Triennial Performance Audit

of the

Alameda-Contra Costa Transit District (AC Transit)

Fiscal Years 2019/20, 2020/21 and 2021/22

FINAL AUDIT REPORT

prepared for the

METROPOLITAN TRANSPORTATION COMMISSION

by

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Management Consulting

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NOTE:

All exhibits in this report are presented at the end of the associated discussion in each section.

EXECUTIVE SUMMARY

This executive summary highlights the findings from the performance audit of Alameda-Contra Costa Transit District (AC Transit). In California, a performance audit must be conducted every three years of any transit operator receiving Transportation Development Act (TDA) Article 4 funds, to determine whether the operator is in compliance with certain statutory and regulatory requirements, and to assess the efficiency and effectiveness of the operator's services. AC Transit operates local and express bus service in the East Bay, and Transbay bus service into San Francisco. The audit period is Fiscal Years 2020 through 2022 (from July 1, 2019 through June 30, 2022).

AC Transit meets its requirements for providing ADA complementary paratransit service through the East Bay Paratransit Consortium (EBPC). A performance audit of EBPC is included as an appendix to this report, since it is a shared responsibility of both BART and AC Transit.

Performance Audit and Report Organization

The performance audit was conducted for MTC in accordance with its established procedures for performance audits. The final audit report consists of these sections:

- An assessment of data collection and reporting procedures;
- A review of performance trends in TDA-mandated indicators and component costs;
- A review of compliance with selected PUC requirements;
- An evaluation of AC Transit's actions to implement the recommendations from the last performance audit;

- An evaluation of functional performance indicator trends; and
- Findings, conclusions, and recommendations to further improve AC Transit's performance based on the results of the previous sections.

Comments received from AC Transit and MTC staff regarding the draft report have been incorporated into the final report. Highlights from the key activities are presented in this executive summary.

Results and Conclusions

Review of TDA Data Collection and Reporting Methods - The purpose of this review is to determine if AC Transit is in compliance with the TDA requirements for data collection and reporting. The review is limited to the five data items needed to calculate the TDA-mandated performance indicators. This review has determined that AC Transit is in compliance with the data collection and reporting requirements for all five TDA statistics. In addition, the statistics collected over the six-year (two-years for rapid bus service, which began operating in August 2020) review period appear to be consistent with the TDA definitions and indicate general consistency in terms of the direction and magnitude of the year-to-year changes across the statistics.

It should be noted that for the prior AC Transit Triennial Performance Audit and for the current audit period (FY2020 – FY2022), AC Transit staff identified a significant portion of operating costs reported in NTD that are construction-related costs that are passed through AC Transit. These include such projects as BRT construction projects, the San Leandro BART Terminal, Rapid Corridor Improvements, Southside Transit Lanes, Richmond Parkway Transit Center Rehabilitation, and the Ashland-Cherryland Alameda County Public Works projects. AC Transit included these costs with operating expenses as they are not considered capital costs because these are pass-through expenses, and no

equity is retained by the District. Such projects are essentially a net zero on the District books as expenses are matched with revenues during the period, outside of any timing differences. As such, these costs were removed from the NTD operating costs for the purposes of the TDA trend analysis and the functional performance review.

Performance Indicators and Trends – AC Transit's bus and rapid bus service performance trends for the five TDA-mandated indicators were analyzed. A six-year analysis period was used for all the indicators (two years for the bus rapid transit system, which began operations in August 2020). In addition, component operating costs were analyzed.

- Bus Service – The following is a brief summary of the TDA performance trend highlights over the six-year period of FY2017 through FY2022:

  - The COVID-19 pandemic had a negative impact on every performance indicator during the current FY202-FY2022 audit period, especially in terms of decreased passengers, and decreased service levels (hours and miles).
  - There was an average annual increase in the operating cost per hour of 6.1 percent. In constant dollars, operating cost per hour increased an average of 2.0 percent per year.
  - The cost per passenger increased on average by 17.5 percent per year, which amounted to an average annual increase of 12.9 percent in constant dollars.
  - Passenger productivity showed negative trends, with both passengers per vehicle service hour and vehicle service mile decreasing overall by 9.7 percent annually.
  - Employee productivity decreased an average of four percent per year.

The following is a brief summary of the component operating costs trend highlights for the bus service between FY2017 through FY2022:

- Labor and fringe benefit costs were mixed, with labor increasing 1.4 and fringe benefits decreasing 0.9 percent annually overall. These two categories combined comprise about 80 percent of total operating costs.

- The most significant change was an average annual increase of 71.6 percent in the casualty/liability area, with considerable variances in cost increases and decreases seen in most years. While casualty/liability costs have averaged less than five percent of total annual costs, casualty/liability expenses have increased due to a higher number of claims during the audit period. Also, AC Transit's deductible was reduced, increasing the percentage of the claims that AC Transit is responsible for paying.

- The services and materials/supplies costs cost categories each experienced modest overall increases and represented about 13 to 15 percent of total operating costs over the six years.

- Miscellaneous other costs saw a modest decrease of 3.5 percent per year, contributing about three percent of total costs in each year.

- Rapid Bus Service – The following is a brief summary of the bus rapid transit TDA performance trend highlights which began operating in August 2020. It should be noted that it is difficult to extrapolate "trends" in performance from such a short review period:

  - Cost efficiency declined, with the operating cost per car service hour rising by 14.2 percent. With the effects of inflation removed, the cost per hour increased by 6.1 percent.

  - Increasing ridership improved BRT cost effectiveness, with the operating cost per passenger decreasing by 24.3 percent. In constant dollars, the cost per passenger decreased by 29.7 percent.

  - Passenger productivity showed positive performance, with passengers per service hour and passengers per service mile increasing by 50.9 and 45.5 percent, respectively.

- Employee productivity was steady, with car service hours per FTE up by 0.4 percent in FY2022.

The following is a brief summary of the component operating costs trend highlights between FY2021 and FY2022:

- The bus rapid transit total operating costs increased by 12.1 percent between FY2021 and FY2022.
- Labor costs increased 11.5 percent and remained at about 38 percent of total operating costs, while fringe benefits costs decreased 3.8 percent and decreased its share of total operating costs from 43.8 percent to 37.5 percent of total operating costs.
- Services costs increased by 27.7 percent and comprised just under 10 percent of total operating costs in both years.
- The materials/supplies, casualty/liability and other expenses categories combined comprised between 10 and 15 percent of total operating costs in both years, and each category showed significant increases in FY2022.

PUC Compliance – AC Transit is in compliance with each of the seven sections of the state PUC that were reviewed as part of this performance audit. These sections included requirements concerning CHP terminal safety inspections, labor contracts, reduced fares, welfare-to-work funding coordination, revenue sharing, and evaluating passenger needs.

Status of Prior Audit Recommendations – There were three recommendations made in AC Transit's prior performance audit. AC Transit has implemented corrective actions for all three recommendations from the prior audit. Two recommendations have been closed due to different or changing circumstances that no longer require further action, although AC Transit is encouraged to continue monitoring the trends in those functional indicators and take action if required. The remaining recommendation is still

in progress, with additional review and actions required to improve the results of the recommendation. That one remaining recommendation has been carried over to this audit report.

- The first recommendation was to examine the increase in bus operator unscheduled absences. AC Transit identified several conditions that were contributing to the increase in unscheduled absences. AC Transit implemented several initiatives to address absenteeism, including a Service Quality Enhancement Taskforce aimed at reducing absenteeism and raising the level of service quality through enhanced communication, coaching and development opportunities.

  AC Transit's efforts do not appear to have been successful in the current audit period. The operator unscheduled absences rate increased from 20.9 percent in FY2020 to 23.8 percent in FY2022, a 13.9 percent overall decrease in performance during the current audit period. Beyond the current audit period, AC Transit has calculated its operator unscheduled absence rate for FY2023 at 22.6 percent, showing some improvement in the post-pandemic era. Still, for this audit report, AC Transit is encouraged to continue its efforts to reduce operator unscheduled absences going forward.

- The second recommendation was to address the number of complaints related to the bus service. AC Transit identified the Salesforce Transit Center closing in September 2018, and subsequent re-opening in July 2019, as the cause of many customer complaints, along with service disruptions related to the Covid-19 pandemic.

  AC Transit did not implement any specific remedies to reduce complaints, however, the rate of complaints decreased by almost 20 percent overall during the current audit period, from 30.1 per 100,000 passenger trips in FY2020 to 24.2 in FY2022. As the trend in complaints appears to be improving, this recommendation is closed, with no further action required of AC Transit.

- The third recommendation was to examine the cause for and develop strategies to reduce the number of missed trips for the bus service. AC Transit explained that a switch to a new CleverCAD operating system during FY2018-19 required the use of a new methodology for calculating missed trip data, which resulted in the number of missed trips increasing, along with the COVID-19 pandemic having an effect on the availability of

operators during the period.

In the current audit period, the rate of missed trips to total trips continued to increase, by more than 175 percent overall between FY2020 and FY2022. In actual numbers, the number of missed trips decreased from 46,751 to 35,155 from FY2020 to FY2021, before ending at 111,946 in FY2022, the first full year of the completely implemented CleverCAD calculating methodology. Given the evidence that missed trips actually decreased between FY2020 and FY2021, and that the new calculating methodology caused a significant increase in number of missed trips reported in FY2022, this recommendation is considered closed. AC Transit is encouraged to continue its efforts to implement the Service Quality Enhancement Taskforce and focus group recommendations and monitor the number of missed trips to determine the direction of the trend for post FY2022 bus services and take additional actions, if necessary, prior to the next TDA audit.

Functional Performance Indicator Trends - To further assess AC Transit's performance over the past three years, a detailed set of systemwide and modal (bus service) functional area performance indicators was defined and reviewed.

- Systemwide – The following is a brief summary of the systemwide functional trend highlights between FY2020 and FY2022:
  - Administrative costs trended lower, as administrative costs share of total operating costs decreased 23 percent, and cost per vehicle service hour decreased about 12 percent.
  - Marketing costs increased modestly from 2.9 percent to 3.7 percent overall compared to total administrative costs and increased over 40 percent from nine cents to thirteen cents per passenger trip.
  - The systemwide farebox recovery ratio decreased approximately 44 percent during the period, likely due to the lingering effects of the COVID pandemic on ridership. Farebox recovery did show improvement in FY2022.

- Bus Service – The following is a brief summary of the bus service functional trend highlights between FY2020 and FY2022:

  - Service Planning results showed operating cost per passenger mile increasing over 72 percent due to passenger miles decreasing at a much higher rate than operating costs, vehicle miles in service increasing just over seven percent and vehicle hours in service increasing about four percent overall. Farebox recovery decreased 45 percent overall, from 15 to eight percent, but showed improvement between FY2021 and FY2022, as the system began recovering from the COVID pandemic.

  - Operations results include vehicle operations costs per service hour increasing by about 12 percent but remaining almost unchanged as a percentage of total costs. Operator scheduled absence rates remained steady at just above nine percent, while unscheduled absences increased almost 14 percent. Schedule adherence was steady at about 73 percent overall. There was a 20 percent decrease in complaints received, while the percentage of missed trips per total trips increased from just over two percent in the first two years to 6.5 percent in FY2022. There was a significant increase in actual missed trip numbers (about 77,000 trips or 200 percent) between FY2021 and FY2022. This was attributed to a new methodology for calculating missed trips required by the adoption of the new CleverCAD operating system, installed in 2019, but the new methodology data was not validated until FY2022. COVID pandemic related staffing shortages for bus operators compounded the resulting increase in missed trips for FY2022.

  - Maintenance results found overall maintenance costs mostly unchanged at about 19 percent of total costs, vehicle maintenance costs per service mile up just over seven percent, mechanic pay hours up almost 10 percent compared to service hours, steady maintenance employee scheduled and unscheduled absence rates, and improvement in the mechanical failure rates. The spare ratio began the audit period at 1.5 percent and ended at 25.3 percent, an increase of more than 1600 percent overall. This is attributed to an NTD reporting anomaly exacerbated by the COVID pandemic and AC Transit running fewer buses during the pandemic, resulting in an abnormally low number of spare vehicles in FY2020. The NTD

reporting anomaly in FY2020 skewed the results for this indicator for the overall audit period. The spare ratio did decline between FY2021 and FY2022, and AC Transit anticipates it to decline even further as ridership begins to recover.

- Safety results showed a slight increase in the rate of preventable accidents, but significant increases in the casualty/liability cost rates. The casualty/liability increase was attributed to increased payouts for claims by AC Transit during the latter two audit years, and an increase in the casualty/liability deductible, resulting in AC Transit paying a higher share of the payouts. The rate of lost days due to industrial accidents increased by 23 percent overall, attributed to an increase in upper body injury claims filed due to the use of newly installed Plexiglass barriers installed on the buses to protect operators during the pandemic. The barriers have also led to an increase in injury claims due to passengers occasionally weaponizing the barriers by pushing them into the operators during assault attempts.

- Rapid Bus Service – The following is a brief summary of the rapid bus service functional trend highlights between FY2021 and FY2022:

  - Service Planning results showed operating cost per passenger mile decreasing almost 16 percent, vehicle miles in service and vehicle hours in service both increasing about two percent, and farebox recovery increasing from 6.3 to 8.3 percent.

  - Operations results include vehicle operations costs per service hour increasing just over 24 percent but increasing only nine percent as a percentage of total costs. Data for operator scheduled and unscheduled absences, on-time performance, complaints, and missed trips are all reported on a systemwide basis and are included with the bus mode part of this section.

  - Maintenance results found overall maintenance costs mostly unchanged at about 19 percent of total costs, and vehicle maintenance costs per service mile up just over six percent. There was improvement in the major mechanical failure rate, but the total mechanical failure rate decreased by five percent. Data for mechanic pay hours per vehicle service hour, and maintenance employee

scheduled and unscheduled absences are reported on a systemwide basis and are included with the bus mode part of this section.

- Safety results showed significant increases in the casualty/liability cost rates. This is attributed to the same increases in casualty/liability payouts described in the bus service section. Data for the rate of preventable accidents and data for lost days due to industrial accidents are reported on a systemwide basis and are included with the bus mode part of this section.

Recommendations

1. CONTINUE TO EXAMINE THE INCREASE IN OPERATOR UNSCHEDULED ABSENCES FOR THE FIXED-ROUTE BUS SERVICE.
   [Reference Sections: V. Status of Prior Audit Recommendations; VI. Functional Performance Indicator Trends]

   In response to the first recommendation for AC Transit to examine the increase in bus operator unscheduled absences, AC Transit identified a shortage of extra-board operators, operators who cover for scheduled operators when they are unable to perform their duties, as one of the main reasons for excessive absences. Also, about one-third of unscheduled absences were by operators with less than five years of service with the agency. AC Transit implemented several initiatives to address absenteeism, including a Service Quality Enhancement Taskforce aimed at reducing absenteeism and raising the level of service quality through enhanced communication, coaching and development opportunities, including assessing the bus run structure to help cover service requirements and reduce operator burnout related to excessive overtime. AC Transit also implemented a focus group to address the following:

   - Review findings from Supervision, Planning and Scheduling, and Systems Analysis

- Provide any immediate recommendations, if any, for operators to implement
- Solicit feedback from the operators for the team to research and fix.
- Set team expectations for the coming week of operations and additional monitoring to optimize route performance in the short-term, and
- Regularly communicate back to the operators to review the improvements or discuss why (if any) implementations could not happen.

AC Transit's efforts do not appear to have been successful in the current audit period. The operator unscheduled absences rate was 19.1 percent in FY2019, then increased from 20.9 percent in FY2020 to 23.8 percent in FY2022, a 13.9 percent overall decrease in performance during the current audit period. AC Transit is encouraged to continue its efforts to reduce operator unscheduled absences going forward.

Table of Contents

List of Exhibits

I. INTRODUCTION

Public Utilities Code (PUC) Section 99246 requires that a performance audit be conducted every three years of each public transit operator in California. The audit requirement pertains to recipients of Transportation Development Act (TDA) funds and is intended to assure that the funds are being used efficiently. The substance and process of the performance audit is defined by the Regional Transportation Planning Agency (RTPA).

In the San Francisco Bay Area, the Metropolitan Transportation Commission (MTC) has been designated the RTPA and has this responsibility. By statute, the audit must be conducted in accordance with the U.S. Comptroller General's "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions" (the "yellow book"). The performance audit is a systematic review to determine the extent to which a transit operator has complied with pertinent laws and regulations and conducted operations in an efficient and economical manner. Relative to system compliance testing, all findings are reported regardless of materiality.

This report has been prepared as part of the performance audit of the Alameda-Contra Costa Transit District (AC Transit). AC Transit operates local and express bus service in the East Bay, Transbay bus service into San Francisco, bus rapid transit service between downtown Oakland and San Leandro, bus service across the Dumbarton Bridge, and Flex demand response feeder service in the Newark and Castro Valley areas. The audit period is Fiscal Years 2020 through 2022 (from July 1, 2019 through June 30, 2022). **NOTE: Due to the COVID-19 emergency it is recognized that performance beginning in the latter part of FY2020 is anomalous with the earlier part of the review period. As**

such, trend analyses in this report do not place much emphasis on performance beyond FY2019 for the purposes of drawing conclusions and formulating recommendations.

AC Transit meets its requirement for providing ADA complementary paratransit service through the East Bay Paratransit Consortium (EBPC), which was established by BART and AC Transit. The consortium contracts with a broker, who executes and administers contracts with several service providers for the consortium. EBPC's performance is also included in this performance audit. The EBPC report is included as an appendix, since it is a shared responsibility of both BART and AC Transit.

The Dumbarton Express bus service and Flex demand response service data are excluded from this compliance audit report. The Dumbarton service is provided by a consortium of five Bay Area transit providers and operated by a private contractor. While AC Transit includes the Dumbarton service as part of its NTD reporting, it does not have primary operating responsibility for the service. The Flex service began operating in March 2018, was suspended due to the COVID pandemic, and remains suspended at the current time. Therefore, only one year of performance data is available for the current audit period; the FY2020 NTD report. The lack of data makes performance measurement of the Flex service difficult to ascertain. If Flex service is reinstated, performance may be examined in the next AC Transit TDA performance audit.

An overview of AC Transit is provided in Exhibit 1. This is followed by a high-level agency organization chart in Exhibit 2, which reflects the basic organizational structure during the audit period and beyond.

Performance Audit and Report Organization

This performance audit of AC Transit is being conducted for MTC in accordance with its established procedures for performance audits. The audit consists of two discrete steps:

1. Compliance Audit - Activities in this phase include:
    - An overview of data collection and reporting procedures for the five TDA performance indicators;
    - Analysis of the TDA indicators; and
    - A review of compliance with selected state Public Utilities Code (PUC) requirements.

2. Functional Review - Activities in this phase include:
    - A review of actions to implement the recommendations from the prior performance audit;
    - Calculation and evaluation of performance indicator trends; and
    - Findings, conclusions, and the formulation of recommendations.

This report presents the findings from the Compliance Audit. Findings and conclusions from the Functional Review will be presented in the Draft Audit Report, which will be prepared at a later date. That document also will incorporate comments received from AC Transit and MTC staff regarding this preliminary report.

Exhibit 1: System Overview

Location Headquarters: 1600 Franklin Street, Oakland CA 94612

Establishment AC Transit was established in 1956 by voters in Alameda and Contra Costa Counties. It was funded through approval of a bond issue in 1959 and began operating service in 1960.

Board AC Transit is governed by a seven-member, elected Board of Directors. Five directors are elected from specific wards; two are elected at-large. Day-to-day operations of the District are the responsibility of the General Manager, who reports to the Board of Directors.

Facilities In addition to the administrative office building in downtown Oakland, AC Transit has four bus operating divisions: East Oakland, Emeryville, Hayward, and Richmond divisions. The Central Maintenance Facility is in Oakland and includes facilities and equipment for heavy duty bus maintenance activities and a warehouse for storage and distribution of replacement parts. The administrative office in Oakland contains the Operational Control Center, and the Hayward bus operating division includes the Training and Education Center.

Service Data AC Transit's service area is located on the eastern shore of the San Francisco Bay. The District operates three main types of service: East Bay local service, Transbay/Express service, and Tempo bus rapid transit service, which began in August of 2020. East Bay local service is provided with 117 local routes including several express/commute period-only routes and destination-based community routes. Transbay service consists of 16 routes that connect various points in the East Bay to San Francisco. Tempo Bus rapid transit consists of one line (1T) operating between uptown Oakland and the San Leandro BART station, mostly along International Boulevard, with 46 stations along a dedicated busway.

In addition, the Dumbarton Express service to the San Mateo Peninsula is administered and governed by AC Transit, with oversight by the Dumbarton Bridge Regional Operations Consortium (DBROC) and operated and maintained under contract by MV Transportation. This service is only peripherally included in the performance audit.

Most East Bay local routes are operated seven days a week, generally from early morning to at least early evening. Reduced service is provided in the evening and on Saturdays and Sundays. Typical headways are seven to 30 minutes during peak hours and 30 to 60 minutes or better at other times. Rapid bus lines provide service to reduce travel times using leading-edge technology and on-street improvements. Transbay bus service is concentrated in weekday peak periods. There are six All Nighter lines. Tempo service operates 24 hours a day, seven days a week, with 10-minute headways from 6:00 a.m. to 7:00 p.m., 15-minute headways from 7:00 p.m. to midnight, and 60-minute headways during the overnight hours.

The current fare structure went into effect in January 2019. The cash fare for East Bay local, express, and Tempo bus routes is $2.20 for adults and $1.25 for children,

senior citizens and people with disabilities. The Clipper fare for East Bay local, express, and Tempo bus routes is $2.25 for adults and $1.12 for children, senior citizens and people with disabilities. A $5.50-day pass is available from the farebox on buses and $5.00 on the Clipper smart card. Basic Transbay cash fares are $6.00 for adults and $3.00 for children, senior citizens and people with disabilities. Passengers also can purchase bus-to-BART transfers. Tempo passengers must pay the fare prior to boarding the bus, either with Clipper, pay-by-phone, or by purchasing a paper ticket from the Ticket Vending Machine (TVM) located at each station.

AC Transit provides ADA-mandated complementary paratransit within its service area through a partnership with BART. Known as the East Bay Paratransit Consortium (EBPC), this service is administered and operated through a broker, with several contracted service providers.

During the audit period, AC Transit's bus fleet consisted of 633 vehicles, including 396 standard 40-foot models, 15 42' double-decker models, 87 60-foot articulated models, 36 45-foot commuter coaches, 86 30-foot feeder buses, and 14 24-foot cutaway buses.

Recent Changes

AC Transit completed its TEMPO Bus Rapid Transit (BRT) line, which runs down International Boulevard. The new BRT line replaces rapid bus Line 1R (International Rapid) which operating between Oakland and San Leandro. Bus-only lanes were constructed along much of the former Line 1R route, and traffic signals provide preference to buses. Bus stations with elevated medians allow for quick passenger loading. AC Transit opened the new BRT line in August 2020.

AC Transit will provide additional changes and projects to this overview at a later date.

Planned Changes

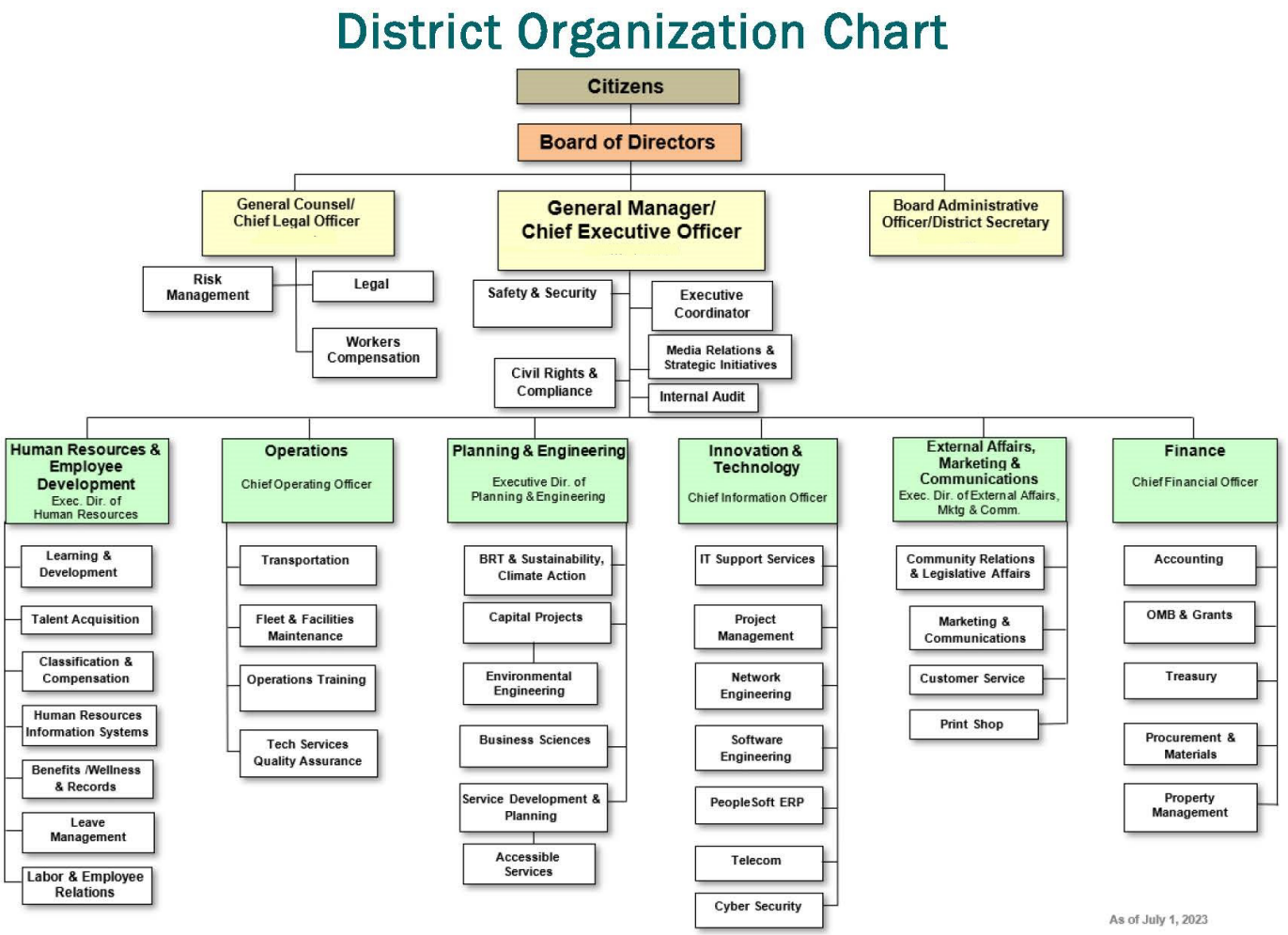
To be provided.

Staff

The AC Transit workforce for FY2019 was divided into the following categories. This list will be updated for the final report:

District Secretary	3
External Affairs, Marketing & Communications	36
Finance	91
General Manager	10
Human Resources	41
Innovation & Technology	37
General Counsel	15
Operations	1,931
Planning & Engineering	43
Retirement	4
Safety, Security & Training	32
TOTAL	2,243

Exhibit 2: Organization Chart



II. REVIEW OF TDA DATA COLLECTION AND REPORTING METHODS

This section focuses on the five performance indicators required by TDA law. These indicators have been defined by the state PUC to evaluate the transit operator's efficiency, effectiveness and economy. The purpose of this review is to determine if AC Transit is in compliance with the data collection and reporting requirements necessary to calculate the TDA performance indicators. The review is limited to the data items needed to calculate the indicators:

- Operating costs
- Vehicle/Vessel service hours
- Vehicle/Vessel service miles
- Unlinked passengers
- Employees (full-time equivalents)

The TDA indicator analysis is based on these operating and financial statistics in the National Transit Database (NTD) reports submitted annually to the Federal Transit Administration (FTA). The information reported by AC Transit covering the audit period has been reviewed.

Compliance with Requirements

To support this review, AC Transit staff confirmed that most of the data collection and reporting procedures remain unchanged from those described in the prior performance audit. The definitions and procedures used to derive the input data for the TDA indicators are consistent with those used for the NTD reporting system.

Based on the information provided, as shown in Exhibit 3.1, AC Transit is in compliance with the data collection and reporting requirements for all five TDA statistics.

Consistency of the Reported Statistics

The resulting TDA statistics for AC Transit's bus service are shown in Exhibit 3.2. Included are statistics covering each fiscal year of the three-year audit period (two years for rapid bus service, as the service began operations in August of 2020), plus the immediately preceding three fiscal years, resulting in a six-year trend. The statistics collected over the period appear to be consistent with the TDA definitions. Further, they indicate general consistency in terms of the direction and magnitude of the year-to-year changes across the statistics. For example, increases or decreases in annual operating costs are relatively proportional to increases or decreases in annual vehicle service hours and miles.

It should be noted that for the prior AC Transit Triennial Performance Audit and for the current audit period (FY2020 – FY2022), AC Transit staff identified a significant portion of operating costs reported in NTD that are construction-related costs that are passed through AC Transit. These include such projects as BRT construction projects, the San Leandro BART Terminal, Rapid Corridor Improvements, Southside Transit Lanes, Richmond Parkway Transit Center Rehabilitation, and the Ashland-Cherryland Alameda County Public Works projects. AC Transit included these costs with operating expenses as they are not considered capital costs because these are pass-through expenses, and no equity is retained by the District. Such projects are essentially a net zero on the District books as expenses are matched with revenues during the period, outside of any timing differences. As such, these costs were removed from the NTD operating costs for the purposes of the TDA trend analysis and the functional performance review.

Overall, the statistics collected over the six-year and two-year review periods appear to be consistent with the TDA definitions. Further, they indicate general consistency in terms of the direction and magnitude of the year-to-year changes across the statistics. For example, increases or decreases in annual operating costs are relatively proportional to increases or decreases in annual vehicle service hours and miles.

Exhibit 3.1: Compliance with TDA Data Collection and Reporting Requirements

TDA Statistic	TDA Definition	Compliance Finding	Verification Information
Operating Cost	"Operating cost" means all costs in the operating expense object classes exclusive of the costs in the depreciation and amortization expense object class of the uniform system of accounts and records adopted by the Controller pursuant to Section 99243, and exclusive of all subsidies for commuter rail services operated under the jurisdiction of the Interstate Commerce Commission and of all direct costs for providing charter services, and exclusive of all vehicle lease costs.	In Compliance	• Financial statistics are gathered and monitored by the Accounting and Budget Departments, which are responsible for preparing reports on a regular basis for internal distribution to the Board. • Operating costs have been defined as the total expenses reported in the quarterly financial statements, excluding depreciation. • Input data are tracked based on approved procedures from the NTD Uniform System of Accounts. *Note: The FY2017-FY2022 operating cost as shown in the following exhibit (3.2) excludes pass-through expenditures identified by AC Transit staff.*
Vehicle Service Hours	"Vehicle service hours" means the total number of hours that each transit vehicle is in revenue service, including layover time.	In Compliance	• Vehicle service hours are tracked through the operator timekeeping system and electronic farebox reports. • Operators' time is accumulated on monthly reports (OTS 370). The report separates the pay categories to facilitate the creation of vehicle hours. • The Accounting Department produces a monthly summary of hours, miles and operator pay. Hours calculations are rooted in the Hastus scheduling system. • Annual vehicle revenue hours (VRH) are reported to NTD by service mode in S-10 forms. Monthly reporting to NTD in MR-20 forms.

TDA Statistic	TDA Definition	Compliance Finding	Verification Information
Vehicle Service Miles	"Vehicle service miles" means the total number of miles that each transit vehicle is in revenue service.	In Compliance	• AC Transit reports actual rather than scheduled service miles for TDA reporting and internal performance measures. • The process for determining vehicle miles begins in the Schedule Department and relies on the Hastus software system. • Annual vehicle revenue miles (VRM) are reported to NTD by service mode in S-10 forms. Monthly reporting to NTD in MR-20 forms.
Unlinked Passengers	"Unlinked passengers" means the number of boarding passengers, whether revenue producing or not, carried by the public transportation system.	In Compliance	• FY FY20 to FY22, AC Transit continues to report unlinked passenger trips (UPT) using established APC ridership methodology. Procedures and processes comply with FTA sampling requirements of 95% confidence +/- 10% precision. FTA references and policy manual are found here: https://www.transit.dot.gov/ntd/manuals. • Monthly UPT data are processed and reviewed internally and reported to NTD in MR-20 forms. Annual figures reported by service mode in S-10 forms (see NTD Annual Report submissions).
Employee Full-Time Equivalents	2,000 person-hours of work in one year constitute one employee.	In Compliance	• For NTD reporting, AC Transit arrived at an FTE count by dividing the number of labor hours by 2,080 hours. • For state reporting, AC Transit counted its FTEs consistent with the TDA definition of 2,000 annual person work hours.

Exhibit 3.2: TDA Statistics – Bus Service

TDA Statistic	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Operating Cost (Actual $)	$365,789,747	$387,091,101	$407,023,507	$424,911,540	$401,596,686	$395,972,060
Annual Change	- -	*5.8%*	*5.1%*	*4.4%*	*-5.5%*	*-1.4%*
Vehicle Service Hours	1,919,037	2,008,283	2,031,124	1,847,503	1,587,486	1,547,934
Annual Change	- -	*4.7%*	*1.1%*	*-9.0%*	*-14.1%*	*-2.5%*
Vehicle Service Miles	19,982,901	20,427,609	20,949,166	18,893,674	16,074,382	16,115,684
Annual Change	- -	*2.2%*	*2.6%*	*-9.8%*	*-14.9%*	*0.3%*
Unlinked Passengers	52,425,303	51,759,750	53,041,480	44,370,426	18,862,602	25,382,188
Annual Change	- -	*-1.3%*	*2.5%*	*-16.3%*	*-57.5%*	*34.6%*
Employee Full-Time Equivalents	1,688.5	1,815.3	2,059.0	1,910.3	1,753.7	1,668.1
Annual Change	- -	*7.5%*	*13.4%*	*-7.2%*	*-8.2%*	*-4.9%*

Sources: *FY2017 through FY2019 - Prior Performance Audit Report*
FY2020 through FY2022 - NTD Reports
FY2017 - FY2022 Operating Cost excludes capital pass throughs for construction projects identified by AC Transit staff

Exhibit 3.3: TDA Statistics – Rapid Bus Service

TDA Statistic	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Operating Cost (Actual $)	*(a)*	*(a)*	*(a)*	*(a)*	$16,628,791	$18,646,194
Annual Change	- -	- -	- -	- -	- -	*12.1%*
Vehicle Service Hours	*(a)*	*(a)*	*(a)*	*(a)*	76,908	75,544
Annual Change	- -	- -	- -	- -	- -	*-1.8%*
Vehicle Service Miles	*(a)*	*(a)*	*(a)*	*(a)*	644,191	656,175
Annual Change	- -	- -	- -	- -	- -	*1.9%*
Unlinked Passengers	*(a)*	*(a)*	*(a)*	*(a)*	2,379,425	3,526,675
Annual Change	- -	- -	- -	- -	- -	*48.2%*
Employee Full-Time Equivalents	*(a)*	*(a)*	*(a)*	*(a)*	83.5	81.7
Annual Change	- -	- -	- -	- -	- -	*48.2%*

(a) Service began August 2020

Sources: FY2021 and FY2022 - NTD Reports

III. TDA PERFORMANCE INDICATORS AND TRENDS

The performance trends for AC Transit's bus and rapid bus service modes are presented in this section. Performance is discussed for each of the five TDA-mandated performance indicators:

- operating cost per vehicle service hour
- passengers per vehicle service hour
- passengers per vehicle service mile
- operating cost per passenger
- vehicle service hours per full-time equivalent employee (FTE)

The performance results in these indicators were developed from the information in the NTD reports filed with the FTA for the three years of the audit period (two years for the bus rapid transit system, which began operations in August 2020). AC Transit's NTD reports were the source of all operating and financial statistics except for pass-through construction items identified by AC Transit staff that were deducted from the operating costs from FY2017 through FY2022.

In addition to presenting performance for the three years of the audit period (FY2020 through FY2022), this analysis features two enhancements:

- Six-Year Time Period – While the performance audit focuses on the three fiscal years of the audit period, six-year trend lines have been constructed for AC Transit's service (two years for bus rapid transit) to provide a longer perspective on performance and to clearly present the direction and magnitude of the performance trends. In this analysis, the FY2020 to FY2022 trend lines have been combined with those from the prior audit period (FY2017 through FY2019) to define a six-year period of performance.

- Normalized Cost Indicators for Inflation – Two financial performance indicators (cost per hour and cost per passenger) are presented in both constant and current dollars to illustrate the impact of inflation in the Bay Area. The inflation adjustment relies on the All Urban Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) for the San Francisco Metropolitan Area. The average CPI-W percent change for each fiscal year has been calculated based on the bi-monthly results reported on the U.S. Department of Labor – Bureau of Labor Statistics website. The CPI-W is used since labor is the largest component of operating cost in transit. Since labor costs are typically controlled through labor contracts, changes in normalized costs largely reflect those factors that are within the day-to-day control of the transit system.

The following discussion is organized to present an overview of AC Transit's performance trends in each of the five TDA performance indicators. The analysis is expanded to include a breakdown of the various component costs that contributed to the total and hourly operating costs during the last six years.

Bus Service Performance Trends

This section provides an overview of the performance of AC Transit's bus service over the past six years. As noted earlier, the Dumbarton Express bus service data is excluded from this trend analysis, as the Dumbarton service is provided through a consortium of five Bay Area transit providers and operated by a private contractor. The trends in the TDA indicators and input statistics are presented in Exhibit 4. The six-year trends are illustrated in Exhibits 4.1 through 4.4.

- Operating Cost per Vehicle Service Hour (Exhibit 4.1)

  – A key indicator of cost efficiency, the cost per hour of bus service increased an average of 6.1 percent annually during the six-year review period.

- The cost per hour ranged from a low of $190.61 in FY2017 to a high of $255.81 in FY2022. The cost per hour increased every year.

- The largest annual increase (14.8 percent) occurred in FY2020, the first year of the COVID-19 pandemic. AC Transit's vehicle service hours decreased nine percent that year, while operating costs saw a 4.4 percent increase overall.

- In constant dollars, there was an average annual increase in this indicator of two percent.

- Passengers per Vehicle Service Hour (Exhibit 4.2)

  - A key indicator of passenger productivity, passengers per hour decreased an average of 9.7 percent annually during the six-year period.

  - Decreases reflect the overall 13.5 percent average annual decrease in passengers during the audit period, combined with a 4.2 percent average annual decrease in service hours. To demonstrate the effect of the COVID pandemic, during the current FY2020 – 2022 audit period, (which encompasses the COVID pandemic years of FY2020 and FY2021) AC Transit experienced an average annual decrease of 24.4 percent in ridership, and an average annual decrease of 8.5 percent in vehicle service hours.

  - Passengers per hour decreased overall from 27.3.2 in FY2017 to 11.9 in FY2021, before recovering to 16.4 in FY2022.

- Passengers per Vehicle Service Mile (Exhibit 4.2)

  - Similar to passengers per hour, passengers per mile decreased overall, by 9.7 percent annually on average.

  - Passengers per mile declined from 2.62 in FY2017 to 1.17 and 1.57 in the last two years.

  - Again, this trend reflects the pandemic effects, with overall decreased ridership combined with a 4.2 percent average annual decrease in service miles. Service miles decreased an average of 7.6 percent per year during the current three-year audit period.

- Operating Cost per Passenger (Exhibit 4.3)

  - A key measure of cost effectiveness, the cost per passenger increased from $6.98 in FY2017 to $21.29 in FY2021, before decreasing to $15.60 in FY2022.

  - The cost per passenger increased in every year of the review period except FY2022, due to the combination of large decreases in ridership and smaller decreases in operating expenses.

  - Overall, cost per passenger increased an average of 17.5 percent annually. With the impact of inflation removed from the cost side (normalization), cost per passenger exhibited an average annual increase of 12.9 percent per year.

- Vehicle Service Hours per Employee (FTE) (Exhibit 4.4)

  - A measure of employee productivity, this indicator decreased an average of four percent per year over the six years.

  - Hours per FTE decreased overall from 1,137 in FY2017 to 905 in FY2021, the lowest level of the period.

  - Vehicle service hours and FTEs both decreased overall during the period, but the decrease in service hours was greater, due to the pandemic service reductions.

* * * * *

The following is a brief summary of the TDA performance trend highlights over the six-year period of FY2017 through FY2022:

- The COVID-19 pandemic had a negative impact on every performance indicator during the current FY202-FY2022 audit period, especially in

terms of decreased passengers, and decreased service levels (hours and miles).

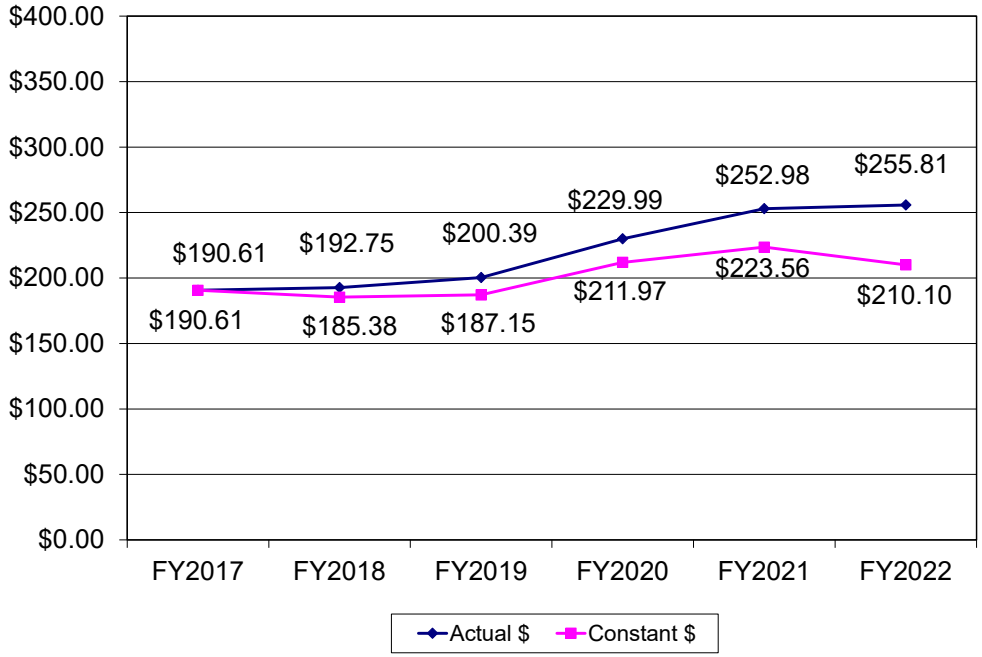
- There was an average annual increase in the operating cost per hour of 6.1 percent. In constant dollars, operating cost per hour increased an average of 2.0 percent per year.
- The cost per passenger increased on average by 17.5 percent per year, which amounted to an average annual increase of 12.9 percent in constant dollars.
- Passenger productivity showed negative trends, with both passengers per vehicle service hour and vehicle service mile decreasing overall by 9.7 percent annually.
- Employee productivity decreased an average of four percent per year.

Exhibit 4: TDA Indicator Performance – Bus Service

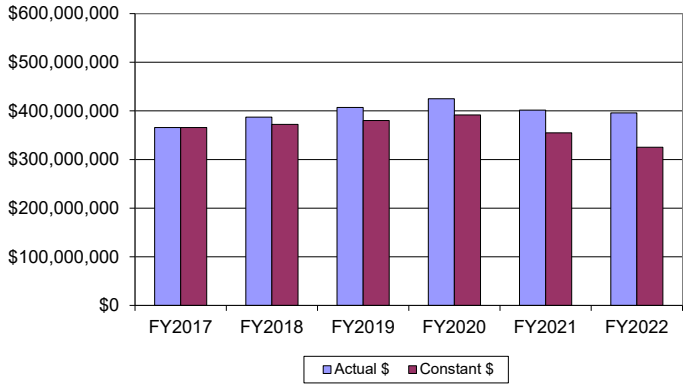
	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	*Av. Ann. Chg.*
Performance Indicators							
Op. Cost per Vehicle Svc. Hour (Actual $)	$190.61	$192.75	$200.39	$229.99	$252.98	$255.81	- -
Annual Change	- -	*1.1%*	*4.0%*	*14.8%*	*10.0%*	*1.1%*	*6.1%*
Op. Cost per Vehicle Svc. Hour (Constant $)	$190.61	$185.38	$187.15	$211.97	$223.56	$210.10	- -
Annual Change	- -	*-2.7%*	*1.0%*	*13.3%*	*5.5%*	*-6.0%*	*2.0%*
Passengers per Vehicle Service Hour	27.3	25.8	26.1	24.0	11.9	16.4	- -
Annual Change	- -	*-5.7%*	*1.3%*	*-8.0%*	*-50.5%*	*38.0%*	*-9.7%*
Passengers per Vehicle Service Mile	2.62	2.53	2.53	2.35	1.17	1.57	- -
Annual Change	- -	*-3.4%*	*-0.1%*	*-7.2%*	*-50.0%*	*34.2%*	*-9.7%*
Op. Cost per Passenger (Actual $)	$6.98	$7.48	$7.67	$9.58	$21.29	$15.60	- -
Annual Change	- -	*7.2%*	*2.6%*	*24.8%*	*122.3%*	*-26.7%*	*17.5%*
Op. Cost per Passenger (Constant $)	$6.98	$7.19	$7.17	$8.83	$18.81	$12.81	- -
Annual Change	- -	*3.1%*	*-0.4%*	*23.2%*	*113.2%*	*-31.9%*	*12.9%*
Vehicle Service Hours per FTE	1,137	1,106	986	967	905	928	- -
Annual Change	- -	*-2.7%*	*-10.8%*	*-2.0%*	*-6.4%*	*2.5%*	*-4.0%*
Input Data							
Operating Cost (Actual $)	$365,789,747	$387,091,101	$407,023,507	$424,911,540	$401,596,686	$395,972,060	- -
Annual Change	- -	*5.8%*	*5.1%*	*4.4%*	*-5.5%*	*-1.4%*	*1.6%*
Operating Cost (Constant $)	$365,789,747	$372,295,057	$380,122,362	$391,618,423	$354,897,743	$325,222,812	- -
Annual Change	- -	*1.8%*	*2.1%*	*3.0%*	*-9.4%*	*-8.4%*	*-2.3%*
Vehicle Service Hours	1,919,037	2,008,283	2,031,124	1,847,503	1,587,486	1,547,934	- -
Annual Change	- -	*4.7%*	*1.1%*	*-9.0%*	*-14.1%*	*-2.5%*	*-4.2%*
Vehicle Service Miles	19,982,901	20,427,609	20,949,166	18,893,674	16,074,382	16,115,684	- -
Annual Change	- -	*2.2%*	*2.6%*	*-9.8%*	*-14.9%*	*0.3%*	*-4.2%*
Unlinked Passengers	52,425,303	51,759,750	53,041,480	44,370,426	18,862,602	25,382,188	- -
Annual Change	- -	*-1.3%*	*2.5%*	*-16.3%*	*-57.5%*	*34.6%*	*-13.5%*
Employee Full-Time Equivalents	1,688.5	1,815.3	2,059.0	1,910.3	1,753.7	1,668.1	- -
Annual Change	- -	*7.5%*	*13.4%*	*-7.2%*	*-8.2%*	*-4.9%*	*-0.2%*
Bay Area CPI - Annual Change	- -	4.0%	3.0%	1.3%	4.3%	7.6%	- -
- Cumulative Change	- -	4.0%	7.1%	8.5%	13.2%	21.8%	*4.0%*

Sources: FY2017 through FY2019 - Prior Performance Audit Report
FY2020 through FY2022 - NTD Reports
CPI Data - U.S. Department of Labor, Bureau of Labor Statistics

Exhibit 4.1: Operating Cost per Vehicle Service Hour – Bus Service



Operating Cost



Vehicle Service Hours

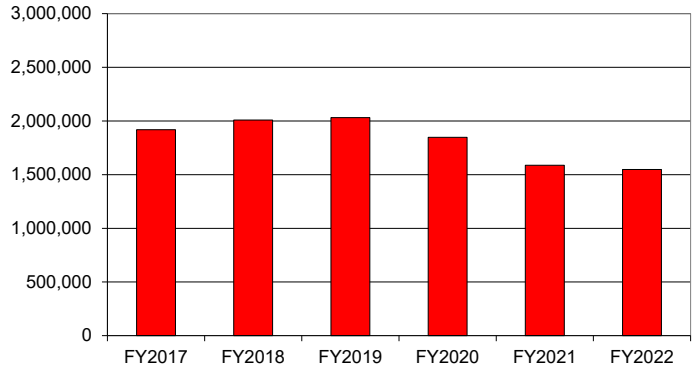
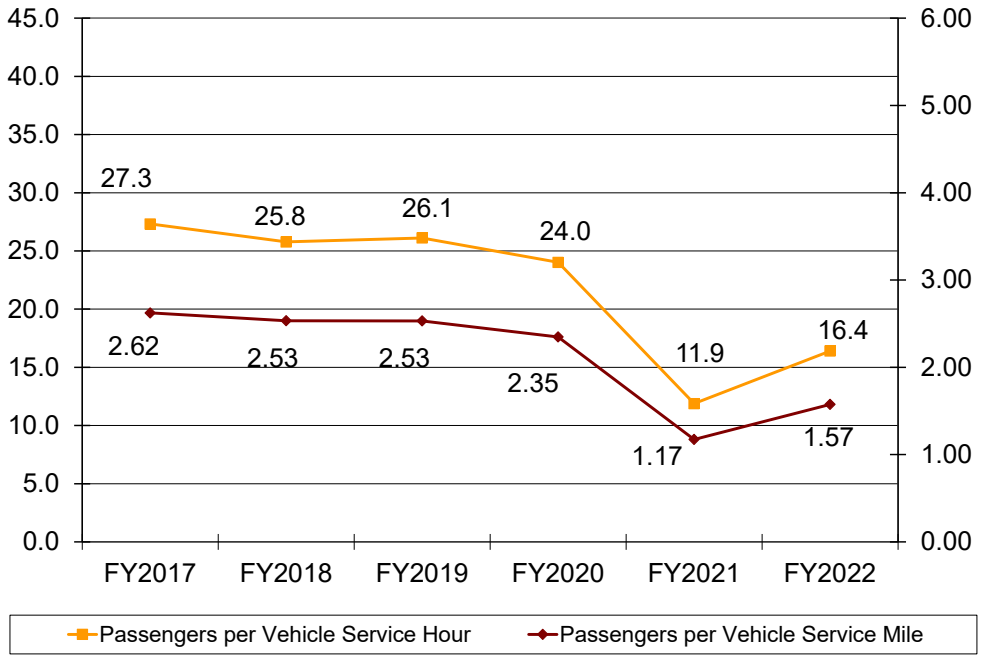
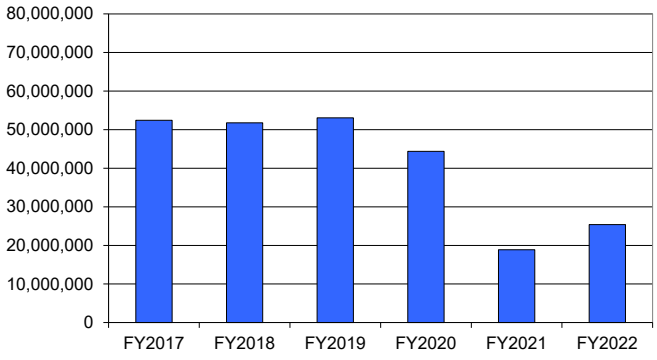


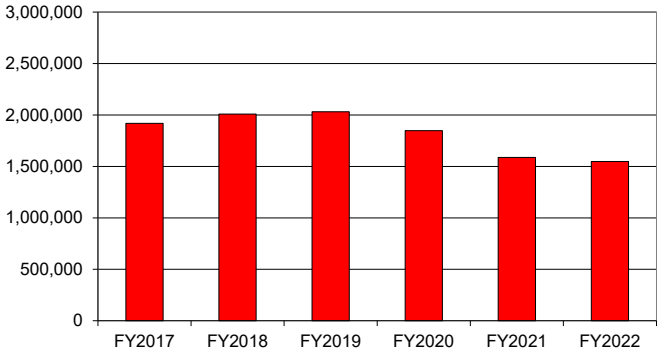
Exhibit 4.2: Passengers per Hour and per Mile –Bus Service



Unlinked Passengers



Vehicle Service Hours



Vehicle Service Miles

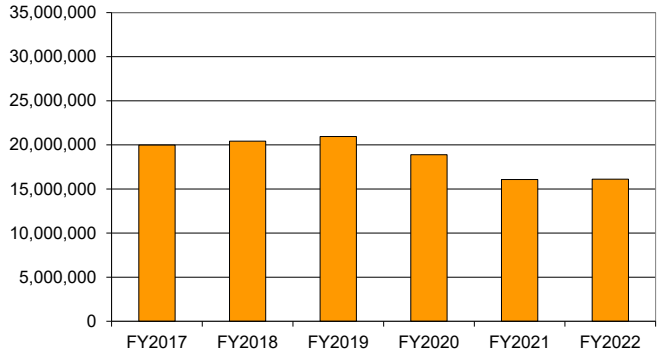
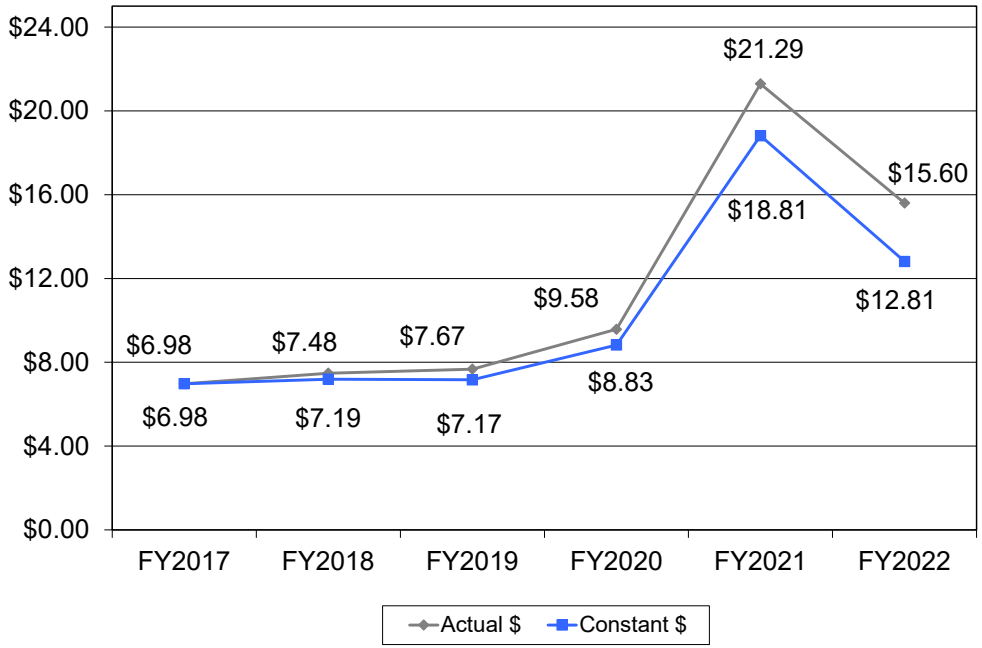
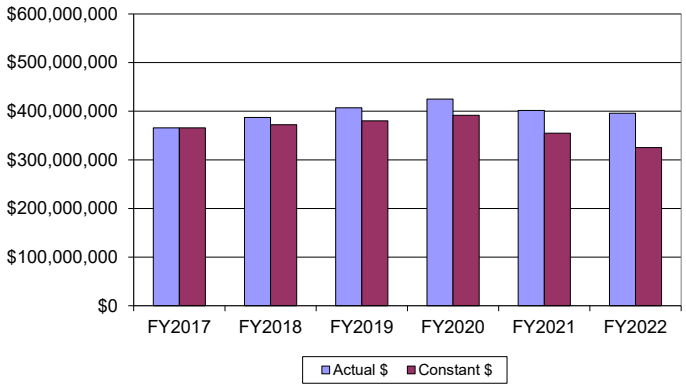


Exhibit 4.3: Operating Cost per Passenger – Bus Service



Operating Cost



Unlinked Passengers

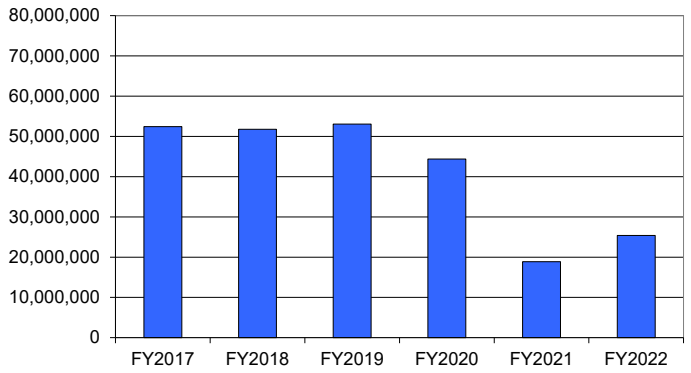
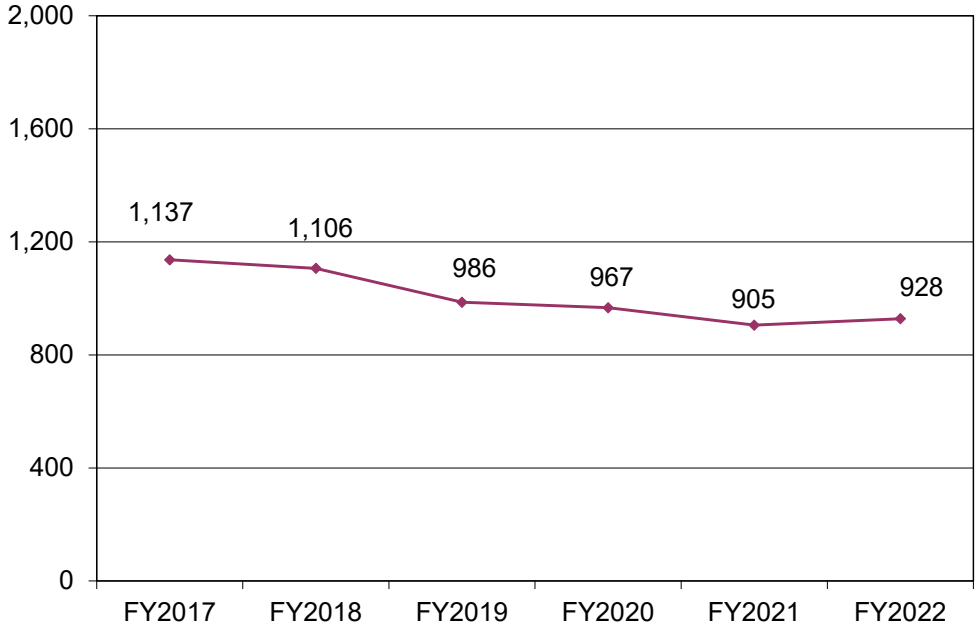
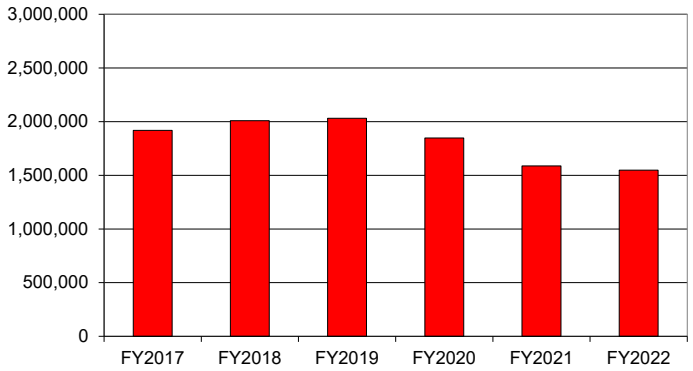


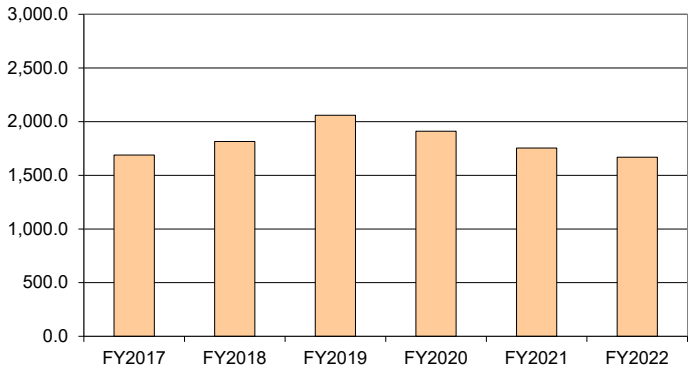
Exhibit 4.4: Vehicle Service Hours per FTE – Bus Service



Vehicle Service Hours



Full-time Equivalents



Bus Service Component Costs

Year-to-year changes in selected operating cost categories over the past six years are presented in Exhibit 4.5. Examining components of operating costs (e.g., labor, fringes, fuel, and casualty/liability) may determine what particular components had the most significant impacts on the operating costs.

Exhibit 4.5 also shows the concurrent changes in vehicle service hours and Exhibit 4.6 illustrates the portion of the cost per bus service hour that can be attributed to each included cost component.

- Total operating costs increased an annual average of 1.6 percent, with the component cost categories of labor and fringe benefits largely responsible for the increase in total operating costs.
- Labor costs increased on average by 1.4 percent per year, while fringe benefits costs decreased by about one percent per year.
- The combination of labor costs and fringe benefits costs represented the largest portion of the total costs, contributing between 77 and 82 percent of total costs throughout the period.
- The most significant component cost change was an average annual increase of 71.6 percent in the casualty/liability area. There was also noticeable variability from year to year. Additional clarification has been requested from AC Transit concerning the variability of casualty/liability costs.
- There were modest cost increases in the services and materials/supplies cost categories, with service costs increasing overall by 4.6 percent per year, and materials/supplies increasing by 2.8 percent per year on average.
- "Other expenses" costs decreased an average of 3.5 percent per year and comprised about two to three percent of total costs.

* * * * *

The following is a brief summary of the component operating costs trend highlights between FY2017 and FY2022:

- Labor and fringe benefit costs were mixed, with labor increasing 1.4 and fringe benefits decreasing 0.9 percent annually overall. These two categories combined comprise about 80 percent of total operating costs.
- The most significant change was an average annual increase of 71.6 percent in the casualty/liability area, with considerable variances in cost increases and decreases seen in most years. While casualty/liability costs have averaged less than five percent of total annual costs, additional information concerning the cost variations has been requested from AC Transit.
- The services and materials/supplies cost categories each experienced modest overall increases and represented about 13 to 15 percent of total operating costs over the six years.
- Miscellaneous other costs saw a modest decrease of 3.5 percent per year, contributing about three percent of total costs in each year.

Exhibit 4.5: Component Cost Trends – Bus Service

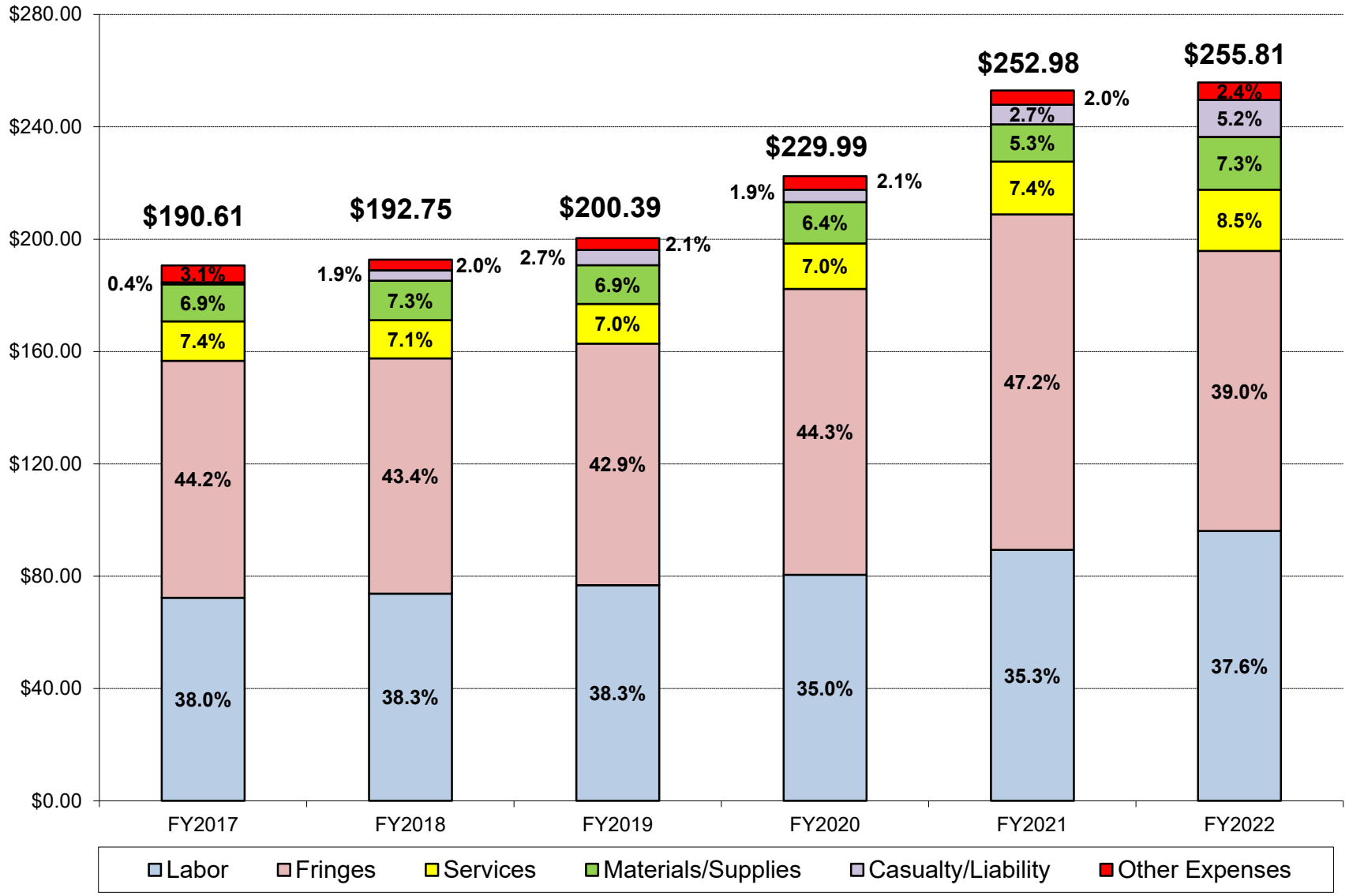
	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	*Av. Ann. Chg.*
COST CATEGORIES							
Labor - (Salaries, Wages)	$138,858,262	$148,239,734	$156,063,143	$162,704,283	$141,850,982	$148,737,499	- -
Annual Change	- -	*6.8%*	*5.3%*	*4.3%*	*-12.8%*	*4.9%*	*1.4%*
Fringe Benefits *(a)*	$161,858,691	$168,163,499	$174,667,619	$188,125,977	$189,725,913	$154,387,983	- -
Annual Change	- -	*3.9%*	*3.9%*	*7.7%*	*0.9%*	*-18.6%*	*-0.9%*
Services	$26,912,488	$27,336,818	$28,627,552	$29,919,967	$29,735,598	$33,765,593	
Annual Change	- -	*1.6%*	*4.7%*	*4.5%*	*-0.6%*	*13.6%*	*4.6%*
Materials/Supplies *(b)*	$25,299,780	$28,300,590	$28,103,253	$27,212,984	$21,107,045	$29,073,482	- -
Annual Change	- -	*11.9%*	*-0.7%*	*-3.2%*	*-22.4%*	*37.7%*	*2.8%*
Casualty/Liability	$1,371,682	$7,415,160	$11,035,621	$8,010,053	$11,019,101	$20,397,585	- -
Annual Change	- -	*440.6%*	*48.8%*	*-27.4%*	*37.6%*	*85.1%*	*71.6%*
Other Expenses *(c)*	$11,488,844	$7,635,300	$8,526,319	$8,938,276	$8,158,047	$9,609,918	- -
Annual Change	- -	*-33.5%*	*11.7%*	*4.8%*	*-8.7%*	*17.8%*	*-3.5%*
Total	$365,789,747	$387,091,101	$407,023,507	$424,911,540	$401,596,686	$395,972,060	- -
Annual Change	- -	*5.8%*	*5.1%*	*4.4%*	*-5.5%*	*-1.4%*	*1.6%*
OPERATING STATISTICS							
Vehicle Service Hours	1,919,037	2,008,283	2,031,124	1,847,503	1,587,486	1,547,934	- -
Annual Change	- -	*4.7%*	*1.1%*	*-9.0%*	*-14.1%*	*-2.5%*	*-4.2%*

(a) Includes paid absences
(b) Includes fuels/lubricants, tires/tubes, and other materials and supplies
(c) Includes utilities, taxes, and miscellaneous expenses

Source: FY2017 – FY2019 prior audit report; FY2020 through FY2022 NTD reports

Exhibit 4.6: Distribution of Component Costs – Bus Service

Operating Cost per Vehicle Service Hour



Rapid Bus Service Performance Trends

This section provides an overview of the performance of AC Transit's Tempo bus rapid transit (BRT) service since it began operation on August 9, 2020. Given this recent start-up date, NTD data are available for just one partial year (FY2021), and one full year (FY2022) of service. The resulting trends in the TDA indicators and input statistics are presented in Exhibit 5. The two-year trends are illustrated in Exhibits 5.1 through 5.4. It should be noted that it is difficult to extrapolate "trends" in performance from such a short review period.

- Operating Cost per Vehicle Service Hour (Exhibit 5.1)
  - A key indicator of cost efficiency, the cost per hour of BRT service increased by 14.2 percent between FY2021 and FY2022, from $216.22 to $246.83.
  - With the impact of inflation removed from the cost side (normalization), there was an increase of 6.1 percent in the cost per hour.

- Passengers per Vehicle Service Hour (Exhibit 5.2)
  - Passengers per hour increased by 50.9 percent in FY2022, from 30.9 to 46.7
  - While the increase in productivity can be associated with having a full year of service versus a partial year service start-up, it is noted that ridership increased in FY2022 while the level of hours of service decreased. The easing of the COVID pandemic in FY2022 also may have been a contributing factor in the increased ridership.

- Passengers per Vehicle Service Mile (Exhibit 5.3)
  - Similar to passengers per hour, passengers per mile increased by 45.5 percent in FY2022, from 3.69 to 5.37.

- The causes for the increased passengers per mile were the same as for passengers per hour.

- Operating Cost per Passenger (Exhibit 5.4)

  - The cost per passenger decreased by 24.3 percent, from $6.99 in FY2021 to $5.29 in FY2022.

  - The increase in cost effectiveness was due to ridership gains far outpacing the increase in operating costs between FY2021 and FY2022.

  - With the impact of inflation removed from the cost side (normalization), the result was a decrease of 29.7 percent in the cost per passenger.

- Vehicle Service Hours per Employee (FTE) (Exhibit 5.5)

  - Vehicle service hours per employee was almost unchanged, increasing by 0.4 percent, from 921.1 to 924.7.

  - Annual FTEs decreased at a higher rate (2.2 percent) than the corresponding BRT service hours (1.8 percent).

* * * * *

The following is a brief summary of the TDA performance trend highlights over the two-year period of FY2021 through FY2022:

- Cost efficiency declined, with the operating cost per car service hour rising by 14.2 percent. With the effects of inflation removed, the cost per hour increased by 6.1 percent.

- Increasing ridership improved BRT cost effectiveness, with the operating cost per passenger decreasing by 24.3 percent. In constant dollars, the cost per passenger decreased by 29.7 percent.

- Passenger productivity showed a positive performance, with passengers per service hour and passengers per service mile increasing by 50.9 and 45.5 percent, respectively.

- Employee productivity was steady, with car service hours per FTE up by 0.4 percent in FY2022.

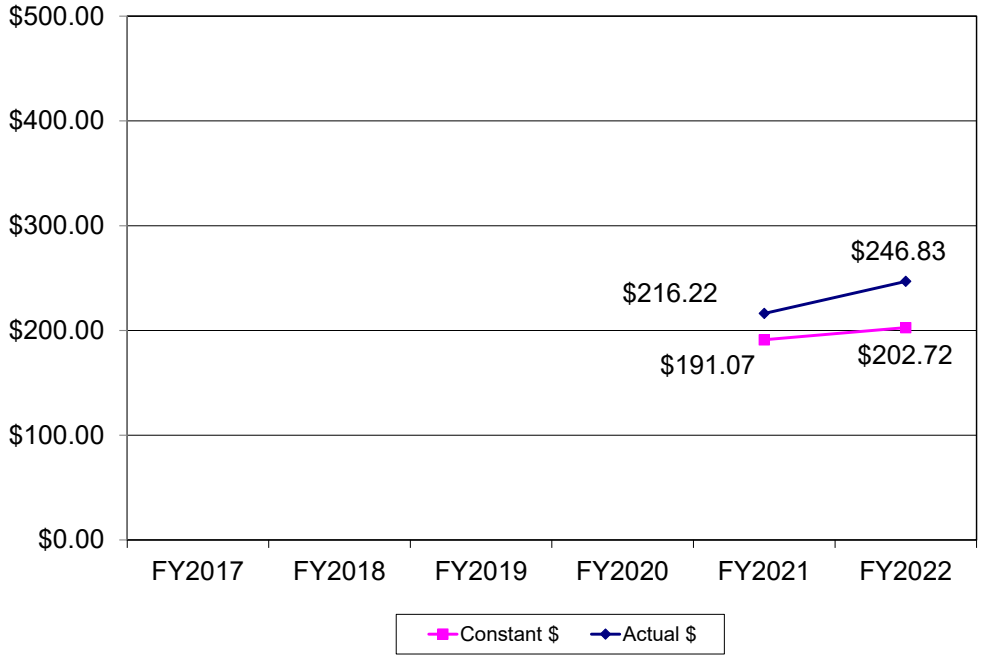
Exhibit 5: TDA Indicator Performance – Rapid Bus

	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	*Av. Ann. Chg.*
Performance Indicators	*(a)*	*(a)*	*(a)*	*(a)*			
Op. Cost per Vehicle Svc. Hour (Actual $)	- -	- -	- -	- -	$216.22	$246.83	- -
Annual Change	- -	- -	- -	- -	- -	*14.2%*	*14.2%*
Op. Cost per Vehicle Svc. Hour (Constant $)	- -	- -	- -	- -	$191.07	$202.72	- -
Annual Change	- -	- -	- -	- -	- -	*6.1%*	*6.1%*
Passengers per Vehicle Service Hour	- -	- -	- -	- -	30.9	46.7	- -
Annual Change	- -	- -	- -	- -	- -	*50.9%*	*50.9%*
Passengers per Vehicle Service Mile	- -	- -	- -	- -	3.69	5.37	- -
Annual Change	- -	- -	- -	- -	- -	*45.5%*	*45.5%*
Op. Cost per Passenger (Actual $)	- -	- -	- -	- -	$6.99	$5.29	- -
Annual Change	- -	- -	- -	- -	- -	*-24.3%*	*-24.3%*
Op. Cost per Passenger (Constant $)	- -	- -	- -	- -	$6.18	$4.34	- -
Annual Change	- -	- -	- -	- -	- -	*-29.7%*	*-29.7%*
Vehicle Service Hours per FTE	- -	- -	- -	- -	921.1	924.7	- -
Annual Change	- -	- -	- -	- -	- -	*0.4%*	*0.4%*
Input Data							
Operating Cost (Actual $)	- -	- -	- -	- -	$16,628,791	$18,646,194	- -
Annual Change	- -	- -	- -	- -	- -	*12.1%*	*12.1%*
Operating Cost (Constant $)	- -	- -	- -	- -	$14,695,142	$15,314,635	- -
Annual Change	- -	- -	- -	- -	- -	*4.2%*	*4.2%*
Vehicle Service Hours	- -	- -	- -	- -	76,908	75,544	- -
Annual Change	- -	- -	- -	- -	- -	*-1.8%*	*-1.8%*
Vehicle Service Miles	- -	- -	- -	- -	644,191	656,175	- -
Annual Change	- -	- -	- -	- -	- -	*1.9%*	*1.9%*
Unlinked Passengers	- -	- -	- -	- -	2,379,425	3,526,675	- -
Annual Change	- -	- -	- -	- -	- -	*48.2%*	*48.2%*
Employee Full-Time Equivalents	- -	- -	- -	- -	83.5	81.7	- -
Annual Change	- -	- -	- -	- -	- -	*-2.2%*	- -
Bay Area CPI - Annual Change	- -	4.0%	3.0%	1.3%	4.3%	7.6%	- -
- Cumulative Change	- -	4.0%	7.1%	8.5%	13.2%	21.8%	*4.0%*

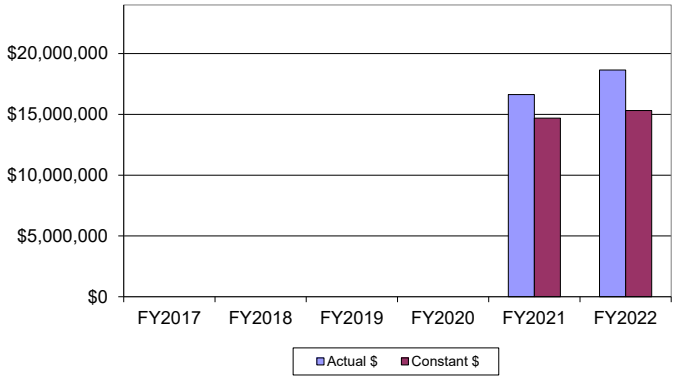
Sources: NTD Reports (FY2021 - FY2022)
CPI Data - U.S. Department of Labor, Bureau of Labor Statistics

(a) Service began August 2020

Exhibit 5.1: Operating Cost per Vehicle Service Hour – Rapid Bus



Operating Cost



Vehicle Service Hours

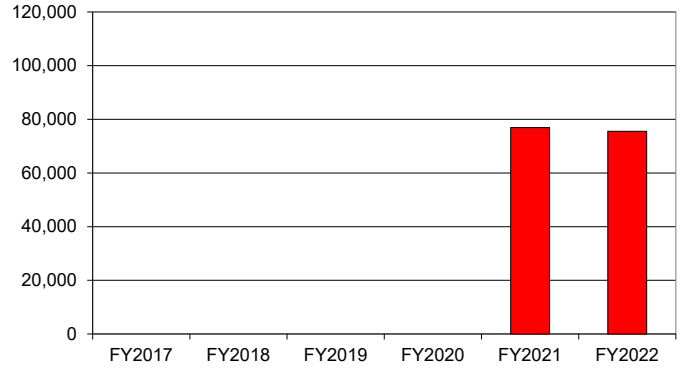
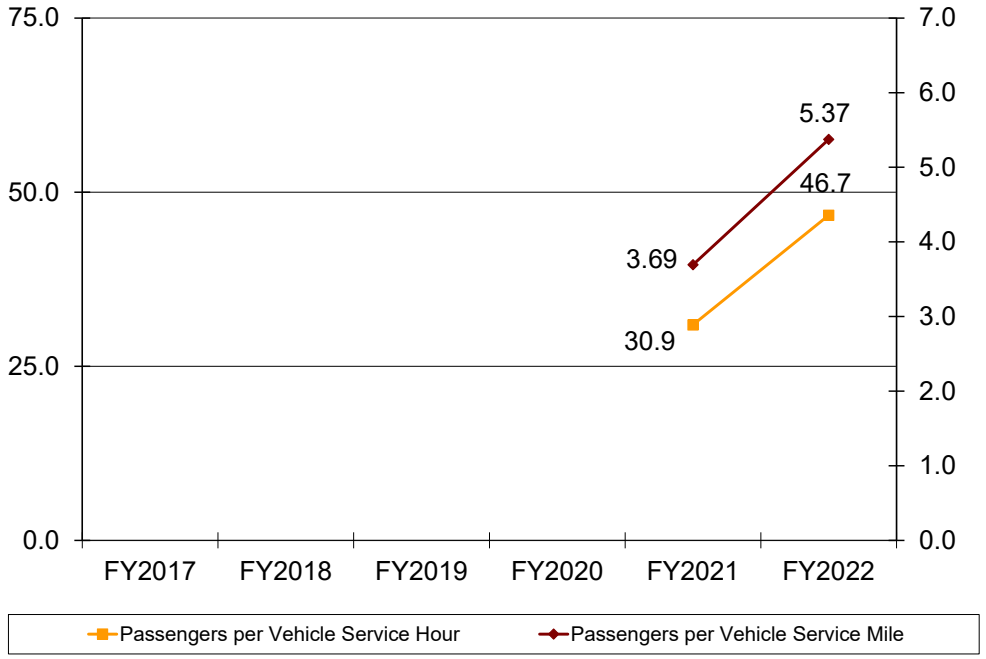
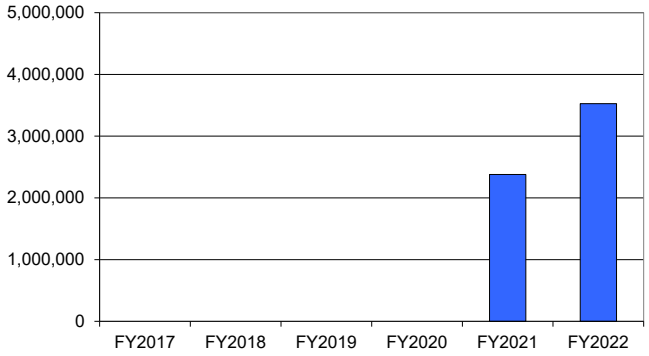


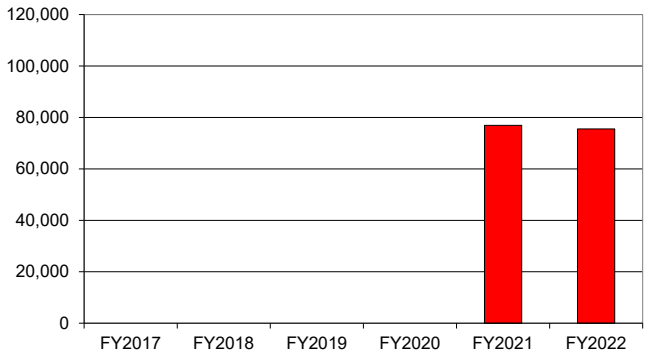
Exhibit 5.2: Passengers per Hour and per Mile – Rapid Bus



Unlinked Passengers



Vehicle Service Hours



Vehicle Service Miles

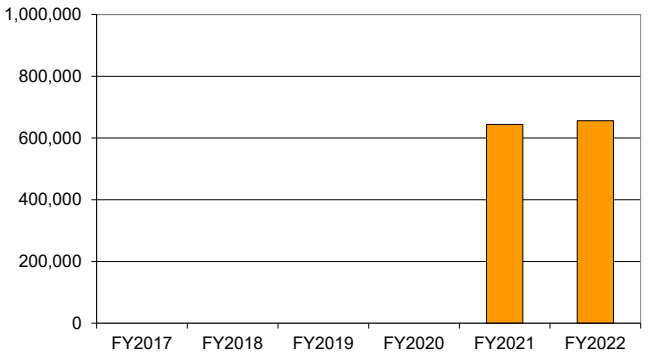
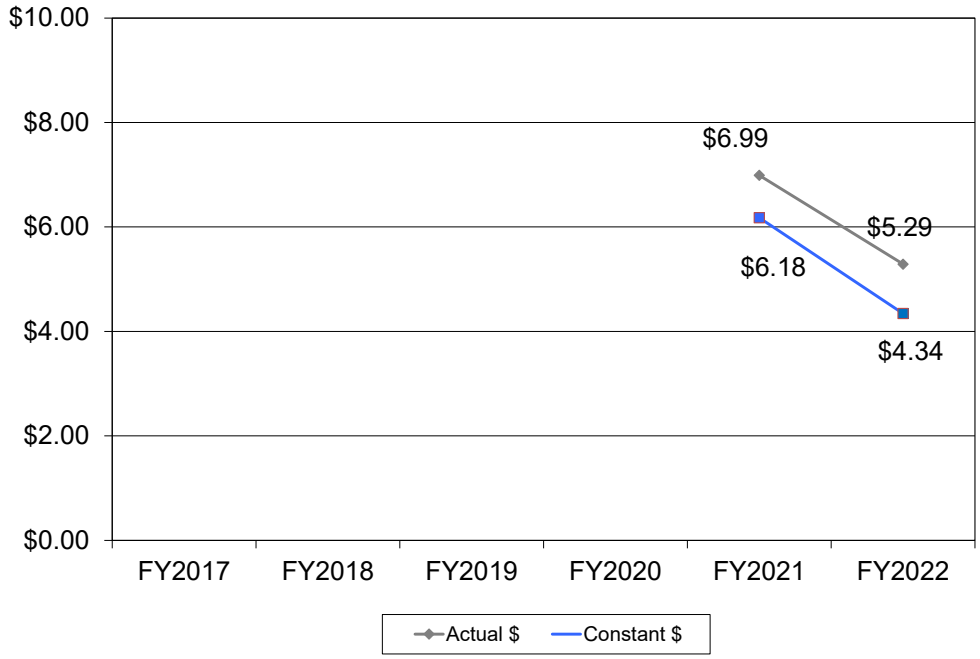
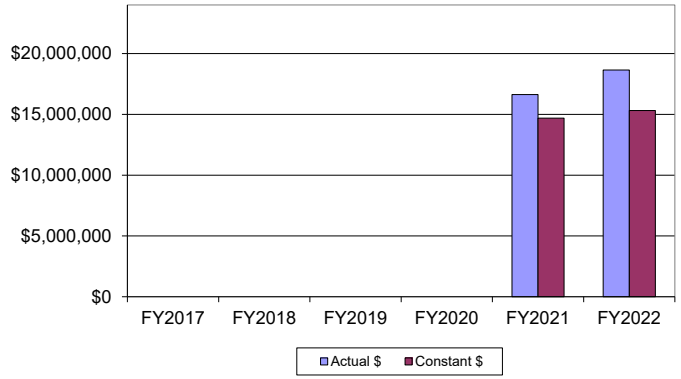


Exhibit 5.3: Operating Cost per Passenger – Rapid Bus



Operating Cost



Unlinked Passengers

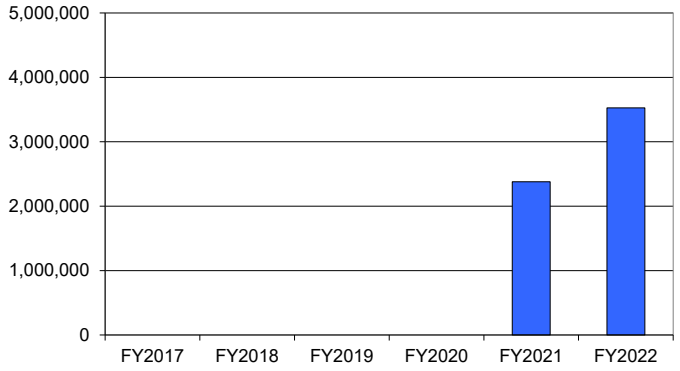
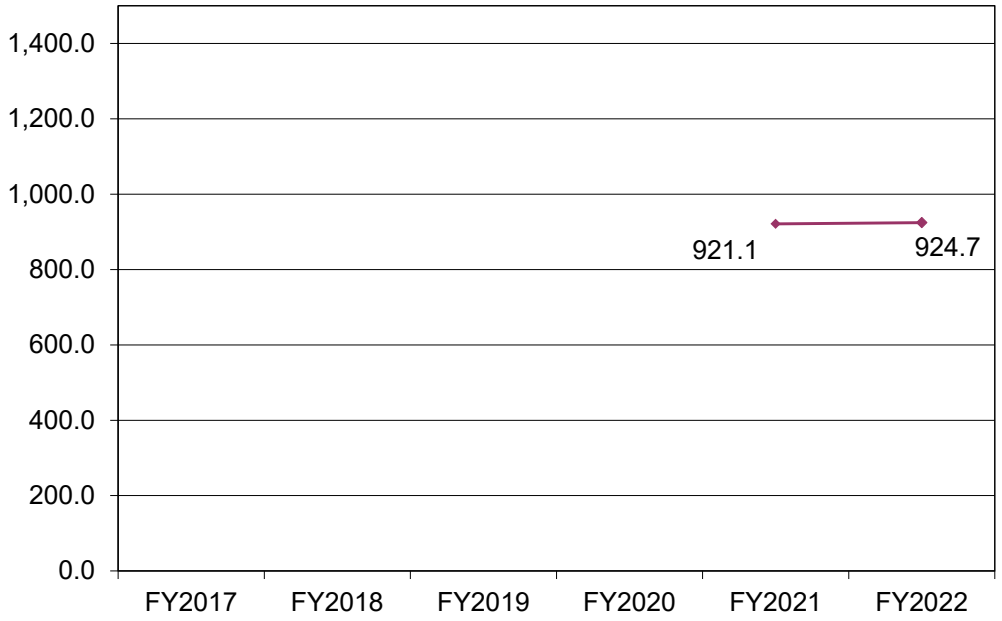
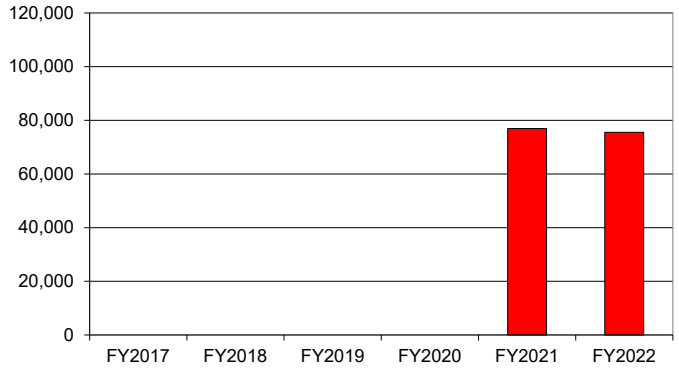


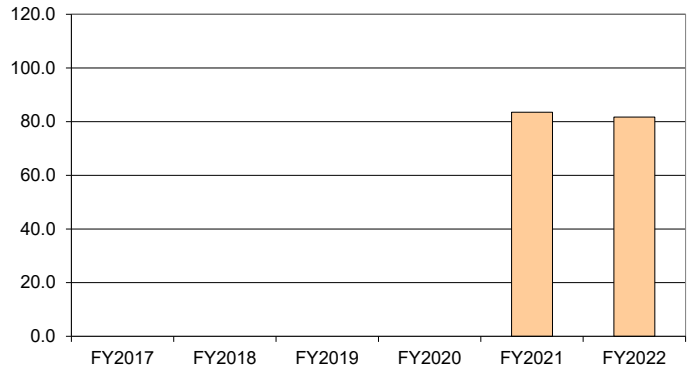
Exhibit 5.4: Vehicle Service Hours per FTE – Rapid Bus



Vehicle Service Hours



Full-time Equivalents



Rapid Bus Component Costs

The year-to-year changes in selected operating cost categories during the two-year rapid bus review period are presented in Exhibit 6.5, along with the concurrent changes in vehicle service hours. The portions of the cost per vehicle service hour that can be attributed to each included cost component are shown in Exhibit 6.6. Again, it is noted that it is difficult to extrapolate "trends" in performance from such a short review period.

- Labor costs increased by 11.5 percent in FY2022, comprising about 37 percent of total operating costs in both years.
- At the same time, fringe benefits costs decreased 3.8 percent, while their percentage of total operating costs decreased from 43.8 percent to 37.5 percent.
- Services costs increased by 27.7 percent and comprised just under 10 percent of total operating costs.
- There were significant cost increases in the remaining cost categories, with materials/supplies costs increasing 65.7 percent, casualty/liability costs rising 109.3 percent, other expenses increasing 33.3 percent. These three cost categories comprised about 10 to 15 percent of total operating costs in the two years of service.

* * * * *

The following is a brief summary of the component operating costs trend highlights between FY2021 and FY2022. It is reiterated that this performance may not constitute trends in the full sense of the word, with just one partial year and one full fiscal year since the service was introduced:

- The bus rapid transit total operating costs increased by 12.1 percent between FY2021 and FY2022.

- Labor costs increased 11.5 percent and remained at about 38 percent of total operating costs, while fringe benefits costs decreased 3.8 percent and decreased its share of total operating costs from 43.8 percent to 37.5 percent of total operating costs.

- Services costs increased by 27.7 percent and comprised just under 10 percent of total operating costs in both years.

- The materials/supplies, casualty/liability and other expenses categories combined comprised between 10 and 15 percent of total operating costs in both years, and each category showed significant increases in FY2022.

Exhibit 5.5: TDA Component Costs Trends – Rapid Bus

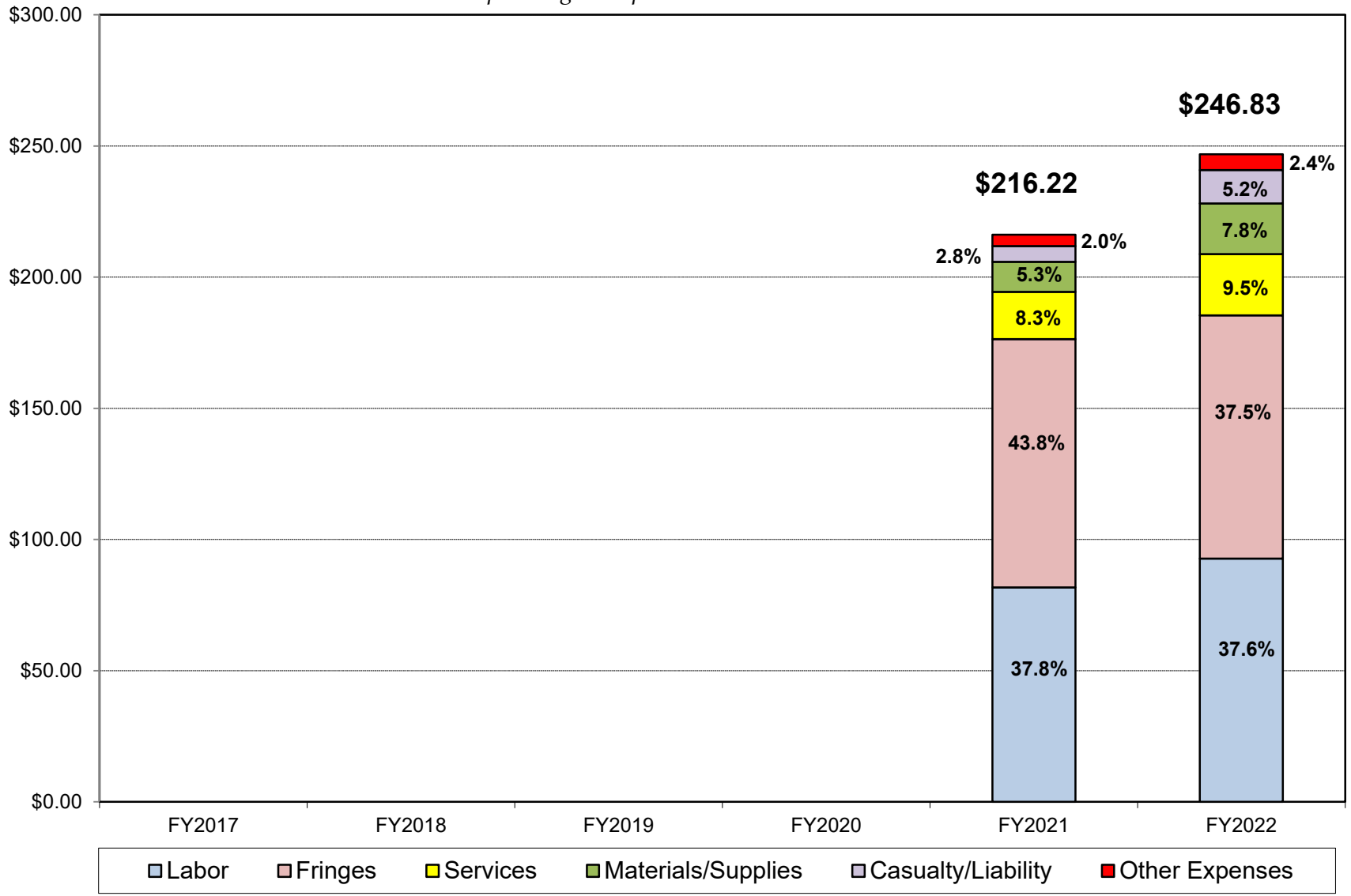
	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	*Av. Ann. Chg.*
COST CATEGORIES							
Labor (Salaries/Wages)	*(a)*	*(a)*	*(a)*	*(a)*	$6,287,331	$7,008,573	- -
Annual Change	- -	- -	- -	- -	- -	*11.5%*	*11.5%*
Fringe Benefits *(b)*	*(a)*	*(a)*	*(a)*	*(a)*	$7,281,035	$7,000,903	- -
Annual Change	- -	- -	- -	- -	- -	*-3.8%*	*-3.8%*
Services	*(a)*	*(a)*	*(a)*	*(a)*	$1,382,457	$1,765,943	
Annual Change	- -	- -	- -	- -	- -	*27.7%*	*27.7%*
Materials/Supplies *(c)*	*(a)*	*(a)*	*(a)*	*(a)*	$879,460	$1,457,392	- -
Annual Change	- -	- -	- -	- -	- -	*65.7%*	*65.7%*
Casualty/Liability	*(a)*	*(a)*	*(a)*	*(a)*	$459,129	$961,143	- -
Annual Change	- -	- -	- -	- -	- -	*109.3%*	*109.3%*
Other Expenses *(d)*	*(a)*	*(a)*	*(a)*	*(a)*	$339,379	$452,240	- -
Annual Change	- -	- -	- -	- -	- -	*33.3%*	*33.3%*
Total	*(a)*	*(a)*	*(a)*	*(a)*	$16,628,791	$18,646,194	- -
Annual Change	- -	- -	- -	- -	- -	*12.1%*	*12.1%*
OPERATING STATISTICS							
Vehicle Service Hours	*(a)*	*(a)*	*(a)*	*(a)*	76,908	75,544	- -
Annual Change	- -	- -	- -	- -	- -	*-1.8%*	*-1.8%*

(a) Not applicable - service started August 2020
(b) Includes paid absences
(c) Includes fuels/lubricants, tires/tubes, and other materials/supplies
(d) Includes utilities, taxes, and miscellaneous expenses

Source: FY2021 and FY2022 NTD reports

Exhibit 5.6: Distribution of Component Costs – Rapid Bus

Operating Cost per Vehicle Service Hour



IV. COMPLIANCE WITH PUC REQUIREMENTS

An assessment of AC Transit's compliance with selected sections of the state Public Utilities Code (PUC) has been performed. The compliance areas included in this review are those that MTC has identified for inclusion in the triennial performance audit. Other statutory and regulatory compliance requirements are reviewed by MTC in conjunction with its annual review of AC Transit's TDA-STA claim application.

The results from this review are detailed by individual requirement in Exhibit 5. AC Transit is in compliance with each of the seven sections of the state PUC that were reviewed as part of this performance audit. These sections included requirements concerning CHP terminal safety inspections, labor contracts, reduced fares, welfare-to-work funding coordination, revenue sharing, and evaluating passenger needs.

Exhibit 6: Compliance with State PUC Requirements

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99251	CHP Certification - 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 following a CHP inspection of the operator's terminal	In Compliance	Satisfactory Facility Inspections: • E. Oakland: 02/20, 02/21, 02/22 • Emeryville: 04/20, 05/21, 04/22 • Hayward: 11/20, 11/21, 11/22 • Richmond: 06/20, 05/21, 06/22
PUC99264	Operator-to-Vehicle Staffing - The operator does not routinely staff with two or more persons public transportation vehicles designed to be operated by one person	In Compliance	No provision for excess staffing in Agreement with ATU (AFL CIO) Local 192, effective 07/01/19 - 06/30/25.
PUC99314.5(e)(1)(2)	Part-Time Drivers and Contracting - If the operator receives STA funds, the operator is not precluded by contract from employing part-time drivers or from contracting with common carriers.	In Compliance	• Part Time Drivers - Section 67.0 (Peak Hour Bus Driver) of Agreement with ATU (AFL CIO) Local 192, effective 07/01/19. • Contracting - AC Transit contracts with MV Transportation to operate the Dumbarton Express bus services, in conjunction with the Dumbarton Bus Regional Operations Consortium. Also, AC Transit's paratransit service is provided by a Broker under contract with the EBPC. The Broker in turn contracts with three private companies for operations and maintenance of the system.

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99155	Reduced Fare Eligibility - For any operator who received TDA Article 4 funds, if the operator offers reduced fares to senior citizens and disabled persons, applicant will honor the federal Medicare identification card, the California Department of Motor Vehicles disability ID card, the Regional Transit Connection Discount Card, or any other current identification card issued by another transit operator that is valid for the type of transportation service or discount requested; and if the operator offers reduced fares to senior citizens, it also offers the same reduced fare to disabled patrons	In Compliance	Bus fare and discount pages present reduced fare options and ID requirements under "Fares" on AC Transit's web site: https://www.actransit.org/fares, and https://www.actransit.org/discounts.
PUC99155.1(a)(1)(2)	Welfare-to-Work - The operator coordinates with county welfare departments in order to ensure that transportation moneys available for purposes of assisting recipients of aid are expended efficiently for the benefit of that population; if a recipient of CalWORKs program funds by the county, the operator shall give priority to the enhancement of public transportation services for welfare-to-work purposes and to the enhancement of transportation alternatives, such as, but not limited to, subsidies or vouchers, van pools, and contract paratransit operations, in order to promote welfare-to-work purposes.	In Compliance	• AC Transit participates in MTC's Coordinated Human Services Transportation Plan, as East Bay Paratransit. • In the past, MTC also programmed some 5307 JARC formula funds for low-income area supporting services, which AC Transit uses for bus service.

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99314.7, Govt Code 66516, MTC Res. Nos. 3837, 4073	Joint Revenue Sharing Agreement - The operator has current joint fare revenue sharing agreements in place with transit operators in the MTC region with which its service connects, and submitted copies of agreements to MTC	In Compliance	• Signatory participant in Amended and Restated Clipper® Memorandum of Understanding (October 2022). Agreement also includes MTC and the other transit operators participating in the Clipper® program. • Dumbarton Bridge Express Service Cooperative Agreement (and 2006 Dumbarton Express Update) • Other valid transfer/revenue sharing agreements with connecting operators: BART, CCCTA, FAST, GGBHTD, SamTrans, SFMTA, Union City, Vallejo (assumed by SolTrans), VTA, and WestCAT.
PUC99246(d)	Process for Evaluation of Passenger Needs - The operator has an established process in place for evaluating the needs and types of passengers being served	In Compliance	• Discussions in latest Short Range Transit Plan (FY2019 – FY2029) of System/Service Evaluation (Chapter 4); and Operations Plan and Budget (Chapter 5 – service overview, service issues, passenger concerns, etc.). • AC Transit Title VI Program, September 2020

V. STATUS OF PRIOR AUDIT RECOMMENDATIONS

AC Transit's prior performance audit was completed in June 2020. Generally, MTC has used the audit recommendations as the basis for developing the Productivity Improvement Program (PIP) projects the operator is required to complete. MTC tracks PIP project implementation as part of its annual review of the operator's TDA-STA claim application. This section provides an assessment of actions taken by TDA-STA recipients toward implementing the recommendations advanced in the prior audit. This assessment provides continuity between the current and prior audits, which allows MTC to fulfill its obligations where the recommendations were advanced as PIP projects.

This review addresses AC Transit's responses to the recommendations made in the prior performance audit, and whether AC Transit made reasonable progress toward their implementation. There were three recommendations made in AC Transit's prior audit. A summary of the recommendations and the actions taken by AC Transit in response is presented in Exhibit 7. A determination of the status of the recommendations also is provided, using one of the following four evaluation categories:

- Implemented – appropriate actions have been taken and the issue has been sufficiently addressed.
- Implementation in Progress – actions have been taken to address the issue, but the recommendation remains open until further actions are completed.
- Not Implemented – no actions have been taken to address the issue, and the recommendation remains open.
- Closed – no actions have been taken to address the issue, but changes in circumstances have impacted the need to implement the recommendation.

AC Transit has implemented corrective actions for all three recommendations from the prior audit. Two recommendations have been closed due to different or changing circumstances that no longer require further action, although AC Transit is encouraged to continue monitoring the trends in those functional indicators and take action if required. The remaining recommendation is still in progress, with additional review and actions required to improve the results of the recommendation. That one remaining recommendation has been carried over to this audit report.

- In response to the first recommendation for AC Transit to examine the increase in bus operator unscheduled absences, AC Transit identified a shortage of extra-board operators, operators who cover for scheduled operators when they are unable to perform their duties as one of the main reasons for excessive absences. Also, about one-third of unscheduled absences were by operators with less than five years of service with the agency. AC Transit implemented several initiatives to address absenteeism, including a Service Quality Enhancement Taskforce aimed at reducing absenteeism and raising the level of service quality through enhanced communication, coaching and development opportunities, including assessing the bus run structure to help cover service requirements and reduce operator burnout related to excessive overtime. AC Transit also implemented a focus group to address the following:

  - Review findings from Supervision, Planning and Scheduling, and Systems Analysis
  - Provide any immediate recommendations, if any, for operators to implement
  - Solicit feedback from the operators for the team to research and fix.
  - Set team expectations for the coming week of operations and additional monitoring to optimize route performance in the short-term, and
  - Regularly communicate back to the operators to review the improvements or discuss why (if any) implementations could not happen.

  AC Transit's efforts do not appear to have been successful in the current audit period. The operator unscheduled absences rate increased from 20.9 percent in FY2020 to 23.8 percent in FY2022, a 13.9 percent overall decrease

in performance during the current audit period. Beyond the current audit period, AC Transit has calculated its operator unscheduled absence rate for FY2023 at 22.6 percent, showing some improvement in the post-pandemic era. Still, for this audit report, AC Transit is encouraged to continue its efforts to reduce operator unscheduled absences going forward.

- The second recommendation was to address the number of complaints related to the bus service. The rate of complaints about AC Transit's bus system increased overall by over 48 percent during the prior audit period. AC Transit identified the closing of the Salesforce Transit Center closing in September 2018, and subsequent re-opening in July 2019, as the cause of many customer complaints. The indefinite timeframes for the opening and closing of the Salesforce Center confused customers, resulting in increased complaints. AC Transit felt that extraordinary events beyond its control like the unexpected closing and re-opening of the Salesforce Transit center, and service disruptions related to the Covid-19 pandemic will not reoccur and decrease the amount of customer complaints. AC Transit did not implement any specific remedies to reduce complaints, however, the rate of complaints decreased by almost 20 percent overall during the current audit period, from 30.1 per 100,000 passenger trips in FY2020 to 24.2 in FY2022. As the trend in complaints appears to be improving, this recommendation is closed, with no further action required of AC Transit.

- In response to the third recommendation to examine the cause for and develop strategies to reduce the number of missed trips for the bus service, AC Transit explained that a switch to a new CleverCAD operating system during FY2018-19 required the use of a new methodology for calculating missed trip data, which resulted in the number of missed trips increasing. AC Transit also found that the increase in missed trip numbers was largely due to workforce availability, which is related to the lack of extra-board operators as mentioned in the first recommendation. In addition, the COVID-19 pandemic had an effect on the availability of operators during the period, and thus the overall number of missed trips as well, compounding the staffing issues. AC Transit is implementing its Service Quality Enhancement Taskforce and focus groups to remedy the problem of operator availability.

  In the current audit period, the rate of missed trips to total trips continued to increase, by more than 175 percent overall between FY2020 and FY2022.

In actual numbers, the number of missed trips decreased from 46,751 to 35,155 from FY2020 to FY2021, before ending at 111,946 in FY2022, the first full year of the completely implemented CleverCAD calculating methodology. Given the evidence that missed trips actually decreased between FY2020 and FY2021, and that the new calculating methodology caused a significant increase in number of missed trips reported in FY2022, this recommendation is considered closed. AC Transit is encouraged to continue its efforts to implement the Service Quality Enhancement Taskforce and focus group recommendations and monitor the number of missed trips to determine the direction of the trend for post FY2022 bus services and take additional actions, if necessary, prior to the next TDA audit.

Exhibit 7: Status of Prior Audit Recommendations

Recommendation	Actions Taken	Evaluation
1. Examine the increase in operator unscheduled absences for the fixed-route bus service.	• Operators with <5 years' experience accounted for about 32 percent of all unscheduled absences. • Shortage of extra-board drivers attributed to inability to cover unscheduled absences. • Implemented Service Quality Enhancement Taskforce, to reduce absenteeism, increase service quality through enhanced communication, training, development opportunities, etc. • Implemented focus group to solicit feedback from operators, provide recommendations to operators, review findings from Supervision, Planning and Scheduling, and Systems Analysis. • Unscheduled absences continued to increase, about 14 percent overall, during the current TDA audit period. • AC Transit is encouraged to continue its efforts to reduce operator unscheduled absences going forward.	Implementation in Progress
2. Address the increasing number of complaints for the fixed-route bus service.	• The closing of the Salesforce Transit Center in September 2018, and subsequent re-opening in July 2019, and the indefinite timeframe for the closing/opening of the Salesforce Center confused customers, resulting in increased complaints. • AC Transit believed these events beyond its control (unexpected closing/re-opening of the Salesforce Transit center, service disruptions related to Covid-	Closed

Recommendation	Actions Taken	Evaluation
	19) will not reoccur and decrease the amount of customer complaints. • Complaints decreased by almost 20 percent overall during the current audit period, from 30.1 per 100,000 passenger trips in FY2020 to 24.2 in FY2022, with no further action required of AC Transit.	
3. Examine the causes of and develop strategies to reduce the number of missed trips for the fixed-route bus service.	• New CleverCAD operating system Implemented FY2018-19, requiring a new methodology for calculating missed trip data, resulting in significant increase in missed trips. • The increase in missed trips was largely due to workforce availability, related to the lack of extra-board operators as mentioned in recommendation one. • COVID-19 also affected the availability of operators during the period, compounding the staffing issues. • AC Transit is implementing its Service Quality Enhancement Taskforce and focus groups to remedy the problem of operator availability. • The rate of missed trips to total trips continued to increase, by more than 175 percent overall between FY2020 and FY2022 however, the number of missed trips did decrease between FY2020 and FY2021. The significant increase in FY2022 missed trips is attributed to the first full year of CleverCAD implementation.	Closed

VI. FUNCTIONAL PERFORMANCE INDICATOR TRENDS

To further assess AC Transit's performance over the past three years, a detailed set of functional area performance indicators was defined. This assessment consists of a three-year trend analysis of the functions in each of the following areas:

- Management, Administration and Marketing
- Service Planning
- Operations
- Maintenance
- Safety

The indicators selected for this analysis were primarily those that were tracked regularly by AC Transit or for which input data were maintained by AC Transit on an on-going basis, such as performance reports, contractor reports, annual financial reports and NTD reports. As such, there may be some overlap with the TDA indicators examined earlier in the audit process, but most indicators will be different. Some indicators were selected from the California Department of Transportation's Performance Audit Guidebook for Transit Operators and Regional Transportation Planning Entities as being appropriate for this evaluation. The input statistics for the indicators, along with their sources, are contained in Appendix A at the end of this report.

As noted earlier in this report, AC Transit staff identified a significant portion of operating costs reported in NTD that are construction-related costs that are passed through AC Transit. AC Transit included these costs with operating expenses as they are not considered capital costs because these are pass-through expenses, and no equity is

retained by the District. As such, these costs were removed from the NTD total operating cost and general administration cost data inputs for the purposes of the functional area performance review.

The trends in performance are presented over the three-year audit period to give an indication of which direction performance is moving for these indicators. The remainder of this section presents the findings from this review. The discussion presents the highlights of systemwide and modal (bus and rapid bus) performance, each followed by an exhibit illustrating the indicators by function as applicable. It is noted that some of the data items requested to create the functional indicators are reported as systemwide data, and not broken down by mode (bus vs. rapid bus). In those circumstances, the data was presented in the bus mode functional indicators to measure performance.

Systemwide

For the purposes of this review, AC Transit's functional indicators relating to Management, Administration and Marketing have been included generally on a systemwide basis. Audit period performance is discussed below and presented in Exhibit 6.

- Administrative costs decreased from 31 to 23.8 percent of total operating costs, decreasing an average of about 23 percent overall.
- Administrative costs decreased from about $64 to $56 per vehicle service hour.
- The portion of administrative costs attributed to marketing activities increased slightly from 2.9 percent to 3.7 percent overall.
- In terms of passenger trips, marketing expenditures increased from $0.09 to $0.13 per trip.

- The systemwide farebox recovery ratio declined from 14.5 percent in the first year to 8.1 percent in FY2022, reflecting the lingering effect of COVID-19 on system ridership but showing improvement between FY2021 and FY2022.

* * * * *

The following is a brief summary of the systemwide functional trend highlights between FY2020 and FY2022:

- Administrative costs trended lower, as administrative costs share of total operating costs decreased 23 percent, and cost per vehicle service hour decreased about 12 percent.
- Marketing costs increased modestly from 2.9 percent to 3.7 percent overall compared to total administrative costs and increased over 40 percent from nine cents to thirteen cents per passenger trip.
- The systemwide farebox recovery ratio decreased approximately 44 percent during the period, due to the lingering effects of the COVID pandemic on ridership. Farebox recovery did show improvement in FY2022.

Exhibit 8: Functional Performance Trends – Systemwide

FUNCTION/Indicator	Actual Performance		
	FY2020	FY2021	FY2022
MANAGEMENT, ADMINISTRATION & MARKETING			
Administrative Cost/Total Operating Cost	31.0%	28.6%	23.8%
Annual Percent Change	- -	*-7.7%*	*-16.6%*
Three Year Percent Change	- -	- -	*-23.1%*
Adminstrative Cost/Vehicle Service Hour	$63.98	$68.71	$56.08
Annual Percent Change	- -	*7.4%*	*-18.4%*
Three Year Percent Change	- -	- -	*-12.3%*
Marketing Cost/Total Administrative Cost	2.9%	3.2%	3.7%
Annual Percent Change	- -	*8.1%*	*15.6%*
Three Year Percent Change	- -	- -	*25.0%*
Marketing Cost/Unlinked Passenger Trip	$0.09	$0.19	$0.13
Annual Percent Change	- -	*104.3%*	*-29.7%*
Three Year Percent Change	- -	- -	*43.7%*
Farebox Recovery Ratio (Farebox Rev./Oper. Cost)	14.5%	5.5%	8.1%
Annual Percent Change	- -	*-62.2%*	*47.3%*
Three Year Percent Change	- -	- -	*-44.3%*

Bus Service

AC Transit's bus service functional area trends represent areas of cost efficiency, safety, productivity and service reliability. Audit period performance is discussed below and presented in Exhibit 7.

- Service Planning
  - Operating costs per passenger mile increased from $2.55 in FY2020 to $4.40 in FY2022, an increase of almost 73 percent, reflecting the decrease in passenger miles greatly outpacing the decrease in operating costs.
  - Vehicle service miles and hours per total miles both improved, with service miles increasing from about 89 percent to 95 percent of all vehicle miles, and service hours increasing from about 93 percent to 97 percent of all vehicle hours over the three years.
  - The farebox recovery ratio declined from 15.1 percent in FY2020 to 5.7 percent in FY2021, before increasing to 8.3 percent in FY2022, reflective of the effect of the COVID pandemic on ridership during this period.

- Operations
  - Vehicle operations cost as a percent of total operating cost fluctuated slightly but began and ended the audit period at about 57 percent.
  - Vehicle operations cost per service hour increased overall, from $131.72 in FY2020 to $147.31 by FY2022.
  - Operator scheduled absences remained between nine and nine and one-half percent of total hours worked, while unscheduled absences increased from 20.9 to 23.8 percent, an almost 14 percent increase.
  - Schedule adherence began and ended the audit period at about 73.5 percent, with an increase to 76.3 percent in FY2021.
  - The rate of complaints decreased almost 20 percent overall, from 30.1 to 24.2 per 100,000 passenger trips.

- The incidence of missed trips compared with total trips was just over two percent in the first two years, but increased over 175 percent overall, to 6.6 percent in FY2022, an increase of about 77,000 missed trips in actual numbers between FY2021 and FY2022. This increase was attributed to a new methodology for calculating missed trips required by the adoption of a new CleverCAD operating system in 2019. It took AC Transit until the FY2022 reporting year to set up the system parameters and validate the data to ensure the new methodology was correct. The new methodology resulted in a significant increase in missed trips reported in FY2022. The COVID-19 pandemic had an effect on the availability of operators during the period, and thus the overall number of missed trips as well, compounding the problem.

- Maintenance

  - Total maintenance costs fluctuated during the period but remained between 18.4 and 19.1 percent of total operating costs.

  - Vehicle maintenance costs per service mile results were similar, increasing overall from $3.51 to $3.76 (7.3 percent).

  - Mechanic pay hours increased overall from about 88 percent of vehicle service hours in the first two years to 96 percent in FY2022.

  - Maintenance employee scheduled absences remained steady between nine and 10 percent of total hours worked, while unscheduled absences remained steady around 14 percent.

  - The vehicle spare ratio increased over 1600 percent during the period, from 1.5 percent in FY2020 to 25.3 percent in FY2022. This is attributed to an NTD reporting anomaly during the FY2020 reporting year and AC Transit running fewer buses during the COVID pandemic, resulting in an unusually low number of spare vehicles in FY2020 that skewed the overall performance of this indicator.

  - The mean distance between major failures improved overall by about six percent. When looking at all failures, there was an overall improvement of about seven percent over the three years.

- Safety

  - The rate of preventable accidents increased slightly, from 1.8 to 2.1 per 100,000 vehicle miles.

  - Casualty/liability costs per service hour and mile both increased significantly in FY2022, resulting in a more than 200 percent overall increase for the period. The increase was attributed to increased payouts for claims by AC Transit during the latter two audit years, and an increase in the casualty/liability deductible, resulting in AC Transit paying a higher share of the payouts.

  - Lost days due to industrial accidents increased 23 percent overall, from 14,944 to 18,374. The increase is attributed to an increase in upper body injury claims filed due to the use of newly installed Plexiglass barriers installed on the buses to protect operators during the pandemic. The barriers have also led to an increase in injury claims due to passengers occasionally weaponizing the barriers by pushing them into the operators during assault attempts.

* * * * *

The following is a brief summary of the bus service functional trend highlights between FY2020 and FY2022:

- Service Planning results showed operating cost per passenger mile increasing over 72 percent due to passenger miles decreasing at a much higher rate than operating costs during the pandemic, vehicle miles in service increasing just over seven percent and vehicle hours in service increasing about four percent overall. Farebox recovery decreased 45 percent overall, from 15 to eight percent, but showed improvement between FY2021 and FY2022, as the system began recovering from the COVID pandemic.

- Operations results include vehicle operations costs per service hour increasing by about 12 percent but remaining almost unchanged as a percentage of total costs. Operator scheduled absence rates remained

steady at just above nine percent, while unscheduled absences increased almost 14 percent overall. Schedule adherence was steady at about 73 percent overall. There was a 20 percent decrease in complaints received, while the percentage of missed trips per total trips increased from just over two percent in the first two years to 6.5 percent in FY2022. There was a significant increase in actual missed trip numbers (about 77,000 trips or 200 percent) between FY2021 and FY2022. This was attributed to a new methodology for calculating missed trips required by the adoption of the new CleverCAD operating system, installed in 2019, but the new methodology data was not validated until FY2022. COVID pandemic related staffing shortages for bus operators compounded the resulting increase in missed trips for FY2022.

- Maintenance results found overall maintenance costs mostly unchanged at about 19 percent of total costs, vehicle maintenance costs per service mile up just over seven percent, mechanic pay hours up almost 10 percent compared to service hours, steady maintenance employee scheduled and unscheduled absence rates, and improvement in the mechanical failure rates. The spare ratio began the audit period at 1.5 percent and ended at 25.3 percent, an increase of more than 1600 percent overall. This is attributed to an NTD reporting anomaly exacerbated by the COVID pandemic and AC Transit running fewer buses during the pandemic, resulting in an abnormally low number of spare vehicles in FY2020. The NTD reporting anomaly in FY2020 skewed the results for this indicator for the overall audit period. The spare ratio did decline between FY2021 and FY2022, and AC Transit anticipates it to decline even further as ridership begins to recover.

- Safety results showed a slight increase in the rate of preventable accidents, but significant increases in the casualty/liability cost rates. The casualty/liability increase was attributed to increased payouts for claims by AC Transit during the latter two audit years, and an increase in the casualty/liability deductible, resulting in AC Transit paying a higher share of the payouts. The rate of lost days due to industrial accidents increased by 23 percent overall, attributed to an increase in upper body injury claims filed due to the use of newly installed Plexiglass barriers installed on the buses to protect operators during the pandemic. The barriers have also led to an increase in injury claims due to passengers occasionally weaponizing the barriers by pushing them into the operators during assault attempts.

Exhibit 9: Functional Performance Trends – Bus Service

FUNCTION/Indicator	Actual Performance		
	FY2020	FY2021	FY2022
SERVICE PLANNING			
Total Operating Cost/Passenger Mile	$2.55	$5.42	$4.40
Annual Percent Change	- -	*112.8%*	*-18.8%*
Three Year Percent Change	- -	- -	*72.8%*
Vehicle Service Miles/Total Miles	88.9%	95.5%	95.4%
Annual Percent Change	- -	*7.5%*	*-0.1%*
Three Year Percent Change	- -	- -	*7.4%*
Vehicle Service Hours/Total Hours	93.2%	97.0%	97.0%
Annual Percent Change	- -	*4.1%*	*0.1%*
Three Year Percent Change	- -	- -	*4.2%*
Farebox Recovery Ratio (Farebox Rev./Oper. Cost)	15.1%	5.7%	8.3%
Annual Percent Change	- -	*-62.4%*	*45.8%*
Three Year Percent Change	- -	- -	*-45.2%*
OPERATIONS			
Vehicle Operations Cost/Total Operating Cost	57.3%	53.8%	57.0%
Annual Percent Change	- -	*-6.1%*	*6.1%*
Three Year Percent Change	- -	- -	*-0.4%*
Vehicle Operations Cost/Vehicle Service Hour	$131.72	$136.09	$147.31
Annual Percent Change	- -	*3.3%*	*8.2%*
Three Year Percent Change	- -	- -	*11.8%*
Operator Scheduled Absence Rate	9.0%	9.5%	9.2%
Annual Percent Change	- -	*5.6%*	*-3.2%*
Three Year Percent Change	- -	- -	*2.2%*
Operator Unscheduled Absence Rate	20.9%	22.5%	23.8%
Annual Percent Change	- -	*7.7%*	*5.8%*
Three Year Percent Change	- -	- -	*13.9%*
On-Time Performance	73.6%	76.3%	73.5%
Annual Percent Change	- -	*3.7%*	*-3.7%*
Three Year Percent Change	- -	- -	*-0.1%*
Complaints/100,000 Unlinked Passenger Trips	30.1	25.6	24.2
Annual Percent Change	- -	*-14.7%*	*-5.5%*
Three Year Percent Change	- -	- -	*-19.4%*
Missed Trips/Total Trips	2.4%	2.2%	6.5%
Annual Percent Change	- -	*-7.2%*	*197.9%*
Three Year Percent Change	- -	- -	*176.5%*

FUNCTION/Indicator	Actual Performance		
	FY2020	FY2021	FY2022
MAINTENANCE			
Vehicle + Non-Veh. Maint. Cost/Total Operating Cost	18.6%	18.4%	19.1%
Annual Percent Change	- -	*-1.1%*	*3.6%*
Three Year Percent Change	- -	- -	*2.5%*
Vehicle Maintenance Cost/Vehicle Service Mile	$3.51	$3.76	$3.76
Annual Percent Change	- -	*7.1%*	*0.2%*
Three Year Percent Change	- -	- -	*7.3%*
Maintenance Pay Hours/Vehicle Service Hours	87.8%	88.7%	96.1%
Annual Percent Change	- -	*1.0%*	*8.3%*
Three Year Percent Change	- -	- -	*9.4%*
Maintenance Employee Scheduled Absences	9.0%	9.9%	9.6%
Annual Percent Change	- -	*9.3%*	*-2.5%*
Three Year Percent Change	- -	- -	*6.6%*
Maintenance Employee Unscheduled Absences	14.1%	13.2%	14.4%
Annual Percent Change	- -	*-6.4%*	*8.8%*
Three Year Percent Change	- -	- -	*1.8%*
Spare Vehicles/Total Vehicles	1.5%	32.2%	25.3%
Annual Percent Change	- -	*2084.0%*	*-21.2%*
Three Year Percent Change	- -	- -	*1620.0%*
Mean Distance between Major Failures (Miles)	16,580	14,371	17,609
Annual Percent Change	- -	*-13.3%*	*22.5%*
Three Year Percent Change	- -	- -	*6.2%*
Mean Distance between All Failures (Miles)	6,813	6,813	7,285
Annual Percent Change	- -	*0.0%*	*6.9%*
Three Year Percent Change	- -	- -	*6.9%*
SAFETY			
Preventable Accidents/100,000 Vehicle Miles	1.8	1.5	2.1
Annual Percent Change	- -	*-16.0%*	*40.2%*
Three Year Percent Change	- -	- -	*17.8%*
Casualty & Liability Cost/Vehicle Service Hour	$4.14	$6.94	$13.18
Annual Percent Change	- -	*67.8%*	*89.8%*
Three Year Percent Change	- -	- -	*218.5%*
Casualty & Liability Cost/Vehicle Service Mile	$0.40	$0.69	$1.27
Annual Percent Change	- -	*69.5%*	*84.6%*
Three Year Percent Change	- -	- -	*212.9%*
Lost Days Due to Industrial Accidents	14,944	10,950	18,374
Annual Percent Change	- -	*-26.7%*	*67.8%*
Three Year Percent Change	- -	- -	*23.0%*

Rapid Bus Service

AC Transit's rapid bus service functional area trends represent areas of cost efficiency, safety, productivity and service reliability. As noted earlier, the rapid bus service began in August FY2020, so one year of partial service data (FY2021), and one full year (FY2022), are presented in this section. This makes any determination of performance "trends" difficult to ascertain. Also, some of the data items requested to create the functional indicators are reported as systemwide data, and not broken down by mode (bus vs. rapid bus). In those circumstances, the data was presented in the bus mode functional indicators to measure performance. Those items are noted in the text below and footnoted in the rapid bus indicator table. Audit period performance is discussed below and presented in Exhibit 8.

- Service Planning
  - Operating costs per passenger mile decreased from $2.28 in FY2021 to $1.92 in FY2022, a decrease of about 16 percent.
  - Vehicle service miles and hours per total miles both improved, with service miles increasing from 93 percent to almost 95 percent of all vehicle miles, and service hours increasing from about 91 percent to 93 percent of all vehicle hours.
  - The farebox recovery ratio increased from 6.3 percent in FY2021 to 8.3 percent in FY2022, an increase of about 32 percent.

- Operations
  - Vehicle operations cost as a percent of total operating cost increased nine percent overall from 52.3 percent to 57 percent.

- Vehicle operations cost per vehicle service hour increased from $113.16 in FY2021 to $140.77 in FY2022.

- The data for operator scheduled and unscheduled absences, on-time performance, complaints, and missed trips are all reported on a systemwide basis and are included with the bus mode part of this section.

- Maintenance

  - Total maintenance costs remained steady between 19.1 and 18.9 percent of total operating costs.

  - Vehicle maintenance costs per service mile results were similar, increasing from $4.03 to $4.28 (6.2 percent).

  - Data for mechanic pay hours and maintenance employee scheduled and unscheduled absences were reported on a systemwide basis.

  - The vehicle spare ratio decreased by 10 percent between FY2021 and FY2022, from 37 percent to 33.3 percent.

  - The mean distance between major failures improved by about 15 percent. When looking at all failures, there was a decrease of five percent between the two years.

- Safety

  - Data on the rate of preventable accidents and lost days due to industrial accidents are calculated systemwide for AC Transit.

  - Casualty/liability costs per service hour and mile both increased significantly, resulting in a more than 100 percent overall increase for the period. This is attributed to the same increases in casualty/liability payouts described in the bus service section.

* * * * *

The following is a brief summary of the rapid bus service functional trend highlights between FY2021 and FY2022:

- Service Planning results showed operating cost per passenger mile decreasing almost 16 percent, vehicle miles in service and vehicle hours in service both increasing about two percent, and farebox recovery increasing from 6.3 to 8.3 percent.

- Operations results include vehicle operations costs per service hour increasing just over 24 percent but increasing only nine percent as a percentage of total costs. Data for operator scheduled and unscheduled absences, on-time performance, complaints, and missed trips are all reported on a systemwide basis and are included with the bus mode part of this section.

- Maintenance results found overall maintenance costs mostly unchanged at about 19 percent of total costs, and vehicle maintenance costs per service mile up just over six percent. There was improvement in the major mechanical failure rate, but the total mechanical failure rate decreased by five percent. Data for mechanic pay hours per vehicle service hour, and maintenance employee scheduled and unscheduled absences are reported on a systemwide basis and are included with the bus mode part of this section.

- Safety results showed significant increases in the casualty/liability cost rates. This is attributed to the same increases in casualty/liability payouts described in the bus service section. Data for the rate of preventable accidents and data for lost days due to industrial accidents are reported on a systemwide basis and are included with the bus mode part of this section.

Exhibit 10: Functional Performance Trends – Rapid Bus Service

FUNCTION/Indicator	Actual Performance		
	FY2020*(a)*	FY2021	FY2022
SERVICE PLANNING			
Total Operating Cost/Passenger Mile	- -	$2.28	$1.92
Annual Percent Change	- -	- -	*-15.9%*
Three Year Percent Change	- -	- -	- -
Vehicle Service Miles/Total Miles	- -	93.1%	94.8%
Annual Percent Change	- -	- -	*1.8%*
Three Year Percent Change	- -	- -	- -
Vehicle Service Hours/Total Hours	- -	91.3%	93.0%
Annual Percent Change	- -	- -	*1.8%*
Three Year Percent Change	- -	- -	- -
Farebox Recovery Ratio (Farebox Rev./Oper. Cost)	- -	6.3%	8.3%
Annual Percent Change	- -	- -	*31.7%*
Three Year Percent Change	- -	- -	- -
OPERATIONS			
Vehicle Operations Cost/Total Operating Cost	- -	52.3%	57.0%
Annual Percent Change	- -	- -	*9.0%*
Three Year Percent Change	- -	- -	- -
Vehicle Operations Cost/Vehicle Service Hour	- -	$113.16	$140.77
Annual Percent Change	- -	- -	*24.4%*
Three Year Percent Change	- -	- -	- -
Operator Sched. Absences/Total Hours Worked	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Operator Unsched. Absences/Total Hours Worked	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
On-Time Performance	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Complaints/100,000 Unlinked Passenger Trips	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Missed Trips/Total Trips	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -

FUNCTION/Indicator	Actual Performance		
	FY2020*(a)*	FY2021	FY2022
MAINTENANCE			
Vehicle + Non-Veh. Maint. Cost/Total Operating Cost	- -	19.1%	18.9%
Annual Percent Change	- -	- -	*-1.0%*
Three Year Percent Change	- -	- -	- -
Vehicle Maintenance Cost/Vehicle Service Mile	- -	$4.03	$4.28
Annual Percent Change	- -	- -	*6.2%*
Three Year Percent Change	- -	- -	- -
Maintenance Pay Hours/Vehicle Service Hours	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Maintenance Employee Scheduled Absences	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Maintenance Employee Unscheduled Absences	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Spare Vehicles/Total Vehicles	- -	37.0%	33.3%
Annual Percent Change	- -	- -	*-10.0%*
Three Year Percent Change	- -	- -	- -
Mean Distance between Major Failures (Miles)	- -	22,317	25,626
Annual Percent Change	- -	- -	*14.8%*
Three Year Percent Change	- -	- -	- -
Mean Distance between All Failures (Miles)	- -	7,282	6,919
Annual Percent Change	- -	- -	*-5.0%*
Three Year Percent Change	- -	- -	- -
SAFETY			
Preventable Accidents/100,000 Vehicle Miles	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Casualty & Liability Cost/Vehicle Service Hour	- -	$5.97	$12.72
Annual Percent Change	- -	- -	*113.1%*
Three Year Percent Change	- -	- -	- -
Casualty & Liability Cost/Vehicle Service Mile	- -	$0.71	$1.46
Annual Percent Change	- -	- -	*105.5%*
Three Year Percent Change	- -	- -	- -
Lost Days Due to Industrial Accidents	- -	*(b)*	*(b)*
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -

(a) Service not operated

(b) Data reported system-wide, not broken out by mode; see MB performance measures for results

VII. CONCLUSIONS AND RECOMMENDATIONS

This report has presented the findings of the compliance audit portion of the performance audit of AC Transit's transit services. The primary focus was the three-year audit period of FY2020 through FY2022 (July 1, 2019 through June 30, 2022). It has focused on TDA compliance issues including trends in TDA-mandated performance indicators and compliance with selected sections of the state Public Utilities Code (PUC). It also provides the findings from an overview of AC Transit's data collection activities to support the TDA indicators. Performance results from the previous three years have also been included as applicable to provide a longer perspective on performance.

The key findings and conclusions from the individual sections of this performance audit are summarized below:

- Data Collection – Based on the information provided, AC Transit is in compliance with the data collection and reporting requirements for all five TDA statistics. In addition, the statistics collected over the six-year (two-years for rapid bus service, which began operating in August 2020) review period appear to be consistent with the TDA definitions and indicate general consistency in terms of the direction and magnitude of the year-to-year changes across the statistics.

- TDA Performance Trends

  AC Transit's performance trends for the five TDA-mandated indicators were analyzed by mode. A six-year analysis period was used for all the indicators. In addition, component operating costs were analyzed for the review period.

  Bus Service – The following is a brief summary of the TDA performance trend highlights over the six-year period of FY2017 through FY2022:

- The COVID-19 pandemic had a negative impact on every performance indicator during the current FY202-FY2022 audit period, especially in terms of decreased passengers, and decreased service levels (hours and miles).

- There was an average annual increase in the operating cost per hour of 6.1 percent. In constant dollars, operating cost per hour increased an average 2.0 percent per year.

- The cost per passenger increased on average by 17.5 percent per year, which amounted to an average annual increase of 12.9 percent in constant dollars.

- Passenger productivity showed negative trends, with both passengers per vehicle service hour and vehicle service mile decreasing overall by 9.7 percent annually.

- Employee productivity decreased an average of four percent per year.

The following is a brief summary of the component operating costs trend highlights for the bus service between FY2017 and FY2022:

- Labor and fringe benefit costs were mixed, with labor increasing 1.4 and fringe benefits decreasing 0.9 percent annually overall. These two categories combined comprise about 80 percent of total operating costs.

- The most significant change was an average annual increase of 71.6 percent in the casualty/liability area, with considerable variances in cost increases and decreases seen in most years. While casualty/liability costs have averaged less than five percent of total annual costs, casualty/liability expenses have increased due to a higher number of claims during the audit period. Also, AC Transit's deductible was reduced, increasing the percentage of the claims that AC Transit is responsible for paying.

- The services and materials/supplies cost categories each experienced modest overall increases and represented about 13 to 15 percent of total operating costs over the six years.

- Miscellaneous other costs saw a modest decrease of 3.5 percent per year, contributing about three percent of total costs in each year.

Rapid Bus Service – The following is a brief summary of the bus rapid transit TDA performance trend highlights which began operating in August 2020. It should be noted that it is difficult to extrapolate "trends" in performance from such a short review period.

- Cost efficiency declined, with the operating cost per car service hour rising by 14.2 percent. With the effects of inflation removed, the cost per hour increased by 6.1 percent.

- Increasing ridership improved BRT cost effectiveness, with the operating cost per passenger decreasing by 24.3 percent. In constant dollars, the cost per passenger decreased by 29.7 percent.

- Passenger productivity showed positive performance, with passengers per service hour and passengers per service mile increasing by 50.9 and 45.5 percent, respectively.

- Employee productivity was steady, with car service hours per FTE up by 0.4 percent in FY2022.

The following is a brief summary of the component operating costs trend highlights for rapid bus for FY2021 and FY2022:

- The bus rapid transit total operating costs increased by 12.1 percent between FY2021 and FY2022.

- Labor costs increased 11.5 percent and remained at about 38 percent of total operating costs, while fringe benefits costs decreased 3.8 percent and decreased its share of total operating costs from 43.8 percent to 37.5 percent of total operating costs.

- Services costs increased by 27.7 percent and comprised just under 10 percent of total operating costs in both years.

- The materials/supplies, casualty/liability, and other expenses categories combined comprised between 10 and 15 percent of total

operating costs in both years, and each category showed significant increases in FY2022.

- PUC Compliance – AC Transit is in compliance with each of the seven sections of the state PUC that were reviewed as part of this performance audit. These sections included requirements concerning CHP terminal safety inspections, vehicle staffing, labor contracts, reduced fares, welfare-to-work funding coordination, revenue sharing, and evaluating passenger needs.

- Status of Prior Audit Recommendations – There were three recommendations made in AC Transit's prior performance audit. AC Transit has implemented corrective actions for all three recommendations from the prior audit. Two recommendations have been closed due to different or changing circumstances that no longer require further action, although AC Transit is encouraged to continue monitoring the trends in those functional indicators and take action if required. The remaining recommendation is still in progress, with additional review and actions required to improve the results of the recommendation. That one remaining recommendation has been carried over to this audit report.

  The first recommendation was to examine the increase in bus operator unscheduled absences. AC Transit identified several conditions that were contributing to the increase in unscheduled absences. AC Transit implemented several initiatives to address absenteeism, including a Service Quality Enhancement Taskforce aimed at reducing absenteeism and raising the level of service quality through enhanced communication, coaching and development opportunities.

  AC Transit's efforts do not appear to have been successful in the current audit period. The operator unscheduled absences rate was 19.1 percent in FY2019, then increased from 20.9 percent in FY2020 to 23.8 percent in FY2022, a 13.9 percent overall decrease in performance during the current audit period. Beyond the current audit period, AC Transit has calculated its operator unscheduled absence rate for FY2023 at 22.6 percent, showing some improvement in the post-pandemic era. Still, for this audit report, AC

Transit is encouraged to continue its efforts to reduce operator unscheduled absences going forward.

The second recommendation was to address the number of complaints related to the bus service. AC Transit identified the closing of the Salesforce Transit Center closing in September 2018, and subsequent re-opening in July 2019, as the cause of many customer complaints, along with service disruptions related to the Covid-19 pandemic.

AC Transit did not implement any specific remedies to reduce complaints, however, the rate of complaints decreased by almost 20 percent overall during the current audit period, from 30.1 per 100,000 passenger trips in FY2020 to 24.2 in FY2022. As the trend in complaints appears to be improving, this recommendation is closed, with no further action required of AC Transit.

The third recommendation was to examine the cause for and develop strategies to reduce the number of missed trips for the bus service. AC Transit explained that a switch to a new CleverCAD operating system during FY2018-19 required the use of a new methodology for calculating missed trip data, which resulted in the number of missed trips increasing, along with the COVID-19 pandemic having an effect on the availability of operators during the period.

In the current audit period, the rate of missed trips to total trips continued to increase, by more than 175 percent overall between FY2020 and FY2022. In actual numbers, the number of missed trips decreased from 46,751 to 35,155 from FY2020 to FY2021, before ending at 111,946 in FY2022, the first full year of the completely implemented CleverCAD calculating methodology. Given the evidence that missed trips actually decreased between FY2020 and FY2021, and that the new calculating methodology caused a significant increase in number of missed trips reported in FY2022, this recommendation is considered closed. AC Transit is encouraged to continue its efforts to implement the Service Quality Enhancement Taskforce and focus group recommendations and monitor the number of missed trips to determine the direction of the trend for post FY2022 bus services and take additional actions, if necessary, prior to the next TDA audit.

- Functional Performance Indicator Trends

  To further assess AC Transit's performance over the past three years, a detailed set of systemwide and modal functional area performance indicators was defined and reviewed.

  Systemwide – The following is a brief summary of the systemwide functional trend highlights between FY2020 and FY2022:

  – Administrative costs trended lower, as administrative costs share of total operating costs decreased 23 percent, and cost per vehicle service hour decreased about 12 percent.

  – Marketing costs increased modestly from 2.9 percent to 3.7 percent overall compared to total administrative costs and increased over 40 percent from nine cents to thirteen cents per passenger trip.

  – The systemwide farebox recovery ratio decreased approximately 44 percent during the period, likely due to the lingering effects of the COVID pandemic on ridership. Farebox recovery did show improvement in FY2022.

  Bus Service – The following is a brief summary of the bus service functional trend highlights between FY2020 and FY2022:

  – Service Planning results showed operating cost per passenger mile increasing over 72 percent due to passenger miles decreasing at a much higher rate than operating costs, vehicle miles in service increasing just over seven percent and vehicle hours in service increasing about four percent overall. Farebox recovery decreased 45 percent overall, from 15 to eight percent, but showed improvement between FY2021 and FY2022, as the system began recovering from the COVID pandemic.

  – Operations results include vehicle operations costs per service hour increasing by about 12 percent but remaining almost unchanged as a percentage of total costs. Operator scheduled absence rates remained steady at just above nine percent, while unscheduled absences increased almost 14 percent. Schedule adherence was steady at about 73 percent overall. There was a 20 percent decrease

in complaints received, while the percentage of missed trips per total trips increased from just over two percent in the first two years to 6.5 percent in FY2022. There was a significant increase in actual missed trip numbers (about 77,000 trips or 200 percent) between FY2021 and FY2022. This was attributed to a new methodology for calculating missed trips required by the adoption of the new CleverCAD operating system, installed in 2019, but the new methodology data was not validated until FY2022. COVID pandemic related staffing shortages for bus operators compounded the resulting increase in missed trips for FY2022.

- Maintenance results found overall maintenance costs mostly unchanged at about 19 percent of total costs, vehicle maintenance costs per service mile up just over seven percent, mechanic pay hours up almost 10 percent compared to service hours, steady maintenance employee scheduled and unscheduled absence rates, and improvement in the mechanical failure rates. The spare ratio began the audit period at 1.5 percent and ended at 25.3 percent, an increase of more than 1600 percent overall. This is attributed to an NTD reporting anomaly exacerbated by the COVID pandemic and AC Transit running fewer buses during the pandemic, resulting in an abnormally low number of spare vehicles in FY2020. The NTD reporting anomaly in FY2020 skewed the results for this indicator for the overall audit period. The spare ratio did decline between FY2021 and FY2022, and AC Transit anticipates it to decline even further as ridership begins to recover.

- Safety results showed a slight increase in the rate of preventable accidents, but significant increases in the casualty/liability cost rates. The casualty/liability increase was attributed to increased payouts for claims by AC Transit during the latter two audit years, and an increase in the casualty/liability deductible, resulting in AC Transit paying a higher share of the payouts. The rate of lost days due to industrial accidents increased by 23 percent overall, attributed to an increase in upper body injury claims filed due to the use of newly installed Plexiglass barriers installed on the buses to protect operators during the pandemic. The barriers have also led to an increase in injury claims due to passengers occasionally weaponizing the barriers by pushing them into the operators during assault attempts.

Rapid Bus Service – The following is a brief summary of the bus service functional trend highlights between FY2020 and FY2022:

- Service Planning results showed operating cost per passenger mile decreasing almost 16 percent, vehicle miles in service and vehicle hours in service both increasing about two percent, and farebox recovery increasing from 6.3 to 8.3 percent.

- Operations results include vehicle operations costs per service hour increasing just over 24 percent but increasing only nine percent as a percentage of total costs. Data for operator scheduled and unscheduled absences, on-time performance, complaints, and missed trips are all reported on a systemwide basis and are included with the bus mode part of this section.

- Maintenance results found overall maintenance costs mostly unchanged at about 19 percent of total costs, and vehicle maintenance costs per service mile up just over six percent. There was improvement in the major mechanical failure rate, but the total mechanical failure rate decreased by five percent. Data for mechanic pay hours per vehicle service hour, and maintenance employee scheduled and unscheduled absences are reported on a systemwide basis and are included with the bus mode part of this section.

- Safety results showed significant increases in the casualty/liability cost rates. This is attributed to the same increases in casualty/liability payouts described in the bus service section. Data for the rate of preventable accidents and data for lost days due to industrial accidents are reported on a systemwide basis and are included with the bus mode part of this section.

Recommendations

1. CONTINUE TO EXAMINE THE INCREASE IN OPERATOR UNSCHEDULED ABSENCES FOR THE FIXED-ROUTE BUS SERVICE.
   [Reference Sections: V. Status of Prior Audit Recommendations; VI. Functional Performance Indicator Trends]

In response to the first recommendation for AC Transit to examine the increase in bus operator unscheduled absences, AC Transit identified a shortage of extra-board operators, operators who cover for scheduled operators when they are unable to perform their duties, as one of the main reasons for excessive absences. Also, about one-third of unscheduled absences were by operators with less than five years of service with the agency. AC Transit implemented several initiatives to address absenteeism, including a Service Quality Enhancement Taskforce aimed at reducing absenteeism and raising the level of service quality through enhanced communication, coaching and development opportunities, including assessing the bus run structure to help cover service requirements and reduce operator burnout related to excessive overtime. AC Transit also implemented a focus group to address the following:

- Review findings from Supervision, Planning and Scheduling, and Systems Analysis
- Provide any immediate recommendations, if any, for operators to implement
- Solicit feedback from the operators for the team to research and fix
- Set team expectations for the coming week of operations and additional monitoring to optimize route performance in the short-term, and
- Regularly communicate back to the operators to review the improvements or discuss why (if any) implementations could not happen.

AC Transit's efforts do not appear to have been successful in the current audit period. The operator unscheduled absences rate increased from 20.9 percent in FY2020 to 23.8 percent in FY2022, a 13.9 percent overall decrease in performance during the current audit period. AC Transit is encouraged to continue its efforts to reduce operator unscheduled absences going forward.

APPENDIX A:
AC TRANSIT - INPUT STATISTICS FOR FUNCTIONAL PERFORMANCE MEASURES

Functional Performance Inputs – AC Transit Systemwide

Data Item	FY2020	FY2021	FY2022	Source
Total Operating Costs *(a)*	$452,406,404	$442,224,979	$439,767,791	NTD F-40 (69% of DR PT) *(b)*
Administrative Costs	$140,079,867	$126,337,006	$104,759,646	NTD F-40 (69% of DR PT)
Vehicle Service Hours	2,189,603	1,838,766	1,867,984	NTD S-10 (all modes)
Marketing Costs	4,109,134	$4,006,943	$3,840,210	General Ledger Accounts Quarterly Summary
Unlinked Passenger Trips	44,926,857	21,441,852	29,225,655	NTD S-10 (all modes)
Farebox Revenue (All Modes)	$65,425,584	$24,182,924	$35,413,031	NTD F-10 (69% of DR PT)

(a) Includes modes MB-DO; CB-DO; DR-PT; RB-DO (FY2021 & FY2022)

(b) Staff-identified construction project pass-throughs removed from operating costs shown

Functional Performance Inputs – AC Transit Bus Service

Data Item	FY2020	FY2021	FY2022	Source
Vehicle Service Miles	18,893,674	16,074,382	16,115,684	NTD S-10 MB
Total Vehicle Miles	21,255,557	16,828,381	16,887,167	NTD S-10 MB
Vehicle Service Hours	1,847,503	1,587,486	1,547,934	NTD S-10 MB
Total Vehicle Hours	1,983,063	1,637,347	1,595,189	NTD S-10 MB
Unlinked Passenger Trips	44,370,426	18,862,602	25,382,188	NTD S-10 MB
Farebox Revenue	$64,055,814	$22,772,472	$33,039,922	NTD F-10
Total Operating Costs *(a)*	$424,911,540	$401,596,686	$399,683,689	NTD F-30 MB
Passenger Miles	166,863,372	74,114,895	90,834,948	NTD S-10 MB
Vehicle Operations Costs	$243,359,867	$216,038,441	$228,019,316	NTD F-30 MB
Total Operator Work Hours	3,024,902	2,438,497	2,430,760	General Ledger Accounts Quarterly Summary
Operator Scheduled Absence Rate	9.0%	9.5%	9.2%	ACT Q4 Op. Quarterly Performance Report
Operator Unscheduled Absence Rate	20.9%	22.5%	23.8%	ACT Q4 Op. Quarterly Performance Report
Trips On-Time (Systemwide)	73.6%	76.3%	73.5%	ACT Q4 Op. Quarterly Performance Report
Total Trips (Scheduled)	1,980,857	1,604,941	1,715,613	Annual Revenue Trips from NTD Monthly Ridership Estimate
Complaints	13,339	4,835	6,149	District Key Performance Indicator Report
Missed Trips	46,751	35,155	111,946	NTD Monthly Ridership Estimate
Maintenance Pay Hours	1,622,432	1,408,627	1,487,227	Peoplesoft Report Query-Attendence Main Total Detail
Total Maintenance Employee Time (Hours)	792,101	709,017	752,933	District Key Performance Indicator Report
Maint. Employee Sched. Absences (Hours)	71,448	69,888	72,392	District Key Performance Indicator Report
Maint. Employee Unsched. Absences (Hours)	111,773	93,639	108,188	District Key Performance Indicator Report
Vehicle Maintenance Costs	$66,251,466	$60,385,670	$60,654,944	NTD F-30 MB
Non-Vehicle Maintenance Costs	$12,763,607	$13,493,344	$15,517,010	NTD F-30 MB
Spare Vehicles (Total less Maximum Service)	8	167	130	NTD S-10 MB
Total Vehicles	543	519	513	NTD S-10 MB
Revenue Vehicle Mechanical System Failures - Total	3,120	2,470	2,318	NTD R-20
Revenue Vehicle Mechanical System Failures - Major	1,282	1,171	959	NTD R-20
Preventable Accidents	388	258	363	District Key Performance Indicator Report
Casualty/Liability Costs	$7,642,513	$11,019,101	$20,397,585	NTD F-30 MB
Lost Days - Industrial Accidents	14,944	10,950	18,374	AC Report - Systemwide

(a) Staff-identified construction project pass-throughs removed from operating costs shown

Functional Performance Inputs – AC Transit Rapid Bus Service

Data Item	FY2020*(a)*	FY2021	FY2022	Source
Vehicle Service Miles	- -	644,191	656,175	NTD S-10 RB
Total Vehicle Miles	- -	691,815	691,910	NTD S-10 RB
Vehicle Service Hours	- -	76,908	75,544	NTD S-10 RB
Total Vehicle Hours	- -	84,254	81,259	NTD S-10 RB
Unlinked Passenger Trips	- -	2,379,425	3,526,675	NTD S-10 RB
Farebox Revenue	- -	$1,052,086	$1,553,579	NTD F-10
Total Operating Costs	- -	$16,628,791	$18,646,194	NTD F-30 RB
Passenger Miles	- -	7,299,351	9,727,136	NTD S-10 RB
Vehicle Operations Costs	- -	$8,702,598	$10,633,982	NTD F-30 RB
Total Operator Work Hours	- -	*(b)*	*(b)*	
Operator Scheduled Absences (Hours)	- -	*(b)*	*(b)*	
Operator Unscheduled Absences (Hours)	- -	*(b)*	*(b)*	
Trips On-Time	- -	*(b)*	*(b)*	
Total Vehicle Trips	- -	*(b)*	*(b)*	
Complaints	- -	*(b)*	*(b)*	
Missed Trips	- -	1,077	6,683	NTD Monthly Ridership
Maintenance Pay Hours	- -	*(b)*	*(b)*	
Total Maintenance Employee Time (Hours)	- -	*(b)*	*(b)*	
Maint. Employee Sched. Absences (Hours)	- -	*(b)*	*(b)*	
Maint. Employee Unsched. Absences (Hours)	- -	*(b)*	*(b)*	
Vehicle Maintenance Costs	- -	$2,595,814	$2,809,259	NTD F-30 RB
Non-Vehicle Maintenance Costs	- -	$582,801	$719,203	NTD F-30 RB
Spare Vehicles (Total less Maximum Service)	- -	10	9	NTD S-10 RB
Total Vehicles	- -	27	27	NTD S-10 RB
Revenue Vehicle Mechanical System Failures - Total	- -	95	100	NTD R-20
Revenue Vehicle Mechanical System Failures - Major	- -	31	27	NTD R-20
Preventable Accidents	- -	*(b)*	*(b)*	
Casualty/Liability Costs	- -	$459,129	$961,143	NTD F-30 RB
Lost Days - Industrial Accidents	- -	*(b)*	*(b)*	

(a) Service not operated

(b) Data reported system-wide, not broken out by mode; see MB performance measures for results