

FY2019 – FY2021 Triennial Performance Audit of the North County Transit District (NCTD)

FINAL AUDIT REPORT

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EXECUTIVE SUMMARY

Transit operators that receive Transportation Development Act (TDA) funds are required to undergo triennial performance audits in the State of California. Triennial performance audits are a requirement for the continued receipt of State TDA funds for public transit under California Public Utilities Code (PUC) Section 99246. The performance audit is administered by the San Diego Association of Governments (SANDAG) and prepared by Kimley-Horn & Associates. This report represents the State-mandated performance audit of the North County Transit District (NCTD) for Fiscal Years 2019, 2020, and 2021, the period from July 1, 2018 through June 30, 2021.

The TDA triennial performance audit of NCTD includes evaluations of:

- Compliance with pertinent sections of the Public Utilities Code
- Progress to implement prior performance audit recommendations
- Agency goals and objectives and performance monitoring systems
- System-wide and functional area performance trends.

The objective of the performance audit is to assess compliance with PUC requirements, identify significant achievements as well as opportunities for improvement, and develop recommendations for short and long-term efficiency and effectiveness improvements.

During the audit period, the major story has been the COVID-19 pandemic and its lingering impact on NCTD through June 2021 and beyond. The pandemic started affecting the San Diego region in March 2020 and lasted throughout the rest of the audit period. Given the audit period goes from July 2018 to June 2021, the pandemic affected fully 16 months of the audit period or a little less than half the three-year period. Generally the agency did a very good job in adapting to the needs of riders during COVID. It is unclear what the “new normal” will look like but NCTD has taken multiple steps to position its organization and service strategy for success.

Several audit period accomplishments and challenges are noted below – these are the key highlights, more are listed later in the report:

- Positive Train Control – Implemented Positive Train Control (PTC) by the federal deadline during FY2019, one in only four commuter railroads to do so in the Country.
- Customer Service – Implemented multi-year Zero Delay Program to improve customer experience not just with on-time performance but with service reliability and technology benefits. NCTD also implemented GoNCTD.com website.
- Financial Stability, Grants and Agreements – Implemented set asides, successfully pursued competitive local, state and Federal grants funding, among others the Del Mar Bluffs stabilization, train and crossing control modernization, Zero-Emission bus infrastructure, State of Good Repair funding. NCTD also took measures to reduce long-term pension liabilities. In addition, NCTD executed an agreement to re-develop the Oceanside Transit Center and the 810 Mission Avenue property (i.e., the future administrative building).
- Safety – Developed and implemented multiple plans to foster safety of employees, customers and general public, following evolution of regulatory guidance (e.g., operator barriers on fixed route bus fleet, hand sanitizing stations on all revenue vehicles).

- COVID Service Adaptation – Adapted to riders’ needs during COVID (minor service cuts on BREEZE, major service cuts to COASTER – which subsequently were restored and expanded upon, SPRINTER service levels stayed the same, LIFT/FLEX fleet was cut significantly in reaction to drop in demand)
- Capital Asset Renewal and State of Good Repair (SGR) – Took several proactive steps including the new Siemens Tier 4 locomotives (bought 5, retired 5), other rail SGR projects such as gangways and powerpacks. On the bus side acquired new Compressed Natural Gas (CNG) buses, reducing average fleet age from 11.2 years to 9.1 years in FY2021. This trend will continue in FY2022 with 30 more CNG and 6 Battery Electric Buses (BEBs), bringing the fleet age down further.
- Planning – Conducted land use and transportation planning study, Strategic Multimodal Transit Implementation Plan (focused on micro-transit), and initiated a strategic “future of work” study to better understand future transportation patterns post pandemic. NCTD also advanced a pilot program for discounted first and last mile connections for some COASTER stations, using Lyft, Uber and TripShot.
- Challenges during the Audit Period and Moving Forward – The myriad implications (safety, security, ridership) stemming from COVID were the biggest challenge during the second half of the audit period and moving forward. Other large challenges identified include high inflation, staff retention (mainly operators and mechanics), and challenges related to security (e.g., operator assaults).

NCTD is in compliance with Public Utilities Code (PUC) requirements in an exceptionally challenging environment. Additionally, NCTD has fully addressed the prior audit recommendations.

- Compliance with PUC Requirements: NCTD is in full compliance with all PUC requirements. NCTD total ridership for each mode fell significantly as a result of the pandemic, affecting FY2020 and especially FY2021 performance. Since farebox recovery is directly tied to ridership, the farebox recovery ratios for FY2020 and FY2021 were heavily impacted. NCTD was not focused on cost containment during the COVID 19 period. It was focused on adapting to the constantly evolving conditions, and setting a course for the future.

The PUC and SANDAG Policy No. 27 – recently updated in June 2021 – mandate that the systemwide farebox recovery ratio must be 18.8% percent, and 10.0% for paratransit service.

Several important Assembly Bills were approved by the Governor and filed with the Secretary of State during the audit period – AB 90 and AB 149. The bills essentially prohibit the imposition of the penalty associated with an operator that does not maintain the required ratio of fare revenues to operating cost during Fiscal Years 2020, 2021, 2022 and 2023. This therefore includes two years of this audit period and two years of the next audit period. NCTD is fully compliant with the PUC requirements, including the one on farebox recovery.

- Progress to Implement Prior Audit Recommendations: NCTD has fully addressed the two recommendations from the prior audit period.
 - 1) NCTD was recommended to expand efforts to understand what riders want and how to grow demand. This recommendation was made in the context of a then FY2016-18 ridership loss of 15.6% (compared to base year of FY2015). Ridership further retreated 53.7% in this audit period (compared to base year of FY2018). In response to these unparalleled conditions, NCTD (1) sought to adapt to every day changing conditions to serve existing riders safely during the pandemic and making the necessary service changes and (2) set out to develop a short- and

medium-term for how to project services moving forward in a hybrid- and post-pandemic situation. The recently initiated “future of work” study, entitled Market Research & Analysis is a significant investment in this direction.

- 2) NCTD was also recommended to closely track and document farebox recovery ratio both with traditional calculation and according to Senate Bill 508 (SB 508) provisions. NCTD agreed with the recommendation and really took this one to heart. NCTD performed a thorough assessment of the detailed provisions of the bill and what expenses could potentially be included in the local support portion of funds expended on operations. NCTD set up an annual process to track and document TDA farebox recovery for each Fiscal Year. The workbook documents the local fund supplementation, as well as operating costs exclusions and exemptions, to calculate a “TDA Fares-Plus-Local-Funds Recovery Ratio” TDA, also referred to as “safe harbor” in this report.

As expected and largely due to the pandemic, performance indicator trends show huge variations especially going from FY2020 to FY2021, because that is the first fully year when the ridership truly cratered. Trends show the following:

- System-wide operating cost per service hour, a measure of cost efficiency, increased 34% during the audit period from \$143.86 in FY2018 to \$192.85 in FY2021 compared to inflation of 7.7%. Operating cost per passenger, a measure of cost effectiveness, increased by 165.3% from \$8.74 in FY2018 to \$823.19 in FY2021. This is a result of a 10.9% increase in total operating costs and a 58.2% drop in ridership. The decrease in ridership reflects a clear pandemic outcome and aligns with national trends. The 58.2% drop in ridership is a systemwide average – there were clear differences between the modes with COASTER and LIFT/FLEX proportionately being much more affected than BREEZE or SPRINTER.
- Service productivity decreased during the audit period as expected. Passengers per service hour decreased by 49.5% while passengers per service mile decreased by 48.6%. The losses in service productivity are again a direct result from the pandemic.
- Service hours per employee FTE, a measure of labor productivity, decreased by 6% during the audit period from 800 in FY2018 to 752 in FY2021. This was actually the most stable of all TDA indicators during the period.
- Assembly Bill 90 (AB 90) grants an exemption to California transit agencies with respect to meeting set farebox recovery targets for FY2020 and FY2021. The NCTD system-wide pure farebox recovery ratio decreased during the audit period, from 16.2% in FY2018 to 5.5% in FY2021. While the pure farebox recovery ratio was below the state mandated minimum (NCTD’s blended rate requirement is 18.80%), the safe harbor calculation – calculation using Senate Bill 508 provisions – is comfortably above the minimum mandate throughout the audit period, including for FY2019 when it was 39%. However, during the audit period the revenue ratios for ADA paratransit were below the 10% Article 4.5 minimum.
- The average fare per passenger trip decreased by 9.7% during the audit period, from \$1.42 to \$1.28, continuing a trend from the prior audit cycle.

It is important to note that during the COVID 19 period, cost containment was not NCTD’s number one priority. NCTD, like many other agencies in the same situation, was forced to face the pandemic head on, adapting to the constantly evolving conditions from a public safety perspective and in terms of its service

orientation, capturing available grants and other capital revenues, and setting a course for the future. NCTD was exemplary in many ways in adapting to the pandemic, and using this extraordinary period to rehabilitate its fleets and make proactive replacements to reach a state of good repair and lower its fleet age. Going forward, recovering and growing back ridership is foremost under management priorities. Given recent initiatives, once market forces settle on a new normal, NCTD is well positioned for robust ridership growth and while managing cost containment in the next audit period.

One recommendation is offered for NCTD's consideration, detailed in Section V:

- Recommendation 1: NCTD should work with SANDAG TDA staff to achieve greater alignment with respect to the various uses and external reporting of farebox recovery ratio (for example, California TDA eligibility, annual financial accounting, NTD reporting, industry measure).

SECTION I: INTRODUCTION

The TDA triennial performance audit of the North County Transit District (NCTD) follows state guidelines. Triennial performance audits are a requirement for the continued receipt of State Transportation Development Act (TDA) funds for public transit under California Public Utilities Code (PUC) Section 99246. The San Diego Association of Governments (SANDAG) is responsible for administering the conduct of performance audits in the San Diego Region. SANDAG has retained Kimley-Horn & Associates (“study team”) to conduct the performance audit of the North County Transit District (NCTD). This report represents the State-mandated performance audit of NCTD for Fiscal Years 2018, 2019, and 2020, the period from July 1, 2018 through June 30, 2021.

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- Compliance with pertinent sections of the Public Utilities Code
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The objective of the performance audit is to identify significant achievements as well as opportunities for improvements, and to provide recommendations for short and long-term efficiency and effectiveness improvements.

Based on the study team’s experience conducting multiple TDA audits, the study team compiled a list of data from NCTD to conduct the preliminary review of the NCTD’s operations and financials and identify specific audit areas. The preliminary review was followed by interviews with NCTD staff and management focusing on the TDA requirements as well as the specific audit areas identified in the previous audit. Upon completion of the on-site interviews, the study team conducted a detailed review of NCTD using data collected from reports/plans/documents and on-site interviews. Finally, the analysis and findings are documented in this report.

The methodology for the NCTD audit included site visits, interviews, and data collection and analysis. Interviews were conducted with personnel responsible for the management and oversight of NCTD services. They are listed below in order of scheduled interview:

- Executive Director
- Chief of Advocacy, Marketing and Communications
- Chief Safety Officer
- Chief Operating Officer – Bus
- Chief Financial Officer
- Senior Financial Analyst
- Fare Revenue Specialist
- Controller
- Chief Operating Officer – Operations Support Services
- General Counsel
- Chief of Procurement and Contract Services
- Director of Marketing
- Manager of Customer Service

- Bus Mechanical Officer
- Rail Mechanical Officer II
- Director of Planning
- Chief Operating Officer - Rail

Background documents and other written information including those identified in Exhibit I-1 were collected and reviewed:

Exhibit I-1: NCTD Background Documents and Written Information Reviewed

Organization and staffing charts	National Transit Database Reports, FY2019-FY2021	Data provided by Finance regarding the TDA data tables
Labor agreements in effect during the audit period	State Controller Reports & Financial Audit Reports and letters, FY2019-FY2021	Transit Operations Annual Reports, FY2019-FY2021
NCTD Mission and Vision and NCTD Board Policies & Ordinances	Comprehensive Annual Financial Reports (CAFR and ACFR), FY2019-FY2021	Sample Monthly Reports & Invoices – Contractors, 2021
Responses to prior audit recommendations	Adopted Budget Documents, FY2019-FY2021	Other Significant Documents (e.g., Planning)
Form B-10s and Related Reports, FY2019-FY2021	CHP Transit Operator Compliance Certificates, FY2019-FY2021	Service maps and brochures
Business Initiatives Reports, FY2020-FY2021		NCTD website: www.gonctd.com SANDAG website: www.sandag.org

The audit team also:

- Assessed compliance with applicable Public Utilities Code Sections, including progress and performance results relative to prior audit recommendations.
- Compiled and analyzed performance indicator trend information for the system and the individual operations, as well as for major functional areas.

1.1. Overview

History

The North San Diego County Transit Development Board was created by California Senate Bill No. 802 on September 20, 1975 to plan, construct, and operate, directly, or through a contractor, public transit systems in its area of jurisdiction. In September 2002, Senate Bill 1703 modified the responsibilities of the Board by transferring responsibility for planning, programming, project development, and construction to the San Diego Association of Governments (SANDAG). In January 2006, the North San Diego County Transit Development Board was renamed to North County Transit District (NCTD). NCTD provides bus, van and train service for people in the northern half of San Diego County—from the rural areas of Fallbrook and Ramona and the Camp Pendleton Marine Corps Base, to the cities of Oceanside, Vista, Carlsbad,

Encinitas, San Marcos, Del Mar, Solana Beach, and Escondido, plus the unincorporated areas of North San Diego County.

Five Service Types

Today NCTD has five service types, known and branded as: BREEZE (Fixed Route Bus), LIFT (ADA Paratransit Service), FLEX (Deviated Fixed Route and Demand Response), COASTER (Commuter Rail), and SPRINTER (Hybrid Rail). Note that SPRINTER is reported through the National Transit Database (NTD) as Light Rail but is more accurately labeled as hybrid rail, propulsion being provided by Diesel Multiple Units (DMUs) and having no overhead catenary. NCTD contracts with private operators to deliver all of these public transportation modes, though plans are underway to bring rail operations in-house in the near future.

NCTD provides fixed route bus (BREEZE), deviated fixed route and demand response service (FLEX), commuter rail along the I-5 corridor (COASTER), hybrid rail service from Oceanside to Escondido (SPRINTER), and ADA paratransit services (LIFT) in the northern portion of San Diego County. NCTD serves a population of approximately 965,000 in an area of responsibility that covers about 403 square miles.

A brief description of each service is presented below (data consistent with FY 2021 Operating Budget):

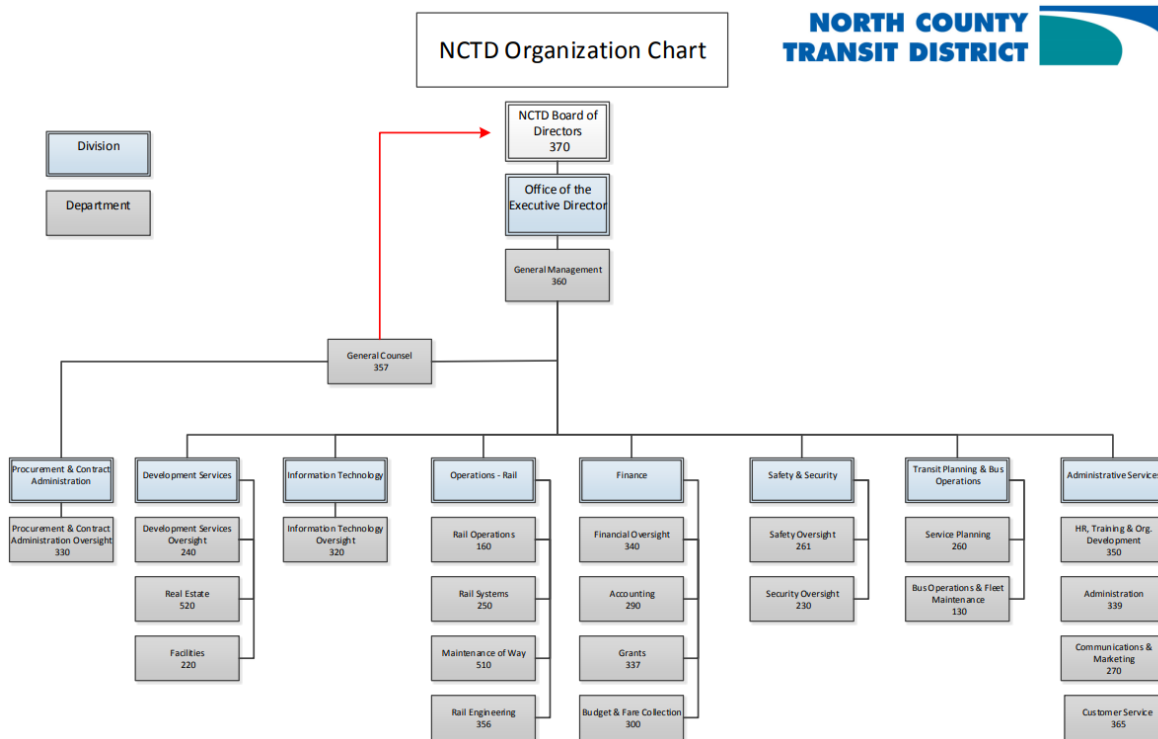
- BREEZE currently operates 30 routes in the North County service area, from early morning to late at night, seven days a week. Of the current active fleet of 152 buses, 133 of the vehicles are Compressed Natural Gas (CNG) models. In recent years NCTD has replaced most of its CNG fleet, bringing down the bus fleet age. As of early 2022, there are 14 Zero-Emission Buses (ZEBs) on order (6 battery-electric buses and 8 hydrogen fuel cell). MV assumed revenue operations of the BREEZE service on July 1, 2017 as part of a procurement for BREEZE, LIFT, and FLEX operations and maintenance and this has continued through this audit period. During the audit period NCTD cross-trained some LIFT/FLEX operators to be able to drive the BREEZE buses, adding operating flexibility to a tight job market.
- COASTER provides commuter rail service seven days a week, north and south along the San Diego County coast between Oceanside and San Diego. COASTER service is provided by seven locomotives and 28 bi-level passenger coaches over 41 directional miles of service territory. Bombardier assumed revenue operations of the COASTER service on July 1, 2016 as part of a bundled service procurement for COASTER and SPRINTER operations and maintenance. The Bombardier operation of the service has continued throughout the audit period, although NCTD is taking some active steps to bring this operation back in-house in the near term.
- SPRINTER provides east-west mobility link between Escondido, San Marcos, Vista, and Oceanside where it extends 22 miles. This service is delivered using European-style rail vehicles with a current active fleet of 12 light rail diesel multiple units (DMU). Being there is no overhead catenary, the service is considered hybrid rail.
- LIFT provides demand response and ADA paratransit service for passengers unable access fixed route service. MV operates and maintains NCTD owned vehicles to deliver the LIFT service using a fleet of 52 vans and low-floor buses (cutaways). Not every customer can use LIFT; they first needs to pass an assessment where NCTD determines the passenger has a limitation preventing usage of the fixed-route service.
- FLEX provides on-demand, deviated fixed-route, and point-deviated fixed-route service in parts of Camp Pendleton, Escondido and Ramona, where BREEZE service is not available. This is considered the FLEX zone. FLEX vehicles take passengers anywhere along the scheduled FLEX route and will deviate up to $\frac{3}{4}$ mile off the route with a prior reservation. The FLEX fleet has 12 vehicles equipped with bike racks and wheelchar lifts.

Organization

NCTD's Board of Directors is made up of one representative from each incorporated city in the District plus the Fifth District County Supervisor – nine voting members and one non-voting advisory member. The Fifth District covers unincorporated areas of North County.

Exhibit I-2 shows NCTD's high-level organizational structure from the FY 2021 Budget.

Exhibit I-2: NCTD Organization Chart



Source: NCTD, FY 2021 Adopted Operating Budget and FY2021-FY2025 Capital Improvement Plan

NCTD's organization chart did not change dramatically from FY2019 to FY2021. As of June 2021 there were nine groups reporting to the General Manager. The organization is expected to change in the next audit cycle, at least from an Full Time Equivalents (FTE) standpoint, as much of the rail operation is brought in-house. In addition, though the change was not made until August 2021 (just outside of the audit period), NCTD created a new department for Operations-Support Services, that has security oversight, support services, and the Operations Control Center (OCC).

Total staffing levels started at 134.25 Full Time Equivalents (FTEs) in FY2019 and ended at 145.50 in FY2021¹. The net overall change from FY2019 to FY2021 is a net positive 11.25 FTEs (+8%). The biggest change over the audit period concerns the Rail Operations division (+20 FTEs) which includes 15 dispatchers and other functions. It also represents the beginning of NCTD's plan to insource the rail operation. NCTD also retired 3.75 FTEs through vacancies for positions that were no longer needed.

¹ Excludes contracted staff

The NCTD budgeted staffing levels by Division are illustrated in Exhibit I-3.

Exhibit I-3: NCTD Staffing Levels, FY2017-2021

Division	Budget Positions				
	FY2017	FY2018	FY2019	FY2020	FY2021
Administrative Services	27.75	29.25	27.75	28.25	30.25
Bus Operations	52.00	21.00	21.00	21.00	15.00
Development Services	6.00	6.00	6.00	7.00	5.00
Finance	17.00	16.00	16.00	17.00	17.00
General Counsel	20.00	18.00	18.00	16.00	17.00
Information Technology	6.00	6.00	6.00	6.00	6.00
Office of the Executive Director	1.75	3.00	4.50	7.00	3.25
Operations - Rail	8.00	9.00	7.00	6.00	26.00
Planning, Strategy, and Innovation	12.00	14.00	15.00	14.00	14.00
Procurement and Contract Administration	9.00	4.00	5.00	5.00	5.00
Safety and Security	7.00	8.00	8.00	7.00	7.00
Total	166.50	134.25	134.25	134.25	145.50

Source: NCTD, Adopted FY2021 Operating Budget and FY2021-FY2025 Capital Improvement Program

This audit period was fairly stable from an overall internal staffing and service contracting perspective. The tumult caused by COVID and subsequent steep drop in ridership was not accompanied by significant staffing or service cuts (and hence operating cost), for multiple reasons. First, there are fixed costs independent of service levels. NCTD has both regulatory (e.g. Federal Transit Administration, Federal Railroad Administration, Public Utilities Commission) and contractual obligations with its contractors. Secondly, it is not recommended to lay off specialty workers that will be hard to replace later, and there are broader public policy considerations as well.

Purchased Transportation

Purchased Transportation (PT) is the largest cost driver for the NCTD's operating budget. PT was \$65 million, representing 52% of the FY2021 budget with two contractors as follows:

Services Operated	Type of service	Contractor
BREEZE, LIFT and FLEX	Operations and Maintenance	MV Transportation
COASTER and SPRINTER	Operations and Maintenance	Bombardier

Each contract is capped at increases associated with the San Diego Area Consumer Price Index not-to-exceed 3% on an annual contract year basis.

Below is a summary for each of the District modes and the supporting transit services and contracted providers:

Combined BREEZE Fixed Route Service, LIFT ADA Complementary Paratransit Service, and FLEX Specialized Transportation Service Contract	
Contractor	MV Transportation, Inc.
Contract Term Limits	Base: July 1, 2017 to June 30, 2027 (exclusive of a single three-year option)

Combined BREEZE Fixed Route Service, LIFT ADA Complementary Paratransit Service, and FLEX Specialized Transportation Service Contract	
Contract Value	\$304,620,005 (at time of contract award)
Scope of Contract	<p>BREEZE service, bus dispatching, employing and managing bus operators, vehicle maintenance, and facility maintenance.</p> <p>Managing and operating LIFT ADA paratransit service; taking customer reservations, responding to complaints, scheduling, dispatching, and maintaining telephone recordings and records, maintaining a current ADA paratransit buffer map; maintaining all necessary records and data needed to assess its performance against contractual requirements and those required for Federal reporting.</p> <p>Managing FLEX specialized transportation services which includes demand response, deviated fixed route, and other low-density services.</p>

Combined Rail Operations and Maintenance Contract	
Contractor	Bombardier Transportation (Holdings) USA, Inc. (Bombardier)
Contract Term Limits	Base: June 11, 2016, to June 30, 2023 (exclusive of a single three-year option)
Contract Value	\$198,281,697 (at time of contract award)
Scope of Contract	COASTER commuter rail and SPRINTER hybrid rail operations, vehicle maintenance, maintenance of way, maintenance of signal, and dispatch in accordance with all state and federal regulations. The Contract is performance-based contract and Bombardier proposed minimum staffing levels to accomplish those performance requirements.

Comprehensive Facilities Maintenance	
Contractor	Bombardier Transportation (Holdings) USA, Inc. (Bombardier)
Contract Term Limits	Base: July 1, 2016 to June 30, 2023 (exclusive of a single three-year option)
Contract Value	\$27,413,400 (at time of contract award)
Scope of Contract	Maintenance of operational equipment, janitorial services, and structural maintenance of the COASTER and SPRINTER rail operations facilities. Janitorial services and structural maintenance of the Maintenance-of-Way facility, layover yard trailer, COASTER stations, and SPRINTER stations.

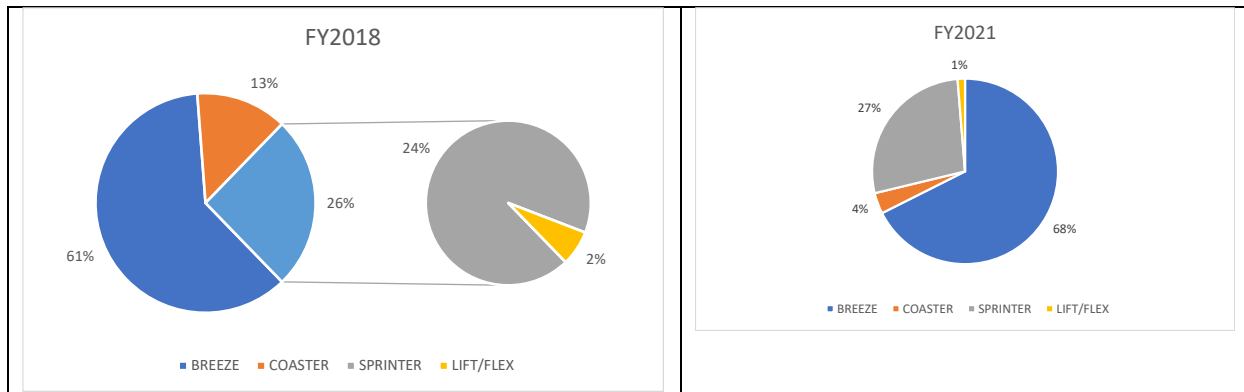
Modal Highlights

Systemwide ridership peaked in FY2015 with 12.6 million passengers. Since that time, both the last audit period and the beginning of this audit period have seen a gradual and steady erosion in ridership, consistent with national trends. But the COVID epidemic took a first big bite out of the ridership in FY2020, resulting in 8.2 million riders. The following year FY2021, first full year with the epidemic, resulted in a far greater drop, the year ended with 4.5 million riders. However, ridership changes did not affect all modes equally.

Total ridership and mode shift changed dramatically during the audit period. Total ridership decreased 58% from FY2018 to FY2021. Mode share for the different modes also shifted dramatically during the audit

period as illustrated in Exhibit I-5. The BREEZE bus mode share went from 61% to 68% of the total. COASTER commuter rail mode share decreased from 13% to just 4% of the total. SPRINTER hybrid rail was steady at 26% and 27%. LIFT/FLEX went from 2% to 1% of the total.

Exhibit I-5: NCTD Mode Share, Unlinked Trips



BREEZE, the NCTD’s fixed route bus system, peaked in FY2015 by carrying over 8.0 million passengers annually. However, the system has seen a steady decline. Over the audit period, ridership has decreased by 53.7%. Most of the drop was from FY2020 to FY2021 and is directly attributed to COVID. In response to the pandemic, NCTD made minor service cuts to the service. BREEZE service generally operates from approximately 5:30 am to 11:30 pm, with the service span varying by route. Service frequency typically varies between 30 to 60 minutes, with some 15 minute-headway service. BREEZE, managed by NCTD but operated by MV day to day, uses two operations and maintenance facilities. The West Division facility is located in Oceanside; the East Division facility is located in Escondido.

The COASTER, NCTD’s commuter rail line, runs between the Oceanside Transit Center and San Diego’s Santa Fe Depot, with six intermediate station stops. Exhibit I-6 provides the COASTER system map.

Exhibit I-6: COASTER System Table

COASTER STATIONS		ZONES
Oceanside Transit Center	195 S. Tremont Street (South Tremont Street between Topeka St. and Michigan Ave.)	North County - Zone 1
Carlsbad Village	2775 State Street (State St. & Grand Ave.)	
Carlsbad Poinsettia	6511 Avenida Encinas (Avenida Encinas just north of Embarcadero Ln.)	
Encinitas	25 East "D" Street (D Street & S. Vulcan Ave.)	
Solana Beach	105 N. Cedros Avenue (North Cedros Ave. & Lomas Santa Fe Dr.)	
Sorrento Valley	11170 Sorrento Valley Road (Sorrento Valley Rd. between Carmel Mountain Rd. and Sorrento Valley Blvd.)	Sorrento Valley - Zone 2
Old Town Transit Center	4005 Taylor Street (Taylor St. & Pacific Hwy.)	San Diego - Zone 3
Santa Fe Depot	1050 Kettner Boulevard (West Broadway & Kettner Blvd.)	

The COASTER experienced an 88.6% decrease in ridership over the audit period with big drops first in FY2020 and then in FY2021. NCTD is responsible for contract management and oversight. Bombardier operates the trains, maintains the equipment, track, signals and facilities.

The COASTER runs 365 days per year. At the beginning of the audit period, COASTER operated 22 trains weekdays (with an increase to 26 trains on Friday nights, seasonally), eight Saturday, Sunday, and Holiday trains. In response to the pandemic, NCTD ran a reduced service on COASTER for about one year (to 12 daily trains), but then restored it fully at the end of May 2021. Then NCTD geared up and subsequently increased the COASTER service to 30 total daily trains in October 2021, four months outside the audit period.

Current ridership levels on COASTER are a total anomaly. Nationally, commuter railroads have been disproportionately affected compared to light rail or fixed-route bus. Since COASTER began service in 1995, it has experienced significant ridership growth serving approximately 1.6 million passengers in FY 2015, with most Park & Ride facilities near or at full capacity. This ridership is equivalent to about 5,500 weekday boardings. Although the FY 2021 ridership was only 162,000, ten percent of its FY 2015 levels, expectations are that riders will return when the pandemic subsides.

The SPRINTER system map is presented below. SPRINTER cars are unique in North America and a significant number of parts can only be sourced from Europe. NCTD has been able to secure a Buy America Waiver to purchase SPRINTER maintenance parts. In the past, lacking this waiver prevented the use of federal funds for equipment that was non-Buy America compliant which increased pressure on NCTD's operating budget due to the need to use state and local funds for capital needs.

Exhibit I-7: SPRINTER System Map



SPRINTER operates 18 hours/day and runs east-west between the Escondido and Oceanside Transit Centers, known as ETC and OTC respectively. SPRINTER runs under a temporal-separation shared track use program where SPRINTER utilizes the track for approximately 18 hours/day and freight trains utilize it for about six hours per night, up to five nights per week. SPRINTER has 12 vehicles and is operated and maintained by Bombardier. Bombardier operates the trains, maintains the equipment, track, signals and facilities.

The COVID epidemic affected SPRINT like everything else, on a level similar to the effect on BREEZE. SPRINT ridership decreased by 51.6% over the audit period. NCTD decided to keep the service levels on SPRINT unchanged during the audit period.

LIFT ADA Paratransit is a curb-to-curb shared ride service available to ADA-certified patrons. LIFT serves origins and destinations that are within ¼-mile of an NCTD fixed route, during the same hours as the corresponding fixed route (generally from 5:30 am to 11:30 pm). NCTD has a fleet of 52 vans and low-floor buses known as cutaways. Not everyone that wants to ride LIFT can do so. Riders need to pass an assessment process where a determination is made whether the rider has a functional limitation that prevents them from using some or all parts of the fixed-route service.

FLEX is a different type of service and is best described as an on-demand, deviated fixed-route and point-deviated fixed-route service. Unlike LIFT, FLEX is available to anyone, within certain service areas. The FLEX fleet is made up of 12 vehicles equipped with bike racks and wheelchair lifts.

Both LIFT and FLEX are operated by MV under a dedicated fleet model, in addition to the BREEZE service.

Fare Structure

Fares for NCTD's modes area are established by SANDAG. Following three public meetings held in January 2021, a final recommendation was considered by the MTS and NCTD Boards, and by the SANDAG Transportation Committee. New fare changes were made effective May 16, 2021. For Youth riders, the changes included a reduction a reduction of the day pass on BREEZE and FLEX and a reduction of one-way fares on COASTER. The fare change also features a free two-hour transfer window of the first ride. Finally, the changes are also meant to correspond to the new regional PRONTO fares system.

Prior to these fare changes, the last major fare changes occurred in 2011 when fares for BREEZE, COASTER, and LIFT were reduced by NCTD to spur ridership. Currently, SANDAG is examining opportunities to advance social equity goals, including pilots to enable persons under 18 years of age to ride transit for free, but this was not implemented during the current audit period.

NCTD fare structures and fare levels differ among service modes. Changes noted apply to differences between the beginning and the ending of the audit period.

- The base fare for BREEZE was increased from \$1.75 to \$2.50. Fifty percent discounts are provided for senior/disabled/Medicare patrons. Youth under 6 ride for free.
- The base fare for SPRINTER was increased from \$2.00 to \$2.50. Fifty percent discounts are provided for senior/disabled/Medicare patrons. Youth under 6 ride for free.
- COASTER utilizes a zone-based fare structure and similar to the other modes base fares were increased. Single ride fares range from \$5.00 to \$6.50, depending on the number of zones crossed (one, two or three). Fifty percent discounts are provided for senior/disabled/Medicare patrons. Youth under 6 ride for free.
- The base fare for FLEX is set at \$5.00. Fifty percent discounts are provided for senior/disabled/Medicare patrons. Youth under 6 ride for free. The FLEX base fare has been unchanged for over 10 years.
- The LIFT paratransit one-way fare is set at \$5.00 and was adjusted along with the other modes.

NCTD offers various regional fare products and passes. As of the end of the audit period, NCTD offers:

- Day Pass valid on BREEZE / SPRINTER
- Regional 14-Day Pass (Regular and Premium) valid on BREEZE / SPRINTER
- Regional Monthly Calendar or Rolling 30-Day Pass (Regular and Premium) valid on BREEZE / SPRINTER

- Regional Monthly Calendar or Rolling 30-Day Pass (by Zone type) valid on COASTER
- Senior/Disabled/Medicare Day Pass, Regional 14-Day Pass and Regional Monthly Pass valid on BREEZE / SPRINTER
- Youth and Senior/Disabled/Medicare Monthly Calendar or Rolling 30-Day Pass (by Zone type) valid on COASTER
- Youth Day Pass, Regional 14-Day Pass and Regional Monthly Pass valid on BREEZE / SPRINTER
- College Monthly Pass valid on BREEZE / SPRINTER

Approximately 70% of NCTD fare revenue is attributable to the monthly passes described above. The cash fare discount for senior/disabled/Medicare riders is set at 50%, in accordance with 49 U.S. C. 5307 (c)(1)(D)d. The monthly pass discounts are set at 75% for senior/disabled/Medicare and at 50% for youth riders. Exhibit I-7 provides NCTD's fare structure from FY2015 to FY2021.

Exhibit I-7: Fare Structure for NCTD Services

BREEZE, FLEX and LIFT Fares

	2021	2020	2019	2018	2017	2016	2015
Fixed Route							
One-way Fare							
Regular	\$ 2.50	\$ 2.50	\$ 1.75	\$ 1.75	\$ 1.75	\$ 1.75	\$ 1.75
Senior/Disabled/Medicare	1.25	1.25	0.75	0.75	0.75	0.75	0.75
Day Pass							
Regular	6.00	6.00	5.00	5.00	5.00	5.00	4.50
Senior/Disabled/Medicare	3.00	3.00	2.25	2.25	2.25	2.25	2.25
Youth	3.00	3.00	*	*	*	*	*
Monthly Calendar or Rolling 30-Day Pass	*	*	59.00	59.00	59.00	59.00	59.00
Regional Day Pass							
Day Pass - Adult	6.00	6.00	5.00	5.00	5.00	5.00	5.00
Day Pass - Senior/Disabled/Medicare/Youth	3.00	3.00	*	*	*	*	*
Premium Day Pass - Adult	12.00	12.00	12.00	*	*	*	*
Premium Day Pass - Senior/Disabled/Medicare/Youth	6.00	6.00	6.00	*	*	*	*
Region Plus Day Pass	*	*	12.00	12.00	12.00	12.00	12.00
COASTER Regional Day Pass - Adult	15.00	15.00	*	*	*	*	*
COASTER Regional Day Pass - Senior/Disabled/Medicare/Youth	7.50	7.50	*	*	*	*	*
Regional Monthly Calendar or Rolling 30-Day Pass							
Regular	72.00	72.00	72.00	72.00	72.00	72.00	72.00
Youth	23.00	23.00	36.00	36.00	36.00	36.00	36.00
Senior/Disabled/Medicare	23.00	23.00	18.00	18.00	18.00	18.00	18.00
Regional Premium Monthly Calendar or Rolling 30-Day Pass							
Regular	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Youth	32.00	32.00	50.00	50.00	50.00	50.00	50.00
Senior/Disabled/Medicare	32.00	32.00	25.00	25.00	25.00	25.00	25.00
Regional 14 Day Pass	*	*	43.00	43.00	43.00	43.00	43.00
Regional Premium 14 Day Pass	*	*	60.00	60.00	60.00	60.00	60.00
College Monthly Pass	**	**	49.00	49.00	49.00	49.00	49.00
On Demand Bus Service							
One-way Fare							
Regular	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00
Senior/Disabled/Medicare	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Youth	2.50	2.50	*	*	*	*	*
ADA/Paratransit							
One-way Fare	\$ 5.00	\$ 5.00	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50

Source: NCTD, Annual Comprehensive Financial Report for Fiscal Years June 30, 2021 and 2020

COASTER FARES

	2021	2020	2019	2018	2017	2016	2015
Commuter Train Service							
ZONE 1							
One-way Fare							
Regular	\$ 5.00	\$ 5.00	\$ 4.00	\$ 4.00	\$ 4.00	\$ 4.00	\$ 4.00
Senior/Disabled/Medicare	2.50	2.50	2.00	2.00	2.00	2.00	2.00
Youth	2.50	2.50	*	*	*	*	*
Monthly Calendar or Rolling 30-Day Pass							
Regular	140.00	140.00	120.00	120.00	120.00	120.00	120.00
ZONE 2							
One-way Fare							
Regular	5.75	5.75	5.00	5.00	5.00	5.00	5.00
Senior/Disabled/Medicare	2.75	2.75	2.50	2.50	2.50	2.50	2.50
Youth	2.75	2.75	*	*	*	*	*
Monthly Calendar or Rolling 30-Day Pass							
Regular	161.00	161.00	150.00	150.00	150.00	150.00	150.00
ZONE 3							
One-way Fare							
Regular	6.50	6.50	5.50	5.50	5.50	5.50	5.50
Senior/Disabled/Medicare	3.25	3.25	2.75	2.75	2.75	2.75	2.75
Youth	3.25	3.25	*	*	*	*	*
Monthly Calendar or Rolling 30-Day Pass							
Regular	182.00	182.00	165.00	165.00	165.00	165.00	165.00
Youth (all zones)	58.00	58.00	82.50	82.50	82.50	82.50	82.50
Senior/Disabled/Medicare (all zones)	58.00	58.00	41.25	41.25	41.25	41.25	41.25

Source: NCTD, Annual Comprehensive Financial Report for Fiscal Years June 30, 2021 and 2020

SPRINTER HYBRID RAIL FARES

	2021	2020	2019	2018	2017	2016	2015
Hybrid Rail Train Service							
One-way Fare							
Regular	\$ 2.50	\$ 2.50	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.00	\$ 2.00
Senior/Disabled/Medicare	1.25	1.25	1.00	1.00	1.00	1.00	1.00
Day Pass							
Regular	6.00	6.00	5.00	5.00	5.00	5.00	4.50
Senior/Disabled/Medicare	3.00	3.00	2.25	2.25	2.25	2.25	2.25
Monthly Pass	*	*	59.00	59.00	59.00	59.00	59.00
Regional Day Pass							
Day Pass - Regular	\$ 6.00	\$ 6.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00
Day Pass - Senior/Disabled/Medicare/Youth	3.00	3.00	*	*	*	*	*
Premium Day Pass - Regular	12.00	12.00	*	*	*	*	*
Premium Day Pass - Senior/Disabled/Medicare/Youth	6.00	6.00	*	*	*	*	*
Region Plus Day Pass	*	*	12.00	12.00	12.00	12.00	12.00
COASTER Regional Day Pass - Regular	15.00	15.00	*	*	*	*	*
COASTER Regional Day Pass - Senior/Disabled/Medicare/Youth	7.50	7.50	*	*	*	*	*
Regional Monthly Calendar or Rolling 30-Day Pass							
Regular	72.00	72.00	72.00	72.00	72.00	72.00	72.00
Youth	23.00	23.00	36.00	36.00	36.00	36.00	36.00
Senior/Disabled/Medicare	23.00	23.00	18.00	18.00	18.00	18.00	18.00
Regional Premium Monthly Calendar or Rolling 30-Day Pass							
Regular	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Youth	32.00	32.00	50.00	50.00	50.00	50.00	50.00
Senior/Disabled/Medicare	32.00	32.00	25.00	25.00	25.00	25.00	25.00
Regional 14 Day Pass	*	*	43.00	43.00	43.00	43.00	43.00
Regional Premium 14 Day Pass	*	*	60.00	60.00	60.00	60.00	60.00
College Monthly Pass	**	**	49.00	49.00	49.00	49.00	49.00

Source: NCTD, Annual Comprehensive Financial Report for Fiscal Years June 30, 2021 and 2020

Planning Studies

To address past declines in customer ridership and revenue, better understand future travel trends as the COVID-19 pandemic subsides, and build effective ridership recovery strategies, NCTD has undertaken a number of activities to garner customer feedback to improve service quality and grow ridership. Following are some examples:

Land Use and Transit Integration Study – NCTD’s Land Use and Transit Integration Study had three rounds of public outreach. During the second half of 2018 and through June of 2019, NCTD gathered input on rider and non-rider travel preferences (i.e. by car, bike, train), their frequent origins and destinations, and service strategies they would like to see implemented in North County (i.e. micromobility, increased service frequencies, new routes).

Strategic Multimodal Transit Implementation Plan – This plan was primarily focused on micro-transit options in the region (e.g., Carlsbad and San Carlos), utilized mobile phone and in person survey data.

Market Research & Analysis – The latest planning study to get off the ground during the audit period is a strategic examination about the “future of work” post-pandemic. This human-centered analysis, carried out by Deloitte Consulting, is co-led by Planning and y the Advocacy, Marketing and Communications.

Some of the planned on-board surveys that tend to be jointly planned with SANDAG (Onboard Transit Passenger Survey) were cancelled due to the COVID pandemic. NCTD did a new type of survey through social media (FaceBook) to try to understand the market and determine what passengers may want in terms of next steps.

NCTD+ – NCTD also advanced a pilot program for discounted first and last mile connections for some COASTER stations (Sorrento Valley and Carlsbad Poinsettia), using Lyft, Uber and TripShot. The service is branded NCTD+. The service which is now advertised on the goNCTD website, was implemented in early 2022, so just after the audit period.

Risk Reduction & Feasibility Analysis/Trespasser Risk Reduction Study – NCTD also completed in June 2020 a Trespasser Risk Reduction Study which featured three main study areas: Oceanside, Encinitas, and Del Mar. The study concluded with mitigation options and proposed fencing locations.

Pathing Study – Finally, NCTD also began a joint-funded study outlining how to phase the expansion of passenger and freight along the Los Angeles- San Diego-San Luis Obispo (LOSSAN) rail corridor. Labeled the San Diego Pathing Study, or Pathing Study, the work is expected to help expand COASTER to the Downtown San Diego Convention Center, and minimize rail crossing delays, among other benefits.

Finally, during the first two years of the audit period NCTD continued its key strategic priorities of:

- Increasing customer ridership and revenue over the 5-year plan
- Improving service quality
- Minimizing expenses
- Funding State of Good Repair and Priority Capital Needs

The first strategic priority is further defined as:

- Implement 30-minute frequencies on the COASTER
- Implement 15-minute peak frequencies on the SPRINTER
- Implement improved bus service frequencies
- Implement new first and last mile services
- Implement new technologies that improve the customer riding experience
- Increase investments in marketing and outreach programs

For the last fiscal year in the audit period, NCTD modified the priorities to take into account specific COVID measures such as enhanced cleaning protocols to protect the safety of employees and customers (see Section III for more detail).

1.2. Accomplishments and Challenges

During the audit period, the major story has been the COVID-19 pandemic and its continuing impact on NCTD through June 2021 and beyond. The pandemic started affecting the San Diego region in March 2020 and lasted throughout the rest of the audit period, thus affecting 16 months of the audit period or a little less than half the three-year period. Looking individually at the three years, FY2019 had nothing, FY2020 had three months, and FY2021 represented a full year of COVID conditions and that is when you can really see it in the numbers, especially ridership. It is unclear what the “new normal” will look like but NCTD has taken multiple steps to position its organization and service strategy to adapt.

Besides the pandemic and sometimes because of it, SANDAG undertook and completed numerous accomplishments during the audit period as well. These are summarized below.

- Positive Train Control Implementation – NCTD implemented Positive Train Control (PTC) by the federal deadline during FY2019, one in only four commuter railroads to do so in the Country. PTC has been an ongoing technical modernization challenge for many years and it’s good to be able to call this a victory.
- Customer Service – NCTD implemented multi-year Zero Delay Program to improve customer experience not just with on-time performance but with service reliability and technology benefits. NCTD also implemented GoNCTD.com website which represented a more user friendly graphical user interface.
- Financial Stability and Agreements – In FY2019 NCTD has budget carryover and set aside funds for a potential downturn in sales tax revenues. NCTD also took measures to reduce long-term pension liabilities by introducing a new benefit tier (effective January 1, 2022). NCTD also increased the amount of UAL payment under a 15 year amortization schedule, hoping to save about \$10 million over that timeframe. In addition, NCTD executed an agreement to re-develop the Oceanside Transit Center and the 810 Mission Avenue property (i.e., the future administrative building). NCTD estimates the total value of benefits to NCTD on the order of \$57 million.
- Discretionary Grants – In FY2019, NCTD activity on grants included: advancing a Transit and Intercity Rail Capital Program Grant to add \$4 million annually to support rail state of good repair projects; \$6 million state funding to support Del Mar Bluffs Stabilization; \$926,000 local grant to fund LIFT replacement vehicles; \$325,000 state grant to fund Strategic Multimodal implementation Plan.

In FY2020, NCTD received the following grants: \$17 million from the Transit and Intercity for fencing and signal optimization; \$11.5 million FRA grant for Del Mar Bluffs Stabilization Project 5; \$9.8 million FRA grant for train and crossing control modernization.

In FY2021, NCTD received the following grants: \$36.2 grant from state Transit Corridor Enhancement Program (TCEP) funds for Del Mar Bluffs Phase 5; \$33.2 million TCEP funds to build a new Convention Center platform; \$9.8 million FRA grant for signal modernization along the LOSSAN corridor; \$6 million California Energy Commission grant for the design-build of a hydrogen fueling facility at Oceanside.

- Safety – In response to CDC and FTA and FRA guidance regarding the pandemic, NCTD developed and implemented plans to foster safety of employees, customers and general public,

following evolution of regulatory guidance. Examples includes operator barriers on fixed route bus fleet, signs, the placement of hand sanitizing stations on all revenue vehicles.

- COVID Service Adaptation – NCTD adapted to riders’ needs during COVID (minor service cuts on BREEZE, major service cuts to COASTER – which subsequently were restored and expanded upon, SPRINTER service levels stayed the same, LIFT/FLEX fleet was cut significantly in reaction to drop in demand)
- Next Generation Fare Collection System – In mid-FY2019, San Diego Metropolitan Transit System (MTS) awarded an agreement for a new account-based fare system to INIT. The new system will be called PRONTO. NCTD joined the initiative and in late FY2020 awarded INIT contracts for field equipment and software. During the audit period the current COMPASS system is still in operation; PRONTO is expected to fully implemented around mid-FY2022.
- Capital Asset Renewal and State of Good Repair (SGR) – NCTD took several proactive steps including the new Siemens Tier 4 locomotives (bought 5, retired 5), other rail SGR projects such as gangways and powerpacks. On the bus side acquired new Compressed Natural Gas (CNG) buses, reducing average fleet age from 11.2 years to 9.1 years in FY2021. This trend will continue in FY2022 with 30 more CNG and 6 Battery Electric Buses (BEBs), bringing the fleet age down further.
- Planning – NCTD conducted land use and transportation planning study, Strategic Multimodal Transit Implementation Plan (focused on micro-transit), and initiated a strategic “future of work” study (formal name is Market Research & Analysis) to better understand future transportation patterns post-pandemic.
- Organization Changes – A flurry of organization changes were made recently but most of them will impact the next audit period, not this one. Though the change was not made until August 2021 (just outside of the audit period), NCTD created a new department for Operations-Support Services, that has security oversight, support services, and the Operations Control Center (OCC). This change becomes official in the FY2022 budget and Safety no longer handles Security. NCTD is also consolidating functions with an enlarged planning, marketing, customer experience department. NCTD is currently recruiting for a government affairs officer to increase Federal grant capture. Finally, the organization is expected to change in the next year, at least from an FTE standpoint, as much of the rail operation is brought in-house.
- Future Insourcing of the Rail Operation – Plans are advanced in a project to insource the rail operation, with a staggered implementation – operators and maintenance (2022), maintenance of signals and MOW (2023). The vast majority of staff interviewed support the insourcing project strongly. Some of the reasons advanced include increasing overall reliability, taking pride with the work, and occasional issues with the contractor. This principally concerns the next audit period.
- Challenges during the Audit Period and Moving Forward – The myriad implications (safety, security, ridership) stemming from COVID were the biggest challenge during the second half of the audit period and moving forward. Other large challenges identified include high inflation, staff retention (mainly operators and mechanics), and challenges related to security (e.g., operator assaults).

1.3. Report Outline

The remainder of the performance audit report is organized into the following four sections:

- Section II- Compliance Review: Assesses NCTD compliance with specific PUC requirements and discusses the status of prior audit recommendations.
- Section III- Management Control and Reporting: Examines the management structure and performance monitoring systems in place to help reach NCTD goals and objectives.
- Section IV- Performance Trends and Functional Review: Examines system-wide performance trends as well as trends in the major functional areas: operations, maintenance, and planning and administration.
- Section V- Conclusions and Recommendations: Outlines recommendations and potential implementation strategies for NCTD to capitalize on improvement opportunities.

SECTION II: COMPLIANCE REVIEW AND PRIOR AUDIT RECOMMENDATIONS

The compliance review assesses compliance with PUC requirements and implementation of prior audit recommendations. Activities conducted by NCTD and each of the NCTD service providers to comply with TDA requirements are described in this section. TDA performance indicator results and trends are discussed in Section IV – Performance Trends and Functional Review.

PUC requirements verified as part of this performance audit include the compliance requirements for transit operators stipulated in the California Department of Transportation TDA Performance Audit Guidebook for Transit Operators and Regional Transportation Planning Entities (2008) and TDA Statutes and California Codes of Regulations (2018).

With the consolidation of operations in the NCTD service area, some of the compliance findings have been made for NCTD as a whole. Where appropriate (e.g., where operators continue to file separate financial audits and State Controller reports), findings have been made for particular NCTD services.

Compliance is assessed at three levels:

- Fully compliant.
- Partially compliant, with additional actions required to achieve full compliance.
- Non-compliant or not applicable.

Compliance to measure progress towards implementing prior audit recommendations has been measured in three categories:

- Fully implemented.
- Partially implemented but further progress is warranted.
- Not implemented or not applicable.

II.1. Compliance Review

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC Section 99243	Uniform System of Accounts and Records: The transit operator submitted annual reports to the RTPA based upon the Uniform System of Accounts and Records established by the State Controller. Report is due within seven (7) months after the end of the fiscal year (on or before January 31).	Full Compliance	State Controller Report submittal dates: FY2019: 1/23/2020 FY2020: 1/25/2021 FY2021: 1/27/2022
PUC Section 99245	Annual Fiscal Audit: The operator has submitted annual fiscal and compliance audits to its RTPA and to the State Controller within 180 days following the end of the fiscal year (Dec. 27), or has received the appropriate 90-day extension by the RTPA allowed by law.	Full Compliance	Annual fiscal audit dates: FY2019: December 26, 2019 FY2020: December 14, 2020 FY2021: November 24, 2021

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC Section 99251	<p>CHP Certifications: The CHP has, within the 13 months prior to each TDA claim submitted by an operator, certified the operator’s compliance with Vehicle Code Section 1808.1 following a CHP inspection of the operator’s terminal.</p>	Full Compliance	<p>CHP certification dates during the audit period:</p> <p>2019 (MV Transportation): East Facility 7/18/2019 West Facility 7/12/2019</p> <p>2020 (MV Transportation): East Facility 7/10/2020 West Facility 7/9/2020</p> <p>2021 (MV Transportation): East Facility 7/23/2021 West Facility 7/15/2021</p>
PUC Section 99261	<p>Transportation Planning Agency Regulations: The operator’s claim for TDA funds is submitted in compliance with rules and regulations adopted by the RTPA for such claims.</p>	Full Compliance	<p>NCTD submitted its TDA claims and proper documentation to SANDAG for Article 4 and 4.5 revenue each year for FY2019, FY2020, and FY2021. A TDA Claims Checklist is used to indicate compliance with each required element, such as financial/ performance reporting forms, resolution of the governing body authorizing the claim, description of service provided, and other attached exhibits. SANDAG’s annual schedule of monthly TDA allocation payments to NCTD exemplifies compliance.</p> <p>NCTD claims State Transit Assistance Funds for operations and capital, exempt from the eligibility criteria in FY 2020-21 (AB 90).</p>
PUC Section 99266	<p>Budget Changes: The operator’s operating budget has not increased by more than 15% over the preceding year, nor is there a substantial increase or decrease in the scope of operations or capital budget provisions for major new fixed facilities unless the operator has reasonably supported and substantiated the change(s).</p> <p>Source: Annual Operating Budget</p>	Full Compliance	<p>FY2019: 8.9% FY2020: 2.2% FY2021: 8.5%</p>

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC Section 99247	<p>Data Definitions: The operator's definition of performance measures are consistent with Public Utilities Code Section 99247, including (a) operating cost, (b) operating cost per passenger, (c) operating cost per vehicle service hour, (d) passengers per vehicle service hour, (e) passengers per vehicle service mile, (f) total passengers, (g) transit vehicle, (h) vehicle service hours, (i) vehicle service miles, and (j) vehicle service hours per employee.</p>	Full Compliance	NCTD operating statistics are collected and performance measures are calculated in accordance with PUC requirements.
PUC Sections 99270.1 99275.5	<p>Requirement – Revenue Ratios in SANDAG Policy 27: The system-wide ratio using a blended urban/rural formula approved by SANDAG is 18.8% for NCTD Article 4.0 claims. For Article 4.5 claims for ADA Paratransit Service, the ratio is 10.0%.</p> <p>Source: Comprehensive Annual Financial Report & State Controller Report</p>	<p>Full Compliance Systemwide</p> <p>Full Compliance ADA Paratransit</p>	<p>Farebox Recovery Ratios System-wide (passenger fares only)*:</p> <p>FY2019: 17.9%</p> <p>FY2020: 13.6%</p> <p>FY2021: 5.7%</p> <p>Farebox Recovery Ratios System-wide (including local support and cost exclusions/exemptions)**:</p> <p>FY2019: 39.02%</p> <p>FY2020: 34.99%</p> <p>FY2021: 25.83%</p> <p>Farebox Recovery Ratios for ADA Paratransit Service (passenger fares only)*:</p> <p>FY2019: 6.8%</p> <p>FY2020: 7.1%</p> <p>FY2021: 6.6%</p> <p>Farebox Recovery Ratios for ADA Paratransit Service (including local support and cost exclusions/exemptions)**:</p> <p>FY2019: 10.24%</p> <p>FY2020: 13.46%</p> <p>FY2021: 13.31%</p> <p>* Passenger fare revenue only; operating costs exclude certain costs per PUC 99268.17, reported in CAFR.</p>

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
			**Fare revenue includes local support revenues; operating costs exclusions and exemptions as shown in the State Controller Report.
PUC Section 99271	Employee Retirement System: The current cost of the operator’s retirement system is fully funded with respect to the officers and employees of its public transportation system, or the operator is implementing a plan approved by the RTPA, which will fully fund the retirement system for 40 years.	Full Compliance	NCTD offers a defined benefit pension through an independent contract with the California Public Employees’ Retirement System (CalPERS). The Comprehensive Annual Financial Report provides the current cost of the retirement system.
CAC Section 6754(a)(3)	<p>Required Findings: If the operator receives state transit assistance funds, the operator makes full use of funds available to it under the Urban Mass Transportation Act of 1964 before TDA claims are granted.</p> <p>Source: Comprehensive Annual Financial Report</p>	Full Compliance	<p>The three primary sources of Federal aid are FTA 5307 (Urban Area), FTA 5337 (State of Good Repair), and FTA 5339 (Bus/Bus Facilities). NCTD also receives FTA 5311 (Rural Area) through Caltrans. During the audit period, NCTD received both federal operating and capital grants:</p> <p>FY 2019: Operating (\$22,916,632) Capital (\$9,613,525)</p> <p>FY 2020: Operating (\$36,168,415) Capital (\$20,079,992)</p> <p>FY 2021: Operating (\$48,843,187) Capital (\$27,634,410)</p> <p>NCTD also received Federal CARES Act allocation to the San Diego region in 2020. Of the regional amount, Section 5307 funds were allocated 30% (\$94.3 million) for NCTD, and Section 5311 funds were allocated 59% (\$1.4 million) for NCTD.</p>

II.2. Prior Audit Recommendations

Exhibit II.2-1 Recommendation #1 Response

Recommendation 1 – Expand efforts to understand what riders want and how to grow demand.

Recommended Actions – NCTD should complete studies that are designed to garner information regarding what riders currently want and what new riders desire to support utilization of transit. NCTD should publicly share the implementation plan and report progress on a routine basis. Using the information on what riders and potential riders want, NCTD should implement improvements to realize growth in demand

NCTD Response – NCTD agreed with the recommendation.

Update – This action is considered complete given the scale and breadth and depth of analysis NCTD has completed on this topic during the last audit cycle. During the audit period, NCTD completed multiple planning studies and surveys to gain better insights on traditional and emerging rider needs and wants (land use and transit integration study, a Breeze speed and reliability study, a Strategic Multimodal Implementation Plan (SMTIP) focused on microtransit, and that used cell phone data and in person surveys. NCTD also turned a planned survey into a focus group for the business community and from member jurisdictions to understand employer priorities for North County. Finally, in response to the COVID 19 epidemic and the unknowns related to how quickly and how fully employees/schools were going to be going to go back to work and school, NCTD developed the scope for a large Market Research and Analysis study that Deloitte won and has recently embarked on. Among others, the study is trying to address the question, what does the new normal look like and what metrics should NCTD use to track its progress. Overall, this ridership understanding recommendation is one that ought to be considered a recurrent need for NCTD and SANDAG to continue to serve the transportation needs of its residents into the future. NCTD and SANDAG are both testing new strategies as pilots (first and last mile solutions, microtransit, free fares for persons less than 18 years), and the success of these strategies needs to be carefully evaluated in the next audit cycle.

Exhibit II.2-2 Recommendation #2 Response

Recommendation 2 - Closely track and document Farebox recovery ratio both with traditional calculation and according to SB 508 provisions.

Recommended Actions – NCTD should track and document the farebox recovery ratio requirement and results very closely over the next several years. The fare increase is expected bring farebox revenue up starting in September 2019. Given other conditions (regional ballot initiatives, coordination with new regional fare structure, new fare collection system implementation) it is a good time to strengthen farebox recovery reporting. Further, recent bus service adjustments focused on high productive routes may have changed the mix of urban and rural services.

NCTD Response – NCTD agreed with the recommendation.

Update – This action is considered complete. Following the prior audit, NCTD did some research and augmented its standard approach for determining the TDA Farebox Recovery Ratio. The methodology involves the following:

- Establishing the allowable exceptions and additions per current law (i.e., PUC 99247(a), 99268.8, PUC 99268.16 and 99268.17)
- Document financial performance across all modes for each line item
- Tabulate local fund supplementation to meet farebox ratio (i.e., sources of local funds that can be used to supplement fare revenues in the nominator – NCTD eight such potential sources)
- Tabulate allowable exclusions and exemptions that apply to the operating cost (i.e., operating expense items like qualified ridesharing expenses, fuel costs in excess of the CPI that would reduce the operating cost in the denominator – NCTD identifies 13 such potential elements)
- Calculate the resulting TDA-Adjusted Operating Cost.
- Calculate the TDA Fare Recovery Ratio and the TDA Fares-Plus-Funds Recovery Ratio.

So in reality NCTD has tabulated three farebox recovery ratio: traditional, TDA farebox recovery ratio, and TDA-plus-funds recovery ratio. The follow-up is really for SANDAG to set up a regular process to update its Board Policy 27 and the TDA Claim Manual so there is full understanding between SANDAG and the operators about and presentation of, the calculations.

SECTION III: MANAGEMENT CONTROL AND REPORTING

NCTD has adopted a strategic framework which identifies strategic areas of focus; business initiatives; and divisional goals. Strategic areas of focus are typically longer term (5-years plus). Business initiatives track progress towards successful implementation of the strategic areas of focus and are typically near-term actions implemented over one to two fiscal years. Divisional goals support the above priorities, as well as have individual division highlights.

III-1 Strategic Priorities

During the first two years of the audit period, NCTD followed the district's key strategic priorities established for the rolling 5-year capital plan and operating budget cycles. These four major priorities are:

- Increase Customer Ridership and Revenue over the 5-Year Plan
- Improve Service Quality
- Minimize Expenses
- Fund State of Good Repair and Priority Capital Needs

Following the sustained impacts of the COVID-19 pandemic, industry trends as reported by the Southern California Association of Governments, and State of California laws and regulations, NCTD has modified its strategic priorities starting from June 1 2021, to include eight priorities up from the previous four:

- Top priority is employee and customer safety from the impacts of COVID-19:
 - Continue enhanced cleaning protocols via a service contract to increase customer and employee confidence by visibly demonstrating enhanced cleaning protocols
- Rediness for re-opening availability of business intelligence to inform decisions
 - Conduct direct mail, online, and onboard surveys to gather feedback from customers, business and other key stakeholders
- Steady recovery of ridership and customer revenue
 - Maintain current bus levels
 - Enhance COASTER weekday and weekend frequencies
 - Implement micro-transit services in San Marcos and expand in Carlsbad
- Optimize expenses
 - Focus on areas where expenses can be reduced
 - Leverage current and future technology investments
 - Prepare for economic downturn
- Maintenance of equipment
 - Continued focus on Zero Delay by implementing business model improvements for BREEZE and SPRINTER similar to recent changes for COASTER
- Improve customer riding experience
 - Implement new fare technology
 - Implement improved real-time information capabilities
- Revenue and real estate development
 - Continue to advance the Oceanside Transit Center Development Project
 - Advance development projects for Solana Beach, Carlsbad, and select SPRINTER stations
- Fund state-of-good-repair and priority capital needs
 - Advance battery and fuel cell zero-emission bus procurements and facility improvements
 - State-of-good-repair bridge and facility projects.

III-2 Performance Reporting

In addition to monitoring performance towards agency goals, NCTD produces several types of performance reports. Major performance reports include:

- Departmental Quarterly Reports
- Contract Oversight Comprehensive Reports
- Monthly Performance Report
- Web-based Performance Monitoring Dashboard
- National Transit Database Report.

Departmental Quarterly Reports

Departments have developed monthly and quarterly performance reports that include data specific to their functions and responsibilities, and summaries of milestones accomplished during that quarter.

Departmental quarterly reports are submitted to the NCTD Board of Directors.

Contract Oversight Comprehensive Reports

Comprehensive reports are prepared by bus contract operations and maintenance staff and rail operations staff using performance metrics and maintenance summaries as reported by contractors.

Monthly Performance Report

Operations contractors provide weekly modal performance reports. For each mode, this report provides a detailed overview of service delivery, service effectiveness, service efficiency, service quality, and safety performance. This performance report summarizes for the System and for each mode separately 12 to 15 performance indicators, from total boardings to on-time performance, to major and other mechanical failures. Weekly performance reports compare performance against contractual performance goals and are summarized monthly for inclusion in the comprehensive monthly report. NCTD also has posted quarter reports but these seem to have been discontinued after the second quarter of FY2019.

Annual Performance Report – Performance Monitoring Dashboard

NCTD overhauled the provision of providing online data and analysis regarding service performance through a business intelligence platform that provides closer to real-time performance data. The performance metric dashboard contains statistical data and charts in regard to service delivery, boardings, revenue, and operating costs. NCTD publishes an annual a presentation-style annual report for Transit Operations that includes a performance dashboard summary for total boardings, customer revenue, on-time performance, operating cost, system farebox recovery, and modal passenger concerns.

National Transit Database

The NTD was established as the nation's primary source for information and statistics for the transit systems of the United States. Recipients or beneficiaries of grants from the FTA under the Urbanized Area Formula Program (§5307) or Other than Urbanized Area (Rural) Formula Program (§5311) are required by statute to submit data to the NTD. Over 660 transit providers in urbanized areas currently report to the NTD through the Internet-based reporting system. As a recipient of both 5307 and 5311 funds, as well as numerous other grants, NCTD provides the appropriate statistical information to NTD.

SECTION IV: PERFORMANCE TRENDS AND FUNCTIONAL REVIEW

IV-1. System-wide Performance

This section of the report provides results of the analysis of TDA and functional performance indicators. The review of TDA performance indicators identifies system-wide trends to assess the overall efficiency and effectiveness of NCTD. Functional area performance trends are also examined by mode (i.e., fixed route bus, commuter rail, paratransit and light rail) to provide additional clarification of performance results.

The TDA performance indicators are as follows:

- Operating Cost per Service Hour: measure of cost efficiency
- Operating Cost per Passenger: measure of cost effectiveness
- Passengers per Service Hour: measure of service productivity
- Passengers per Service Mile: another measure of service productivity
- Vehicle Service Hours per Employee Full-Time Equivalent (FTE): measure of labor productivity.

The metrics tracked in the report were calculated using the data submitted by NCTD to the National Transit Database from Fiscal Year 2019, 2020, and 2021. Since the FY2021 data was not available through the Federal website, NCTD provided FY2021 data to the audit team directly. Additional data from the CAFRs, annual Bus Operations Performance Reports, and the annual Fleet Maintenance Plans was incorporated as needed.

The performance trends cover the period from FY2019 through FY2021, with FY2018 used as a base year to provide a point of reference for the analysis. It should be noted that any differences between the values and metrics reported in the TDA audit report and other publicly available sources, such as the NCTD CAFR, may be attributed to different data sources and data definitions. Rail service metrics reported in the report reflect train car miles/hours as opposed to train consist miles/hours.

It is important to note that at the beginning of FY2019, NCTD implemented FIN-5058 (NCTD Administrative Policy FIN-5058 Allocation of Operating Revenues and Expenses). Prior to FY2019, costs that were shared among different modes were allocated on average revenue miles, revenue hours and/or ridership, which disproportionately allocated most costs to bus services. In the new methodology, costs that can be directly attributed to a mode are 100% allocated to that mode. Cost that are shared among modes are allocated based on level of effort, usage and benefits received. When comparing cost trends between FY2018 and FY2021, there are two methodologies at play – bus services show a lower increase compared to rail services, but that is because bus costs are overstated in FY2018. The new methodology corrects the past issue and provides a new baseline moving forward.

Exhibit IV-1 shows NCTD system-wide TDA performance indicators during the audit period.

Exhibit IV-1: NCTD System-Wide TDA Performance Indicators

Verified TDA Statistics & Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$93,189,180	\$96,712,618	\$100,930,620	\$103,353,521	10.9%
Unlinked Passengers	10,662,534	10,391,615	8,292,809	4,457,759	-58.2%
Vehicle Service Hours	647,756	606,598	571,124	535,938	-17.3%
Vehicle Service Miles	9,370,150	8,957,156	8,320,394	7,626,684	-18.6%
Employee FTEs	809	784	721	712	-12.0%
Operating Cost per Service Hour	\$143.86	\$159.43	\$176.72	\$192.85	34.0%
Operating Cost per Passenger	\$8.74	\$9.31	\$12.17	\$23.19	165.3%
Passengers per Service Hour	16.46	17.13	14.52	8.32	-49.5%
Passengers per Service Mile	1.14	1.16	1.00	0.58	-48.6%
Service Hours per Employee FTE	800	773	792	752	-6.0%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

The main findings from Exhibit IV-1 are as follows:

- System-wide operating costs increased by 10.9% during the audit period, which was 3.2% higher than inflation (CPI). This is primarily driven by a significant increase in COASTER operations costs, which will be discussed in **Section IV-3**.
- Overall ridership decreased by 58.2% from FY2018 to FY2021 for perhaps the first time in NCTD’s history. This fully reflects national transit industry trends. The first year of the audit period can be considered a “normal” year. COVID was formally declared in California in March 2020, with stay at home order and therefore negatively impacting the one third of the fiscal year. The first year of the audit period, FY2021, was a fully COVID year and that is where the ridership drop was felt the most acutely. Finally, while every mode was affected to a great degree, COASTER ridership was affected even worse given the nature of the service.

Agencies across the nation experienced a decrease in riders as cities and counties received directives for people to shelter in place and schools were closed. Additional contributors to the decline are legion and include a healthy economy and low gas prices, offering a personal auto travel option to more families, jobs and housing moving away from easily served central business districts, and immigrants (a high transit amenable population) moved to suburbs in large numbers which are less well served by transit. NCTD lacks many characteristics of areas recovering from ridership loss (e.g., a large vibrant central business district with large numbers of millennials and growing mixed development, and large active senior retired populations). Even so, NCTD is working hard to grow ridership with a variety of options under review to include: increasing capacity on COASTER, recover ridership and bring on new riders, implementing micro-transit solutions in San Marcos and Carlsbad, partnering with developers to build transit-oriented development adjacent to NCTD stations, looking at first and last mile options for rail riders, partnering with cities to achieve air quality and mobility plans, and double tracking Coaster to add service (completed in October 2021).

- NCTD-provided system service hours and miles declined by 17.3% and 18.6% respectively over the audit period, consistent with service cuts taken during FY2020 and FY2021, mostly, in response to the pandemic.

- Operating costs per service hour, a measure of cost efficiency, increased by 34% as a result of the combined service reductions due to COVID-19 and slight growth in operating costs.
- NCTD shows a 12% drop in staffing levels during the audit period, a reduction from 809 FTEs to 712 FTEs.
- Productivity of NCTD services at the systemwide level, measured by passengers per hour and mile, declined by 49.5% and 48.6% respectively, as a result of the disproportionate loss of overall ridership compared to the service levels provided. Again this reflects national transit industry trends due to COVID-19. NCTD is working diligently to recover from the impacts of the pandemic and attract and grow ridership.

Exhibit IV-2 shows system-wide fare revenue indicators during the audit period, using the NTD data sources. The TDA farebox recovery calculation follows in a separate table.

Exhibit IV-2: NCTD System-wide Revenue Performance Indicators

Data Item and Farebox Ratio	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$93,189,180	\$96,712,618	\$100,930,620	\$103,353,521	10.9%
Farebox Revenues	\$15,117,408	\$15,819,330	\$12,842,154	\$5,704,716	-62.3%
Net Cost	\$78,071,772	\$80,893,288	\$88,088,466	\$97,648,805	25.1%
Unlinked Passenger Trips	10,662,534	10,391,615	8,292,809	4,457,759	-58.2%
Farebox Recovery Ratio (No Local Funds)	16.2%	16.4%	12.7%	5.5%	-66.0%
Average Fare per Passenger Trip	\$1.42	\$1.52	\$1.55	\$1.28	-9.7%
Net Cost per Passenger Trip	\$7.32	\$7.78	\$10.62	\$21.91	199.2%
Pure Farebox Recovery, Fixed Route Bus	14.1%	14.9%	11.7%	5.4%	-62.0%
Pure Farebox Recovery, Commuter Rail	32.9%	28.9%	20.4%	4.6%	-86.1%
Pure Farebox Recovery, Light Rail	13.9%	12.6%	10.2%	6.5%	-53.5%
Pure Farebox Recovery, Demand Response	7.4%	6.8%	7.1%	6.4%	-13.2%
Local Support Funds Expended on Operations	\$12,419,835	\$0	\$0	\$0	-100.0%
Farebox Recovery (With Local Funds)	35.1%	39.0%	35.0%	25.8%	-26.5%
TDA Requirement	20.0%	20.0%	20.0%	20.0%	

Source: NTD Reports, B-10 Reports

The main findings from Exhibit IV-2 are as follows:

- Farebox recovery measures the percentage of operating costs paid with passenger fares. The nationally defined system-wide farebox recovery ratio decreased by an alarming 66% during the period, finishing the audit period at 5.5%, down from 16.2% in FY2018. The BREEZE farebox ratio decreased by 62%, ending the audit period at 5.4%. The farebox ratios for COASTER fell by 86.1% closing the audit period at 4.6%. SPRINTER passengers paid 6.5% of the cost of services, reflecting a decline of 53.5% over the audit period. The LIFT farebox ratio dropped to 6.4%.
- The driving factor behind the decline in farebox recovery during the audit period was the global coronavirus pandemic. Resulting mitigation strategies, such as working from home and social distancing, directly impact the core nature of NCTD's service model which is predicated upon

moving large numbers of people in an efficient manner. With many revenue vehicles traveling close to empty, it is no surprise the farebox recovery ratio be impacted as much as it was.

- System-wide farebox revenue dropped from \$15.1 million to 5.7 million, a 62.3% decrease, during the audit period (as compared to a 58.2% decline in ridership).

Under normal circumstances, the TDA mandates a minimum farebox recovery reflecting an intent that passengers pay a small but important share of the cost of transit services. Failure to meet the target risks receipt of some state funding sources. The minimum targets are as follows:

- The minimum for fixed route bus and rail in non-rural areas is set at 20%
- The minimum for fixed route transit services in rural areas is set at 10%
- The minimum for demand response services is set at 10%
- The blended target for NCTD considering rural and urban operating statistics is 18.8%.

But these are not normal circumstances. The State of California has recognized the burdens transit agencies face with revenue collection. Two assembly bills – AB 90 and AB 149, were passed during the audit period, each granting two fiscal years of exemptions for farebox recovery targets. AB 90 grants an exemption for FY2020 and for FY2021. AB 149 grants an exemption for FY2022 and for FY2023.

Even before the pandemic, the State of California required that at least one of two farebox recovery measures meets the minimum target – a “pure” farebox recovery and/or a “safe harbor” farebox recovery (through SB 508). For completeness, both calculations are discussed in this section. The pure measure is simply farebox revenue divided by operating expenses (shown in Table IV-2 above).

The safe harbor measure allows revenue and expense adjustments in making the calculation, which is shown in Table IV-3 for FY 2018 (the lowest fare revenue and local subsidy year). NCTD is consistent with state guidance in making safe harbor adjustments, and readily exceeds the minimum farebox recovery requirement under safe harbor rules (i.e., versus a blended target of 18.8%). The adjustments include:

- Revenue and expense of new service (routes) and service changes greater than 25% of an existing route can be excluded for the year of implementation, plus two years.
- System generated revenue (e.g., advertising, interest, rental and lease income) can be added to fare revenue
- Local subsidies provided for operations can be added to fare revenue (e.g., *TransNet* funds, local cash grants and reimbursements)
- Operating expenses unrelated to current operations may be excluded (e.g., depreciation, prior year pension benefit adjustments, qualified principal and interest payments on capital expenditures, qualified rideshare expenses)
- Certain expense growth over the rate of inflation can be excluded (e.g., fuel, electricity, liability insurance).

Using the safe harbor calculations for this audit cycle is therefore not applicable for TDA compliance. NCTD has established an ongoing process for tabulating safe harbor farebox recovery calculations and should continue for the next audit cycle.

Safe harbor calculations for the mid year in the audit period, FY2020, is shown in Exhibit IV-3 on the following page. NCTD used the same format for calculating FY2019 and FY2021 ratios.

TABLE IV-3: FY2020 TDA FAREBOX RECOVERY CALCULATION

	Total Fare Revenue:	\$ 12,161,637
Local Fund Supplementation to Meet Farebox Ratio		
Auxiliary transportation revenue (406)		\$ 1,320,154
Non-Transportation Revenues (407)		\$ 4,570,933
Local cash grants and reimbursements (409)		\$ 13,327,667
	Total Local Fund Revenue:	\$ 19,218,753
	Total Fares-Plus-Local-Fund Revenue:	\$ 31,380,391
State And Federal Operating Assistance Grants		
State cash grants and special fare assistance (411, 412)		\$ 57,687
Federal cash grants and reimbursements (413)		\$ 33,468,269
	Total State and Federal Grants:	\$ 33,525,956
All Other Operating Revenue:		
Other operating revenue		
Other non-operating revenue		
	Total All Other Operating Revenue:	\$ -
	Total Revenue:	\$ 64,906,346
Operating Costs:		
Operating costs excluding service extensions		\$ 110,610,560
Operating costs of service extensions.		
	Total Operating Cost:	\$ 110,610,560
	Operating Deficit:	\$ 45,704,214
Exclusions And Exemptions (optional if needed to meet farebox recovery standard):		
Qualified depreciation and amortization expense (USOA 513)		\$ 18,245,839
Qualified principal and interest payments on capital projects		\$ 2,068,643
Qualified ridesharing expenses		\$ 385,511
	Total Exclusions and Exemptions:	\$ 20,699,993
TDA-defined Ratios:		
	TDA-Adjusted Operating Cost:	\$ 89,910,567
	TDA Fare Recovery Ratio:	13.53%
	TDA Fares-Plus-Local-Funds Recovery Ratio:	34.90%

Source: NCTD

The rest of this chapter includes the following sections:

- BREEZE Fixed Route Bus
- COASTER Commuter Rail
- SPRINTER Light Rail
- LIFT Paratransit / FLEX demand response

Each section includes an overview of performance against TDA performance indicators, followed by a discussion of performance at the functional level.

IV-2. BREEZE Fixed Route Bus Operations Performance

The provision of BREEZE service stayed fairly constant during the audit period, even once the COVID pandemic took hold in March-April 2020. The only modification of note was changes to school trippers as children and students shifted to virtual instruction.

BREEZE ridership decreased during the audit period by a significant 53.7%, reflecting national trends. NCTD managed costs roughly to the rate of inflation (7.9% growth in cost per hour versus inflation of 7.7%).

The delta is at least in part attributable to the decline in service hours and miles (-5.7% and -2.6%, respectively). NCTD effectively leverages its contracting strategy to gain more for less, reflected in higher productivity (3.9% increase in service hours per employee equivalent).

Exhibit IV-4 shows BREEZE TDA performance indicators during the audit period.

Exhibit IV-4: TDA Performance Indicators for BREEZE Fixed Route Bus Service

Verified TDA Statistics & Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY20
		FY19	FY20	FY21	
Operating Costs	\$46,639,573	\$45,064,333	\$46,643,312	\$47,466,841	1.8%
Unlinked Passengers	6,508,713	6,404,923	5,166,163	3,012,173	-53.7%
Vehicle Service Hours	463,855	440,431	441,692	437,632	-5.7%
Vehicle Service Miles	6,194,287	6,112,267	6,105,026	6,034,327	-2.6%
Employee FTEs	440	433	389	399	-9.2%
Operating Cost per Service Hour	\$100.55	\$102.32	\$105.60	\$108.46	7.9%
Operating Cost per Passenger	\$7.17	\$7.04	\$9.03	\$15.76	119.9%
Passengers per Service Hour	14.03	14.54	11.70	6.88	-50.9%
Passengers per Service Mile	1.05	1.05	0.85	0.50	-52.5%
Service Hours per Employee FTE	1,055	1,017	1,137	1,097	3.9%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-4 are as follows:

- Ridership decreased by 53.7% from 6.5 million rides in FY2018 to 3.0 million rides in FY2021. In addition to the global pandemic, many of the contributors to a national decline in transit ridership exist in north county – robust economy, low fuel prices, distributed employment and population patterns, immigrants moving to harder to serve suburbs, and seniors leaving the state in search of a lower cost of living. NCTD has been combatting the losses with more efficient schedules, modest service reductions and adjustments, and a focus on on-time performance.
- Operating costs increased by 1.8% during the audit period, coupled with service declines, produced cost growth per hour of service of 7.9% versus inflation of 7.7%.
- Staffing levels are about 40 FTEs lower than in FY2018.

Exhibit IV-5 shows BREEZE Bus fare revenue indicators during the audit period.

Exhibit IV-5: BREEZE Bus Revenue Performance Indicators

Data Item	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$46,639,573	\$45,064,333	\$46,643,312	\$47,466,841	1.8%
Farebox Revenues	\$6,597,733	\$6,726,013	\$5,441,790	\$2,551,111	-61.3%
Net Cost	\$40,041,840	\$38,338,320	\$41,201,522	\$44,915,730	12.2%
Unlinked Passenger Trips	6,508,713	6,404,923	5,166,163	3,012,173	-53.7%
Farebox Recovery Ratio	14.1%	14.9%	11.7%	5.4%	-62.0%
Average Fare per Passenger Trip	\$1.01	\$1.05	\$1.05	\$0.85	-16.4%
Net Cost per Passenger Trip	\$6.15	\$5.99	\$7.98	\$14.91	142.4%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports

Main findings from Exhibit IV-5 are as follows:

- BREEZE fare revenue decreased significantly by 61.3% during the audit period (mainly because of the 53.7% ridership decline). Coupled with a cost increase of 12.2%, the pure farebox recovery for this mode fell 62% to 5.4%.
- The average fare per passenger trip hovered went from just over \$1.00 to 85 cents per trip. Fare pricing was increased in May 2021, following ten years without a major fare increase. This fare increase was so late during the audit period that we can assume the fare structure was basically unchanged during the three years.
- Given that operating costs increased, and ridership declined significantly, the net cost per passenger trip increased from \$6.15 to \$14.91 during the audit period, soaring by 142.4%.

Exhibit IV-6 shows BREEZE operational performance indicators during the audit period.

Exhibit IV-6: BREEZE Operational Performance Indicators

Operations Data	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operations FTEs	323	315	282	290	-10.2%
Total Operating Costs	\$46,639,573	\$45,064,333	\$46,643,312	\$47,466,841	1.8%
Vehicle Service Hours (VSH)	463,855	440,431	441,692	437,632	-5.7%
Vehicle Service Miles (VSM)	5,456,012	5,381,148	5,402,578	5,370,922	-1.6%
Total Vehicle Hours	498,161	475,326	476,169	470,942	-5.5%
Total Vehicle Miles	6,194,287	6,112,267	6,105,026	6,034,327	-2.6%
Unlinked Passenger Trips	6,508,713	6,404,923	5,166,163	3,012,173	-53.7%
Passenger Miles	28,003,119	5,166,163	22,231,930	13,062,633	-53.4%
VSH per Operations FTE	1,438	1,396	1,564	1,510	5.0%
VSM per Operations FTE	16,913	17,061	19,131	18,533	9.6%
Service Miles per Service Hour	11.8	12.2	12.2	12.3	4.3%
Service Hours / Total Hours	0.9	0.9	0.9	0.9	-0.2%
Service Miles / Total Miles	0.9	0.9	0.9	0.9	1.0%
Operating Cost per Passenger Trip	\$7.17	\$7.04	\$9.03	\$15.76	119.9%
Operating Cost per Passenger Mile	\$1.67	\$8.72	\$2.10	\$3.63	118.2%
Average Passenger Miles per Passenger Trip	4.30	0.81	4.30	4.34	0.8%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-6 are as follows:

- Staff counts shown for BREEZE Operations include both agency and contracted staff. Total reported staff declined by 10.2% during the audit period, based on NTD and Form C Reports.
- Service hours and service miles decreased by 5.7% and 1.6%, respectively, during the audit period.
- NCTD's fixed route bus operations costs increased by 1.8% from \$46.6 million in FY2018 to \$47.5 million in FY2021, versus inflation of 7.7%.

- Operations costs per passenger trip and per passenger mile greatly increased by 119.9% and 118.2% respectively.
- The speed of service operations slightly increased from 11.8 miles per hour to 12.3 miles per hour, a 4.3% increase, reflecting emptier-than-normal roadways.

Exhibit IV-7 shows BREEZE Bus maintenance indicators during the audit period.

Exhibit IV-7: NCTD BREEZE Maintenance Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Maintenance FTEs	61.9	68.5	57.0	62.6	1.1%
Maintenance Costs	\$10,152,870	\$10,219,748	\$10,487,804	\$11,368,902	12.0%
Total Vehicle Hours	498,161	475,326	476,169	470,942	-5.5%
Total Vehicle Miles	6,194,287	6,112,267	6,105,026	6,034,327	-2.6%
Peak Vehicles	146	138	140	135	-7.5%
Total Vehicles	166	151	160	152	-8.4%
Revenue Vehicle Failures	526	556	736	497	-5.5%
Vehicle Hours per Maintenance FTE	8,048	6,939	8,354	7,523	-6.5%
Vehicle Miles per Maintenance FTE	100,069	89,230	107,106	96,395	-3.7%
Maintenance Cost per Active Vehicle	\$61,162	\$67,680	\$65,549	\$74,795	22.3%
Maintenance Cost per Vehicle Hour	\$20.38	\$21.50	\$22.03	\$24.14	18.4%
Maintenance Cost per Vehicle Mile	\$1.64	\$1.67	\$1.72	\$1.88	14.9%
Vehicle Hours per Active Vehicle	3,001	3,148	2,976	3,098	3.2%
Vehicle Miles per Active Vehicle	37,315	40,479	38,156	39,700	6.4%
Total Miles Between Failures	11,776	10,993	8,295	12,142	3.1%
Spare Ratio	13.7%	9.4%	14.3%	12.6%	-8.1%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD reports, NCTD data

Main findings from Exhibit IV-7 are as follows:

- Whilst modernizing it, NCTD has allowed its total fleet to tighten in relation to service plans and the pandemic, with peak vehicles reducing to 135 from 146 and total vehicles reducing to 152 from 166. Since 2018, NCTD has replaced the majority of its fleet – almost 100 New Flyer buses to replace ageing vehicles. The intent is to bring the average age of buses from 11 years to 4 years. Of the 152-vehicle fleet, 143 of them are compressed natural gas (CNG) vehicles. Gradually the mix of vehicles will include more and more Zero-Emission bus technology until the entire fleet turns over.
- Maintenance costs increased by 12%, while inflation increased by 7.7% during the audit period. NCTD saw an increase in mechanics during the audit period, which they were able to do by eliminating some supervisory positions. As an example, NCTD dropped two supervisor positions and added three mechanic positions. Most of the cost increases for maintenance were on the contractor side, and parts costs have increased. NCTD's contractor requested an increase in the parts budget, and experienced overtime during this period given some undertaffing conditions.
- Maintenance costs per active vehicle rose by 22.3%. Similarly, maintenance cost per vehicle hour and mile increased by 18.4% and 14.9% respectively.

- NCTD has decreased its spare ratio from 13.7% in FY18 to 12.6% in FY21, which is a reduction of 8.1%, largely attributable to service decreases. NCTD has entered a contract to replace 26 buses (6 buses of the 26-bus order will be electric buses). These first 6 electric vehicles are the bridge to a future where NCTD envisions a fully electric bus fleet consistent with California Air Resources Board mandates. NCTD states an intent to increase the spare ratio once new vehicles have settled into operations to bring them in line with FTA's 20% guideline. FTA recommends operators carry spares at no more than the 20% peak vehicle requirement.
- Actual revenue vehicle failures showed an overall decrease despite a worse-than-average year in FY2020 that had 736 vehicle failures. Even accounting for that year, the audit trend for vehicles miles between failures is positive with NCTD realizing 12,142 BREEZE miles between failures for FY2021. With NCTD's focus on investing in state-of-good repair and lowering the age of its bus fleet, this trend is expected to continue.

NCTD's BREEZE administration further reduced staffing levels and increased productivity during the audit period. Exhibit IV-8 illustrates some of the key administrative data and metrics.

Exhibit IV-8: BREEZE Bus Administration Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Administration FTEs	55.0	49.0	49.1	46.5	-15.5%
Administration Costs	\$10,603,702	\$9,654,041	\$10,669,763	\$11,474,311	8.2%
Vehicle Service Hours (VSH)	463,855	440,431	441,692	437,632	-5.7%
Vehicle Service Miles (VSM)	5,456,012	5,381,148	5,402,578	5,370,922	-1.6%
Unlinked Passenger Trips	6,508,713	6,404,923	5,166,163	3,012,173	-53.7%
VSH per Administration FTE	8,434	8,988	8,996	9,411	11.6%
VSM per Administration FTE	99,200	109,819	110,032	115,504	16.4%
Complaints per 100,000 Boardings	17.72	18.60	6.88	15.37	-13.3%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports, Quarterly Performance Reports

Main findings from Exhibit IV-8 are as follows:

- The frequency of customer complaints decreased during the audit period, by 13.3% (from 17.72 complaints per 100,000 boarding's to 15.37). The decrease in part is due to reduced ridership during the audit period; fewer riders means fewer potential complains. The complaints would include patron reactions to the new safety protocols, such as installation of operator barriers and other procedural modifications. NCTD also worked to reduced the average age of the fleet, which may in part explain the reductions in complaints per 100,000 boardings.

IV-3. COASTER Commuter Rail

The provision of COASTER service was reduced by 43.1% during the audit period, and ridership fell significantly (88.6%). Although the changes started to manifest themselves in FY2020, the biggest drop was between FY2020 and FY2021. This dramatic loss in ridership shows that the COASTER is truly a commuter service – the pandemic and the work-from-home environment removed COASTER's main ridership base. Very similar patterns were experienced by other commuter railroads elsewhere, such as Caltrain in the Bay Area, Metrolink in the great Los Angeles area, and METRA in Chicago.

About 76% of the COASTER track is double-tracked, allowing traffic to move uninhibited in both directions. Additional double tracking is being implemented by SANDAG, which will allow for service expansion over time. NCTD also leases the track to other train operators. The “typical” daily services on the commuter rail tracks during the audit period were: COASTER providing 22 trains, Metrolink 16 trains, Amtrak 20 trains, and 6 freight trains. Freight railroads have track access, but operate most frequently between 1 AM – 4 AM.

During the audit period, NCTD ran a COVID-reduced schedule, but brought the service back to the 22 trains in May 2021. The COVID service reductions included: no weekend service, and 12 daily trips during the week instead of the normal 22. Further, NCTD planned a major service expansion during the audit period, moving towards a “clock-face” schedule and increasing service from 22 to 30 trains per day (weekend trips were expected to increase from 8 to 20). This beefed up service went live in October 2021, just outside the window of this audit.

NCTD worked consistently internally and with partner agencies like SANDAG to continue to apply for and receive grant funding for double tracking and other major improvements, such as the Del Mar Bluffs effort. Each year of the audit period NCTD applied for and received state funding for the multi-phase Del Mar Bluffs stabilization program: \$6 million in FY2019, 11.5 million in FY2020, and \$36.2 million in FY2021.

Most recently, NCTD received \$250 million to move three key projects forward: the San Diego Convention Center extension and station, the Del Mar Fairgrounds special event station, and the Del Mar Bluffs track relocation project.

NCTD has also invested heavily in state-of-good-repair projects for its COASTER fleet, especially new locomotives. In June 2018, the NCTD Board approved the purchase of five new Siemens Charger Tier-4 locomotives to replace older, more polluting locomotives that had reached the end of their useful lives. It is estimated that the new locomotives – which were deployed into revenue service during FY2021 – reduce emissions by almost 90 percent.

Exhibit IV-9 provides TDA performance indicators for COASTER Commuter Rail.

Exhibit IV-9: COASTER TDA Performance Indicators

Verified TDA Statistics & Performance Indicators	Base Year FY18	Audit Review Period			% Change FY 18 – FY21
		FY19	FY20	FY21	
Operating Costs	\$16,592,479	\$19,643,067	\$21,274,486	\$23,843,716	43.7%
Unlinked Passengers	1,433,125	1,408,677	944,109	162,707	-88.6%
Vehicle Service Hours	34,747	40,454	37,458	24,931	-28.2%
Vehicle Service Miles	1,376,953	1,289,001	1,186,577	782,995	-43.1%
Employee FTEs	143	141	144	139	-3.1%
Operating Cost per Service Hour	\$477.52	\$485.57	\$567.96	\$956.39	100.3%
Operating Cost per Passenger	\$11.58	\$13.94	\$22.53	\$146.54	1165.7%
Passengers per Service Hour	41.24	34.82	25.20	6.53	-84.2%
Passengers per Service Mile	1.04	1.09	0.80	0.21	-80.0%
Service Hours per Employee FTE	243	287	260	180	-26.0%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-9 are as follows:

- The COASTER operating costs trend needs to be considered in light of NCTD’s change in cost allocation methodology using FIN-5058 and implemented starting FY2019. In the base year

FY2018, bus operating costs were overstated and rail operating costs were understated. With this methodology now in place, the operating costs stated represent a new baseline.

- COASTER experienced the largest shifts in TDA performance indicators as compared with all other NCTD modes. This is due in part to the flexibility of COASTER customers to work remotely during the pandemic and even as the pandemic started to subside. Another key reason to explain the performance data is the following. First, there are fixed costs independent of service levels. NCTD has both regulatory (e.g. Federal Railroad Administration, Public Utilities Commission) and contractual obligations vis a vis its contractors. Secondly, it is not recommended to lay off specialty workers that will be hard to replace later, and there are broader public policy considerations as well.
- COASTER operating costs dramatically increased by 43.7% during the audit period, compared to an increase in inflation of 7.7%. Contributing factors to COASTER's operating come from all sides and include operation, maintenance, and administration. The biggest change over the audit period concerns the Rail Operations division (+20 FTEs) which includes 15 dispatchers and other functions. It also represents the beginning of NCTD's plan to insource the rail operation. NCTD also retired 3.75 FTEs through vacancies for positions that were no longer needed.
- As previously mentioned, COASTER ridership decreased by a total of 88.6%. Ridership appears to decrease gradually from FY2018 through FY2020; however, FY2021 sees a dramatic decrease in ridership because this is the first full year of the COVID-19 pandemic. As a result of decreased ridership, service productivity indicators like passengers per service hour and mile decreased by 84% and 80% respectively.
- The amount of employees also decreased by about 3.1%. Service hours delivered by NCTD employees, a measure of labor productivity, also decreased significantly by about 26%.

Fare revenue indicators for COASTER Commuter Rail increased over the audit period. This is shown in Exhibit IV-10.

Exhibit IV-10: COASTER Revenue Performance Indicators

Date Item and Farebox Ratio	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$16,592,479	\$19,643,067	\$21,274,486	\$23,843,716	43.7%
Farebox Revenues	\$5,453,047	\$5,674,370	\$4,333,924	\$1,085,678	-80.1%
Net Cost	\$11,139,432	\$13,968,697	\$16,940,562	\$22,758,038	104.3%
Unlinked Passenger Trips	1,433,125	1,408,677	944,109	162,707	-88.6%
Farebox Recovery Ratio	32.9%	28.9%	20.4%	4.6%	-86.1%
Average Fare per Passenger Trip	\$3.81	\$4.03	\$4.59	\$6.67	75.4%
Net Cost per Passenger Trip	\$7.77	\$9.92	\$17.94	\$139.87	1699.5%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports

Main findings from Exhibit IV-10 are as follows:

- Farebox revenues fluctuated over the audit period, even growing from FY2018 to FY2019, however they dropped precipitously in FY2020 and during FY2021 due to the pandemic. Farebox revenue decreased significantly by 80.1% during the audit period, while operating costs increased by 43.7%. This trend caused the (pure) farebox recovery ratio to decrease by 86%. Similarly to the overall farebox revenue, the recovery ratio for COASTER fluctuated over the audit period and significantly decreased from 20.4% in FY2020 to 4.6% in FY2021.
- The average fare per passenger trip increased by 75.4% during the audit period, while the net cost per passenger trip increased by 1,699.5%, from \$7.77 to \$139.87 per passenger trip. Average fare per passenger trip began to gradually increase from FY2018 to FY2020, however FY2021 saw a sizable increase in average fare per passenger trip due to lower ridership and higher operating costs during the fiscal year.

Exhibit VI-11 provides COASTER Commuter Rail operations performance indicators.

Exhibit IV-11: COASTER Commuter Rail Operations Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operations FTEs	70.0	66.5	63.0	59.5	-15.0%
Total Operations Costs	\$5,648,018	\$6,767,001	\$6,424,179	\$7,814,650	38.4%
Car Service Hours (CSH)	34,747	40,454	37,458	24,931	-28.2%
Car Service Miles (CSM)	1,376,953	1,289,001	1,186,577	782,995	-43.1%
Total Car Hours	40,124	45,426	42,212	28,428	-29.1%
Total Car Miles	1,459,636	1,365,523	1,254,334	835,285	-42.8%
Unlinked Passenger Trips	1,433,125	1,408,677	944,109	162,707	-88.6%
Passenger Miles	37,902,707	944,109	24,963,395	4,302,564	-88.6%
CSH per Operations FTE	496	608	595	419	-15.6%
CSM per Operations FTE	19,671	19,371	18,835	13,160	-33.1%
Service Miles per Service Hour	39.6	31.9	31.7	31.4	-20.7%
Service Hours / Total Hours	86.6%	89.1%	88.7%	87.7%	1.3%
Service Miles / Total Miles	94.3%	94.4%	94.6%	93.7%	-0.6%
Operations Cost per Passenger Trip	\$3.94	\$4.80	\$6.80	\$48.03	1118.7%
Operations Cost per Passenger Mile	\$0.15	\$7.17	\$0.26	\$1.82	1118.9%
Average Passenger Miles per Passenger Trip	26.4	0.7	26.4	26.4	0.0%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-11 are as follows:

- Staffing levels experienced a gradual decline over the audit period. Overall, staffing levels decreased by approximately 15%.
- Total operating costs for COASTER increased significantly by 38.4% during the audit period, with significant reductions in service hours and miles by 28.2% and 43.1%, respectively.
- While ridership fluctuated over the audit period, it saw an overall decrease of 88.6% due to the pandemic. Due to less people riding COASTER, operational costs per passenger trip and mile by approximately 1,118.7% and 1,118.9% respectively.

Exhibit IV-12 shows the COASTER Commuter Rail maintenance performance indicators.

Exhibit IV-12: NCTD COASTER Maintenance Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Maintenance FTEs	45.0	49.3	54.1	58.1	29.1%
Maintenance Costs	\$7,199,967	\$7,609,968	\$8,210,841	\$9,293,167	29.1%
Total Car Hours	40,124	45,426	42,212	28,428	-29.1%
Total Car Miles	1,459,636	1,365,523	1,254,334	835,285	-42.8%
Peak Vehicles	24	24	24	24	0.0%
Total Vehicles	35	35	35	30	-14.3%
Revenue Vehicle Failures	39	39	8	4	-89.7%
Car Hours per Maintenance FTE	892	921	780	489	-45.1%
Car Miles per Maintenance FTE	32,436	27,680	23,193	14,374	-55.7%
Maintenance Cost per Active Car	\$205,713	\$217,428	\$234,595	\$309,772	50.6%
Maintenance Cost per Car Hour	\$179.44	\$167.52	\$194.51	\$326.90	82.2%
Maintenance Cost per Car Mile	\$4.93	\$5.57	\$6.55	\$11.13	125.6%
Car Hours per Active Car	1,146	1,298	1,206	948	-17.3%
Car Miles per Active Car	41,704	39,015	35,838	27,843	-33.2%
Car Miles Between Failures	37,427	35,013	156,792	208,821	457.9%
Spare Ratio	45.8%	45.8%	45.8%	25.0%	-45.5%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-12 are as follows:

- COASTER maintenance costs were up 29.1% over the audit period. There was a period towards the end of the audit period where NCTD was running less service, but providing the same amount of maintenance (COASTER maintenance intervals are time-based, not mileage-based).
- The number of COASTER vehicle failures decreased from 39 in FY18 to 4 in FY21. Within the audit period, NCTD added new vehicles into their fleet mix that could contribute to the lower rate of vehicle failures as well as the significant increase in rail car miles between failures (457.9%).
- Cost of maintenance per car hour and mile increased by 82.2% and 125.6%, respectively. The main reason is the continuation of maintenance costs at basically the same levels at a time when less service was out for riders during the pandemic (reduction from 22 daily trips to 12 daily trips). Costs were gradually increasing from FY2018 through FY2020 until a large cost spike in FY2021, which also corresponds to the first full year with COVID.

- Reduction of revenue vehicle failures could be attributed in part, but not exclusively, to decreased in total car hours and miles. Total car hours decreased by approximately 29.1%, while total car miles decreased by approximately 42.8%. Since the revenue vehicle failures are down almost 90%, pointing to sound maintenance management on the part of NCTD and contractor personnel.
- The spare ratio appears stable around 45-46% from FY2018 through FY2020, however FY2021 sees a significant decrease in spare ratio by about 45.5%, to 25%. This is likely due to retirement of older vehicles and gets NCTD closer to the 20% ratio recommended by the FTA.

Exhibit IV-13 shows several key COASTER administrative indicators.

Exhibit IV-13: NCTD COASTER Administration Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Administration FTEs	28.0	24.9	26.8	21.0	-25.0%
Administration Costs	\$3,763,870	\$5,266,098	\$6,639,466	\$6,735,899	79.0%
Car Service Hours (CSH)	34,747	40,454	37,458	24,931	-28.2%
Car Service Miles (CSM)	1,376,953	1,289,001	1,186,577	782,995	-43.1%
Unlinked Passenger Trips	1,433,125	1,408,677	944,109	162,707	-88.6%
CSH per Administration FTE	1,241	1,625	1,398	1,187	-4.3%
CSM per Administration FTE	49,177	51,767	44,275	37,285	-24.2%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

From FY2018 to FY2021, COASTER administrative staffing levels decreased by 25% from 28 to 21 FTEs. Although the amount of staff decreased, the administration costs increased by approximately 79%. Some of these fluctuations can be explained by initial activities NCTD is pursuing to insource the rail operations function. This initiative is well in the planning stages and will take several years to be fully implemented.

Car service hours per FTE and car service miles per FTE both decreased over the audit period.

IV-3.2. SPRINTER Hybrid Rail Services

SPRINTER hybrid rail serves the east-west Highway 78 corridor with 22 miles of rail and 15 stations, serving Oceanside, Vista, Unincorporated County of San Diego, San Marcos and Escondido. Stations are particularly well used around colleges and universities (e.g., Palomar College, Cal State San Marcos). The SPRINTER operates via a temporal separation waiver from the Federal Railroad Administration (FRA). Freight trains operate after SPRINTER service is over and all SPRINTERS are off of the railroad.

SPRINTER operates 18 hours per weekday with Friday and Saturday service extended to approximately 20 hours. Service levels were not reduced during the pandemic.

SPRINTER is listed as “light rail” under the NTD reporting but is corrected and clarified here as being “hybrid rail” instead. SPRINTER propulsion is performed by twelve Diesel Multiple Unit (DMU) units, thus not requiring the typical overhead line category visible with other light rail systems.

Exhibit IV-14 provides SPRINTER Hybrid Rail performance indicators.

Exhibit IV-14: SPRINTER Hybrid Rail TDA Performance Indicators

Verified TDA Statistics & Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$19,770,818	\$21,525,239	\$23,490,608	\$22,409,302	13.3%
Unlinked Passengers	2,532,731	2,408,962	2,066,091	1,225,435	-51.6%
Vehicle Service Hours	32,515	31,689	29,725	35,804	10.1%
Vehicle Service Miles	710,980	693,043	653,158	787,877	10.8%
Employee FTEs	105	111	108	104	-0.7%
Operating Cost per Service Hour	\$608.05	\$679.27	\$790.26	\$625.89	2.9%
Operating Cost per Passenger	\$7.81	\$8.94	\$11.37	\$18.29	134.3%
Passengers per Service Hour	77.89	76.02	69.51	34.23	-56.1%
Passengers per Service Mile	3.56	3.48	3.16	1.56	-56.3%
Service Hours per Employee FTE	310	285	276	343	10.9%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-14 are as follows:

- From FY2018 through FY2021, operating costs increased by 13.3%, whereas the CPI over the same period increased by 7.7%. Notably, there was a slight savings from FY2020 to FY2021 as NCTD began to run “singles” (operating just one DMU vehicle as opposed to two in tandem) during the worst of the pandemic.
- Operating cost per service hour, a key measure of service efficiency, held steady at 2.9% increase over the audit period. This is commendable for SPRINTER and below the 7.7% CPI increase.
- Even though vehicle service hours and miles increased, ridership fell significantly by 51.6%. This is very similar to the BREEZE declines. Most of the decline was experienced during FY2021 when the pandemic ran its course. The drop in ridership also directly resulted in a 134% increase in the operating cost per passenger (service effectiveness).
- Employee FTEs were basically flat over the audit period. However service hours per employee FTE a measure of labor productivity increased by approximately 10.9%.
- NCTD actually increased SPRINTER vehicle service hours and miles during the audit period by approximately 10% even though ridership decreased. Service productivity measures were both heavily affected. Passengers per service hour and passengers per service mile were both down by over 56%.

As expected, fare revenue indicators for SPRINTER Hybrid Rail services decreased over the audit period. This is shown in Exhibit IV-15.

Exhibit IV-15: SPRINTER Hybrid Rail Revenue Performance Indicators

Data Item and Farebox Ratio	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$19,770,818	\$21,525,239	\$23,490,608	\$22,409,302	13.3%
Farebox Revenues	\$2,750,014	\$2,702,065	\$2,385,873	\$1,448,226	-47.3%
Net Cost	\$17,020,804	\$18,823,174	\$21,104,735	\$20,961,076	23.1%
Unlinked Passenger Trips	2,532,731	2,408,962	2,066,091	1,225,435	-51.6%
Farebox Recovery Ratio	13.9%	12.6%	10.2%	6.5%	-53.5%
Average Fare per Passenger Trip	\$1.09	\$1.12	\$1.15	\$1.18	8.8%
Net Cost per Passenger Trip	\$6.72	\$7.81	\$10.21	\$17.11	154.5%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports

Main findings from Exhibit IV-15 are as follows:

- Farebox revenue decreased by 47.3% during the audit period, which was actually less of a drop than the 51.6% drop in ridership.
- SPRINTER operating costs increased by 13.3%. This caused the pure farebox recovery ratio to drop by 53.5%, with passengers paying approximately \$1.18 per passenger trip in FY2021, which is an 8.8% increase during the audit period.
- Due to lower ridership and increased operating costs, the net cost per passenger trip went from \$6.72 per trip to \$17.11 per trip, an increase of over 150%.

Operations costs for SPRINTER services were kept down during the audit period to a 2.4% increase, while inflation increased by 7.7%. This is shown in Exhibit IV-16.

Exhibit IV-16: SPRINTER Operations Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operations FTEs	49.0	48.4	42.9	41.7	-15.0%
Total Operations Costs	\$6,217,693	\$7,356,897	\$6,654,700	\$6,364,214	2.4%
Car Service Hours (CSH)	32,515	31,689	29,725	35,804	10.1%
Car Service Miles (CSM)	710,980	693,043	653,158	787,877	10.8%
Total Car Hours	32,658	31,864	29,899	35,975	10.2%
Total Car Miles	717,931	696,342	656,885	791,367	10.2%
Unlinked Passenger Trips	2,532,731	2,408,962	2,066,091	1,225,435	-51.6%
Passenger Miles	21,730,491	20,676,718	15,992,023	8,938,930	-58.9%
CSH per Operations FTE	664	654	693	859	29.5%
CSM per Operations FTE	14,510	14,306	15,229	18,909	30.3%
Service Miles per Service Hour	21.9	21.9	22.0	22.0	0.6%
Service Hours / Total Hours	99.6%	99.5%	99.4%	99.5%	0.0%
Service Miles / Total Miles	99.0%	99.5%	99.4%	99.6%	0.5%
Operations Cost per Passenger Trip	\$2.45	\$3.05	\$3.22	\$5.19	111.6%
Operations Cost per Passenger Mile	\$0.29	\$0.36	\$0.42	\$0.71	148.8%
Average Passenger Miles per Passenger Trip	8.6	8.6	7.7	7.3	-15.0%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-16 are as follows:

- SPRINTER Operations staffing levels gradually decreased from 49 in FY18 to 41.7 in FY2021, a 15% decrease.
- SPRINTER service hours and miles increased by a roughly 10% (10.1% and 10.8%, respectively). The jump was mainly seen from FY2020 to FY2021 after several years of slight decreases.
- As identified earlier, passenger trips decreased 51.6% from FY2018 levels. With a decrease in passengers and a stable service miles per service hour rate, Operation costs per passenger trip increased by 111.6% and Operations cost per passenger mile increased by 148.8%.

SPRINTER Maintenance FTEs and maintenance costs increased over the audit period (14% and 10.2%, respectively), a little higher than inflation, as shown in Exhibit IV-17.

Exhibit IV-17: SPRINTER Maintenance Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Maintenance FTEs	31.0	48.4	33.3	35.3	14.0%
Maintenance Costs	\$8,829,540	\$8,809,858	\$10,447,300	\$9,732,183	10.2%
Total Car Hours	32,658	31,864	29,899	35,975	10.2%
Total Car Miles	717,931	696,342	656,885	791,367	10.2%
Peak Cars	8	8	8	8	0.0%
Total Cars	12	12	12	12	0.0%
Revenue Vehicle Failures	202	228	47	29	-85.6%
Car Hours per Maintenance FTE	1,053	658	897	1,018	-3.4%
Car Miles per Maintenance FTE	23,159	14,374	19,707	22,397	-3.3%
Maintenance Cost per Active Car	\$735,795	\$734,155	\$870,608	\$811,015	10.2%
Maintenance Cost per Car Hour	\$270.36	\$276.48	\$349.42	\$270.53	0.1%
Maintenance Cost per Car Mile	\$12.30	\$12.65	\$15.90	\$12.30	0.0%
Car Hours per Active Car	2,722	2,655	2,492	2,998	10.2%
Car Miles per Active Car	59,828	58,029	54,740	65,947	10.2%
Car Miles Between Failures	3,554	3,054	13,976	27,289	667.8%
Spare Ratio	50.0%	50.0%	50.0%	50.0%	0.0%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-17 are as follows:

- The audit period drop in SPRINTER rail car failures is recorded at 85.6%. They were drastically down in FY2020 and FY2021 compared to FY2018 and FY2019. As a result, car miles between failures is at a four year high (27,289 miles). Staff attribute most of these safety gains to recent comprehensive mid-life overhaul efforts on the vehicles. This program is ongoing.
- Overall maintenance costs per car hour and mile were flat in FY2021, essentially the same as in FY2018. Maintenance costs per car were up and this is attributed to parts costs.
- Vehicle utilization improved, with an increase of 10.2% in service miles and hours. The spare ratio has stood constant at 50% for this unique fleet. The high degree of spares is considered necessary to account for poor access to parts for repair.

NCTD slightly increased administrative staffing for SPRINTER during the audit period from 25 to 27 (a 9.2% increase), however a decrease of about 4 people occurred between FY2020 and FY2021. Nevertheless, total administrative costs for SPRINTER increased 33.6% during the audit period as shown in Exhibit IV-18.

Exhibit IV-18: SPRINTER Administration Performance Indicators

Base Data and Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Administration FTEs	25.0	28.1	31.5	27.3	9.2%
Administration Costs	\$4,723,585	\$5,358,484	\$6,388,608	\$6,312,905	33.6%
Car Service Hours (CSH)	32,515	31,689	29,725	35,804	10.1%
Car Service Miles (CSM)	710,980	693,043	653,158	787,877	10.8%
Unlinked Passenger Trips	2,532,731	2,408,962	2,066,091	1,225,435	-51.6%
CSH per Administration FTE	1,301	1,128	944	1,312	0.8%
CSM per Administration FTE	28,439	24,663	20,735	28,860	1.5%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

IV-3.3. LIFT Paratransit and FLEX Demand Response Services

This section summarizes performance for the LIFT paratransit and FLEX demand response service. Ridership declined by 69.4% over the audit period, mainly due to the COVID-19 pandemic. This is the second highest modal percentage drop for NCTD, following the COASTER – both SPRINTER and BREEZE experienced drops just over 50%. Total ridership for LIFT/FLEX in FY2021 was about one third the ridership for FY2018.

One of NCTD's biggest challenges for both LIFT/FLEX but also with BREEZE is operator (driver) recruiting and retention. During this audit period NCTD retrained the paratransit operators to be able to drive BREEZE buses and gained some flexibility in operating both services with a skeletal operator crew.

Operating costs per service hour and operating cost per passenger are measures of cost efficiency and cost effectiveness, respectively. Because ridership fell so much (69.4%), cost efficiency and cost effectiveness worsened 193.6% and 209.5%, respectively, compared to FY2018 levels.

Exhibit IV-19 provides LIFT paratransit / FLEX demand response TDA performance indicators.

Exhibit IV-19: LIFT Paratransit/ FLEX Demand Response TDA Performance Indicators

Verified TDA Statistics & Performance Indicators	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$10,186,310	\$10,479,979	\$9,522,214	\$9,633,662	-5.4%
Unlinked Passengers	187,965	169,053	116,446	57,444	-69.4%
Vehicle Service Hours	116,639	94,024	62,249	37,571	-67.8%
Vehicle Service Miles	1,826,205	1,593,964	1,078,081	684,890	-62.5%
Employee FTEs	122	99	81	70	-42.2%
Operating Cost per Service Hour	\$87.33	\$111.46	\$152.97	\$256.41	193.6%
Operating Cost per Passenger	\$54.19	\$61.99	\$81.77	\$167.71	209.5%
Passengers per Service Hour	1.61	1.80	1.87	1.53	-5.1%
Passengers per Service Mile	0.10	0.11	0.11	0.08	-18.5%
Service Hours per Employee FTE	957	945	771	533	-44.3%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-19 are as follows:

- Operating costs for LIFT/FLEX were down 5.4% compared to FY2018 levels. However, this needs to be contrasted by the far reduced service output during the period – 67.8% fewer vehicle service hours and 62.5% vehicle service miles.
- Service productivity measured by passengers per service hour and passenger per service mile decreased 5.1% and 18.5%, respectively.
- Over the audit period, employees decreased from 122 to 70 people (42.2% decrease). This is mainly attributed to the decrease in service output that would lead to less demand for staff. Staff also experienced a 44.3% decrease in service hours per employee.

Exhibit IV-20 provides LIFT paratransit / FLEX demand response revenue performance indicators.

Exhibit IV-20: LIFT Paratransit / FLEX Demand Response Revenue Performance Indicators

Data Item and Farebox Ratio	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Operating Costs	\$10,186,310	\$10,479,979	\$9,522,214	\$9,633,662	-5.4%
Farebox Revenues	\$754,843	\$716,882	\$680,567	\$619,701	-17.9%
Net Cost	\$9,431,467	\$9,763,097	\$8,841,647	\$9,013,961	-4.4%
Unlinked Passenger Trips	187,965	169,053	116,446	57,444	-69.4%
Farebox Recovery Ratio	7.4%	6.8%	7.1%	6.4%	-13.2%
Average Fare per Passenger Trip	\$4.02	\$4.24	\$5.84	\$10.79	168.6%
Net Cost per Passenger Trip	\$50.18	\$57.75	\$75.93	\$156.92	212.7%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports

Main findings from Exhibit IV-20 are as follows:

- Farebox revenues declined by 17.9%, driven in part by the steep ridership declines. As part of NCTD’s overall fare increases starting FY2020 the paratransit base fare went up from \$3.50 to \$5.00 and NCTD began charging demand response youths \$2.50 per trip. These changes presumably improved farebox recovery to some degree.

- Although operating costs decreased by 5.4%, the average fare per passenger trip and net cost per passenger trip increased significantly by 168% and 212.7%.
- The net cost per passenger trip tripled from \$50.18 in FY2018 to \$156.92 in FY2021, representing an increase of over 200%. At these levels, it is encumbent upon NCTD to contain further cost escalation.

Exhibit IV-21 provides LIFT paratransit / FLEX demand response operations performance indicators.

Exhibit IV-21: LIFT Paratransit / FLEX Demand Response Operations Performance Indicators

Operations Data	Base Year FY18	Audit Review Period			% Change FY18-FY21
		FY19	FY20	FY21	
Employee FTEs	121.9	99.5	80.7	70.5	-42.2%
Operating Costs	\$10,186,310	\$10,479,979	\$9,522,214	\$9,633,662	-5.4%
Vehicle Service Hours (VSH)	116,639	94,024	62,249	37,571	-67.8%
Vehicle Service Miles (VSM)	1,826,205	1,593,964	1,078,081	684,890	-62.5%
Total Vehicle Hours	139,060	116,606	77,012	46,648	-66.5%
Total Vehicle Miles	2,173,230	1,890,295	1,263,060	826,806	-62.0%
Unlinked Passenger Trips	187,965	169,053	116,446	57,444	-69.4%
Passenger Miles	2,111,383	116,446	1,889,141	774,261	-63.3%
Total Vehicles	55	53	54	43	-21.8%
Operating Cost per Service Hour	\$87.33	\$111.46	\$152.97	\$256.41	193.6%
Operating Cost per Passenger Trip	\$54.19	\$61.99	\$81.77	\$167.71	209.5%
Passengers per Service Hour	1.61	1.80	1.87	1.53	-5.1%
Passengers per Service Mile	0.10	0.11	0.11	0.08	-18.5%
Vehicle Hours per Employee FTE	1,141	1,172	954	662	-42.0%
Vehicle Miles per Active Vehicle	39,513	35,666	23,390	19,228	-51.3%
Passenger Miles per Passenger Trip	11.2	0.7	16.2	13.48	20.0%
% Change in Consumer Price Index (CPI-All)		3.2%	1.7%	2.6%	7.7%

Source: NTD Reports, B-10 Reports

Main findings from Exhibit IV-21 are as follows:

- Staffing numbers declined by 42.2% between FY2018 and FY2021. There are multiple reasons for this, during the second half of the audit period NCTD reduced staffing to keep it proportional to the service, but other reductions likely arose as a result of the online reservation system that was
- LIFT/FLEX operating costs fluctuated over the audit period. While it appears that operating costs have declined overall, they increase between FY2020 and FY2021 when ridership experienced a decrease.
- Cost efficiency and cost effectiveness measures did extremely poorly given the large ridership drops. Operating service costs per service hour and passenger trip increased by 193.6% and 209.5%.

SECTION V: CONCLUSIONS AND RECOMMENDATIONS

NCTD is in compliance with all but one PUC requirement and has made satisfactory progress to implement prior audit recommendations:

- Compliance with PUC Requirements: NCTD is in compliance with applicable PUC requirements. Under normal circumstances, the PUC mandates that NCTD maintain a farebox recovery of 18.8% for its transit service and for its paratransit services maintain a farebox recovery ratio of 10.0%.

But these are not normal circumstances. The COVID pandemic has thrown the

In FY 2018, the paratransit farebox recovery ratio was 7.4%. NCTD readily met and exceeded the fixed route blended TDA recovery rate of 18.80% using the safe harbor calculation (adding locally generated revenues and subtracting some operating costs).

- Progress to Implement Prior Audit Recommendations:
 - 1) NCTD was recommended to expand efforts to understand what riders want and how to grow demand. This recommendation was made in the context of a then FY2016-18 ridership loss of 15.6% (compared to base year of FY2015). Ridership further retreated 53.7% in this audit period (compared to base year of FY2018). In response to these unparalleled conditions, NCTD (1) sought to adapt to every day changing conditions to serve existing riders safely during the pandemic and making the necessary service changes and (2) set out to develop a short- and medium-term for how to project services moving forward in a hybrid- and post-pandemic situation. The recently initiated “future of work” study, entitled Market Research & Analysis is a significant investment in this direction.
 - 2) NCTD was also recommended to closely track and document farebox recovery ration both with traditional calculation and according to Senate Bill 508 (SB 508) provisions. NCTD agreed with the recommendation and really took this one to heart. NCTD performed a thorough assessment of the detailed provisions of the bill and what expenses could potentially be included in the local support portion of funds expended on operations. NCTD set up an annual process to track and document TDA farebox recovery for each Fiscal Year. The workbook document the local fund supplementation, as well as operating costs exclusions and exemptions, to calculate a “TDA Fares-Plus-Local-Funds Recovery Ratio” TDA, also referred to as “safe harbor” in this report.

NCTD operates a diverse and complementary system of fixed route bus, hybrid rail, commuter rail and demand response vans.

During the audit period, the major story has been the COVID-19 pandemic and its lingering impact on NCTD through June 2021 and beyond. The pandemic affected fully 16 months of the audit period or a little less than half the three-year period – four months in FY2020 and the entirety of FY2021. This is very visible in the TDA performance tables presented in this report. Despite the performance results that reflect a period of global calamity, NCTD has been exemplary with its response to the pandemic, maintaining a safe system, and taking advantage of this time to advance critical infrastructure projects (e.g., Del Mar bluff stabilization) and meaningfully address State of Good Repair.

The system-wide TDA performance trends over the audit period reflect a system in shock and are not sustainable. COASTER and FLEX/LIFT were the services most affected by the pandemic, with BREEZE and SPRINTER ridership still down by half. With ridership numbers down as much as 89% on COASTER,

52% down on SPRINTER, 54% down on BREEZE, and down 69% on LIFT/FLEX, from FY2021 as compared to FY2018 levels, it is no surprise that all performance indicators involving passengers or ridership in the calculation were very severely impacted. At the same time, NCTD had limited maneuvering room to reduce service, being a critical service provider in the region. Some of the services, such as signaling, rail right of way, and other systems need to be maintained at the same levels regardless of the amount of service provided. In other words, a significant part of the rail operation involves fixed costs independent of service levels.

Generally the agency did a very good job in adapting to the needs of riders during COVID. NCTD has been able to increase its cash balances such that they reached \$66.6 million at the end of FY2020. NCTD received \$95.7 million from the CARES Act and \$60 million from the American Rescue Act. NCTD's finances are projected to be balanced for the next five years.

NCTD has also, during the audit period, led several important initiatives relating to state of good repair (e.g., new locomotives for COASTER, SPRINTER mid-life overhaul, rejuvenation of the BREEZE fleet) – resulting in a sharply younger fleet age in some cases. NCTD also advanced several important infrastructure projects, such as the Del Mar Bluffs stabilization. NCTD has also worked on real estate deals, including the relocation of the current administrative offices at 810 Mission Avenue to the Oceanside Transit Center and repurposing of this space. In several areas the last three years have been a period of growth, not retrenchment. This of course applies to the increased COASTER service with 30 daily trains starting this past October and which NCTD hopes will help recover lost ridership from the pandemic.

Moving forward for TDA it will be important to establish what a new “baseline” looks like once ridership recovers, and how fully it recovers. Unknowns include not only the possibility of additional variants that could delay resumption of normal activities, but also some deeper, structural and perhaps permanent changes to work- and leisure-related trip making behaviors. New insights will undoubtedly come from the current Market Research & Analysis study under way. It is unclear what the “new normal” will look like exactly but NCTD has taken multiple steps to position its organization and service strategy for success.

We offer just one recommendation at this time, as follows.

Recommendation 1: NCTD should work with SANDAG TDA staff to achieve greater alignment with respect to the various uses and external reporting of farebox recovery ratio (for example, California TDA eligibility, annual financial accounting, NTD reporting, industry measure).

Issues and Opportunities – Since 2015, there have been multiple changes to legislation when it comes to the definition of farebox recovery in relation to TDA eligibility, and exemptions as of result of COVID-19. California, due to funding regulation, uses the common industry term for farebox recovery to mean operating costs with some exclusions covered by fares and other system generated revenue. This is different than the commonly used industry metric farebox recovery and is not comparable to transit systems nationally or globally. Both metrics have merit.

MTS and NCTD ceded fare policy decision rights to SANDAG, and NCTD meticulously calculates the California state farebox recovery ratio using all approved cost exclusions, and adding all system generated revenues SANDAG is required to ensure a fare policy supportive of state mandates, including farebox recovery. Doing so with a consistent measure of farebox recovery among MTS and NCTD is preferred, as it gives all three parties (SANDAG, MTS and NCTD) information on a level playing field, and consistent with state regulation.

While there are complications, confusion and potential errors, resulting from having different measures for the same metric, it is still of value given the complexities of the region and state. The auditor has

recommended that SANDAG establish an annual review process for Policy 27 and the TDA Claim Manual, and communicate with the operators. Through this process, there is an opportunity to have a comparable measure regionally and for state reporting purposes, while also providing an opportunity to measure the common definition for comparability to the larger transit industry. Having full and complete information on TDA farebox recovery is also a benefit for the entity responsible for fare policy.

Recommended Actions – NCTD should work with SANDAG TDA staff to achieve greater understanding and alignment with respect to the various uses and external reporting of farebox recovery (for example, California TDA eligibility, annual financial accounting, NTD reporting, industry measure). In addition, NCTD should provide related guidance to its Certified Public Accountants when they prepare to work on fiscal audits/Comprehensive Annual Financial Reports.

Expected Results – Enhanced clarity in understanding for staff and Board members, and a comparable regional approach for farebox recovery calculations while retaining ability to measure the common global definition for comparability to the transit industry.

NCTD Response – NCTD already performs the calculations of Farebox Recovery Ratio utilizing local support and the exclusions allowed by TDA (Ratio) and reports this Ratio annually in the State Controller's Office reports. The Ratios reported to the State Controller's Office are for all modes of service combined (BREEZE, COASTER, SPRINTER, FLEX) and for paratransit; the Ratio is not reported individually by mode, except paratransit (LIFT). The statistical section in NCTD's Annual Comprehensive Financial Report (ACFR) reports statistical data by modes of service; therefore, the Ratio reported to the State Controller's is not reported in the ACFR since it is not mode specific. However, NCTD may start reporting the Ratio with in its next ACFR but it will not be mode specific and rather be labeled as "Fixed Route" and "Paratransit".