Northstar Rail Corridor Post-Pandemic Study

Appendix B: Peer Corridor Review Technical Report

FINAL

Metropolitan Council

Prepared by:

SRF

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Overview

This report analyzes system performance for Northstar commuter rail and five similar rail corridors before and after the start of the COVID-19 pandemic. Northstar's peer rail corridors evaluated in this report are:

- Amtrak Downeaster intercity rail in New England, which is operated by Amtrak and managed by Northern New England Passenger Rail Authority (NNEPRA)
- COASTER commuter rail in San Diego, which is operated by Bombardier Transportation on behalf of North County Transit District (NCTD)
- FrontRunner commuter rail in Salt Lake City, which is operated by Utah Transit Authority (UTA)
- Sounder commuter rail in Seattle, which is operated by BNSF on behalf of Sound Transit
- Trinity Railway Express commuter rail in Dallas/Fort Worth, which is operated by Herzog Transit Services on behalf of Trinity Metro (Fort Worth/Tarrant County) and Dallas Area Rapid Transit (DART)

The Metropolitan Council selected most of the peer agencies for this study because of similarities between these corridors and Northstar. These agencies serve similarly sized regions or are a similarly sized transit agency to Metro Transit, with a similar mix of modes. Like Northstar, these peer corridors also have a downtown orientation. Additionally, these peer corridors operate in regions with similar regional economic conditions in that the regions are growing. Amtrak Downeaster does not share these characteristics but is included in this study to represent a peer for the intercity rail scenarios evaluated in this study.

This memorandum includes a summary of interviews that the consultant team conducted with peer agency staff and a comparison of pre- and post-COVID system performance measures using data from the National Transit Database (NTD).

Peer Corridor Interview Takeaways

The consultant team interviewed peer agency staff between August and October 2022. These interviews focused on questions related to the agencies' responses to COVID-19 pandemic, service changes, pandemic ridership recovery strategies, and what the future of corridor will look like. A detailed description of these interviews is included in Appendix A and a list of agency staff that the consultant team interviewed is included in Appendix B

Through these interviews, the consultant team learned that most of Northstar's peer agencies have reinstated commuter rail service to pre-pandemic levels, but ridership has been slow to rebound, especially among traditional commuters. All of Northstar's peer agencies have reinstated some level of special event service and many are seeing ridership that mirrors pre-COVID levels on those trips.

In general, the peer agency contacts were optimistic about the future of their commuter rail service. Most of Northstar's peer agencies have major capital projects underway to expand and improve their service. Additionally, multiple agencies cited geographical constraints to the region's growth and growing congestion as reasons why they believe that commuter rail will be successful in their region in the long-term. For two agencies, 2019 was either the highest ridership or second highest ridership year on record and agency staff were optimistic that this pre-COVID demand for the service would rebound.

Peer Corridor Performance Analysis Pre- and Post-COVID

This analysis evaluates performance measures for Northstar and its five peer rail corridors before and after the COVID-19 pandemic began, using data from the National Transit Database (NTD). This analysis uses 2019 data as a pre-COVID baseline and 2021 data to reflect performance after the COVID-19 pandemic began. The system performance measures included in this analysis relate to ridership, operating costs, fare revenue, and subsidies.

Limitations of NTD Data

Data Reported by Fiscal Year

A key limitation of comparing peer agency data using NTD is that most data are reported by fiscal year (FY) only. NTD only reports unliked passenger trips (UPT), vehicles operated in maximum service (VOMS), vehicle revenue miles (VRM), and vehicle revenue hours (VRH) monthly. As a result, these data can be summarized as calendar year totals that summarize ridership and the amount of service operated on each corridor. All other NTD data are reported using each agency's own fiscal year.

Northstar's peer agencies' fiscal years begin in January, July, and October (Table 1). As a result, any NTD data for 2019 is from a fiscal year that could fall within the timeframe of July 2018 through December 2019 and the data for FY 2021 could be from July 2020 through December 2021. The FY 2021 data for COASTER, Downeaster, and Trinity Railway Express include some months in 2020.

Table 1 Peer Agency Fiscal Year Schedules

Agency	Corridor	FY 2021 Begins
Metro Transit	Northstar	January 2021
UTA	FrontRunner	January 2021
Sound Transit	Sounder	January 2021
North County Transit District	COASTER	July 2020
NNEPRA	Amtrak Downeaster	July 2020
DART/Trinity Metro	Trinity Railway Express	October 2020

Source: National Transit Database, 2021 Data Tables

By the time FY 2021 began for NNEPRA and DART/Trinity Metro, DART/Trinity Metro was back to operating commuter rail service at pre-pandemic levels and NNEPRA was operating at nearly pre-pandemic levels. COASTER service was still operating at reduced levels for the first six

months of NCTD's FY 2021. The data for these three agencies are included throughout this analysis but will be flagged as being potentially less reliable as a comparison to Northstar's FY 2021 data.

Normalizing Peer Data

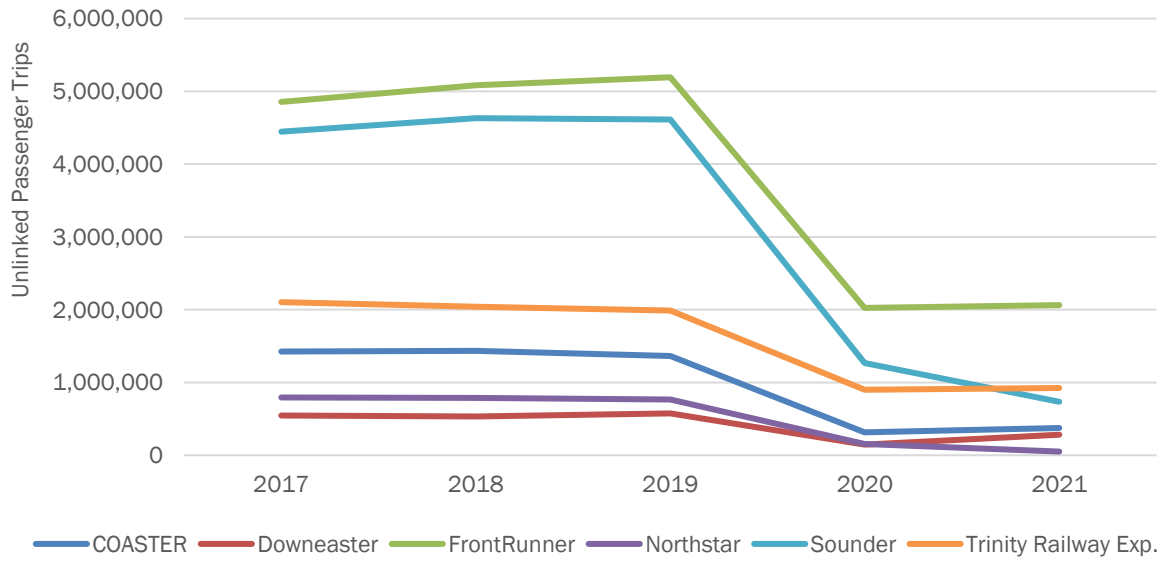
To facilitate comparison between peer corridors, data in this analysis is normalized to account for differences in the amount of service operated on each corridor. Throughout this analysis, data are normalized by vehicle revenue hours (VRH) for commuter rail service, which measures the hours that vehicles/passenger cars travel while in revenue service. VRH is used to normalize the data because NTD does not report on the number of service trips operated by mode per year. It was not possible to reliably calculate the number of service trips operated by each agency using schedule data because peer agencies changed their schedules many times during FY 2021. As a result, VRH was used.

Ridership

Ridership by Calendar Year

Figure 1 shows annual ridership, measured as unlinked passenger trips (UPT), from calendar years 2017 through 2021.[1] In 2019, Northstar had the second lowest annual ridership among these peer corridors and by 2021 it had the lowest annual ridership among its peers.

Figure 1. Unlinked Passenger Trips by Agency, Calendar Years 2017-2021

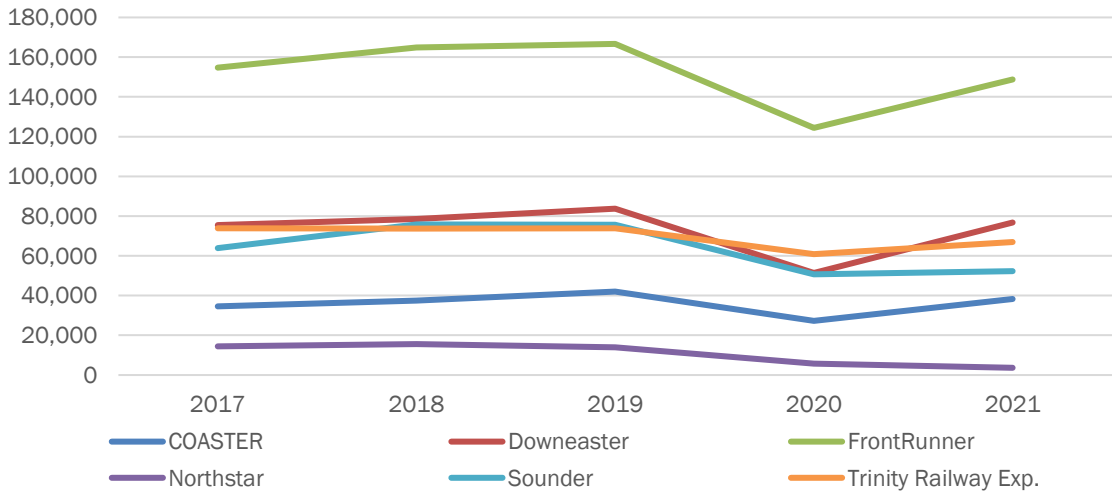


Source: National Transit Database, Monthly Module Adjusted Data Release, May 2022

[1] Ridership data labeled "Calendar Year" reflect January-December data for that year.

Between 2017 and 2021, Northstar consistently operated less service than its peers in terms of vehicle revenue hours (Figure 2).

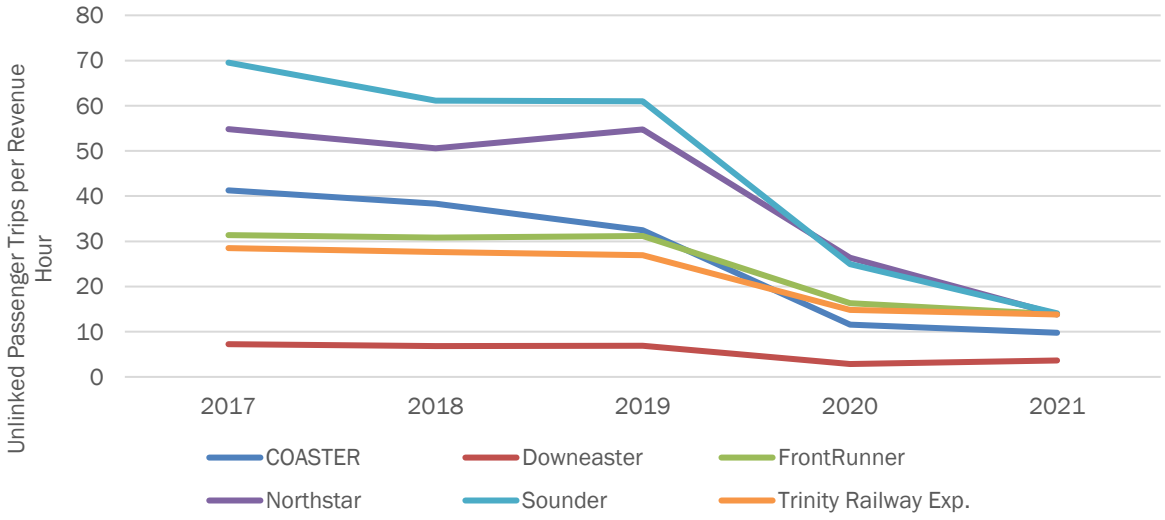
Figure 2 Vehicle Revenue Hours, Calendar Years 2017-2021



Source: National Transit Database, Monthly Module Adjusted Data Release, May 2022

While Northstar's total ridership was much lower than most of its peers throughout this period, when summarized as ridership per vehicle revenue hour operated, Northstar had the second highest ridership per revenue hour in 2019 and is among the highest in 2021, too (Figure 3). This reflects the much lower number of vehicle revenue hours that Northstar operates relative to its peers. Northstar's productivity, as measured by passengers per revenue hour, is comparable to that of many of its peers.

Figure 3 Unlinked Passenger Trips per Vehicle Revenue Hour by Agency, Calendar Years 2017-2021



Source: National Transit Database, Monthly Module Adjusted Data Release, May 2022

Ridership by Fiscal Year

As discussed in the Limitations of NTD Data section, all NTD data besides unlinked passenger trips (UPT), vehicle revenue hours (VRH), vehicle revenue miles (VRM), and vehicles operated in maximum service (VOMS) are only reported by fiscal year. Since unlinked passenger trips and vehicle revenue hours are referenced in many of the subsequent metrics, Table 2 and Figure 4 and **Error! Reference source not found.** show unlinked passenger trips and vehicle revenue hours data as reported in NTD's fiscal year reports for FY 2019 and FY 2021.

Table 2 shows that ridership on Northstar and its peer corridors decreased by 77.5 percent on average between FY 2019 and FY 2021. FrontRunner and Trinity Railway Express had the lowest decreases at around 60 percent. Northstar had the highest decrease ridership at 93 percent. All of the peer agencies also decreased the amount of vehicle revenue hours operated during this period, with an average decrease of 30.4 percent. Northstar's vehicle revenue hours decreased the most at 74 percent.

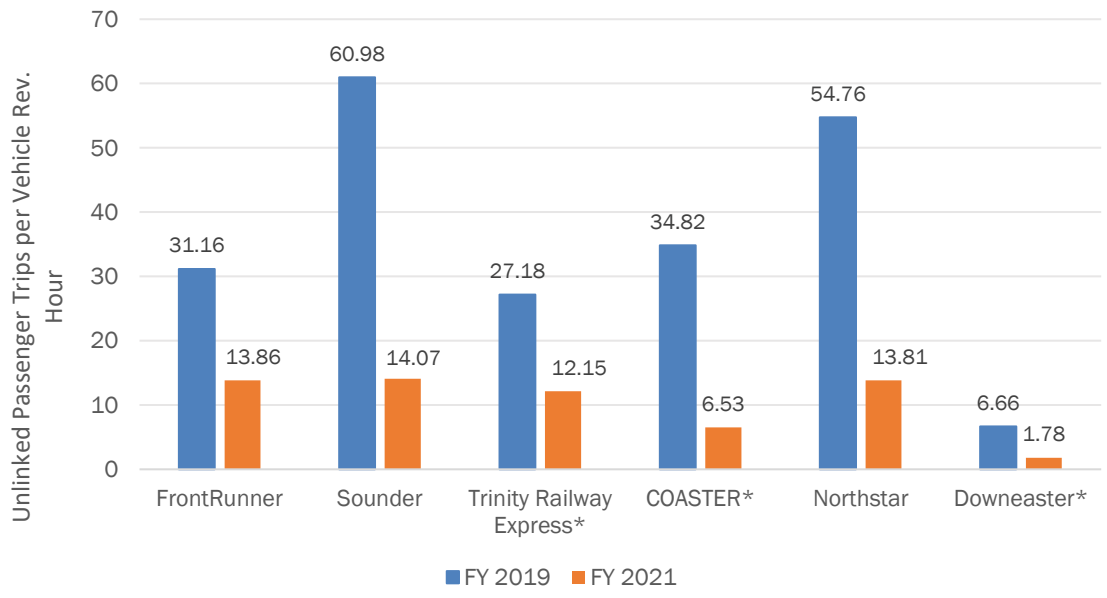
Table 2 Unlinked Passenger Trips and Vehicle Revenue Hours, FY 2019 and FY 2021

Commuter Rail Service	Total Unlinked Trips, FY 2019	Total Unlinked Trips, FY 2021	Percent Change	Vehicle Revenue Hours, FY 2019	Vehicle Revenue Hours, FY 2021	Percent Change
FrontRunner	5,193,879	2,062,334	-60.3%	166,668	148,822	-10.7%
Sounder	4,612,415	734,481	-84.1%	75,641	52,209	-31.0%
Trinity Railway Express*	2,006,996	795,302	-60.4%	73,830	65,442	-11.4%
COASTER*	1,408,677	162,707	-88.4%	40,454	24,931	-38.4%
Northstar	767,768	50,433	-93.4%	14,020	3,651	-74.0%
Downeaster*	547,293	117,863	-78.5%	82,186	66,244	-19.4%

Source: National Transit Database, 2019 and 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Figures 4 summarizes unlinked passenger trips per vehicle revenue hour. This figure shows similar trends to the charts in the Ridership by Calendar Year section above. All of Northstar's peer corridors had major decreases in productivity, measured by ridership per vehicle revenue hour, after the pandemic began. Pre-COVID, Northstar had high ridership per vehicle revenue hour compared to its peers. Between FY 2019 and FY 2021, Northstar's 75 percent decrease in ridership per vehicle revenue hour was comparable to that of many of its peers.

Figure 4 Unlinked Passenger Trips per Vehicle Revenue Hour, FY 2019 and FY 2021



Source: National Transit Database, 2019 and 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Ridership by Schedule Type: Weekday, Saturday, and Sunday

Table 3 shows ridership, measured as average typical daily UPT, disaggregated by weekday, Saturday, and Sunday service for FY 2019 and FY 2021. Even before the pandemic began, none of the three highest ridership peer agencies operated service on Sundays. Sounder, the second highest ridership service among these agencies, only operates on weekdays. Downeaster had the lowest average daily weekday UPT and was unique in that its weekend ridership was slightly higher than its weekday UPT, indicating that its riders also use the service regularly for non-commuting purposes.

Table 3 Average Daily Ridership by Day of Week, FY 2019 and FY 2021

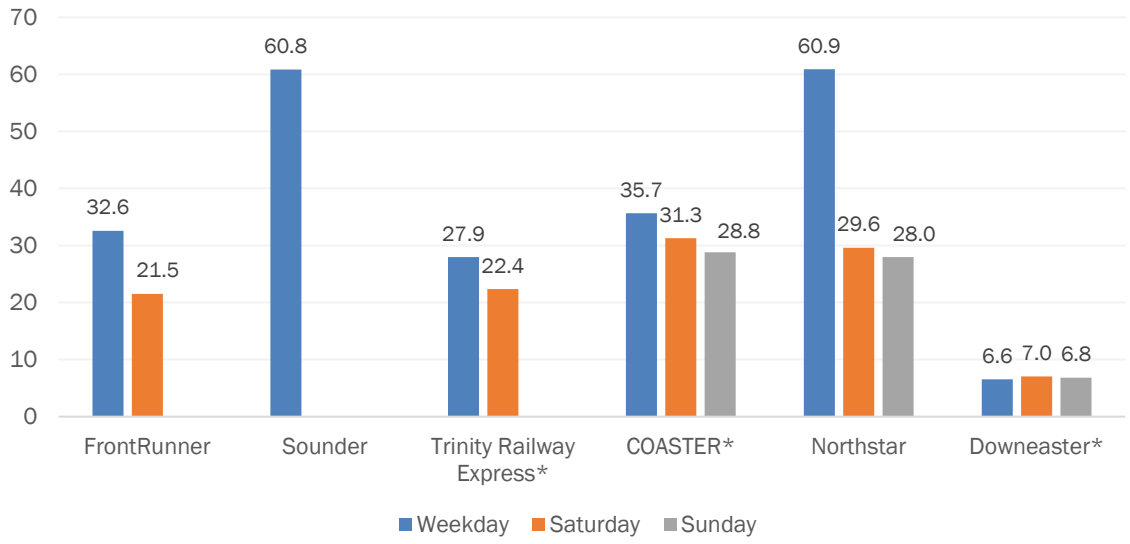
Commuter Rail Service	Average Weekday UPT, FY 2019	Average Weekday UPT, FY 2021	Average Saturday UPT, FY 2019	Average Saturday UPT, FY 2021	Average Sunday UPT, FY 2019	Average Sunday UPT, FY 2021
FrontRunner	18,794	7,210	7,892	4,431	0	0
Sounder	17,938	2,829	0	0	0	0
Trinity Railway Express*	7,071	2,797	3,689	1,733	0	0
COASTER*	4,886	592	2,095	1,211	1,470	902
Northstar	2,739	199	710	0	699	0
Downeaster*	1,462	294	1,616	385	1,568	405

Source: National Transit Database, 2019 Data Tables; * Agency's fiscal year includes months in 2020

Figures 5 and 6 show UPT by day of the week per vehicle revenue hour operated in FY 2019 and FY 2021. For all agencies, ridership for all days of the week decreased drastically between FY 2019

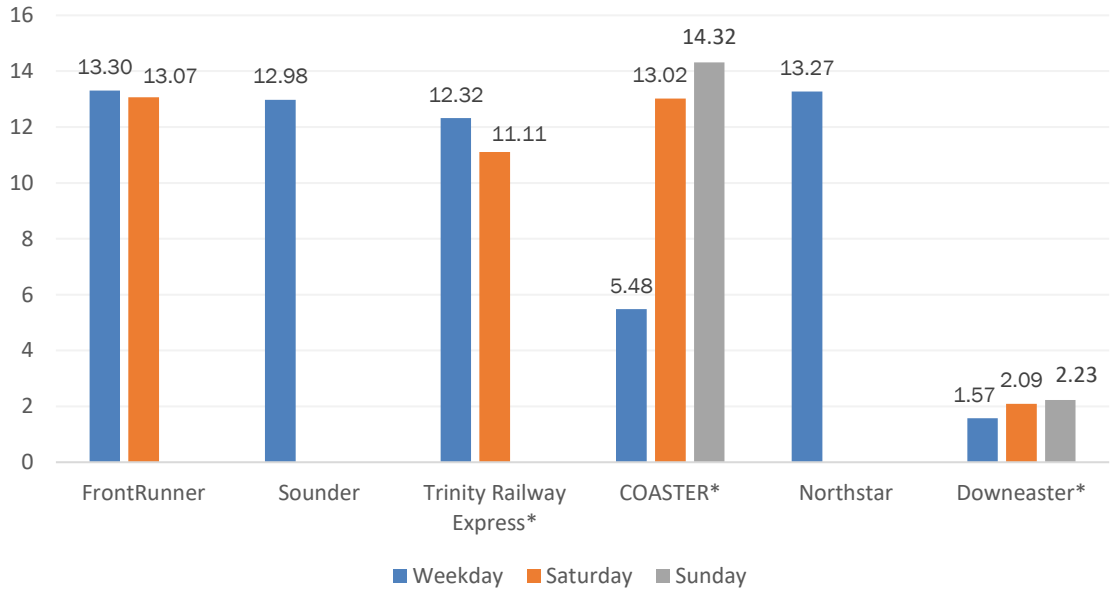
and FY 2021. Since COVID began, Saturday and Sunday ridership on FrontRunner, Downeaster, and Coaster decreased less relative to each corridor's decrease in weekday ridership. This is consistent with findings from interviews with staff from these agencies, where staff noted that non-traditional commuters have been a consistent source of ridership throughout the pandemic (Appendix A).

Figure 5 Average Daily Ridership by Day of Week per Vehicle Revenue Hour (FY 2019)



Source: National Transit Database, 2019 Data Tables; * Agency's FY 2021 includes months in 2020

Figure 6 Average Daily Ridership by Day of Week per Vehicle Revenue Hour (FY 2021)



Source: National Transit Database, 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Operating Costs

Table 4 summarizes annual commuter rail operating costs before and after the pandemic began. Four of Northstar's peers had increases in operating costs during this period. COASTER's operating cost increase in FY 2021 is likely related to the agency's expansion of its fleet that year (see peer interview notes in Appendix A). During this period, Northstar's operating costs decreased nearly 50 percent.

Table 4 Total Operating Costs, FY 2019 and FY 2021

Commuter Rail Service	Operating Cost, FY2019	Operating Cost, FY 2021	Percent Change
COASTER*	$19,643,067	$23,843,716	21.4%
Trinity Railway Express*	$33,798,689	$37,823,959	11.9%
FrontRunner	$44,291,302	$49,428,282	11.6%
Sounder	$56,879,437	$62,324,946	9.6%
Downeaster*	$23,056,079	$20,049,595	-13.0%
Northstar	$17,484,857	$8,881,226	-49.2%

Source: National Transit Database, 2019 and 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Table 5 summarizes operating costs by vehicle revenue hour and service trip, measuring cost efficiency. While Northstar had the lowest overall operating cost among its peer agencies in both FY 2019 and FY 2021, when summarized as operating cost per vehicle revenue hour, Northstar had the highest operating cost because Northstar's annual vehicle revenue hours were much lower that its peers (Table 2). Northstar's operating cost per vehicle revenue hour increased 95 percent during this period. Northstar's operating costs per service trip is also high among its peers.

Table 5 Operating Cost by Vehicle Revenue Hour and Service Trip

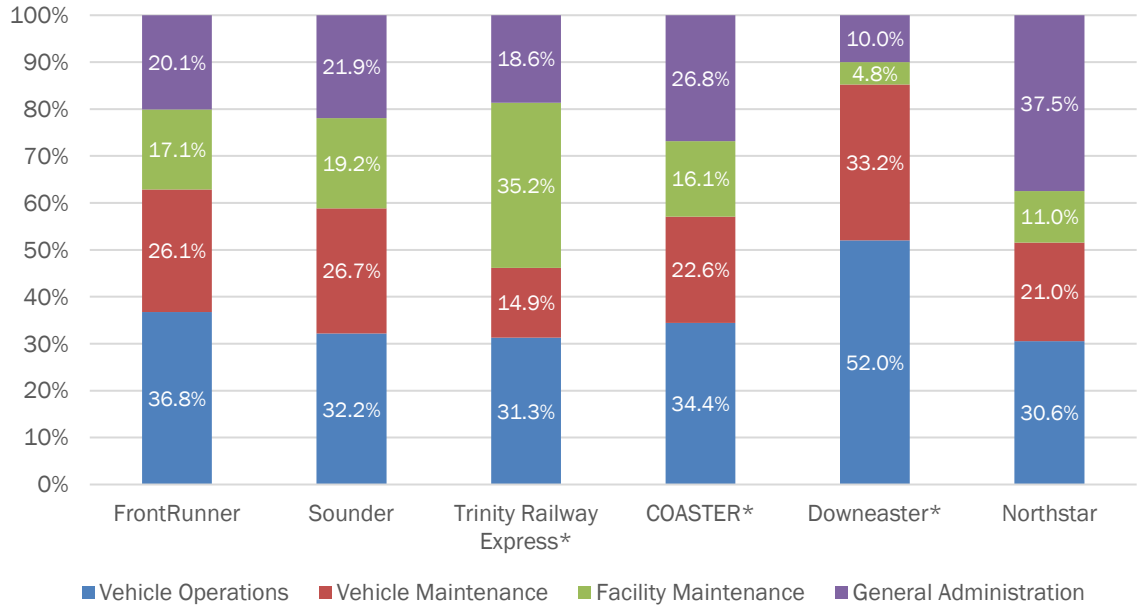
Commuter Rail Service	Cost per VRH, FY 2019	Cost per VRH, FY 2021	Percent Change	Cost per train trip, FY 2019	Cost per train trip, FY 2021	Percent Change
FrontRunner	$265.75	$332	25.0%	$4,936.61	$5,668	14.8%
Sounder	$751.97	$1,194	58.8%	$13,224.70	$27,372	107.0%
Trinity Railway Express*	$457.79	$578	26.3%	$3,378.86	$3,781	11.9%
COASTER*	$485.57	$956	97.0%	$6,008.89	$10,084	67.8%
Northstar	$1,247.14	$2,433	95.1%	$10,037.23	$17,346	72.8%
Downeaster*	$280.54	$303	7.9%	$12,633.47	$10,986	-13.0%

Source: National Transit Database, 2019 and 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Figure 7 and Figure 8 show operating costs by function, including vehicle operation, vehicle maintenance, facility maintenance, and general administration costs as a proportion of total operating costs for FY 2019 and FY 2021. The proportion of Northstar's operating cost associated with the general administration function, which NTD defines as "wages, salaries, and expenses

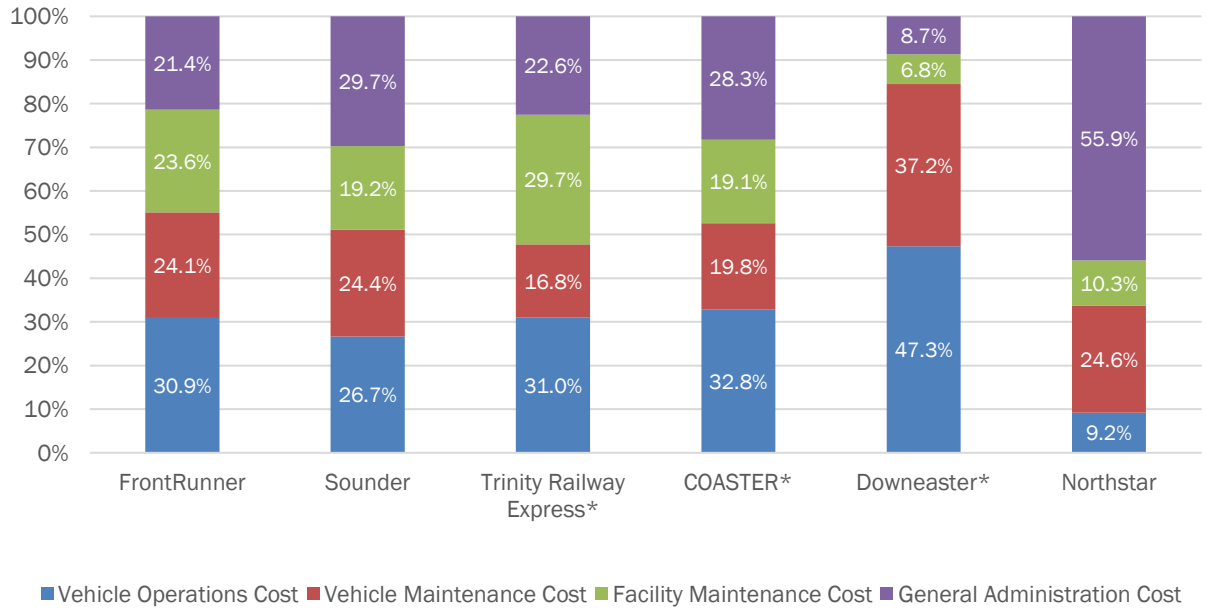
incurred to perform support and administrative activities", is notably higher than its peers in both years and the corridor's facility maintenance costs are low among its peers.

Figure 7 Expense Type as a Proportion of Total Operating Cost for Commuter Rail (FY 2019)



Source: National Transit Database, 2019 Data Tables; * Agency's FY 2021 includes months in 2020

Figure 8 Expense Type as a Proportion of Total Operating Cost for Commuter Rail (FY 2021)



Source: National Transit Database, 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Fare Revenue and Subsidies

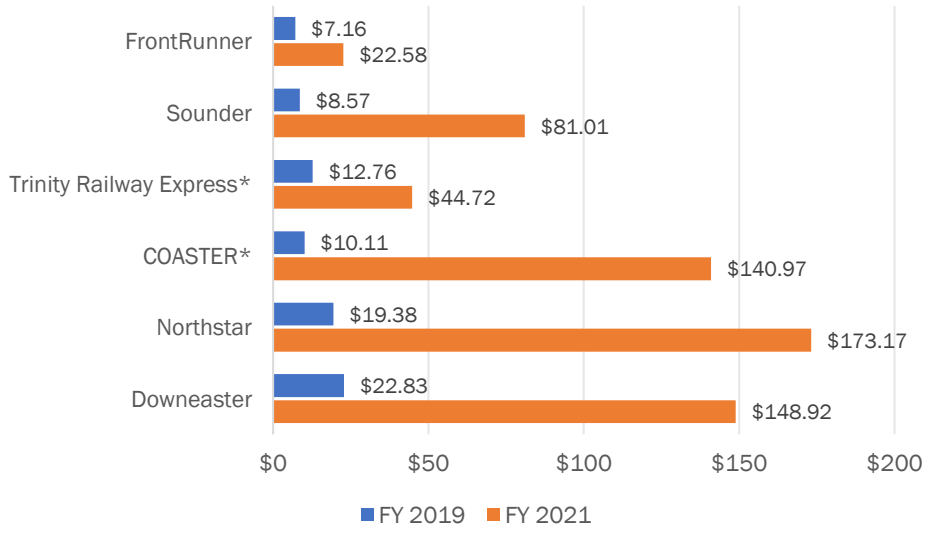
Table 6 summarizes total annual fare revenue, total subsidy, and per passenger subsidy. Total subsidy is calculated as the difference of the total annual operating cost (**Error! Reference source not found.**) and the total annual fare revenue (Table 6). Northstar had a low total subsidy compared to its peers in FY 2019 and had the lowest total subsidy among its peers FY 2021. However, the per passenger subsidy allows for better comparison between the agencies. In FY 2019, Northstar had the second to highest per passenger subsidy among its peers and, in FY 2021, Northstar had the highest per passenger subsidy (Figure 9).

Table 6 Fare Revenue and Subsidies, FY 2019 and FY 2021

Commuter Rail Service	Annual Fare Revenue, FY 2019	Annual Fare Revenue, FY 2021	Total Subsidy, FY 2019	Total Subsidy, FY 2021	Subsidy per trip, FY 2019	Subsidy per trip, FY 2021
FrontRunner	$7,084,619	$2,856,640	$37,206,683	$46,571,642	$7.16	$22.58
Sounder	$17,332,381	$2,827,487	$39,547,056	$59,497,459	$8.57	$81.01
Trinity Railway Express*	$8,190,826	$2,255,350	$25,607,863	$35,568,609	$12.76	$44.72
COASTER*	$5,394,547	$907,137	$14,248,520	$22,936,579	$10.11	$140.97
Northstar	$2,604,994	$147,588	$14,879,863	$8,733,638	$19.38	$173.17
Downeaster*	$10,559,172	$2,497,783	$12,496,907	$17,551,812	$22.83	$148.92

Source: National Transit Database, 2019 and 2021 Data Tables; * Agency's FY 2021 includes months in 2020

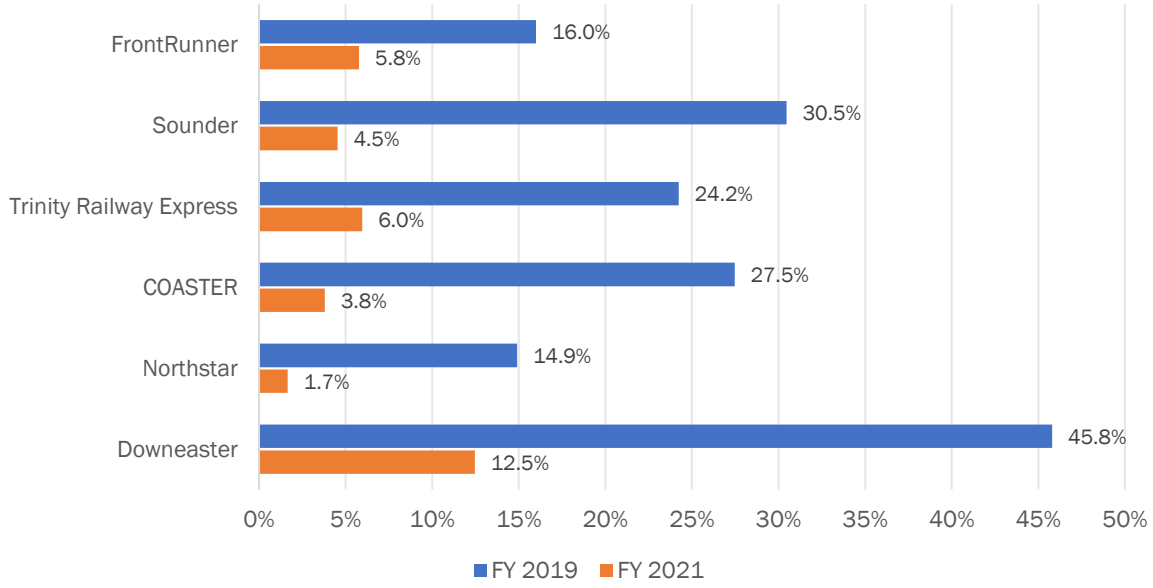
Figure 9 Subsidy per Passenger Trip, FY 2019 and FY 2021



Source: National Transit Database, 2019 and 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Farebox recovery ratio reflects the portion of the total annual operating costs that were recovered through the fare revenue earned. In both FY 2019 and FY 2021, Northstar had the lowest farebox recovery ratio of its peers (Figure 10).

Figure 10 Farebox Recovery Ratio, FY 2019 and FY 2021



Source: National Transit Database, 2019 and 2021 Data Tables; * Agency's FY 2021 includes months in 2020

Key Takeaways from NTD Data Analysis

The key takeaways from this analysis of NTD data for Northstar and its peer corridors are as follows:

In 2019, Northstar had the second lowest annual ridership among these peer agencies and by 2021 it had the lowest annual ridership among its peers. However, Northstar's productivity, as measured by passengers per revenue hour, is comparable to that of many of its peers.

Northstar had the lowest overall operating cost among its peer agencies in both FY 2019 and FY 2021. However, when summarized as cost efficiency, or operating cost per vehicle revenue hour, Northstar had the highest operating cost because Northstar's annual vehicle revenue hours were much lower than its peers both years. Northstar's operating cost per vehicle revenue hour increased 95 percent during this period. Northstar's operating costs per service trip is also high among its peers.

Northstar had a low total subsidy compared to its peers in FY 2019 and had the lowest total subsidy among its peers FY 2021. However, the per passenger subsidy allows for better comparison between the agencies. In FY 2019, Northstar had the second to highest per passenger subsidy among its peers and, in FY 2021, Northstar had the highest per passenger subsidy. In both FY 2019 and FY 2021, Northstar had the lowest farebox recovery ratio of its peers.

Conclusion

The results from the peer agency interviews and the NTD data analysis for pre- and post-COVID performance suggest that many of Northstar's peer agencies have stronger prospects for recovering from the pandemic than Northstar does. While the NTD data show that Northstar's peers also experienced dramatic decreases in ridership during the early period of the pandemic, most peer agency staff expressed optimism about the long-term future of their respective corridors when interviewed and most of Northstar's peers are actively planning to expand and improve their commuter rail service coming out of the pandemic.

Appendices

Appendix B-1. Peer Agency Interview Findings

This appendix summarizes the findings from peer agency interviews conducted between August and October 2022. The information in this appendix is from interviews conducted with agency staff. A list of peer agency staff interviewed is included in Appendix B.

In these interviews, the consultant team requested data on special event service, trip purpose and origin/destination, and ridership demographic data from the agencies interviewed. The consultant did not receive this data from most of the agencies.

Amtrak Downeaster

Corridor Overview

Amtrak Downeaster is an interstate rail corridor in New England with daily service from Brunswick, Maine to Boston, Massachusetts that began operating in 2001. Amtrak operates this service and the Northern New England Passenger Rail Authority (NNEPRA), an agency of the State of Maine, manages the service. Downeaster corridor is 146 miles long and serves 12 stops in three states (Maine, New Hampshire, and Massachusetts). Travel time from end-to-end is 3 hours and 20 minutes.

According to NNEPRA staff, 85 percent of Downeaster riders are traveling to/from Boston. Many of their riders are traditional commuters, but the corridor has always had a diverse market base, including seniors, students, tourists, and riders traveling to medical appointments.

Service and Operations Changes due to COVID

Like other transit services, the beginning of the COVID-19 pandemic heavily impacted Downeaster's service. NNEPRA suspended Downeaster operations from April 13th through June 15th of 2020. The agency took advantage of this service suspension time to do track work that had originally been scheduled for later in 2020. NNEPRA added one round trip in June 2020 and increased this to four round trips in July 2020. In May 2021, NNEPRA returned to pre-pandemic service levels, with five round trips operating daily. Throughout these changes, NNEPRA maintained four-car consists.

As NNEPRA began adding service back, the agency adjusted the schedule by reallocating the last evening trip out of Boston to a mid-afternoon trip out of Boston. The big gap in midday service out of Boston (between noon and 5pm) had always a problem for the agency. Since post-COVID rush hour is less defined, adding mid-day service was a good option for the agency. Ridership on this new mid-day service has been strong and staff have noticed riders on midday trips working on their laptops on the train.

Ridership Impacts

Downeaster had its highest revenue year and its second highest ridership year on record in 2019. Before the pandemic began, the first southbound weekday trip was at standing room only by the time the train got to southern Maine. NNEPRA staff attributed this growth in ridership to increasing traffic and parking challenges in Boston. Like other transit services, the beginning of the COVID-19 pandemic heavily impacted Downeaster's ridership. The nature of riders' travel behavior has also changed. Since COVID began, there is more ridership earlier in the week and ridership is less peak-focused, with equal movement throughout the day.

As of September 2022, Downeaster's ridership was back to September 2019 levels. NNEPRA staff attributed the successful ridership recovery to Downeaster's diverse market base. This diverse market mix is what has kept them afloat during COVID. During the pandemic, they are seeing shorter trips since COVID began, with more riders traveling between New Hampshire and Maine and more ridership to destinations like beaches. Staff said that pass riders, who are primarily traditional commuters, are returning steadily, too. They are not seeing a full rebound in the commuter market yet, but the agency thinks that this is coming. Pre-COVID, commuters made up 35 percent of Downeaster's ridership and they made up 22 percent of its ridership as of September 2022.

Future of the Corridor

NNEPRA staff expressed optimism about the future of the corridor. NNEPRA is actively planning and implementing projects to expand service on the corridor. This includes projects to extend double tracking, to improve schedule flexibility and reliability, and to add a sixth daily roundtrip within Maine between Brunswick and Wells. They are also planning multiple station improvements, including relocating their station in Portland, Maine and adding a station between two existing stations that would provide easier access to commuters coming from northern Maine. The agency is also working with the Maine Department of Transportation on a pilot to extend the service from Brunswick up the coast to Rockland, Maine.

COASTER

Corridor Overview

North County Transit District (NCTD) operates COASTER commuter rail in San Diego County, California between the City of San Diego and Oceanside. This commuter rail service opened in February 1995. NCTD owns most of the corridor's 41 directional miles of track, excluding a portion owned by the San Diego Metropolitan Transit System, and maintains the track along the entire corridor. The corridor connects to a broader regional rail network that provides service to areas like Los Angeles. In addition to its commuter ridership base, NCTD staff noted that the corridor is widely used by tourists.

Service and Operations Changes due to COVID

In March 2020, NCTD implemented service reductions for all modes, including COASTER. NTCD suspended all weekend COASTER service and reduced its weekday trips from 22 daily one-way trips to 12. During early COVID service reductions, NCTD continued accepting many new locomotives and focused on commissioning these vehicles, staff, and preparing for future service.

In February 2021, NCTD added these new locomotives into service. At the same time, NCTD experimented with adding mid-day service on the corridor. They had heard from customers that they should have mid-day service and saw this as an opportunity to try it out. As they added service, ridership ebbed and flowed with the waves of the pandemic. Throughout this time, NCTD continued to operate the same sized consists for ease of maintenance.

NCTD restored service to pre-pandemic levels in May 2021, with 22 daily trips. By October 2021, NCTD began implementing plans to increase service beyond pre-pandemic levels, increasing daily trips from 22 to 30 trips on weekdays. With this increase, the agency added more mid-day and late service on weekdays. The agency also doubled weekend service. The agency had committed to and funded these service increases pre-COVID and decided to continue with the plans to implement them despite the pandemic.

Ridership Impacts

Since the pandemic began, commuter rail has lost more ridership that NCTD's other modes. The agency lost 95 percent of commuter rail ridership, compared to only 55-60 percent of ridership on bus service and 55 percent on hybrid rail. NCTD staff noted that these other modes provided service to more essential workers who continued to use transit during the earlier periods of the pandemic. Even with the dramatic increase in commuter rail service that NCTD is operating, COSTER's ridership rebound has been slow.

Special event service is one area where COASTER ridership has been strong since the pandemic began. As soon as events returned, NCTD reinstated special event service. They saw very high ridership on these trips because the Padres had a good season. NCTD staff noted that special event service may be less necessary for the agency in the future because their new, expanded service will cover a lot of the demand that used to be met by special event service

Future of the Corridor

Despite slow ridership recovery, NCTD is actively planning for and investing in the future of the COASTER corridor. The agency plans to continue expanding service, with plans to increase from 30 to 36 weekday trips in October 2023. The agency also has a larger plan to increase to 42 trips, but this planned project is not yet funded. The agency is also planning to extend the corridor within San Diego to reduce the need for transfers. As they plan for this growth, NCTD is also in the process of conducting three studies to develop strategies for regrowing ridership, including potential changes to service patterns, marketing strategies, and fare structure.

FrontRunner

Corridor Overview

Utah Transit Administration (UTA) operates FrontRunner commuter rail service along an 83-mile corridor between Provo and Ogden, Utah via Salt Lake City. There are 15 stops along this corridor, one of which was added in early 2022. The service opened in 2008 and was expanded south of Salt Lake City in 2012, doubling the length of the existing line. UTA owns and maintains FrontRunner's tracks and it is mostly a single-track system.

FrontRunner staff noted that the major population centers along the route are in the middle of the route. In some ways, FrontRunner is two lines coming in towards downtown Salt Lake City, but UTA operates it as one route. Most of the ridership along the corridor is along the portion south of Salt Lake City. UTA has a lot of reverse commuters in both directions. UTA staff noted that reverse commuters are generally traveling to universities along the corridor. The agency has a pass program with universities and has BRT service connecting FrontRunner stations and campuses.

Service and Operations Changes due to COVID

Before the pandemic, FrontRunner operated one-hour headways all day with 30-minute headways during peak. Early in the pandemic, UTA removed peak service and late evening service and ran 60-minute all-day service. In early 2021, the agency resumes pre-COVID peak service and, in December 2021, UTA resumed most of the evening service. As of summer 2022, UTA is operating 95 percent of pre-COVID service. As of fall 2022, the last Frontrunner trip of the evening leaves at 10 pm, arriving at the end of line around 12am. Before COVID the train ran about a half hour later.

Early in the pandemic, UTA maintained the same consists to provide space for social distancing. In April 2022, the agency reduced the consist size from four car trains to three cars, reflecting lower ridership than pre-pandemic.

Ridership Impacts

UTA saw the biggest loss in ridership among traditional weekday commuters. Throughout the pandemic, Saturday ridership and mid-day ridership dropped less than peak hour; Saturday ridership is down 5-10 percent of pre-pandemic while weekdays are down 35-40 percent. UTA has observed that non-traditional commuters rode at a higher rate.

UTA has not noticed a major change in ridership patterns at the station level. The change hasn't been a change in origin and destination, it has just been a reduction in commuter trips.

UTA did a survey of pass holders to ask about their travel patterns post-COVID. Over one third of respondents said that they do not plan to ride transit again because their work schedule had changed to remote work permanently. UTA would like to do a ridership study to understand whether the reduction in ridership is because fewer people are riding or because people are riding less frequently.

Even before COVID, UTA did not operate much special event service. Staff noted that most of their event ridership is typically on light rail, not commuter rail. UTA occasionally operates special event service on FrontRunner when special events take place along the corridor like Sunday service once for an air show at the Air Force base along the corridor.

Future of the Corridor

UTA has taken steps to entice riders back. In February 2022, UTA offered Fare Free February systemwide, including on FrontRunner. The agency saw that ridership increased about 30 percent from January 2022. Ridership dipped again in March and April but not down to what it was in January.

UTA staff noted that, due to the geography and growth patterns in the region, commuter rail will be successful long-term in the region. He anticipates that the corridor will probably extend 10-20 miles depending on population growth. They are working towards delivering more reliable service and getting to 15-minute peak headways. UTA is also investing heavily in capital projects along the corridor. In early 2021, the Utah State Legislature approved funding for strategic double-track segments along the corridor to increase the speed, reliability, and frequency of the service.

Sounder

Corridor Overview

Sounder is a commuter rail service operated by Sound Transit between Lakewood and Everett, Washington via Seattle. The southern portion of the route between Seattle and Tacoma (S Line) opened in 2000 and the northern portion of the route between Seattle and Everett (N Line) opened in 2003. Sound Transit extended the S Line further south to Lakewood in 2012. Sounder operates on 82 miles of track and serves 12 stations. The track that Sounder operates on is owned by BNSF Railway Company. Sound Transit operates this service with a fleet of 14 locomotives and 67 rail cars.

According to Sound Transit staff, most riders on both the S and N Lines tend to be traveling to Seattle. Staff noted differences in travel patterns between the lines; the N Line has more peak-focused ridership while the S Line's ridership is more distributed throughout the day. The S Line also has higher ridership than the N Line and its ridership was growing more quickly pre-COVID than ridership on the N Line was. Staff cited multiple reasons why S Line ridership is higher: there is greater highway congestion into Seattle from the southern metro, communities along the N Line corridor tend to have higher median incomes and may be more likely to drive into Seattle, the N Line operates along the coastline and mostly captures ridership from the east, and the station in Seattle is on the southern end of downtown, meaning that N Line riders have to backtrack through downtown to reach the center of the city. Additionally, Sound Transit is more constrained operationally along the N Line than the S Line because they have a narrower window when their trains can operate on the BNSF tracks.

Service and Operations Changes due to COVID

At the beginning of the COVID pandemic, Sound Transit cut regular service trips in half, focusing on serving peak hour trips and reducing the number of midday trips. Sound Transit also suspended special event service between 2020 and mid-2021. As of September 2022, the S Line is operating 100 percent of pre-Covid service levels with 13 daily round trips on weekdays. Staff noted that this restoration of service along the S Line is related to service suspensions on parallel express bus trips into Seattle from the south metro. Sound Transit is adding Sounder trips to accommodate those riders. Although service has been restored on the S Line, Sound Transit is still operating reduced service on the N Line (two daily round trips down from four pre-COVID).

Ridership Impacts

Sound Transit staff said that they are seeing a slower recovery of commuter rail compared to other modes since Sounder primarily served commuters and many of those riders have not returned to the office. The agency has done ridership forecasting for post-COVID recovery and is projecting that Sounder ridership will be down in the near-term.

According to data provided by staff, the average weekday boardings in 2019 were 17,900 daily boardings. As of June 2022, Sounder had 5,000 average weekday boardings. Staff also provided ridership projections that the agency developed in early 2022 that projected ridership between 6,900 and 15,000 by 2023 and between 16,300 and 21,700 by 2028. They noted that ridership recovery will be different on the two lines.

Ridership for special event service is also coming back. Sound Transit adds special event service when Seattle's baseball and soccer teams have weekend games. In 2022, Sound Transit has seen ridership for baseball games that was typical for pre-COVID.

Throughout the pandemic, Sound Transit has used its online rider panel to conduct monthly in-depth surveys. They have asked riders about how their travel behavior has changed and what their backup plans are if Sounder service is interrupted. This has given the agency insight into riders' travel patterns post-COVID. The agency also relies on information from station agents to understand what park and ride utilization has been like throughout the pandemic.

Future of the Corridor

Sound Transit staff said that they are optimistic about the success of the corridor in the long-term, even though performance does not look as good in the short-term. They noted that the region's rapid growth and increasing housing prices are pushing people to move farther out from Seattle, which they think will translate to ridership growth on Sounder. This growth is constrained by the region's geography with the Sound to the west and mountains to the east and is occurring in areas that are currently served by Sounder. Sound Transit staff expect that Sounder will be seen as an easier way to get into Seattle from these outlying areas than driving alone.

Sound Transit staff also drew parallels to the current downturn in ridership and the impacts from the Great Recession. The Great Recession also affected ridership and it took four years before

ridership rebounded. Ridership rebounded much faster than the agency's forecasts projected. They had paused their projects and were unprepared for the return operationally, resulting in a gap in capacity during the peaks. They noted that, while they don't know when ridership is going to rebound, their Board of Directors has committed to moving projects forward in the meantime.

Trinity Railway Express

Corridor Overview

Trinity Railway Express (TRE) connects downtown Dallas and Fort Worth, Texas. This service is operated cooperatively by Dallas Area Rapid Transit (DART) and Trinity Metro. TRE operates along 34 miles of track and serves 10 stations, including the Dallas-Fort Worth International Airport. This service opened in 1996 and was extended to link Dallas and Fort Worth in 2001.

TRE operates on weekdays and Saturdays with 20–30-minute peak service and 60–90-minute off-peak frequency. TRE runs 35 daily roundtrips on weekdays, with additional late-night trips on Fridays, and 21 roundtrips on Saturdays. According to TRE staff, most ridership on the corridor takes place between the two terminals in downtown Fort Worth and Dallas. Most riders use the TRE to commute from Fort Worth into Dallas.

Service and Operations Changes due to COVID

At the beginning of the COVID-19 pandemic, DART and Trinity Metro reduced service on the corridor. During that period, the agencies operated a modified Saturday service schedule, with two extra trips earlier in the day based on customer input. The TRE board decided to restore TRE service to nearly pre-pandemic service levels by October 2020. TRE is back at 100 percent of its pre-pandemic service levels.

TRE has changed the consists that it uses to operate its service over the course of these service changes. Pre-COVID, TRE operated six daily train sets (five three-car sets and one two-car set). When the initial service reductions went into effect in early 2020, TRE was running two-car consists. The agency received customer complaints about the lack of social distancing on the trains and decided to add a third car back in October 2021. TRE recently reduced their consist size back to two cars in August 2022 because concerns about social distancing have lessened.

Staff noted that TRE has exceeded its internal standards for commuter rail service both pre- and post-COVID. They have particularly good performance on the on-time performance goals. TRE regularly compares itself to other commuter rail corridors in the southwest and finds that they are performing well compared to their peers in terms of ridership and on-time performance post-covid.

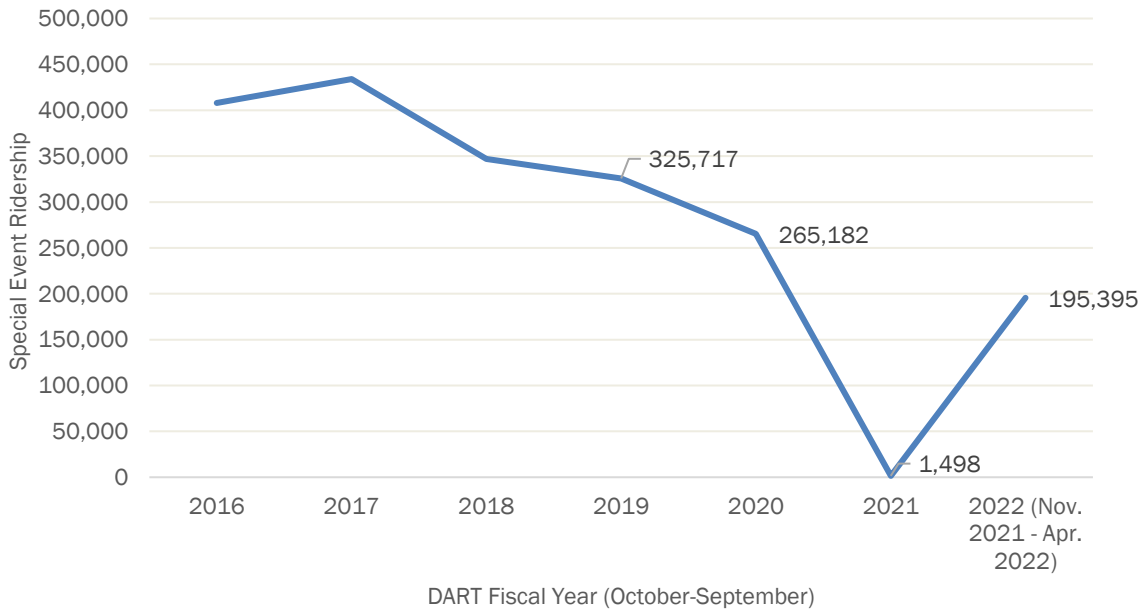
Ridership Impacts

In 2019, TRE had record ridership. TRE staff think that this was fueled by difficulties parking downtown, construction along major interstates, and an increase in congestion related to population growth. Like other transit agencies, TRE experienced a major drop in ridership at the beginning of

the pandemic and ridership has been slow to recover. TRE staff noted that this is because most of their riders are commuters and many downtown businesses have not returned to the office. One segment of ridership that has remained strong during the pandemic has been hospital employees. TRE has adjusted service to meet the needs of those employees by adding earlier service.

TRE saw a decrease in special event ridership in 2020 and 2021 because many events were cancelled (Figure 11). When events were held, TRE operated special event service. In FY 2020, TRE provided 265,000 rides for special event service from October 2019 through February 2020 (after this point, the events that TRE typically provides service for were cancelled). In FY 2021 (October 2020 through September 2021), special event ridership decreased to only 1,500 rides all year. In 2022, the agency saw a major rebound in special event ridership, with nearly 200,000 riders.

Figure 11 TRE Special Event Ridership



Source: Data provided by TRE staff

TRE staff noted that other DART and Trinity Metro modes have rebounded in ridership more quickly than TRE has. TRE has not done previous rider surveys but is in the process of conducting a customer survey in the fall of 2022. The agency's marketing department also wants to use the employer discount program to determine if the companies that use that program are going to return to the office or remain fully remote.

Future of the Corridor

TRE staff said that both DART and Trinity Metro staff and their boards are asking similar questions to Metropolitan Council about what the future of the corridor will look like. They are considering questions like:

- Should they repair or replace their aging fleet?

- Should they use the same train cars across other areas of operation to save money on parts?
- Should they consider free or reduced fare riders?
- Should they allow overnight parking at their park-and-rides to serve riders who work night shifts?
- Is ridership going to start leveling off? Are current ridership levels the new normal?
- Should they reevaluate the schedule? Will morning and afternoon peak periods remain?

TRE staff noted that both agencies will have to agree on what they want the future of the corridor to look like. They said that there are no set timelines for making these decisions.

Appendix B-2. Peer Agency Staff Interviewed

COASTER – North County Transit District (NCTD)

- Graham Blackwell, Chief Operations Officer – Rail

Downeaster – Northern New England Passenger Rail Authority (NNEPRA)

- Patricia Quinn, Executive Director

FrontRunner – Utah Transit Authority (UTA)

- Bruce Cardon, General Manager of Commuter Rail

Sounder – Sound Transit

- William Chow, Senior Project Manager, Commuter Rail
- Kelly Dunn, Project Manager, Data and Research
- Isaac Greenfelder, Corridor Operations Director, Commuter Rail
- Melissa Saxe, Project Development Director
- Martin Young, Operations Program Manager, Commuter Rail

Trinity Railway Express – Dallas Area Rapid Transit (DART) and Trinity Metro

- Paul Bourzikas, Assistant Vice President, Commuter Rail (DART)
- Patricia Brierre, Program Manager, Customer Relations and Outreach (DART)
- Anthony Fuller, Chief Operating Officer (Trinity Metro)
- Bonnie Murphy, Vice President of Commuter Rail and Railroad Management (DART)