ATTACHMENT A

FY16-FY18 TDA PERFORMANCE AUDIT

Orange County Transportation Authority

PREPARED FOR

OCTA

ORANGE COUNTY TRANSPORTATION AUTHORITY

APRIL 2019 | FINAL - VERSION 1

Prepared By:

Kimley»Horn

In association with

Michael Baker International

CONTENTS

FIGURES

TABLES

1. INTRODUCTION

1.1. PERFORMANCE AUDIT SCOPE AND METHODOLOGY

Triennial performance audits are a requirement for the continued receipt of State Transportation Development Act (TDA) funds for public transit under California Public Utilities Code (PUC) Section 99246.

This performance audit is administered by the Orange County Transportation Authority (OCTA) and prepared by Kimley-Horn in association with Michael Baker International. This report represents the state-mandated performance audits of OCTA as the Regional Transportation Planning Entity (RTPE) and the Orange County Transit District (OCTD) as the transit operator. The audit covers the period from July 1, 2015 through June 30, 2018 (i.e., FY2016 – FY2018).

TDA performance audits of RTPEs and transit operators include:

- Assessments of compliance with applicable sections of the California PUC
- Reviews of progress to implement prior audit recommendations
- Recommendations of opportunities to improve efficiency and effectiveness.

In addition, RTPE performance audits provide assessments of the efficiency and effectiveness of the agency's regional transportation planning and TDA administration functions. Operator performance audits also review performance trends and functional area performance results. Those standards require that the audit be planned and performed to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on the audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Extensive background documents and other written information were collected and reviewed, including those listed in **Table 1-1**:

Table 1-1 – Document Review

Organization and staffing charts	OCTA Adopted Budgets, FY14-FY19
OCTA Comprehensive Business Plans	CHP Terminal Inspection Certificates
OCTA Strategic Plan	OCTA TDA Guidelines
OCTA website: http://www.octa.net	OCTA TDA Claim Files, FY16-FY18
Coach operator labor agreements in effect during the audit period	Quarterly Transit Division Performance Measurements Reports
Purchased Transportation Contracts	Data provided by operating units to support specific analyses and functional performance review (customer service, maintenance, operating statistics)
National Transit Database Reports, FY15-FY17	Service maps and brochures
State Controller Reports, FY15-FY17	FY13-FY15 Performance Audit Report and OCTA's response to prior audit recommendations
Comprehensive Annual Financial Reports, FY16-FY18	

The audit team also conducted on-site interviews with OCTA management and staff responsible for administration, management, and operations, including planning and TDA administration functions, transit system functions, and transit support functions. These interviews were conducted in October and November 2018 (October 25-26, October 29-30, November 14) and included the following OCTA staff:

- Chief Executive Officer (CEO)
- Deputy CEO
- Chief Operating Officer
- Communications Manager, Public Information Office
- Department Director, Financial Planning and Analysis
- Director of External Affairs
- Director Strategic Planning
- Director, Finance & Administration
- Executive Director, Capital Programs
- Executive Director, External Affairs
- Executive Director, Finance & Administration
- Executive Director, Human Resources & Organizational Development (HROD)
- Executive Director, Internal Audit
- Executive Director, Planning
- General Manager, Bus Operations
- Manager, Finance and Administration/Revenue Administration
- Manager, Marketing
- Manager, Security and Emergency Preparedness
- Manager, Transit Service Planning
- Principal Financial Analyst, Revenue/Grant Administration
- Section Manager II Finance and Administration, Key Performance Indicators
- Section Manager Operations, Community Transportation Services
- Section Manager, Accounting/Reporting
- Section Manager, Motorist Services
- Section Manager, Vanpool Program

1.2. OCTA OVERVIEW

OCTA was established by state law on June 20, 1991 to consolidate the transportation planning and operating agencies within Orange County. Today OCTA serves as both the Regional Transportation Planning Entity and the primary transit service provider for Orange County.

With its creation, the OCTA assumed the responsibilities of several formerly separate agencies: The Orange County Transportation Commission, the Orange County Transit District (OCTD), the Consolidated Transportation Services Agency (CTSA), the Service Authority for Freeway Emergencies (SAFE), the Orange County Local Transportation Authority, and the Orange County Congestion Management Agency.

OCTA works with federal, state, regional and local agencies to plan, fund, implement, and maintain transportation programs and services throughout Orange County. OCTA is responsible for providing coordinated, effective, and accountable multimodal transportation services within Orange County, including countywide bus and demand response services, the 91 Express Lanes, freeway, street and road improvement projects, and motorist aid services. OCTA is an active member of the five agency Southern California Regional Rail Authority (SCRRA), which governs the Metrolink Service. Three lines provide service to a total of 11 stations in Orange County: The Orange County Line, the Inland Empire-Orange County Line, and the 91 Line. OCTA is also responsible for regulating taxi operations.

The remainder of this section provides an overview of OCTA in the context of its regional transportation planning and transit service delivery responsibilities. It also discusses significant initiatives, accomplishments, and challenges of the performance audit period.

1.2.1. ORGANIZATION STRUCTURE

OCTA is currently organized in ten divisions that report directly to the Chief Executive Officer. The Chief Executive Officer reports to the OCTA Board of Directors. During the audit period, Operations was consolidated, and minor adjustments were made affecting Finance & Administration, Planning, and the Public Information Office. The current organization is displayed in **Figure 1-1**.

Figure 1-1 – OCTA Organization Chart (as of November 13, 2018)

- The **Chief Executive Office** (CEO) provides management direction to all OCTA divisions and programs and implements the Board of Director's policy directives.
- The **Clerk of the Board**, which is budgeted in the CEO's office, is responsible for recording and preserving OCTA's official and historical records. This office manages the Board and Committee

agenda processes, provides meeting and administrative support to the Board of Directors, and receives and processes all legal documents served on the Authority.

- **Planning Division** provides planning and programming for transportation projects to meet Orange County's mobility needs. Current functions include Measure M2 administration, strategic planning, regional modeling and traffic operations, Geographical Information Systems, transportation planning, and capital programming.
- **Finance & Administration Division** includes the following functions: contracts administration & materials management, accounting and financial reporting, financial planning & analysis, general services, information systems, treasury / public finance, and revenue administration.
- **Operations Division** was recently restructured to include bus operations/maintenance, service planning & customer advocacy, community transportation services, motorist services, contracted services, transit program controls, LOSSAN, OC Streetcar, and rail operations.
- **Public Information Office** oversees media relations, strategic communications, emergency communications, and internal communications. (This division was pulled out from Marketing in 2015).
- **Internal Audit Division** examines and evaluates OCTA's financial, administrative, and operational activities and controls, to assist management staff with their responsibilities for asset and operations control. The Internal Audit Department reports functionally to the Board of Directors, administratively to the CEO (dotted line).
- **Capital Programs Division** ensures that OCTA's highway and rail improvements are delivered consistent with Board direction. This division includes highway programs, rail & facilities engineering, project controls and real property.
- **External Affairs Division** provides communications, marketing, rideshare, media relations, customer relations (including telephone information), and community outreach programs. This division also includes all government relations functions, including outreach, legislative and regulatory tracking, and federal compliance monitoring.
- **Human Resources & Organizational Development Division** is responsible for human resources, labor & employee relations, EEO/affirmative action, learning and development, risk management, and health, safety and environmental compliance.

1.2.2. BOARD OF DIRECTORS

OCTA's 18-member Board of Directors includes 17 voting members: five members of the Orange County Board of Supervisors, ten city members selected by the cities in the supervisorial district they represent, and two public members selected by the other 15 Board members. Board members are elected or appointed to four-year terms. The 18th member of the Board is a non-voting representative appointed by the Governor; the District 12 Director of the California Department of Transportation (Caltrans) is the Governor's appointee to the Board of Directors. The full board meets twice per month.

Board members serve on standing committees that reflect OCTA's roles and responsibilities:

- **Executive Committee** monitors overall activities at OCTA, develops policy and strategy recommendations, and reviews policy issues.
- **Finance and Administration Committee** reviews and provides recommendations on financial and administrative matters, including investments, debt financing, financial operations, human resources, risk management, and information systems.

- **Legislative and Communications Committee** evaluates and recommends strategies and action plans to advance OCTA priorities at the local, state, and federal levels of government, and provides guidance on communications, community and customer relations, and marketing activities.
- **Regional Planning and Highways Committee** reviews the planning, programming, and delivery of regional planning and highway programs; provides recommendations on OCTA's compliance with federal, state, and regional planning and programming requirements; and reviews local agency eligibility and compliance with Measure M and Renewed Measure M (M2) safeguards and requirements.
- **Transit Committee** reviews and provides recommendations on bus and commuter rail operations, including ACCESS and other demand response services.

OCTA's Board members represent the Authority on multi-agency advisory committees where OCTA has an interest, including:

- **State Route 91 Advisory Committee**, which also includes a voting representative from the Riverside County Transportation Commission (RCTC) and non-voting members from Caltrans Districts 8 and 12 and the San Bernardino County Transportation Authority (SBCTA). This committee was created by the state enabling legislation for OCTA's purchase of the State Route 91 toll road.

Board members also represent OCTA and its interests on regional organizations and committees, including the Orange County Council of Governments, California Association of Councils of Government, Southern California Regional Rail Authority, Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor) Agency, the Southern California Association of Governments (SCAG), and the South Coast Air Quality Management District.

Support is also provided to OCTA by other committees at multiple levels. There are legislatively-mandated standing citizens committees. The standing committees are:

- The **Citizens Advisory Committee**, which helps to examine traffic solutions and provide input to OCTA's transportation studies, in part by identifying ways to obtain public input on specific issues and serving as a liaison between the public and OCTA. The 34 members of the CAC are selected by OCTA's Board of Directors to represent a broad spectrum of interests from all geographic areas of the county. The CAC also has a Bicycle Program subcommittee.
- The **Special Needs Advisory Committee**, which advises OCTA about issues related to fixed route and demand response services for customers with special transportation needs. SNAC also recommends mechanisms for obtaining input on issues from disabled and senior service users, communicates with care providers and agency clients regarding service-related information, and assists with special needs service evaluations. The 34 members represent individuals with disabilities and senior citizens.
- **Taxpayers Oversight Committee**, which monitors the use of M2 funds and ensures that M2 revenues are spent on voter approved projects.

Then, support is provided by project-specific citizen input committees (e.g., two M2-related committees: The Environmental Cleanup Allocation Committee and the Environmental Mitigation and Resource Protection Oversight Committee). Finally, support is also provided by the Technical Advisory Committee (TAC) and its Transportation Steering Committee (TSC). The TAC has 35 members, one representative from each of the cities in Orange County and one from the County of Orange. They provide staff with technical advice on issues primarily related to M2 competitive grants to improve capacity on local streets and roads. The TSC has nine voting members.

OCTA serves as the managing agency for **LOSSAN**. LOSSAN is a joint powers authority with the aim to increase ridership, revenue, capacity, reliability, coordination and safety on the coastal rail line.

1.2.3. OCTA AS THE REGIONAL TRANSPORTATION PLANNING ENTITY

OCTA sets programming policies for federal, state and local funding sources for eligible transit, highway, pedestrian, bicycle and other transportation projects and administers Calls for Projects to allocate funds to local agencies for projects that are consistent with public mobility needs and regulatory guidelines:

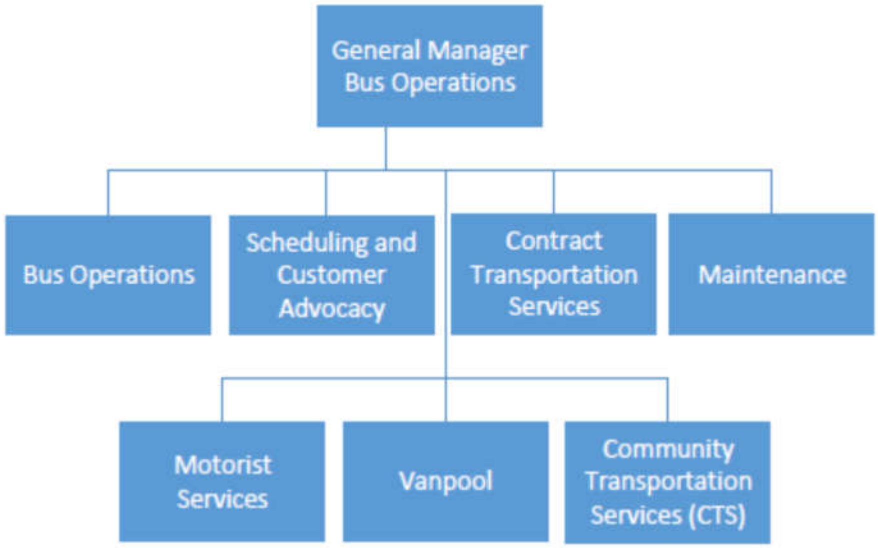
- Federal sources include the FAST Act (formerly MAP-21) and FTA operating and capital assistance grants.
- State sources include the State Transportation Improvement Program (STIP), Proposition 1B (expired but funds remaining), State Highway Operation and Protection Program (SHOPP), SB 1 TDA (all articles), and cap and trade funding.
- The most significant source of local funding is now Measure M2, which provides funding for transit, freeways, and streets, as well as environmental clean-up.
- OCTA also runs the 91 Toll road, therefore administers the associated toll revenues.

As the RTPE, OCTA is responsible for regional transportation planning, administering the Local Transportation Fund (LTF) and the State Transit Assistance Fund (STA or STAF), working with and allocating those funds to eligible claimants, and handling grant applications and managing approved grants. OCTA also provides transportation planning and regional coordination services for Orange County, and plans, evaluates, and markets alternative transportation programs.

1.2.4. OCTA AS THE REGIONAL TRANSIT OPERATOR

Bus Operations consists of seven main functions responsible for operations and maintenance of fixed route (both directly operated and contracted) and demand response services. Bus Operations currently has 150 positions including 11 open positions. The organization chart features 14 direct reports to the General Manager, Bus Operations, including one open position. The major functions are illustrated in **Figure 1-2** below.

Figure 1-2 – Bus Operations Organization Chart (Simplified)



1.3. AUDIT PERIOD ACCOMPLISHMENTS AND CHALLENGES

1.3.1. ACCOMPLISHMENTS

During the audit period, accomplishments were made in the following areas:

- Ridership stabilization and service reallocation
- Financial sustainability
- Organization changes
- Technology
- Streetcar program.

These categories are mutually self-supporting, and they reinforce OCTA's overall goals as spelled out in the Comprehensive Business Plan (CBP) – a 20-year planning document updated every two years and last submitted to the Board in September 2018.

Ridership Stabilization and Service Reallocation. Systemwide ridership for OCTA fell 16 percent from 48.7 million passengers in FY15 to 40.9 million in FY18 (Source: National Transit Database). During this period, OCTA focused on understanding the causes of the ridership drop, putting in place strategies and programs to stabilize ridership, ultimately reallocating some service in a financially sustainable way. It is important to note that OCTA did not cut service.

The most visible of these programs was the 2016 Bus Service Plan (OC Bus 360 Program), planning for which started in 2015. There was a realization that perhaps the product OCTA was offering didn't fit all transit markets anymore and needed to be rethought. Bus ridership visibility was taken to a new level during the audit period with the inclusion of ridership as a weekly feature in the CEO's executive staff meetings.

In addition, the productivity of each route was analyzed and reported on at the Board level, quarter over quarter, to be able to track route level productivity, and to gauge the efficacy of service tweaks. Two rounds of reallocation occurred, the first in 2016, the other in 2017-18. Service capacity was primarily redirected from lower performing routes to areas that exhibited higher demand (broadly speaking, from parts of south county to areas more central to the County).

OCTA also developed a Transit Master Plan called Transit Vision, issued in February 2018. The document outlined 11 transit corridors where the ultimate technology – express bus, BRT, light rail – is yet to be determined. Some are already undergoing planning studies, such as the South Harbor Boulevard corridor (completed), and the Bristol Street corridor (starting).

Financial Sustainability. During the audit period OCTA increased the balance of contracted fixed route operations to 40 percent, the maximum allowed under the labor contract. The contracted service being more cost efficient than the directly operated service, all else being equal, maximizing the 40 percent provides higher financial sustainability for OCTA.

Another major policy change OCTA made during FY18 was the decision to increase the useful life of fixed route buses from 14 to 18 years. This came about during the completion of OCTA's first Transit Asset Management plan, also an accomplishment for the audit period. The life extension is a significant policy decision for OCTA. Running the buses that much longer is somewhat unexplored territory – several Canadian operators do it, but few American agencies do. OCTA is considering what will be needed, from a maintenance perspective, to run buses for the full 18-year period (i.e., when and how many "mid-life" overhauls to carry out). The expected advantage of a longer useful life is mainly financial; instead of setting aside 1/14th of the bus value each year, setting aside only 1/18th of the bus value will increase the amount that can go to operations.

A smaller (but related) accomplishment is OCTA' s handling of its non-revenue vehicle fleet. OCTA recently put in place a policy that sets criteria on how many non-revenue vehicles they will have. In effect, the study calculated that there were 47 excess non-revenue vehicles in inventory. By instituting a motor pool, where staff check out a vehicle each time one is needed, more efficient utilization can occur, reducing the overall revenue fleet size. The associated savings will begin to accrue after 2018.

OCTA has also approached local colleges for partnerships. A pilot was started with Santa Ana College in 2017 to get college students to ride the bus with the mobile ticketing app and their college ID, paid for through their student fees. The revenue neutral approach assumes that non-riding students subsidize riding students, since all students are charged whether they ride or not. Early indications are that existing riders are riding more frequently. OCTA also extended the program to Santiago Canyon College. OCTA will continue to monitor success of this program and seek to extend it to more colleges (e.g., Fullerton).

Lastly, the defeat of Proposition 6 in California in the November 2018 mid-term elections is good news in that SB 1 funds will continue to flow. It also means that a potential 11 percent service cut associated with the measure was avoided.

Organization Changes. The most visible organization change during the last year of audit period was the establishment of a Chief Operating Officer (COO) position. The COO oversees Bus Operations, the LOSSAN functions, and the embryonic organization for the new OC Streetcar operation. It's early to evaluate the efficacy of this change but many interviewees commented that now that OCTA is becoming multi-modal it makes sense to have all the modes under one operating umbrella. More subtle organization changes occurred during the audit period within Finance and Administration. Specifically, there was a reallocation of revenue work from Financial Planning & Analysis and Accounting to Revenue Administration for grant administration and TDA. Revenue Administration has also begun to manage fare policy. The Executive Grants Committee (EGC) was restructured and enlarged during the audit period, and as a result has become much more effective than in the past according to multiple interviewees.

Technology. During the audit period, OCTA's major technology accomplishment was the rollout of mobile ticketing. This service is meant to add convenience, retain existing customers and potentially open new markets, while reducing revenue collection costs. The intent is to ultimately go a full account-based system (i.e., each person would have an account and could manage their account from a computer, tablet or smart phone instead of having to tag their smart card at OCTA facilities). Now the buses are equipped with readers; in the past OCTA operators conducted a visual check. At the end of the audit period, OCTA estimated the market penetration for mobile ticketing to be about ten percent of fare revenue.

Less visible than the mobile ticketing rollout was the $1 million upgrade to the Ellipse system. Ellipse is the inventory system of record for asset management. OneSolution (still known to some as IFAS) is the current system of record for accounting purposes. These systems are partially integrated, which allows Ellipse data to flow into OneSolution. The upgrade was intended to allow for data integration from OneSolution into Ellipse. Revenue and non-revenue vehicle asset data is robust and well tracked within Ellipse. During the audit period, Facilities data was tracked at the "primary" asset level (i.e. building level). In early 2018, OCTA hired a facilities planner to populate additional "secondary" facilities data into Ellipse. OCTA systems track lifecycle costs, but still do not data-mine lifecycle costs for decision making purposes.

Streetcar Program. While ground was not broken during the audit period, the OC Streetcar is considered a major accomplishment moving forward. OCTA has already hired staff and made organizational changes to host the streetcar operation under its new Chief Operations Officer. Award of the construction contract was being planned in winter 2018/19. The Full Funding Grant Agreement (FFGA) was signed by FTA and OCTA on November 30, 2018. A tentative date for revenue operations has been set to 2022.

1.3.2. CHALLENGES

The challenges facing OCTA during the past three years can be summarized by the following:

- Declining Ridership
- Funding Limitations
- Recruiting Challenges
- Regulatory Changes
- Long Term Trends.

Declining Ridership. The main challenge during the audit period has been the declining ridership, despite what has been a growing economy for Orange County. The causes of the decline have been debated and analyzed at length. They include Assembly Bill 360 which authorized illegal immigrants to obtain California Drivers licenses; the cost of real estate and transit dependents leaving the County; the emergence of Transportation Network Companies; and other factors. Although the trend appears to be bottoming out in FY18, the first two years of the audit period, FY16 and FY17, saw significant declines with between 3.5 and

4 million fewer passengers, each year. The fact that ridership declines are a statewide and a national phenomenon over recent years is not much consolation. The basic implications for OCTA are unchanged: more unproductive routes, lost fare revenues, and greater competition for fewer discretionary dollars to fill the revenue gap. The much talked-about OC Bus 360 Program has already borne fruit in stemming the ridership losses and several pilots are now in place. As market forces continue to shape transit ridership in Orange County in the years ahead, close attention to ridership trends will be necessary.

Funding Limitations. As previously mentioned, OCTA's fare revenue is directly tied to ridership. Systemwide farebox revenues declined from $54.9 million in FY15 to $44.6 million in FY18, an 18.7% decline. This was the biggest challenge over the audit period. In April 2017, Senate Bill 1 (SB1) was implemented in California, providing $7.5 billion for transit operations and transit capital expenditures around the state. There was a real possibility that the bill would be repealed by Proposition 6 in the 2018 mid-term elections, but Proposition 6 failed by a 45 to 55 margin. This means the $16.3 million SB1 contributes toward OCTA bus operations each year will continue for the foreseeable future.

The last funding challenge is complicated and longer term; it is represented by the erosion of Local Transportation Fund (LTF) sales tax. LTF is a huge contributor to bus operations revenues, funding about half the operating costs for revenue service. As a point-of-sale tax, LTF sales tax revenues have fallen short of expectations. This is attributed to the fact that online purchases are sold and shipped from points outside Orange County, such as Riverside and San Bernardino Counties. Because sales from the internet have increased so much (and brick and mortar store sales have decreased accordingly); the problem is growing. OCTA is proactive about building awareness regarding the issue and has already modified its budgeting approach for forecasting LTF sales tax growth. OCTA sponsored a legislative audit request, which led to a State Auditor recommendation in 2017 and introduction of legislation in 2018. OCTA continues to lead efforts to continue this discussion and advocate for policy changes moving forward.

Recruiting Challenges. A significant challenge over the course of the audit period has been recruiting operators, and to a lesser extent, for mechanics and service workers. This is not a new issue; however, this has been felt more keenly with the vibrant economy and low unemployment of the last several years. The biggest challenge involves bus operator staffing which has about 60 vacancies currently (and about 40 on the contracted services side). Turnover is about the same as in the past, but recruiting challenges have resulted in: (1) a "permanent shortfall" of drivers; (2) regularly scheduled overtime increases to make up the difference; (3) an approaching saturation point for drivers wanting overtime. At the same time, OCTA has observed a greying of its operator workforce – over one third of operators are eligible for retirement, and there are several operators in their 70's. On the maintenance side the recruiting problem is not as severe, and management has used scheduled overtime to address the shortfall just as for bus operations.

Regulatory Changes. The State, through the California Air Resources Board (CARB), in 2018 adopted the Innovative Clean Transit regulation, which requires transit agencies in the State to convert to zero-emission buses by 2040. In order to achieve this goal, the regulation includes a 25 percent zero emissions bus purchase requirement in 2023, with increasing purchase requirements in future years, culminating in a 100 percent zero emissions purchase requirement by 2029. Currently two technologies meet the zero-emission bus requirements: hydrogen fuel cell and battery electric. OCTA has not yet chosen a technology pathway, and instead is currently exploring both technologies. In the last five years, OCTA has actively been implementing its Revenue Fleet Plan which calls for migration from Diesel and Liquefied Natural Gas (LNG) to compressed natural gas (CNG). In FY16, the first year of the audit period, the last of the diesel buses were retired and there were 72 of the 2300 series 40-foot LNG buses from 2002 left. By the second year of the audit period, FY17, OCTA's fleet was 100 percent CNG buses (including all contracted fixed route service). With respect to moving towards 100 percent zero emissions, the challenge lies in making the best choice for OCTA in terms of technology. Implementation of a new bus technology has enormous cost and staffing impacts, ranging from fueling equipment, facilities, and potentially more buses than currently required to cover the range/service requirements.

Long Term Trends. Some trends have become challenges during this audit period and need to be examined in the context of future audit periods. Some of these trends are beyond OCTA's control, nevertheless they impact efficiency and effectiveness of operations. They include: land use and demographics, working patterns, auto ownership, attractiveness of transit, transit employee hiring and retention, maintenance challenges for vehicles beyond 15 years old, and the stability of funding sources.

1.4. OUTLINE

The rest of the performance audit report is organized into five sections:

- **Section 2.** Compliance Review assesses OCTA's compliance with specific PUC requirements and summarizes the status of prior audit recommendations.
- **Section 3.** Management Control and Reporting examines the management controls and performance monitoring systems in place to help reach OCTA's goals and objectives.
- **Section 4.** RTPE Functional Review addresses the RTPE activities performed by OCTA.
- **Section 5.** Operations Performance Trends and Functional Review examines systemwide and modal performance trends, including TDA key performance indicators as well as major functional areas: transportation, maintenance, and administration.
- **Section 6.** Recommendations discusses and recommends opportunities and potential implementation strategies for OCTA to improve compliance with TDA requirements or strengthen performance.

2. COMPLIANCE REVIEW

2.1. OCTA COMPLIANCE REVIEW

The results of the compliance review of OCTA as a Regional Transportation Planning Entity are summarized in the **Table 2-1**.

Table 2-1 – Compliance Matrix of OCTA as the Regional Transportation Planning Entity

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
PUC Section 99231	All transportation operators and city or county governments which have responsibility for serving a given area, in total, claim no more than those LTF monies apportioned to that area.	**Fully Compliant.** OCTA's updated "TDA Guidelines for Administration of the Act and Preparation of Local Transportation Fund Claims and State Transit Assistance Fund Claims" (December 2017) includes specific provisions stating that "The TPA may not authorize more payments from the LTF (or the STA) to any claimant than that claimant is eligible to receive. The annual LTF claim form must be filed in such a manner so that the claimant does not request more funds to be allocated to it than what it is eligible to receive." OCTD must file a claim and is eligible to receive 100% of LTF funding, while meeting the 20% farebox recovery ratio. Laguna Beach Municipal Transit Line (LBMTL) must file its annual LTF claim and meet the 50% expenditure limitation, which may be less than its apportionment. Laguna Beach may also receive up to 100% LTF funding if it meets the 20% farebox recovery ratio. Finance and Administration Department personnel, who are responsible for TDA, review the claims and ensure that allocations do not exceed amounts authorized through current year apportionments and prior year capital reserves. Within the Department, there are several steps in the claims approval process, including initial review by the assigned Financial Analyst in the Revenue Administration Division, followed by initial approval by the Grants and Revenue Manager and the Department Manager of Revenue Administration. The claims are then reviewed by the Director of Finance & Administration with final approval by the Executive Director of Finance & Administration. Finance & Administration staff administer monthly

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
		revenue distributions and allocations by area of apportionment and claimant.
PUC Sections 99233 and 99234	The RTPE has adopted rules and regulations delineating procedures for the submission of claims for facilities provided for the exclusive use of pedestrians and bicycles (i.e., Article 3).	**Fully Compliant.** As described in OCTA's updated TDA Guidelines, no LTF funds are allocated for bicycle and pedestrian facilities (BPF) in Orange County under Article 3. OCTA has the discretion of lowering or eliminating the percent allocable to any claimant if it finds that the funds could be used to a better purpose in meeting the public transit needs of the county. With this discretion, OCTA has used the allowance by state law to redirect Article 3 funding for bicycle and pedestrian projects to a better purpose, to meet public transit needs in the County. A policy was approved by the Board in June 2009 that prioritizes Article 3 funds for transit operations. Despite the prioritization of Article 3 pedestrian and bicycle funds towards transit, the updated guidelines added new language consistent with recent state law (SB 508) with respect to a city or county expending up to 5% of its bicycle and pedestrian allocation for both bicycle and pedestrian safety education programs.

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
PUC Sections 99238 and 99238.5	The RTPE has established a Social Services Transportation Advisory Council (SSTAC). The RTPE must ensure that there is a citizen participation process, which includes at least an annual public hearing.	**Not Applicable**. PUC 99238 specifies that a SSTAC is not required in a county that had a population of 500,000 or more as of the 1970 federal decennial census. However, in lieu of an SSTAC, OCTA sponsors a citizen-based Special Needs Advisory Committee (SNAC). The 34-member committee advises OCTA on special needs transit service for persons with disabilities. SNAC members are appointed by the Board of Directors and serve three-year terms. Meetings are held quarterly on the fourth Tuesday of the month. Information and resources about the SNAC including a PDF recruitment application is available on the OCTA website. A separate Citizens Advisory Committee (CAC) of OCTA actively participates in helping examine traffic solutions, providing input to OCTA's transportation studies and communicating with their constituencies. The CAC's scope of responsibility is generally broader than the SNAC on transportation issues.
PUC Section 99244	The RTPE has annually identified, analyzed, and recommended potential productivity improvements, which could lower the operating cost of those operators which operate at least 50% of their vehicle service miles within the RTPE's jurisdiction. Recommendations include, but are not limited to, those made in the performance audit. • A committee to provide advice on productivity improvements may be formed • The operator has made a reasonable effort to implement improvements recommended by the RTPE, as determined by the RTPE, or else the operator has not received an allocation that exceeds its prior year allocation.	**Fully Compliant.** OCTA has taken multiple actions to identify, analyze and recommend potential productivity improvements. OCTA's TDA Guidelines include two requirements for the operators in the submittal of annual TDA claims. These requirements help enable OCTA's compliance with this statute provision. One is that the operators must submit 12 transit performance measures, by mode, for a running three-year period with their TDA claims. These data, shown below, are available to monitor each operator's performance trends. • vehicle service hours • vehicle service miles • passengers • operating cost • fare revenues • operating cost per passenger • operating cost per vehicle service hour • passengers per vehicle service hour • passengers per vehicle service mile • farebox recovery ratio • vehicle service hours per employee

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
		• number of full-time employee equivalents These performance indicators are necessary for OCTA to carry out its responsibilities in determining the efficiency, effectiveness, productivity and general operating trends of operators. Explanations of major changes in the indicators are provided by each operator in its claim. In addition, the OCTA TDA Guidelines require the claimants to report on the status of prior TDA performance audit recommendations. According to the prior TDA performance audit covering FYs 2013-15, OCTA began requiring in each operator's claim a description of actions taken to implement each prior recommendation and current status. OCTA requested this information from the City of Laguna Beach and OCTD in the LTF claim form. Beyond reporting requirements in the TDA Guidelines, OCTA engages in other activities to improve operator efficiency. OCTA's Comprehensive Business Plan establishes bus service performance targets to manage costs and to improve the efficiency and effectiveness of the bus service. These targets help staff to better understand business practices and identify areas that need improvement and have led to the development of the quarterly Performance Measurement Reports that are prepared by each division and presented to the Board of Directors. This includes a Transit Division performance report. As means to incorporate public participation in the review and delivery of transportation, two OCTA standing citizens committees provide input on transit issues: the Special Needs Advisory Committee advises on transit and demand response services, and the Citizens Advisory Committee meets on various transportation issues including transit and highways. OCTA staff also support the Transit Committee comprising OCTA board members that advises the full Board on transit issues.

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
		By far the largest endeavor undertaken during this audit period by OCTA to improve transit is OC Bus 360°, an initiative launched in 2016 to improve bus service and increase the efficiency of bus travel in response to shifting travel patterns and declining ridership. Efforts include implementing new and faster bus routes, reallocating bus service to areas with higher demand and rolling out new technology, including mobile ticketing and real-time bus arrival information. OCTA also launched OC Flex, a one-year micro transit pilot program, in two areas of the county.
PUC Section 99245	The RTPE has ensured that all claimants to whom it allocated TDA funds submit to it and to the State Controller an annual certified fiscal and compliance audit within 180 days after the end of the fiscal year (i.e., by December 30. However, the responsible entity may grant an extension of up to 90 days, as it deems necessary).	**Fully Compliant**. OCTA provided letters (via email) to the State Controller to verify submittal of annual certified fiscal and compliance audits for claimants of Article 4 and Article 4.5 funds. Each letter was submitted within the 180-day timeline, or with the 90-day time extension, and accompanied by the audit reports. FY16: submitted on Dec. 22, 2016 FY17: submitted on Dec. 20, 2017 FY18: submitted on Feb. 1, 2019

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
PUC Sections 99246 and 99248	The RTPE has designated an independent entity to conduct a performance audit of operators and itself (for the current and previous triennial). For operators, the audit was made and calculated the required performance indicators, and the audit report was transmitted to the entity that allocates the operator's TDA money, and to the RTPE within 12 months after the end of the triennium. If an operator's audit was not transmitted by the start of the second fiscal year following the last fiscal year of the triennium, TDA funds were not allocated to the operator for that or subsequent fiscal years until the audit was transmitted.	**Fully Compliant.** The FY13-FY15 Triennial Performance Audits were conducted by an independent entity. They were completed in April 2016, within 12 months after the end of the audit period. The FY16-FY18 Triennial Performance Audits are conducted by an independent entity and completed within 12 months after the end of the audit period.
PUC Section 99246(c)	The RTPE has submitted a copy of its performance audit to the Director of the California Department of Transportation. In addition, the RTPE has certified in writing to the Director that the performance audits of operators located under its jurisdiction have been completed.	**Fully Compliant.** OCTA Internal Audit Department provided a transmittal letter (via email) to the Caltrans Division Chief, Mass Transportation, to verify that the OCTA audit was submitted and the operator audits were completed. The email attached the performance audits of OCTA, OCTD, and Laguna Beach Transit.

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
PUC Section 99246(d)	The performance audit of the operator providing public transportation services shall include a verification of the operator's cost per passenger, operating cost per vehicle service hour, passengers per vehicle service mile, and vehicle service hours per employee, as defined in Section 99247. The performance audit shall include consideration of the needs and types of passengers being served and the employment of part-time drivers and the contracting with common carriers of persons operating under a franchise or license to provide services during peak hours, as defined in subdivision (a) of Section 99260.2.	**Fully Compliant.** The FY16-FY18 Triennial Performance Audits of Orange County Transit District (OCTD) and Laguna Beach Municipal Transit Lines (LBMTL) include the required five key performance measures. OCTD takes a prescribed approach to verifying the collection and reporting of vehicle service hours and miles. • Scheduled hours and miles ○ Initially, the statistics were calculated by using the daily hours and miles provided by the HASTUS Line Summaries and factored by the number of operating days. ○ Currently, these scheduled hours and miles are pulled from the Transit Dashboard reports (eliminating the need for the manual calculations previously done). • "Actual" hours and miles ○ Lost service hours, reported to Central Communications, are subtracted from the scheduled hours to calculate the "actual" (estimated) hours. ○ The percentage of lost hours against the total schedule hours are then used to the calculate the "actual" (estimated) miles. Both transit operators included in the performance audit program provide service to the general public and are not precluded from employing part-time drivers or contracting service during peak hours.

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
PUC Sections 99270.1 and 99270.2	The RTPE has established rules and regulations regarding revenue ratios for transportation operators providing services in urbanized and newly urbanized areas.	**Not Applicable.** The provisions of the referenced PUC sections do not pertain to Orange County. One provision applies to a "blended" revenue ratio if the operator serves both urban and rural areas; the other provision pertains to newly urbanized areas. However, OCTA's TDA Guidelines do establish rules for revenue ratios for the transit operators. OCTD is subject to a 20% urban farebox recovery ratio (per provisions of SB 508), which could include local support revenues. LMBTL is not subject to this ratio but must qualify under the 50% expenditure limitation provision of the TDA. Compliance with these requirements is discussed in each operator's compliance review.
PUC Section 99275.5	The RTPE has adopted criteria, rules, and regulations for the evaluation of claims filed under Article 4.5 of the TDA and the determination of the cost effectiveness of the proposed community transit services.	**Fully Compliant.** OCTD is the designated CTSA for Orange County and the only eligible claimant of Article 4.5 funds. During the audit period, OCTD claimed these funds for CTSA-related programs including ACCESS ADA Paratransit, Special Agency Transportation services, and the Senior Mobility Program (SMP). While M2 sales tax revenue is also provided to the 18 eligible cities for the SMP, the eligible non-profit agencies in Orange County have cooperative agreements with OCTA to continue receiving Article 4.5 funds for accessible senior transportation services. The non-profit agency must provide a local match of 20% of the funds provided by OCTD. OCTA's updated TDA Guidelines provide a description of the evaluation criteria that OCTA must use to make annual findings prior to approving Article 4.5 claims. According to the findings of the prior performance audit, OCTA has strengthened its review by adding to its public transit claim checklist a requirement for OCTD to include information to make findings for Article 4.5. Under checklist item #13, OCTD makes seven findings in the claims: 1. The community transit service is responding to a demonstrated need by those persons who cannot use fixed route service;

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
		2. The service is integrated with existing transit services, if appropriate; 3. The claimant has prepared an estimate of revenues, operating costs, and boardings; 4. The claimant is in compliance with fare recovery, performance requirements, and local match requirements; 5. The claimant has been submitting an annual certified fiscal audit; 6. The operator honors the federal Medicare identification card as sufficient identification for reduced fares for senior citizens; and 7. The operator honors identification cards issued by another transit operator as sufficient identification for reduced fares for disabled veterans and other persons with disabilities. These findings are found in the updated OCTA TDA Guidelines. In the annual resolution authorizing filing of the LTF claim, it is stipulated that OCTD agrees to provide OCTA with information as necessary to support the funding claim including claims under Article 4.5.
PUC Sections 99310.5 and 99313.3 and Proposition 116	State transit assistance funds received by the RTPE are allocated only for transportation planning and mass transportation purposes.	**Fully Compliant.** OCTA, on behalf of its legal subsidiary the OCTD, is the sole recipient of STA funding in Orange County. These revenues may be used for capital and operating expenditures related to public transportation, community transit, and rail service. A portion of the funding is also used to subsidize fares for seniors and persons with disabilities. On March 12, 2018, the OCTA Board of Directors authorized use of the SB-1 portion of STA funds allocations for transit operations. The TDA Allocations/Disbursement Instructions starting the 2nd quarter of FY 17-18 requests distribution of STA for operations in addition to capital. To use STA for operations, TDA regulations (as amended by SB 508) require an efficiency test using a cost per service hour trend calculation. The results of this test to be conducted by OCTA are not included in the allocation/disbursement instructions to the Orange County Auditor-

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
		Controller that verify compliance with statute for the amount of STA that could be applied to operations. **Recommendation**: Although fully compliant with this measure in that all STA is allocated for public transportation purposes, OCTA allocation of STA revenue for transit operations rather than capital should demonstrate compliance through results of the operators qualifying criteria for eligibility (PUC 99314.6). OCTA conducts the efficiency test annually using audited performance and fiscal data. A sliding scale is used to determine the amount eligible for operations. It should be noted that efficiency tests are not required if STA revenues are used only for capital projects. The results of the eligibility and the proportion of STA that can be allocated for transit operations and capital should be included in the staff report for STA allocations.
PUC Section 99314.3	The amount received pursuant to PUC Section 99314.3 by each RTPE for state transit assistance is allocated to operators in the area of its jurisdiction as allocated by the State Controller's Office.	**Fully Compliant.** STA funds available from PUC Section 99314.3 are included in the Formula Allocation Process for distribution to OCTD. OCTA and the City of Laguna Beach have agreed that LBMTL will receive local funding assistance in lieu of STA funds. Therefore, OCTD is the sole recipient of STA revenue.

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
PUC Section 99401.5	If TDA funds are allocated to purposes not directly related to public or specialized transportation services, or facilities for the exclusive use of pedestrians and bicycles, the transit-planning agency has annually: • Consulted with the SSTAC established pursuant to PUC Section 99238 • Identified transit needs, including groups who are transit-dependent or transit-disadvantaged, adequacy of existing transit services to meet the needs of groups identified, and analysis of potential alternatives to provide transportation services • Adopted or re-affirmed definitions of "unmet transit needs" and "reasonable to meet" • Identified unmet transit needs and those that are reasonable to meet • Identified the unmet transit needs, or if there are not unmet transit needs, or there are unmet transit needs that are reasonable to meet. If a finding is adopted that there are unmet transit needs, these needs must have been funded before an allocation was made for streets and roads.	**Not Applicable**. OCTA is not subject to this PUC requirement. All applicable TDA funds are allocated for public or specialized transit purposes as elected by OCTA under PUC Section 99232, under the Apportionment Restriction. Despite not being subject to this requirement, OCTA's citizen-based Special Needs Advisory Committee (SNAC) serves as the SSTAC equivalent to identify and address needs of specialized services.

Reference	RTPE Compliance Requirements	OCTA Compliance Actions
CAC Section 6662	The RTPE has caused an audit of its accounts and records to be performed for each fiscal year by the county auditor or a certified public accountant. The RTPE must transmit the resulting audit report to the state controller within 12 months of the end of each fiscal year and the audit must be performed in accordance with the Basic Audit Program and Report Guidelines for the California Special Districts prescribed by the State Controller. The audit shall include a determination of compliance with the TDA and accompanying rules and regulations. Financial statements may not commingle the state transit assistance fund, the local transportation fund, or other revenues or funds of any city, county or other agency. The RTPE must maintain fiscal and accounting records and supporting papers for at least four years following fiscal year close.	**Fully Compliant.** The Comprehensive Annual Financial Reports were completed and transmitted to the State Controller within 12 months of the end of each fiscal year. FY16: submitted on October 31, 2016 FY17: submitted on October 31, 2017 FY18: submitted on October 31, 2018 OCTA also files the CAFR with the State Controller on behalf of OCTD, per PUC Section 99243; for that purpose, the CAFRs must be submitted within 180 days after the end of the fiscal year. OCTA is also compliant with that requirement.

2.2. OCTD COMPLIANCE REVIEW

The results of the compliance review of OCTD as a transit operator are summarized in **Table 2-2**.

Table 2-2 Compliance Matrix of OCTD as a Transit Operator

Reference	Operator Compliance Requirements	OCTD Compliance Actions
PUC Section 99243	The transit operator submitted annual reports to RTPE based on Uniform System of Account and Records established by State Controller.	**Fully Compliant.** OCTA filed these reports with the State Controller within the 110-day timeline for reports submitted electronically (verified by the dates on the transmittal cover pages): FY16: submitted on October 18, 2016 FY17: submitted on January 31, 2018 * FY18: submitted on January 31, 2019 * In compliance with the PUC, OCTA files separate reports for OCTD general public service, and OCTD CTSA specialized service for elderly and disabled. *Note: AB 1113 extended the submittal date of the State Controller Transit Financial Transactions Report from 110-days to 7 months (end of January) beginning in FY 16-17. Recommendation: While in full compliance, OCTA should update its Standard Assurance checklist in the LTF claims to reflect changes from State legislation, including the due date for the State Controller Transit Financial Transactions Report.
PUC Section 99245	The operator submitted annual fiscal and compliance audits to its RTPE and to the State Controller within 180 days following the end of the fiscal year or has received the 90-day extension allowed by law.	**Fully Compliant.** As a division of OCTA, the Transit Division is included in OCTA's Comprehensive Annual Financial Report. OCTA's annual reports were submitted to the State Controller within the required timeframe: FY16: completed on Oct 31, 2016 FY17: completed on Oct 31, 2017 FY18: completed on Oct 31, 2018

<table>
<tr><th>Reference</th><th>Operator Compliance Requirements</th><th>OCTD Compliance Actions</th></tr>
<tr><td>PUC Section 99251 B</td><td>The CHP has, within the 13 months prior to each TDA claim submitted by an operator, certified the operator’s compliance with Vehicle Code Section 1808.1 following a CHP inspection of the operator’s terminal.</td><td>Fully Compliant. Dates were taken from copies of OCTA TDA claims containing CHP Pull Notice Compliance Certificates:
<table>
<tr><th>Base</th><th>FY15/16</th><th>FY16/17</th><th>FY17/18</th></tr>
<tr><td>Anaheim</td><td>2/20/14</td><td>2/19/15*
12/16/15**</td><td>12/15/16</td></tr>
<tr><td>Garden Grove</td><td>9/29/14</td><td>9/24/15</td><td>9/19/16</td></tr>
<tr><td>Irvine
Sand Canyon
Construction Circle</td><td>
1/17/14

12/4/14</td><td>
10/30/15**
1/9/16*
11/19/15</td><td>
1/19/17

12/12/16</td></tr>
<tr><td>Santa Ana</td><td>1/22/15</td><td>1/22/15</td><td>1/13/17</td></tr>
</table>
*MV Transit
** First Transit</td></tr>
<tr><td>PUC Section 99261</td><td>The operator’s claim for TDA funds is submitted in compliance with rules and regulations adopted by the RTPE for such claims.</td><td>Fully Compliant. Claims made by OCTD and Laguna Beach Municipal Transit Lines follow the OCTA claim requirements under Article 4. A checklist of items filed with the claim is used to organize the materials, among them the public transportation claim form, standard assurances, financial statements, and performance measures. In compliance with implementing a prior performance audit recommendation, the OCTD claim form includes an additional requirement to document findings every year for Article 4.5 claims for ACCESS, Special Agency Transportation Services, and the Senior Mobility Program.</td></tr>
<tr><td>PUC Section 99270.1</td><td>If an operator serves urbanized and non-urbanized areas, it has maintained a ratio of fare revenue to operating costs at least equal to the ratio determined by the rules and regulations adopted by the RTPE.</td><td>Not Applicable. This provision, which applies to a “blended” revenue ratio if the operator serves both urban and rural areas, does not apply to Orange County.</td></tr>
<tr><td>PUC Section 99266</td><td>The operator’s operating budget has not increased by more than 15% over the preceding year, nor is there a substantial increase or decrease in the scope of operations or capital budget provisions for major new fixed facilities unless the operator has reasonably supported and substantiated the change(s).</td><td>Fully Compliant. OCTD budget increases during the audit period were well within the 15% cap, as shown in the annual TDA claim:
FY16: 5.3%
FY17: -6.2%
FY18: 3.1%</td></tr>
</table>

Reference	Operator Compliance Requirements	OCTD Compliance Actions
PUC Section 99247	The operator's definitions of performance measures are consistent with PUC Section 99247.	**Fully Compliant.** OCTA complies with PUC requirements in reporting data in the State Controller Reports. The data include operating cost, total passengers, vehicle service hours, vehicle service miles, and vehicle service hours per employee. On an annual basis, an independent accountant verifies that a system is in place and maintained for recording data in accordance with NTD definitions which mirror those of the PUC. This process is conducted for agreed-upon procedures performed with respect to the National Transit Database Report.
PUC Sections 99268.2 99268.3 99268.1	If the operator serves an urbanized area, it has maintained a ratio of fare revenue to operating cost at least equal to 20%.	**Fully Compliant.** OCTD is required to meet a 20.0% farebox recovery ratio. OCTA met this requirement throughout the audit period using a combination of passenger fares plus local support revenues: Farebox Recovery Ratio: FY16: 24.9% FY17: 25.9% FY18: 25.7% Note: SB 508 (October 2015) deleted the requirement for OCTA to meet the higher 24.42% farebox recovery ratio (based on the FY79 ratio), or 20.0% using just fare revenues. SB508 now instead requires OCTA to meet a 20.0% farebox ratio, with local support. Recommendation: While in full compliance, OCTA should update its Standard Assurance checklist in the LTF claims to reflect changes from State legislation, including the revised farebox recovery ratio with local support.
PUC Sections 99268.2 99268.4 99268.5	If the operator serves a rural area, it has maintained a ratio of fare revenue to operating cost at least equal to 10%.	**Not Applicable.** OCTD's service area is in an urbanized area.

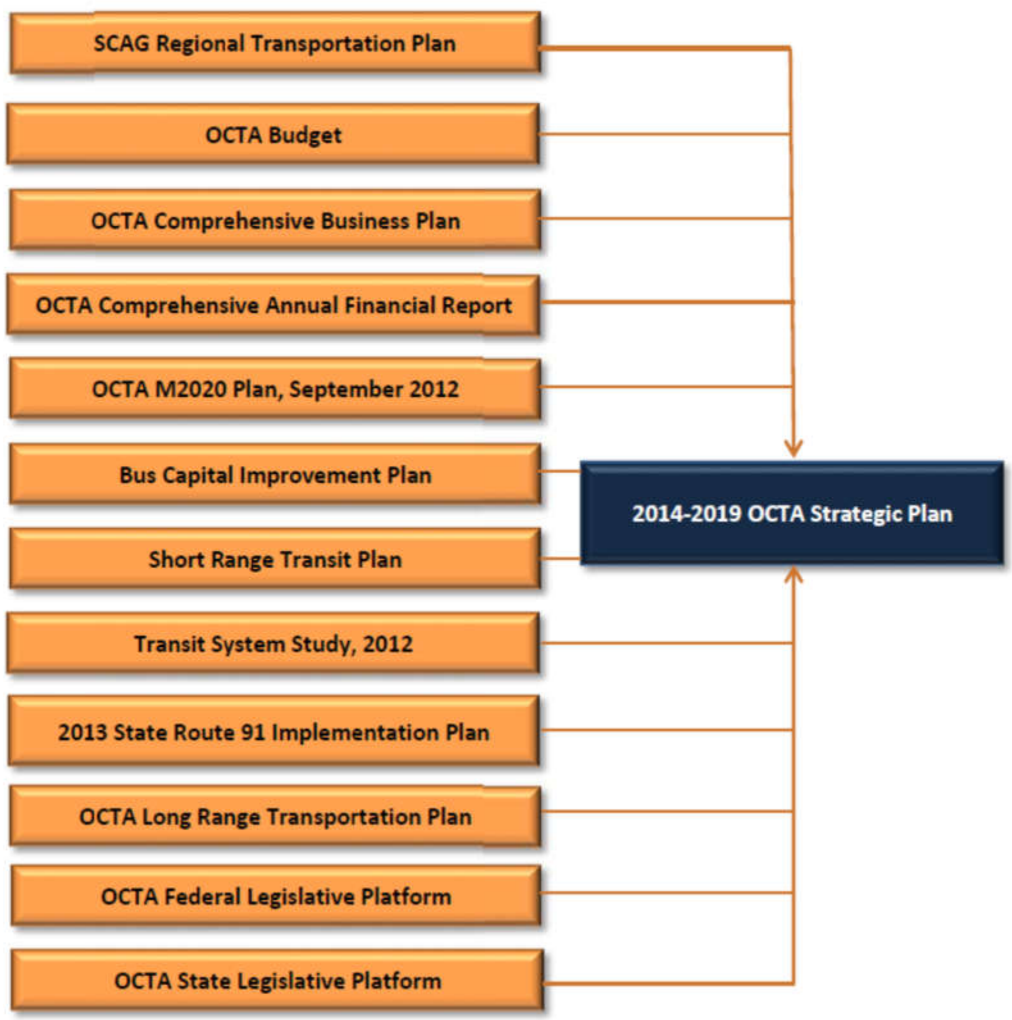
Reference	Operator Compliance Requirements	OCTD Compliance Actions
PUC Section 99271	The current cost of operator's retirement system is fully funded with respect to the officers and employees of its public transportation system, or the operator is implementing a plan approved by the RTPE, which will fully fund the retirement system for 40 years.	**Fully Compliant.** OCTD's TDA claims include letters from the Orange County Employee Retirement System (OCERS) Board certifying that the actuarial value of assets to the actuarial accrued liability was 72.3%, indicating less than fully funded as defined in the PUC. The most recent actuarial valuation of OCERS is as of December 31, 2017. The OCERS Board adopted a funding policy to combine and re-amortize the outstanding unfunded liability balance over a declining 20-year period. Higher employer and employee contribution rates since 2001 have been necessary to offset losses in the OCERS portfolio. Based on this information and the funding policy, OCERS certifies that OCTD satisfies the requirements of PUC Section 99271.
CAC Section 6754(a)(3)	If operator receives state transit assistance funds, operator makes full use of funds available to it under the Urban Mass Transportation Act of 1964 before TDA claims are granted.	**Fully Compliant.** OCTA receives STA funds for transit projects. In addition, in its budgeting and reporting, OCTD plans for federal operating assistance grants, as well as federal capital assistance grants. During the audit period, annual budgets in the TDA claim show that federal assistance grants accounted for about 20 to 25 percent of total OCTD operating expenses. The highest budgeted percentage of federal assistance grants for operations was during FY16 at 25.5 percent, followed by 25.0 percent in FY18, and 21.0 percent in FY17.

3. MANAGEMENT CONTROL AND REPORTING

3.1. STRATEGIC PLAN

OCTA completed its 2014-19 Strategic Plan during the prior audit period but it extends through the current audit period and into 2019. The Strategic Plan is intended to enhance OCTA's focus on performance, accountability, and transparency. The Strategic Plan is intended to provide a framework, set priorities for five years, determine principles that will guide OCTA decisions, and provide strategies to achieve the agency goals. It is intended to be a living document that can be adjusted over time. The Strategic Plan builds on numerous other planning and financial documents as illustrated below in **Figure 3-1**.

Figure 3-1 – Integration of OCTA Plans with Strategic Plan



The framework of the Strategic Plan is composed of five elements:

- **Vision:** The future that OCTA is striving to create. OCTA's vision is:

  An integrated and balanced transportation system that supports the diverse travel needs and reflects the character of Orange County.

- **Mission:** The overall purpose and role of OCTA. OCTA's mission is to:

  Develop and deliver transportation solutions to enhance quality of life and keep Orange County moving.

- **Values:** Principles that guide OCTA staff in their day-to-day work. OCTA-defined values include: Integrity, Customer Focus, Can-Do Spirit, Communication, and Teamwork.
- **Goal Areas:** Broad statements of direction that OCTA is undertaking to carry out its mission. OCTA's goals include: Mobility, Public Service, Fiscal Sustainability, Stewardship, and Organizational Excellence.
- **Objectives:** Derived from the goals, objectives detail specific results that need to be achieved to make progress towards each goal. Each of OCTA's five goals is tied with three to four specific objectives.

Accountability and implementation of the Strategic Plan and tracking progress is achieved via performance measures at three levels: at the Board Chairman level, at the CEO level, and at the Division level. Each is updated annually. For example, the CEO list of initiatives and action plan for 2017 – in the middle of the audit period – is presented in **Figure 3-2** below.

Figure 3-2 – 2017 CEO Initiatives and Action Plan

The CEO presents quarterly progress reports to the Board as well as an end-of-year summary of progress.

OCTA monitors progress toward its goals and objectives using a balanced scorecard, or dashboard. This balanced scorecard approach is intended to provide decision-makers with information on the most critical facets of the agency's operations, by facilitating performance measurement and management from four key perspectives: customer, employee, financial, and process.

The CEO action plan by division tracks each project and associated milestone. Each activity is tracked by quarter, identifying whether it is completed (blue), on track (green), with an adjusted timetable (yellow), at risk (red), carryover (orange), and if it supports Board initiatives (light blue). This is illustrated below.

Figure 3-3 – Detailed CEO Action Plan by Division, FY 2018

OPERATIONS DIVISION, CONTINUED

Project/Program	Milestone	Q1	Q2	Q3	Q4
5. *Same Day Taxi Service*	**Milestone:** Board award of consultant services for the same day taxi services - Q2. **Note:** On February 12, 2018, the Board approved the release of the request for proposals for taxi service providers. On July 23, 2018, the Board approved the selection of the contractor to provide Same-Day Taxi service to ACCESS-eligible customers.				
6. *Hydrogen Fuel Cell Bus Purchases*	**Milestone:** Receive first article, hydrogen bus – Q3. **Note:** On track for first delivery in Sep 2018.				
7. *Micro-Transit Demonstration Project*	**Milestone:** Implement OC Flex Service – Q3. **Note:** On March 26, 2018, the Board approved the firm to provide operation and maintenance services for the micro-transit pilot program. On August 13, 2018, the Board received an update on the pilot program and approved the proposed fare structure. OC Flex will more likely be implemented in October due to delays with the vehicle delivery. Timetable adjusted to Q4.				
8. *iShuttle Project V*	**Milestone:** Accept delivery of new iShuttle buses for expanded iShuttle service – Q3. **Note:** On June 25, 2018 the Board authorized an amendment to the agreement with First Transit for expansion of iShuttle service. Implementation of services has slipped to Q4 due to a delay in iShuttle bus receipt.				
9. *Carryover 2017 - Near Zero NOx Emission Engines*	**Milestone:** Complete engine repower on 98 New Flyer buses - Q4.				
10. *Hydrogen Fuel Cell Bus Purchases*	**Milestone:** Begin receiving remaining nine production buses - Q4.				

3.2. COMPREHENSIVE BUSINESS PLAN

OCTA's CBP is a business planning tool designed to assist the Authority in implementing its strategic goals and objectives. The CBP lays the foundation for the annual budget process and is consistent with the goals of OCTA's other key planning documents such as the SRTP and the Long Range Transportation Plan (LRTP).

The CBP utilizes a 20-year cash flow model for OCTA programs that is updated regularly in response to changes in the social, political, and economic environment in Orange County. The published document is typically updated every two years. The most recent CBP is dated September 2018 and serves as a baseline for developing the FY19-20 budget.

The published CBP provides descriptions, relevant trends, funding sources, and uses of funds for the following six OCTA programs: Bus Operations, Rail, Measure M2, the 91 Express Lanes, Non-Program Specific Projects, and Motorist Services.

Over the next 20 years, the CBP assumes a flat demand for fixed-route service (1,642,000 revenue vehicle hours) and a 28 percent increase in demand for paratransit trips (2,199,000 trips in 2038, up from 1,713,000 in 2018).

3.3. PERFORMANCE REPORTING

OCTA prepares quarterly performance reports for Bus Operations that track the following key performance indicators by mode. These reports track actual performance compared to a standard or division goal, and they are presented each quarter to the Board. For FY15 and FY16, this list of indicators for directly operated fixed route included:

Fixed-Route Performance

- Safety: Preventable Vehicle Accidents per 100,000 Miles. Standard: 1/100,000 miles
- Courtesy: Customer Complaints per 100,000 Boardings. Standard: 5/1,000 Boardings
- Reliability: On-time Performance (OTP). Standard: 85% OTP
- Reliability: Miles Between Road Calls. Standard: 14,000 MBRC

Performance Evaluation

- Productivity: Service Performance Index (A composite mixture of Passenger Boardings per Revenue Hour, Passenger miles per seat mile, and farebox recovery ratio, compared to system wide average and converted to a zero to one score – SPI of 0.5 represents an average route, therefore higher scores are more productive routes and lower scores less productive routes)

ACCESS Services

- Safety: Preventable Vehicle Accidents per 100,000 Miles. Standard: 1/100,000 miles
- Courtesy: Customer Complaints per 1,000 Boardings. Standard: 1. 5/1,000 Boardings
- Reliability: On-time Performance. Standard: 94% OTP
- Reliability: Miles Between Road Calls. Standard: 25,000 MBRC

For FY17 and FY18, Bus Operations restructured the performance reports. The new format is visually more appealing and self-explanatory. The statistics are now handled together for directly operated fixed-route, contracted fixed-route, and ACCESS. The new report is organized as follows:

- Safety (Vehicle accidents)
- Courtesy (Customer complaints)
- Reliability (On-time performance, miles between road calls)
- Ridership and productivity
- Unclassified revenue
- Contractor performance (tracking the contract penalties and incentives)

- Farebox recovery ratio (showing both with and without local revenues added to the farebox revenues)
- Operating cost per revenue vehicle hour
- Performance evaluation by route
- OC Bus 360 Plan, Performance to date

The quarterly performance reports are produced in addition to department-level performance reports that are prepared monthly, such as the Maintenance Department's Standards and Performance Indicators Report.

4. REGIONAL TRANSPORTATION PLANNING ENTITY FUNCTIONAL REVIEW

The primary objective of the Regional Transportation Planning Entity (RTPE) performance audit is to provide an independent, objective, and comprehensive evaluation of the economy, efficiency, and effectiveness of OCTA's performance as an RTPE. Together with the compliance review in Section 2, the functional review provides the basis for recommendations offered for OCTA's consideration in Section 6.

The functional review covers OCTA's role and performance in the following areas:

- Administration and management of its responsibilities as the RTPE
- Claimant relationships, including transit productivity oversight
- Transportation planning and regional coordination
- Marketing and transportation alternatives
- Grant applications and management.

The functional review has considered:

- The systems and procedures used for managing finances and operations, and those for evaluating and reporting performance
- Areas where there may be internal control weaknesses, uneconomical or inefficient operations, lack of goal achievement, or lack of compliance with laws and regulations
- Achievements and opportunities for improvement.

4.1. RTPE ADMINISTRATION AND MANAGEMENT

As the RTPE, OCTA is responsible for general administration, regional transportation planning, administering Local Transportation Fund (LTF) and State Transit Assistance funds (STA or STAF), working with and allocating funds to eligible claimants, handling grant applications, and managing approved grants. OCTA also provides transportation planning and regional coordination services for Orange County. OCTA plans, evaluates, and markets alternative transportation programs within the County. They work with federal, state, regional, and local agencies to plan, fund, implement, and maintain transportation programs and services throughout the County. These transportation services extend beyond transit.

4.1.1. TDA PROGRAM ADMINISTRATION

OCTA is responsible for administering the TDA and LTF in Orange County. The Revenue and Grants Administration Department administers the TDA program. Staff prepare and update the OCTA TDA Guidelines[1]; prepare apportionments; maintain data on allocations and claims; assist claimants in preparing claims and amendments; review claims and amendments for eligibility, compliance, and funding; obtain Board approval of TDA claims; and prepare and update allocation instructions and payment schedules for the County Controller. Accounting & Financial Reporting oversees general accounting, and revenue and

[1]The OCTA TDA Guidelines for Administration of the Act and Preparation of Local Transportation Fund Claims and State Transit Assistance Fund Claims was most recently updated in December 2017.

grant accounting (among other responsibilities). This division prepares the drawdown and reimbursement requests that are submitted to the County Controller for payment. The TDA-mandated Triennial Performance Audits are managed by the Internal Audit Department. Internal Audit also transmits annual financial audit reports to the State Controller.

The largest part of TDA funding sources is the LTF, derived from a ¼ cent of the general sales tax collected statewide. The LTF is a stable ongoing funding source for local transit operators throughout the state. **Table 4-1** summarizes the top-level articles for LTF.

Table 4-1 – LTF Article Descriptions

LTF Article	Description
Article 3	**Administration** revenues are made available for administration of the TDA by a Transportation Planning Agency (TPA). OCTA is the TPA for Orange County and oversees the administration of this fund.
	Planning funding is available for transportation planning and programming by the County Transportation Commission (CTC), as determined by TDA. OCTA is the designated CTC for Orange County. The Southern California Association of Governments (SCAG) also claims some of this funding for their regional planning efforts.
Article 4	**Public Transportation Services** revenues are available to support public transportation systems and may be used for capital, operating, and maintenance costs. Transit operators must meet farebox revenue and local support ratios to remain eligible for these funds.
Article 4.5	**Community Transit Services** funds are available for the provision of community transit services, including transit services for persons with disabilities unable to use fixed-route transit services. Up to five percent of the annual LTF revenues are allotted to this service after deductions are made for administration, planning, and bicycle and pedestrian facility allocations.

The second component of TDA is the STA Fund (or STAF), which is derived from a portion of the sales tax on gasoline and diesel fuel. Funds are allocated based on annual population estimates. Two percent of the remaining money in the fund shall be made available to counties and cities for facilities that are provided for the exclusive use of pedestrians and bicycles. The STA Fund is forecasted by the California State Controller's office on an annual basis and incorporates the impact of Transportation Senate Bill 1 (SB-1).

The TDA allocation process makes funds available for administering, planning, and programming TDA funds. Consistent with TDA guidelines, claims for these categories are funded first, in priority order, before other TDA-eligible claims. Funds allocated to OCTA for planning and programming may not exceed 3.0% of TDA revenues. Another 0.75% may be allocated to SCAG. These funds are a significant source of funding for OCTA. According to the OCTA 2017-2018 Approved Budget, the ¼ cent TDA sales tax is estimated to be $162.2 million and the STAF $28.9 million for FY2017-18. OCTA's appropriations clearly distinguish between revenues allocated for administration and revenues allocated for programming. The amounts that are committed to OCTA and the County Auditor-Controller for TDA administration and to OCTA and SCAG for planning and programming are also identified in OCTA's annual budgets.

OCTA oversees LTF funds allocated to Orange County. Eligible recipients are the OCTD and Laguna Beach Municipal Transit Lines. OCTD claims funding for providing public transit services to Orange County residents. LBMTL is eligible to claim funding for public transit services within the City of Laguna Beach. Eligible recipients are designated as CTSA. OCTA has designated OCTD as the sole CTSA in Orange County. Funds are provided to OCTD for community transportation and local agencies in Orange County to assist in their senior transportation programs.

Table 4-2 provides an overview of the funds from LTF Articles 3, 4, and 4.5 over the audit period.

Table 4-2 – Example of LTF for Orange County

LTF Forecast	FY 15-16	FY 16-17	FY 17-18
Net estimated sales tax available for apportionment	**$162,424,637**	**$160,206,213**	**$163,980,130**
Article 3 Administration			
OC Auditor-Controller	$6,439	$7,671	$3,122
OCTA – CTC Administration	$135,882	$138,600	$141,372
Article 3 Planning			
OCTA – CTC planning	$365,554	$3,604,639	$3,610,130
SCAG – Regional planning	$1,218,185	$1,201,547	$1,203,377
Amount available for public transit financing	**$157,409,576**	**$155,253,757**	**$155,492,224**
Article 4.5 Paratransit Operating & Capital			
OCTD – CTSA funding	$7,870,479	$7,762,688	$7,774,611
Article 4 Operating & Capital			
OCTD – Public transit funding	$148,423,794	$146,396,713	$146,621,592
Laguna Beach – Public transit funding	$1,115,304	$1,094,356	$1,096,021

Since the implementation of the "Amazon Tax" in 2012 (requires internet sales to be taxed) the composition of LTF sales tax revenues have been changing. In recent years, the expected revenue from these "point of sale' tax has failed to meet the Orange County projections. Concern over this discrepancy has led OCTA leadership to believe that the lower revenues are due to a lack of accountability for online purchases that are sold and shipped from distribution centers outside Orange County. In 2017, OCTA sponsored an audit request before the Joint Legislative Audit Committee, for the State Auditor to audit this sales tax collection.

The results of this audit confirmed that there has been a significant decrease in Bradley-Burns tax revenue in certain areas of the State, due to the unique situs rules for these taxes. One of the key recommendations of the audit was for legislation to change the situs rules to a destination-based system, which was then introduced in 2018 with SCA 20 (Glazer, D-Orinda), and supported by OCTA. This legislation failed passage, but discussions continue throughout the State about improved data to determine the impacts for each county. Since the projections have not matched actual funding over the past several years, OCTA has chosen to use a different forecasting methodology to create the budget. A compilation of an LTF-specific forecast by Muni Services and a blended rate forecast from three California Universities is used.

The second source of TDA funding comes from the STAF. Based on data provided in the FY2017-18 Approved Budget for OCTA, Sales Tax Revenue actuals for FY 2015-16 totaled $7.9 million, and the budgeted sales tax revenue was $17.2 million for FY 2016-17 and $28.8 million for FY 2017-18. These budgets are estimates of OCTA's allocation of revenues based on the State Controller's Office estimates of STAF collections.

4.2. CLAIMANT RELATIONSHIPS

As the RTPE, OCTA works with its claimants to ensure an efficient and accurate disbursement of funds to those eligible to receive them. OCTA allocates both LTF and STAF to OCTD, and only LTF to LBMTL. Both agencies are eligible to receive STA and FTA funds.

In addition to its role in handling claims, OCTA also helps claimants enhance their productivity and administrative processes. OCTA organized a working group comprised of the Planning and Transit divisions which reviews productivity monthly. To set appropriate targets, data is validated based on NTD reports and financial status reports which are submitted annually. This includes data from First Transit, the contractor for fixed route bus.

OCTA works very closely with OCTD to provide assistance when necessary. OCTA manages TDA for OCTD and provides technical and managerial assistance to its operators. Since they are housed together, their working relationship was described in interviews as being like a single organization in function.

OCTA also provides assistance as needed to Laguna Beach Municipal Transit Lines (LBMTL). OCTA reviews LBMTL's reports to make sure they are in compliance and send them funding for which they qualify. OCTA operates under a cooperative agreement with LBMTL to pay them their share of the FTA funds. LBMTL has used a third party in the past two years to add more service, which has yielded higher Revenue Vehicle Hours and ridership.

4.3. TRANSPORTATION PLANNING AND REGIONAL COORDINATION

As discussed in Section 1.3, many accomplishments have occurred during this audit period. Regional coordination and transportation planning for Orange County utilizes many divisions within OCTA (primarily Planning and Operations), and the Executive Steering Committee. Most information regarding short-, mid- and long-term plans for Orange County can be identified in planning documents, agency agreements, and funding sources.

The more vital planning documents for OCTA include the Board Goals, developed annually, which are supported by the detailed CEO initiatives. Additional planning documents include the CBP. For the most recent version of the CBP, analysis occurred during this audit period. The CBP contains a 20-year forecast for the entire agency and is updated annually. The CBP assumes the next fare increase will take place in 2023. The CBP is a good resource to compare trends of the goals set by the agency compared to actuals received over past years. OCTA also participates in the SCAG RTP (which is on a four-year cycle). OCTA's LRTP is used to inform/develop a project list, which is then submitted to the RTP. This process is completed on a staggered two-year basis. The LRTP is multimodal in nature and includes active transportation. Additionally, the Transit Master Plan was prepared in 2017. This Transit Master Plan outlines 11 high capacity corridors and does not specify the type of transit service (rail, bus-rapid transit, bus, etc.) to be utilized. The latest version was completed in February 2018.

Additional sources are used to identify major growth or changes likely to occur within Orange County which would impact the transportation network. OCTA uses a Regional Modeling group to develop trip/mode projections for both the long-range transportation plan and a model based upon the Transit Master Plan. Due to constraints of available resources, the CBP shows no growth in service hours for the next 20 years. Additionally, OCTA reviews project development plans for cities and developers within Orange County to coordinate efforts and provide valuable input prior to construction regarding transit and transportation matters.

OCTA collects transportation-related information from its own resources (fareboxes, APC, AVL equipment, and mobile ticketing) as well as from local agencies and partners. Data from the Longitudinal Employer-Household Dynamics (database provided by the US Census Bureau summarizing where people live and work) is also used for analysis.

Regarding the future of bus fleets within California, the California Air Resources Board released a standard for transitioning transit fleets to 100 percent zero-emission by 2040. In the interim, requirements for new annual bus purchases will follow a phased schedule starting at 25% in 2023, 50% in 2026, and 100% in 2029. During the audit period, OCTA took the opportunity to test a hydrogen fuel-cell bus to see if it meets OCTA needs. Currently, a hydrogen fueling station is under construction at the Santa Ana bus base. OCTA plans to test battery electric bus technology as well. No decision has been made at this time to adopt a zero emissions technology, but a plan will be developed outlining OCTA's implementation strategy to meet the 2040 fleet requirement. OCTA may decide to adopt multiple technologies (for example, equipping 80 percent of the fleet with hydrogen fuel cell, and equipping the remaining 20 percent with electric battery).

Another impactful change for the bus fleet was OCTA's 2018 decision to set the useful life of a bus to 18 years. The change was made as part of the Transit Asset Management plan development and re-assessment of asset useful lives. The 18-year bus life assumption – already adopted as part of the CBP – is a policy change with significant ramifications for fleet acquisition, but also for maintenance planning. Maintenance is expected to include a second mid-life interval at 12 years.

Recently, OCTA has utilized progressive tactics to meet transportation needs given funding restrictions. Under the Measure M Project V funding (which establishes a program for local jurisdiction to develop local bus transit services and meet needs in areas not adequately served by regional transit) OCTA provided a grant to the City of San Clemente. Under this grant, an agreement was established with Lyft to provide an alternative source of transportation where the bus service was discontinued along the service route. Under this agreement, users can hail a ride within 50 feet of the discontinued transit route (which is geofenced in the app) and get a coupon code to supplement their ride.

OCTA entered into an agreement with the City of Laguna Beach on May 22, 2017 under a cooperative agreement for OCTA to operate Route 689 or the Laguna Beach Summer Breeze. The services were scheduled for 11:00AM until 12:00 midnight on Saturdays and Sundays from July 1, 2017 through September 3, 2017. This contract was for the fixed amount of $79,443.62 plus any required reimbursement for passenger fares if a subsidy was implemented by the City.

4.4. MARKETING AND TRANSPORTATION ALTERNATIVES

As RTPE, OCTA is responsible for supporting transportation alternatives (e.g. shared-vehicle programs, bicycling) as well as making information about these resources readily available to the public. The CBP reinforces the importance of the relationship between transportation modes and users. It is also important that information regarding upcoming transit projects be communicated to the public. The OCTA division that interacts regularly with the public to market this information is the Public Information Office (PIO), which in 2015 was moved from the Marketing division to report directly to the OCTA CEO.

Marketing undertook a major marketing campaign after the initiation of OC Bus 360. They established a strategic marketing approach due to limited resources, which they have continued to follow. A variety of methods have been used to communicate information to the public including: the OCTA website (http://www.octanet), email blasts, social media pages, online advertisements, local billboards, direct mail-outs, promotional passes, creative services, bus wraps, and targeted campaigns.

The Marketing Department also conducts a system-wide (quantitative) customer satisfaction survey every two to three years, with the most recent occurring in FY15. Due to the number of changes to the service recently undertaken at OCTA, this survey will be delayed a year and conducted next in FY20. The Marketing Department also conducts a qualitative survey to general residents at more frequent intervals. As necessary, focus groups are brought in to help with marketing campaigns; these are also conducted with in-house focus groups. This tool was used most recently prior to the launch of a pilot on-demand service in October 2018.

OCTA progressively looks at ways to provide service to Orange County residents using alternative forms of transportation, and even alternative forms of accessing existing transit within the 34 cities of Orange County. For example, OCTA launched OC Flex (a micro-transit on-demand service, where users can request transit on an as-needed basis) in two zones where regular transit services were decreased or eliminated. The service is accessed through a mobile application or by phone. The on-demand vehicles which support this service are eight-passenger ADA accessible vans. This initiative is meant to supply the area with a comparable service where a bus route is not warranted. The results of this project may be used to influence other future initiatives. There are some concerns with OC Flex and how to best evaluate its success. For example, with the way the service is called/accessed, and the limited availability of a fixed route, OCTA has not identified a way to report the ridership in a comparable way.

Housed under the Bus Operations, OCTA's Vanpool program has been in place since 2007. One staff member in the Marketing division is responsible for the marketing and sales related to vanpool services. CMAQ funds support the program. In 2018, there were approximately 510 vanpools in operation. It was noted by staff that these reporting numbers will differ from NTD data. OCTA pulls the number of active vanpools at the end of each month, whereas NTD tracks the highest number of vanpools in each month. As other nearby counties have begun their own vanpool programs, OCTA has transferred the vehicles to them. In this audit period, 21 vanpools were transferred to Riverside County and eight were transferred to San Bernardino County. The vanpool contractor, Enterprise™, is the supplier of vanpool vehicles in Orange County and is responsible for vehicle maintenance.

OCTA enlists an active transportation coordinator, housed under the Planning Division. Their focus is the "advancement of active transportation in Orange County, which includes bikeways planning, safety programs and community events." They receive grants from the California State Office of Traffic Safety, which are used to promote bicycle safety through education. This division also works closely with OC Loop to develop Regional Bikeways Planning and a Master Plan. TDA Article 3 continues to provide annual funding for bicycle and pedestrian projects.

4.5. GRANT APPLICATIONS AND MANAGEMENT

During this audit period the Executive Grants Committee (EGC) was structured into a more formalized group. This committee is comprised of most of the executive staff at OCTA, in addition to some of the Planning division staff. The EGC was formed to provide a stable process for the review, understanding, and supervision of grants identified for OCTA and to increase its success rate. The EGC meets once a month, separate from the Executive Steering Committee.

The EGC undertakes several tasks, including creating a package prior to each meeting which includes existing grant status, identifies potential grant opportunities, brainstorms ways to pursue grants, and reviews debriefs of grants where OCTA wasn't selected. When members of OCTA are interested in applying for a grant, they must present it to the EGC for approval before continuing the application process. This is to reduce time spent on grants that OCTA would not be eligible for, or which do not align with corporate goals. The EGC is working to formalize the "compliance" portion of the review process.

OCTA applies for grants on behalf of its operators. The Capital Programming Group is responsible for writing the discretionary grants on behalf of OCTD. The financial piece of the grant process is prepared by the Finance and Administration Division. OCTA is not involved with grant applications for Laguna Beach, except for changing the funding Laguna Beach typically receives (5307 and 5309) to local funds to ease the regulations attached to the funding that would restrict how Laguna Beach could use the funding.

Once grants have been approved, the Finance and Administration Division assumes responsibility for managing, administering, and reporting on grants. This includes reporting to the EGC monthly to ensure the funding is being used and all regulations are being followed. The Finance and Administration Division is also responsible for the reimbursements of all grants which are received from external agencies.

Staff members interviewed reported that they are pleased with how the EGC is functioning. They are pleased with the division of responsibilities that has been established to ensure the system works effectively and that OCTA follows funding agencies' requirements. This quality control has helped staff stay on target as well as keeping all divisions aware of funding granted to OCTA and how it is being used. Staff confirmed that, during this audit period, OCTA has complied with grant requirements and no grants have been denied or withdrawn.

5. OPERATIONS PERFORMANCE TRENDS AND FUNCTIONAL REVIEW

5.1. OVERVIEW

This section of the audit focuses on performance results and trends for OCTA's Bus Operations. It begins with the required TDA performance indicators, which are used to provide a high-level assessment of OCTA's systemwide efficiency and effectiveness during the performance audit period. The review of TDA performance indicators includes systemwide and modal results for the types of transit service OCTA provides:

- Fixed-route bus service, including both directly-operated and contracted service
- Demand response service – ACCESS, which is OCTA's ADA-mandated complementary demand response service – is operated under contract.

More detailed performance results are presented for each mode, using functional data as a basis for calculating and discussing cost and service performance metrics that help to explain the high-level performance trends observed in the TDA performance indicators. The TDA performance trends and functional reviews provide the independent and objective review of the efficiency and effectiveness of OCTA's performance as a transit operator that is the objective of this operator performance audit. Together with the compliance assessment in Section 2, the review of systemwide and modal performance trends and functional performance indicators provides the basis for recommendations offered for OCTA's consideration in Section 6.

5.2. SYSTEMWIDE OPERATIONS

California Public Utilities Code Section 99246(d) states that the performance audit of an operator providing public transportation services shall include, but not be limited to, a verification of the performance indicators defined in Section 99247 of the PUC. These performance indicators include:

- **Operating cost per passenger** to measure the cost effectiveness of the service consumed
- **Operating cost per revenue vehicle hour** to measure the cost efficiency of the service provided
- **Passengers per revenue vehicle hour** and **passengers per revenue vehicle mile** to measure the productivity of the service provided
- **Revenue vehicle hours per employee** to measure labor productivity.

In addition to the five required indicators, the **farebox recovery ratio** is calculated to determine whether an operator is eligible for funding under PUC. A summary of what is include is under PUC sections 99243 and 99247. The ratio of fare revenues to operating cost is 20% as the claimant is serving an urbanized area.

With the passage of Senate Bill 508 (SB 508) in October 2015, the State deleted provisions for certain operators (including OCTD) to meet a greater than 20% farebox ratio. Previously, OCTD was required to continually meet a 24.42% ratio that it previously generated from its 1978/79 fiscal year, or to meet a 20% ratio without the inclusion of local funds. SB 508 effectively authorized operators to use local funds in the calculation of farebox recovery ratio. The specific SB 508 language change is presented in the text box below. This is a significant change that affects this TDA Triennial audit period for the first time.

99268.19.

If fare revenues are insufficient to meet the applicable ratio of fare revenues to operating cost required by this article, an operator may satisfy that requirement by supplementing its fare revenues with local funds. As used in this section, "local funds" means any nonfederal or nonstate grant funds or other revenues generated by, earned by, or distributed to an operator.

Additional performance indicators were also evaluated regarding the efficiency, effectiveness, and general performance of OCTA's public transportation services.

The primary data for this analysis is taken from FTA's and OCTA's National Transit Database (NTD) reports, since they typically provide the most detailed performance data. Where necessary, other data sources (e.g., financial audits, State Controller reports, internal reports from the Transit Division) were used to calculate additional performance results.

Cost and revenue-based performance indicators have not been adjusted for inflation, but year-over-year inflation rates, as well as the total inflation over the three-year audit period, are provided at the bottom of each data table. The inflation data are based on the Orange County Consumer Price Index for All Items, furnished by the Bureau of Labor Statistics.

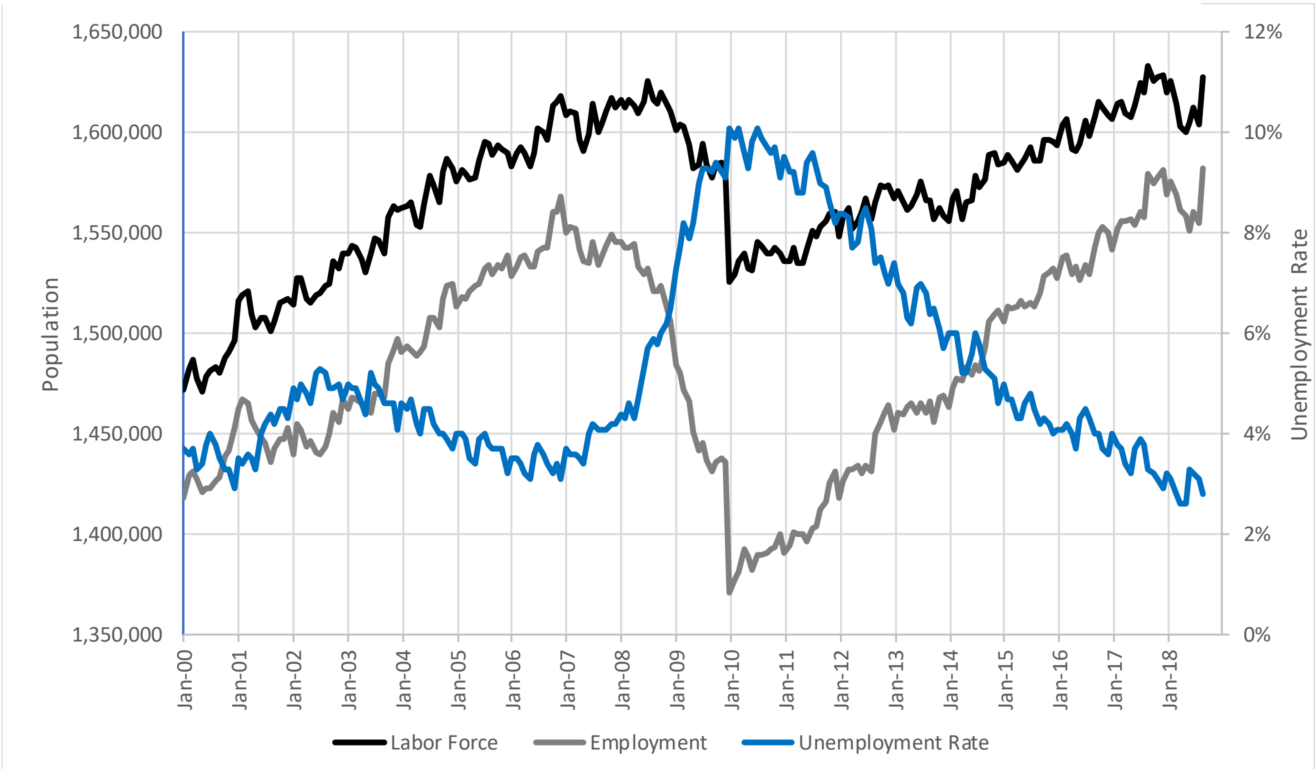
There are several external factors outside OCTA's direct control that impact OCTA performance results, including the costs of fuel, liability coverage, state-mandated employee benefits, air quality laws/regulations, technology developments, and recent economic conditions. As a public agency, OCTA must comply with new state and federal mandates. Compliance with these regulations often entails costs that, while planned, impact the agency's budget. One such mandate is Senate Bill 375 (SB 375), which was signed into law in 2008 and is intended to control greenhouse gas emissions through land use planning and transportation decisions. This bill continues to have effects today. Another influential bill is Senate Bill 1 (SB 1), signed into law in 2017, which helps transit agencies increase access and service and pay for capital projects. Revenues of $5 billion are expected to improve local transportation infrastructure, statewide. The sources of the revenue include increases to the gas tax, the diesel fuel tax, vehicle registration fees and a clean air vehicle fee. The repeal of this bill under Proposition 6 was defeated in November 2018.

One of the key external factors affecting OCTA's operation during the audit period was the dynamic economic picture. Since the recession of 2008 the national economy has enjoyed nearly nine years of economic growth and job creation. This mirrors the regional picture in Orange County. **Figure 5-1** shows the employment trends in Orange County for almost 20 years. The following observations can be drawn:

- The labor force today is back to the levels of the big recession of 2008 at 1.63 million
- As of mid-2017, Orange County employment had surpassed that of pre-recession peak
- The unemployment rate in the County has been steadily declining for eight years in a row from the 2010 peak

- Between the audit period timeframe of 2015 and 2018, employment in Orange County rose to its pre-recessionary levels and the unemployment rate is now well below 3%.

Figure 5-1 – Labor Force and Employment in Orange County, 2000 to 2018



Sources: Labor Market Indicators, Orange County, California Employment Development Department

Starting in FY11, OCTA began implementing service changes three times per year instead of four. Switching to three service changes reduces the associated costs while maintaining the flexibility to respond to changing demands and the economic recovery of the region. During this audit period, OCTA continued to conduct three annual service plans.

The total quantity of fixed-route service provided – measured by Revenue Vehicle Hours or RVH – during the audit period was essentially flat (-0.5% change since FY15). What changed was the *distribution* between directly operated and purchased transportation. This is in line with the OC Bus 360 Program and OCTA's policy decision to continue to mitigate operating costs by increasing contract service levels up to 40% of the total fixed-route service. As can be seen in **Table 5-1**, there was a 15% reduction in the directly operated motor bus service, and a 34.6% increase in purchased transportation. With commuter bus, the increase for directly operated was matched by a similar decline for purchased transportation (about 6%).

Table 5-1 – Fixed-Route Revenue Service Levels (Revenue Vehicle Hours), FY 2015- FY2018

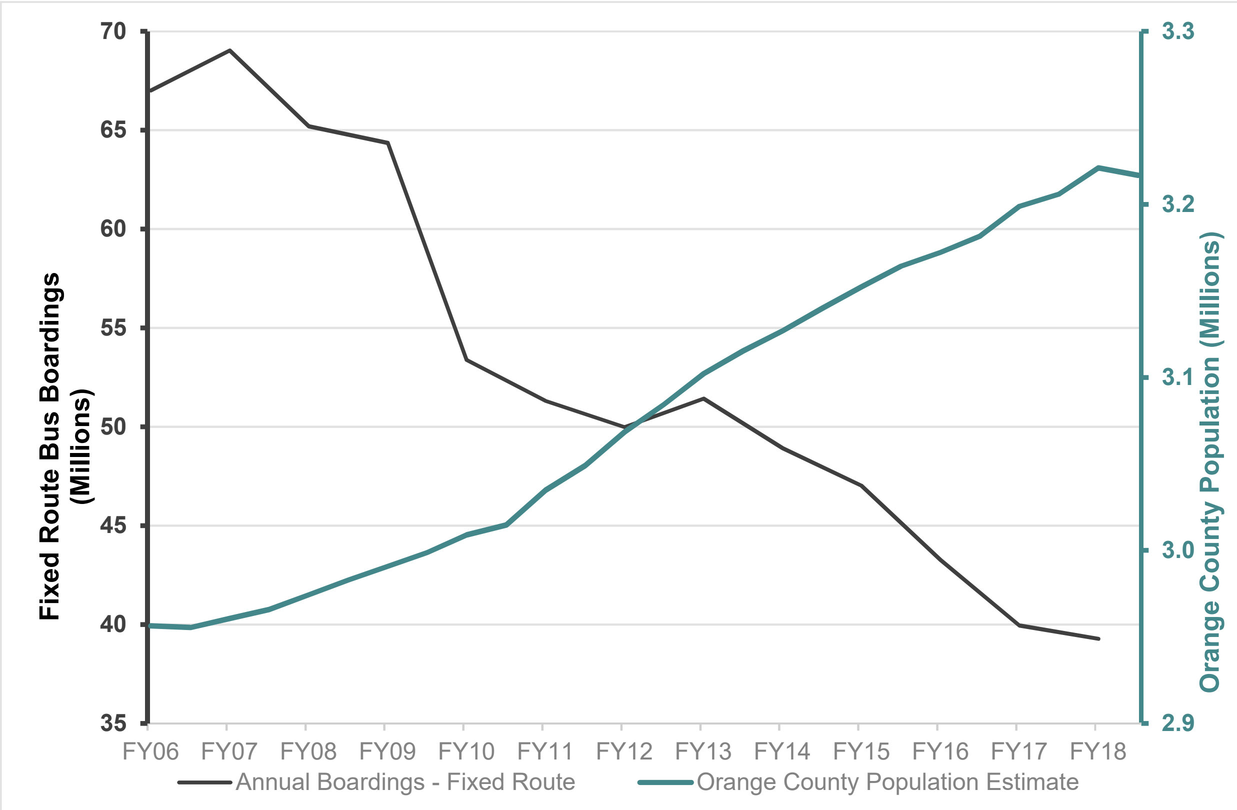
Service Levels	Mode	Base Year	Audit Review Period			% Change
		FY15	FY16	FY17	FY18	FY15-FY18
Directly Operated RVH	Commuter Bus	8,557	9,461	10,799	9,045	5.7%
	Motor Bus	1,114,607	1,034,267	976,672	946,984	-15.0%
Purchased Transportation RVH	Commuter Bus	20,102	21,122	21,573	18,883	-6.1%
	Motor Bus	465,256	559,754	619,169	626,110	34.6%
	Total, Fixed-Route	1,608,522	1,624,604	1,628,213	1,601,022	-0.5%

Source: NTD Reports

Figure 5-2 displays Orange County population growth and Fixed-Route boardings over the last 13 years. The population in Orange County grew steadily from 2.9 to 3.2 million during this time, a 9% increase.

Plotting OCTA's ridership (measured by boardings) shows that Fixed-route ridership peaked back in FY07, with 69 million boardings. Ridership declined until 2010, stabilized over a period of four years, then experienced another decline until 2017. Ridership appears to have stabilized in 2018. The total boardings decline compared to the peak in FY07 is extensive and represents about a 43% drop.

Figure 5-2 – Orange County Population and Fixed-Route Bus Boardings 2006-2018



Sources: Population

In 2010, OCTA initiated the Transit System Study, a comprehensive operations analysis of OCTA's Fixed-route and demand response services. The Study, which was completed in 2012, evaluated the allocation of transit services in the County to better match resources to demand. It identified a series of short, medium, and long-term changes to improve OCTA's efficiency and effectiveness in maximizing mobility benefits. OCTA will begin implementing Transit System Study pilot projects in FY14 and FY15, including limited stop service on Harbor Boulevard and express bus service on State Routes 22 and 73.

5.2.1. FAREBOX RECOVERY

During the audit period, OCTA has strived to stabilize ridership and farebox recovery through the OC Bus 360 program. Still, from FY15 to FY18, farebox recovery – as calculated in the historic way, i.e., without any local funds or subsidies included on the revenue side– eroded by 18.6%.

Under PUC Sections 99268.2, 99268.3, or 99268.4, and following SB 508, OCTA measures farebox recovery by including farebox revenues plus local support funds that currently help fund OCTD operations including property tax revenues, advertising revenue, and Measure M fare stabilization.

The ability to include a larger spectrum of local support revenue resulted in OCTA not having to increase fares during the audit period. The last fare increase took place in early 2013, when OCTA implemented a fare increase to offset rising costs. Regular cash fare for a one-way trip increased from $1.50 to $2.00, and the cost of a regular fare 30-day pass increased from $55 to $69. Cash fare for seniors and people with disabilities increased from 60 to 75 cents and discounted monthly passes increased from $18 to $22.25. At that time, OCTA also introduced a five-ride pass for $9, and discounted pre-paid day passes. In the current environment, OCTA hopes to keep the fares stable and the next fare increase assumption in the CBP is for 2023. A fare study is currently under way.

This is the first Performance audit period post SB 508 implementation. OCTA exceeded its farebox recovery targets, as shown in **Table 5-2**.

Table 5-2 – Systemwide Farebox Recovery FY 2015 to FY 2018

Date Item and Farebox Ratio	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-FY18
Farebox Revenues	$54,867,082	$51,054,127	$46,503,568	$44,612,570	-18.7%
Operating Costs	$266,233,999	$279,688,558	$264,579,605	$265,936,098	-0.1%
Farebox Recovery Ratio (no local funds)	**20.6%**	**18.3%**	**17.6%**	**16.8%**	**-18.6%**
Farebox Revenues	$54,867,082	$51,054,127	$46,503,568	$44,612,570	-18.7%
Local Funds - Sales Taxes	$2,896,501	$4,448,661	$5,060,842	$7,039,969	143.1%
Local Funds - Property Taxes	$13,293,181	$14,098,212	$14,943,128	$15,994,605	20.3%
Local Funds - Other dedicated funds (Tolls)	$0	$58,641	$0	$0	N/A
Local Funds - General revenue	$0	$0	$2,130,771	$651,032	N/A
Local Funds - Other local funds	$0	$0	$0	$29,510	N/A
Local Funds - Total (from NTD Form F-10)	$16,189,682	$18,605,514	$22,134,741	$23,715,116	46.5%
Operating Costs	$266,233,999	$279,688,558	$264,579,605	$265,936,098	-0.1%
Farebox Recovery Ratio (with local funds)	**26.7%**	**24.9%**	**25.9%**	**25.7%**	**-3.7%**
TDA Requirement	20.0%	20.0%	20.0%	20.0%	0%

Sources: NTD Reports, F-10 Form (Sources of Funds – Funds Expended & Funds Earned)

When interpreting **Table 5-2**, the following conclusions are apparent:

- First, the farebox recovery ratio, as calculated without local funds (i.e., pre-SB 508) has dropped every year of the audit period and at 16.8% is now substantially below the 20% benchmark.
- The farebox recovery ratio, as calculated with local funds, is more than 25% thus comfortably exceeds the 20% benchmark. The measure has been stable over the audit period.
- The calculations shown in the table are based on the Fare Revenues and local funds reported through NTD. They exclude Low Carbon Transit Operations Program (LCTOP) funds, as well as Fare Stabilization funds.

It is tempting to compare farebox recovery ratio as calculated with NTD data with farebox recovery as calculated for Performance Measurement reports (i.e., the Quarterly reports prepared for the Board). The numbers are close but don't match exactly because they have slightly different numerators and denominators. The key differences between the measurement methodologies are presented in **Table 5-3**:

Table 5-3 – Difference in Assumptions for Farebox Recovery Calculations, Using NTD Reporting Versus Performance Measurements Reporting Assumptions

Type or Source of Funding	Item	NTD Reporting	Performance Measurements Reporting
Fare Revenue	Yellow Cab retained fares	Included in Fare Revenue	Not included in Fare Revenue
	LCTOP funds	Not included in Fare Revenue	Included in Fare Revenue
Local Funds Revenue	Sales taxes	Included in Local Funds	Not included in Local Funds
	Other dedicated funds (tolls)	Included in Local Funds	Not included in Local Funds
	General revenue	Included in Local Funds	Not included in Local Funds
	Other local funds	Included in Local Funds	Not included in Local Funds
Advertising Revenue	Advertising	Considered a Directly Generated Fund	Considered Local Fund
Vanpool Expenses	Vanpool Expenses	Not included in Expenses	Included in Expenses

Sources: OCTA, NTD Reports

It is important for these differences to be understood when comparing the two sets of figures.

Calculating the farebox recovery ratio for each mode, as shown in **Table 5-4**, is helpful for understanding the performance of the individual modes. For an even comparison, the calculations were made without local funds. During the audit period, OCTA's farebox recovery for fixed-route services shrunk about 20%, reflecting the reduction in ridership and associated farebox revenue. With demand response, farebox recovery was mostly flat, reflecting much more consistent ridership.

Table 5-4 – Fixed-Route and Demand Response, Farebox Recovery FY 2015 to FY 2018

Farebox Recovery Calculation - Fixed-route Bus Service

Date Item and Farebox Ratio	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-FY18
Farebox Revenues	$48,496,844	$44,439,893	$39,516,626	$37,854,504	-21.9%
Operating Costs	$196,262,473	$201,480,886	$192,765,060	$191,136,844	-2.6%
TDA Farebox Recovery Ratio (no local funds)	24.7%	22.1%	20.5%	19.8%	-19.9%

Farebox Recovery Calculation - Demand Response

Date Item and Farebox Ratio	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-FY18
Farebox Revenues	$6,370,238	$6,614,234	$6,986,942	$6,758,066	6.1%
Operating Costs	$69,971,526	$78,207,672	$71,814,545	$74,799,254	6.9%
TDA Farebox Recovery Ratio (no local funds)	9.1%	8.5%	9.7%	9.0%	-0.8%

Sources: NTD Reports

5.2.2. TDA PERFORMANCE INDICATORS

OCTA's performance against the five TDA indicators is depicted in **Table 5-5**. These indicators incorporate key measures of transit service delivery and consumption, including operating costs, ridership, service levels, and employee full time equivalents (FTEs). Overall, the TDA performance measures were significantly impacted by the decline in ridership (including the poorer effectiveness and productivity measures this entails), but also point to the efficacy of some of OCTA's cost sustainability initiatives, such as increasing the contracted fixed-route proportion to 40 percent.

In response to declining ridership projections, and the corresponding declines in farebox revenues, OCTA instituted the OC Bus 360 program. The program was the most comprehensive analysis of the system ever undertaken before. It resulted in reallocated service at key times in the audit period (2016 and again later in 2017-18) as well as a series of new initiatives, such as OC Flex. OCTA made the decision not to cut any service (measured by revenue hours provided). The full impact of these measures will probably not be felt until the next audit period (FY19-21), however there are early indications of success with ridership levels appearing to bottom out in FY18.

The economy and inflation do not seem to be major causes any more as TDA performance indicators were impacted by other factors.

Table 5-5 – Systemwide, TDA Performance Indicators FY 2015 to FY 2018

Verified TDA Statistics & Performance Indicators	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-FY18
Operating Costs	$266,233,999	$279,688,558	$264,579,605	$265,936,098	-0.1%
Unlinked Passengers	48,736,032	45,056,855	41,566,419	40,922,124	-16.0%
Revenue Vehicle Hours	2,368,118	2,379,845	2,355,478	2,345,768	-0.9%
Revenue Vehicle Miles	31,965,331	32,474,301	31,694,066	31,327,949	-2.0%
Employee FTEs	1,063	989	977	907	-14.7%
Operating Cost per Revenue Vehicle Hour	$112.42	$117.52	$112.33	$113.37	0.8%
Operating Cost per Passenger	$5.46	$6.21	$6.37	$6.50	19.0%
Passengers per Revenue Vehicle Hour	20.58	18.93	17.65	17.45	-15.2%
Passengers per Revenue Vehicle Mile	1.52	1.39	1.31	1.31	-14.3%
Service Hours per Employee FTE	2,228	2,407	2,410	2,587	16.2%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

(a) TDA operating costs exclude depreciation, charter, purchased transportation costs
Sources: NTD Reports, State Controller Reports (employee FTEs)

Systemwide cost efficiency was essentially flat during the audit period. Operating cost per revenue hour increased by a modest 0.8%, while the CPI increased only 8.4% during the same period. After a jump in FY16, operating costs dropped back to FY15 levels in FY17 and FY18, which is quite remarkable given inflation. OCTA made the decision not to cut systemwide service levels despite the ridership drop, and this decision is borne out in the statistics. Revenue vehicle hours output was also flat during the three-year period, compared to FY15, with a 0.9% decline.

Systemwide cost effectiveness, however, decreased by 19%. The overall operating cost per passenger increased from $5.46 to $6.50. The main reason behind the jump is the 16% drop in unlinked passengers. All the passenger-driven effectiveness and productivity indicators, given the magnitude of the ridership declines, will show declines.

Passengers per revenue hour and mile (service productivity) also decreased, by 15.2% and by 14.3% respectively. The number of passengers per revenue hour and mile is negatively impacted by the loss in ridership. After a modest increase in FY16, vehicle miles dropped back in FY17 and even more in FY18 as OC Bus 360 was put in place. Still the overall drop in ridership means service productivity looks worse than it did in FY15.

Labor productivity, measured as revenue hours per employee FTE, fluctuated but increased 16.2% overall from 2,228 hours in FY15 to 2,587 in FY18. Most of this increase is due to the reduction in employee FTEs, about 14% during the period.

On a systemwide basis, vehicle productivity (i.e., average vehicle occupancy) experienced declines during the audit period, as shown in **Table 5-6**. This is a little counter-intuitive, given the OC Bus 360 program objectives. When breaking out the different modes, it becomes apparent that purchased transportation experienced an increase in both revenue vehicle miles and passenger miles, and this is consistent with OCTA's intended shift to increase service levels up to 40% of the total fixed-route service.

Table 5-6 – Systemwide and Mode, Vehicle Occupancy FY 2015 to FY 2018

Operations Data	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-FY18
Revenue Vehicle Miles	**31,965,331**	**32,474,301**	**31,694,066**	**31,327,949**	**-2.0%**
Directly Operated Fixed-route Bus	13,202,024	12,287,765	11,688,772	11,312,975	-14.3%
Purchased Transportation Fixed-route Bus	6,412,449	7,560,704	8,071,108	8,045,204	25.5%
Purchased Transportation Demand Response	12,350,858	12,625,832	11,934,186	11,969,770	-3.1%
Passenger Miles	**191,771,118**	**177,049,413**	**161,469,956**	**170,683,771**	**-11.0%**
Directly Operated Fixed-route Bus	132,835,362	111,351,940	95,812,598	105,676,528	-20.4%
Purchased Transportation Fixed-route Bus	40,359,598	46,425,423	48,590,826	47,952,686	18.8%
Purchased Transportation Demand Response	18,576,158	19,272,050	17,066,532	17,054,557	-8.2%
Vehicle Occupancy	**6.0**	**5.5**	**5.1**	**5.4**	**-9.2%**
Directly Operated Fixed-route Bus	10.1	9.1	8.2	9.3	-7.2%
Purchased Transportation Fixed-route Bus	6.3	6.1	6.0	6.0	-5.3%
Purchased Transportation Demand Response	1.5	1.5	1.4	1.4	-5.3%

Source: NTD Reports

The rest of this section describes performance trends and results for:

- Fixed-route bus service, including service operated directly by OCTA and service operated by First Transit under contract to OCTA
- Demand response service operated by MV under contract to OCTA to provide ACCESS service.

5.3. FIXED-ROUTE BUS OPTIONS

OCTA has transitioned an increasing share of its fixed-route bus service from direct operation to contracted services since FY09. First it was to MV Transportation, OCTA's fixed-route contract service provider, then after June 2015, OCTA switched to First Transit. The contract term is from June 1, 2015 through May 31, 2019, with two, 2-year options. This will theoretically take OCTA through to 2023. Under the labor agreement, OCTA can contract up to 40% of fixed-route bus service.

Historically, OCTA has used its fixed-route service contractor to operate service during peak periods, as well as routes that have relatively low service productivity. OCTA traditionally assigned smaller vehicles to the contractors to use on the lower productivity routes and routes in hills and through residential neighborhoods. This has changed in recent years as First Transit now operates from both Irvine and Anaheim bases, and they operate on more and busier routes.

Table 5-7 shows revenue service hours and ridership. In the audit period, the percent of purchased transportation revenue hours increased from 35.8% to 40.3%. In FY15, this percentage was 30.2%. The percentage of passengers carried by purchased transportation is now up to 31.2%. The CBP assumes a 60-40 distribution between directly operated and purchased transportation, over the next 20 years.

Table 5-7 – Fixed-route Bus, Directly Operated vs. Purchased Transportation FY 2015 to FY 2018

Reporting Period	Directly Operated		Purchased Transportation		Total			
	Rev Hours	Passengers	Rev Hours	Passengers	Rev Hours	% PT	Passengers	% PT
FY15	1,123,164	37,834,362	485,358	9,187,083	1,608,522	30.2%	47,021,445	19.5%
FY16	1,043,728	32,380,916	580,876	10,890,617	1,624,604	35.8%	43,271,533	25.2%
FY17	987,471	28,023,916	640,742	11,930,930	1,628,213	39.4%	39,954,846	29.9%
FY18	956,029	27,037,277	644,993	12,237,469	1,601,022	40.3%	39,274,746	31.2%

Source: NTD Reports

5.3.1. DIRECTLY OPERATED FIXED-ROUTE SERVICE

Table 5-8 provides TDA performance indicators for directly operated fixed-route service.

Operating cost per revenue vehicle hour, a measure of *cost efficiency*, was relatively stable over the period with a 3.1% increase over the base year. At the end of FY18, the operating cost per revenue hour is $133.13. This compares to an 8.4% increase in inflation. Revenue hours decreased 14.9% over the audit period, while operating costs decreased 12.2%. FY16 reached $136.27 per revenue vehicle hour, but the OC Bus 360 actions stabilized cost efficiency in FY17 and FY18. The progressive transition of additional service to purchased transportation also helped.

Cost effectiveness, measured as operating cost per passenger, increased by 22.9%. This is a lot higher than the 8.4% increase in the CPI during the audit period and is explained by the ridership drop faced by OCTA.

The *productivity of directly operated fixed-route service* suffered 16% declines as the number of passengers per revenue hour and mile decreased. So even though OCTA reduced some directly operated service by converting it to purchased transportation (the overall level of service was unchanged), the number of passengers declined more, sending the productivity measure into a double-digit decline.

Labor productivity (revenue hours per employee FTE) remained relatively stable, down 0.2% over the audit period at about 1,050 service hours per employee FTE.

Table 5-8 – Directly Operated Fixed-route Bus, TDA Performance Indicators FY 2015 to FY 2018

Verified TDA Statistics &	Base Year	Audit Review Period			% Change
Performance Indicators	FY15	FY16	FY17	FY18	FY15-FY18
Operating Costs	$144,968,107	$142,223,706	$130,638,199	$127,276,998	-12.2%
Unlinked Passengers	37,834,362	32,380,916	28,023,916	27,037,277	-28.5%
Revenue Vehicle Hours	1,123,164	1,043,728	987,471	956,029	-14.9%
Revenue Vehicle Miles	13,202,024	12,287,765	11,688,772	11,312,975	-14.3%
Employee FTEs	1,063	989	977	907	-14.7%
Operating Cost per Revenue Vehicle Hour	$129.07	$136.27	$132.30	$133.13	3.1%
Operating Cost per Passenger	$3.83	$4.39	$4.66	$4.71	22.9%
Passengers per Revenue Vehicle Hour	33.69	31.02	28.38	28.28	-16.0%
Passengers per Revenue Vehicle Mile	2.87	2.64	2.40	2.39	-16.6%
Service Hours per Employee FTE	1,056	1,055	1,010	1,054	-0.2%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

(a) TDA operating costs exclude depreciation, charter, purchased transportation costs
Source: NTD Reports

During the audit period, vehicle operations accounted for over 60% of directly operated fixed-route operating costs, as shown in **Table 5-9**. This is consistent with historical experience. The remainder of the operating costs split between maintenance and administration. Operating costs for Operations and Maintenance were down 13.7% and 14.3%, respectively, mainly due to the transition of some service to purchased transportation. The operating cost for Administration was down 3.4%.

Table 5-9 – Directly Operated Fixed-route Bus, Distribution of Operating Costs FY 2015 to FY 2018

Base Data and	Base Year	Audit Review Period			% Change
Performance Indicators	FY15	FY16	FY17	FY18	FY15-FY18
Operating Cost, Operations	$90,577,376	$84,126,677	$79,545,357	$78,141,078	-13.7%
Operating Cost, Maintenance	$31,401,550	$29,579,933	$26,580,162	$26,918,297	-14.3%
Operating Cost, Administration	$22,989,181	$28,517,096	$24,512,680	$22,217,623	-3.4%
% Operating Cost, Operations	62.5%	59.2%	60.9%	61.4%	-1.7%
% Operating Cost, Maintenance	21.7%	20.8%	20.3%	21.1%	-2.4%
% Operating Cost, Administration	15.9%	20.1%	18.8%	17.5%	10.1%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

Source: NTD Reports

Operations accounted for the highest share of employees. Approximately 72% of the total FTEs support service operations, as shown in **Table 5-10**, whereas maintenance accounts for approximately 17%.

Administrative FTEs grew slightly to 11% of total FTEs. The proportion of administrative FTEs increased as total FTEs were reduced. Conversely, the proportion of operations and maintenance FTEs shrunk slightly as service transitioned more to contracted operations.

Table 5-10 – Allocation of Directly Operated Fixed-route Bus Labor Hours and FTEs, FY 2015 to FY 2018

FY	Operations			Maintenance			Administration			Total		
	Labor Hours	FTEs	% of Total FTEs	Labor Hours	FTEs	% of Total FTEs	Labor Hours	FTEs	% of Total FTEs	Labor Hours	FTEs	% of Total FTEs
FY15	1,549,720	775	72.9%	368,251	184	17.3%	208,278	104	9.8%	2,126,249	1063	100%
FY16	1,433,349	717	72.5%	340,211	170	17.2%	204,153	102	10.3%	1,977,713	989	100%
FY17	1,406,601	703	72.0%	334,006	167	17.1%	214,093	107	11.0%	1,954,700	977	100%
FY18	1,308,227	654	72.1%	304,804	152	16.8%	200,233	100	11.0%	1,813,264	907	100%

Source: NTD Reports

Table 5-11 shows vehicle operations performance indicators for directly operated bus service.

Generally, many of the vehicle operations performance indicators presented are in significant flux over the audit period, given the decrease in ridership and the shift of service to purchased transportation. OCTA has successfully scaled down operations of its own FTEs and costs in proportion to the service reallocation. One illustration is revenue hours per FTE has been very stable during the audit period. Noteworthy changes in performance indicators include:

- Unmet scheduled Revenue Vehicle Miles (RVM) were down 18.1% during the audit period, a positive result. In FY17 the RVM volume was down following the service reduction and in FY18 OCTA redeployed some of the service hours that had been used.
- The percent deadhead time (or unproductive driving time with no revenue passengers) was up almost 20% over the audit period for Fixed-route operated service likely due to deadheading the vehicles to two bases (Garden Grove and Santa Ana) instead of three (Anaheim, Garden Grove and Santa Ana) following the two service changes in FY16 and FY17.
- OCTA has a standard of no more than one vehicle accident per 100,000 miles for directly operated Fixed-route. It is the same standard for contracted Fixed-route and for ACCESS. All three modes met their standard for safety during the audit period. The number of bus crashes was 90 in FY15, but has climbed into the three digits in each of the audit period years. Contracted Fixed-route safety performance is typically the best, followed by ACCESS, followed by directly operated Fixed-route. In **Table 5-10**, Preventable Crashes per 100,000 Total Vehicle Miles were up 39.2% during the audit period, which means even though the standard may be met, the increase in total accidents is something to be watched.
- On time performance (OTP) requires buses to depart between zero minutes early and five minutes late 85% of the time. On time performance has traditionally been quite good for directly operated service, exceeding the 85% goal, except for FY2018 where it was just under at 84.9%. The automatic vehicle location (AVL) system provides continuous information and enables OCTA to track on-time performance both overall, and for specific time segments.
- In February 2018, Transit reversed an OTP measurement change in response to an Internal Audit report, retroactive to 2016. The alternative methodology, in effect for two years, increased the OTP window by 30 seconds to accommodate near-sided stop scenarios. However, it was determined this was more than offset by the higher proportion of late-sided stops and thus, benefiting both

directly operated and contract operations. Moving forward, OTP measurement at intersections will remain at zero to five minutes as originally defined.

Table 5-11 – Directly Operated Fixed-route Bus, Vehicle Operations Performance Indicators, FY 2015 to FY 2018

Base Data and	Base Year	Audit Review Period			% Change
Performance Indicators	**FY15**	**FY16**	**FY17**	**FY18**	**FY15-FY18**
Vehicle Operations FTEs	774.9	716.7	703.3	654.1	-15.6%
Vehicle Operations Costs	$90,577,376	$84,126,677	$79,545,357	$78,141,078	-13.7%
Total Operator Pay Costs	$34,555,114	$33,626,183	$32,122,228	$35,991,876	4.2%
Revenue Vehicle Hours (RVH)	1,123,164	1,043,728	987,471	956,029	-14.9%
Revenue Vehicle Miles (RVM)	13,202,024	12,287,765	11,688,772	11,312,975	-14.3%
Scheduled Revenue Vehicle Miles	13,210,382	12,296,650	11,693,743	11,319,824	-14.3%
Total Vehicle Hours	1,226,398	1,139,676	1,093,742	1,062,918	-13.3%
Total Vehicle Miles	15,804,505	14,627,491	13,927,507	13,479,770	-14.7%
Bus Crashes	90	104	125	107	18.8%
Unlinked Passenger Trips	37,834,362	32,380,916	28,023,916	27,037,277	-28.5%
Passenger Miles	132,835,362	111,351,940	95,812,598	105,676,528	-20.4%
RVH per Operations FTE	1,450	1,456	1,404	1,462	0.8%
Operator Pay Cost as % of Vehicle Operations Costs	38.1%	40.0%	40.4%	46.1%	20.7%
Revenue Vehicle Hours / Total Vehicle Hours	91.6%	91.6%	90.3%	89.9%	-1.8%
% Deadhead Time	8.4%	8.4%	9.7%	10.1%	19.5%
Unmet Scheduled RVM	8,358	8,885	4,971	6,849	-18.1%
Revenue Vehicle Miles / Total Vehicle Miles	83.5%	84.0%	83.9%	83.9%	0.5%
Vehicle Operations Cost per RVH	$80.64	$80.60	$80.55	$81.74	1.4%
Vehicle Operations Cost per Passenger Trip	$2.39	$2.60	$2.84	$2.89	20.7%
Vehicle Operations Cost per Passenger Mile	$0.68	$0.76	$0.83	$0.74	8.4%
Average Passenger Miles per Passenger Trip	3.5	3.4	3.4	3.9	11.3%
Preventable Crashes per 100,000 Total Vehicle Miles	0.57	0.71	0.90	0.79	39.2%
Average Service Speed	38.5	37.1	35.2	35.6	-7.4%
On-Time Performance	86.7%	86.1%	85.8%	84.9%	-2.0%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

Sources: NTD Reports, Budgets, CAFRs, Transit Division Quarterly Performance Measurement Reports

Generally, the vehicle maintenance indicators as shown in **Table 5-12** remained relatively steady over the audit period. Noteworthy changes in maintenance indicators include:

- Significant drops in the aggregate numbers of maintenance FTEs, maintenance costs, peak and total vehicles, and roadcalls occurred as OCTA implemented its OC Bus 360 program and shifted service to purchased transportation.
- OCTA replaced aging articulated diesel buses with 60-foot CNG buses and replaced over 200 LNG buses with CNG buses. OCTA also conducted a significant number of engine overhauls.
- The most significant reliability measure is miles between roadcalls. OCTA's standard for miles between roadcalls is 14,000, meaning each revenue vehicle regardless of vehicle type is expected to run 14,000 miles for each roadcall. For directly operated service, reliability of the fleet varied

substantially. The worst performance of the audit period was in FY16, when the number of engine-related, electrical and charging system failures impacted reliability (11,371 miles between roadcalls). At that time, the fleet included 2000 and 2001 vintage LNG buses that were becoming more unreliable (as well as becoming costlier for parts). Many vehicles were approaching mid-life intervals which contributed to the numbers as well. Reliability during FY17 and FY18 has been much improved, owing no doubt to the CNG vehicle replacements and to the replacement of engines.

- Maintenance labor costs calculated per mile and per maintenance FTE increased 18.4% and 22.0%, respectively, significantly over the 8.4% CPI change. Despite these increases, retention and recruiting in the maintenance ranks remained a challenge during the audit period.
- The cost of parts per vehicle was steady in FY15 and FY16, then dropped significantly in FY17 and FY18. The total drop was over 32%, a very good trend. The main culprit for the higher cost for parts was the older LNG buses OCTA was using in the first two years. In addition, OCTA faced obsolescence issues and in some cases had to manufacture vaporizers when the supplier could no longer provide them. Another contributing factor was the number of buses and equipment under warranty in FY18.
- The spare ratio is calculated as the difference between the active fleet and the peak fleet divided by the peak fleet. The data are taken from OCTA's NTD which identifies Vehicles Available for Maximum Service and Vehicles Operated in Maximum Service for each year. For directly operated fixed-route service the spare ratio increased from 15.1% in FY15 to 19.6% in FY18. FTA guidance is to keep the ratio below 20%. During FY17, OCTA's spare ratio fell to 8.7% due to the decision to retire 40 2000-01 LNG buses from the fleet following the October 2016 service change. The buses were operating several years over their useful lives; OCTA was eager to retire the buses given their poor reliability and increasing cost to maintain.

Table 5-12 – Directly Operated Fixed-route Bus, Vehicle Maintenance Performance Indicators FY 2015 to FY 2018

Base Data and	Base Year	Audit Review Period			% Change
Performance Indicators	**FY15**	**FY16**	**FY17**	**FY18**	**FY15-FY18**
Maintenance FTEs	184.1	170.1	167.0	152.4	-17.2%
Maintenance Costs	$31,401,550	$29,579,933	$26,580,162	$26,918,297	-14.3%
Maintenance Labor Costs	$10,728,133	$10,239,975	$10,260,051	$10,837,647	1.0%
Maintenance Parts Costs	$6,878,908	$6,747,436	$4,209,152	$3,899,440	-43.3%
Total Vehicle Hours	1,226,398	1,139,676	1,093,742	1,062,918	-13.3%
Total Vehicle Miles	15,804,505	14,627,491	13,927,507	13,479,770	-14.7%
Peak Vehicles	299	272	263	240	-19.7%
Total Vehicles	344	317	286	287	-16.6%
Roadcalls, Mechanical (Valid Calls Only)	1,183	1,286	963	998	-15.7%
Vehicle Hours per Maintenance FTE	6,661	6,700	6,549	6,974	4.7%
Vehicle Miles per Maintenance FTE	85,836	85,991	83,397	88,449	3.0%
Vehicles per Maintenance FTE	1.87	1.86	1.71	1.88	0.8%
Maintenance Labor Cost as % of Maint. Costs	34.2%	34.6%	38.6%	40.3%	17.8%
Maintenance Cost per Vehicle Hour	$25.60	$25.95	$24.30	$25.32	-1.1%
Maintenance Cost per Vehicle Mile	$1.99	$2.02	$1.91	$2.00	0.5%
Maintenance Cost per Active Vehicle	$91,284	$93,312	$92,938	$93,792	2.7%
Maintenance Labor Cost per Total Vehicle Mile	$0.68	$0.70	$0.74	$0.80	18.4%
Maintenance Labor Cost per Maintenance FTE	$58,265	$60,198	$61,436	$71,112	22.0%
Parts Cost / Total Vehicles	$19,996.83	$21,285.29	$14,717.31	$13,586.90	-32.1%

Base Data and Performance Indicators	Base Year FY15	Audit Review Period			% Change FY15-FY18
		FY16	FY17	FY18	
Average Miles per Vehicle	45,943	46,144	48,698	46,968	2.2%
Total Vehicle Miles Between Roadcalls	13,356	11,371	14,464	13,512	1.2%
Vehicle Hours per Active Vehicle	3,565	3,595	3,824	3,704	3.9%
Vehicle Miles per Active Vehicle	45,943	46,144	48,698	46,968	2.2%
Spare Ratio	15.1%	16.5%	8.7%	19.6%	30.1%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

Sources: NTD Reports, Budgets, CAFRs, Fleet Reports, Transit Division Quarterly Performance Measurement Reports

OCTA did conduct a maintenance study during the audit period in 2017. The scope was multi-faceted, including review of OCTA's preventive maintenance program, major maintenance and midlife overhaul program, useful life and fleet replacement, and contingency fleet performance and best practices. Of these, the useful life and fleet replacement component was somewhat controversial and future research is recommended given OCTA's decision to move to an 18-year bus life and the upcoming zero emissions requirements.

As expected, Administration performance indicators shown in **Table 5-13** fluctuated less than the operations and maintenance performance indicators.

- During the audit period, fixed-route administration costs diminished 3.4% in line with FTE reductions (3.9% decrease). Efficiency and effectiveness indicators per Administration FTE were adversely affected by the reduction in service. This inconsistency is a result of OCTA's need to retain administrative staff for oversight. Administration staff is not as linearly proportional or elastic to changes in service provision, as are operators or mechanics and service workers.
- Passenger complaints per 100,000 boardings decreased 13.7% from 4.36 to 3.76. The standard used by OCTA for directly operated service is one complaint per 20,000 boardings. OCTA met this standard for each quarter every quarter of each of the audit period, with exception of the first quarter of FY16. The performance was remarkably stable between FY2015-2017. The customer satisfaction performance for FY18 is commendable.

Table 5-13 – Directly Operated Fixed-route Bus, Administration Performance Indicators FY 2015 to FY 2018

Base Data and Performance Indicators	Base Year FY15	Audit Review Period			% Change FY15-FY18
		FY16	FY17	FY18	
Administration FTEs	104.1	102.1	107.0	100.1	-3.9%
Administration Costs	$22,989,181	$28,517,096	$24,512,680	$22,217,623	-3.4%
Revenue Vehicle Hours	1,123,164	1,043,728	987,471	956,029	-14.9%
Revenue Vehicle Miles	13,202,024	12,287,765	11,688,772	11,312,975	-14.3%
Revenue Vehicle Hours per Administration FTE	10,785	10,225	9,225	9,549	-11.5%
Revenue Vehicle Miles per Administration FTE	126,773	120,378	109,193	112,998	-10.9%
Complaints per 100,000 Boardings	4.36	4.39	4.37	3.76	-13.7%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

5.3.2. CONTRACTED FIXED-ROUTE SERVICE

OCTA's contracted fixed-route service is operated by First Transit from OCTA's Sand Canyon base in Irvine, and since 2015, from OCTA's Anaheim base. The routes that operate from this base are primarily local routes in southern and northern Orange County, but also include commuter express routes and StationLink routes that provide connections for Metrolink commuters.

In 2015, OCTA entered into a four-year contract with two, 2-year options with First Transit to operate fixed-route commuter and regular bus service. At the beginning of the audit period, First Transit carried approximately 25% of OCTA fixed-route passengers with 35% of the revenue hours provided. At the end of the audit period, First Transit carried 31% of the passengers with 40% of the revenue hours provided. The CBP assumes that the current allocation of service between directly operated and contracted will remain the same for the foreseeable future.

Under the terms of the contact, OCTA pays a firm-fixed monthly rate plus a variable rate based on service levels. The contract establishes performance standards for on time performance, valid complaints, accidents, preventive maintenance, miles between road calls and missed trips. Incentives and penalties are applied depending on the achievement of the standards. The vehicles and facilities continue to be owned by OCTA therefore are considered OCTA assets.

For purchased transportation, the audit period saw significant increases in service provision and the number of passengers served, and operating cost increases (**Table 5-14**). Future audit periods should not experience such major changes. Cost efficiency, measured by the operating cost per revenue vehicle hour, improved 6.3% over the audit period. First Transit's operating cost per revenue vehicle hour was $99.01 in FY18. This is 61% of the $133.13 experienced by directly operated service.

Cost effectiveness, measured by the operating cost per passenger, improved 6.5%, due to the greater increase in passengers in the last several years in the audit period.

The productivity of purchased fixed-route service was flat on a revenue hour basis. However, when measured on a revenue mile basis, purchased fixed-route service productivity improved 10.2%. Passengers per revenue mile increased from 1.09 to 1.20. This increase is likely because of the denser nature of the Northern Orange County that First Transit is now serving.

Table 5-14 – Purchased Transportation Fixed-route Bus, TDA Performance Indicators FY 2015 to FY 2018

Verified TDA Statistics &	Base Year	Audit Review Period			% Change
Performance Indicators	**FY15**	**FY16**	**FY17**	**FY18**	**FY15-FY18**
Operating Costs	$51,294,366	$59,257,180	$62,126,861	$63,859,846	24.5%
Unlinked Passengers	9,187,083	10,890,617	11,930,930	12,237,469	33.2%
Revenue Vehicle Hours	485,358	580,876	640,742	644,993	32.9%
Revenue Vehicle Miles	8,466,497	9,830,906	10,301,780	10,228,495	20.8%
Operating Cost per Revenue Vehicle Hour	$105.68	$102.01	$96.96	$99.01	-6.3%
Operating Cost per Passenger	$5.58	$5.44	$5.21	$5.22	-6.5%
Passengers per Revenue Vehicle Hour	18.93	18.75	18.62	18.97	0.2%
Passengers per Revenue Vehicle Mile	1.09	1.11	1.16	1.20	10.3%

% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

(a) TDA operating costs exclude depreciation, charter, purchased transportation costs
Source: NTD Reports, State Controller Reports

Additional performance indicators for contracted fixed-route service are shown in **Table 5-15**. Noteworthy results include:

- The length of passenger trips increased by almost 11%, as OCTA began assigning longer routes to First Transit that were run from the Anaheim base. The percent of deadhead time was reduced 13.1%, improving cost efficiency.
- Preventable crashes per 100,000 total vehicle miles decreased by 65.2%, a wonderful trend.
- Complaints per 100,000 boardings decreased by 24.4%, indicating improved customer satisfaction with the services being provided by the operator.
- As First Transit has taken on more revenue hours and routes, on-time performance varied but for the most part remained under OCTA's 85% standard. An OCTA internal audit revealed an issue with the measurement of OTP that resulted in the contractor avoiding OTP penalties between March and December 2016. This has since been addressed. On-time performance should be tracked to ensure that the contractor meets OCTA's performance target of 85% and penalties be assessed for each full percentage below 84%.
- The average passenger fare decreased from $1.50 to $0.90. There could be different factors behind this decline including passenger sales revenue, interagency revenues, but it would make sense to examine the systemwide trends.

Table 5-15 – Purchased Transportation Fixed-route Bus, Additional Performance Indicators FY 2015 to FY 2018

Operations Data	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-FY18
Total Cost - Contracted Fixed Route	$51,294,366	$59,257,180	$62,126,861	$63,859,846	24.5%
Purchased Transportation Cost	$31,873,322	$33,427,029	$35,506,620	$37,245,064	16.9%
Revenue Vehicle Hours (RVH)	485,358	580,876	640,742	644,993	32.9%
Revenue Vehicle Miles (RVM)	6,412,449	7,560,704	8,071,108	8,045,204	25.5%
Total Vehicle Hours	565,961	669,369	731,125	736,092	30.1%
Total Vehicle Miles	8,466,497	9,830,906	10,301,780	10,228,495	20.8%
Unlinked Passenger Trips	9,187,083	10,890,617	11,930,930	12,237,469	33.2%
Passenger Miles	40,359,598	46,425,423	48,590,826	47,952,686	18.8%
Total Vehicles	226	240	242	259	14.6%
Purchased Transportation as a % of Total Costs	62.1%	56.4%	57.2%	58.3%	-6.1%
Total Vehicle Miles / Total Vehicles	37,462	40,962	42,569	39,492	5.4%
Passenger Miles per Passenger Trip	4.39	4.26	4.07	3.92	-10.8%
% Deadhead Time	14.2%	13.2%	12.4%	12.4%	-13.1%
Preventable Crashes per 100,000 Total Vehicle Miles	0.93	0.64	0.45	0.32	-65.2%
Complaints per 100,000 Boardings	14.51	18.39	13.62	10.98	-24.4%
Average Service Speed	34.9	34.49	33.34	32.65	-6.6%
On-Time Performance	N/A	84.6%	82.3%	83.7%	N/A
Average Passenger Fare	$1.50	$1.08	$0.97	$0.90	-40.3%

Operations Data	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-FY18
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

Source: NTD Reports

5.4. DEMAND RESPONSE OPERATIONS

In 1993, OCTA implemented ACCESS, which began providing complementary paratransit service for individuals unable to use the fixed route system. This service was mandated by the Americans with Disabilities Act (ADA) of 1990. The service is based on advanced reservation for persons who have been certified as ADA eligible.

In Orange County, three types of service are available to ADA-eligible ACCESS riders:

- Standard curb-to-curb service – provided within ¾-mile of the OC Bus Service
- Subscription service – provided for customers who travel consistently on specific days of the week/time/destination
- Same-day taxi service (SDT) – provided as a non-ADA service to supplement conventional ACCESS

OCTA provides ACCESS services through a contract with MV Transportation, Inc. (MV) and its subcontractor, Yellow Cab of Greater Orange County (Yellow Cab). OCTA directly contracts with another taxi company to provide non-ADA same-day taxi service. The MV contract is typically a competitively-bid contract and the service provider is paid by the operator a fixed monthly rate plus a variable rate based on RVH, as it is for the fixed-route contracted service. OCTA provides a fleet of 248 for paratransit services and has kept this number during the audit period. OCTA aims to maintain a fixed fleet size and accommodate additional demand through use of the MV subcontract with Yellow Cab. Additionally, any trips provided by SDT in lieu of prioritizing the trip on ACCESS also helps manage the demand for ACCESS trips. The aim is to create more efficiencies in providing services without requiring additional OCTA-owned vehicles.

MV was contracted for operations from July 1, 2013 through June 30, 2017 with two two-year option terms. The maximum obligation for the contract is $156,690,376. OCTA pays MV a fixed monthly rate plus a variable rate per revenue vehicle hour (RVH) as well as Yellow Cab's per-trip rate for supplemental service. OCTA exercised the first option term in June 2017 to extend the contract to June 2019 (the maximum obligation at the time was increased by $90,982,108).

OCTA assesses the performance of the contractor providing services on a quarterly basis. As established in the contractual agreement, OCTA assesses both incentives and penalties based on performance in a variety of categories. For FY 2018, $73,300 in penalties were assessed to the contractor for issues such as: customer comments; call center hold times; excessively late trips; unreported accidents; and preventive maintenance issues.

OCTA has observed trends seen across the country, with a growing elderly population and a budget not proportionate to this trend. The OCTA's Transit Master Plan notes that 72% of ACCESS rides are made by customers under the age of 65. In Orange County, the growing senior population and the growing number of disabled working-age adults are both factors in the increase of paratransit demand. In response to growing demands, OCTA amended MV's contract to both increase its maximum obligation for contracted services with MV in FY16 and reimburse MV for increased call center services for same-day taxi in FY18.

Working with MV, OCTA has continued to move towards creating solutions to maintain and improve ACCESS service quality and cost effectiveness. Some of these include:

- OCTA has ramped up internal auditing of contractors both from the administrative and service perspective:
    - Administratively, OCTA has made it a priority to review training files of new employees (drivers, dispatchers, road supervisors, etc.) to ensure proficiency, review phone calls to ensure there are no service denials (Trapeze does not keep track of this information), and that a selection of complaints is investigated for appropriate conduct and actions.
    - Service-wise, OCTA has started a route efficiency review of traditional paratransit routes to identify inefficiencies in routing.
- As a growth management strategy, OCTA oversees and funds programs designed to provide alternatives and mitigate the cost of conventional ACCESS service for seniors and persons with disabilities. Same-day taxi service is scheduled the day and time a customer wishes to travel. The fare is the same as the ACCESS fare (currently $3.60) for a five-mile ride and OCTA subsidizes the rest of the trip. Any costs beyond the five-mile ride are to be paid by the OC ACCESS customer.

Operating costs per passenger for demand response using traditional vehicles is about ten times higher than for the demand taxi service, as shown in **Table 5-16**:

Table 5-16 – Demand Response, Operating Cost per Passenger FY 2015 to FY 2018

Data	Base Year	Audit Review Period			% Change FY15-18
	FY15	FY16	FY17	FY18	
Demand Response (Paratransit) Operating Cost per Passenger	$40.81	$43.81	$44.56	$45.41	11.3%
Demand Taxi Operating Cost per Passenger	$3.78	$4.11	$4.11	$4.19	10.8%

Source: NTD Reports

Table 5-17 illustrates recent performance trends for demand response. During the audit period, OCTA observed higher operating costs (up 6.9%, a little below inflation of 8.4%), and experienced small declines in the number of passengers, revenue vehicle hours and revenue vehicle miles. The big drop in ridership (about 175,000 passengers) occurred between FY16 and FY17, and ridership increased a little in FY18 to about 1.6 million passengers.

Between FY15 and FY18, the operating cost per revenue vehicle hour increased by 9.0%, just above inflation rate. Operating cost per passenger increased at a higher rate, 11.3%, largely due to the decrease in overall number of passengers between FY15 and FY18.

The productivity of the ACCESS service provided, measured by passengers per revenue hour and per revenue miles decreased by 2.0% and 0.9%, respectively. This trend aligns with the decrease in unlinked passenger trips for OCTA's demand response services.

Table 5-17 – Demand Response, TDA Performance Indicators FY 2015 to FY 2018

Verified TDA Statistics & Performance Indicators	Base Year FY15	Audit Review Period FY16	FY17	FY18	% Change FY15-FY18
Operating Costs	$69,971,526	$78,207,672	$71,814,545	$74,799,254	6.9%
Unlinked Passengers	1,714,587	1,785,322	1,611,573	1,647,378	-3.9%
Revenue Vehicle Hours	759,596	755,241	727,265	744,746	-2.0%
Revenue Vehicle Miles	12,350,858	12,625,832	11,934,186	11,969,770	-3.1%
Operating Cost per Revenue Vehicle Hour	$92.12	$103.55	$98.75	$100.44	9.0%
Operating Cost per Passenger	$40.81	$43.81	$44.56	$45.41	11.3%
Passengers per Revenue Vehicle Hour	2.26	2.36	2.22	2.21	-2.0%
Passengers per Revenue Vehicle Mile	0.14	0.14	0.14	0.14	-0.9%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

(a) TDA operating costs exclude depreciation, charter, purchased transportation costs
Source: NTD Reports

OCTA's demand response farebox recovery was stable during the audit period, at around 9.0%. Farebox revenues kept pace with operating costs.

Table 5-18 – Demand Response, TDA Performance Indicators FY 2015 to FY 2018

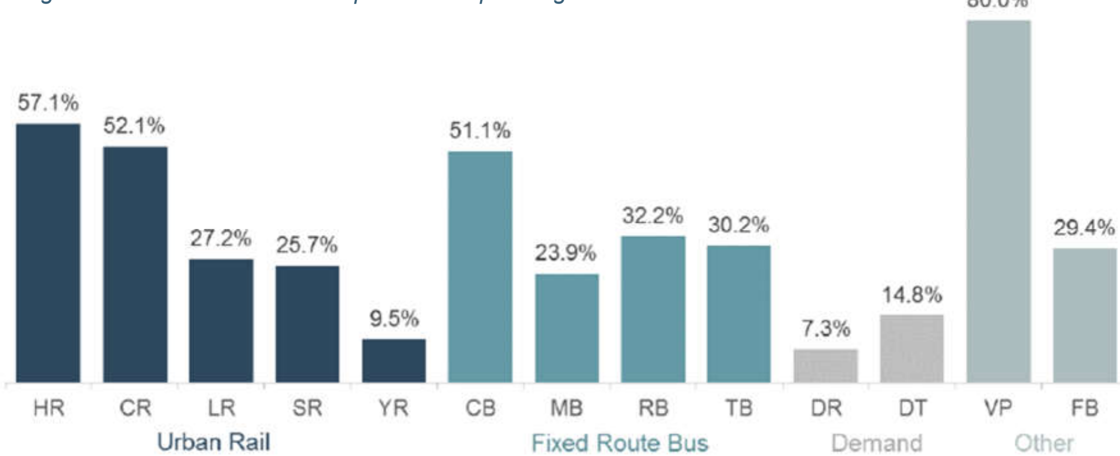
Date Item and Farebox Ratio	Base Year FY15	Audit Review Period FY16	FY17	FY18	% Change FY15-FY18
Farebox Revenues	$6,370,238	$6,614,234	$6,986,942	$6,758,066	6.1%
Operating Costs	$69,971,526	$78,207,672	$71,814,545	$74,799,254	6.9%
TDA Farebox Recovery Ratio (no local funds)	9.1%	8.5%	9.7%	9.0%	-0.8%

Source: NTD Reports

According to the National Transit Database's 2016 National Transit Summary and Trends, the average farebox recovery ratio for demand response services nationally was 7.3% and for demand response-taxi was 14.8%. OCTA's performance exceeds the national average for demand response farebox recovery ratio by almost 20%.

Figure 5-3 below is a graphic showing these national statistics. "DR" means Demand Response and "DT" Demand Taxi.

Figure 5-3 – 2016 Fares as Proportion of Operating Costs



Additional performance indicators for demand response are provided in **Table 5-19**.

- Vehicle productivity, measured by the total vehicle miles divided by total vehicles, grew almost 13% over the audit period. This is because of the reduction in total current number of vehicles available for service diminished to just over 500, when it was a little over 600 at the end of FY16.
- OCTA can be commended for continuing to maintain and improve customer satisfaction. The standard for complaints is one per 667 boardings. Complaints per 1,000 passengers decreased by 29.7% from the base year. This statistic is likely a direct result from OCTA continuing to foster best practices regarding customer satisfaction. Recent initiatives included increasing the number of (random) phone and field observations for the demand response service, focusing on customer satisfaction.
- The accident rate increased 18.7% over the three-year audit period, with most of the increase occurring in FY17. The demand response service is considered very safe and well under the standard of one accident per 100,000 miles. Given the recent uptick in accidents, OCTA ought to have a discussion with its contractor to ensure adherence to all safety precautions.
- Average passenger fare from FY15 to FY18 increased by 10.4%, a bit higher than inflation. In February 2013, demand response fare increased to $3.60. The higher number is likely due to the increase in trips being provided by the same-day taxi services, which are non-ADA demand response services. This specific service is $3.60 for a five-mile trip, any costs beyond the five miles are paid by the ACCESS customer.

Table 5-19 – Demand Response, Additional Performance Indicators FY 2015 to FY 2018

Operations Data	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-18
Total Cost – Demand Response	$69,971,526	$78,207,672	$71,814,545	$74,799,254	6.9%
Revenue Vehicle Hours (RVH)	759,596	755,241	727,265	744,746	-2.0%
Revenue Vehicle Miles (RVM)	12,350,858	12,625,832	11,934,186	11,969,770	-3.1%
Total Vehicle Hours	819,018	832,363	797,877	809,726	-1.1%
Total Vehicle Miles	13,428,521	13,887,489	13,125,622	13,149,842	-2.1%
Unlinked Passenger Trips	1,714,587	1,785,322	1,611,573	1,647,378	-3.9%

Operations Data	Base Year	Audit Review Period			% Change
	FY15	FY16	FY17	FY18	FY15-18
Passenger Miles	18,576,158	19,272,050	17,066,532	17,054,557	-8.2%
Total Vehicles	579	601	513	502	-13.3%
Performance Indicators					
Total Vehicle Miles / Total Vehicles	23,192.6	23,107.3	25,586.0	26,194.9	12.9%
Passenger Miles per Passenger Trip	10.8	10.8	10.6	10.35	-4.4%
% Deadhead Time	9.2%	11.3%	11.9%	11.9%	28.4%
Accidents per 100,000 Total Vehicle Miles	0.48	0.38	0.73	0.57	18.7%
Complaints per 1,000 Psgr Trips	1.48	0.99	1.12	1.04	-29.7%
On-Time Performance	94.5%	94.5%	95.0%	94.4%	-0.1%
Average Passenger Fare	$3.72	$3.70	$4.34	$4.10	10.4%
% Change in Consumer Price Index (CPI-All)		1.9%	2.8%	3.5%	8.4%

Source: NTD Reports, OCTA Transit Performance Measures Detailed Reports

6. RECOMMENDATIONS

Findings documented in previous sections of the performance audit indicate areas of positive performance as well as opportunities for improved compliance and improved effectiveness, efficiency, and economy of operations. More detailed recommendations are offered here to capitalize on improvement opportunities. Rather than viewing the recommendations as negative, they should be balanced against OCTA's many positive performance results during the performance audit review period, noted throughout this report.

The following recommendations are provided for consideration by OCTA:

Recommendation 1: Continue to Improve Compliance with PUC Requirements from Changes in State TDA Law

- **Understanding of the Issue:** OCTA is fully in compliance with all PUC requirements, however there are actions that OCTA could take to improve the reporting of TDA.
- **Recommended Action:** It is recommended that OCTA consider implementing the following recommendations to improve compliance with PUC requirements for administering TDA funds:
  a) Document the Operator Qualifying Criteria to use State Transit Assistance for operations:
     - OCTA conducts the eligibility test using audited performance and fiscal data. The results of eligibility and proportion of STA that can be allocated for transit operations and capital should be included in the staff report for STA allocations.
     - The operator qualifying criteria (i.e., eligibility test) should be described in the OCTA TDA Guidelines with an example of its application.

  b) OCTA should update its Standard Assurances in the LTF claim to reflect TDA amendments from State legislation:
     - Changes to TDA were made from State legislation passed during the audit period. SB 508 (October 2015) and AB 1113 (July 2017) both included new provisions affecting operator compliance with State statute. These provisions include farebox recovery thresholds, and timelines for submittal of reports to the State Controller's Office.

       The Standard Assurances checklist in the OCTA LTF claim form identifies several TDA compliance areas that OCTD signs off as conditions of receiving LTF revenue. The current checklist shows farebox and local support ratios that are no longer applicable such as conforming to thresholds set from the base FY 1978-79 year. The new laws deleted these older ratios and only require OCTD to meet a 20% fare and local support ratio. In addition, the new law extended the timeline to submit the 90-day annual report to the State Controller to 7 months. These changes should be made to be consistent with the TDA statute.
- **Expected Results:** OCTA should demonstrate improved reporting of recent changes to state TDA law including improvements to its TDA Guidelines, and greater formatting consistency with the claims forms.

MANAGEMENT RESPONSE (F&A):

OCTA staff will document the calculations used to determine the portion of STA funds to be allocated for operations and capital and will include the allocated amounts for operations and capital in the staff report. In addition, OCTA staff will update the OCTA TDA Guidelines to reflect the operator qualifying criteria. Staff will also update the OCTA LTF claim form to be consistent with TDA statute based on the passage of SB 508 and AB 1113.

Recommendation 2: Seek Opportunities to Increase Ridership

- **Issue/Opportunity:** Ridership growth is no longer tied to the health of the regional economy. OCTA's ridership fell significantly from FY15 to FY18, by about 16%. Ridership, however, appears to have stabilized in FY18. While it's too early to predict a bottoming out effect, the combined effects of OC Bus 360 also appear to have "right sized" the service for today's environment. Other initiatives such as mobile ticketing, OC Flex and college partnerships show promise. Reduced ridership negatively affects OCTA's mission. Seeking opportunities to increase ridership ought to continue during the next audit period.
- **Recommended Actions:** Proposed next steps include:
  a) Play out OC 360 bus strategy and implementation
  b) Document efficacy of alternative ridership boosting strategies (college passes, mobile ticketing, etc.)
  c) Determine ridership measurement approach for OC Flex and consider expansion of the program
  d) Strengthen regional partnerships by collaborating on plans for increased intercounty transit trips between OC, Riverside, San Bernardino, and Los Angeles counties.
- The **Expected Results:** Ridership growth should be observed during the next audit period, as a result of strategically planned reallocations in OCTA services, increased college student ridership, intercounty trips and increased system integration.

MANAGEMENT RESPONSE (Operations/Planning):

a) OCTA continues to implement additional strategies consistent with the OC Bus 360 initiative. Recent examples are the updated mobile ticket app, expanded college pass program, and additional Project V grants. Staff is proposing additional bus service reallocation in FY19-20.

b) OCTA will continue to report ridership in the quarterly performance measures report presented by Operations and the twice annual OC Bus 360 update. Where possible, staff will highlight how specific efforts have impacted ridership. An example is ridership growth attributed to route improvements or the college pass program. Some efforts including rebranding, marketing, and mobile ticketing are difficult to measure ridership impacts. OCTA will continue to compare ridership to peer agencies to determine overall if local strategies are collectively effective.

c) OCTA management will provide the OCTA Board with a review of the pilot program in early 2020 and evaluate how this micro-transit service model can be used to supplement OCTA's existing bus system network, which could include the continuation of the service, the expansion of the service, reconfiguration of the current service provided, or a discontinuation of the service.

d) OCTA works will the neighboring counties on regional transit issues. Examples include active participation in regional transit coordination meetings, participation in the SCAG Regional Transit TAC, and assistance is planning studies for neighboring agencies. OCTA will be conducting a LA-OC county transit connections study starting in 2019. This study will develop recommendations to coordinate both short and long-term transit projects between the counties. OCTA also participates in the Metrolink service planning and regional vanpool programs which have had the most success in growing intercounty transit trips.

Recommendation 3: Maximize Local Support Revenues

- **Issue/Opportunity:** OCTA uses Low Carbon Transit Operations Program (LCTOP) as part of its fare revenue assumptions. OCTA offers promotions to its riders and offsets the lost revenue with LCTOP dollars. For example, an all-day ticket normally costing $5 is offered at $4 and backfilled with $1 of LCTOP funding. A similar process is performed with some passes. In FY18, OCTA received $3.34 Million in LCTOP funds, and used about one quarter of it, $886,000, for fare revenue subsidies. Initially, one of the intents of the LCTOP legislation was that it would be legitimate to use it as a fare subsidy. LCTOP is a state revenue but incorporating as a local revenue is a grey area with arguments on both sides. It is possible that in the future, the use of LCTOP in the calculation of farebox recovery will no longer be accepted. Local support revenues include those identified in the TDA statute: auxiliary transportation revenues, taxes levied directly by transit system, local cash grants and reimbursements, local special fare assistance and subsidy from other sectors of operation.
- **Recommended Actions:** OCTA should continue to develop an aggressive program to pursue local support revenues because state legislation SB 508 is now allowing local funds to be used in the calculation of farebox recovery.
- **Expected Results:** Maximization of local support revenues.

MANAGEMENT RESPONSE (F&A):

OCTA staff has been and will continue to seek additional local funds to support farebox revenue for the bus system. OCTA currently augments farebox revenue with local revenues such as property tax, advertising, fare stabilization funds and LCTOP funds. OCTA staff will continue to seek local funds to support farebox revenue to the extent additional sources become available and are eligible under SB508.

Recommendation 4: Document Sources for Farebox Recovery Ratio

- **Issue/Opportunity:** SB 508 marked a paradigm shift in how OCTA reports its farebox recovery ratio and potentially, impacting how often OCTA increases its fares. This TDA audit found consistent differences with what was included in the numerator and denominator for farebox recovery calculations between Performance Measurements Reporting (i.e., Quarterly reports) and data submitted to the National Transit Database. These differences are neither right nor wrong but it important to understand what they are. TDA's definitions are different than Federal definitions, so what ends up being included as Farebox Revenues (numerator) and Operating Cost (denominator) are different. LCTOP funds are included in Fare Revenue for Performance Measurements, but not for NTD reporting. Advertising revenue is considered a local fund for Performance Measurements but is considered a Directly Generated Fund for NTD reporting. The overall magnitude of the difference is typically under 4%, so up to a percentage point on a 25% farebox recovery.
- **Recommended Actions:** Update the TDA guidelines to identify the sources of data used in the calculation of farebox recovery and document these sources in applicable reports. OCTA also ought to annually revisit the fare increase assumptions, beyond the current CBP assumption of 2023 for the next increase.
- **Expected Results:** Clearer references for TDA rules and regulations and audit purposes.

MANAGEMENT RESPONSE (F&A):

Staff will update OCTA TDA guidelines to identify the revenue and expense sources used to calculate the farebox recovery ratio. OCTA staff revisits all revenue and expenditure assumptions for the bus program on an annual basis, which includes the timing and amount of any planned fare increase for the following 20-year period.

Recommendation 5: Plan for Impacts of Longer Bus Lives and Clean Fleet

- **Issue/Opportunity:** During the completion of the Transit Asset Management Plan in 2018, OCTA revisited Useful Life Benchmarks (ULBs) including for its fleet. A decision to move to 18 years was made (up from the 14-year baseline). This assumption was carried forward in the Comprehensive Business Plan. Since that time, OCTA has backed off a little with the vision for a gradual increase of the bus fleet age, continuing to retire current vintage buses at 14 years but gradually increase to 15, 16, and 18 years to minimize risk. Separately, the California Air Resources Board (CARB) has issued new regulations requiring aggressive compliance to zero emissions fleets. There are significant trade-offs with the new fleet types (e.g., hydrogen fuel cell versus electric battery) including charge times and operational ranges. OCTA has not yet determined a course of action for this fleet change or a technology.
- **Recommended Actions:** There are two elements to this recommendation. Since the two elements are linked, it will behoove OCTA to conduct them in coordination with one another.
    a) For a definitive resolution to fleet Useful Life Benchmarks, OCTA ought to build on existing work to document a strategic Fleet Plan and related documents supported by executive staff. The Fleet Plan ought to have a clear retirement plan year for each revenue vehicle in the inventory. The supporting analysis should carefully document what is included in a midlife interval and what components of the vehicle the midlife refers to. It should assess lifecycle cost data, including timing and number of midlife intervals for each fleet (for example, one midlife at 6 years, and a second one at 12 years). The analysis should address the tradeoff with fuller rebuild or restauration procedures. The lifecycle cost analysis should include full capture of maintenance costs between 12 years and the retirement time at 14-18 years (labor, cost of roadcalls and full cost of obsolescence for parts). The study ought to also recommend procurement strategies advantageous to OCTA such as potentially hardening specifications to increase warranty beyond 12 years for certain components or slowing down vehicle delivery schedules.
    b) OCTA should develop an initial fleet and facility management plan reflecting current available and expected technology choices to address the expected technology mix (i.e., CNG, hydrogen, electric battery). This broad OCTA plan ought to investigate tradeoffs between the technologies (fuel cell, battery), operational compatibility, infrastructure lifecycle cost, vehicle lifecycle cost, and other factors (e.g., training, fire protection, and other safety considerations) before recommending a fleet mix and the timing for acquisitions. The study should include reaching out to operator peers who have had experience with longer lived buses and zero emissions technologies. In addition, CARB requires a separate plan for compliance by July 2020.
- **Expected Results:** Compliance with CARB requirements; management buy-in; updated Fleet Plan and Facility Management Plan, early assumptions input into CBP.

MANAGEMENT RESPONSE (Planning):

a. The Board approved OCTA's first Transit Asset Management Plan in 2018. Elements of this plan will be updated annually including the 20-Year Fleet Outlook. A new "Fleet Plan" as suggested would be duplicative of these efforts. Staff concurs that a data-driven analysis on the cost of keeping buses for 18 years would help determine if extending the useful life was cost effective. Staff intends to collect data on maintenance costs during years 14 thru 18 to help inform future decisions.

b. OCTA will be developing a Zero-Emission Bus Rollout Plan before July 1, 2020 as required by the California Air Resources Board. The recommended actions will be addressed in this plan. It is important to note that OCTA has plans to operate a small sub fleet of both hydrogen fuel-cell and battery electric buses to gain local experience on both technologies.

Recommendation 6: Demand Response – Set Up Recurring Route Efficiency Review Process

- **Issue/Opportunity:** Paratransit services, due to their inherent built-in flexibility in scheduling, have the opportunity to gain inefficiencies with scheduled pick-ups. Recently, OCTA has conducted a route efficiency review for established paratransit routes, and up to ten have been identified as having opportunities for restructuring. The opportunity is to instill a regular route efficiency review process.
- **Recommended Actions:** Develop recurring route efficiency review process. Determine appropriate level of engagement by OCTA and by the contractor staff to generate supporting data and analysis. Document results and implement changes accordingly.
- **Expected Results:** Increased efficiency and effectiveness for demand response services.

MANAGEMENT RESPONSE (Operations):

As mentioned in the report, a route review has already been initiated. Staff will complete this and schedule route reviews on a regular basis going forward.

Recommendation 7: Demand Response – Consider a Different Contracting Model

- **Issue/Opportunity:** Currently, OCTA limits the number of demand response services to a single contractor. The contractor, then, can hire subcontractors as is the case currently with same-day taxi service. Having multiple contractors (potentially based on geography of the county), could promote service efficiencies and grant OCTA more control.
- **Recommended Actions:** Proposed next steps include:
  a) Benchmarking/limited industry review to investigate precedents and lessons learned
  b) Assess cost benefits of working directly with multiple contractors
  c) Depending on the outcome, build into the next contract the ability for OCTA to make adjustments to the contracting model
- **Expected Results:** OCTA should observe a more competitive overall cost for service. Another potential for results is the ability for the contractor to provide more trips.

MANAGEMENT RESPONSE (Operations/Planning):

OCTA will be developing a "Paratransit Sustainability Strategy" in FY19-20. This effort will include reviews of operation policies and outcomes for peer paratransit agencies. The current agreement for the provision of OC ACCESS services will expire on June 20, 2020. Over the next few months, OCTA will be developing a scope of work for this procurement and will consider the impacts of changing the method of compensation as well as the role that multiple contractors could play in delivery of the service going forward.