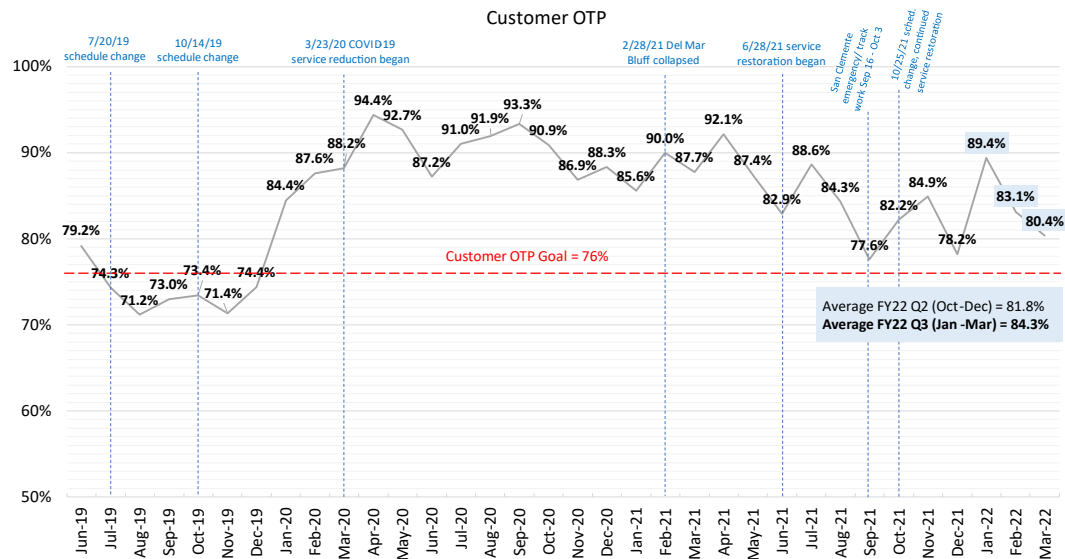


Customer OTP

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 27 months, from January 2020 through March 2022. For Q3 FY 2021-22, **customer OTP averaged 84.3 percent, representing a 3.1 percent increase** from 81.8 percent in the previous quarter.

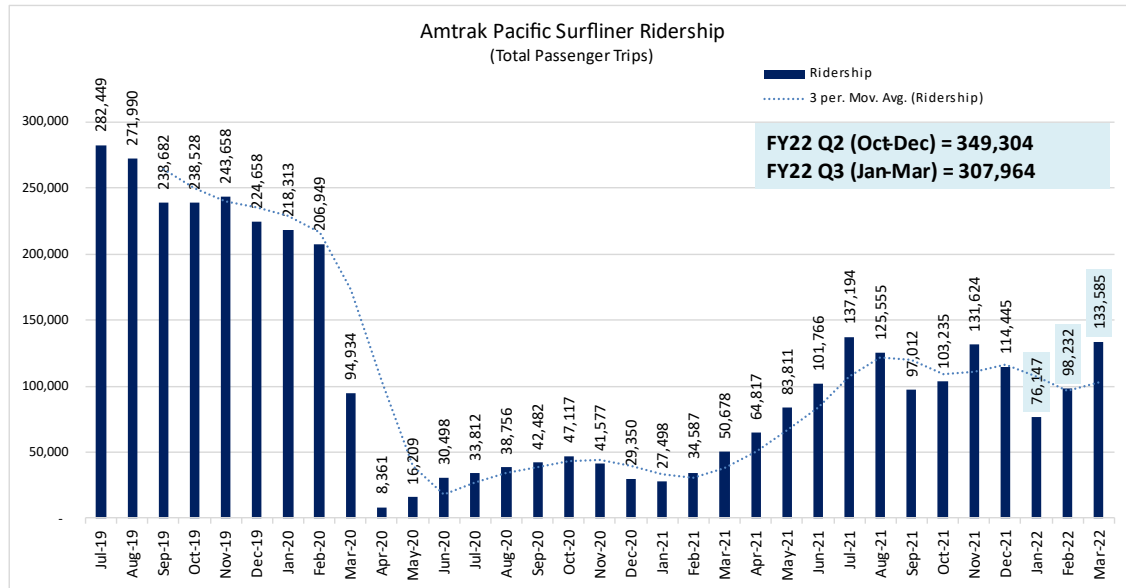
Figure 5: Customer OTP



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 Q3 FY 2021-22, there were a **total of 307,964 passenger trips** on the Pacific Surfliner, representing an 11.8 percent decrease from 349,304 passenger trips in the previous quarter.

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

Regular Equipment Turns	
562-573-580-591-594	
564-777	
761-794	
765-784-595	
567-572-583-588	
770-581-586	
774-785	

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.

Figure 8: Endpoint OTP by Train

Origin-		3-Month				# Trains
Train	Destination	Jan-22	Feb-22	Mar-22	Avg	Operated
1761	Not regular service		100.0%		100%	2
1770	Not regular service		100.0%		100%	2
1774	Not regular service		100.0%		100%	2
1777	Not regular service		100.0%		100%	2
1784	Not regular service		100.0%		100%	2
1785	Not regular service		100.0%		100%	2
1794	Not regular service		100.0%		100%	2
1765	Not regular service		50.0%		50%	2
562	LAX-SAN	93.5%	96.4%	90.3%	93%	90
581	SAN-LAX	93.5%	85.7%	93.5%	91%	90
765	SAN-GTL	90.3%	89.3%	90.3%	90%	90
586	LAX-SAN	88.9%	82.1%	96.3%	89%	82
573	SAN-LAX	88.9%	89.3%	88.9%	89%	82
770	GTL-SAN	90.3%	89.3%	87.1%	89%	90
588	LAX-SAN	80.6%	92.9%	90.3%	88%	90
594	LAX-SAN	87.5%	85.7%	88.0%	87%	77
794	SLO-LAX	87.1%	88.5%	83.9%	86%	88
580	LAX-SAN	93.5%	75.0%	90.3%	86%	90
572	LAX-SAN	92.6%	78.6%	85.2%	85%	82
567	SAN-LAX	90.3%	85.7%	77.4%	84%	90
583	SAN-LAX	88.5%	66.7%	96.2%	84%	79
564	LAX-SAN	87.1%	78.6%	83.9%	83%	90
595	SAN-LAX	83.3%	71.4%	93.5%	83%	89
784	GTL-SAN	80.6%	82.1%	80.6%	81%	90
785	SAN-GTL	83.9%	67.9%	83.9%	79%	90
774	SLO-SAN	96.8%	71.4%	61.3%	76%	90
761	SAN-SLO	93.3%	82.1%	51.6%	76%	89
591	SAN-LAX	83.9%	64.3%	74.2%	74%	90
777	SAN-SLO	83.9%	60.7%	29.0%	58%	90
System Average		88.5%	80.5%	81.4%	83.5%	1,854
*Reguar service effective October 25, 2021 includes 21 dailytrains.						

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.

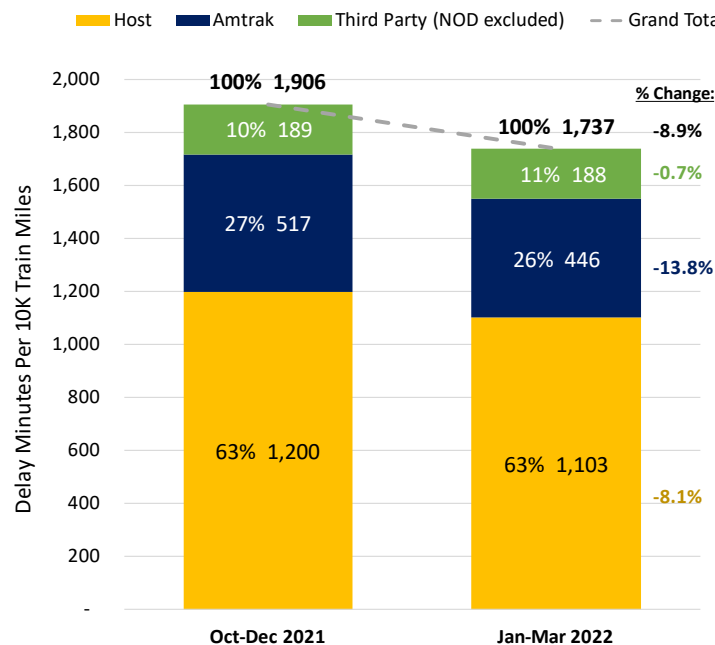
The rate metric of **minutes of delay by responsible party per 10,000 train miles** is useful for comparing levels of delay for periods or territories that may have differing levels of Pacific Surfliner service. The measure is normalized by dividing the total minutes of delay for all operated trains,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

For Q3 FY 2021-22, the Pacific Surfliner service operated a total of **395,566 train miles, representing a 3.4 percent** increase from the 382,588 train miles operated in Q2.

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 waiting to avoid operating ahead of schedule.

Overall, for Q3 FY 2021-22, there were **1,737 minutes of delay per 10,000 train miles, representing an 8.9 percent decrease**, or improvement, in the overall delay rate compared to Q2 FY 2021-22. The rate of host-responsible delays decreased by 8.1 percent, the rate of Amtrak-responsible delays decreased by 13.8 percent, and the rate of third party-responsible delays decreased by 0.7 percent.

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



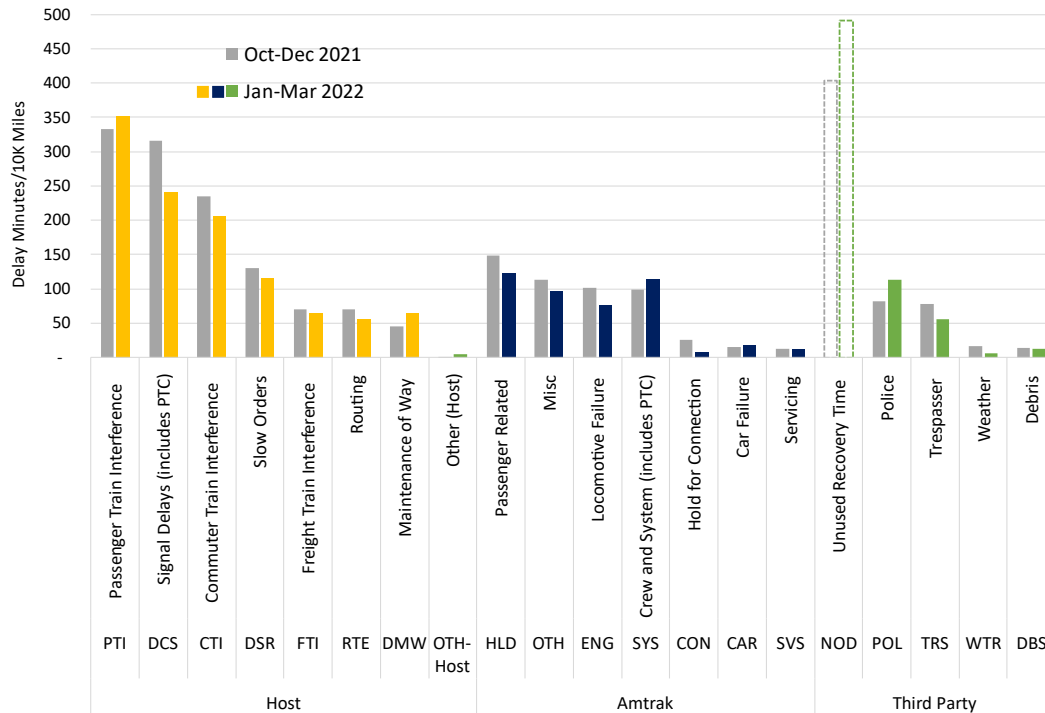
Systemwide Delays by Delay Type, Per 10,000 Train Miles

For Q3 FY 2021-22, under the host-responsible category, the rate of nearly all delay types decreased. The top delay type by far under this category was passenger train interference, followed by signal delays, then commuter train interference. The host-responsible delay type that increased the most was maintenance of way.

Under the Amtrak-responsible category, passenger related delays decreased, but remained the top delays type. The delay type that increased the most under the Amtrak-responsible category was crew and system, which encompasses many different issues ranging from labor-related crew shortages, to issues involving positive train control (PTC) technology.

Regarding third party-responsible delays, the top delay type was police activity, followed by trespassers. The third party-responsible delay type that increased the most was police activity. Unfortunately, these types 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

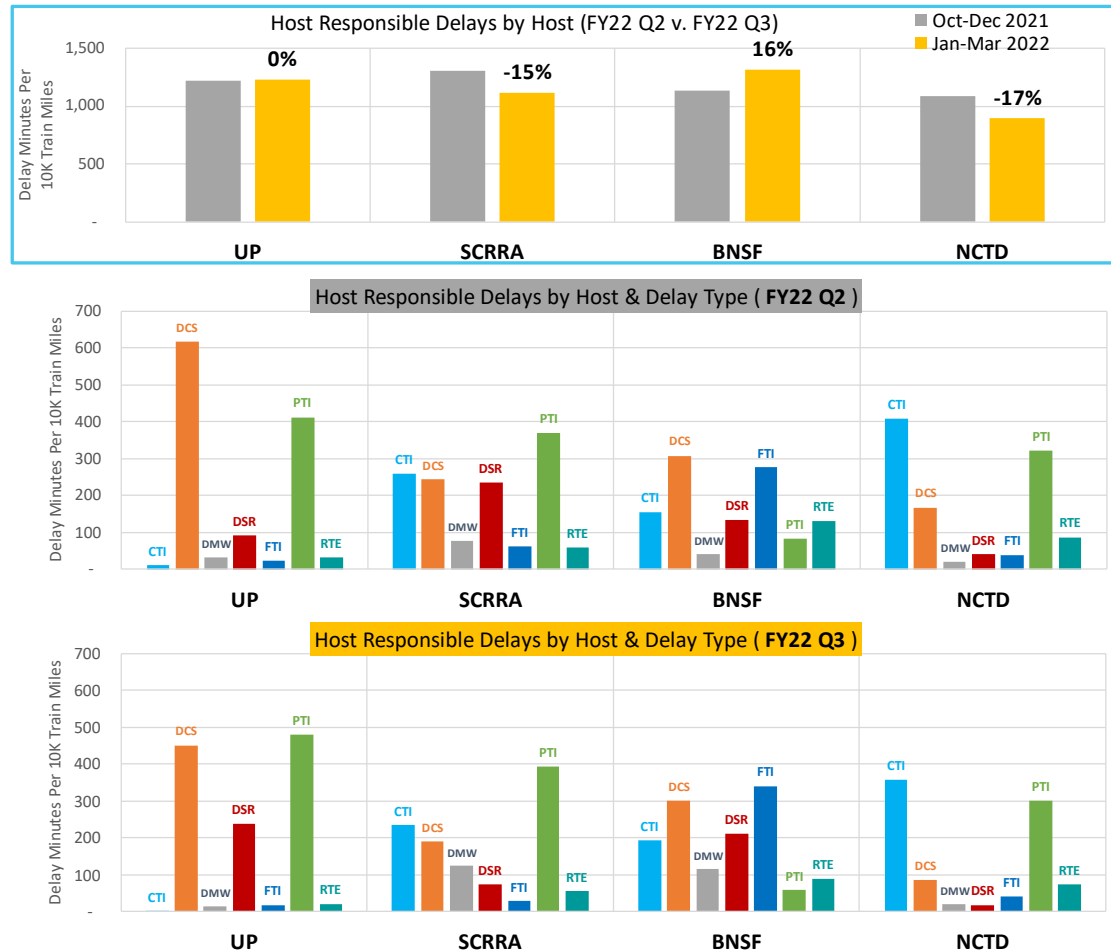


Host-Responsible Delays, Per 10,000 Train Miles

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 Q3 FY 2021-22, the host-responsible delay rate balanced out and remained **unchanged** within UP territory, but decreased by **15 percent** within SCRRA territory, increased by **16 percent** within BNSF territory, and decreased by **17 percent** within NCTD territory.

Focusing just on the bottom chart showing recent Q3 FY 2021-22 data, you can clearly see what the large delay contributors were within each host territory. Although signal issues remain a top delay type within UP territory, they significantly decreased, or improved, for Q3, compared to Q2. Signal related delays in UP territory also led to a significant amount of passenger train interferences, which increased in Q3. In SCRRA territory, the top delay type remained passenger train interference. In BNSF territory, there were high rates of signal issues and freight train interference. Moreover, while the top delay types in NCTD territory are still commuter train interference and passenger train interference, there was a decrease, or improvement, for both of these delay types within NCTD territory from Q2 to Q3.

Figure 11: Host-Responsible Delays, Per 10,000 Train Miles¹



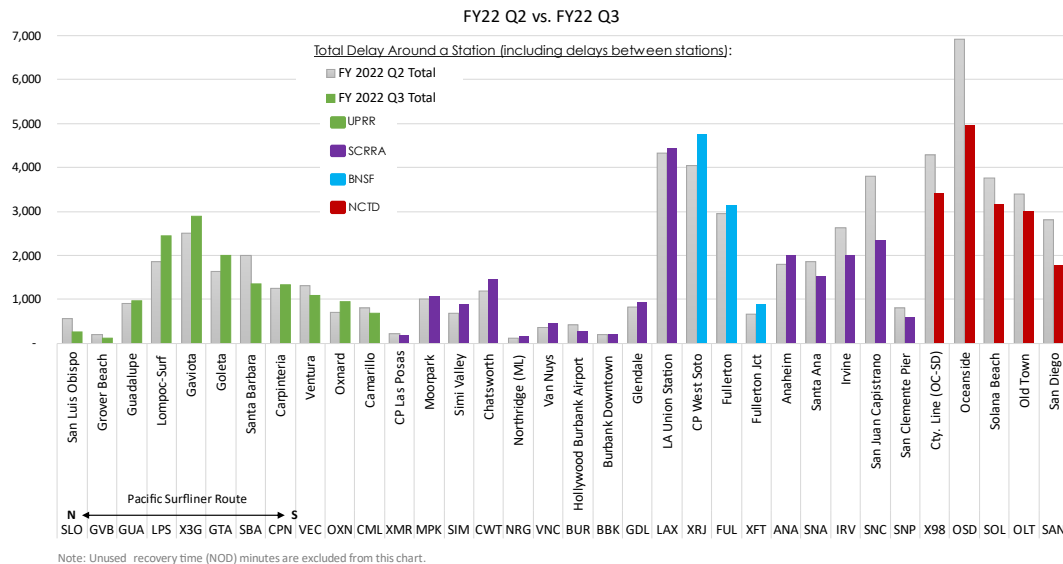
Total Delays Around Stations (or Other Specific Locations)

Figure 12 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 Q3 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 decreased by 8.2 percent**, from 62,779 in Q2 FY 2021-22, to **57,615 in Q3 FY 2021-22**. The top three delay locations were Oceanside Station, Control Point (CP) West Soto, and Los Angeles Union Station.

¹ Refer to Figure 10 for definitions of all three-letter delay codes.

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



Summary

For Q3 FY 2021-22, the Amtrak Pacific Surfliner achieved an average systemwide endpoint on-time performance score of 83.5 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 train interference.

Attachment

A. Fiscal Year 2021-22 Third Quarter Amtrak Pacific Surfliner On-Time Performance Analysis Presentation

Prepared by:

Rosa Guillen-Sanchez
Senior Transportation Analyst, Planning and Analysis
(714) 560-5747