

# **Triennial Performance Audit**

*of the*

## **San Mateo County Transit District (SamTrans)**

**Fiscal Years 2014/15, 2015/16 and 2016/17**

**FINAL AUDIT REPORT**

*prepared for the*



**METROPOLITAN  
TRANSPORTATION  
COMMISSION**

*by*



**Pierlott & Associates, LLC**  
*Management Consulting*

**May 2018**

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NOTE:

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

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## EXECUTIVE SUMMARY

This executive summary highlights the findings from the performance audit of the San Mateo County Transit District (SamTrans). 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. The two service modes operated by SamTrans, bus and paratransit, are the focus of this performance audit. The audit period is Fiscal Years 2015 through 2017 (from July 1, 2014 through June 30, 2017).

### **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 SamTrans' 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 SamTrans' performance based on the results of the previous sections.

Comments received from SamTrans 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 SamTrans 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 SamTrans is in compliance with the data collection and reporting requirements for all five TDA statistics. In addition, the statistics collected over the six-year 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.

Performance Indicators and Trends – SamTrans' 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.

- Bus Service – The following is a brief summary of the TDA performance trend highlights over the six-year period of FY2012 through FY2017:
  - There was an average annual decrease in the operating cost per hour of 3.6 percent, which amounted to a 6.1 percent decrease in inflation adjusted dollars.
  - Passenger productivity showed negative trends, with passengers per vehicle service hour decreasing by 7.1 percent per year overall, and passengers per vehicle service mile decreasing by 1.9 percent annually.

- Cost per hour and passengers per hour results were impacted by FY2017 hours reported 20 percent higher than FY2016, resulting from an NTD-directed change in service hour reporting to include layover time.
- The cost per passenger increased on average by 3.8 percent per year, which amounted to an average annual increase of 1.2 percent in constant FY2012 dollars.
- Employee productivity (SamTrans employees only) increased an average 5.2 percent per year.

The following is a brief summary of the component operating costs trend highlights for the bus service between FY2012 and FY2017:

- In FY2017, in-house labor costs increased by 4.8 percent over the prior year, while fringe benefits costs decreased by 4.3 percent. These two categories represented by far the largest portion of total costs in all six years.
  - Services/utilities costs posted the largest overall increase, most of which occurred in FY2015 and FY2016. Services/utilities costs also increased from 12.4 percent of total costs in FY2012 to 16.3 percent in FY2017.
  - Materials/supplies and casualty/liability costs were reduced overall during the period, on average by six to seven percent annually, and reduced their shares of the total costs as well.
  - Purchased transportation costs remained steady through the period, but went down from contributing about 18 percent to 16 percent of total costs.
- Paratransit – The following is a brief summary of the TDA performance trend highlights over the six-year period of FY2012 through FY2017:
    - For cost efficiency, there was an average annual increase in the operating cost per hour of 3.6 percent, or one percent in inflation adjusted dollars.

- Passenger productivity showed moderately positive results, with passengers per hour increasing by 1.2 percent per year on average, and passengers per mile increasing by 0.2 percent annually.
- The operating cost per passenger achieved a slight annual decrease (0.2 percent on average) when normalized in FY2012 dollars.

The following is a brief summary of the component operating costs trend highlights for paratransit between FY2012 and FY2017:

- Purchased transportation costs represented by far the largest portion of the total costs, at more than 60 percent throughout the review period. They increased by nearly five percent per year on average.
- The most significant change in the component costs was an 18 percent average annual increase in services/utilities. At the same time, materials/supplies costs were reduced by almost one percent annually.
- While not major cost components, in-house labor and fringe benefits costs both increased by about ten percent on average annually.
- Casualty/liability costs decreased steadily through FY2015, and then increased substantially. Their share of total costs was over ten percent in FY2012 and FY2017 but much lower in between.

PUC Compliance – SamTrans is in compliance with the sections of the state PUC that were reviewed as part of this performance audit. The sections reviewed included requirements concerning CHP safety inspections, labor contracts, reduced fares, Welfare-to-Work, revenue sharing, and evaluation of passenger needs.

Status of Prior Audit Recommendations – There were no recommendations made in SamTrans' prior performance audit.

Functional Performance Indicator Trends - To further assess SamTrans' 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 FY2015 and FY2017:
  - Administrative costs increased moderately to 32 percent of total operating costs, while remaining just above \$50 per vehicle service hour.
  - Marketing costs increased overall compared to total administrative costs and rose to \$0.33 per passenger trip in FY2017.
  - The systemwide farebox recovery ratio declined from 15.5 percent to 12.8 percent by FY2017.
  
- Bus Service – The following is a brief summary of the bus service functional trend highlights between FY2015 and FY2017:
  - Service Planning results showed the operating cost per passenger mile increasing by nearly 30 percent, and the farebox recovery declining to 14.2 percent in FY2017. Consistently at least 70 percent of vehicle miles and 80 percent of vehicle hours were in service.
  - Operations results showed decreases in vehicle operations costs per service hour with smaller decreases in relation to total costs, improving operator absence trends, some improvement in schedule adherence to 84 percent, an overall decrease in the rate of complaints, and very few missed trips.
  - Maintenance results showed maintenance costs steady at 19 percent of total costs but vehicle maintenance costs per service mile up by 3.6 percent, and maintenance pay hours down compared to service hours. A general increase in the maintenance employee scheduled absence rate was accompanied by a decrease in the unscheduled rate. The vehicle spare ratio reduced from 19 to 17 percent, and there was noticeable improvement in the mechanical failure rates.

- Safety results showed the rate of preventable accidents about the same in FY2015 and FY2017, overall decreases in the casualty/liability cost rates, and lost days due to industrial accidents down by 45 percent.
- Paratransit – The following is a brief summary of the paratransit functional trend highlights between FY2015 and FY2017:
  - Service Planning results showed the operating cost per passenger mile increasing by 32 percent overall (in line with cost increases resulting from a combination of identified events), the farebox recovery ratio decreasing from 5.6 to 4.7 percent, and consistently about 90 percent of vehicle miles and hours in service.
  - Operations results showed the vehicle operations cost per hour increasing by 13 percent overall, but decreasing from 57 percent to 47 percent of total costs. Schedule adherence increased from 90 to 92 percent and there was a 35 percent decrease in the rate of complaints. The missed trip rate remained very low, and there were no ADA trip denials. The trip cancellation rate decreased modestly to 16 percent, while late cancellations and passenger no-shows both remained at just over one percent of ADA trips.
  - Maintenance results showed total maintenance costs remaining at 15 percent of total costs, while vehicle maintenance costs per service mile increased overall by 19 percent. The spare ratio decreased from about ten to eight percent, and there was significant improvement in the mechanical failure rates.
  - Safety results showed the preventable accident rate reduced by 30 percent over the audit period.

## **Recommendations**

No recommendations are suggested for SamTrans based on the results of this triennial performance audit.

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## 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 San Mateo County Transit District (SamTrans). The two modes operated by SamTrans, bus and paratransit, are the focus of this performance audit. The audit period is Fiscal Years 2015 through 2017 (from July 1, 2014 through June 30, 2017).

An overview of SamTrans is provided in Exhibit 1. This is followed by an early audit period organization chart in Exhibit 2.1, and a more recent organization chart in Exhibit 2.2. The latter reflects few changes to the basic reporting hierarchy but some

shuffling of functional responsibilities between departments. In addition, the Deputy CEO/Chief Administrative Officer position was replaced with the Chief of Staff, and two positions reporting directly to the General Manager (Senior Advisor/Strategic Initiatives and Deputy CEO – Organizational Support/Special Projects) were eliminated.

### **Performance Audit and Report Organization**

This performance audit of SamTrans was conducted for MTC in accordance with its established procedures for performance audits. The audit consisted of two discrete steps:

1. Compliance Audit - Activities in this phase included:
  - 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 included:
  - A review of actions to implement the recommendations from the prior performance audit;
  - Calculation and evaluation of functional performance indicator trends; and
  - Findings, conclusions, and the formulation of recommendations.

This report presents the findings from both phases. Comments received from SamTrans and MTC staff regarding the draft report have been incorporated into this final report.

## Exhibit 1: System Overview

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<b>Location</b>	Headquarters: 1250 San Carlos Avenue, San Carlos, CA 94070-1306
<b>Establishment</b>	The San Mateo County Transit District (SamTrans) was created by voter referendum in 1974 and established in 1976 as a consolidation of 11 different local city bus systems in the county.
<b>Board</b>	The SamTrans nine-member Board of Directors consists of two members of the County Board of Supervisors; a transportation expert from the general public selected by the Board of Supervisors; three elected city officials (one from each judicial district in the county), and three additional members of the general public selected by the other six Board members. By legislation, one general public member must be from the Pacific Coast side of the county, while the other two must represent geographically diverse portions of the county.
<b>Facilities</b>	The SamTrans administrative offices are located in San Carlos, CA. Fixed-route maintenance and operations facilities are located in San Carlos (South Base) and South San Francisco (North Base). The central base of paratransit operations is located at the Brewster Depot in Redwood City. SamTrans operates six Park and Ride facilities within the county, and one underground parking garage at Sequoia Station in Redwood City.
<b>Service Data</b>	<p>SamTrans provides fixed-route bus service throughout San Mateo County and into San Francisco and Palo Alto. Service consists of more than 70 routes, including one express route between San Francisco and Redwood City, and connecting services to BART stations, Caltrain rail stations and San Francisco International Airport.</p> <p>Service is provided seven days a week. The majority of the service is operated on weekdays between 6:00 a.m. and 7:30 p.m. SamTrans contracts with MV Transportation, Inc. to provide much of its fixed-route service, including the Contracted Urban Bus (CUB) routes and Route 17 service, along with several Coastside and shuttle services. The remainder of the system is directly operated by SamTrans.</p> <p>The base fare is \$2.25 for local trips (including trips into San Francisco), and \$4.00 for trips out of San Francisco. Reduced youth fares are available for children ages 5-18, and two children (four years old or younger) per fare-paying adult ride for free. Seniors (age 65 and older), customers with disabilities and Medicare cardholders pay \$1.10 for all trips. SamTrans also offers discounted unlimited ride monthly transit passes, day passes and tokens, and accepts inter-agency transfers in the form of transit passes from several connecting systems. Passengers who pay a one-way fare using</p>

Clipper Card receive approximately a ten percent discount. Approved ADA paratransit cardholders, as well as their personal care attendants, ride fixed-route service free at all times.

SamTrans has two Americans with Disabilities paratransit services, Redi-Wheels and RediCoast. Redi-Wheels is operated under contract (currently with First Transit, Inc.), and serves the Bay side of San Mateo County east of Highway 280, as well as the towns of Woodside and Portola Valley. RediCoast is also operated under contract (with MV Transportation, Inc.), and serves the Coast side communities. Paratransit services operate seven days a week from 5:30 a.m. to midnight and 24 hours a day in some areas. Phone reservations can be made up to seven days in advance. The one-way fare is \$4.25 and \$1.75 for Lifeline participants.

SamTrans also is involved in several programs that support regional transportation efforts. These programs are not directly included in this audit:

- Managing agency of the San Mateo County Transportation Authority;
- Managing agency of the Peninsula Corridor Joint Powers Board (Caltrain);
- Sponsor of employee shuttles between BART/Caltrain stations and employment sites;
- Operation and technical assistance provider for community shuttles sponsored by the City/County Association of Governments of San Mateo County; and
- Voting member of the Dumbarton Bridge Service Consortium, which provides bus service from Union City BART to Palo Alto.

## **Recent Changes**

SamTrans has continued to make refinements to its service following the February 2014 launch of the SamTrans Service Plan. This includes increasing efficiency by altering running times and deadheads to improve on-time performance, and merging 12 existing routes into six routes that offer more user-friendly service and fewer transfers.

SamTrans has introduced a “sliding seats” operational procedure that reduces costs by reducing operator overtime and paid breaks. It features in-service operator reliefs which allow buses to stay in service throughout the day. A relief operator reports for work at the Base and drives a car to the on-route relief point, where the operator on the coach swaps seats with the relief operator, and the original operator can take his or her break back at the Base.

In 2017, SamTrans replaced fifty 40-foot diesel buses that had exceeded their useful life with fifty new 40-foot clean-diesel buses, and introduced 25 hybrid diesel Gillig buses as part of a 62-bus replacement procurement.

In 2017, SamTrans also continued introducing new vehicles for the paratransit program, including nine 22-foot cutaway vehicles and ten minivans.

First Transit, Inc. took over as the Redi-Wheels paratransit operations contractor as of January 1, 2015. (MV Transportation, Inc. continues as the RediCoast paratransit operations contractor.)

## **Planned Changes**

A general fare increase is scheduled for January 2019.

Continuing refinements of school related seasonal changes to fixed route services.

Combining routes and services for operational efficiencies and to allow more passengers a one seat ride.

Replacing the 55 articulated clean-diesel buses and 60 conventional buses that have reached or are reaching the end of their useful life.

Purchasing ten 40-foot battery-electric buses to replace ten 40-foot diesel buses.

Capital projects including closed-circuit television and facility security systems, intelligent transportation systems network improvements, and North and South Base facility improvements to reduce energy consumption.

SamTrans is undertaking several long-term planning initiatives aimed at improving the quality of life of San Mateo County by ensuring an integrated approach to land use and transportation planning:

- Coastside Study - Developed a set of Coastside transit service recommendations for both near-term and longer-term implementation.
- Grand Boulevard Initiative - Sustainable communities and multi-modal transportation enhancements are expected to improve transit ridership along the 43-mile El Camino Real.
- Fare Policy Study - A fresh look at the universe of fare policy options and a framework for a District fare policy. Kicked off in late 2017 and scheduled to be complete by Fall 2018.
- Youth Mobility Plan - Adopted by the Board of Directors in 2017, it is a strategic blueprint for SamTrans to address the mobility needs of youth in the county and cultivate the next generation of bus customers.

- US 101 Express Bus Feasibility Study - Evaluating the financial and operational feasibility of a network of long-distance express buses, potentially integrated with high-occupancy vehicle lanes.
- Senior Mobility Plan - Updating the 2006 County Mobility Management Plan (MMP), to keep seniors and people with disabilities connected to their community as they may face mobility challenges.
- SamTrans Business Plan - To provide a strategic vision for moving forward, it will build upon the SamTrans Strategic Plan and the Short Range Transit Plan, as well as incorporating ongoing agency initiatives.

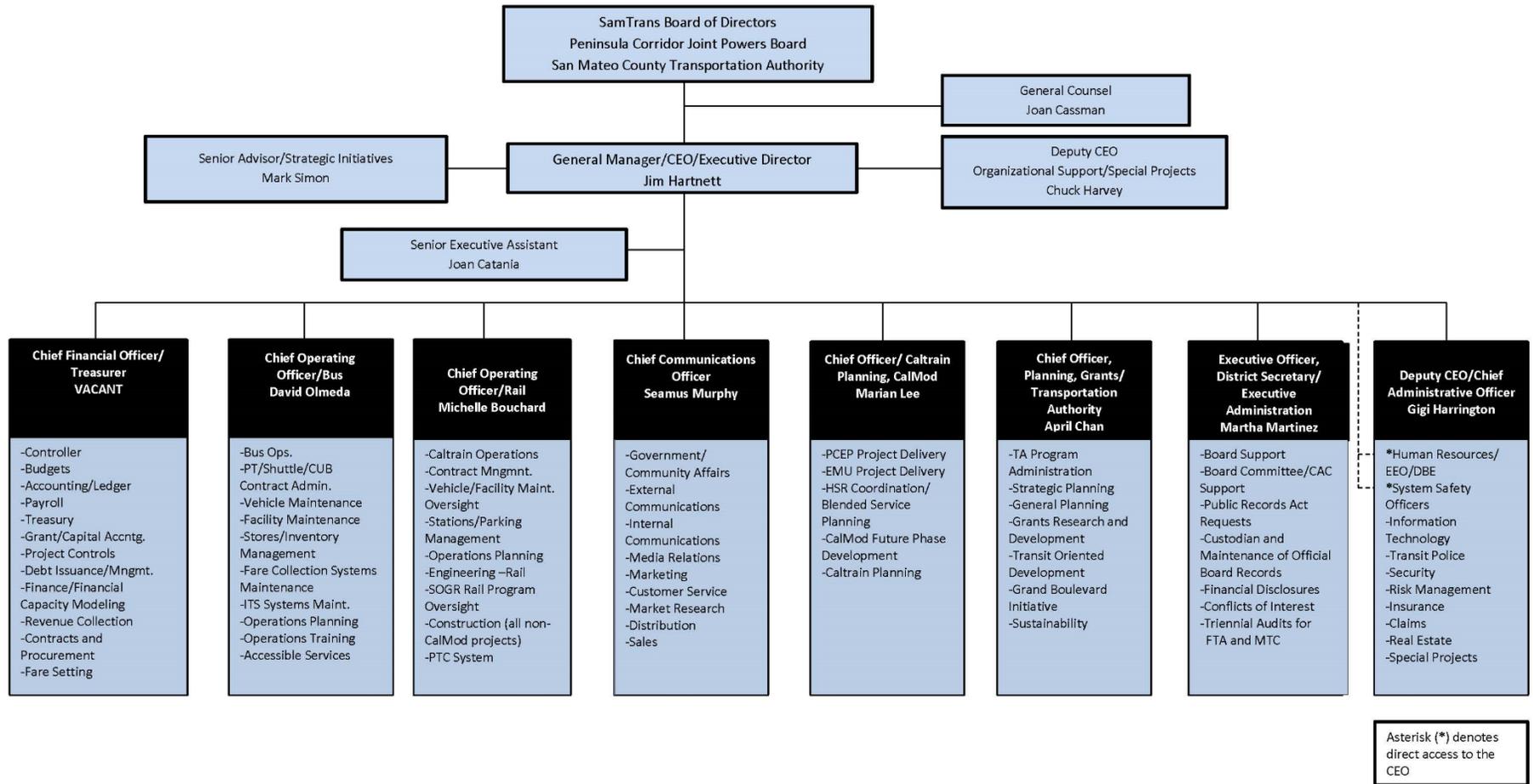
**Staff**

As shown in SamTrans’ FY2017-2026 Short Range Transit Plan (SRTP), as of May 2017, the District was organized into eight divisions with 680 employees:

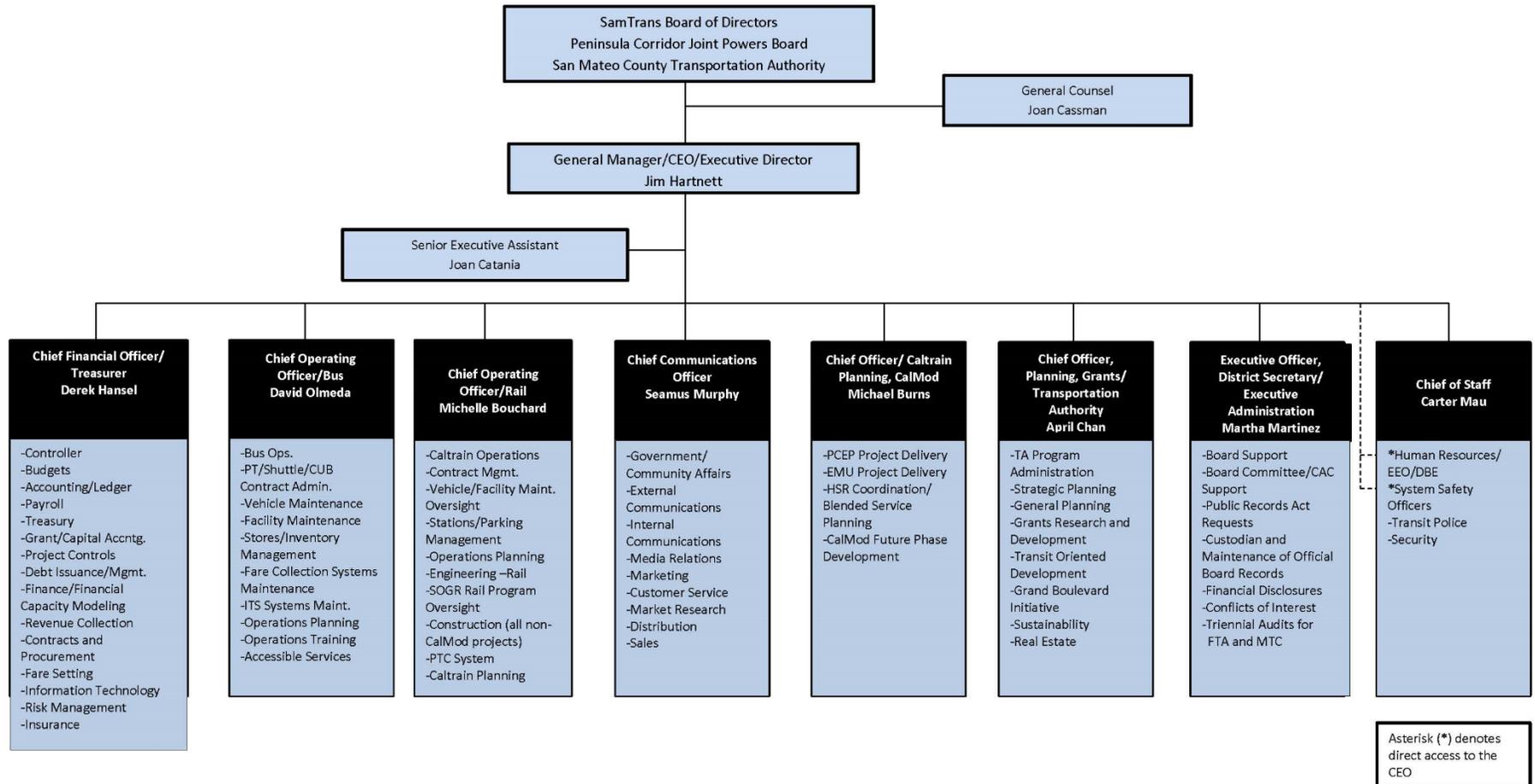
Administration	23
Executive Office	5
Finance	69
Communications	37
Planning/Grants/Transp. Auth.	21
Bus	481
Rail	36
Caltrain Modernization	8
TOTAL	<u>680</u>

Included in the Bus Division were approximately 303 bus operators (both full- and part-time) and 59 mechanics.

## Exhibit 2.1: 2015 Organization Chart



## Exhibit 2.2: 2017 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 SamTrans 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 service hours
- Vehicle 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 SamTrans covering the audit period has been reviewed. SamTrans' NTD reports include its bus and paratransit services. However, consistent with FTA reporting requirements, SamTrans does not submit employee hour information for purchased transportation service to the NTD.

### Compliance with Requirements

In support of this review, SamTrans staff did not indicate any changes to the data collection and reporting procedures described in the prior performance audit, with one exception: Per instructions from NTD staff, the definition of vehicle service hours was adjusted effective with the FY2017 NTD to return to including all layover time (e.g., for

meal breaks as well as recovery time) in the calculation, as had been the practice some years earlier.

Based on the available information, as shown in Exhibit 3.1, SamTrans 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 SamTrans' bus and paratransit services are shown in Exhibits 3.2 and 3.3, respectively. Included are statistics covering each fiscal year of the three-year audit period, plus the immediately preceding three fiscal years, resulting in a six-year trend. Certain potential inconsistencies which were identified are discussed below, along with explanations that have been provided:

- Bus Service Hours – In FY2017, vehicle service hours for the bus system were up by 20 percent compared to the previous year, without corresponding increases in operating costs or vehicle service miles. SamTrans staff attributed this to the above-noted change in the definition of service hours effective with FY2017 NTD reporting.

In the prior audit report, it was noted that SamTrans had changed its methodology for reporting vehicle service hours for the bus system. SamTrans determined it had been reporting these hours incorrectly on its NTD reports, citing on-route driver meal breaks being included in error in layover times. It is unclear how this determination was made. Nonetheless, SamTrans indicated that the NTD was notified of the issue, and that reporting was adjusted to exclude meal breaks.

As of FY2017, SamTrans has essentially returned its vehicle service hours reporting to its earlier methodology, wherein all layover time including meal breaks is included. This appears consistent with NTD and TDA definitions.

- Paratransit Operating Costs – Through FY2015, there were negligible changes to the annual operating costs. However, in the last two years there were substantial increases (15 and 18 percent respectively), not accompanied by similar increases in the service provided. SamTrans staff identified a combination of events that contributed to the cost increases in FY2016 and FY2017. These events included the addition of a new Care Evaluator contract, increased labor needs to maintain the paratransit vehicles (due to an increased demand for service), and a period of major claims settlement activity.

Overall, 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.

### Exhibit 3.1: Compliance with TDA Data Collection and Reporting Requirements

TDA Statistic	TDA Definition	Compliance Finding	Verification Information
Operating Cost	<p>“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. Also excluded are all subsidies for commuter rail services operated on railroad lines under the jurisdiction of the Federal Railroad Administration, all direct costs for providing charter services, all vehicle lease costs, and principal and interest payments on capital projects funded with certificates of participation.</p>	In Compliance	<ul style="list-style-type: none"> <li>• Defined as costs incurred in order to conduct business, excluding expenses related to financing and other non-district related subsidies.</li> <li>• Captured on accrual basis and monitored by cost center managers; monthly report prepared for key personnel.</li> <li>• NTD reporting guidelines followed; directly-operated services reported by object class within several broad categories; contracted services reported in aggregate by each contractor.</li> <li>• Annual totals audited by external auditors.</li> </ul>
Vehicle Service Hours	<p>“Vehicle service hours” means the total number of hours that each transit vehicle is in revenue service, including layover time.</p>	In Compliance	<ul style="list-style-type: none"> <li>• Directly-operated hours based on total scheduled service hours generated by run-cutting software; missed trips subtracted and special additional service added for actual total.</li> <li>• Based on schedule information from Operations Division (reporting number of days per month and type of service operated each day) and exceptions per operators’ day cards.</li> <li>• Similar approach by operating contractors.</li> <li>• After several years of excluding layover time from the NTD reporting, the definition was adjusted per NTD instructions effective in FY2017 to again include layover time (e.g., for recovery and meal breaks) in the calculation.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Directly-operated miles based on total scheduled miles generated by run-cutting software; missed trips subtracted and special additional service added for actual total.</li> <li>• Based on schedule information from Operations Division (reporting number of days per month and type of service operated each day) and exceptions per operators’ day cards.</li> <li>• Similar approach by operating contractors.</li> </ul>
Unlinked Passengers	“Unlinked passengers” means the number of boarding passengers, whether revenue producing or not, carried by the public transportation system.	In Compliance	<ul style="list-style-type: none"> <li>• Ridership data entered by bus operators directly into ACS (Advanced Communication System) database.</li> <li>• Operating contractors use similar method.</li> <li>• Bus operators count passengers using AMDT (Automated Data Terminal) located near the farebox.</li> <li>• Counts divided by fare category.</li> <li>• Ridership collected and reported daily by ACS.</li> <li>• FMC (Fleet Management Center) prepares report for missed data.</li> <li>• Detailed and summary passenger count reports generated by ACS are periodically reviewed by Service Planning staff.</li> </ul>

TDA Statistic	TDA Definition	Compliance Finding	Verification Information
Employee Full-Time Equivalents	2,000 person-hours of work in one year constitute one employee.	In Compliance	<ul style="list-style-type: none"> <li>• District follows NTD rules for reporting employee work hours.</li> <li>• Based on actual number of full and part-time employees.</li> <li>• Actual work hours also reported by function; bus operator hours gathered bi-weekly, conforming to the pay period.</li> </ul>

### Exhibit 3.2: TDA Statistics – Bus Service

TDA Statistic	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Operating Cost (Actual \$)	\$101,387,955	\$100,937,586	\$95,781,674	\$106,745,576	\$112,896,129	\$113,517,541
<i>Annual Change</i>	-	-0.4%	-5.1%	11.4%	5.8%	0.6%
Vehicle Service Hours	482,939	487,756	505,763	505,824	539,930	649,591
<i>Annual Change</i>	-	1.0%	3.7%	0.0%	6.7%	20.3%
Vehicle Service Miles	6,570,084	6,633,233	6,795,082	6,622,381	6,688,654	6,716,710
<i>Annual Change</i>	-	1.0%	2.4%	-2.5%	1.0%	0.4%
Unlinked Passengers	13,118,261	12,742,830	13,365,469	13,467,166	13,170,760	12,180,964
<i>Annual Change</i>	-	-2.9%	4.9%	0.8%	-2.2%	-7.5%
Employee Full-Time Equivalents	514.0	509.4	515.3	519.6	529.8	535.9
<i>Annual Change</i>	-	-0.9%	1.2%	0.8%	2.0%	1.2%

Sources: FY2012 through FY2014 - Prior Performance Audit Report  
 FY2015 through FY2017 - NTD Reports; FY2017 Original Submission

### Exhibit 3.3: TDA Statistics – Paratransit

TDA Statistic	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Operating Cost (Actual \$)	\$14,364,150	\$14,294,073	\$14,284,839	\$14,434,145	\$16,641,191	\$19,629,024
<i>Annual Change</i>	- -	-0.5%	-0.1%	1.0%	15.3%	18.0%
Vehicle Service Hours	169,826	177,994	184,895	196,250	191,695	194,447
<i>Annual Change</i>	- -	4.8%	3.9%	6.1%	-2.3%	1.4%
Vehicle Service Miles	2,536,537	2,609,175	2,678,026	2,890,156	2,981,879	3,057,391
<i>Annual Change</i>	- -	2.9%	2.6%	7.9%	3.2%	2.5%
Unlinked Passengers	304,467	297,655	314,007	329,038	360,005	369,998
<i>Annual Change</i>	- -	-2.2%	5.5%	4.8%	9.4%	2.8%
Employee Full-Time Equivalents	(a)	(a)	(a)	(a)	(a)	(a)
<i>Annual Change</i>	- -	- -	- -	- -	- -	- -

Sources: FY2012 through FY2014 - Prior Performance Audit Report  
 FY2015 through FY2017 - NTD Reports; FY2017 Original Submission

(a) Not available

### III. TDA PERFORMANCE INDICATORS AND TRENDS

The performance trends for SamTrans' bus and paratransit 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. SamTrans' NTD reports were the source of all operating and financial statistics. However, since the NTD does not require transit systems to report employee work hours for contracted services, no FTE information was available for SamTrans' contracted services. The fixed-route FTE data utilized in this portion of the analysis reflects only the directly operated employee hours reported in SamTrans' NTD reports. FTE information was not available for the contracted paratransit services. This is consistent with the analysis in the prior audits.

In addition to presenting performance for the three years of the audit period (FY2015 through FY2017), 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 SamTrans' service to provide a longer perspective on performance and to clearly present the direction and magnitude of the performance trends. In this analysis, the FY2015 to FY2017 trend lines have been combined with

those from the prior audit period (FY2012 through FY2014) 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 SamTrans' performance trends in each of the five TDA performance indicators. The discussion is organized by service mode -- bus service is discussed first, followed by paratransit. The analysis is also 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 SamTrans' bus service over the past six years. 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 decreased an average of 3.6 percent annually during the six-year review period.

- The cost per hour ranged from a high of \$211.03 in FY2015 to a low of \$174.75 in FY2017. There were decreases in most years; the largest (16.4 percent) occurring in FY2017.
- The significant improvement reported in cost efficiency in FY2017 was the result of operating costs increasing only negligibly while reported service hours were up by 20 percent compared to the previous year. The latter resulted from the NTD-directed change in reporting of service hours as of FY2017 to include layover time.
- In FY2012 constant dollars, there was an average annual decrease in this indicator of 6.1 percent.
- Passengers per Vehicle Service Hour (Exhibit 4.2)
  - A key indicator of passenger productivity, passengers per hour decreased an average of 7.1 percent annually during the six-year period.
  - The decrease reflects an overall decrease in passengers combined with a larger increase in service hours.
  - A significant reduction was posted in FY2017, driven by the above-mentioned 20 percent increase in reported service hours even as passenger levels declined by 7.5 percent (following a smaller decline in FY2016 as well). SamTrans staff attributed the recent decrease in ridership to changes in the economic and geographic locations of its core ridership base, as well as appearing generally in line with the experience of transit operators across the country. Major contributing factors include lower fuel costs, easier auto loan terms, and especially the proliferation of competition from Transportation Network Companies (TNCs) such as Uber and Lyft. Additionally in California, a wider range of residents can now obtain drivers licenses with little difficulty.
  - Passengers per hour decreased overall from 27.2 in FY2012 to 18.8 in FY2017.
- Passengers per Vehicle Service Mile (Exhibit 4.2)
  - Similar to passengers per hour, passengers per mile also decreased overall, but at a lower rate (1.9 percent annually on average).

- There were about two passengers per mile in all years.
- The largest annual change in this indicator was a 7.9 percent decline in FY2017, which ensued from almost steady service miles but passenger levels declining by 7.5 percent compared to FY2016.
- Operating Cost per Passenger (Exhibit 4.3)
  - A key measure of cost effectiveness, the cost per passenger generally increased through the period, from \$7.73 in the first year to \$9.32 by FY2017.
  - The overall increase amounted to 3.8 percent annually, with increases in every year except FY2014.
  - With the impact of inflation removed from the cost side (normalization), the six-year result was an average annual increase of 1.2 percent in the cost per passenger.
- Vehicle Service Hours per Employee (FTE) (Exhibit 4.4)
  - A measure of employee productivity, this indicator increased by an average 5.2 percent per year over the six years.
  - Hours per FTE (SamTrans employees only) generally increased from 940 in the first review year to just over 1,200 in the last year.
  - Annual FTEs increased at a lower rate than vehicle service hours overall during the period.

\* \* \* \* \*

The following is a brief summary of the bus service TDA performance trend highlights over the six-year period of FY2012 through FY2017:

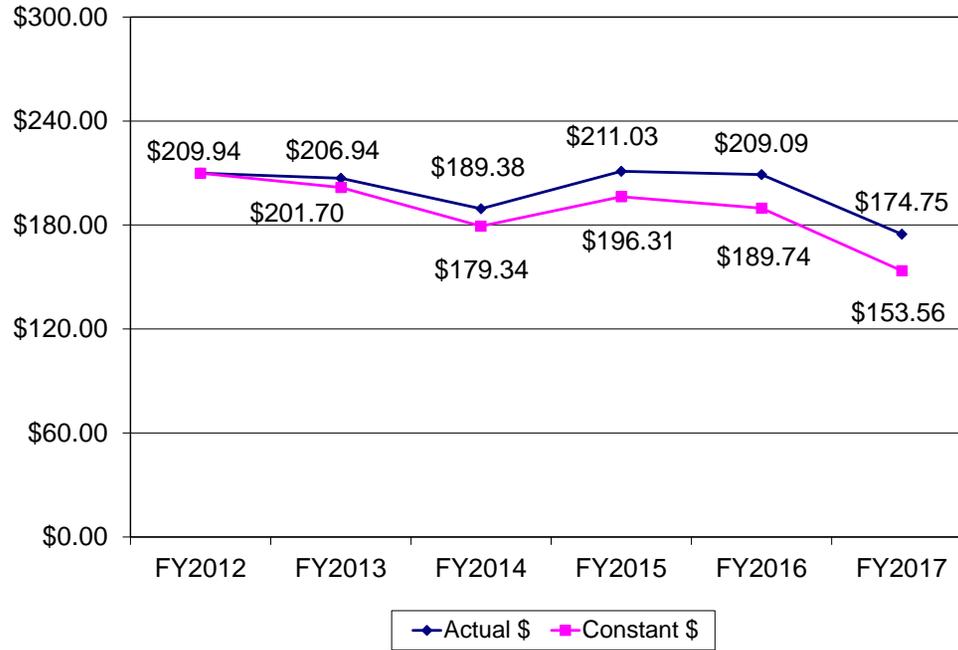
- There was an average annual decrease in the operating cost per hour of 3.6 percent, which amounted to a 6.1 percent decrease in inflation adjusted dollars.
- Passenger productivity showed negative trends, with passengers per vehicle service hour decreasing by 7.1 percent per year overall, and passengers per vehicle service mile decreasing by 1.9 percent annually.
- Cost per hour and passengers per hour results were impacted by FY2017 hours reported 20 percent higher than FY2016, resulting from an NTD-directed change in service hour reporting to include layover time.
- The cost per passenger increased on average by 3.8 percent per year, which amounted to an average annual increase of 1.2 percent in constant FY2012 dollars.
- Employee productivity (SamTrans employees only) increased an average 5.2 percent per year.

### Exhibit 4: TDA Indicator Performance - Bus Service

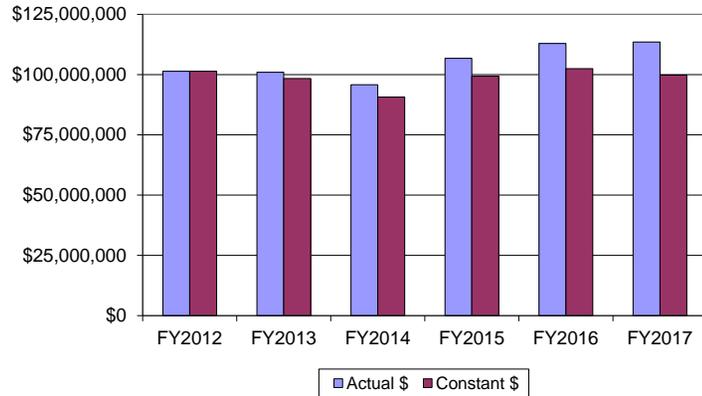
	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	Av. Ann. Chg.
<b>Performance Indicators</b>							
Op. Cost per Vehicle Svc. Hour (Actual \$)	\$209.94	\$206.94	\$189.38	\$211.03	\$209.09	\$174.75	- -
<i>Annual Change</i>	- -	-1.4%	-8.5%	11.4%	-0.9%	-16.4%	-3.6%
Op. Cost per Vehicle Svc. Hour (Constant \$)	\$209.94	\$201.70	\$179.34	\$196.31	\$189.74	\$153.56	- -
<i>Annual Change</i>	- -	-3.9%	-11.1%	9.5%	-3.3%	-19.1%	-6.1%
Passengers per Vehicle Service Hour	27.2	26.1	26.4	26.6	24.4	18.8	- -
<i>Annual Change</i>	- -	-3.8%	1.2%	0.7%	-8.4%	-23.1%	-7.1%
Passengers per Vehicle Service Mile	2.00	1.92	1.97	2.03	1.97	1.81	- -
<i>Annual Change</i>	- -	-3.8%	2.4%	3.4%	-3.2%	-7.9%	-1.9%
Op. Cost per Passenger (Actual \$)	\$7.73	\$7.92	\$7.17	\$7.93	\$8.57	\$9.32	- -
<i>Annual Change</i>	- -	2.5%	-9.5%	10.6%	8.1%	8.7%	3.8%
Op. Cost per Passenger (Constant \$)	\$7.73	\$7.72	\$6.79	\$7.37	\$7.78	\$8.19	- -
<i>Annual Change</i>	- -	-0.1%	-12.1%	8.7%	5.5%	5.3%	1.2%
Vehicle Service Hours per FTE	940	958	981	973	1,019	1,212	- -
<i>Annual Change</i>	- -	1.9%	2.5%	-0.8%	4.7%	18.9%	5.2%
<b>Input Data</b>							
Operating Cost (Actual \$)	\$101,387,955	\$100,937,586	\$95,781,674	\$106,745,576	\$112,896,129	\$113,517,541	- -
<i>Annual Change</i>	- -	-0.4%	-5.1%	11.4%	5.8%	0.6%	2.3%
Operating Cost (Constant \$)	\$101,387,955	\$98,379,713	\$90,702,343	\$99,298,210	\$102,446,578	\$99,751,793	- -
<i>Annual Change</i>	- -	-3.0%	-7.8%	9.5%	3.2%	-2.6%	-0.3%
Vehicle Service Hours	482,939	487,756	505,763	505,824	539,930	649,591	- -
<i>Annual Change</i>	- -	1.0%	3.7%	0.0%	6.7%	20.3%	6.1%
Vehicle Service Miles	6,570,084	6,633,233	6,795,082	6,622,381	6,688,654	6,716,710	- -
<i>Annual Change</i>	- -	1.0%	2.4%	-2.5%	1.0%	0.4%	0.4%
Unlinked Passengers	13,118,261	12,742,830	13,365,469	13,467,166	13,170,760	12,180,964	- -
<i>Annual Change</i>	- -	-2.9%	4.9%	0.8%	-2.2%	-7.5%	-1.5%
Employee Full-Time Equivalents	514.0	509.4	515.3	519.6	529.8	535.9	- -
<i>Annual Change</i>	- -	-0.9%	1.2%	0.8%	2.0%	1.2%	0.8%
Bay Area CPI - Annual Change	- -	2.6%	2.9%	1.9%	2.5%	3.3%	- -
- Cumulative Change	- -	2.6%	5.6%	7.5%	10.2%	13.8%	2.6%

Sources: FY2012 through FY2014 - Prior Performance Audit Report  
FY2015 through FY2017 - NTD Reports; FY2017 Original Submission  
CPI Data - U.S. Department of Labor, Bureau of Labor Statistics

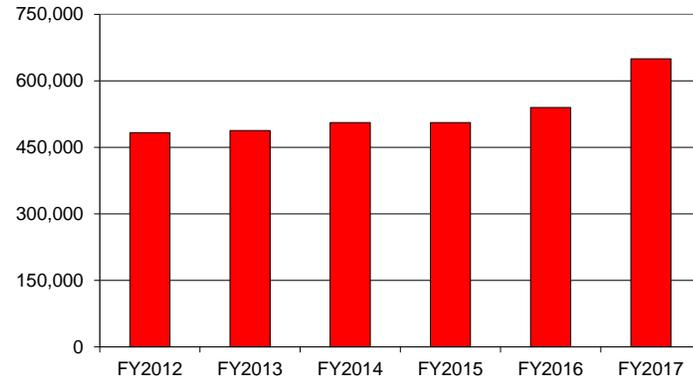
**Exhibit 4.1: Operating Cost per Vehicle Service Hour - Bus Service**



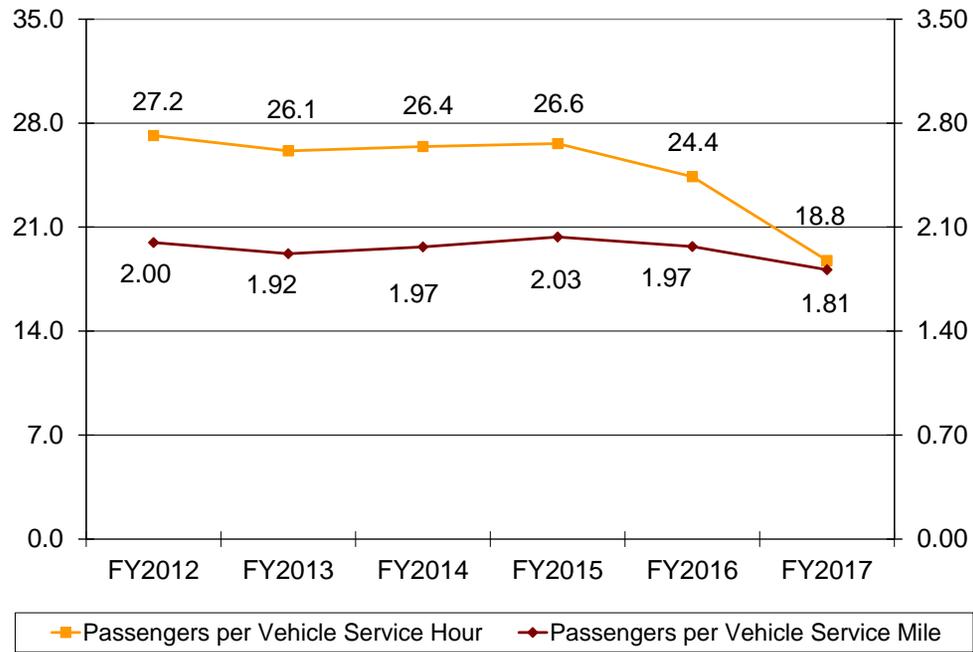
**Operating Cost**



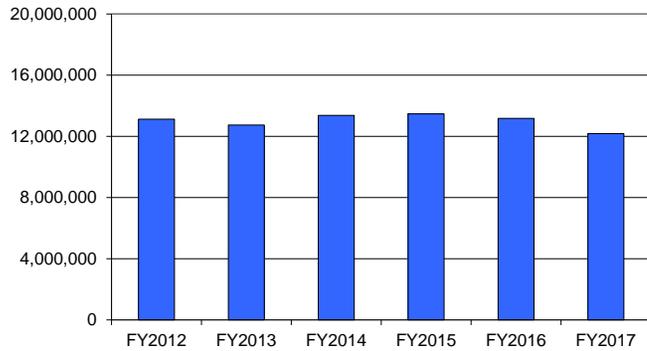
**Vehicle Service Hours**



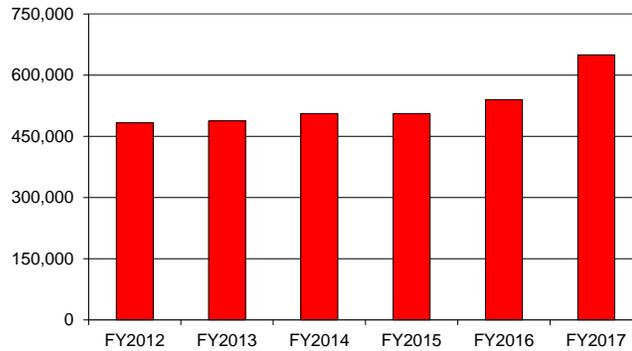
**Exhibit 4.2: Passengers per Hour and per Mile – Bus Service**



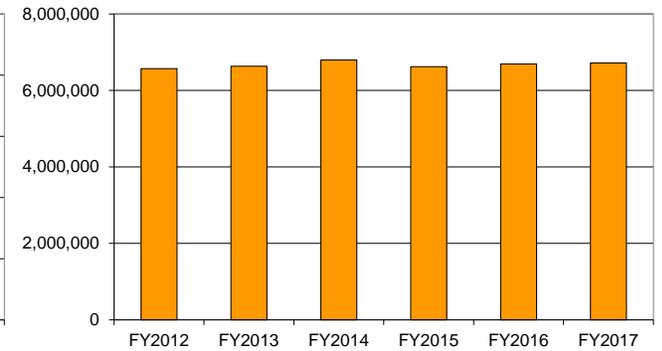
**Unlinked Passengers**



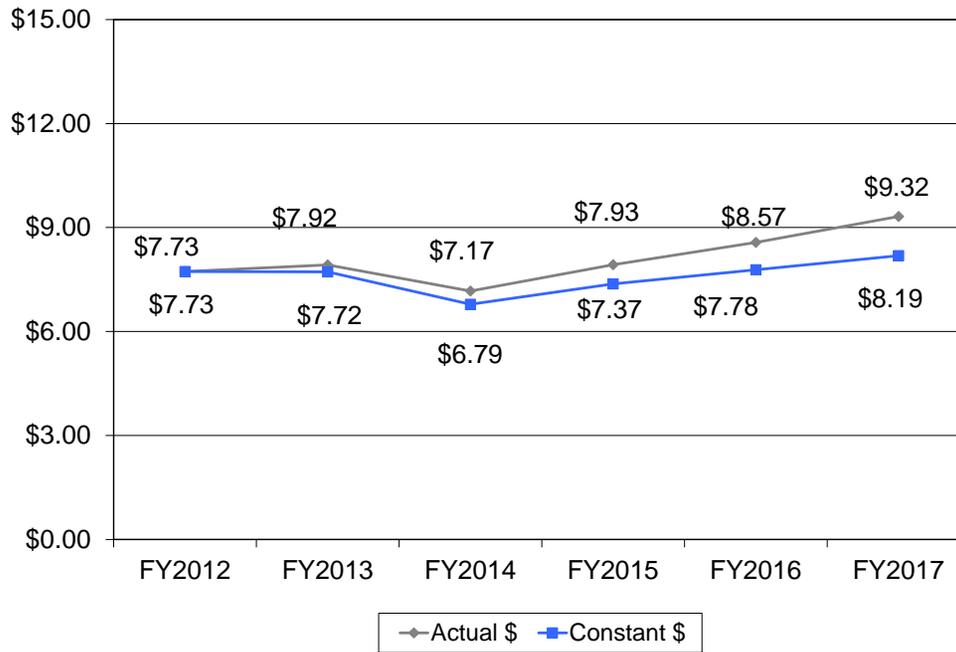
**Vehicle Service Hours**



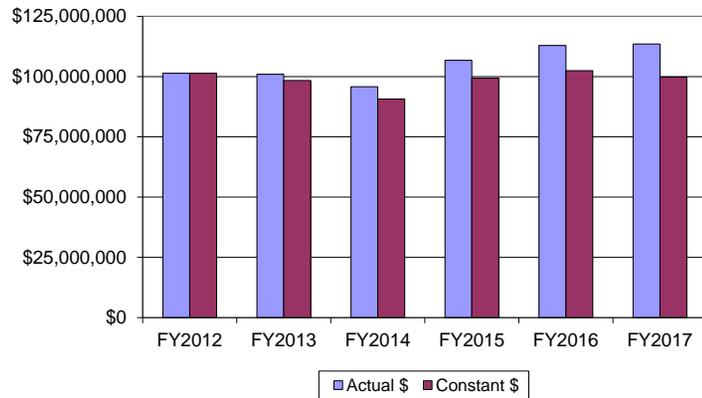
**Vehicle Service Miles**



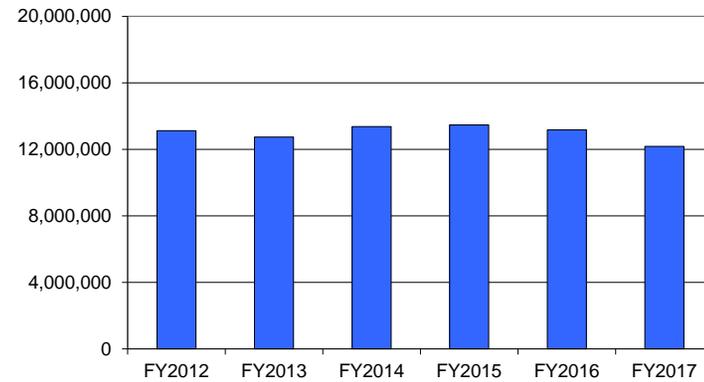
### Exhibit 4.3: Operating Cost per Passenger – Bus Service



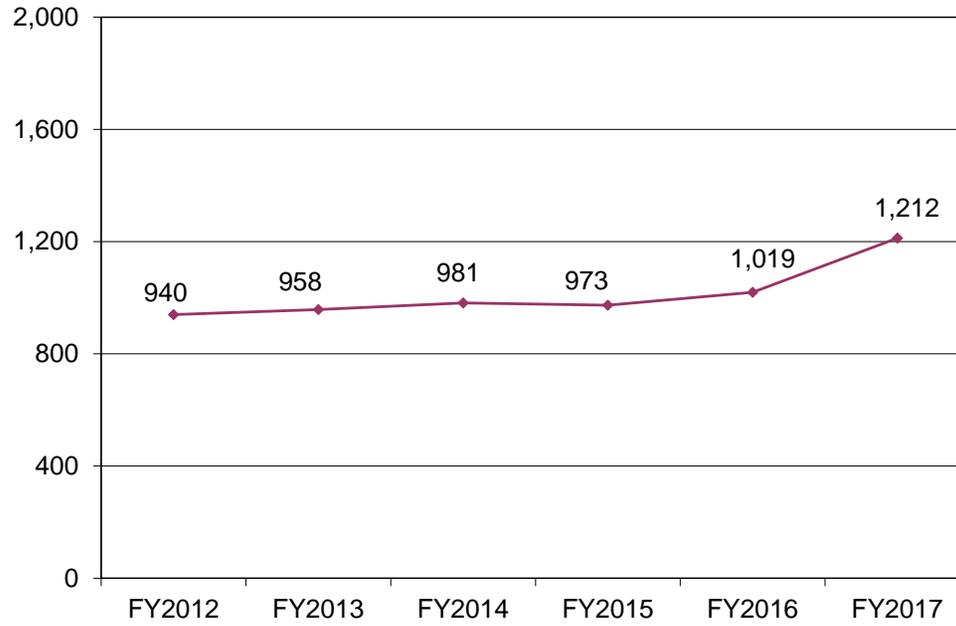
#### Operating Cost



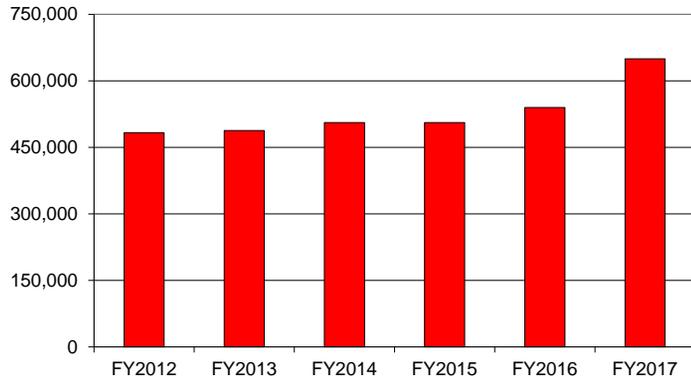
#### Unlinked Passengers



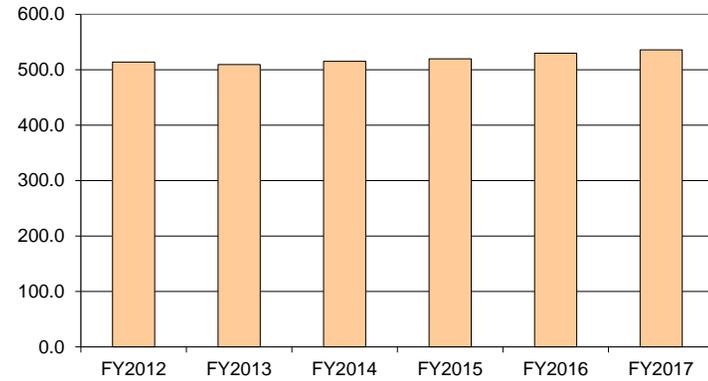
### Exhibit 4.4: Vehicle Service Hours per FTE – Bus Service



**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 by 2.3 percent annually on average during the six-year review period.
- In-house labor costs increased by 4.8 percent in FY2017 compared to FY2016, while fringe benefits costs decreased by 4.3 percent at the same time. SamTrans staff noted that the fringe benefits rate for FY2017 was 71.04 percent, lower than the 78.57 percent rate for FY2016.
- In-house labor costs represented the largest portion of the total costs in all years, ranging between 31 and 35 percent. This was followed by fringe benefits costs, which varied from 22 to 25 percent.
- Services/utilities costs posted the largest overall increase, at eight percent per year on average. Most of the increase occurred in FY2015 and FY2016, attributed to consultant costs following implementation of a *PeopleSoft* management system, higher legal fees, and cost-of-living based increases in security services.
- The portion of total costs ensuing from services/utilities costs increased in every year, from 12.4 percent in FY2012 to 16.3 percent in FY2017.
- Materials/supplies costs were reduced overall during the period, on average by 6.1 percent annually. This was mainly due to lower fuel costs in FY2014 through FY2016. This cost component was reduced from contributing about eight percent of total costs in the earlier years to less than five percent toward the end of the period.

- Casualty/liability costs also were reduced overall, averaging 7.7 percent less annually. There was a 4.6 percent increase between FY2012 and FY2013, followed by a negative balance in FY2014. The latter resulted from the closure of several large claims and reversal of claims reserves. Continued annual variation in the last three years appears in line with the relative unpredictability of settlement activity.
- Casualty/liability costs were reduced from contributing nearly six percent of total costs in the earlier years to four percent or less toward the end of the period.
- Purchased transportation costs remained at about \$18 million per year throughout the review period, but were reduced from contributing about 18 percent of total costs in the earlier years to about 16 percent toward the end of the period.

\* \* \* \* \*

The following is a brief summary of the bus service component operating costs trend highlights between FY2012 and FY2017:

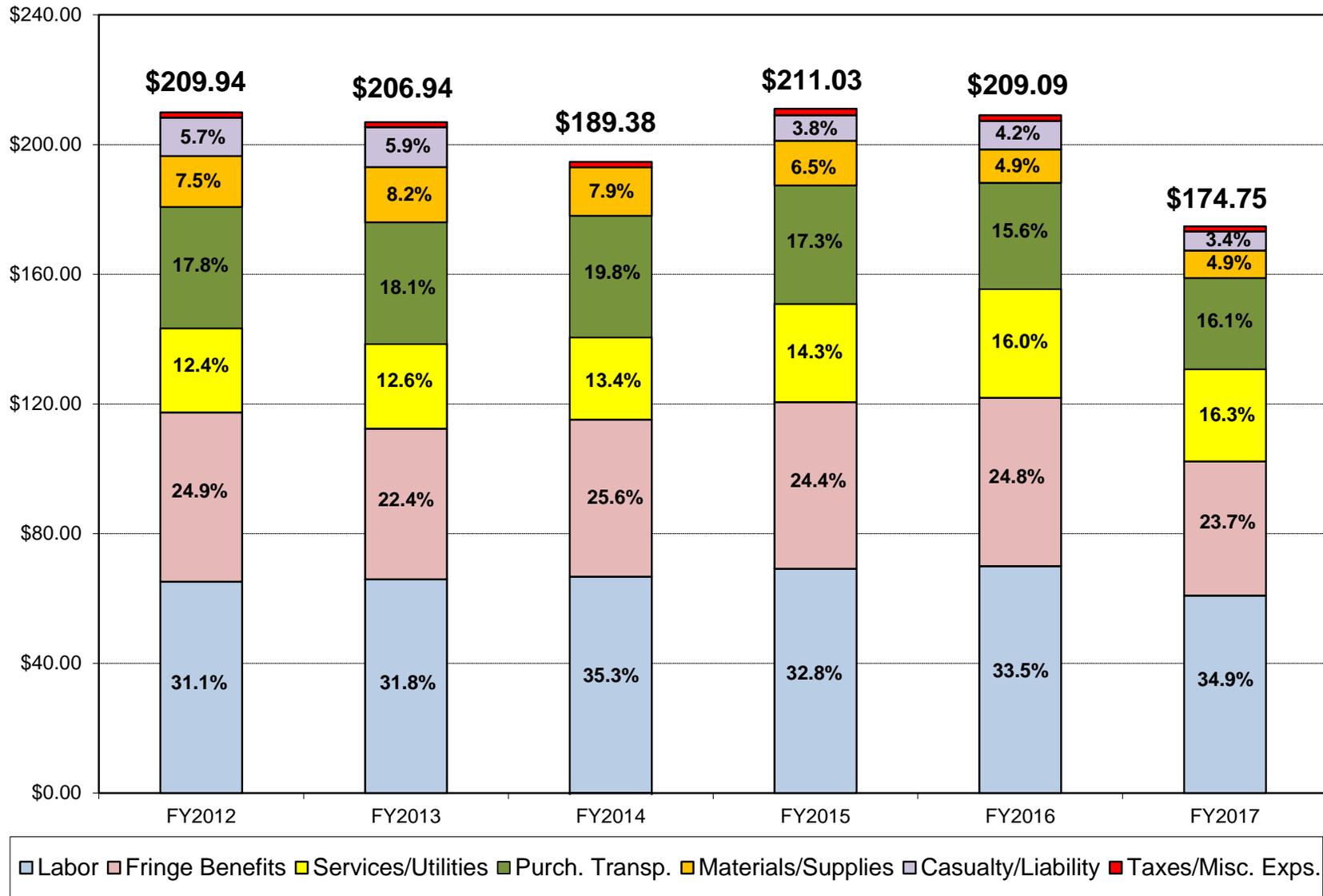
- In FY2017, in-house labor costs increased by 4.8 percent over the prior year, while fringe benefits costs decreased by 4.3 percent. These two categories represented by far the largest portion of total costs in all six years.
- Services/utilities costs posted the largest overall increase, most of which occurred in FY2015 and FY2016. Services/utilities costs also increased from 12.4 percent of total costs in FY2012 to 16.3 percent in FY2017.
- Materials/supplies and casualty/liability costs were reduced overall during the period, on average by six to seven percent annually, and reduced their shares of the total costs as well.
- Purchased transportation costs remained steady through the period, but went down from contributing about 18 percent to 16 percent of total costs.

### Exhibit 4.5: Component Cost Trends – Bus Service

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	Av. Ann. Chg.
COST CATEGORIES							
Labor (Salaries/Wages)	\$31,494,458	\$32,146,945	\$33,764,520	\$34,969,661	\$37,773,183	\$39,578,974	--
<i>Annual Change</i>	--	2.1%	5.0%	3.6%	8.0%	4.8%	4.7%
Fringe Benefits	\$25,195,567	\$22,654,683	\$24,494,968	\$26,032,385	\$28,054,169	\$26,860,757	--
<i>Annual Change</i>	--	-10.1%	8.1%	6.3%	7.8%	-4.3%	1.3%
Services/Utilities	\$12,549,865	\$12,742,442	\$12,828,138	\$15,305,887	\$18,116,362	\$18,467,387	--
<i>Annual Change</i>	--	1.5%	0.7%	19.3%	18.4%	1.9%	8.0%
Purchased Transportation	\$18,053,781	\$18,306,664	\$18,957,249	\$18,472,169	\$17,664,048	\$18,252,735	--
<i>Annual Change</i>	--	1.4%	3.6%	-2.6%	-4.4%	3.3%	0.2%
Materials/Supplies (a)	\$7,589,831	\$8,311,969	\$7,556,673	\$6,965,239	\$5,581,873	\$5,536,240	--
<i>Annual Change</i>	--	9.5%	-9.1%	-7.8%	-19.9%	-0.8%	-6.1%
Casualty/Liability	\$5,732,551	\$5,998,204	-\$2,671,746	\$4,005,537	\$4,711,611	\$3,840,174	--
<i>Annual Change</i>	--	4.6%	-144.5%	-249.9%	17.6%	-18.5%	-7.7%
Taxes/Miscellaneous Expenses	\$771,902	\$776,679	\$851,872	\$994,698	\$994,883	\$981,274	--
<i>Annual Change</i>	--	0.6%	9.7%	16.8%	0.0%	-1.4%	4.9%
<b>Total</b>	<b>\$101,387,955</b>	<b>\$100,937,586</b>	<b>\$95,781,674</b>	<b>\$106,745,576</b>	<b>\$112,896,129</b>	<b>\$113,517,541</b>	<b>--</b>
<i>Annual Change</i>	--	-0.4%	-5.1%	11.4%	5.8%	0.6%	2.3%
OPERATING STATISTICS							
Vehicle Service Hours	482,939	487,756	505,763	505,824	539,930	649,591	--
<i>Annual Change</i>	--	1.0%	3.7%	0.0%	6.7%	20.3%	6.1%

(a) Includes tires/tubes, fuels/lubricants, and other materials/supplies

**Exhibit 4.6: Distribution of Component Costs – Bus Service**  
*Operating Cost per Vehicle Service Hour*



## Paratransit Performance Trends

This section provides an overview of the performance of SamTrans' paratransit service over the six year analysis period. The trends in the TDA indicators and input data are presented in Exhibit 5. The six-year trends are illustrated in Exhibits 5.1 through 5.3.

- Operating Cost per Vehicle Service Hour (Exhibit 5.1)
  - SamTrans' paratransit cost per hour decreased in every year through FY2015, and then increased in the last two years by 18 and 16 percent respectively.
  - The FY2016 and FY2017 results reflect a significantly increasing trend in operating costs despite only minor changes in service hours. As discussed earlier, SamTrans staff noted a specific combination of events that contributed to the cost increases in FY2016 and FY2017.
  - Overall, the cost per hour increased an average of 3.6 percent per year over the six years, from \$84.58 in FY2012 to \$100.95 in FY2017.
  - With the effects of inflation removed, cost per hour exhibited an average annual decrease of one percent.
- Passengers per Vehicle Service Hour (Exhibit 5.2)
  - Passengers per vehicle service hour remained in a range of 1.7 to 1.9 passengers, with the highest levels recorded in the last two years.
  - The trend amounted to an average annual increase of 1.2 percent, as overall annual passenger levels increased at a somewhat higher rate than service hours.
- Passengers per Vehicle Service Mile (Exhibit 5.2)
  - Performance in passengers per vehicle service mile improved slightly overall, with the largest annual change (a six percent increase) reported in FY2016.

- Passengers per mile posted an average increase of 0.2 percent over the six-year period.
- Operating Cost per Passenger (Exhibit 5.3)
  - The cost per passenger rose by 2.4 percent per year on average through the review period, from \$47.18 in FY2012 to \$53.05 in FY2017.
  - Operating costs increased by 6.4 percent per year, while passenger levels increased by 4.0 percent per year.
  - The trend was driven by the significant increases in operating costs in FY2016 and FY2017, cited by SamTrans staff as resulting from the specific combination of events in those years that was discussed earlier.
  - With the impact of inflation removed, the result was a slight average annual decrease in the cost per passenger (0.2 percent).

\* \* \* \* \*

The following is a brief summary of the paratransit TDA performance trend highlights over the six-year period of FY2012 through FY2017:

- For cost efficiency, there was an average annual increase in the operating cost per hour of 3.6 percent, or one percent in inflation adjusted dollars.
- Passenger productivity showed moderately positive results, with passengers per hour increasing by 1.2 percent per year on average, and passengers per mile increasing by 0.2 percent annually.
- The operating cost per passenger achieved a slight annual decrease (0.2 percent on average) when normalized in FY2012 dollars.

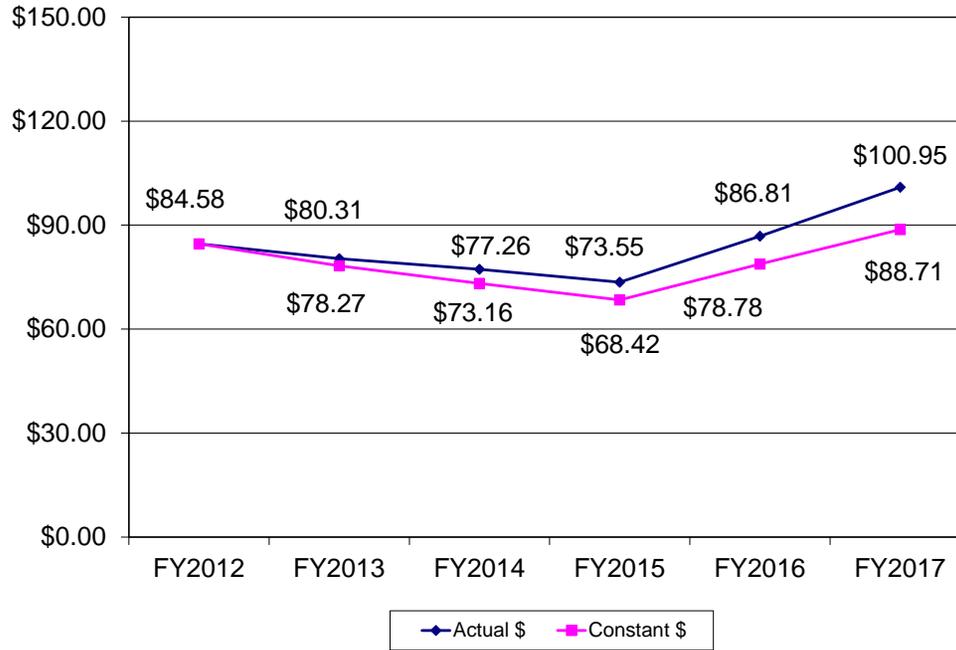
## Exhibit 5: TDA Indicator Performance – Paratransit

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	Av. Ann. Chg.
<b>Performance Indicators</b>							
Op. Cost per Vehicle Svc. Hour (Actual \$)	\$84.58	\$80.31	\$77.26	\$73.55	\$86.81	\$100.95	- -
<i>Annual Change</i>	- -	-5.1%	-3.8%	-4.8%	18.0%	16.3%	3.6%
Op. Cost per Vehicle Svc. Hour (Constant \$)	\$84.58	\$78.27	\$73.16	\$68.42	\$78.78	\$88.71	- -
<i>Annual Change</i>	- -	-7.5%	-6.5%	-6.5%	15.1%	12.6%	1.0%
Passengers per Vehicle Service Hour	1.8	1.7	1.7	1.7	1.9	1.9	- -
<i>Annual Change</i>	- -	-6.7%	1.6%	-1.3%	12.0%	1.3%	1.2%
Passengers per Vehicle Service Mile	0.12	0.11	0.12	0.11	0.12	0.12	- -
<i>Annual Change</i>	- -	-5.0%	2.8%	-2.9%	6.0%	0.2%	0.2%
Op. Cost per Passenger (Actual \$)	\$47.18	\$48.02	\$45.49	\$43.87	\$46.22	\$53.05	- -
<i>Annual Change</i>	- -	1.8%	-5.3%	-3.6%	5.4%	14.8%	2.4%
Op. Cost per Passenger (Constant \$)	\$47.18	\$46.81	\$43.08	\$40.81	\$41.95	\$46.62	- -
<i>Annual Change</i>	- -	-0.8%	-8.0%	-5.3%	2.8%	11.1%	-0.2%
Vehicle Service Hours per FTE	(a)	(a)	(a)	(a)	(a)	(a)	- -
<i>Annual Change</i>	- -	- -	- -	- -	- -	- -	- -
<b>Input Data</b>							
Operating Cost (Actual \$)	\$14,364,150	\$14,294,073	\$14,284,839	\$14,434,145	\$16,641,191	\$19,629,024	- -
<i>Annual Change</i>	- -	-0.5%	-0.1%	1.0%	15.3%	18.0%	6.4%
Operating Cost (Constant \$)	\$14,364,150	\$13,931,845	\$13,527,310	\$13,427,112	\$15,100,899	\$17,248,703	- -
<i>Annual Change</i>	- -	-3.0%	-2.9%	-0.7%	12.5%	14.2%	3.7%
Vehicle Service Hours	169,826	177,994	184,895	196,250	191,695	194,447	- -
<i>Annual Change</i>	- -	4.8%	3.9%	6.1%	-2.3%	1.4%	2.7%
Vehicle Service Miles	2,536,537	2,609,175	2,678,026	2,890,156	2,981,879	3,057,391	- -
<i>Annual Change</i>	- -	2.9%	2.6%	7.9%	3.2%	2.5%	3.8%
Unlinked Passengers	304,467	297,655	314,007	329,038	360,005	369,998	- -
<i>Annual Change</i>	- -	-2.2%	5.5%	4.8%	9.4%	2.8%	4.0%
Employee Full-Time Equivalents	(a)	(a)	(a)	(a)	(a)	(a)	- -
<i>Annual Change</i>	- -	- -	- -	- -	- -	- -	- -
Bay Area CPI - Annual Change	- -	2.6%	2.9%	1.9%	2.5%	3.3%	- -
- Cumulative Change	- -	2.6%	5.6%	7.5%	10.2%	13.8%	2.6%

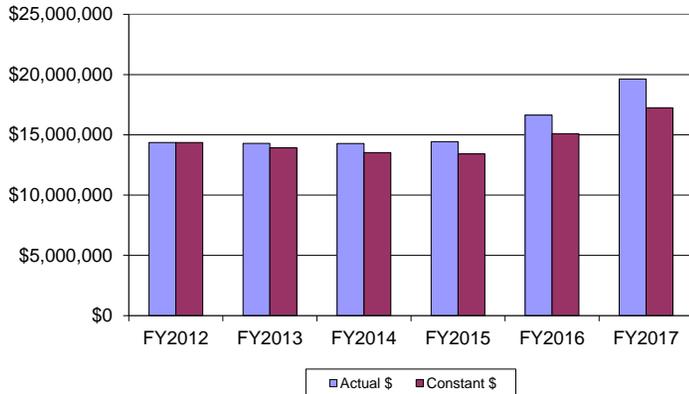
Sources: FY2012 through FY2014 - Prior Performance Audit Report  
FY2015 through FY2017 - NTD Reports; FY2017 Original Submission  
CPI Data - U.S. Department of Labor, Bureau of Labor Statistics

(a) Not available

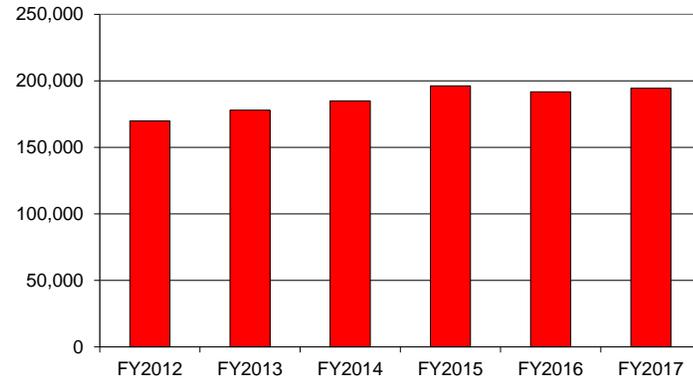
**Exhibit 5.1: Operating Cost per Vehicle Service Hour – Paratransit**



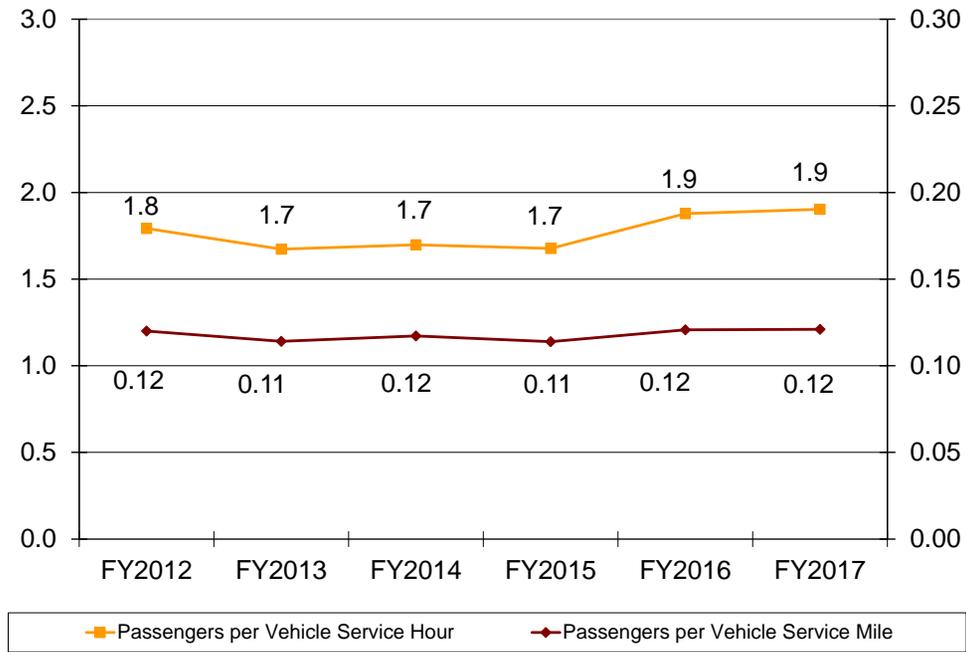
**Operating Cost**



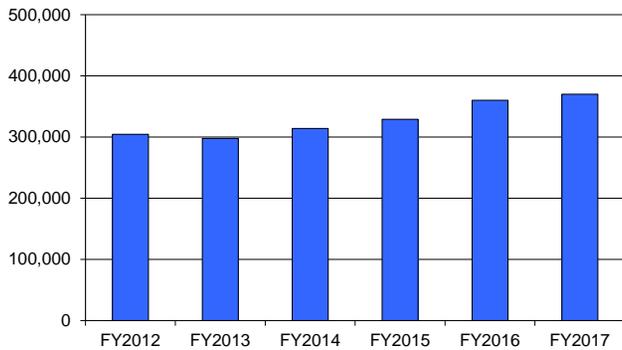
**Vehicle Service Hours**



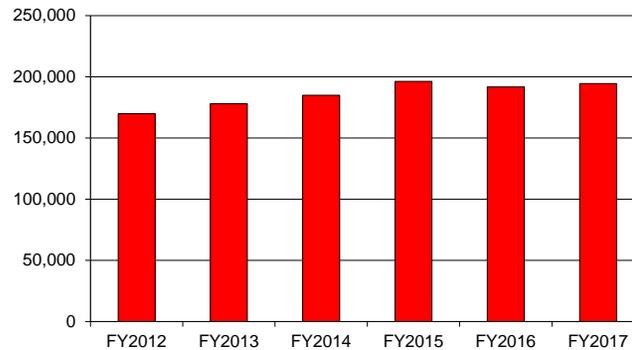
### Exhibit 5.2: Passengers per Hour and per Mile – Paratransit



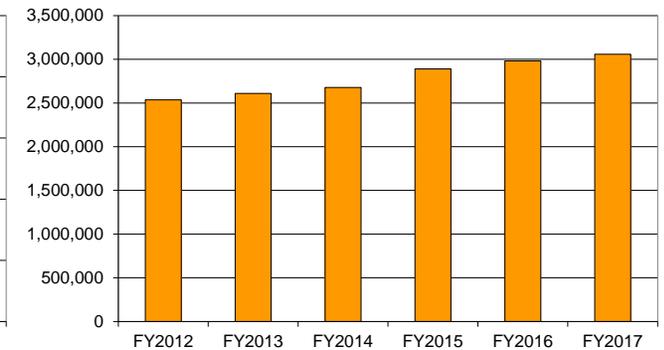
**Unlinked Passengers**



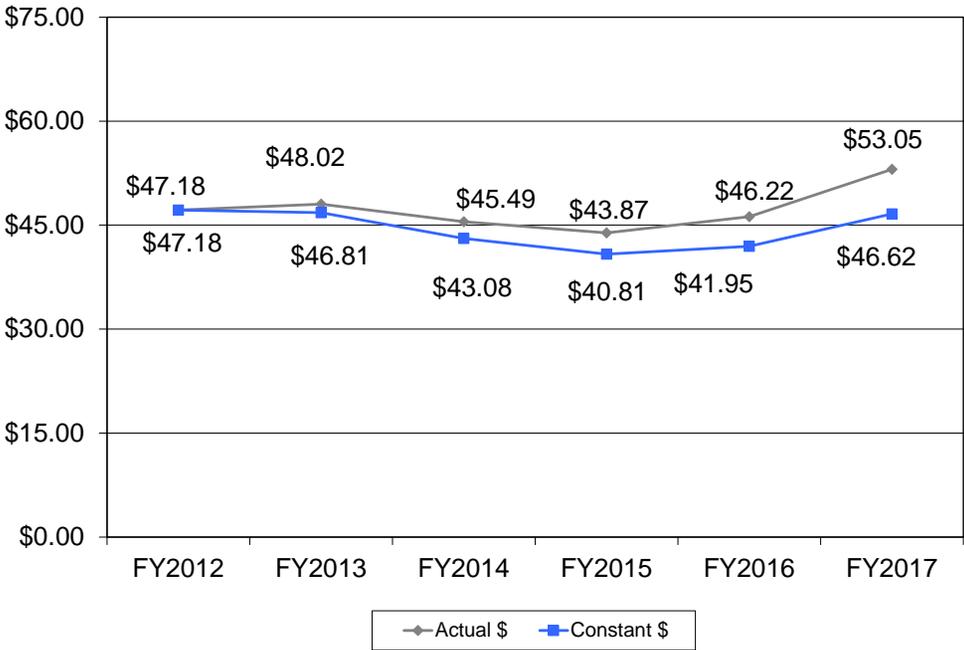
**Vehicle Service Hours**



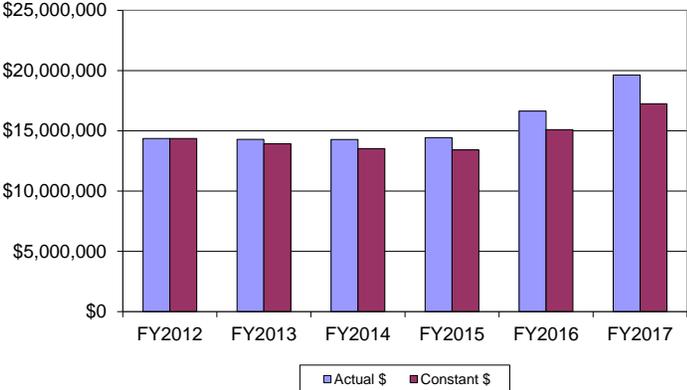
**Vehicle Service Miles**



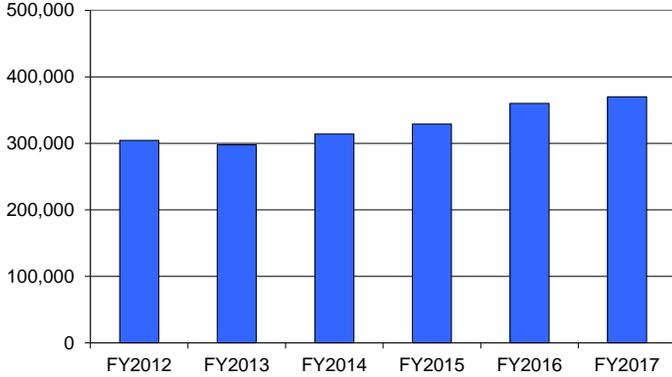
### Exhibit 5.3: Operating Cost per Passenger – Paratransit



#### Operating Cost



#### Unlinked Passengers



## Paratransit Component Costs

The year-to-year changes in selected operating cost categories are presented in Exhibit 5.4, 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 5.5.

- Between FY2012 and FY2017, the total annual costs increased by 6.4 percent on average over the six years.
- Purchased transportation costs represented by far the largest portion of the total costs, at more than 60 percent throughout the review period. These costs increased in every year, and by nearly five percent annually on average.
- The most significant change in the component costs was an 18 percent average annual increase in services/utilities. Much of this increase was attributed to the addition of a new Care Evaluator contract effective in FY2016. Services/utilities costs increased through the period to 4.1 percent of total costs in FY2017.
- While not major cost components (each contributing well under ten percent of total costs), in-house labor and fringe benefits costs both increased by about ten percent on average annually. An increased demand for services (especially in FY2016) resulted in increased labor needs to maintain the paratransit vehicles.
- Materials/supplies costs were reduced overall during the period, on average by 0.9 percent annually. This cost component also was reduced from contributing about seven percent of total costs in the earlier years to less than five percent at the end of the period.
- Casualty/liability costs decreased steadily through FY2015, and then increased substantially in both of the last years, which was a period of major claims settlement activity. The average annual increase amounted to 10.6 percent. Their share of total costs ranged from over ten percent in both FY2012 and FY2017 to four percent or less in two of the interim years.

\* \* \* \* \*

The following is a brief summary of the paratransit component operating costs trend highlights between FY2012 and FY2017:

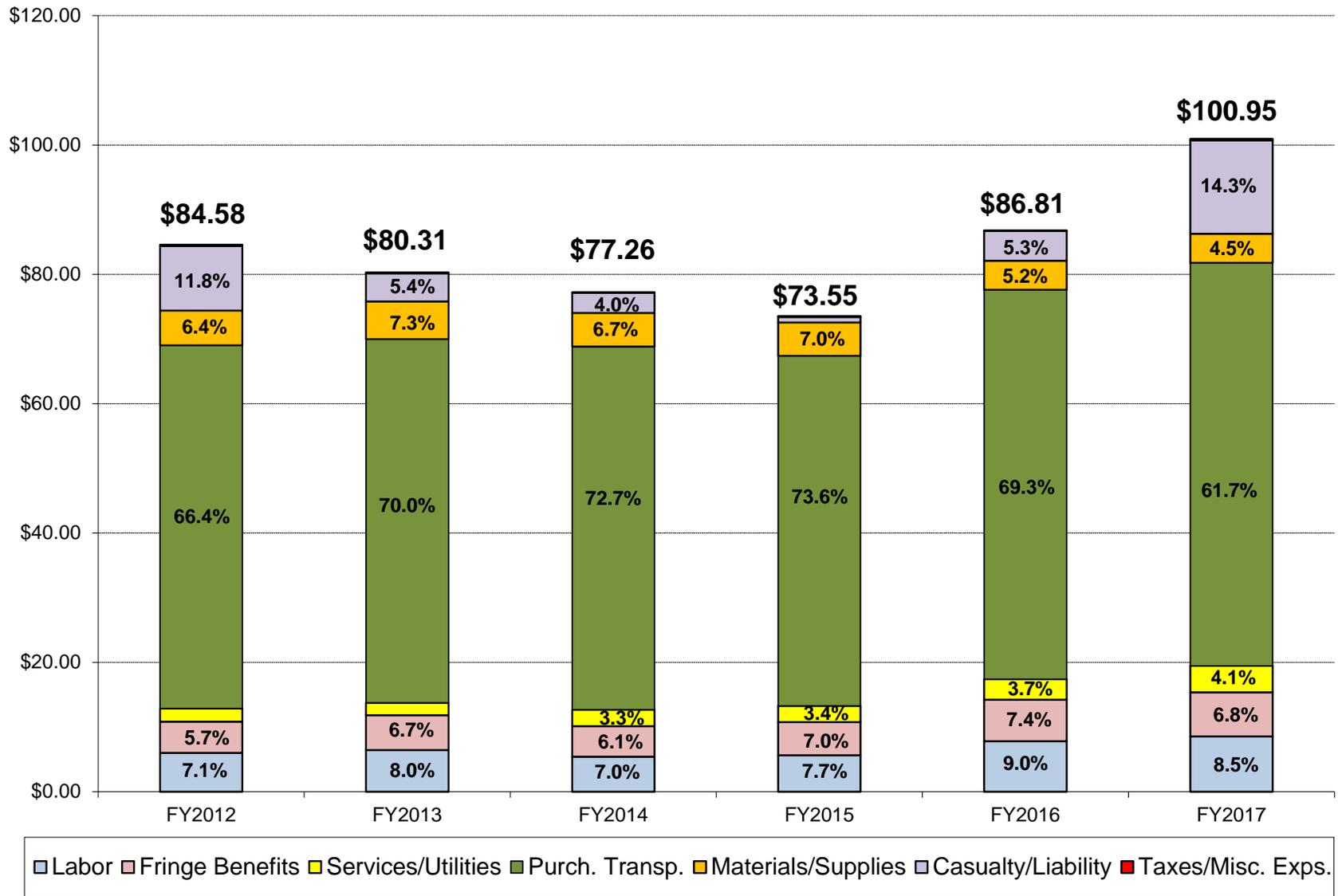
- Purchased transportation costs represented by far the largest portion of the total costs, at more than 60 percent throughout the review period. They increased by nearly five percent per year on average.
- The most significant change in the component costs was an 18 percent average annual increase in services/utilities. At the same time, materials/supplies costs were reduced by almost one percent annually.
- While not major cost components, in-house labor and fringe benefits costs both increased by about ten percent on average annually.
- Casualty/liability costs decreased steadily through FY2015, and then increased substantially. Their share of total costs was over ten percent in FY2012 and FY2017 but much lower in between.

### Exhibit 5.4: Component Costs Trends – Paratransit

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	Av. Ann. Chg.
COST CATEGORIES							
Labor (Salaries/Wages)	\$1,018,219	\$1,146,600	\$1,004,667	\$1,104,390	\$1,499,705	\$1,660,317	--
<i>Annual Change</i>	--	12.6%	-12.4%	9.9%	35.8%	10.7%	10.3%
Fringe Benefits	\$824,850	\$962,167	\$870,233	\$1,005,725	\$1,228,887	\$1,325,901	--
<i>Annual Change</i>	--	16.6%	-9.6%	15.6%	22.2%	7.9%	10.0%
Services/Utilities	\$342,474	\$340,807	\$468,312	\$495,412	\$609,103	\$796,750	--
<i>Annual Change</i>	--	-0.5%	37.4%	5.8%	22.9%	30.8%	18.4%
Purchased Transportation	\$9,534,752	\$10,005,207	\$10,386,522	\$10,619,991	\$11,539,464	\$12,120,887	--
<i>Annual Change</i>	--	4.9%	3.8%	2.2%	8.7%	5.0%	4.9%
Materials/Supplies (a)	\$914,024	\$1,038,976	\$956,664	\$1,015,583	\$859,576	\$873,543	--
<i>Annual Change</i>	--	13.7%	-7.9%	6.2%	-15.4%	1.6%	-0.9%
Casualty/Liability	\$1,697,286	\$771,851	\$578,036	\$165,274	\$890,197	\$2,810,811	--
<i>Annual Change</i>	--	-54.5%	-25.1%	-71.4%	438.6%	215.8%	10.6%
Taxes/Miscellaneous Expenses	\$32,545	\$28,465	\$20,405	\$27,770	\$14,259	\$40,815	--
<i>Annual Change</i>	--	-12.5%	-28.3%	36.1%	-48.7%	186.2%	4.6%
<b>Total</b>	\$14,364,150	\$14,294,073	\$14,284,839	\$14,434,145	\$16,641,191	\$19,629,024	--
<i>Annual Change</i>	--	-0.5%	-0.1%	1.0%	15.3%	18.0%	6.4%
OPERATING STATISTICS							
Vehicle Service Hours	169,826	177,994	184,895	196,250	191,695	194,447	--
<i>Annual Change</i>	--	4.8%	3.9%	6.1%	-2.3%	1.4%	2.7%

(a) Includes tires/tubes, fuels/lubricants, and other materials/supplies

**Exhibit 5.5: Distribution of Component Costs – Paratransit**  
*Operating Cost per Vehicle Service Hour*



## IV. COMPLIANCE WITH PUC REQUIREMENTS

An assessment of SamTrans' 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 SamTrans' TDA-STA claim application.

The results from this review are detailed by individual requirement in Exhibit 6. SamTrans 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, revenue sharing, and evaluating passenger needs.

## Exhibit 6: Compliance with State PUC Requirements

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99251	<u>CHP Certification</u> - 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 Inspections: <ul style="list-style-type: none"> <li>• 2015: North Base - 07/09/15 South Base - 09/04/15</li> <li>• 2016: North Base - 09/16/16 South Base - 09/21/16</li> <li>• 2017: North Base - 06/23/17 South Base - 11/28/17</li> </ul>
PUC99264	<u>Operator-to-Vehicle Staffing</u> - 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 between SamTrans and ATU Local 1574, effective 07/13/14.
PUC99314.5 (e)(1)(2)	<u>Part Time Drivers and Contracting</u> - Operators receiving STA funds are not precluded by contract from employing part-time drivers or from contracting with common carriers	In Compliance	<ul style="list-style-type: none"> <li>• <u>Part Time Drivers</u> – Article 14 (Part-Time Employees) of Agreement with ATU Local 1574, effective 07/13/14.</li> <li>• <u>Contracting</u> - SamTrans contracts with MV Transportation, Inc. to provide Contracted Urban Bus (CUB) and Route 17 fixed-route service, along with several Coastside and shuttle services. SamTrans also operates the Redi-Wheels paratransit service under contract, currently with First Transit, Inc.</li> </ul>

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99155	<p><u>Reduced Fare Eligibility</u> - 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</p>	In Compliance	<p>Fare information in public information materials:</p> <ul style="list-style-type: none"> <li>• Bus Route Map (October 2016)</li> <li>• SamTrans Website</li> </ul>
PUC99155.1 (a)(1)(2)	<p><u>Welfare to Work Coordination</u> - 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.</p>	In Compliance	<p>In collaboration with MTC's Community-Based Transportation Planning Program (CBTP), SamTrans produced four CBTPs for the City/County Association of Governments of San Mateo County (C/CAG) – East Palo Alto, Bayshore, North Center San Mateo, and San Bruno/South San Francisco. These, along with the San Mateo Countywide Transportation Plan for Low Income Populations, and participation in MTC's Lifeline Transportation Program, support projects that address mobility and accessibility needs in low-income communities, including welfare-to-work purposes.</p>

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99314.7, Govt Code 66516, MTC Res. Nos. 3837, 4073	<u>Joint Revenue Sharing Agreement</u> - 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	<ul style="list-style-type: none"> <li>• Signatory participant in Amended and Restated Clipper® Memorandum of Understanding (February 2016). Agreement also includes MTC and the other transit operators participating in the Clipper® program.</li> <li>• Revenue sharing agreements providing local fare credits for passengers transferring from these connecting operators: AC Transit, Caltrain, Dumbarton Express, and VTA.</li> </ul>
PUC99246(d)	<u>Process for Evaluation of Passenger Needs</u> - The operator has an established process in place for evaluating the needs and types of passengers being served	In Compliance	<ul style="list-style-type: none"> <li>• Triennial Customer Surveys (2009, 2012, 2015)</li> <li>• Customer Experience Survey (2017)</li> <li>• Paratransit Customer Survey (2015)</li> <li>• Service Improvement Survey (2014)</li> <li>• MTC Origin-Destination Survey (2013)</li> <li>• SamTrans Public Comment Process for Fare and Service Changes (2004)</li> <li>• FY2017-2026 SRTP - Service and System Evaluation section, including Title VI Report Summary</li> </ul>

## V. STATUS OF PRIOR AUDIT RECOMMENDATIONS

SamTrans' prior performance audit was completed in May 2015. 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 SamTrans' responses to the recommendations made in the prior performance audit, and whether SamTrans made reasonable progress toward their implementation. However, there were no recommendations made in SamTrans' prior audit.

## VI. FUNCTIONAL PERFORMANCE INDICATOR TRENDS

To further assess SamTrans' 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 SamTrans or for which input data were maintained by SamTrans 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.

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 performance by mode (Systemwide, Bus Service and Paratransit), each followed by an exhibit illustrating the indicators by function as applicable.

### Systemwide

For the purposes of this review, SamTrans' 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 7.

- Administrative costs increased from 29 percent to 32 percent of total operating costs between FY2015 and FY2017.
- Administrative costs comprised about \$50 per vehicle service hour in both the first and last years, with slightly higher results in the middle year.
- The portion of administrative costs attributed to marketing activities increased overall from just over eight percent in the first two years to 9.5 percent in FY2017.
- Marketing expenditures rose from \$0.21 to \$0.33 per passenger trip during the audit period.
- The systemwide farebox recovery ratio declined steadily from 15.5 percent in FY2015 to 12.8 percent in the last year.

\* \* \* \* \*

The following is a brief summary of the systemwide functional trend highlights between FY2015 and FY2017:

- Administrative costs increased moderately to 32 percent of total operating costs, while remaining just above \$50 per vehicle service hour.
- Marketing costs increased overall compared to total administrative costs and rose to \$0.33 per passenger trip in FY2017.
- The systemwide farebox recovery ratio declined from 15.5 percent to 12.8 percent by FY2017.

## Exhibit 7: Functional Performance Trends - Systemwide

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
<b>MANAGEMENT, ADMINISTRATION &amp; MARKETING</b>			
Administrative Cost/Total Operating Cost	29.1%	30.2%	32.3%
<i>Annual Percent Change</i>	--	3.7%	7.0%
<i>Three Year Percent Change</i>	--	--	10.9%
Administrative Cost/Vehicle Service Hour	\$50.27	\$53.45	\$50.96
<i>Annual Percent Change</i>	--	6.3%	-4.7%
<i>Three Year Percent Change</i>	--	--	1.4%
Marketing Cost/Total Administrative Cost	8.2%	8.1%	9.5%
<i>Annual Percent Change</i>	--	-0.9%	17.5%
<i>Three Year Percent Change</i>	--	--	16.4%
Marketing Cost/Unlinked Passenger Trip	\$0.21	\$0.23	\$0.33
<i>Annual Percent Change</i>	--	11.9%	39.3%
<i>Three Year Percent Change</i>	--	--	55.9%
Farebox Revenue/Operating Cost	15.5%	14.0%	12.8%
<i>Annual Percent Change</i>	--	-10.1%	-8.3%
<i>Three Year Percent Change</i>	--	--	-17.6%

## Bus Service

SamTrans' 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 8.

- Service Planning
  - Operating costs per passenger mile increased from \$1.78 in the first year to \$2.29 in FY2017 (nearly 30 percent).
  - Just over 70 percent of all vehicle miles traveled were in service, as were just over 80 percent of all vehicle hours in all three years.
  - The bus service farebox recovery ratio declined steadily from 16.9 percent in the first year to 14.2 percent in FY2017. This trend appears largely driven by the lost revenue associated with the previously discussed reductions in bus passengers toward the end of the period.
  
- Operations
  - Vehicle operations costs comprised 51.5 percent of total operating costs in the first year, but decreased to 49.5 percent by FY2017.
  - Vehicle operations costs per service hour decreased as well in each year, from \$108.61 in FY2015 to \$86.52 in FY2017. The latter represented a decrease of 17 percent from the prior year, due to the significantly increased vehicle service hours in FY2017 to conform to NTD reporting conventions.
  - Operator scheduled absences decreased noticeably from 11.5 percent of total hours worked in FY2015 to seven percent thereafter, while unscheduled absences decreased just from four percent to three percent at the same time.
  - Schedule adherence improved from 82.7 percent in FY2015 to 84.4 percent in the last two years.

- The rate of complaints decreased somewhat in the last year, to 13 per 100,000 passenger trips.
- The incidence of missed trips increased in each year but remained very low overall.
- Maintenance
  - Total maintenance costs comprised about 19 percent of total operating costs throughout the period.
  - Vehicle maintenance costs per service mile increased overall from \$2.64 to \$2.74 (3.6 percent).
  - Maintenance pay hours decreased steadily from 37.8 percent of vehicle service hours to 27.9 percent over the period.
  - Maintenance employee scheduled absences increased in each year, from 5.9 percent of total time in the first year to 7.4 percent in FY2017. Unscheduled absences decreased at the same time, from 2.5 percent to 2.3 percent.
  - The vehicle spare ratio decreased from 19 percent in the first two years to 17 percent in FY2017.
  - The mean distance between major failures improved overall by 13.5 percent. When looking at all failures, there was a similar rate of improvement.
- Safety
  - The rate of preventable accidents was about the same in FY2015 and FY2017, with less positive results in the interim year.
  - Casualty/liability costs per service hour and mile both increased in FY2016 but showed overall reductions during the three years.

- Lost days due to industrial accidents (based on calendar year reporting) decreased overall by 45 percent, with most of the decrease occurring in FY2017.

\* \* \* \* \*

The following is a brief summary of the bus service functional trend highlights between FY2015 and FY2017:

- Service Planning results showed the operating cost per passenger mile increasing by nearly 30 percent, and the farebox recovery declining to 14.2 percent in FY2017. Consistently at least 70 percent of vehicle miles and 80 percent of vehicle hours were in service.
- Operations results showed decreases in vehicle operations costs per service hour with smaller decreases in relation to total costs, improving operator absence trends, some improvement in schedule adherence to 84 percent, an overall decrease in the rate of complaints, and very few missed trips.
- Maintenance results showed maintenance costs steady at 19 percent of total costs but vehicle maintenance costs per service mile up by 3.6 percent, and maintenance pay hours down compared to service hours. A general increase in the maintenance employee scheduled absence rate was accompanied by a decrease in the unscheduled rate. The vehicle spare ratio reduced from 19 to 17 percent, and there was noticeable improvement in the mechanical failure rates.
- Safety results showed the rate of preventable accidents about the same in FY2015 and FY2017, overall decreases in the casualty/liability cost rates, and lost days due to industrial accidents down by 45 percent.

## Exhibit 8: Functional Performance Trends – Bus Service

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
<b>SERVICE PLANNING</b>			
Total Operating Cost/Passenger Mile	\$1.78	\$1.83	\$2.29
<i>Annual Percent Change</i>	--	2.7%	25.4%
<i>Three Year Percent Change</i>	--	--	28.9%
Vehicle Service Miles/Total Miles	72.2%	70.1%	71.3%
<i>Annual Percent Change</i>	--	-2.9%	1.7%
<i>Three Year Percent Change</i>	--	--	-1.3%
Vehicle Service Hours/Total Hours	82.8%	80.3%	82.9%
<i>Annual Percent Change</i>	--	-2.9%	3.2%
<i>Three Year Percent Change</i>	--	--	0.1%
Farebox Revenue/Operating Cost	16.9%	15.3%	14.2%
<i>Annual Percent Change</i>	--	-9.2%	-7.3%
<i>Three Year Percent Change</i>	--	--	-15.8%
<b>OPERATIONS</b>			
Vehicle Operations Cost/Total Operating Cost	51.5%	50.1%	49.5%
<i>Annual Percent Change</i>	--	-2.7%	-1.1%
<i>Three Year Percent Change</i>	--	--	-3.8%
Vehicle Operations Cost/Vehicle Service Hour	\$108.61	\$104.66	\$86.52
<i>Annual Percent Change</i>	--	-3.6%	-17.3%
<i>Three Year Percent Change</i>	--	--	-20.3%
Operator Sched. Absences/Total Hours Worked	11.5%	6.9%	7.0%
<i>Annual Percent Change</i>	--	-39.7%	0.3%
<i>Three Year Percent Change</i>	--	--	-39.5%
Operator Unsched. Absences/Total Hours Worked	4.1%	3.0%	3.3%
<i>Annual Percent Change</i>	--	-27.5%	12.7%
<i>Three Year Percent Change</i>	--	--	-18.3%
Trips On-Time/Total Trips	82.7%	84.4%	84.4%
<i>Annual Percent Change</i>	--	2.1%	0.0%
<i>Three Year Percent Change</i>	--	--	2.1%

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
<b>OPERATIONS (continued)</b>			
Complaints/100,000 Unlinked Passenger Trips	14.0	14.4	13.0
<i>Annual Percent Change</i>	--	3.3%	-10.1%
<i>Three Year Percent Change</i>	--	--	-7.1%
Missed Trips/Total Trips	0.02%	0.03%	0.03%
<i>Annual Percent Change</i>	--	25.0%	4.7%
<i>Three Year Percent Change</i>	--	--	30.9%
<b>MAINTENANCE</b>			
Vehicle + Non-Veh. Maint. Cost/Total Operating Cost	19.2%	19.9%	19.3%
<i>Annual Percent Change</i>	--	3.6%	-2.9%
<i>Three Year Percent Change</i>	--	--	0.5%
Vehicle Maintenance Cost/Vehicle Service Mile	\$2.64	\$2.83	\$2.74
<i>Annual Percent Change</i>	--	7.2%	-3.4%
<i>Three Year Percent Change</i>	--	--	3.6%
Maintenance Pay Hours/Vehicle Service Hours	37.8%	32.4%	27.9%
<i>Annual Percent Change</i>	--	-14.5%	-13.9%
<i>Three Year Percent Change</i>	--	--	-26.4%
Maintenance Employee Scheduled Absences	5.9%	7.2%	7.4%
<i>Annual Percent Change</i>	--	21.7%	2.7%
<i>Three Year Percent Change</i>	--	--	25.0%
Maintenance Employee Unscheduled Absences	2.5%	2.5%	2.3%
<i>Annual Percent Change</i>	--	-0.7%	-9.2%
<i>Three Year Percent Change</i>	--	--	-9.9%
Spare Vehicles/Total Vehicles	18.9%	19.2%	16.7%
<i>Annual Percent Change</i>	--	1.6%	-12.8%
<i>Three Year Percent Change</i>	--	--	-11.4%
Mean Distance between Major Failures (Miles)	33,482	38,026	38,005
<i>Annual Percent Change</i>	--	13.6%	-0.1%
<i>Three Year Percent Change</i>	--	--	13.5%
Mean Distance between All Failures (Miles)	29,786	35,482	33,904
<i>Annual Percent Change</i>	--	19.1%	-4.4%
<i>Three Year Percent Change</i>	--	--	13.8%

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
<b>SAFETY</b>			
Preventable Accidents/100,000 Vehicle Miles	0.76	0.85	0.73
<i>Annual Percent Change</i>	--	11.2%	-13.7%
<i>Three Year Percent Change</i>	--	--	-4.1%
Casualty & Liability Cost/Vehicle Service Hour	\$7.92	\$8.73	\$5.91
<i>Annual Percent Change</i>	--	10.2%	-32.3%
<i>Three Year Percent Change</i>	--	--	-25.3%
Casualty & Liability Cost/Vehicle Service Mile	\$0.60	\$0.70	\$0.57
<i>Annual Percent Change</i>	--	16.5%	-18.8%
<i>Three Year Percent Change</i>	--	--	-5.5%
Lost Days Due to Industrial Accidents (Calendar Year)	2,149	2,048	1,163
<i>Annual Percent Change</i>	--	-4.7%	-43.2%
<i>Three Year Percent Change</i>	--	--	-45.9%

## Paratransit

SamTrans' paratransit functional area trends represent mostly similar areas to the bus service. Audit period performance is discussed below and presented in Exhibit 9.

- Service Planning
  - Operating costs per passenger mile increased from \$4.50 in the first year to nearly \$6.00 in FY2017 (32 percent overall), primarily reflecting the operating cost increases in the last two years discussed earlier.
  - About 90 percent of all vehicle miles traveled and vehicle hours were in service in all three years.
  - The farebox recovery ratio declined from 5.6 percent in the first year to 4.7 percent in FY2016 and FY2017.
  
- Operations
  - Vehicle operations costs decreased steadily from 57 percent of total operating costs in FY2015 to 47 percent by FY2017.
  - Vehicle operations costs per service hour increased overall from \$41.97 to \$47.57 (13 percent).
  - Schedule adherence improved during the audit period from 90.1 percent in FY2015 to 92.6 percent in FY2017.
  - The rate of complaints decreased by more than 35 percent between FY2016 and FY2017.
  - The incidence of missed trips remained very low throughout the period, and decreased even further in FY2017.
  - There were no ADA trip denials.

- The trip cancellation rate decreased modestly, from 17.6 percent of total ADA trips in FY2015 to 16.3 percent subsequently. Meanwhile, late trip cancellations went up slightly to 1.7 percent.
- The passenger no-show rate decreased overall, but remained just over one percent of total ADA trips.
- Maintenance
  - Total maintenance costs remained at about 15 percent of total operating costs throughout the period.
  - Vehicle maintenance costs per service mile increased overall from \$0.76 to \$0.90 (19 percent).
  - The vehicle spare ratio decreased from about ten percent in the first two years to eight percent in FY2017.
  - The mean distance between major failures improved significantly (27 percent over the period). When looking at all failures, there was a similarly positive overall trend.
- Safety
  - The rate of preventable accidents was reduced by about 30 percent over the audit period.

\* \* \* \* \*

The following is a brief summary of the paratransit functional trend highlights between FY2015 and FY2017:

- Service Planning results showed the operating cost per passenger mile increasing by 32 percent overall (in line with cost increases resulting from a combination of identified events), the farebox recovery ratio decreasing

from 5.6 to 4.7 percent, and consistently about 90 percent of vehicle miles and hours in service.

- Operations results showed the vehicle operations cost per hour increasing by 13 percent overall, but decreasing from 57 percent to 47 percent of total costs. Schedule adherence increased from 90 to 92 percent and there was a 35 percent decrease in the rate of complaints. The missed trip rate remained very low, and there were no ADA trip denials. The trip cancellation rate decreased modestly to 16 percent, while late cancellations and passenger no-shows both remained at just over one percent of ADA trips.
- Maintenance results showed total maintenance costs remaining at 15 percent of total costs, while vehicle maintenance costs per service mile increased overall by 19 percent. The spare ratio decreased from about ten to eight percent, and there was significant improvement in the mechanical failure rates.
- Safety results showed the preventable accident rate reduced by 30 percent over the audit period.

## Exhibit 9: Functional Performance Trends – Paratransit

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
<b>SERVICE PLANNING</b>			
Total Operating Cost/Passenger Mile	\$4.50	\$4.80	\$5.94
<i>Annual Percent Change</i>	--	6.7%	23.6%
<i>Three Year Percent Change</i>	--	--	31.9%
Vehicle Service Miles/Total Miles	89.1%	89.3%	88.5%
<i>Annual Percent Change</i>	--	0.2%	-0.9%
<i>Three Year Percent Change</i>	--	--	-0.7%
Vehicle Service Hours/Total Hours	90.9%	90.9%	90.8%
<i>Annual Percent Change</i>	--	-0.1%	-0.1%
<i>Three Year Percent Change</i>	--	--	-0.2%
Farebox Revenue/Operating Cost	5.6%	4.7%	4.7%
<i>Annual Percent Change</i>	--	-16.1%	-0.3%
<i>Three Year Percent Change</i>	--	--	-16.4%
<b>OPERATIONS</b>			
Vehicle Operations Cost/Total Operating Cost	57.1%	53.2%	47.1%
<i>Annual Percent Change</i>	--	-6.7%	-11.5%
<i>Three Year Percent Change</i>	--	--	-17.4%
Vehicle Operations Cost/Vehicle Service Hour	\$41.97	\$46.20	\$47.57
<i>Annual Percent Change</i>	--	10.1%	3.0%
<i>Three Year Percent Change</i>	--	--	13.3%
Trips On-Time/Total Trips	90.1%	92.0%	92.6%
<i>Annual Percent Change</i>	--	2.1%	0.7%
<i>Three Year Percent Change</i>	--	--	2.8%
Complaints/10,000 Unlinked Passenger Trips	5.7	5.7	3.6
<i>Annual Percent Change</i>	--	-0.3%	-36.4%
<i>Three Year Percent Change</i>	--	--	-36.6%
Missed Trips/Total Trips	0.006%	0.006%	0.002%
<i>Annual Percent Change</i>	--	0.5%	-69.0%
<i>Three Year Percent Change</i>	--	--	-68.9%
ADA Trip Denials/Total ADA Trips	0.0%	0.0%	0.0%
<i>Annual Percent Change</i>	--	--	--
<i>Three Year Percent Change</i>	--	--	--
Trip Cancellations/Total ADA Trips	17.6%	16.3%	16.3%
<i>Annual Percent Change</i>	--	-7.1%	0.0%
<i>Three Year Percent Change</i>	--	--	-7.0%

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
<b>OPERATIONS (continued)</b>			
Late Trip Cancellations/Total ADA Trips	1.3%	1.3%	1.7%
<i>Annual Percent Change</i>	--	-2.7%	31.9%
<i>Three Year Percent Change</i>	--	--	28.4%
No-Shows/Total ADA Trips	1.5%	1.2%	1.2%
<i>Annual Percent Change</i>	--	-14.7%	-2.8%
<i>Three Year Percent Change</i>	--	--	-17.1%
<b>MAINTENANCE</b>			
Vehicle + Non-Veh. Maint. Cost/Total Operating Cost	15.4%	15.8%	14.4%
<i>Annual Percent Change</i>	--	2.4%	-8.7%
<i>Three Year Percent Change</i>	--	--	-6.5%
Vehicle Maintenance Cost/Vehicle Service Mile	\$0.76	\$0.86	\$0.90
<i>Annual Percent Change</i>	--	14.2%	4.2%
<i>Three Year Percent Change</i>	--	--	19.0%
Spare Vehicles/Total Vehicles	9.8%	9.8%	7.8%
<i>Annual Percent Change</i>	--	0.2%	-20.6%
<i>Three Year Percent Change</i>	--	--	-20.4%
Mean Distance between Major Failures (Miles)	87,649	107,718	111,429
<i>Annual Percent Change</i>	--	22.9%	3.4%
<i>Three Year Percent Change</i>	--	--	27.1%
Mean Distance between All Failures (Miles)	83,154	107,718	104,676
<i>Annual Percent Change</i>	--	29.5%	-2.8%
<i>Three Year Percent Change</i>	--	--	25.9%
<b>SAFETY</b>			
Preventable Accidents/100,000 Vehicle Miles	0.83	0.78	0.58
<i>Annual Percent Change</i>	--	-6.5%	-25.6%
<i>Three Year Percent Change</i>	--	--	-30.5%

## VII. CONCLUSIONS AND RECOMMENDATIONS

The preceding sections presented a review of SamTrans' transit service performance during the three-year period of FY2015 through FY2017 (July 1, 2014 through June 30, 2017). They focused on TDA compliance issues including trends in TDA-mandated performance indicators and compliance with selected sections of the state Public Utilities Code (PUC). They also provided the findings from an overview of SamTrans' data collection activities to support the TDA indicators, actions taken to implement recommendations from the prior performance audit, and a review of selected key functional performance results.

### Conclusions

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

- Data Collection – SamTrans is in compliance with the data collection and reporting requirements for all five TDA statistics. In addition, the statistics collected over the six-year 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

SamTrans' 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.

Bus Service – The following is a brief summary of the TDA performance trend highlights over the six-year period of FY2012 through FY2017:

- There was an average annual decrease in the operating cost per hour of 3.6 percent, which amounted to a 6.1 percent decrease in inflation adjusted dollars.
- Passenger productivity showed negative trends, with passengers per vehicle service hour decreasing by 7.1 percent per year overall, and passengers per vehicle service mile decreasing by 1.9 percent annually.
- Cost per hour and passengers per hour results were impacted by FY2017 hours reported 20 percent higher than FY2016, resulting from an NTD-directed change in service hour reporting to include layover time.
- The cost per passenger increased on average by 3.8 percent per year, which amounted to an average annual increase of 1.2 percent in constant FY2012 dollars.
- Employee productivity (SamTrans employees only) increased an average 5.2 percent per year.

The following is a brief summary of the component operating costs trend highlights for the bus service between FY2012 and FY2017:

- In FY2017, in-house labor costs increased by 4.8 percent over the prior year, while fringe benefits costs decreased by 4.3 percent. These two categories represented by far the largest portion of total costs in all six years.
- Services/utilities costs posted the largest overall increase, most of which occurred in FY2015 and FY2016. Services/utilities costs also increased from 12.4 percent of total costs in FY2012 to 16.3 percent in FY2017.
- Materials/supplies and casualty/liability costs were reduced overall during the period, on average by six to seven percent annually, and reduced their shares of the total costs as well.

- Purchased transportation costs remained steady through the period, but went down from contributing about 18 percent to 16 percent of total costs.

Paratransit – The following is a brief summary of the TDA performance trend highlights over the six-year period of FY2012 through FY2017:

- For cost efficiency, there was an average annual increase in the operating cost per hour of 3.6 percent, or one percent in inflation adjusted dollars.
- Passenger productivity showed moderately positive results, with passengers per hour increasing by 1.2 percent per year on average, and passengers per mile increasing by 0.2 percent annually.
- The operating cost per passenger achieved a slight annual decrease (0.2 percent on average) when normalized in FY2012 dollars.

The following is a brief summary of the component operating costs trend highlights for paratransit between FY2012 and FY2017:

- Purchased transportation costs represented by far the largest portion of the total costs, at more than 60 percent throughout the review period. They increased by nearly five percent per year on average.
- The most significant change in the component costs was an 18 percent average annual increase in services/utilities. At the same time, materials/supplies costs were reduced by almost one percent annually.
- While not major cost components, in-house labor and fringe benefits costs both increased by about ten percent on average annually.
- Casualty/liability costs decreased steadily through FY2015, and then increased substantially. Their share of total costs was over ten percent in FY2012 and FY2017 but much lower in between.

- PUC Compliance – SamTrans is in compliance with the 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, revenue sharing, and evaluating passenger needs.
- Status of Prior Audit Recommendations – There were no recommendations made in SamTrans’ prior performance audit.
- Functional Performance Indicator Trends

To further assess SamTrans’ 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 FY2015 and FY2017:

- Administrative costs increased moderately to 32 percent of total operating costs, while remaining just above \$50 per vehicle service hour.
- Marketing costs increased overall compared to total administrative costs and rose to \$0.33 per passenger trip in FY2017.
- The systemwide farebox recovery ratio declined from 15.5 percent to 12.8 percent by FY2017.

Bus Service – The following is a brief summary of the bus service functional trend highlights between FY2015 and FY2017:

- Service Planning results showed the operating cost per passenger mile increasing by nearly 30 percent, and the farebox recovery declining to 14.2 percent in FY2017. Consistently at least 70 percent of vehicle miles and 80 percent of vehicle hours were in service.

- Operations results showed decreases in vehicle operations costs per service hour with smaller decreases in relation to total costs, improving operator absence trends, some improvement in schedule adherence to 84 percent, an overall decrease in the rate of complaints, and very few missed trips.
- Maintenance results showed maintenance costs steady at 19 percent of total costs but vehicle maintenance costs per service mile up by 3.6 percent, and maintenance pay hours down compared to service hours. A general increase in the maintenance employee scheduled absence rate was accompanied by a decrease in the unscheduled rate. The vehicle spare ratio reduced from 19 to 17 percent, and there was noticeable improvement in the mechanical failure rates.
- Safety results showed the rate of preventable accidents about the same in FY2015 and FY2017, overall decreases in the casualty/liability cost rates, and lost days due to industrial accidents down by 45 percent.

Paratransit – The following is a brief summary of the paratransit functional trend highlights between FY2015 and FY2017:

- Service Planning results showed the operating cost per passenger mile increasing by 32 percent overall (in line with cost increases resulting from a combination of identified events), the farebox recovery ratio decreasing from 5.6 to 4.7 percent, and consistently about 90 percent of vehicle miles and hours in service.
- Operations results showed the vehicle operations cost per hour increasing by 13 percent overall, but decreasing from 57 percent to 47 percent of total costs. Schedule adherence increased from 90 to 92 percent and there was a 35 percent decrease in the rate of complaints. The missed trip rate remained very low, and there were no ADA trip denials. The trip cancellation rate decreased modestly to 16 percent, while late cancellations and passenger no-shows both remained at just over one percent of ADA trips.
- Maintenance results showed total maintenance costs remaining at 15 percent of total costs, while vehicle maintenance costs per service

mile increased overall by 19 percent. The spare ratio decreased from about ten to eight percent, and there was significant improvement in the mechanical failure rates.

- Safety results showed the preventable accident rate reduced by 30 percent over the audit period.

## **Recommendations**

No recommendations are suggested for SamTrans based on the results of this triennial performance audit.

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**APPENDIX A:  
INPUT STATISTICS FOR  
FUNCTIONAL PERFORMANCE MEASURES**

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## Functional Performance Inputs - Systemwide (All Modes)

Data Item	FY2015	FY2016	FY2017	Source
Total Operating Costs	\$121,179,721	\$129,537,320	\$133,146,565	NTD F-40
Administrative Costs	\$35,295,159	\$39,107,637	\$43,015,960	NTD F-40
Vehicle Service Hours	702,074	731,625	844,038	NTD S-10 (all modes)
Marketing Costs	\$2,891,500	\$3,174,000	\$4,101,073	SamTrans Budget
Unlinked Passenger Trips	13,796,204	13,530,765	12,550,962	NTD S-10 (all modes)
Farebox Revenue (All Modes)	\$18,816,424	\$18,078,032	\$17,040,333	NTD F-10

## Functional Performance Inputs – Bus Service

Data Item	FY2015	FY2016	FY2017	Source
Vehicle Service Miles	6,622,381	6,688,654	6,716,710	NTD S-10 MB
Total Vehicle Miles	9,173,960	9,544,579	9,425,309	NTD S-10 MB
Vehicle Service Hours	505,824	539,930	649,591	NTD S-10 MB
Total Vehicle Hours	611,221	672,186	783,993	NTD S-10 MB
Unlinked Passenger Trips	13,467,166	13,170,760	12,180,964	NTD S-10 MB
Farebox Revenue	\$18,010,845	\$17,299,221	\$16,124,530	NTD F-10
Total Operating Costs	\$106,745,576	\$112,896,129	\$113,517,541	NTD F-30 MB
Passenger Miles	60,041,871	61,815,883	49,554,277	NTD S-10 MB
Vehicle Operations Costs	\$54,939,357	\$56,508,088	\$56,205,096	NTD F-30 MB; FY16 - NTD Database
Total Operator Time (Days)	72,424	77,639	74,896	Bus Transp. Staff ("MTC Report")
Operator Scheduled Absences (Days)	8,349	5,394	5,220	Bus Transp. Staff ("MTC Report")
Operator Unscheduled Absences (Days)	2,953	2,296	2,496	Bus Transp. Staff ("MTC Report")
Trips On-Time	82.7%	84.4%	84.4%	Bus Transp. Staff ("MTC Report")
Total Trips	567,965	574,418	573,372	Bus Transp. Staff ("MTC Report")
Complaints	1,879	1,899	1,579	Bus Transp. Staff ("MTC Report")
Missed Trips	140	177	185	Bus Transp. Staff ("MTC Report")
Mechanic Pay Hours	191,360	174,720	180,960	Bus Maintenance Staff
Total Maintenance Employee Time (Days or Hours)	191,360	174,720	180,960	Bus Maintenance Staff
Maint. Employee Sched. Absences (Days or Hours)	11,266	12,518	13,313	Bus Maintenance Staff
Maint. Employee Unsched. Absences (Days or Hours)	4,792	4,344	4,085	Bus Maintenance Staff
Vehicle Maintenance Costs	\$17,488,904	\$18,938,398	\$18,379,398	NTD F-30 MB; FY16 - NTD Database
Non-Vehicle Maintenance Costs	\$2,996,643	\$3,503,611	\$3,520,908	NTD F-30 MB; FY16 - NTD Database
Spare Vehicles (Total less Maximum Service)	63	64	55	NTD S-10 MB
Total Vehicles	334	334	329	NTD S-10 MB
Revenue Vehicle Mechanical System Failures - Total	308	269	278	NTD R-20
Revenue Vehicle Mechanical System Failures - Major	274	251	248	NTD R-20
Preventable Accidents	70	81	69	Industry Safe Data Base from ARC
Casualty/Liability Costs	\$4,005,537	\$4,711,611	\$3,840,174	NTD F-30 MB
Lost Days - Industrial Accidents	2,149	2,048	1,163	CALOSHA 300A Records (Calendar Year)

## Functional Performance Inputs – Paratransit

Data Item	FY2015	FY2016	FY2017	Source
Vehicle Service Miles	2,890,156	2,981,879	3,057,391	NTD S-10 DR + DT
Total Vehicle Miles	3,243,010	3,339,272	3,454,295	NTD S-10 DR + DT
Vehicle Service Hours	196,250	191,695	194,447	NTD S-10 DR + DT
Total Vehicle Hours	215,791	210,926	214,183	NTD S-10 DR + DT
Unlinked Passenger Trips	329,038	360,005	369,998	NTD S-10 DR + DT
Farebox Revenue	\$805,579	\$778,811	\$915,803	NTD F-10
Total Operating Costs	\$14,434,145	\$16,641,191	\$19,629,024	NTD F-30 DR + DT
Passenger Miles	3,204,702	3,463,723	3,305,016	NTD S-10 DR + DT
Vehicle Operations Costs	\$8,237,359	\$8,855,875	\$9,249,056	NTD F-30 DR + DT; FY16 - NTD Database
Trips On-Time	90.1%	92.0%	92.6%	District-owned software
Total Trips	329,038	360,005	369,998	Contractor
Complaints	188	205	134	District-owned software
Missed Trips	20	22	7	District-owned software
Total ADA Trips	320,581	351,204	361,382	Contractor
ADA Trip Denials	0	0	0	Contractor & verified by District
Trip Cancellations	56,357	57,381	59,060	Contractor
Late Trip Cancellations	4,164	4,440	6,026	District-owned software
No Shows	4,675	4,369	4,370	Contractor & verified by District
Vehicle Maintenance Costs	\$2,182,536	\$2,571,447	\$2,748,454	NTD F-30 DR + DT; FY16 - NTD Database
Non-Vehicle Maintenance Costs	\$39,763	\$52,264	\$77,643	NTD F-30 DR + DT; FY16 - NTD Database
Spare Vehicles	10	11	11	NTD S-10 DR + DT
Total Vehicles	102	112	141	NTD S-10 DR + DT
Revenue Vehicle Mechanical System Failures - Total	39	31	33	NTD R-20
Revenue Vehicle Mechanical System Failures - Major	37	31	31	NTD R-20
Preventable Accidents	27	26	20	District Staff (NTD Reporting)