Triennial Performance Audit

of the

Napa Valley Transportation Authority (NVTA)

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

FINAL AUDIT REPORT

prepared for the

METROPOLITAN TRANSPORTATION COMMISSION

by

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NOTE:

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

EXECUTIVE SUMMARY

This executive summary highlights the findings from the performance audit of the Napa Valley Transportation Authority (NVTA). 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 NVTA, 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 NVTA's actions to implement the recommendations from the last performance audit;
- An evaluation of functional performance indicator trends; and
- Findings, conclusions, and recommendations to further improve NVTA's performance based on the results of the previous sections.

Comments received from NVTA and MTC staff regarding the draft audit 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 NVTA 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 NVTA 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 – NVTA's performance trends for the five TDA-mandated indicators were analyzed by mode. A six-year analysis period was used for all the indicators. In addition, component operating costs were analyzed.

- 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 increase in the operating cost per hour of 0.5 percent, which amounted to a two percent decrease in inflation adjusted dollars.
  - The cost per passenger decreased on average by 7.7 percent per year, which amounted to an average annual decrease of more than ten percent in constant FY2012 dollars -- driven by major reported increases in passengers in FY2014 and FY2016.

- Passenger productivity showed very positive trends, with passengers per hour increasing by nearly nine percent per year overall, and passengers per mile increasing by 7.4 percent annually -- again driven by major reported increases in passengers in FY2014 and FY2016.

- Employee productivity increased on average by 0.1 percent per year.

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

- While contributing relatively small portions to total operating costs, in-house labor and fringe benefits costs both increased by 43.7 percent in FY2017, when two new transit planners were hired.

- Purchased transportation costs increased in line with vehicle service hours until a new operating contract in FY2017 produced higher costs even with fewer service hours.

- Purchased transportation costs increased from 65 percent to nearly 80 percent of the total operating costs over the period.

- Materials/supplies and casualty/liability costs both decreased by about seven percent on average per year, and decreased their overall shares of total operating costs over the period.

- Paratransit – 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 increase in the operating cost per hour of 6.7 percent in inflation adjusted dollars; however, very low results were reported prior to apparent cost allocation adjustments made between NVTA's service modes in FY2013.

  - Similarly, the operating cost per passenger increased by 6.6 percent annually when normalized in FY2012 dollars.

- Passenger productivity showed somewhat mixed results, with 3.6 passengers per hour at the beginning and end of the period, but passengers per mile increasing by 2.8 percent annually.

- The net result for employee productivity was an average annual decrease of 3.2 percent.

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, ranging between 81 and 88 percent during the review period. They increased on average by 10.2 percent per year but moderated toward the end of the period.

- There was a 51 percent average annual increase in casualty/liability costs (primarily reflecting an accounting reclassification); however, this category only accounted for three percent or less of total costs.

- While contributing relatively small portions to total operating costs, in-house labor and fringe benefits costs both increased by 137 percent in FY2013 and decreased by 43.5 percent in FY2017, reflecting some cost redistributions by mode (the latter when two new planners were hired).

- Materials/supplies costs decreased by 1.3 percent on average per year, and also contributed decreasing shares of total operating costs over the period.

PUC Compliance – NVTA 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 NVTA's prior performance audit.

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

- Systemwide – The following is a brief summary of the systemwide functional trend highlights between FY2015 and FY2017:
  - Administrative costs increased moderately to 16 percent of total operating costs, and also increased by 26 percent to $14.68 per vehicle service hour in FY2017.
  - Marketing costs decreased noticeably as a portion of total administrative costs, and went down by 50 percent per passenger trip as well.
  - The subsidy per passenger decreased overall by 14 percent, but the systemwide farebox recovery ratio declined from over 13 percent to about 11 percent.

- 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 decreasing by 15 percent but farebox recovery also decreasing – from 14.4 to 11.9 percent. The TDA recovery ratio (reflecting local support and operating cost exclusions) also decreased, from 15.5 to 12.8 percent. Consistently at least 95 percent of vehicle miles and about 80 percent of vehicle hours were in service, and passenger productivity improved by 24 percent.
  - Operations results showed vehicle operations costs per service hour decreasing steadily and reduced compared to total costs as well. Schedule adherence remained about 76 to 78 percent, the complaint rate decreased by 45 percent, and there were very few missed trips.
  - Maintenance results showed maintenance costs remaining at 13 percent of total costs but vehicle maintenance costs per service mile up by 8.8 percent. The vehicle spare ratio increased from 18 to nearly

30 percent, and there was noticeable improvement in the rate of major mechanical failures even though the rate for all failures worsened slightly overall.

- Safety results showed the rate of preventable accidents increasing overall by 25 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 nearly 30 percent, but farebox recovery also increasing overall – from 9.3 percent to ten percent or more. The TDA recovery ratio trend was very close to the latter, since no local support and just minimal operating cost exclusions were reported. Though showing some decrease, 80 percent or more vehicle miles and hours generally were in service through the period. Passenger productivity also experienced moderate declines.

  - Operations results showed steady vehicle operations costs per hour and compared to total costs. Schedule adherence decreased over the audit period from 77 to 75 percent. The rates of complaints and missed trips increased but remained very low. There were no ADA trip denials, but slight increases in the trip cancellation and passenger no show rates.

  - Maintenance results showed total maintenance costs increasing slightly to 6.8 percent of total costs, while vehicle maintenance costs per service mile increased overall from $0.46 to $0.55. The spare ratio remained consistently high at just under 60 percent, but there were positive trends in the mechanical failure rates.

  - Safety results showed the preventable accident rate worsened considerably in FY2017.

Recommendations

1. DEVELOP AND IMPLEMENT STRATEGIES TO IMPROVE SCHEDULE ADHERENCE ON THE BUS AND PARATRANSIT SERVICES.
[Reference Section: VI. Functional Performance Indicator Trends]

It was found that over the audit period, schedule adherence on NVTA's bus system remained in a range of 76 to 78 percent. At the same time, paratransit schedule adherence decreased from 77 percent in FY2015 to 75 percent in FY2017. These performance results appear generally low. In order to provide more reliable service, NVTA and its contractor should expand efforts toward improving on-time performance across its services. These efforts should include additional monitoring activities to identify the causes of service delays, and a plan for addressing the circumstances found that are hindering on-time operations.

NVTA reports it has begun to address schedule adherence on its bus service by convening a driver Technical Advisory Committee with Transdev to review schedules and ensure that they reflect the reality of travel times. NVTA is also looking to adjust bus schedules based on known seasonal changes in traffic. For its paratransit services, NVTA plans to start looking at trip scheduling and the number of vehicles assigned. Dispatch may be trying to squeeze too much service out of too few vehicles, especially given the current shallow driver pool.

2. TAKE STEPS TO REDUCE PREVENTABLE ACCIDENTS ON NVTA'S BUS AND PARATRANSIT SERVICES.
[Reference Section: VI. Functional Performance Indicator Trends]

The rate of preventable accidents on NVTA's bus system increased overall by 25 percent during the audit period, from 0.66 to 0.82 accidents per 100,000 vehicle miles, despite more positive results in the interim year. These results reflect 13

preventable accidents in FY2017 compared with ten in FY2015. On the paratransit side, the rate of preventable accidents improved in FY2016 compared to FY2015, but then worsened considerably in FY2017 to 2.3 per 100,000 miles traveled. These results reflect seven preventable accidents in FY2017 compared with two in FY2015 and one in FY2016.

Although the number of accidents is not inordinately high, the recent increases point to a potentially burgeoning safety issue which NVTA should address in coordination with its operating contractor. Efforts should include additional strategies to improve operator training and enhance monitoring activities to ensure that safety issues are identified and corrected before they have a chance to escalate further.

NVTA attributes this trend to high rates of driver attrition throughout the region that have resulted in the contractor hiring more individuals with no driving experience. In that context, Transdev has developed a series of detailed measures that it has reportedly implemented to decrease the number of preventable accidents.

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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 Napa Valley Transportation Authority (NVTA). The two modes operated by NVTA, 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 NVTA is provided in Exhibit 1. This is followed by an audit period organization chart in Exhibit 2.1, and a current organization chart in Exhibit 2.2. The

latter reflects some restructuring of the reporting hierarchy to the Executive Director, along with a net gain of one position.

Performance Audit and Report Organization

This performance audit of NVTA 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 NVTA and MTC staff regarding the draft audit report have been incorporated into this final report.

Exhibit 1: System Overview

Location

Headquarters: 625 Burnell Street, Napa CA 94559

Establishment

In 1998, the Napa Country Transportation & Planning Agency (NCTPA) was formed by the cities of American Canyon, Calistoga, Napa, St. Helena, the town of Yountville, and the County of Napa. At the February 16, 2016 Board of Directors meeting, the Agency changed its name to the Napa Valley Transportation Authority (NVTA). NVTA serves as the transportation planning agency for Napa County and administers the public transit services. Day-to-day operations, maintenance, and management for all of NVTA's transit services are provided through a third party contract with Transdev Services (formerly Veolia Transportation). NVTA owns all transit facilities and equipment.

Board

The 13-member board is comprised of 12 voting members and one ex-officio member. The board is made up of two representatives from Napa County, two representatives from each member community, and one non-voting representative from the Paratransit Coordinating Council. The voting representatives must be elected officials in their communities; if the community is a city or town, one of these representatives must be the Mayor.

Facilities

NVTA administrative staff is located on the 2nd floor of the Soscol Gateway Transit Center at 625 Burnell Street in Napa. NVTA has two Park and Ride facilities in Napa and one in Yountville.

NVTA's Vine fixed-route fleet includes 41 transit vehicles and 18 paratransit vehicles. Most of these vehicles are maintained and stored in a bus maintenance facility at 720 Jackson Street in Napa. Fueling is provided by a private enterprise across the street for diesel and gasoline vehicles. Compressed natural gas vehicles are fueled at two locations in the City of Napa.

The bus yard also houses Transdev Services employees. Eight additional community shuttle vehicles are stored and fueled in their respective cities but return to the Jackson Street yard for maintenance.

Service Data

NVTA operates local, regional, and commuter fixed-route service, on-demand shuttle service, and ADA paratransit service. The Agency also administers several mobility management programs including travel training, a shared vehicle program, mileage reimbursement, and lifeline taxi programs.

Fixed-route Vine service operates local in the City of Napa on eight routes (Routes 1 through 8). In addition, there are four regional routes. Routes 10 and 11 provide regional service between Calistoga and the San Francisco Ferry Terminal in Vallejo, Route 21 between Napa and Fairfield/Suisun, and Route 29 commuter express service from Calistoga to El Cerrito del Norte BART station.

Local fixed-route service operates Monday to Saturday with no service on Sunday. Regional Routes 10 and 11 are available seven days a week; Routes 21 and 29

operate only on weekdays. NVTA breaks out its fares into two fare categories, full and half fare. Full cash fare is $1.60 paid by individuals between the ages of 19 and 64. Criteria for half fare ($0.80) includes: 65 or older, disabled, 18 or under, and/or a Medicare card holder. Children under age six ride free with a paying customer. The one-way adult cash fare on regional Vine routes ranges from $1.60 to $5.50. Free transfers between routes and various discounted passes (single day, 20-ride, and 31-day) are available as well. They can be used on all local routes, and the regional routes with some limitations.

NVTA also currently operates four community shuttles: American Canyon Transit, Calistoga Shuttle, St. Helena Shuttle, and Yountville Trolley. All are on-demand service within the city limits for the general public, no advance reservations are required. Each of the shuttle services has two dedicated vehicles. Service hours and fares vary by shuttle.

VineGo paratransit offers curb-to-curb, origin-to-destination service for ADA certified individuals within ¾ of a mile of all Vine fixed-routes. Passengers may call one to seven days in advance to make a reservation. Same day service requests are filled based on vehicle availability. VineGo will not duplicate services available via community shuttles. VineGo service is available during the same hours and in the same locations as the fixed route system on a given day. Since VineGo provides service to the entire Napa Valley, fares are zoned based on the distance traveled ($3.20 or $6.40).

Recent Changes

There was a general fare increase effective July 1, 2015.

NVTA recently began using a contractor for ADA evaluations. Evaluations are now done in-person through a functional assessment as opposed to paper applications previously.

NVTA launched an automated dispatch system which will streamline its on-demand shuttle system.

Due to a funding cut and poor operational performance, regional Route 25 between Napa and Sonoma was discontinued effective December 30, 2017.

NVTA added a computer aided dispatch/automatic vehicle locator (CAD/AVL) system, an automatic passenger counter system (APC), and new scheduling software to improve contractor oversight and data collection, and to optimize system performance.

Planned Changes

NVTA recently completed an Express Bus Study with numerous recommendations including service and capital improvements.

NVTA is nearing completion of a comprehensive operational analysis (COA) which will provide recommendations to enhance local service in the City of Napa.

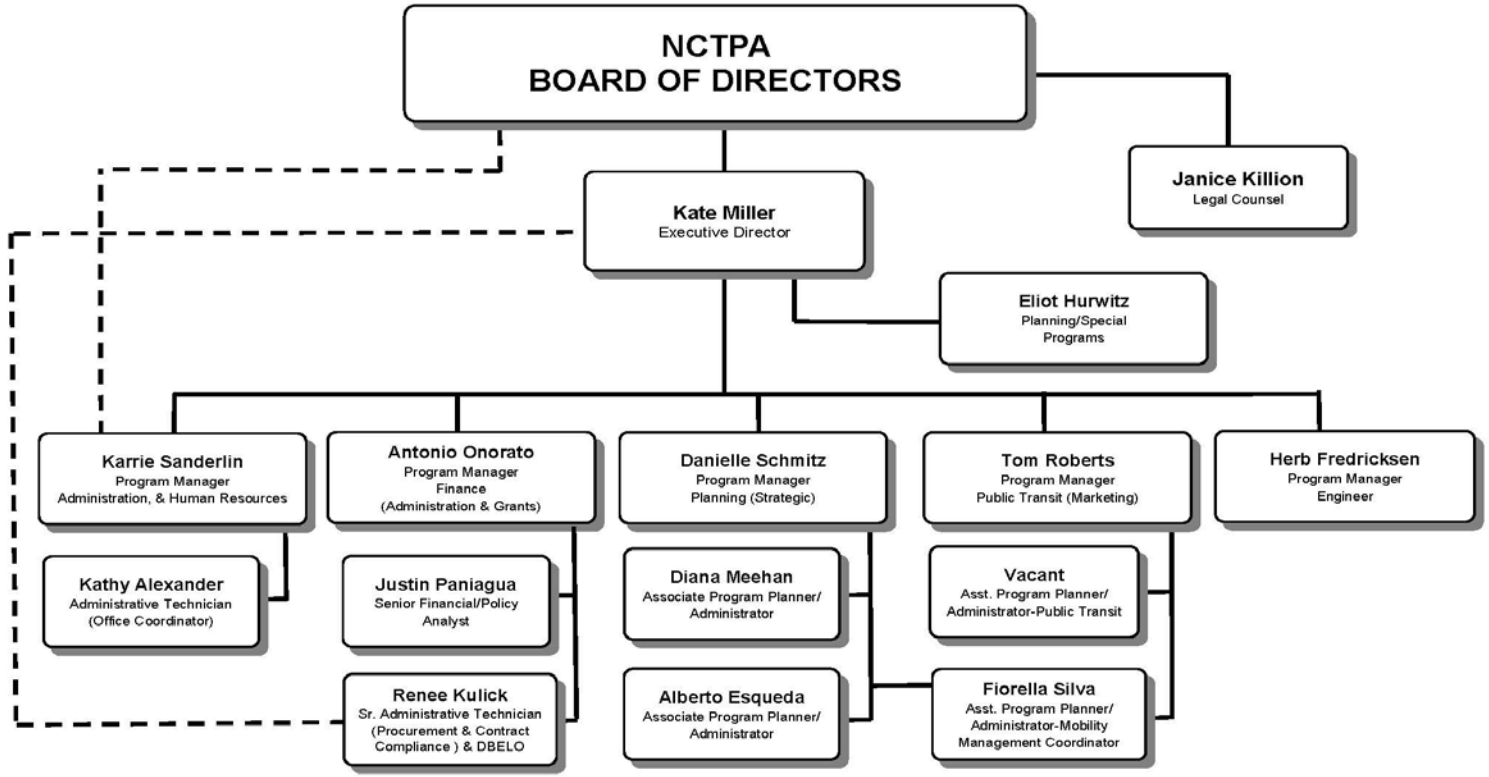
The next general fare increase is scheduled for January 2019.

NVTA plans to move into a new operations, maintenance, and administration facility in the Spring of 2021.

Staff

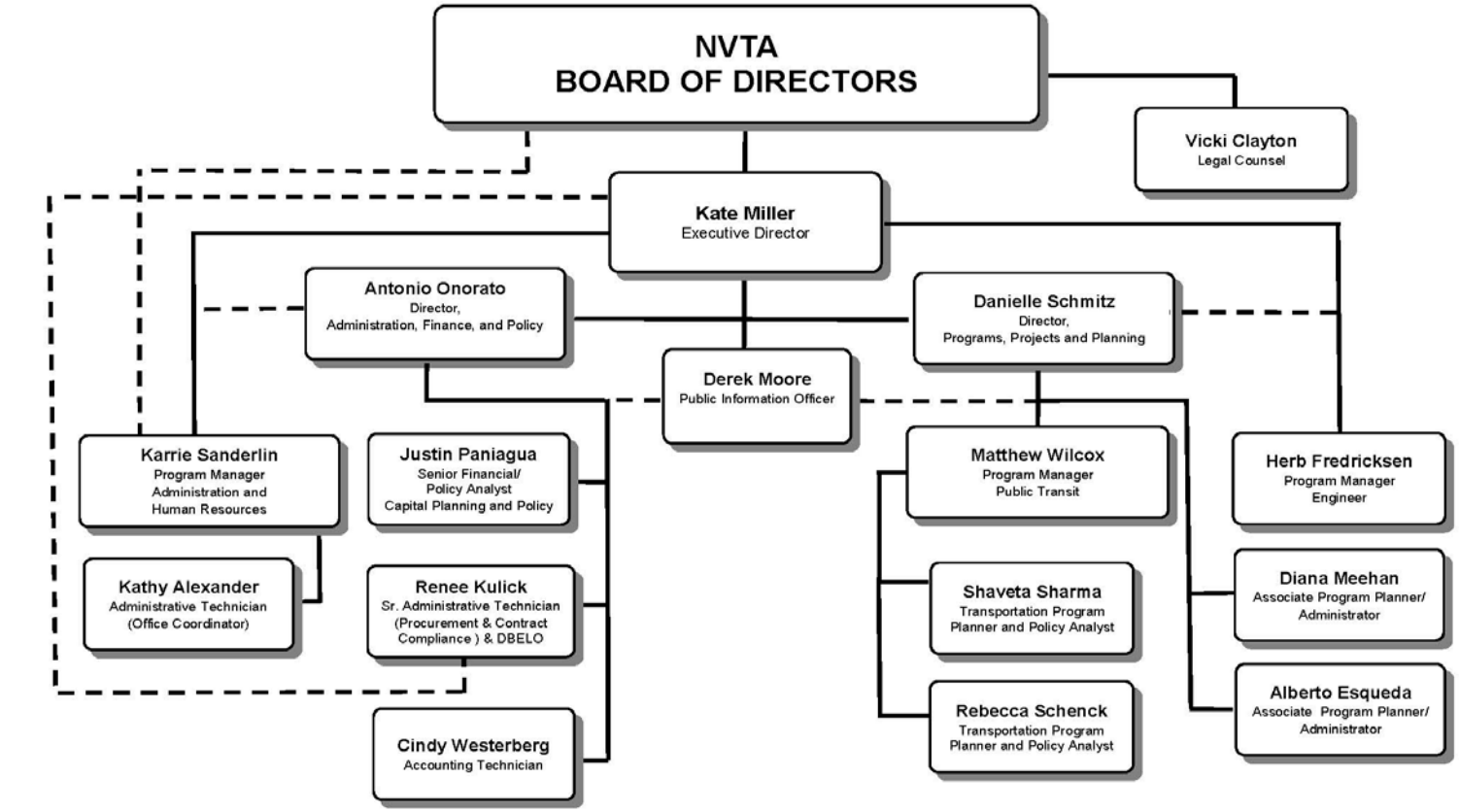
The NVTA administrative staff at the end of the audit period was comprised of 15 employee positions (14.63 FTEs). Transit services are overseen by the Transit Manager and two transit planners who report to the Director of Programs, Projects, and Planning. NVTA's contractor employs approximately 100 full and part-time employees for the operations and maintenance of NVTA's Vine Transit services.

Exhibit 2.1: Audit Period Organization Chart



Approved: 02/18/2015

Exhibit 2.2: Current Organization Chart



Approved: 7/19/2017
Updated: 8/28/2017
Updated: 10/23/2017

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 NVTA 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 NVTA covering the audit period has been reviewed. NVTA's NTD reports include its bus and paratransit services. However, consistent with FTA reporting requirements, NVTA does not submit employee hour information for purchased transportation service to the NTD. NVTA staff provided full-time employee equivalent (FTE) information for this review.

Compliance with Requirements

To support this review, NVTA staff also provided information to confirm and update its data collection and reporting procedures as described in the prior performance audit. There were no substantive changes. Based on the information provided, as shown

in Exhibit 3.1, NVTA 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 NVTA's 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:

- Fixed-Route Operating Costs – Unlike the earlier years, FY2017 operating costs increased by nearly six percent even though vehicle service hours decreased by two percent. NVTA staff cited the new contract executed with Transdev Services on September 1, 2016, which included significant cost increases, mainly for driver wages. NVTA contends that this increase was necessary in order to fill chronically open driver and dispatch positions.

- Fixed-Route Vehicle Service Hours and Miles - There were slight discrepancies between service hours and service miles in each year (especially in FY2017 when hours decreased while miles increased, when they usually are expected to move in tandem). NVTA staff indicated that there have been reallocations of service hours between routes as well as refined travel times between timepoints. In many cases travel times were reduced where there was too much slack in the schedule, likely resulting in minimal impact on service miles but less service hours spent waiting at scheduled timepoints.

- Fixed-Route Passengers – Unexpectedly substantial passenger increases were reported in two years. First, in FY2014 an increase of almost 50 percent occurred; NVTA staff noted this was the first full year following a major service expansion and restructuring. Second, a further 35 percent increase was reported in FY2016. NVTA staff explained that this was the first year of full reporting from automatic passenger counters (APCs). Staff believe

there had been significant undercounting with the previous farebox-based counting system. It appears that NVTA has calibrated the APC system to verify its accuracy and it has been certified for NTD reporting purposes by the Federal Transit Administration.

A 5.3 percent reduction in reported passengers carried in FY2017 appears generally in line with the recent experience of transit operators across the country. 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.

- Demand-Response Operating Costs - Most of the annual operating cost increases were below three percent during the review period. However, there was a substantial 49 percent increase in FY2013, not accompanied by any increase in service provided. As discussed in the prior audit report, this increase apparently resulted from cost allocation adjustments made between NVTA's service modes at that time.

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	"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.	In Compliance	• Consistent with the TDA definition: all costs in the operating expense object classes exclusive of depreciation, amortization and subsidies for commuter rail services operated under the jurisdiction of the Federal Railroad Administration; and of all direct costs for providing charter services, and all vehicle lease costs. • Reporting follows NTD categories and requirements.
Vehicle Service Hours	"Vehicle service hours" means the total number of hours that each transit vehicle is in revenue service, including layover time.	In Compliance	• Defined as the total number of hours that each transit vehicle is in revenue service, including layover time. • Fixed-route: vehicle service hours collected and reported on an exception basis from scheduled revenue service hours. Base revenue service hours are the timetable scheduled hours. Additional service hours and hours missed are logged on the daily bus reports and presented in the contractor's monthly report. • Demand-response: vehicle service hours collected and reported as time between pull-out and pull-in less service breaks such as for lunch and training.

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	• Defined as the total number of miles that each transit vehicle is in revenue service. • Fixed-route and demand-response revenue miles are pulled from NVTA's automated vehicle locator system.
Unlinked Passengers	"Unlinked passengers" means the number of boarding passengers, whether revenue producing or not, carried by the public transportation system.	In Compliance	• Defined as the number of boarding passengers, whether revenue or not. • Fixed-route: passengers counted electronically using automated passenger counters. Passengers are counted by specific fare category, transfer or free. Summaries of total rides and total rides by fare category are reported monthly. • Demand-response: all passengers counted electronically using a GFI farebox stationed in each vehicle. Passengers are counted by fare category or free. Data is transferred to a spreadsheet, and summary totals are reported monthly.
Employee Full-Time Equivalents	2,000 person-hours of work in one year constitute one employee.	In Compliance	• Defined as 2,000 person-hours of work in one year constituting one employee. • NVTA staff is budgeted for and dedicated to transit. A percentage of clerical and executive management oversight is budgeted and allocated to transit. • Contractor budgets for employee positions based upon service needs required to provide the service.

Exhibit 3.2: TDA Statistics – Bus Service

TDA Statistic	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Operating Cost (Actual $)	$5,224,078	$6,443,599	$7,053,169	$7,020,548	$7,105,717	$7,523,993
Annual Change	- -	*23.3%*	*9.5%*	*-0.5%*	*1.2%*	*5.9%*
Vehicle Service Hours	59,835	71,945	78,874	81,259	85,795	83,951
Annual Change	- -	*20.2%*	*9.6%*	*3.0%*	*5.6%*	*-2.1%*
Vehicle Service Miles	1,010,393	1,290,802	1,473,000	1,481,832	1,495,463	1,518,356
Annual Change	- -	*27.8%*	*14.1%*	*0.6%*	*0.9%*	*1.5%*
Unlinked Passengers	490,043	551,759	815,502	825,148	1,113,033	1,053,708
Annual Change	- -	*12.6%*	*47.8%*	*1.2%*	*34.9%*	*-5.3%*
Employee Full-Time Equivalents	55.4	68.1	79.5	77.6	76.3	77.5
Annual Change	- -	*22.9%*	*16.7%*	*-2.4%*	*-1.7%*	*1.6%*

Sources: FY2012 through FY2014 - Prior Performance Audit Report
FY2015 through FY2017 - NTD Reports (FY2017 Original Submission), except FTEs - NVTA Staff

Exhibit 3.3: TDA Statistics – Paratransit

TDA Statistic	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Operating Cost (Actual $)	$1,556,487	$2,156,745	$2,455,237	$2,582,021	$2,443,879	$2,439,170
Annual Change	- -	*38.6%*	*13.8%*	*5.2%*	*-5.4%*	*-0.2%*
Vehicle Service Hours	27,747	25,734	28,902	29,527	27,801	27,667
Annual Change	- -	*-7.3%*	*12.3%*	*2.2%*	*-5.8%*	*-0.5%*
Vehicle Service Miles	281,200	264,286	276,215	275,302	251,046	244,583
Annual Change	- -	*-6.0%*	*4.5%*	*-0.3%*	*-8.8%*	*-2.6%*
Unlinked Passengers	100,375	105,793	116,971	116,599	101,934	100,240
Annual Change	- -	*5.4%*	*10.6%*	*-0.3%*	*-12.6%*	*-1.7%*
Employee Full-Time Equivalents	24.3	24.4	26.4	27.4	27.7	28.5
Annual Change	- -	*0.4%*	*8.2%*	*3.8%*	*1.1%*	*2.9%*

Sources: FY2012 through FY2014 - Prior Performance Audit Report
FY2015 through FY2017 - NTD Reports (FY2017 Original Submission), except FTEs - NVTA Staff

III. TDA PERFORMANCE INDICATORS AND TRENDS

The performance trends for NVTA's 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 primarily developed from the information in the NTD reports filed with the FTA for the three years of the audit period. NVTA's NTD reports were the source of all operating and financial statistics except for FTEs. Employee FTE data was provided by NVTA staff, primarily from data reported by the contractor.

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 NVTA's 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 NVTA's 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 NVTA's 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 increased an average of 0.5 percent annually during the six-year review period.
  - The cost per hour ranged from a low of $82.82 in FY2016 to a high of $89.62 in FY2017. After FY2013, there were decreases in every year until FY2017, when the largest annual increase (8.2 percent) occurred in conjunction with cost increases from a new operating contract.

- In FY2012 constant dollars, there was an average annual decrease in this indicator of two percent.

- Passengers per Vehicle Service Hour (Exhibit 4.2)

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

  - The increase reflects a major overall increase in passengers combined with a smaller increase in service hours.

  - Passenger levels increased in every year except FY2017. The largest increase was in FY2014, amounting to nearly 50 percent in the first full year following a major VINE service expansion and restructuring.

  - A further 35 percent increase was reported in FY2016, the first year of full reporting from automatic passenger counters (APCs). NVTA staff believe there had been significant undercounting with the previous farebox-based counting system.

  - Passengers per hour increased overall from 8.2 in FY2012 to 12.6 in FY2017.

- Passengers per Vehicle Service Mile (Exhibit 4.2)

  - Similar to passengers per hour, passengers per mile also increased significantly overall (7.4 percent annually on average), driven by the major reported increases in passengers in FY2014 and FY2016.

  - There were 0.5 passengers or less per mile through FY2015, followed by about 0.7 passengers per mile in the last two years.

- Operating Cost per Passenger (Exhibit 4.3)

  - A key measure of cost effectiveness, the cost per passenger was $10.66 in the first year of the review period followed by an increase in the next year to $11.68.

- The cost per passenger generally decreased from year to year through the rest of the period, reaching a period low of $6.38 in FY2016 but then climbing back to $7.14 in FY2017.

- The overall result was a decrease averaging 7.7 percent annually, again driven by the major reported increases in passengers in FY2014 and FY2016.

- With the impact of inflation removed from the cost side (normalization), the six-year result was an average annual decrease of more than ten 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 of just 0.1 percent per year over the six years (primarily reflecting the operating contractor's work hours).

  - There were about 1,080 hours per FTE in both the first and last years of the review period, with some moderate fluctuation in the interim years.

  - Annual FTEs increased at about the same rate as 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 increase in the operating cost per hour of 0.5 percent, which amounted to a two percent decrease in inflation adjusted dollars.

- The cost per passenger decreased on average by 7.7 percent per year, which amounted to an average annual decrease of more than ten percent in constant FY2012 dollars -- driven by major reported increases in passengers in FY2014 and FY2016.

- Passenger productivity showed very positive trends, with passengers per hour increasing by nearly nine percent per year overall, and passengers per mile increasing by 7.4 percent annually – again driven by major reported increases in passengers in FY2014 and FY2016.

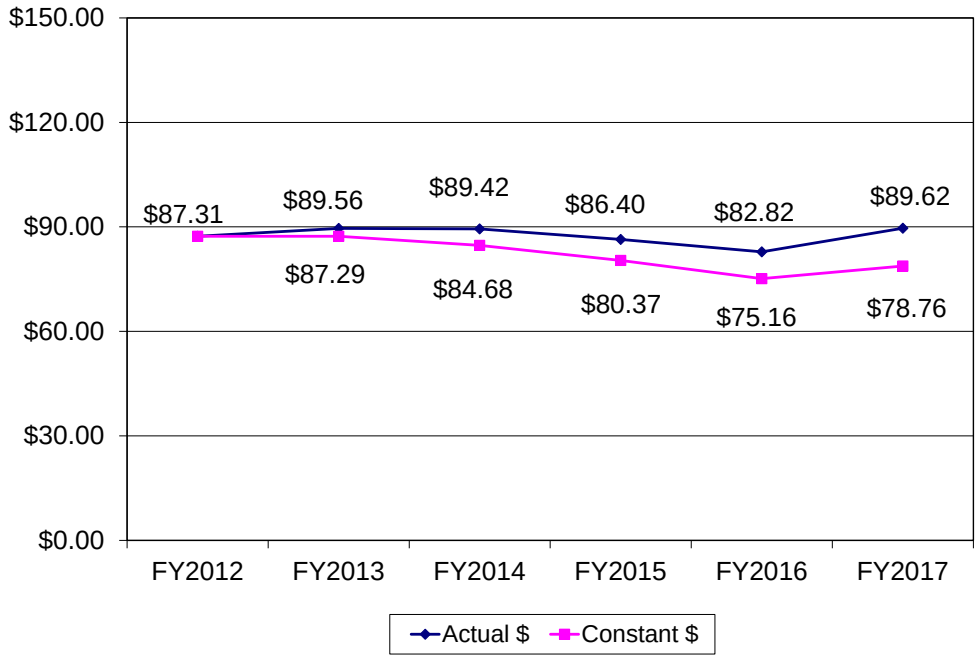
- Employee productivity increased on average by 0.1 percent per year.

Exhibit 4: TDA Indicator Performance - Bus Service

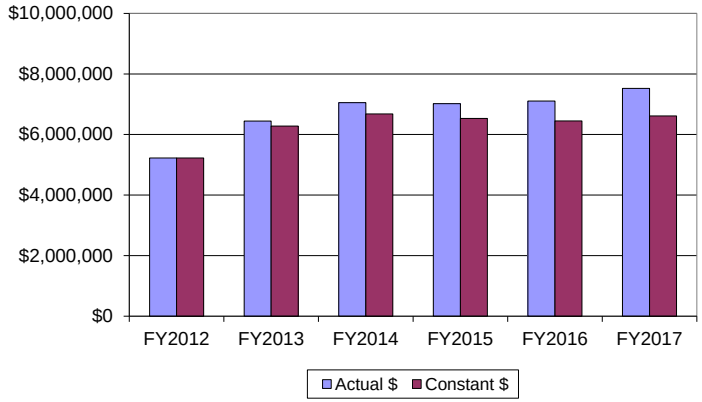
	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	*Av. Ann. Chg.*
Performance Indicators							
Op. Cost per Vehicle Svc. Hour (Actual $)	$87.31	$89.56	$89.42	$86.40	$82.82	$89.62	- -
Annual Change	- -	*2.6%*	*-0.2%*	*-3.4%*	*-4.1%*	*8.2%*	*0.5%*
Op. Cost per Vehicle Svc. Hour (Constant $)	$87.31	$87.29	$84.68	$80.37	$75.16	$78.76	- -
Annual Change	- -	*0.0%*	*-3.0%*	*-5.1%*	*-6.5%*	*4.8%*	*-2.0%*
Passengers per Vehicle Service Hour	8.2	7.7	10.3	10.2	13.0	12.6	- -
Annual Change	- -	*-6.4%*	*34.8%*	*-1.8%*	*27.8%*	*-3.3%*	*8.9%*
Passengers per Vehicle Service Mile	0.49	0.43	0.55	0.56	0.74	0.69	- -
Annual Change	- -	*-11.9%*	*29.5%*	*0.6%*	*33.7%*	*-6.8%*	*7.4%*
Op. Cost per Passenger (Actual $)	$10.66	$11.68	$8.65	$8.51	$6.38	$7.14	- -
Annual Change	- -	*9.5%*	*-25.9%*	*-1.6%*	*-25.0%*	*11.8%*	*-7.7%*
Op. Cost per Passenger (Constant $)	$10.66	$11.38	$8.19	$7.91	$5.79	$6.27	- -
Annual Change	- -	*6.8%*	*-28.0%*	*-3.4%*	*-26.8%*	*8.3%*	*-10.1%*
Vehicle Service Hours per FTE	1,080	1,056	992	1,047	1,124	1,083	- -
Annual Change	- -	*-2.2%*	*-6.1%*	*5.5%*	*7.4%*	*-3.7%*	*0.1%*
Input Data							
Operating Cost (Actual $)	$5,224,078	$6,443,599	$7,053,169	$7,020,548	$7,105,717	$7,523,993	- -
Annual Change	- -	*23.3%*	*9.5%*	*-0.5%*	*1.2%*	*5.9%*	*7.6%*
Operating Cost (Constant $)	$5,224,078	$6,280,311	$6,679,137	$6,530,742	$6,448,019	$6,611,593	- -
Annual Change	- -	*20.2%*	*6.4%*	*-2.2%*	*-1.3%*	*2.5%*	*4.8%*
Vehicle Service Hours	59,835	71,945	78,874	81,259	85,795	83,951	- -
Annual Change	- -	*20.2%*	*9.6%*	*3.0%*	*5.6%*	*-2.1%*	*7.0%*
Vehicle Service Miles	1,010,393	1,290,802	1,473,000	1,481,832	1,495,463	1,518,356	- -
Annual Change	- -	*27.8%*	*14.1%*	*0.6%*	*0.9%*	*1.5%*	*8.5%*
Unlinked Passengers	490,043	551,759	815,502	825,148	1,113,033	1,053,708	- -
Annual Change	- -	*12.6%*	*47.8%*	*1.2%*	*34.9%*	*-5.3%*	*16.5%*
Employee Full-Time Equivalents	55.4	68.1	79.5	77.6	76.3	77.5	- -
Annual Change	- -	*22.9%*	*16.7%*	*-2.4%*	*-1.7%*	*1.6%*	*6.9%*
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), except FTEs - NVTA Staff
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

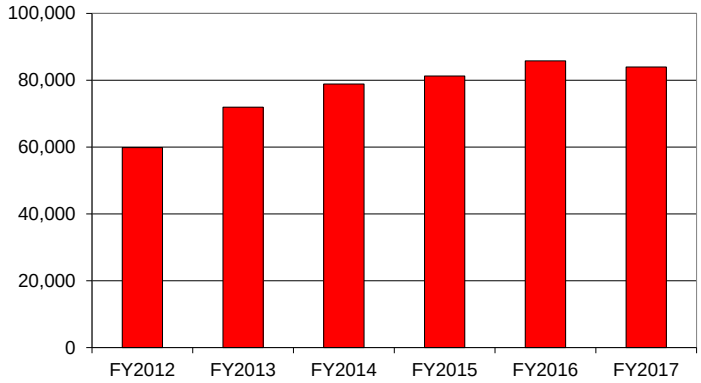
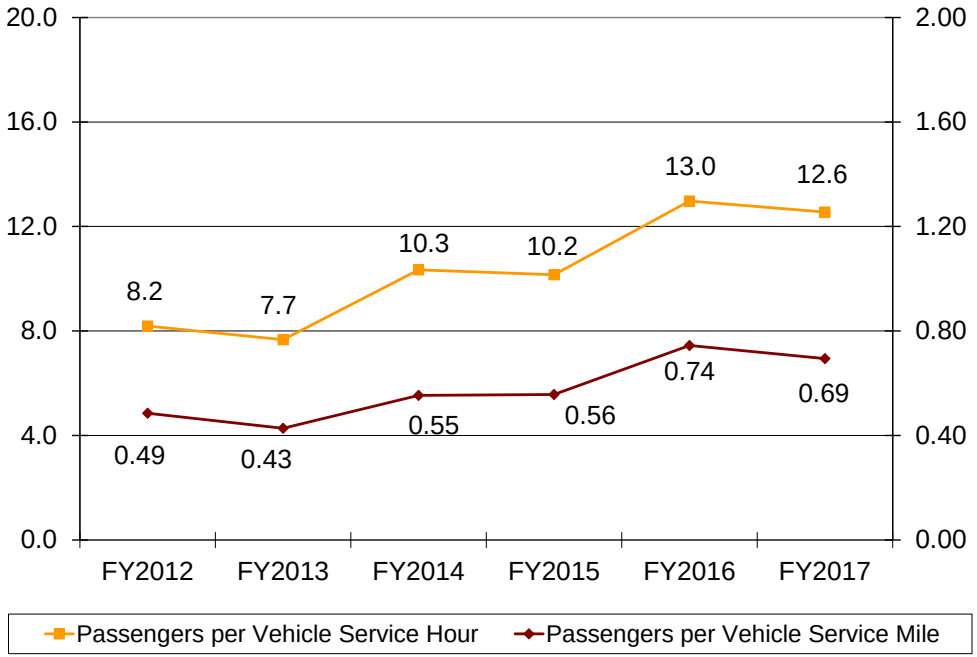
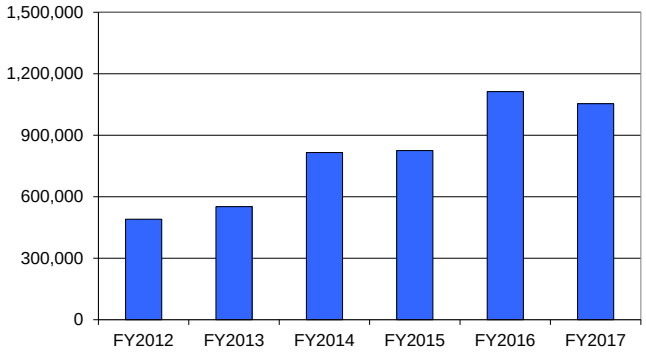


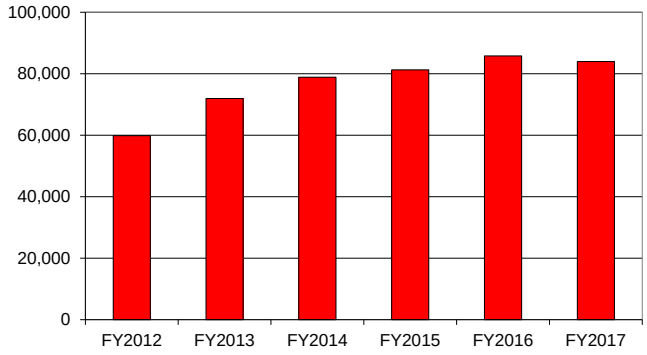
Exhibit 4.2: Passengers per Hour and per Mile – Bus Service



Unlinked Passengers



Vehicle Service Hours



Vehicle Service Miles

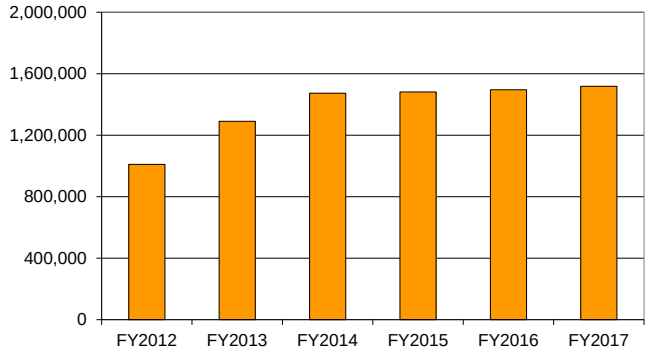
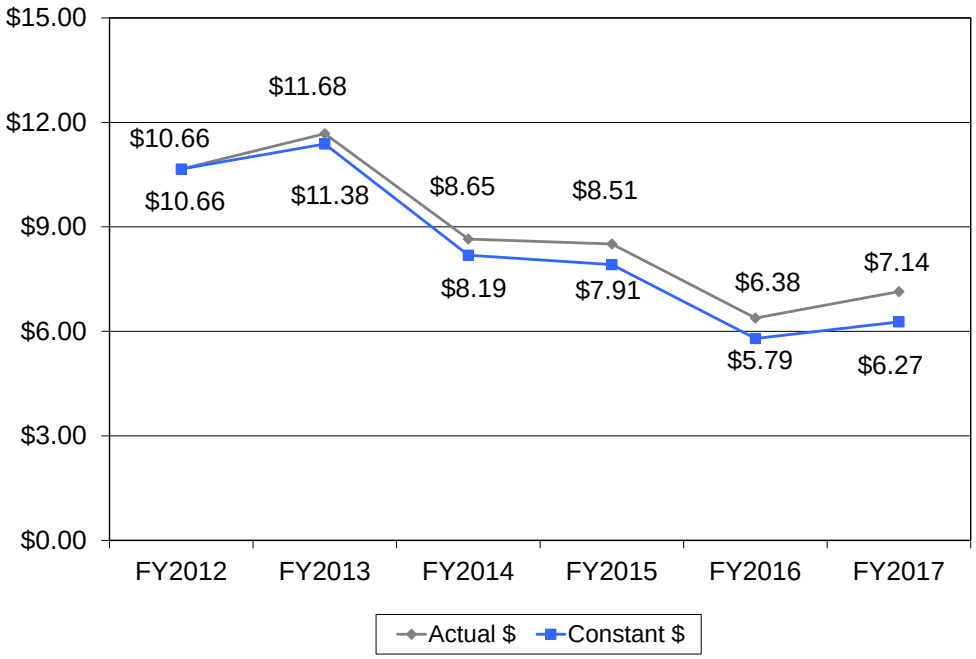
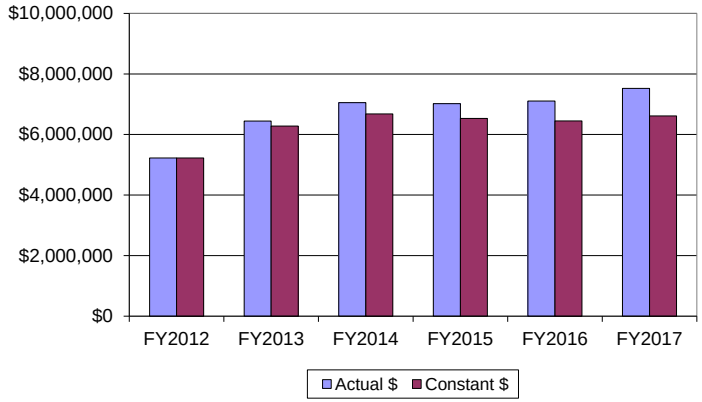


Exhibit 4.3: Operating Cost per Passenger – Bus Service



Operating Cost



Unlinked Passengers

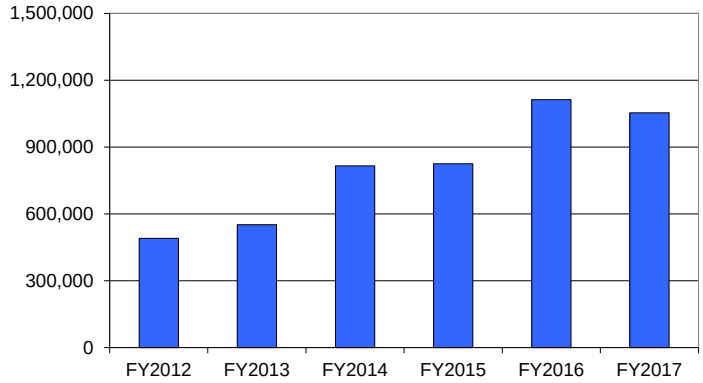
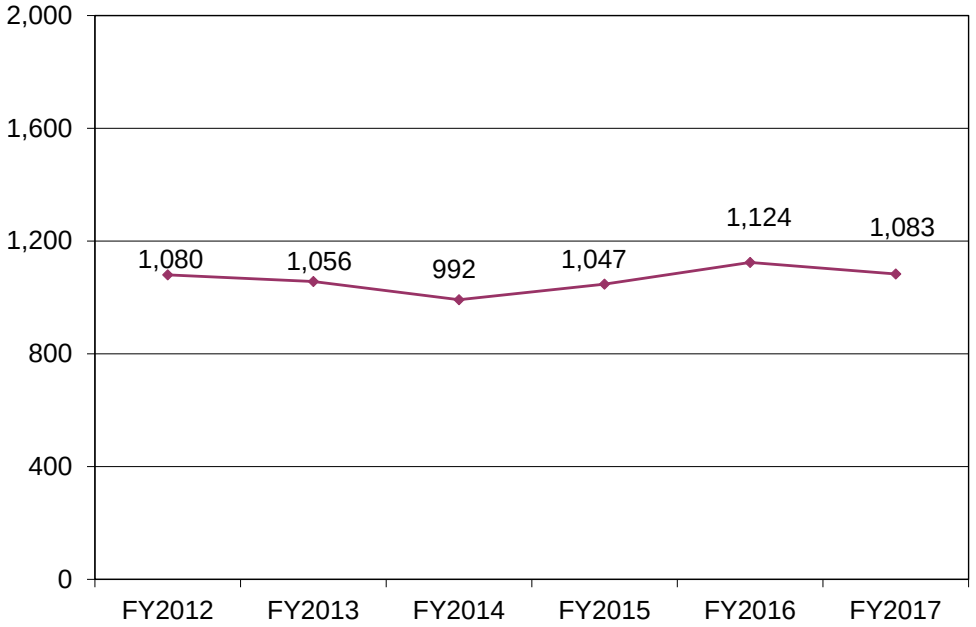
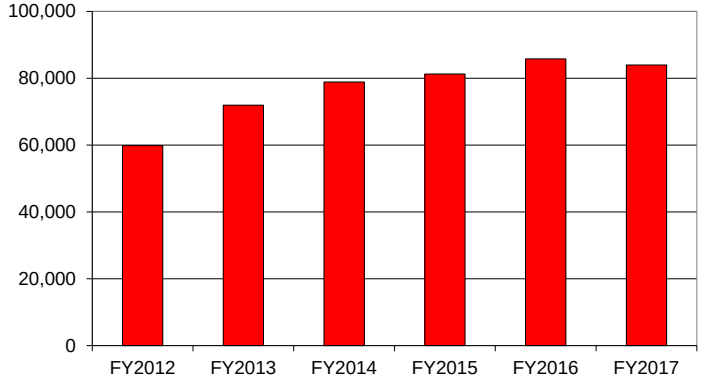


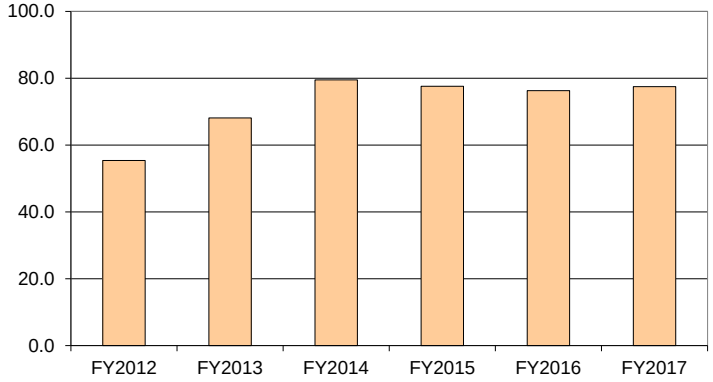
Exhibit 4.4: Vehicle Service Hours per FTE – Bus Service



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 7.6 percent annually on average during the six-year review period.
- While not major components of total costs, in-house labor and fringe benefits costs both increased by 43.7 percent in FY2017. NVTA staff noted that two new planners were hired, dedicating more time to public transit activities (but less than two full time equivalents).
- Also not a major cost component (comprising less than three percent of total costs through the review period), services/utilities costs increased on average by 62 percent per year.
- Purchased transportation costs increased in every year, generally commensurate to vehicle service hour increases.
- In FY2017, purchased transportation costs increased by 5.8 percent compared to the prior year even as service hours decreased by 2.1 percent. This cost increase was attributed to a new operating contract effective September 1, 2016.
- Purchased transportation costs increased from 65 percent to nearly 80 percent of the total operating costs over the period.
- Materials/supplies and casualty/liability costs both decreased by about seven percent on average per year, and decreased their overall shares of total operating costs over the period as well.

* * * * *

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

- While contributing relatively small portions to total operating costs, in-house labor and fringe benefits costs both increased by 43.7 percent in FY2017, when two new transit planners were hired.

- Purchased transportation costs increased in line with vehicle service hours until a new operating contract in FY2017 produced higher costs even with fewer service hours.

- Purchased transportation costs increased from 65 percent to nearly 80 percent of the total operating costs over the period.

- Materials/supplies and casualty/liability costs both decreased by about seven percent on average per year, and decreased their overall shares of total operating costs over the period.

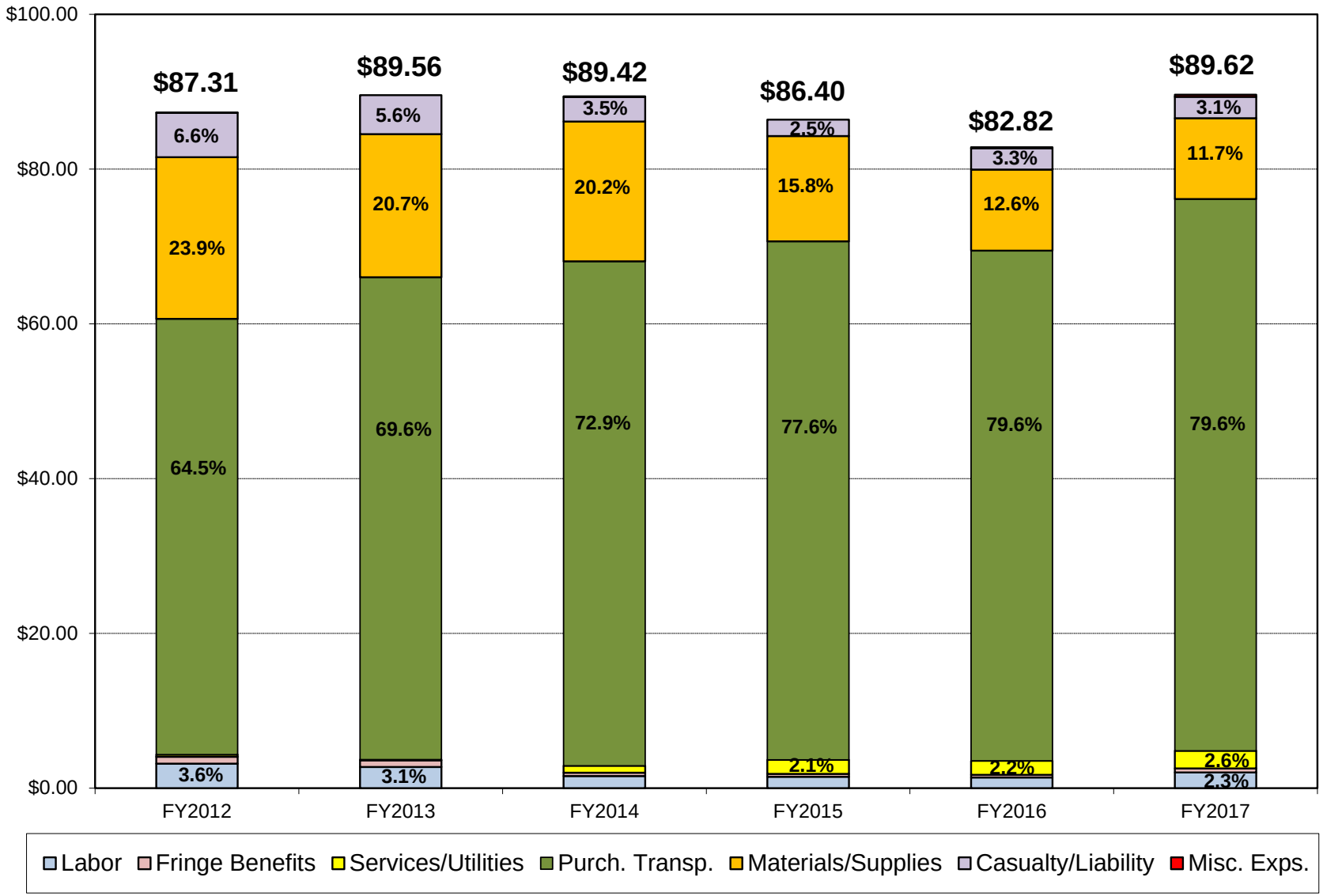
Exhibit 4.5: Component Cost Trends – Bus Service

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	*Av. Ann. Chg.*
COST CATEGORIES							
Labor (Salaries/Wages)	$189,630	$196,801	$124,232	$118,774	$118,353	$170,119	- -
Annual Change	- -	*3.8%*	*-36.9%*	*-4.4%*	*-0.4%*	*43.7%*	*-2.1%*
Fringe Benefits	$53,086	$60,677	$34,227	$29,694	$29,804	$42,825	- -
Annual Change	- -	*14.3%*	*-43.6%*	*-13.2%*	*0.4%*	*43.7%*	*-4.2%*
Services/Utilities	$17,225	$8,462	$69,270	$148,509	$154,329	$192,173	
Annual Change	- -	*-50.9%*	*718.6%*	*114.4%*	*3.9%*	*24.5%*	*62.0%*
Purchased Transportation	$3,368,604	$4,485,178	$5,143,699	$5,445,218	$5,658,650	$5,987,143	- -
Annual Change	- -	*33.1%*	*14.7%*	*5.9%*	*3.9%*	*5.8%*	*12.2%*
Materials/Supplies *(a)*	$1,251,119	$1,331,077	$1,424,925	$1,106,342	$897,984	$877,163	- -
Annual Change	- -	*6.4%*	*7.1%*	*-22.4%*	*-18.8%*	*-2.3%*	*-6.9%*
Casualty/Liability	$343,714	$361,404	$247,445	$172,011	$235,971	$231,269	- -
Annual Change	- -	*5.1%*	*-31.5%*	*-30.5%*	*37.2%*	*-2.0%*	*-7.6%*
Miscellaneous Expenses	$700	$0	$9,371	$0	$10,626	$23,301	- -
Annual Change	- -	*-100.0%*	- -	*-100.0%*	- -	*119.3%*	*101.6%*
Total	$5,224,078	$6,443,599	$7,053,169	$7,020,548	$7,105,717	$7,523,993	- -
Annual Change	- -	*23.3%*	*9.5%*	*-0.5%*	*1.2%*	*5.9%*	*7.6%*
OPERATING STATISTICS							
Vehicle Service Hours	59,835	71,945	78,874	81,259	85,795	83,951	- -
Annual Change	- -	*20.2%*	*9.6%*	*3.0%*	*5.6%*	*-2.1%*	*7.0%*

(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 NVTA's 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 5.4.

- Operating Cost per Vehicle Service Hour (Exhibit 5.1)
  - NVTA's paratransit cost per hour increased in every year, jumping from $56.10 in FY2012 to $83.81 in the following year, and subsequently climbing to $88.16 by FY2017.
  - Most of the annual increases were below three percent; however, a substantial 49 percent increase in FY2013 apparently resulted from cost allocation adjustments made between NVTA's service modes (discussed in the prior audit report).
  - Overall, the cost per hour increased an average of 9.5 percent per year over the six years.
  - With the effects of inflation removed, cost per hour exhibited an average annual increase of 6.7 percent.
- Passengers per Vehicle Service Hour (Exhibit 5.2)
  - There were 3.6 passengers per vehicle service hour in both FY2012 and FY2017.
  - After a 13 percent increase in FY2013, passengers per hour decreased in each year starting in FY2014, as passenger levels did not keep pace with service hours.
- Passengers per Vehicle Service Mile (Exhibit 5.2)
  - Performance in passengers per vehicle service mile improved overall, with the largest annual increases toward the beginning of the review period.

- Passengers per mile posted an average increase of 2.8 percent over the six-year period.

- Operating Cost per Passenger (Exhibit 5.3)

  - The cost per passenger rose every year -- by 9.4 percent per year on average through the review period, from $15.51 in FY2012 to $24.33 in FY2017.

  - Similar to the above cost per hour trend, by far the most significant annual increase (31.5 percent) occurred in FY2013, reflecting the apparent cost allocation adjustments made between NVTA's service modes.

  - Operating costs increased by 9.4 percent per year, while passenger levels were almost the same in FY2012 and FY2017.

  - With the impact of inflation removed, the result was an average annual increase in the cost per passenger of 6.6 percent.

- Vehicle Service Hours per FTE (Exhibit 5.4)

  - Employee productivity (primarily based on contractor work hours) decreased over the six years, from 1,142 hours per FTE in FY2012 to 971 hours in FY2017.

  - Employee FTEs increased moderately during the period, while service hours decreased very slightly overall.

  - The net result was an average annual decrease in employee productivity of 3.2 percent.

* * * * *

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

- There was an average annual increase in the operating cost per hour of 6.7 percent in inflation adjusted dollars; however, very low results were reported prior to apparent cost allocation adjustments made between NVTA's service modes in FY2013.

- Similarly, the operating cost per passenger increased by 6.6 percent annually when normalized in FY2012 dollars.

- Passenger productivity showed somewhat mixed results, with 3.6 passengers per hour at the beginning and end of the period, but passengers per mile increasing by 2.8 percent annually.

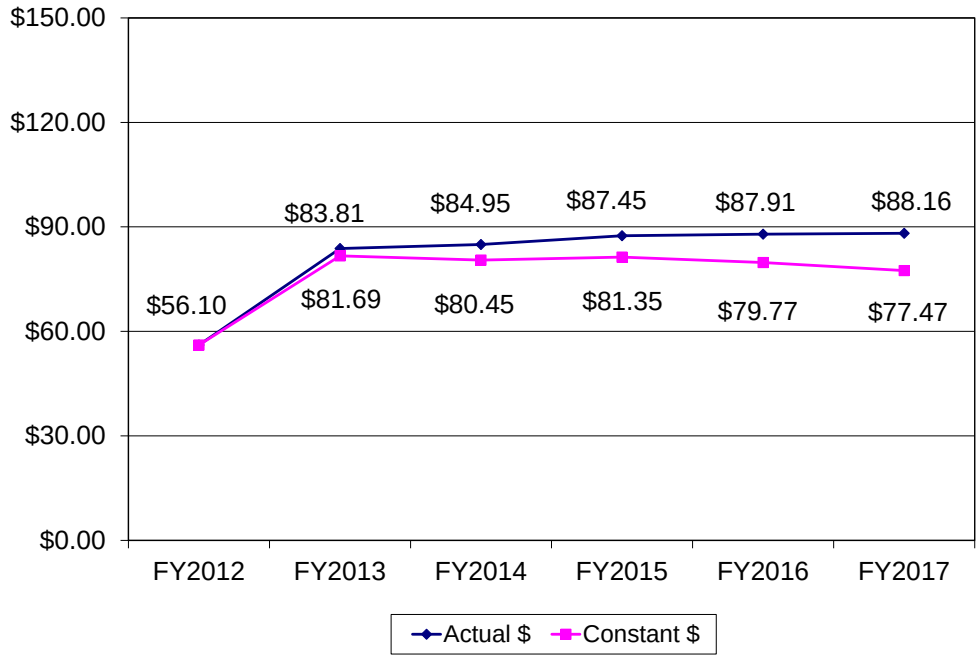
- The net result for employee productivity was an average annual decrease of 3.2 percent.

Exhibit 5: TDA Indicator Performance – Paratransit

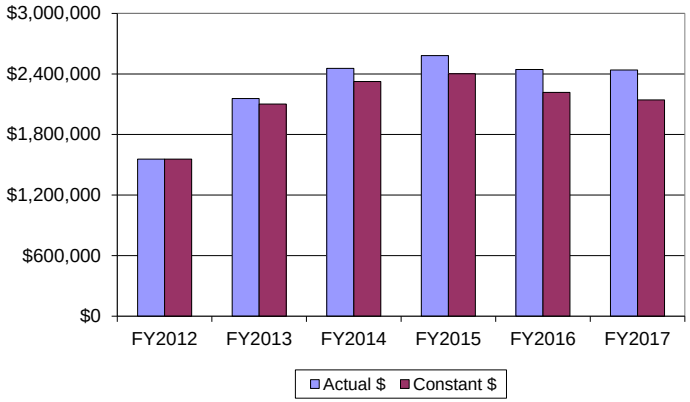
	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	*Av. Ann. Chg.*
Performance Indicators							
Op. Cost per Vehicle Svc. Hour (Actual $)	$56.10	$83.81	$84.95	$87.45	$87.91	$88.16	- -
Annual Change	- -	*49.4%*	*1.4%*	*2.9%*	*0.5%*	*0.3%*	*9.5%*
Op. Cost per Vehicle Svc. Hour (Constant $)	$56.10	$81.69	$80.45	$81.35	$79.77	$77.47	- -
Annual Change	- -	*45.6%*	*-1.5%*	*1.1%*	*-1.9%*	*-2.9%*	*6.7%*
Passengers per Vehicle Service Hour	3.6	4.1	4.0	3.9	3.7	3.6	- -
Annual Change	- -	*13.6%*	*-1.6%*	*-2.4%*	*-7.1%*	*-1.2%*	*0.0%*
Passengers per Vehicle Service Mile	0.36	0.40	0.42	0.42	0.41	0.41	- -
Annual Change	- -	*12.1%*	*5.8%*	*0.0%*	*-4.1%*	*0.9%*	*2.8%*
Op. Cost per Passenger (Actual $)	$15.51	$20.39	$20.99	$22.14	$23.98	$24.33	- -
Annual Change	- -	*31.5%*	*3.0%*	*5.5%*	*8.3%*	*1.5%*	*9.4%*
Op. Cost per Passenger (Constant $)	$15.51	$19.87	$19.88	$20.60	$21.76	$21.38	- -
Annual Change	- -	*28.1%*	*0.0%*	*3.6%*	*5.6%*	*-1.7%*	*6.6%*
Vehicle Service Hours per FTE	1,142	1,055	1,095	1,078	1,004	971	- -
Annual Change	- -	*-7.6%*	*3.8%*	*-1.6%*	*-6.9%*	*-3.3%*	*-3.2%*
Input Data							
Operating Cost (Actual $)	$1,556,487	$2,156,745	$2,455,237	$2,582,021	$2,443,879	$2,439,170	- -
Annual Change	- -	*38.6%*	*13.8%*	*5.2%*	*-5.4%*	*-0.2%*	*9.4%*
Operating Cost (Constant $)	$1,556,487	$2,102,091	$2,325,035	$2,401,880	$2,217,676	$2,143,383	- -
Annual Change	- -	*35.1%*	*10.6%*	*3.3%*	*-7.7%*	*-3.4%*	*6.6%*
Vehicle Service Hours	27,747	25,734	28,902	29,527	27,801	27,667	- -
Annual Change	- -	*-7.3%*	*12.3%*	*2.2%*	*-5.8%*	*-0.5%*	*-0.1%*
Vehicle Service Miles	281,200	264,286	276,215	275,302	251,046	244,583	- -
Annual Change	- -	*-6.0%*	*4.5%*	*-0.3%*	*-8.8%*	*-2.6%*	*-2.8%*
Unlinked Passengers	100,375	105,793	116,971	116,599	101,934	100,240	- -
Annual Change	- -	*5.4%*	*10.6%*	*-0.3%*	*-12.6%*	*-1.7%*	*0.0%*
Employee Full-Time Equivalents	24.3	24.4	26.4	27.4	27.7	28.5	- -
Annual Change	- -	*0.4%*	*8.2%*	*3.8%*	*1.1%*	*2.9%*	*3.2%*
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), except FTEs - NVTA Staff
CPI Data - U.S. Department of Labor, Bureau of Labor Statistics

Exhibit 5.1: Operating Cost per Vehicle Service Hour – Paratransit



Operating Cost



Vehicle Service Hours

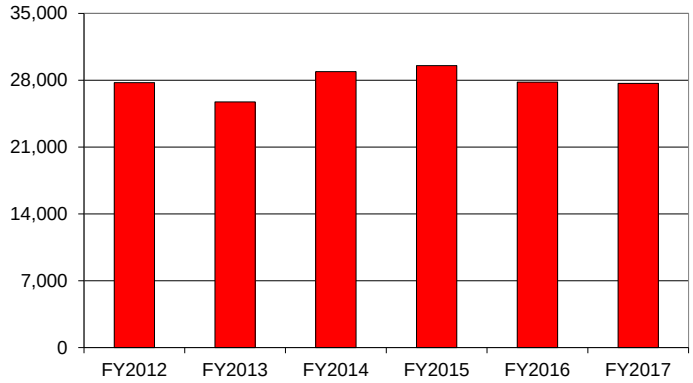
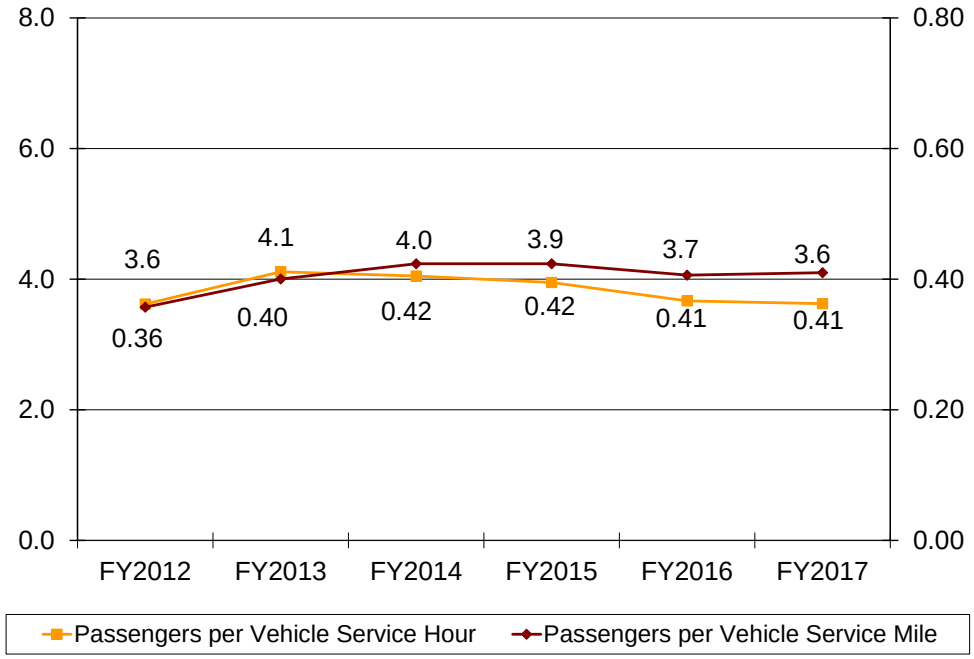
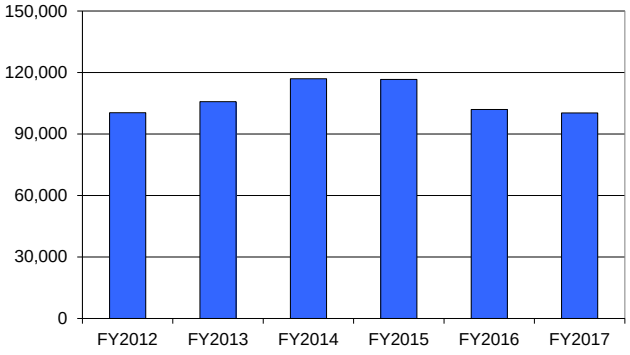


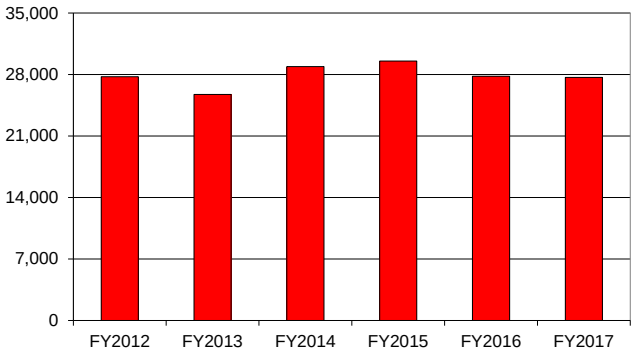
Exhibit 5.2: Passengers per Hour and per Mile – Paratransit



Unlinked Passengers



Vehicle Service Hours



Vehicle Service Miles

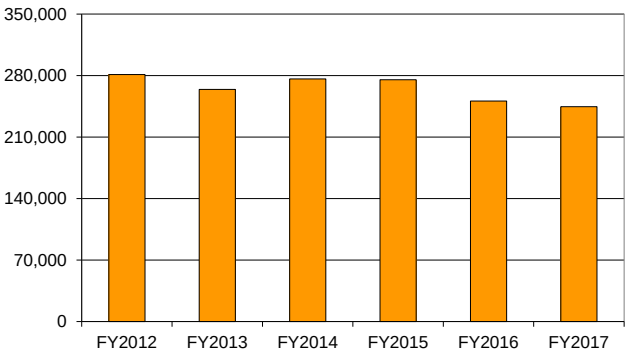
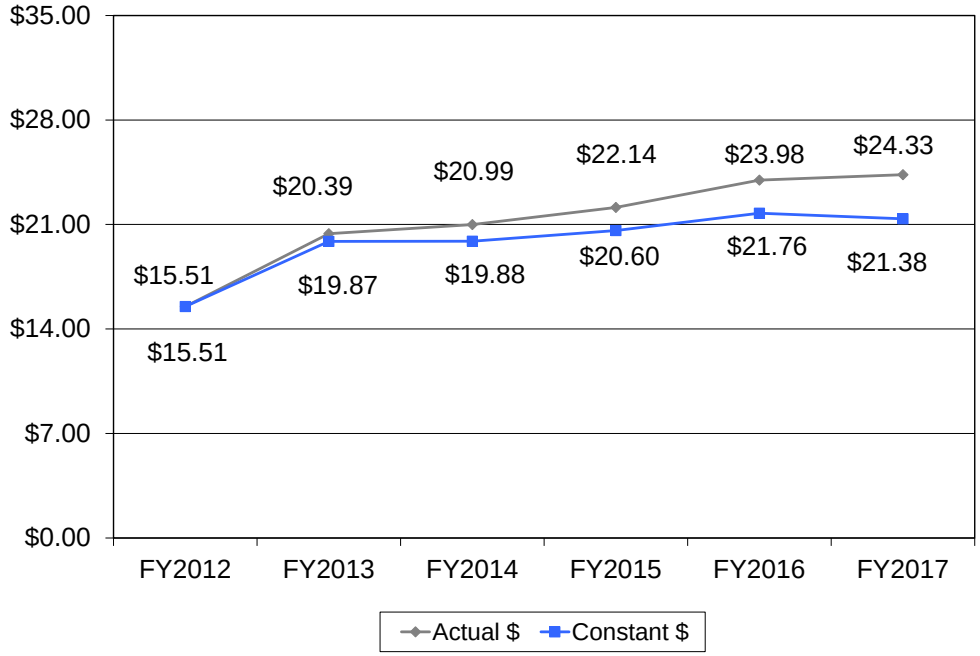
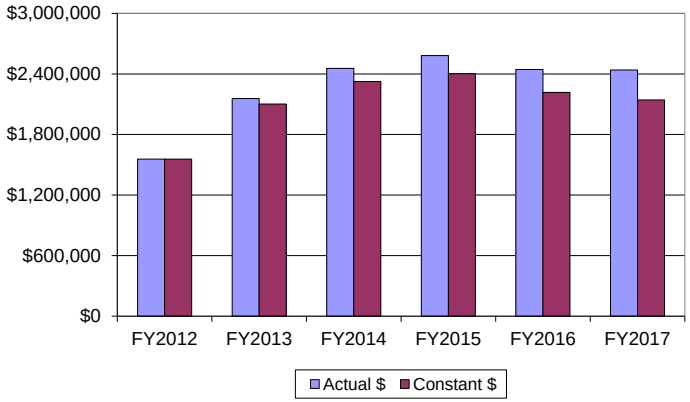


Exhibit 5.3: Operating Cost per Passenger – Paratransit



Operating Cost



Unlinked Passengers

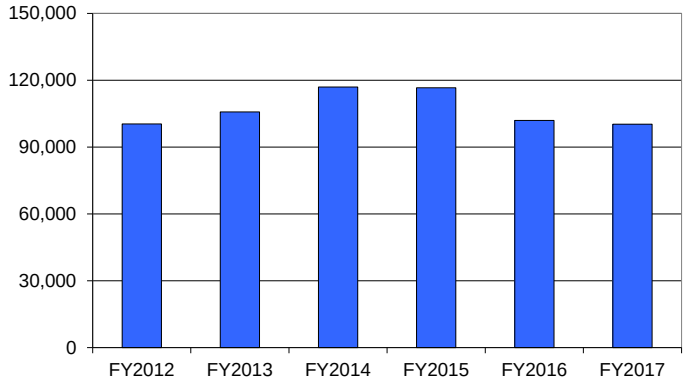
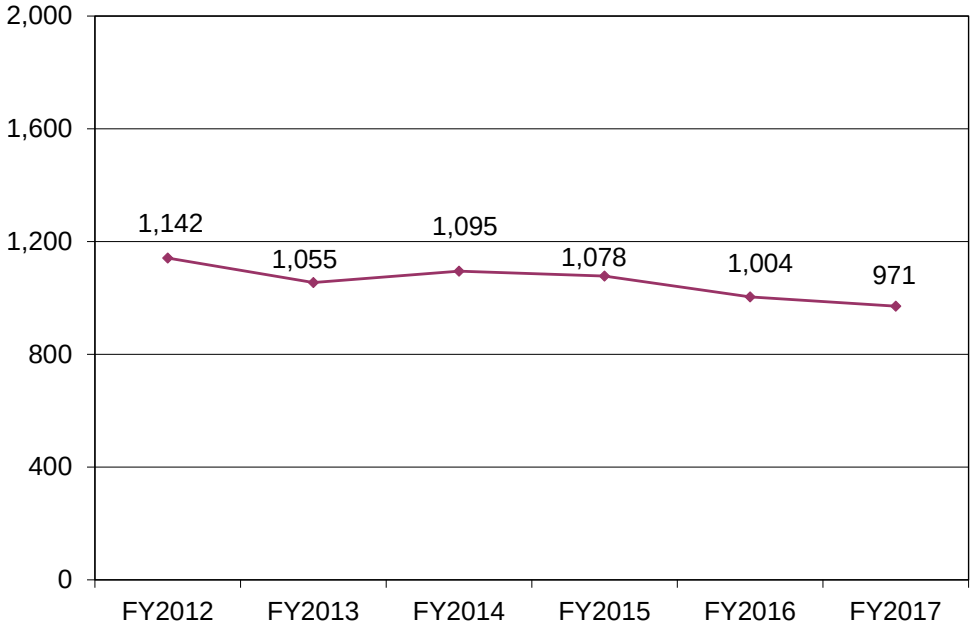
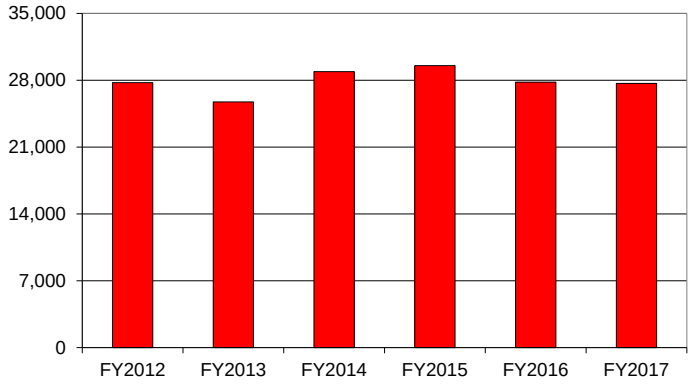


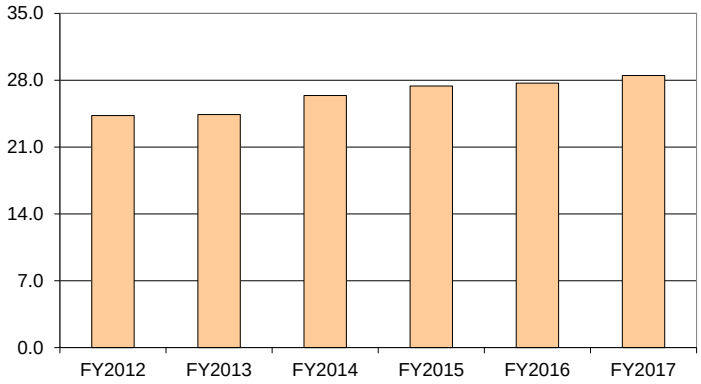
Exhibit 5.4: Vehicle Service Hours per FTE – Paratransit



Vehicle Service Hours



Full-time Equivalents



Paratransit Component Costs

The year-to-year changes in selected operating cost categories are presented in Exhibit 5.5, along with the concurrent changes in vehicle service hours. The portions of the cost per vehicle service hour that can be attributed to each included cost component are shown in Exhibit 5.6.

- Total operating costs increased by 9.4 percent annually on average during the six-year period. The costs increased substantially in the first half of the review period, followed by some reductions in the last two years.

- This primarily mirrored the trend in purchased transportation costs, which increased on average by 10.2 percent per year but moderated toward the end of the period, mostly trending similarly to vehicle service hours.

- Purchased transportation costs represented by far the largest portion of the total costs throughout the review period, ranging between 81 and 88 percent depending on the year.

- While not major components of total costs, in-house labor and fringe benefits costs both increased by 137 percent in FY2013, apparently reflecting cost allocation adjustments made between NVTA's service modes at that time. Labor and fringe benefits costs also both decreased by 43.5 percent in FY2017, suggesting some redistribution of these costs by mode in conjunction with the hiring of the new planners noted previously.

- The most significant change in the component costs was a 51 percent average annual increase in casualty/liability costs, though this category only accounted for three percent or less of the total costs. The increase was the result of an accounting reclassification where insurance costs that had been embedded in the purchased transportation line item were separated out in the later years. Also, casualty/liability costs were added for the Soscol Gateway Transit Center.

- Materials/supplies costs decreased overall by 1.3 percent per year on average, and generally were reduced from 11 percent or more of total costs in the first half of the period to nine percent or less in the second half.

* * * * *

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, ranging between 81 and 88 percent during the review period. They increased on average by 10.2 percent per year but moderated toward the end of the period.

- There was a 51 percent average annual increase in casualty/liability costs (primarily reflecting an accounting reclassification); however, this category only accounted for three percent or less of total costs.

- While contributing relatively small portions to total operating costs, in-house labor and fringe benefits costs both increased by 137 percent in FY2013 and decreased by 43.5 percent in FY2017, reflecting some cost redistributions by mode (the latter when two new planners were hired).

- Materials/supplies costs decreased by 1.3 percent on average per year, and also contributed decreasing shares of total operating costs over the period.

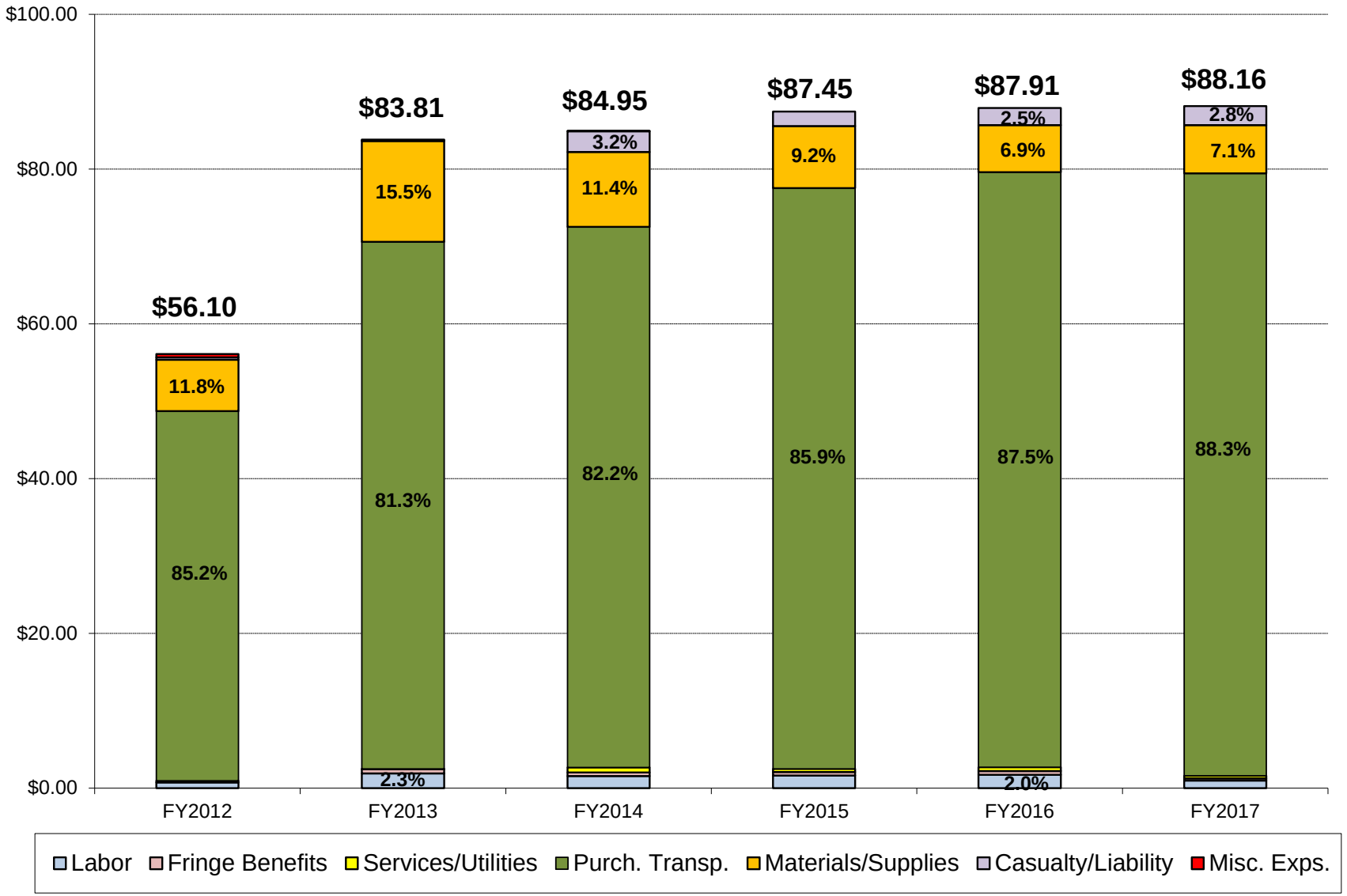
Exhibit 5.5: Component Costs Trends – Paratransit

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	*Av. Ann. Chg.*
COST CATEGORIES							
Labor (Salaries/Wages)	$20,750	$49,131	$45,381	$48,412	$48,000	$27,120	- -
Annual Change	- -	*136.8%*	*-7.6%*	*6.7%*	*-0.9%*	*-43.5%*	*5.5%*
Fringe Benefits	$5,853	$13,858	$12,800	$13,655	$13,539	$7,649	- -
Annual Change	- -	*136.8%*	*-7.6%*	*6.7%*	*-0.8%*	*-43.5%*	*5.5%*
Services/Utilities	$0	$906	$19,355	$11,080	$13,595	$9,427	- -
Annual Change	- -	- -	*2036.3%*	*-42.8%*	*22.7%*	*-30.7%*	- -
Purchased Transportation	$1,325,547	$1,753,269	$2,019,070	$2,217,102	$2,138,189	$2,154,517	- -
Annual Change	- -	*32.3%*	*15.2%*	*9.8%*	*-3.6%*	*0.8%*	*10.2%*
Materials/Supplies *(a)*	$184,389	$335,044	$279,693	$236,261	$169,059	$172,427	- -
Annual Change	- -	*81.7%*	*-16.5%*	*-15.5%*	*-28.4%*	*2.0%*	*-1.3%*
Casualty/Liability	$8,503	$2,107	$77,364	$55,511	$61,497	$68,030	- -
Annual Change	- -	*-75.2%*	*3571.8%*	*-28.2%*	*10.8%*	*10.6%*	*51.6%*
Miscellaneous Expenses	$11,445	$2,430	$1,574	$0	$0	$0	- -
Annual Change	- -	*-78.8%*	*-35.2%*	*-100.0%*	- -	- -	*-100.0%*
Total	$1,556,487	$2,156,745	$2,455,237	$2,582,021	$2,443,879	$2,439,170	- -
Annual Change	- -	*38.6%*	*13.8%*	*5.2%*	*-5.4%*	*-0.2%*	*9.4%*
OPERATING STATISTICS							
Vehicle Service Hours	27,747	25,734	28,902	29,527	27,801	27,667	- -
Annual Change	- -	*-7.3%*	*12.3%*	*2.2%*	*-5.8%*	*-0.5%*	*-0.1%*

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

Exhibit 5.6: Distribution of Component Costs – Paratransit

Operating Cost per Vehicle Service Hour



IV. COMPLIANCE WITH PUC REQUIREMENTS

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

The results from this review are detailed by individual requirement in Exhibit 6. NVTA 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	CHP Certification - The CHP has, within the 13 months prior to each TDA claim submitted by an operator, certified the operator's compliance with Vehicle Code Section 1808 following a CHP inspection of the operator's terminal	In Compliance	Satisfactory Inspections: • 2015: 11/17/15 • 2016: 11/08/16 • 2017: 11/16/17
PUC99264	Operator-to-Vehicle Staffing - The operator does not routinely staff with two or more persons public transportation vehicles designed to be operated by one person	In Compliance	• No provision for excess vehicle staffing in Transit Services Agreement #10-01 with Veolia Transportation (now Transdev Services, Inc.), dated August 27, 2009, nor various amendments of 2012, 2013 and 2014. • No provision for excess vehicle staffing in Transit Operations Services Agreement #2016-12 with Transdev Services, Inc., dated September 1, 2016.
PUC99314.5 (e)(1)(2)	Part Time Drivers and Contracting - Operators receiving STA funds are not precluded by contract from employing part-time drivers or from contracting with common carriers	In Compliance	NVTA contracts with Transdev Services, Inc. to provide its fixed-route and paratransit services.
PUC99155	Reduced Fare Eligibility - For any operator who received TDA Article 4 funds, if the operator offers reduced fares to senior citizens and disabled persons, applicant will honor the federal Medicare identification card, the California Department of Motor Vehicles disability ID card, the Regional Transit Connection Discount Card, or any other current identification card issued by another transit operator that is valid for the type of transportation service or discount requested; and if the operator offers reduced fares to senior citizens, it also offers the same reduced fare to disabled patrons	In Compliance	NVTA's "ridethevine" website: • *Fares & Passes* section • *Accessibility* section

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99155.1 (a)(1)(2)	Welfare to Work Coordination - Operators must coordinates with county welfare departments in order to ensure that transportation moneys available for purposes of assisting recipients of aid are expended efficiently for the benefit of that population; if a recipient of CalWORKs program funds by the county, the operator shall give priority to the enhancement of public transportation services for welfare-to-work purposes and to the enhancement of transportation alternatives, such as, but not limited to, subsidies or vouchers, van pools, and contract paratransit operations, in order to promote welfare-to-work purposes	In Compliance	• NVTA participates in MTC's Coordinated Public Transit- Human Service Transportation Plan for the San Francisco Bay Area. • NVTA also acts as the Consolidated Transportation Service Agency (CTSA) for Napa County. As such, NVTA coordinates with a host of social service organizations including county welfare departments to ensure that transportation moneys available for assisting recipients of aid are expended efficiently for the benefit of that population.
PUC99314.7, Govt Code 66516, MTC Res. Nos. 3837, 4073	Joint Revenue Sharing Agreement - The operator has current joint fare revenue sharing agreements in place with transit operators in the MTC region with which its service connects, and submitted copies of agreements to MTC	In Compliance	• Signatory participant in Amended and Restated Clipper® Memorandum of Understanding (February 2016). Agreement also includes MTC and the other transit operators participating in the Clipper® program. • Passenger Transfer Agreement with SolTrans (December 2016)

Code Reference	Operator Compliance Requirements	Compliance Finding	Verification Information
PUC99246(d)	Process for Evaluation of Passenger Needs - The operator has an established process in place for evaluating the needs and types of passengers being served	In Compliance	• NVTA generally relies on the MTC passenger survey to provide statistically significant information regarding rider demographics and the needs of the riders. • In tandem with studies completed by NVTA, most recently the Express Bus Study and the Comprehensive Operational Analysis, NVTA has issued voluntary surveys to its riders and potential riders. • Napa County Short Range Transit Plan (SRTP) FY2016-2026 includes evaluations of existing service conditions, passenger demographics, service needs, operating and capital budgets and recommendations. • Community Based Transportation Plan (completed in 2015), was developed through a collaborative planning process between Napa County residents, transportation planners and NVTA staff, with a focus on ensuring equitable access to transportation for “Communities of Concern”.

V. STATUS OF PRIOR AUDIT RECOMMENDATIONS

NVTA's 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 NVTA's responses to the recommendations made in the prior performance audit, and whether NVTA made reasonable progress toward their implementation. However, there were no recommendations made in NVTA's prior audit.

VI. FUNCTIONAL PERFORMANCE INDICATOR TRENDS

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

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

The indicators selected for this analysis were primarily those that were tracked regularly by NVTA or for which input data were maintained by NVTA 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, NVTA's functional indicators relating to Management, Administration and Marketing have been included generally on a systemwide basis. Audit period performance is discussed below and presented in Exhibit 7.

- Administrative costs increased from 13.4 percent to 16.4 percent of total operating costs by FY2017.
- Administrative costs rose from $11.61 per vehicle service hour in the first year to $14.68 in FY2017 (26 percent).
- The portion of administrative costs attributed to marketing activities decreased noticeably in each year, from 13 percent in FY2015 down to 6.3 percent in FY2017.
- Marketing expenditures per passenger trip went down by 50 percent over the three years, from $0.18 to $0.09.
- NVTA's subsidy per passenger decreased overall from $8.86 in FY2015 to $7.65 in FY2017 (14 percent), with even lower results in the middle year.
- The systemwide farebox recovery ratio declined from more than 13 percent in FY2015 to about 11 percent in the last two years.

* * * * *

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

- Administrative costs increased moderately to 16 percent of total operating costs, and also increased by 26 percent to $14.68 per vehicle service hour in FY2017.

- Marketing costs decreased noticeably as a portion of total administrative costs, and went down by 50 percent per passenger trip as well.

- The subsidy per passenger decreased overall by 14 percent, but the systemwide farebox recovery ratio declined from over 13 percent to about 11 percent.

Exhibit 7: Functional Performance Trends - Systemwide

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
MANAGEMENT, ADMINISTRATION & MARKETING			
Administrative Cost/Total Operating Cost	13.4%	14.6%	16.4%
Annual Percent Change	- -	*9.0%*	*12.6%*
Three Year Percent Change	- -	- -	*22.8%*
Adminstrative Cost/Vehicle Service Hour	$11.61	$12.27	$14.68
Annual Percent Change	- -	*5.7%*	*19.6%*
Three Year Percent Change	- -	- -	*26.4%*
Marketing Cost/Total Administrative Cost	13.0%	9.6%	6.3%
Annual Percent Change	- -	*-26.1%*	*-34.6%*
Three Year Percent Change	- -	- -	*-51.6%*
Marketing Cost/Unlinked Passenger Trip	$0.18	$0.11	$0.09
Annual Percent Change	- -	*-37.9%*	*-19.1%*
Three Year Percent Change	- -	- -	*-49.7%*
Subsidy/Unlinked Passenger Trip	$8.86	$6.94	$7.65
Annual Percent Change	- -	*-21.7%*	*10.2%*
Three Year Percent Change	- -	- -	*-13.7%*
Farebox Recovery Ratio (Farebox Rev./Oper. Cost)	13.1%	11.7%	11.4%
Annual Percent Change	- -	*-10.4%*	*-2.4%*
Three Year Percent Change	- -	- -	*-12.5%*

Bus Service

NVTA's bus service functional area trends represent areas of cost efficiency, safety, productivity and service reliability. Audit period performance is discussed below and presented in Exhibit 8.

- Service Planning
  - The operating cost per passenger mile decreased from $0.86 in the first year to $0.74 in FY2017 (almost 15 percent).
  - The bus service farebox recovery ratio declined from 14.4 percent in the first year to 11.9 percent by FY2017.
  - At the same time, the TDA recovery ratio decreased from 15.5 percent to 12.8 percent. For this calculation, farebox revenue is augmented with local support and operating costs reflect various allowable exclusions. (NVTA reported no qualifying local support during the audit period, but allowable cost exclusions in all three years.)
  - Vehicle miles traveled that were in service went down from 97 percent in the first year to about 95 percent thereafter.
  - About 80 percent of vehicle hours were in service in all three years.
  - Passengers carried per service mile and per service hour both improved by about 24 percent over the three years.
- Operations
  - Vehicle operations costs comprised 72 percent of total operating costs in the first year, but decreased steadily to 67 percent by FY2017.
  - Vehicle operations costs per service hour decreased moderately overall, from $62.11 in FY2015 to $60.39 in FY2017.

- Schedule adherence remained in a range of 76 to 78 percent during the audit period.

- The rate of complaints decreased in each year, by 45 percent over the three years.

- The incidence of missed trips was reduced overall, from 0.14 percent in FY2015 to 0.09 percent in FY2017.

- Maintenance

  - Total maintenance costs comprised about 13 percent of total operating costs throughout the period.

  - Vehicle maintenance costs per service mile increased from $0.58 to $0.63 (8.8 percent).

  - The vehicle spare ratio increased from 18 percent in the first year to nearly 30 percent in the two subsequent years.

  - The mean distance between major failures improved substantially in each year. NVTA attributed this trend to less use of problematic New Flyer buses that were having weekly breakdowns. In addition, protocols were revised to reduce the need for dispatching a mechanic to "reboot" buses stuck on the road after routinely programmed particulate trap cleanings. When looking at all failures, however, performance worsened overall by four percent.

- Safety

  - The rate of preventable accidents increased overall by 25 percent, despite more positive results in the interim year. NVTA's contractor attributes this to an increase of new drivers coming aboard. High rates of driver attrition seen throughout the Bay Area have resulted in hiring of more individuals with no driving experience.

* * * * *

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 decreasing by 15 percent but farebox recovery also decreasing – from 14.4 to 11.9 percent. The TDA recovery ratio (reflecting local support and operating cost exclusions) also decreased, from 15.5 to 12.8 percent. Consistently at least 95 percent of vehicle miles and about 80 percent of vehicle hours were in service, and passenger productivity improved by 24 percent.

- Operations results showed vehicle operations costs per service hour decreasing steadily and reduced compared to total costs as well. Schedule adherence remained about 76 to 78 percent, the complaint rate decreased by 45 percent, and there were very few missed trips.

- Maintenance results showed maintenance costs remaining at 13 percent of total costs but vehicle maintenance costs per service mile up by 8.8 percent. The vehicle spare ratio increased from 18 to nearly 30 percent, and there was noticeable improvement in the rate of major mechanical failures even though the rate for all failures worsened slightly overall.

- Safety results showed the rate of preventable accidents increasing overall by 25 percent.

Exhibit 8: Functional Performance Trends – Bus Service

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
SERVICE PLANNING			
Total Operating Cost/Passenger Mile	$0.86	$0.73	$0.74
Annual Percent Change	- -	*-14.9%*	*0.4%*
Three Year Percent Change	- -	- -	*-14.6%*
Farebox Recovery Ratio (Farebox Rev./Oper. Cost)	14.4%	12.1%	11.9%
Annual Percent Change	- -	*-16.3%*	*-1.6%*
Three Year Percent Change	- -	- -	*-17.6%*
TDA Recovery Ratio *(a)*	15.5%	12.9%	12.8%
Annual Percent Change	- -	*-16.8%*	*-0.8%*
Three Year Percent Change	- -	- -	*-17.5%*
Vehicle Service Miles/Total Miles	97.2%	94.8%	95.4%
Annual Percent Change	- -	*-2.5%*	*0.7%*
Three Year Percent Change	- -	- -	*-1.8%*
Vehicle Service Hours/Total Hours	79.4%	81.5%	79.4%
Annual Percent Change	- -	*2.6%*	*-2.5%*
Three Year Percent Change	- -	- -	*0.0%*
Passengers/Vehicle Service Mile	0.56	0.74	0.69
Annual Percent Change	- -	*33.7%*	*-6.8%*
Three Year Percent Change	- -	- -	*24.6%*
Passengers/Vehicle Service Hour	10.2	13.0	12.6
Annual Percent Change	- -	*27.8%*	*-3.3%*
Three Year Percent Change	- -	- -	*23.6%*
OPERATIONS			
Vehicle Operations Cost/Total Operating Cost	71.9%	70.3%	67.4%
Annual Percent Change	- -	*-2.2%*	*-4.2%*
Three Year Percent Change	- -	- -	*-6.3%*
Vehicle Operations Cost/Vehicle Service Hour	$62.11	$58.26	$60.39
Annual Percent Change	- -	*-6.2%*	*3.6%*
Three Year Percent Change	- -	- -	*-2.8%*
Trips On-Time/Total Trips	77.3%	78.3%	76.0%
Annual Percent Change	- -	*1.3%*	*-2.9%*
Three Year Percent Change	- -	- -	*-1.7%*
Complaints/100,000 Unlinked Passenger Trips	10.4	8.2	5.7
Annual Percent Change	- -	*-21.6%*	*-30.4%*
Three Year Percent Change	- -	- -	*-45.4%*
Missed Trips/Total Trips	0.14%	0.21%	0.09%
Annual Percent Change	- -	*53.0%*	*-55.4%*
Three Year Percent Change	- -	- -	*-31.7%*

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
MAINTENANCE			
Vehicle + Non-Veh. Maint. Cost/Total Operating Cost	12.6%	12.9%	13.2%
Annual Percent Change	- -	*2.5%*	*2.0%*
Three Year Percent Change	- -	- -	*4.6%*
Vehicle Maintenance Cost/Vehicle Service Mile	$0.58	$0.60	$0.63
Annual Percent Change	- -	*2.7%*	*5.9%*
Three Year Percent Change	- -	- -	*8.8%*
Spare Vehicles/Total Vehicles	18.4%	29.5%	29.5%
Annual Percent Change	- -	*60.4%*	*0.0%*
Three Year Percent Change	- -	- -	*60.4%*
Mean Distance between Major Failures (Miles)	35,465	225,472	795,539
Annual Percent Change	- -	*535.8%*	*252.8%*
Three Year Percent Change	- -	- -	*2143.1%*
Mean Distance between All Failures (Miles)	31,771	47,827	30,598
Annual Percent Change	- -	*50.5%*	*-36.0%*
Three Year Percent Change	- -	- -	*-3.7%*
SAFETY			
Preventable Accidents/100,000 Vehicle Miles	0.66	0.44	0.82
Annual Percent Change	- -	*-32.4%*	*84.2%*
Three Year Percent Change	- -	- -	*24.6%*

(a) Farebox Revenue plus Local Support/Operating Cost less TDA Allowable Exclusions

Paratransit

NVTA's 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 $2.61 in the first year to $3.38 by FY2017 (nearly 30 percent).

  - The farebox recovery ratio improved from 9.3 percent in the first year to ten percent or higher thereafter.

  - At the same time, the TDA recovery ratio increased overall from 9.3 percent to just above ten percent. For this calculation, farebox revenue is augmented with local support and operating costs reflect various allowable exclusions. (NVTA reported no qualifying local support during the audit period, and minimal allowable cost exclusions – all in the last two years.)

  - The portion of vehicle miles traveled that were in service decreased from 82 to 79 percent during the period, and the portion of vehicle hours in service decreased from 84 to 81 percent.

  - Passengers carried per service mile decreased by three percent, while passengers carried per service hour decreased by eight percent.

- Operations

  - Vehicle operations costs consistently comprised just over 85 percent of total operating costs.

  - Vehicle operations costs per service hour remained at about $75 through the period.

  - Schedule adherence decreased during the audit period from 77 percent in FY2015 to 75 percent in FY2017.

- The rate of complaints increased in each year, tripling over the period, but still low in absolute numbers.

- There were no missed trips in FY2015, and almost none in the following two years.

- There were no ADA trip denials.

- The trip cancellation rate increased from 12 percent of total ADA trips in FY2015 and FY2016 to 13 percent in FY2017. Late trip cancellations remained at five to six percent.

- The passenger no-show rate increased in each year, from 3.8 percent to 4.7 percent of total ADA trips.

- Maintenance

  - Total maintenance costs increased from 6.1 to 6.8 percent of total operating costs through the period.

  - Vehicle maintenance costs per service mile increased from $0.46 to $0.55 (21 percent).

  - The vehicle spare ratio was steady at just under 60 percent in all three years.

  - The mean distance between major failures improved significantly (85 percent). When looking at all failures, there was also a positive trend overall.

- Safety

  - The rate of preventable accidents improved in FY2016 compared to FY2015, but then worsened considerably in FY2017 to 2.3 per 100,000 miles traveled. Similar to the bus service, this trend appears to result from high rates of driver attrition throughout the region that have resulted in NVTA's contractor hiring more individuals with no driving experience.

* * * * *

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 nearly 30 percent, but farebox recovery also increasing overall – from 9.3 percent to ten percent or more. The TDA recovery ratio trend was very close to the latter, since no local support and just minimal operating cost exclusions were reported. Though showing some decrease, 80 percent or more vehicle miles and hours generally were in service through the period. Passenger productivity also experienced moderate declines.

- Operations results showed steady vehicle operations costs per hour and compared to total costs. Schedule adherence decreased over the audit period from 77 to 75 percent. The rates of complaints and missed trips increased but remained very low. There were no ADA trip denials, but slight increases in the trip cancellation and passenger no show rates.

- Maintenance results showed total maintenance costs increasing slightly to 6.8 percent of total costs, while vehicle maintenance costs per service mile increased overall from $0.46 to $0.55. The spare ratio remained consistently high at just under 60 percent, but there were positive trends in the mechanical failure rates.

- Safety results showed the preventable accident rate worsened considerably in FY2017.

Exhibit 9: Functional Performance Trends – Paratransit

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
SERVICE PLANNING			
Total Operating Cost/Passenger Mile	$2.61	$3.28	$3.38
Annual Percent Change	- -	*25.3%*	*3.3%*
Three Year Percent Change	- -	- -	*29.4%*
Farebox Recovery Ratio (Farebox Rev./Oper. Cost)	9.35%	10.62%	10.00%
Annual Percent Change	- -	*13.6%*	*-5.8%*
Three Year Percent Change	- -	- -	*7.0%*
TDA Recovery Ratio *(a)*	9.35%	10.64%	10.03%
Annual Percent Change	- -	*13.9%*	*-5.7%*
Three Year Percent Change	- -	- -	*7.3%*
Vehicle Service Miles/Total Miles	82.6%	78.9%	79.0%
Annual Percent Change	- -	*-4.4%*	*0.0%*
Three Year Percent Change	- -	- -	*-4.4%*
Vehicle Service Hours/Total Hours	84.3%	84.4%	81.1%
Annual Percent Change	- -	*0.1%*	*-3.9%*
Three Year Percent Change	- -	- -	*-3.8%*
Passengers/Vehicle Service Mile	0.42	0.41	0.41
Annual Percent Change	- -	*-4.1%*	*0.9%*
Three Year Percent Change	- -	- -	*-3.2%*
Passengers/Vehicle Service Hour	3.95	3.67	3.62
Annual Percent Change	- -	*-7.1%*	*-1.2%*
Three Year Percent Change	- -	- -	*-8.3%*
OPERATIONS			
Vehicle Operations Cost/Total Operating Cost	86.4%	85.1%	86.1%
Annual Percent Change	- -	*-1.4%*	*1.1%*
Three Year Percent Change	- -	- -	*-0.3%*
Vehicle Operations Cost/Vehicle Service Hour	$75.53	$74.83	$75.89
Annual Percent Change	- -	*-0.9%*	*1.4%*
Three Year Percent Change	- -	- -	*0.5%*
Trips On-Time/Total Trips	77.2%	76.8%	74.6%
Annual Percent Change	- -	*-0.6%*	*-2.8%*
Three Year Percent Change	- -	- -	*-3.4%*
Complaints/10,000 Unlinked Passenger Trips	0.4	0.8	1.2
Annual Percent Change	- -	*83.0%*	*52.5%*
Three Year Percent Change	- -	- -	*179.2%*
Missed Trips/Total Trips	0.00%	0.01%	0.02%
Annual Percent Change	- -	- -	*95.1%*
Three Year Percent Change	- -	- -	- -

FUNCTION/Indicator	Actual Performance		
	FY2015	FY2016	FY2017
OPERATIONS (continued)			
ADA Trip Denials/Total ADA Trips	0.0%	0.0%	0.0%
Annual Percent Change	- -	- -	- -
Three Year Percent Change	- -	- -	- -
Trip Cancellations/Total ADA Trips	11.8%	11.8%	13.2%
Annual Percent Change	- -	*-0.3%*	*12.1%*
Three Year Percent Change	- -	- -	*11.8%*
Late Trip Cancellations/Total ADA Trips	5.9%	*5.1%*	*6.1%*
Annual Percent Change	- -	*-13.5%*	*19.2%*
Three Year Percent Change	- -	- -	*3.1%*
No-Shows/Total ADA Trips	3.8%	4.3%	4.7%
Annual Percent Change	- -	*13.2%*	*10.4%*
Three Year Percent Change	- -	- -	*25.0%*
MAINTENANCE			
Vehicle + Non-Veh. Maint. Cost/Total Operating Cost	6.1%	6.6%	6.8%
Annual Percent Change	- -	*8.5%*	*3.8%*
Three Year Percent Change	- -	- -	*12.6%*
Vehicle Maintenance Cost/Vehicle Service Mile	$0.46	$0.52	$0.55
Annual Percent Change	- -	*13.0%*	*7.1%*
Three Year Percent Change	- -	- -	*21.0%*
Spare Vehicles/Total Vehicles	58.6%	58.6%	58.6%
Annual Percent Change	- -	*0.0%*	*0.0%*
Three Year Percent Change	- -	- -	*0.0%*
Mean Dist. betw. Major Failures (Miles)	83,363	105,999	154,872
Annual Percent Change	- -	*27.2%*	*46.1%*
Three Year Percent Change	- -	- -	*85.8%*
Mean Dist. betw. All Failures (Miles)	55,575	79,499	61,949
Annual Percent Change	- -	*43.0%*	*-22.1%*
Three Year Percent Change	- -	- -	*11.5%*
SAFETY			
Preventable Accidents/100,000 Vehicle Miles	0.60	0.31	2.26
Annual Percent Change	- -	*-47.6%*	*618.7%*
Three Year Percent Change	- -	- -	*276.8%*

(a) Farebox Revenue plus Local Support/Operating Cost less TDA Allowable Exclusions

VII. CONCLUSIONS AND RECOMMENDATIONS

The preceding sections presented a review of NVTA's 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 NVTA's 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 – NVTA 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

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

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 increase in the operating cost per hour of 0.5 percent, which amounted to a two percent decrease in inflation adjusted dollars.

- The cost per passenger decreased on average by 7.7 percent per year, which amounted to an average annual decrease of more than ten percent in constant FY2012 dollars -- driven by major reported increases in passengers in FY2014 and FY2016.

- Passenger productivity showed very positive trends, with passengers per hour increasing by nearly nine percent per year overall, and passengers per mile increasing by 7.4 percent annually - again driven by major reported increases in passengers in FY2014 and FY2016.

- Employee productivity increased on average by 0.1 percent per year.

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

- While contributing relatively small portions to total operating costs, in-house labor and fringe benefits costs both increased by 43.7 percent in FY2017, when two new transit planners were hired.

- Purchased transportation costs increased in line with vehicle service hours until a new operating contract in FY2017 produced higher costs even with fewer service hours.

- Purchased transportation costs increased from 65 percent to nearly 80 percent of the total operating costs over the period.

- Materials/supplies and casualty/liability costs both decreased by about seven percent on average per year, and decreased their overall shares of total operating costs over the period.

Paratransit – 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 increase in the operating cost per hour of 6.7 percent in inflation adjusted dollars; however, very low results were reported prior to apparent cost allocation adjustments made between NVTA's service modes in FY2013.

- Similarly, the operating cost per passenger increased by 6.6 percent annually when normalized in FY2012 dollars.

- Passenger productivity showed somewhat mixed results, with 3.6 passengers per hour at the beginning and end of the period, but passengers per mile increasing by 2.8 percent annually.

- The net result for employee productivity was an average annual decrease of 3.2 percent.

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, ranging between 81 and 88 percent during the review period. They increased on average by 10.2 percent per year but moderated toward the end of the period.

- There was a 51 percent average annual increase in casualty/liability costs (primarily reflecting an accounting reclassification); however, this category only accounted for three percent or less of total costs.

- While contributing relatively small portions to total operating costs, in-house labor and fringe benefits costs both increased by 137 percent in FY2013 and decreased by 43.5 percent in FY2017, reflecting some cost redistributions by mode (the latter when two new planners were hired).

- Materials/supplies costs decreased by 1.3 percent on average per year, and also contributed decreasing shares of total operating costs over the period.

- PUC Compliance – NVTA 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 NVTA's prior performance audit.

- Functional Performance Indicator Trends

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

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

  – Administrative costs increased moderately to 16 percent of total operating costs, and also increased by 26 percent to $14.68 per vehicle service hour in FY2017.

  – Marketing costs decreased noticeably as a portion of total administrative costs, and went down by 50 percent per passenger trip as well.

  – The subsidy per passenger decreased overall by 14 percent, but the systemwide farebox recovery ratio declined from over 13 percent to about 11 percent.

  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 decreasing by 15 percent but farebox recovery also decreasing – from 14.4 to 11.9 percent. The TDA recovery ratio (reflecting local support and operating cost exclusions) also decreased, from 15.5 to

12.8 percent. Consistently at least 95 percent of vehicle miles and about 80 percent of vehicle hours were in service, and passenger productivity improved by 24 percent.

- Operations results showed vehicle operations costs per service hour decreasing steadily and reduced compared to total costs as well. Schedule adherence remained about 76 to 78 percent, the complaint rate decreased by 45 percent, and there were very few missed trips.

- Maintenance results showed maintenance costs remaining at 13 percent of total costs but vehicle maintenance costs per service mile up by 8.8 percent. The vehicle spare ratio increased from 18 to nearly 30 percent, and there was noticeable improvement in the rate of major mechanical failures even though the rate for all failures worsened slightly overall.

- Safety results showed the rate of preventable accidents increasing overall by 25 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 nearly 30 percent, but farebox recovery also increasing overall – from 9.3 percent to ten percent or more. The TDA recovery ratio trend was very close to the latter, since no local support and just minimal operating cost exclusions were reported. Though showing some decrease, 80 percent or more vehicle miles and hours generally were in service through the period. Passenger productivity also experienced moderate declines.

- Operations results showed steady vehicle operations costs per hour and compared to total costs. Schedule adherence decreased over the audit period from 77 to 75 percent. The rates of complaints and missed trips increased but remained very low. There were no ADA trip denials, but slight increases in the trip cancellation and passenger no show rates.

- Maintenance results showed total maintenance costs increasing slightly to 6.8 percent of total costs, while vehicle maintenance costs per service mile increased overall from $0.46 to $0.55. The spare ratio remained consistently high at just under 60 percent, but there were positive trends in the mechanical failure rates.

- Safety results showed the preventable accident rate worsened considerably in FY2017.

Recommendations

1. DEVELOP AND IMPLEMENT STRATEGIES TO IMPROVE SCHEDULE ADHERENCE ON THE BUS AND PARATRANSIT SERVICES.
[Reference Section: VI. Functional Performance Indicator Trends]

It was found that over the audit period, schedule adherence on NVTA's bus system remained in a range of 76 to 78 percent. At the same time, paratransit schedule adherence decreased from 77 percent in FY2015 to 75 percent in FY2017. These performance results appear generally low. In order to provide more reliable service, NVTA and its contractor should expand efforts toward improving on-time performance across its services. These efforts should include additional monitoring activities to identify the causes of service delays, and a plan for addressing the circumstances found that are hindering on-time operations.

NVTA reports it has begun to address schedule adherence on its bus service by convening a driver Technical Advisory Committee with Transdev to review schedules and ensure that they reflect the reality of travel times. NVTA is also looking to adjust bus schedules based on known seasonal changes in traffic. For its paratransit services, NVTA plans to start looking at trip scheduling and the number of vehicles assigned. Dispatch may be trying to squeeze too much service out of too few vehicles, especially given the current shallow driver pool.

2. TAKE STEPS TO REDUCE PREVENTABLE ACCIDENTS ON NVTA'S BUS AND PARATRANSIT SERVICES.

[Reference Section: VI. Functional Performance Indicator Trends]

The rate of preventable accidents on NVTA's bus system increased overall by 25 percent during the audit period, from 0.66 to 0.82 accidents per 100,000 vehicle miles, despite more positive results in the interim year. These results reflect 13 preventable accidents in FY2017 compared with ten in FY2015. On the paratransit side, the rate of preventable accidents improved in FY2016 compared to FY2015, but then worsened considerably in FY2017 to 2.3 per 100,000 miles traveled. These results reflect seven preventable accidents in FY2017 compared with two in FY2015 and one in FY2016.

Although the number of accidents is not inordinately high, the recent increases point to a potentially burgeoning safety issue which NVTA should address in coordination with its operating contractor. Efforts should include additional strategies to improve operator training and enhance monitoring activities to ensure that safety issues are identified and corrected before they have a chance to escalate further.

NVTA attributes this trend to high rates of driver attrition throughout the region that have resulted in the contractor hiring more individuals with no driving experience. In that context, Transdev has developed a series of detailed measures that it has reportedly implemented to decrease the number of preventable accidents.

APPENDIX A:
INPUT STATISTICS FOR
FUNCTIONAL PERFORMANCE MEASURES

Functional Performance Inputs - Systemwide (All Modes)

Data Item	FY2015	FY2016	FY2017	Source
Total Operating Costs	$9,602,569	$9,549,596	$9,963,163	NTD F-40
Administrative Costs	$1,285,974	$1,394,203	$1,638,238	NTD F-40
Vehicle Service Hours	110,786	113,596	111,618	NTD S-10 MB + CB + DR
Marketing Costs	$167,279	$134,080	$103,077	Audited Financial Statements
Unlinked Passenger Trips	941,747	1,214,967	1,153,948	NTD S-10 MB + CB + DR
Farebox Revenue	$1,254,964	$1,117,923	$1,138,694	NTD F-10 (All Modes)

Functional Performance Inputs – Bus Service

Data Item	FY2015	FY2016	FY2017	Source
Vehicle Service Miles	1,481,832	1,495,463	1,518,356	NTD S-10 MB + CB
Total Vehicle Miles	1,525,010	1,578,301	1,591,078	NTD S-10 MB + CB
Vehicle Service Hours	81,259	85,795	83,951	NTD S-10 MB + CB
Total Vehicle Hours	102,307	105,320	105,739	NTD S-10 MB + CB
Unlinked Passenger Trips	825,148	1,113,033	1,053,708	NTD S-10 MB + CB
Farebox Revenue	$1,013,659	$858,411	$894,713	NTD F-10
Total Operating Costs	$7,020,548	$7,105,717	$7,523,993	NTD F-30 MB + CB
Passenger Miles	8,153,626	9,701,067	10,233,501	NTD S-10 MB + CB
Vehicle Operations Costs	$5,047,179	$4,998,516	$5,069,448	NTD F-30 MB + CB
Local Support *(a)*	$0	$0	$0	NVTA Staff (none qualifying)
TDA Oper. Cost Exclusions - PUC 99247 *(b)*	$480,000	$446,400	$446,400	NVTA Staff (RM2 Funds)
TDA Oper. Cost Exclusions - PUC 99268.17 *(c)*	$0	$0	$77,587	NVTA Staff (Financial Stmts)
Trips On-Time	77.3%	78.3%	76.0%	NVTA Staff
Total Trips	97,143	98,567	97,668	NVTA Staff
Complaints	86	91	60	NVTA Staff (includes "not valid")
Missed Trips	134	208	92	NVTA Staff
Vehicle Maintenance Costs	$858,735	$890,203	$957,426	NTD F-30 MB + CB
Non-Vehicle Maintenance Costs	$24,285	$25,818	$32,117	NTD F-30 MB + CB
Spare Vehicles (Total less Maximum Service)	7	13	13	NTD S-10 MB + CB
Total Vehicles	38	44	44	NTD S-10 MB + CB
Revenue Vehicle Mechanical System Failures - Total	48	33	52	NTD R-20
Revenue Vehicle Mechanical System Failures - Major	43	7	2	NTD R-20
Preventable Accidents	10	7	13	NVTA Staff

(a) Local Support includes the following (USOA revenue class in parentheses):

- *Auxiliary transportation revenue (406)*
- *Taxes directly levied (408)*
- *Local cash grants and reimbursements (409)*
- *Local special fare assistance (410)*
- *Subsidy from other sectors of operation (440)*
- *Other non-federal/non-state grant funds or other revenues*

(b) Operating expense object classes exclusive of the following pursuant to PUC Section 99247:

- *depreciation and amortization expenses*
- *subsidies for commuter rail services operated on railroad lines under the jurisdiction of the Federal Railroad Administration*
- *costs for providing charter services*
- *vehicle lease costs*
- *principal and interest payments on capital projects funded with certificates of participation*

(c) Operating expense object class exclusions pursuant to PUC Section 99268.17:

- *additional operating costs for federally required ADA paratransit service that exceed prior year costs (CPI adjusted)*
- *cost increases beyond the CPI change for: fuel; alternative fuel programs; power (including electricity); insurance premiums/liability claims payouts; state and federal mandates*
- *start-up costs for new services (not more than two years)*

Functional Performance Inputs – Paratransit

Data Item	FY2015	FY2016	FY2017	Source
Vehicle Service Miles	275,302	251,046	244,583	NTD S-10 DR
Total Vehicle Miles	333,450	317,996	309,743	NTD S-10 DR
Vehicle Service Hours	29,527	27,801	27,667	NTD S-10 DR
Total Vehicle Hours	35,045	32,956	34,122	NTD S-10 DR
Unlinked Passenger Trips	116,599	101,934	100,240	NTD S-10 DR
Farebox Revenue	$241,305	$259,512	$243,981	NTD F-10
Total Operating Costs	$2,582,021	$2,443,879	$2,439,170	NTD F-30 DR
Passenger Miles	987,594	746,208	720,945	NTD S-10 DR; FY15 - NTD Database
Vehicle Operations Costs	$2,230,115	$2,080,386	$2,099,697	NTD F-30 DR
Local Support *(a)*	$0	$0	$0	NVTA Staff (none qualifying)
TDA Oper. Cost Exclusions - PUC 99247 *(b)*	$0	$0	$0	NVTA Staff (none qualifying)
TDA Oper. Cost Exclusions - PUC 99268.17 *(c)*	$0	$4,932	$7,014	NVTA Staff (Financial Stmts)
Trips On-Time	22,688	22,306	22,230	NVTA Staff
Total Trips	29,379	29,056	29,785	NVTA Staff
Complaints	5	8	12	NVTA Staff (includes "not valid")
Missed Trips	0	3	6	NVTA Staff
Total ADA Trips	29,379	29,056	29,785	NVTA Staff
ADA Trip Denials	0	0	0	NVTA Staff
Trip Cancellations	3,467	3,417	3,928	NVTA Staff
Late Trip Cancellations	1,748	1,495	1,827	NVTA Staff
No Shows	1,108	1,241	1,404	NVTA Staff
Vehicle Maintenance Costs	$126,227	$130,054	$135,674	NTD F-30 DR
Non-Vehicle Maintenance Costs	$30,054	$30,416	$30,563	NTD F-30 DR
Spare Vehicles (Total less Maximum Service)	17	17	17	NTD S-10 DR
Total Vehicles	29	29	29	NTD S-10 DR
Revenue Vehicle Mechanical System Failures - Total	6	4	5	NTD R-20
Revenue Vehicle Mechanical System Failures - Major	4	3	2	NTD R-20
Preventable Accidents	2	1	7	NVTA Staff

(a) Local Support includes the following (USOA revenue class in parentheses):

- *Auxiliary transportation revenue (406)*
- *Taxes directly levied (408)*
- *Local cash grants and reimbursements (409)*
- *Local special fare assistance (410)*
- *Subsidy from other sectors of operation (440)*
- *Other non-federal/non-state grant funds or other revenues*

(b) Operating expense object classes exclusive of the following pursuant to PUC Section 99247:

- *depreciation and amortization expenses*
- *subsidies for commuter rail services operated on railroad lines under the jurisdiction of the Federal Railroad Administration*
- *costs for providing charter services*
- *vehicle lease costs*
- *principal and interest payments on capital projects funded with certificates of participation*

(c) Operating expense object class exclusions pursuant to PUC Section 99268.17:

- *additional operating costs for federally required ADA paratransit service that exceed prior year costs (CPI adjusted)*
- *cost increases beyond the CPI change for: fuel; alternative fuel programs; power (including electricity); insurance premiums/liability claims payouts; state and federal mandates*
- *start-up costs for new services (not more than two years)*