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## REGIONAL TRANSPORTATION DISTRICT



DECEMBER 2020

PERFORMANCE AUDIT

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# OFFICE OF THE STATE AUDITOR



December 23, 2020

DIANNE E. RAY, CPA  
—  
STATE AUDITOR

Members of the Legislative Audit Committee:

This report contains the results of a performance audit of the Regional Transportation District (RTD). The audit was conducted pursuant to Section 32-9-115(3), C.R.S., which requires a performance audit of RTD at least once every 5 years to determine whether the district is effectively and efficiently fulfilling its statutory obligations, and pursuant to Section 2-3-103, C.R.S., which authorizes the State Auditor to conduct audits of all departments, institutions, and agencies of state government. The report presents our findings, conclusions, and recommendations, along with RTD's responses.

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# CONTENTS



Report Highlights	1
<b>CHAPTER 1</b>	
<b>OVERVIEW</b>	<b>3</b>
Services	4
Response to COVID-19 Pandemic	5
Administration	6
Oversight	7
Revenue and Expenses	7
Audit Purpose, Scope, and Methodology	9
<b>CHAPTER 2</b>	
<b>OPERATOR TURNOVER</b>	<b>15</b>
General Reasons for Operator Turnover	20
RTD Initiatives to Address Operator Turnover	21
Supervisory Practices	27
RECOMMENDATION 1	34
Rest Breaks for Bus Operators	38
RECOMMENDATION 2	44
Bus Operator Schedules	46
RECOMMENDATION 3	56
Use of Internal Audit Function to Improve Operations	58
RECOMMENDATION 4	71
<b>CHAPTER 3</b>	
<b>RTD'S FAREBOX RECOVERY RATIO</b>	<b>75</b>
RECOMMENDATION 5	82



# REPORT HIGHLIGHTS



## REGIONAL TRANSPORTATION DISTRICT PERFORMANCE AUDIT, DECEMBER 2020

**KEY CONCERN**—The Regional Transportation District (RTD) should continue to take steps to reduce employee turnover of bus and light rail (rail) operators by improving areas of its operations, including supervisory practices, operator rest breaks, and shift scheduling, which affect these employees' engagement and job satisfaction. RTD also needs to better utilize its internal audit function to respond to and mitigate organizational risks, such as employee turnover.

### KEY FINDINGS

- From January 2015 through May 2020, RTD experienced a prolonged shortage of bus and rail operators, with a significant number of them leaving RTD each year, resulting in planned services not being provided to the public. Despite steps taken by RTD to improve operator retention, they continue to experience discontentment and/or low morale.
- 31 of 51 bus and rail operators surveyed or interviewed reported problems with supervisory practices at RTD, including lack of meaningful performance feedback, supervisory communication that is delivered in a punitive manner, and inconsistent and/or untimely recognition of operator achievements.
- For 10 of 20 sampled bus routes driven from August to February 2020, up to one-third of the time bus operators did not receive rest breaks as required by the collective bargaining agreement due to lack of processes to analyze break data and update schedules to ensure breaks.
- Newer operators have greater fatigue risk due to working more 6- or 7-day weeks and fluctuating schedules compared to senior operators. For example, during 4-weeks tested in early 2020, 36 percent of newer operators worked at least one 7-day week compared to 13 percent of senior operators, and 76 percent of newer operators had their daily shifts change by 4 to 7 hours, compared to 27 percent of senior operators.
- RTD has not utilized its internal audit unit to effectively identify and respond to organizational risks, such as operator turnover. For example, from January 2018 to mid-2020, internal audits did not consistently focus on important or high-risk areas, were not timely or presented to the Board, and were not always used to improve RTD.
- Although RTD complies with the statutory 30 percent farebox recovery ratio, which is the percentage of expenses it pays with non-sales and use tax revenues, this ratio is not a meaningful measure of RTD's operations, in part because it has limited control over whether it meets the ratio and the ratio provides an incomplete picture of its operations.

### BACKGROUND

- RTD was created in 1969 by the General Assembly to develop, maintain, and operate a mass transportation system in the Denver metropolitan area that includes bus and rail service, and special transportation, such as for seniors and people with disabilities.
- In Calendar Year 2019, RTD had about 95 million annual passenger boardings across all of its services.
- RTD's annual budget is about \$1 billion. Its largest revenue sources are passenger fares, federal grants, and a sales and use tax on purchases within its boundaries.
- A 15-member, elected Board of Directors governs RTD and appoints the General Manager who oversees the day-to-day operations.

### KEY RECOMMENDATIONS

- Improve supervision through regular performance feedback and recognition for operators, and supervisory training.
- Ensure bus operators receive adequate rest breaks in line with the collective bargaining agreement.
- Improve processes for assigning schedules to operators, and provide training on managing and mitigating fatigue.
- Improve the internal audit unit's effectiveness and compliance with Internal Audit Standards, and establish procedures and expectations for how the unit will be utilized, supervised, and evaluated.
- Identify a meaningful performance metric to replace the statutory farebox recovery ratio and work with the General Assembly to amend statute accordingly.

RTD agreed with all of the audit recommendations.





# CHAPTER 1

## OVERVIEW

In 1969, the General Assembly created the Regional Transportation District (RTD) as a political subdivision of the State to address the need for public transit to “promote the public health, safety, convenience, economy, and welfare of the residents of the District and the state of Colorado” [Section 32-9-102, C.R.S.]. RTD develops, maintains, and operates a mass transportation system that includes bus and rail lines, as well as special transportation services, such as for seniors and people with disabilities [Section 32-9-107, C.R.S.].

## SERVICES

RTD’s service area encompasses 2,342 square miles in which more than 3 million people reside, and includes Denver, Boulder, and Jefferson counties, as well as portions of Adams, Arapahoe, Broomfield, Douglas, and Weld counties. The service area is divided into 15 contiguous districts that are apportioned by population, each with about 200,000 residents. In Calendar Year 2019, RTD had a total of about 95 million annual passenger boardings across all of its services.

RTD provides fixed-route bus and rail services and non-fixed-route busing within its geographical boundaries. Fixed-route service comprises short and long-distance bus routes, as well as rail train lines. Non-fixed-route service is intermittent or customer-scheduled, on-demand bus transportation. To provide these services, RTD maintains a fleet of about 1,025 buses that consume about 5 million gallons in diesel fuel annually, and 267 commuter and light rail train vehicles that run on about 113 miles of track.

EXHIBIT 1.1 summarizes RTD’s services by type in Calendar Year 2020.

**EXHIBIT 1.1. RTD BUS AND RAIL SERVICES  
CALENDAR YEAR 2020**

SERVICE TYPE	NUMBER OF ROUTES <sup>1</sup>
<b>BUSING</b>	
<b>Local and Limited buses</b> along arterial and collector roads, typically with one-tenth mile to one-half mile between stops	100
<b>Regional buses</b> operating long distances for commuters	23
<b>Free MallRide and MetroRide buses</b> in downtown Denver	2
<b>Paratransit buses</b> for people with disabilities	Multiple, Varies
<b>Senior buses</b> for senior housing complexes and groups	Multiple, Varies
<b>Specialty buses</b> to and from Denver International Airport, Boulder, and Englewood, and for ride sharing and special events	Multiple, Varies
<b>RAIL TRAINS</b>	
<b>Light rail</b> throughout the region, operating at speeds up to 55 miles per hour	8
<b>Commuter rail</b> typically serving longer lines than light rail, operating at speeds up to 79 miles per hour	4

SOURCE: Office of the State Auditor analysis of information from RTD and its website.

<sup>1</sup> In April 2020, RTD suspended some of its regular services temporarily due to reduced ridership during the COVID-19 pandemic. As of November 2020, RTD had temporarily reduced its local and limited buses to 81 routes, its regional buses to 20 routes, its light rail to six lines, and was not operating the Free MetroRide.

In addition to the services described above, RTD has a transit expansion plan, FasTracks, to address the Denver metropolitan area's growing transportation needs by improving transportation options, increasing the percentage of people using RTD services during peak hours, and balancing transit needs with future regional growth. As of September 2020, RTD had spent \$5.5 billion on FasTracks by building 18 miles of rapid-transit bus routes that travel in separate highway lanes, including high-occupancy vehicle lanes; redeveloping Denver Union Station to a multimodal transit station hub for bus and rail services; building more rail lines; and adding new Park-n-Rides, among other transportation improvements.

## RESPONSE TO COVID-19 PANDEMIC

In April 2020, RTD began reducing its bus and rail services in response to the global pandemic caused by the 2019 novel coronavirus, known as COVID-19; suspended the collection of fares from passengers until

July 2020; and suspended the practice of requiring its bus and rail operators to work overtime. From April to November 2020, RTD was able to avoid employee layoffs, in part, due to federal funding from the Coronavirus Aid, Relief, and Economic Security (CARES) Act. However, in November 2020, RTD anticipated layoffs that could affect about 20 percent of union-represented bus and rail operators in late 2020 and early 2021 due to a 60 percent reduction in ridership and a projected \$140 million shortfall in its 2021 budget.

## ADMINISTRATION

**BOARD OF DIRECTORS (BOARD).** RTD is governed by a Board of Directors that is statutorily empowered to perform “All powers, duties, functions, rights, and privileges vested in the district” and it may delegate any executive or administrative powers to management and staff [Section 32-9-109.5, C.R.S.]. The Board comprises 15 directors elected to represent each of the 15 districts within RTD’s boundaries. The districts are apportioned after each federal census so that each director represents an approximately equal number of residents. Directors serve staggered 4-year terms with one-half of the Board seats up for re-election every 2 years. The Directors are each paid \$12,000 per year [Section 32-9-117, C.R.S.] and they meet several times each month to provide governance, set RTD policy, discuss general business, and obtain feedback from customers.

**GENERAL MANAGER AND STAFF.** The Board appoints a general manager who is responsible for day-to-day operations under the direction of the Board. For example, the general manager oversees RTD’s employees, implements and interprets Board policies, proposes and executes the budget, and makes recommendations regarding operations to the Board. In January 2020, the then-general manager retired, and the Board selected an interim general manager who was with RTD from February to early November 2020. RTD’s new general manager began on November 9, 2020.

As of September 2020, RTD had 2,987 employees—906 salaried employees and 2,081 union-represented employees, such as bus and rail

operators and mechanics, who are paid hourly and represented by the Amalgamated Transit Union, Local 1001 (Union). RTD also contracts a portion of its service to private firms, such as First Transit, that provide additional operators for fixed-route and paratransit services.

## OVERSIGHT

THE FEDERAL TRANSIT ADMINISTRATION (FTA), within the U.S. Department of Transportation, administers a national transit safety program and compliance oversight of transit agencies, including RTD, to advance safe, reliable, and equitable transit service.

THE RTD ACCOUNTABILITY COMMITTEE was created in July 2020 by the Governor, House and Senate Transportation Committee Chairs, and RTD Board to provide an independent assessment of RTD and provide recommendations to improve RTD operations and related statutes by July 2021. The Accountability Committee's 11 members are appointed by the Governor and the Chairs of the Transportation Committees, and members have expertise related to local governments within RTD's district, transit, economic development, paratransit services, human resources, transportation equity, financial planning and management, and urban planning.

THE TRANSPORTATION LEGISLATION REVIEW COMMITTEE provides legislative oversight of RTD's privatized services, recommends legislative change to the General Assembly, and receives presentations and updates from RTD representatives [Section 32-9-119.5(8), C.R.S.].

## REVENUE AND EXPENSES

RTD has an annual budget of about \$1 billion, as shown in EXHIBIT 1.2, and its fiscal year coincides with the calendar year. RTD's largest revenue source is from a 1 percent sales and use tax (including 0.4 percent for FasTracks) imposed on most sales within RTD's service area. The second and third largest sources of RTD revenue are grants and contributions, such as from the federal government and passenger

fares, respectively. Passenger fares comprise cash paid by passengers for single rides, multiple-ride tickets, and monthly and annual passes. As of September 2020, fares for an unlimited 3-hour pass were \$3.00 for local, \$5.25 for regional, and \$10.50 for airport services.

**EXHIBIT 1.2. RTD REVENUE AND EXPENSES BY SOURCE, IN MILLIONS  
CALENDAR YEARS 2017 THROUGH 2020, AS OF SEPTEMBER 2020**

	2017	2018	2019	2020 <sup>1</sup>
<b>REVENUE</b>				
Sales and Use Tax	\$598.2	\$634.2	\$659.4	\$461.6
Passenger Fares (Farebox)	\$140.2	\$143.2	\$154.4	\$55.8
Grants and Local Contributions (Operating and Capital)	\$166.8	\$167.4	\$210.8	\$354.6
Other Income (Gain on Capital Assets, Investment Income)	\$77.6	\$26.0	\$44.3	\$16.0
Advertising, Rent, and Other <sup>2</sup>	\$7.2	\$7.5	\$6.6	\$4.0
<b>TOTAL REVENUE</b>	<b>\$990.0</b>	<b>\$978.3</b>	<b>\$1,075.5</b>	<b>\$892.0</b>
<b>EXPENSES</b>				
Operating Expenses	\$830.5	\$864.2	\$998.0	\$720.5
Other Expenses (Interest, Loss on Capital Assets)	\$68.3	\$64.2	\$204.0 <sup>3</sup>	\$129.2 <sup>4</sup>
<b>TOTAL EXPENSES</b>	<b>\$898.8</b>	<b>\$928.4</b>	<b>\$1,202.0</b>	<b>\$849.7</b>

SOURCE: RTD's audited Comprehensive Annual Financial Reports for Fiscal Years Ended December 31, 2017 through December 31, 2019, and 2020 unaudited draft financial statements.

<sup>1</sup> 2020 figures are from the unaudited September 2020 financial status report.

<sup>2</sup> Includes revenue from advertisements primarily on RTD buses and rail trains.

<sup>3</sup> The increase in 2019 includes recognition of \$72.5 million of prior year interest expense for the FasTracks project, the East and Gold Line Public-Private Partnership (Eagle P3), which was previously recorded as prepaid interest.

<sup>4</sup> The increase in 2020 compared to 2017 and 2018, is due to the implementation of GASB 89, requiring interest incurred during construction to be expensed rather than capitalized.

In 1989, the General Assembly began requiring RTD to track its farebox recovery ratio, which is the percentage of operating expenses paid for with non-sales and use tax revenues minus the costs incurred for paratransit services mandated by the Americans with Disabilities Act, long-term planning, and rapid transit infrastructures [Section 32-9-119.7(2), C.R.S.]. RTD calculates the farebox recovery ratio using its revenue and expenditure data and reports information on its budget and the ratio to the Transportation Legislation Review Committee and the RTD Board. In Calendar Year 2019, RTD's farebox recovery ratio was 32 percent.

## AUDIT PURPOSE, SCOPE, AND METHODOLOGY

We conducted this performance audit pursuant to Section 32-9-115(3), C.R.S., which requires a performance audit of RTD at least once every 5 years to determine whether the district is effectively and efficiently fulfilling its statutory obligations. Included in this audit is a legislative request to review whether RTD has met the statutory farebox recovery ratio. Audit work was performed from December 2019 through September 2020. We appreciate the cooperation and assistance provided by RTD's Board, management, and staff during this audit.

We conducted this audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The objectives of the audit were to evaluate (1) turnover of RTD's bus and rail operators, and (2) RTD's compliance with the statutory farebox recovery ratio. Our audit focused on operations prior to May 2020, but included steps taken by RTD to address turnover of its bus and rail operators through September 2020.

To accomplish our audit objectives, we performed the following audit work:

- Reviewed RTD's 2015-2020 Strategic Plan, 2019 Performance Measures report, 2019 Service Performance report, and June 2020 Bus Operations 5-year Strategic Plan.

- Analyzed RTD’s Comprehensive Annual Financial Reports from Fiscal Years 2017 to 2019; adopted budgets and monthly financial status updates for Calendar Years 2019 and 2020; and revenue and expenditure data for other transit agencies from the National Transit Database.
- Reviewed RTD policies and procedures related to the objectives of the audit, as well as its Employee Guidebook for union-represented employees, and other written rules and guidance.
- Reviewed the 2018-2021 collective bargaining agreement (Union agreement) agreed upon by RTD and the Union, as well as collective bargaining agreements from six other transit agencies to identify operator scheduling best practices.
- Reviewed Board meeting minutes and packets from 2017 to 2020.
- Interviewed and/or surveyed RTD’s 15 Board members; senior management; management from human resources and the bus and rail divisions; staff, including bus and rail operators; and representatives from the Union and the FTA.
- Analyzed RTD’s human resources data and documentation, such as on staffing and turnover of bus and rail operators from Calendar Years 2015 through May 2020, staff and supervisory training provided in 2019 and 2020, the results of RTD’s 2019 employee engagement survey, and employee recognition programs.
- Analyzed RTD data on scheduled routes, and shifts and hours worked by full-time union-represented operators from January 2020 and February 2020.
- Reviewed documentation of RTD’s internal audits from 2018 to 2020, including audit reports and annual plans, position descriptions for the internal audit manager, materials and presentations provided to the Board, as well as the Internal Audit Charter.



- Listened to audio recordings of the Transportation Legislation Review Committee hearings from 2017 to 2019, and communicated with legislative committee staff.
- Analyzed RTD's farebox recovery ratio calculations for Calendar Years 2015 to 2019 and the second quarter of Calendar Year 2020.
- Researched human resources and safety best practices for the transit industry and organizations in general, including studies by the Transit Advisory Committee for Safety and the American College of Occupational and Environmental Medicine.
- Reviewed RTD's 2019 Bus Accident Summary Report summarizing data for Calendar Years 2017 to 2019.

We relied on the following samples to support some of our audit work as follows:

- A random, nonstatistical sample of 57 of the 1,344 union-represented bus and rail operators to interview regarding their experiences working for RTD. Of the 57 bus and rail operators invited to participate in the interviews, 16 operators (28 percent) agreed to be interviewed.
- A random, nonstatistical sample of 150 of the 1,344 union-represented bus and rail operators to participate in a survey questionnaire regarding their experiences working for RTD. Of the 150 operators who were sent the survey, 35 operators (23 percent) responded.
- A random, nonstatistical sample of data for 20 out of the 100 local and limited bus routes driven between August 2019 and February 2020, to assess whether operators received rest breaks in line with the Union agreement.

The results of our samples were not intended to be projected to the sampled populations. However, the sample results are valid for assessing the factors that contribute to operator turnover and whether

RTD ensures that bus operators receive sufficient breaks during their work shifts. The samples, along with the other audit work performed, provide sufficient, reliable evidence as the basis for our findings, conclusions, and recommendations.

As required by auditing standards, we planned our audit work to assess the effectiveness of those internal controls that were significant to our audit objectives. Specifically, our work on internal control included the components and underlying principles listed in EXHIBIT 1.3, based on guidance issued by the U.S. Government Accountability Office.

**EXHIBIT 1.3. SIGNIFICANT INTERNAL CONTROL COMPONENTS AND UNDERLYING PRINCIPLES REVIEWED DURING THE AUDIT**

<p><b>Control Environment</b></p> <ul style="list-style-type: none"> <li>▪ Commitment to Integrity and Ethical Values</li> <li>▪ Exercise Oversight Responsibility</li> <li>▪ Establish Structure, Responsibility, and Authority</li> <li>▪ Commitment to Competence</li> <li>▪ Enforce Accountability</li> </ul>	<p><b>Control Activities</b></p> <ul style="list-style-type: none"> <li>▪ Design Control Activities</li> <li>▪ Design Activities for the Information System</li> <li>▪ Implement Control Activities</li> </ul>
<p><b>Risk Assessment</b></p> <ul style="list-style-type: none"> <li>▪ Define Objectives and Risk Tolerances</li> <li>▪ Identify, Analyze, and Respond to Risks</li> <li>▪ Identify, Analyze, and Respond to Change</li> </ul>	<p><b>Information and Communication</b></p> <ul style="list-style-type: none"> <li>▪ Use Quality Information</li> <li>▪ Communicate Internally</li> <li>▪ Communicate Externally</li> </ul> <p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>▪ Perform Monitoring Activities</li> <li>▪ Evaluate Issues and Remediate Deficiencies</li> </ul>

SOURCE: Office of the State Auditor analysis of internal controls, as specified in the U.S. Government Accountability Office, Standards for Internal Control in the Federal Government (Green Book).

Details about the audit work supporting our findings and conclusions, including any deficiencies in internal control that were significant to our audit objectives, are described in the remainder of this report. We communicated certain deficiencies in internal control and other matters that were not significant to the objectives of the audit but warranted RTD management’s attention in a separate letter dated December 2, 2020.

A draft of this report was reviewed by RTD’s Board and management. We have incorporated comments of the Board and management into the

report, where relevant. The written responses to the recommendations and the related implementation dates are the sole responsibility of the RTD Board and management.



# CHAPTER 2

## OPERATOR TURNOVER

The operation of the nation's transit systems depends on a skilled and qualified workforce, yet transit agencies, like the Regional Transportation District (RTD), have faced difficulty finding and keeping qualified workers, such as bus and rail train operators [U.S. Government Accountability Office, *Transit Workforce Development*, March 2019]. Studies of the nation's transit industry have found that employee turnover and transit growth have caused major employment challenges for transit agencies, which are expected to continue through at least 2022 [U.S. Departments of Education, Labor, and Transportation, *Strengthening Skills Training and Career Pathways across the Transportation Industry*, August 2015; and *A Guide for the Development of Career Pathways in Transportation*, December 2015]. RTD experienced a prolonged shortage of transit operators from January 2015 through May 2020, with a significant number of its bus and light rail (rail) operators leaving each year.

To assess the magnitude of the operator shortage and how it has affected RTD's services, we reviewed RTD data on staffing goals, vacancies, and tenure of bus and rail operators from January 2015 through May 2020; annual turnover from 2016 through 2019; bus services from January 2015 through April 2020; and rail services from July 2019 through April 2020, which were the data available at the time of the audit. We also interviewed RTD's Board of Directors (Board), senior management, management from human resources and the bus and rail divisions, operators, as well as representatives from the Amalgamated Transit Union Local 1001 for operators (Union). We identified the following trends:

- **ANNUAL TURNOVER HAS BEEN HIGHER FOR BUS AND RAIL OPERATORS COMPARED TO OTHER RTD STAFF.** From 2016 to 2019, the average annual turnover rates were 26 percent for bus operators and 43 percent for rail operators. In comparison, during the same 4-year period, RTD's organization-wide average turnover rate was 15 percent.

According to bus and rail division management and RTD data, the operator shortage was primarily due to turnover; the number hired was often insufficient to address the number who left each year. From January 2016 to May 2020, RTD hired 1,289 new bus operators, but lost 1,143 of its bus operators, and it hired 404 new rail operators, but lost 321 of its rail operators.

- **MOST OPERATORS WHO LEFT WERE EMPLOYED WITH RTD FOR LESS THAN 2 YEARS.** From January 2016 to May 2020, about two-thirds of all operators who left RTD were newer hires who left within 2 years of their start date. EXHIBIT 2.1 shows the tenure of newer operators at RTD from 2016 through 2020.

**EXHIBIT 2.1. TENURE OF NEWER BUS AND RAIL OPERATORS  
JANUARY 2016 THROUGH MAY 2020**

	2016	2017	2018	2019	2020 <sup>1</sup>	TOTAL
<b>BUS OPERATORS</b>						
Total hired each year	341	262	305	288	93	1,289
Total who left RTD <sup>1</sup>	228	157	166	115	21	687
Left ≤ 1 year	151	123	134	114	21	543
Left in 2nd year	48	26	31	1	0	106
Left in 3rd, 4th, or 5th year	29	8	1	0	0	38
<b>RAIL OPERATORS</b>						
Total hired each year	90	90	45	76 <sup>2</sup>	103 <sup>2</sup>	404
Total who left RTD <sup>1</sup>	66	74	26	46	18	230
Left ≤ 1 year	53	63	18	46	18	198
Left in 2nd year	11	8	8	0	0	27
Left in 3rd, 4th, or 5th year	2	3	0	0	0	5

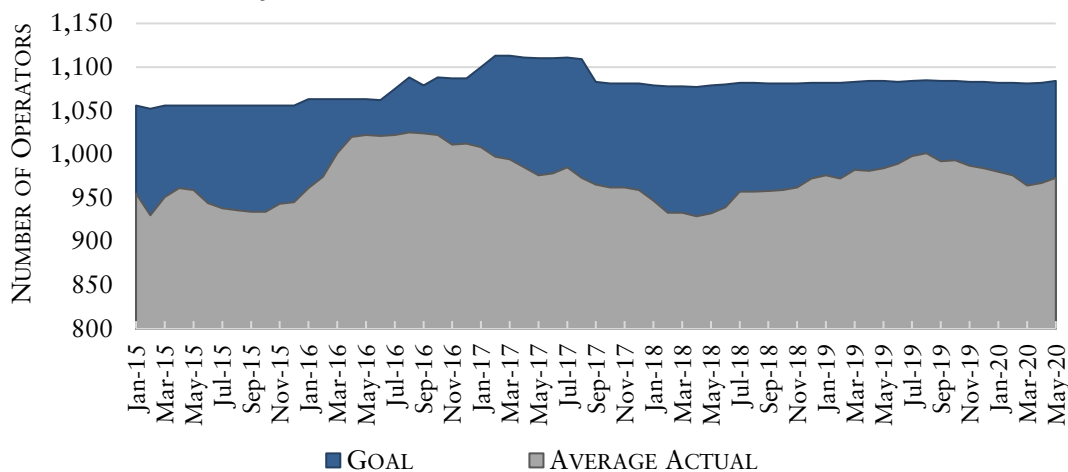
SOURCE: Office of the State Auditor analysis of RTD available data of full time hires.

<sup>1</sup> As of May 2020.

<sup>2</sup> Hiring of rail operators increased in 2019 and 2020 to address planned expansion of rail service.

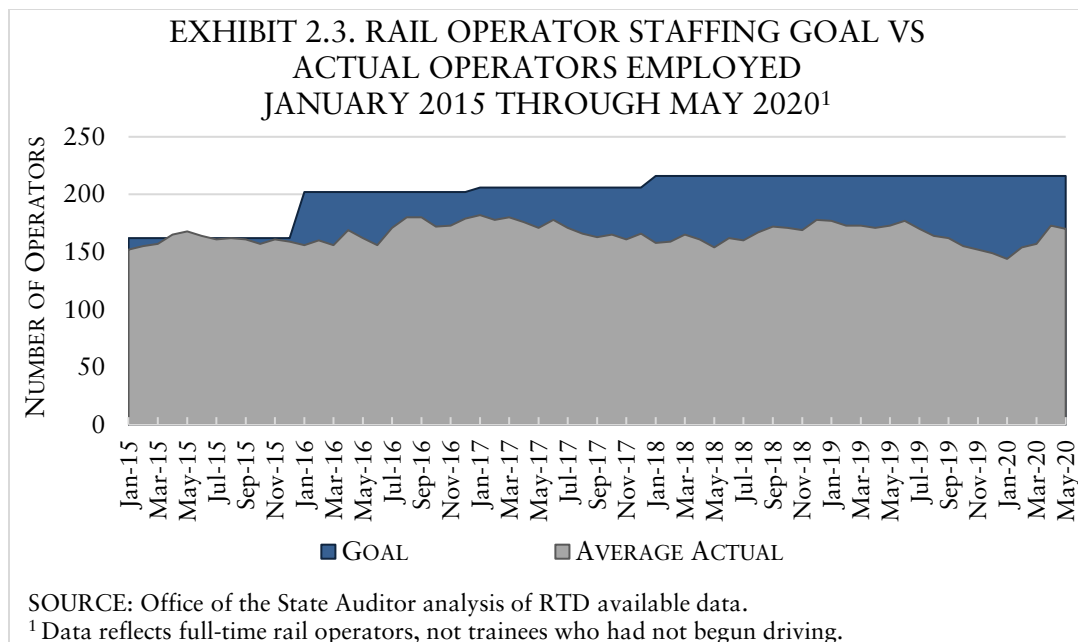
- **RTD DID NOT MEET ITS STAFFING GOALS FOR OPERATORS FROM JANUARY 2015 TO MAY 2020.** RTD establishes annual goals for the number of bus and rail operators that it needs based on its anticipated service demands. RTD data shows that it regularly did not meet these goals. First, annual staffing goals for bus operators were not met by an average 11 percent from January 2015 through May 2020, as shown in EXHIBIT 2.2, primarily due to turnover.

**EXHIBIT 2.2. BUS OPERATOR STAFFING GOAL VS  
ACTUAL OPERATORS EMPLOYED  
JANUARY 2015 THROUGH MAY 2020**



SOURCE: Office of the State Auditor analysis of RTD available data.

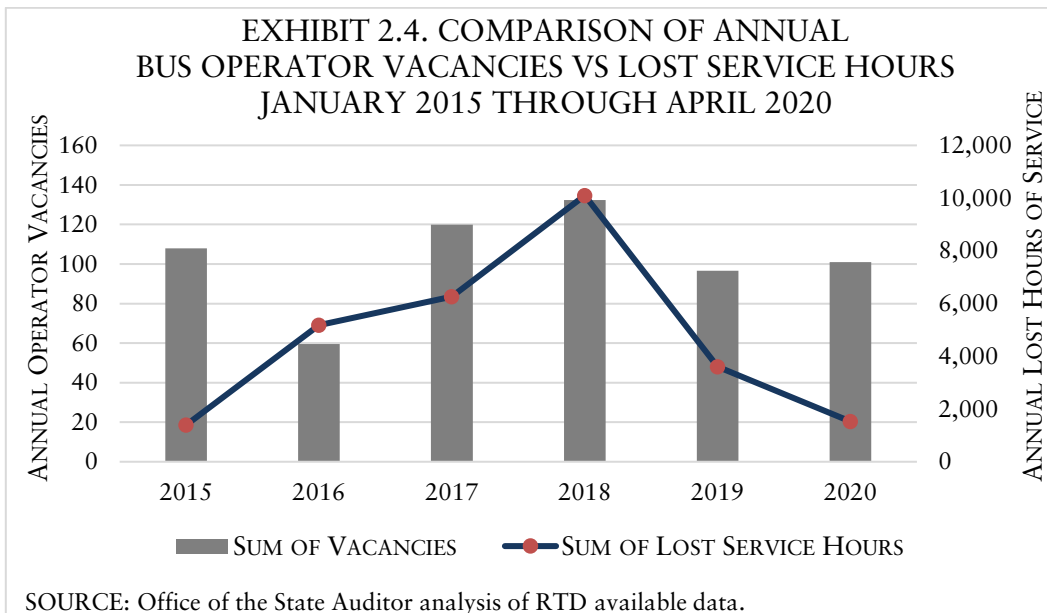
Second, while RTD met annual staffing goals for rail operators in 2015, they were not met by an average 27 percent from January 2016 through May 2020, as shown in EXHIBIT 2.3. Prior to January 2016, RTD had few rail operator vacancies. However, for 2016, RTD set a staffing goal of 202 rail operators, a 25 percent increase from the prior year, in anticipation of planned service expansions. RTD was unable to meet the 2016 goal, and subsequent annual goals. Staffing goals for rail operators were not met in 2019, in part because RTD had difficulty recruiting the number of operators that it needed for planned rail service expansion, and began requiring overtime for rail operators to meet existing service needs, which caused some operators to leave RTD as services were expanding. In 2019, RTD also lacked the capacity to train a large number of rail operators, and therefore, could not hire as quickly as needed. However, in September 2019, RTD contracted with a recruiter to hire rail operators and improved hiring capacity by expanding training classes and adding instructors.



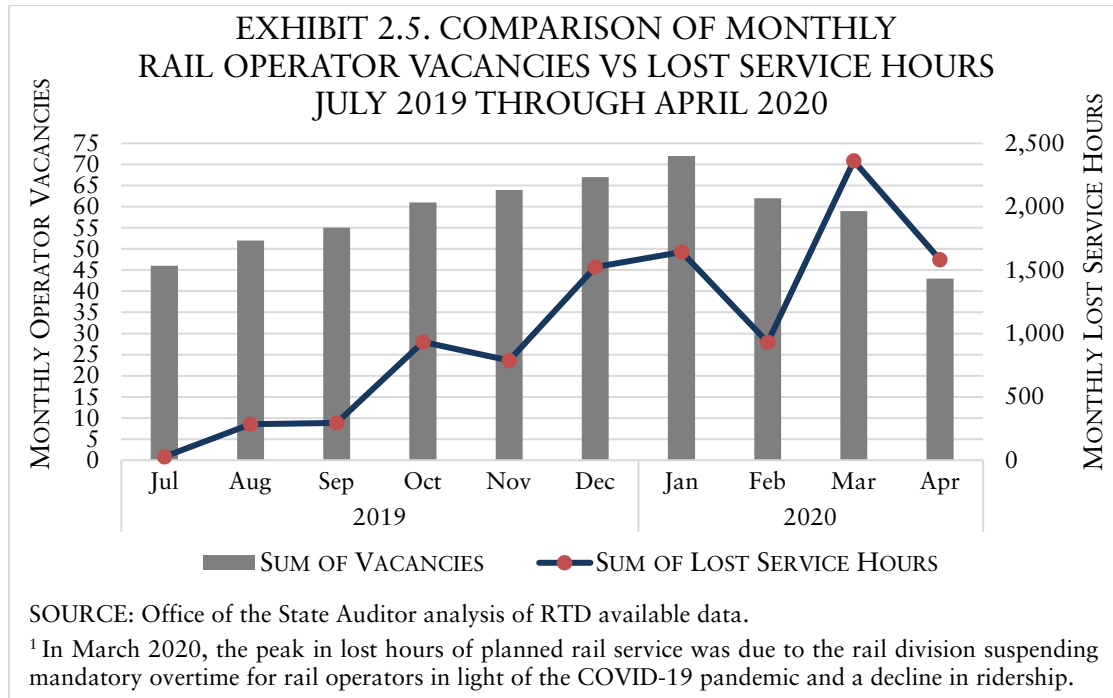
- **ONGOING SHORTAGE OF OPERATORS RESULTED IN LOST BUS AND RAIL SERVICES.** RTD’s bus division defines lost service as the cumulative service hours lost when a planned bus route is not driven or there are significant delays starting a bus route; the rail division defines lost



service as the cumulative hours lost when RTD does not operate a planned rail trip. Lost hours of service can erode public confidence in RTD because its customers rely on regularly scheduled buses and rail trains for their transit needs, which can reduce ridership and fare revenue. Due to operator shortages from 2015 to 2020, there were times when RTD was not able to provide all of its planned services because of too few operators. For example, when RTD bus operator vacancies peaked in 2018, lost hours of bus service also peaked, as shown in EXHIBIT 2.4. In 2018, RTD was not able to provide about 10,100 planned hours of weekday bus service. In 2019 and early 2020, RTD required operators to work overtime to provide planned bus and rail services and reduce the hours of lost service.



Furthermore, when rail operator vacancies rose from July 2019 to January 2020, lost hours of rail service also rose, as shown in EXHIBIT 2.5. In January 2020, RTD was not able to provide about 1,640 planned hours of rail service, compared to just 28 hours not provided in July 2019. During the onset of the COVID-19 pandemic (pandemic) in March 2020, the number of lost hours of planned rail service peaked.



## GENERAL REASONS FOR OPERATOR TURNOVER

During the audit, RTD management, operators, and Union representatives told us that key contributing factors leading to turnover of its operators include job dissatisfaction, such as due to the relative stress that they experience in the position; less than competitive wages prior to 2018; sometimes strained relations between supervisors and operators; mandatory overtime, primarily for newer operators prior to the pandemic; as well as a healthy job market in the Denver metro area prior to Spring 2020, which offered operators other employment options. Additionally, management told us that many RTD operators are older adults who are closer to retirement, which has contributed to turnover, with about 50 operators retiring from January 2019 to June 2020.

Operators' lack of experience in the transit industry can also lead to turnover. According to RTD management, over the past several years, it has become increasingly difficult to recruit operators with transit experience, so some new hires are inexperienced and lack an

understanding of the challenges of being a commercial driver. For example, an RTD survey of 137 new bus operators hired in 2019, showed that 73 percent had never worked as an operator at a transit agency and 58 percent had never held a commercial driver's license. These inexperienced operators are not always a good fit for the job, which can lead to turnover.

In October and November 2019, RTD hired a consultant specializing in employee engagement and human resources to survey a sample of all employees to better understand turnover. Survey respondents included 322 bus and rail operators (26 percent of all respondents), but the results are not available for operators alone. According to RTD's consultant, employee engagement, which is tied to job satisfaction and morale, has a direct impact on employee retention. The employee engagement survey results showed that 31 percent of the 1,216 responding employees were actively disengaged, meaning they were more likely to leave the organization compared to engaged employees, not doing more than what was required for their position, and/or affecting other employees with their discontentment. The survey also revealed that 56 percent of respondents did not feel valued by RTD.

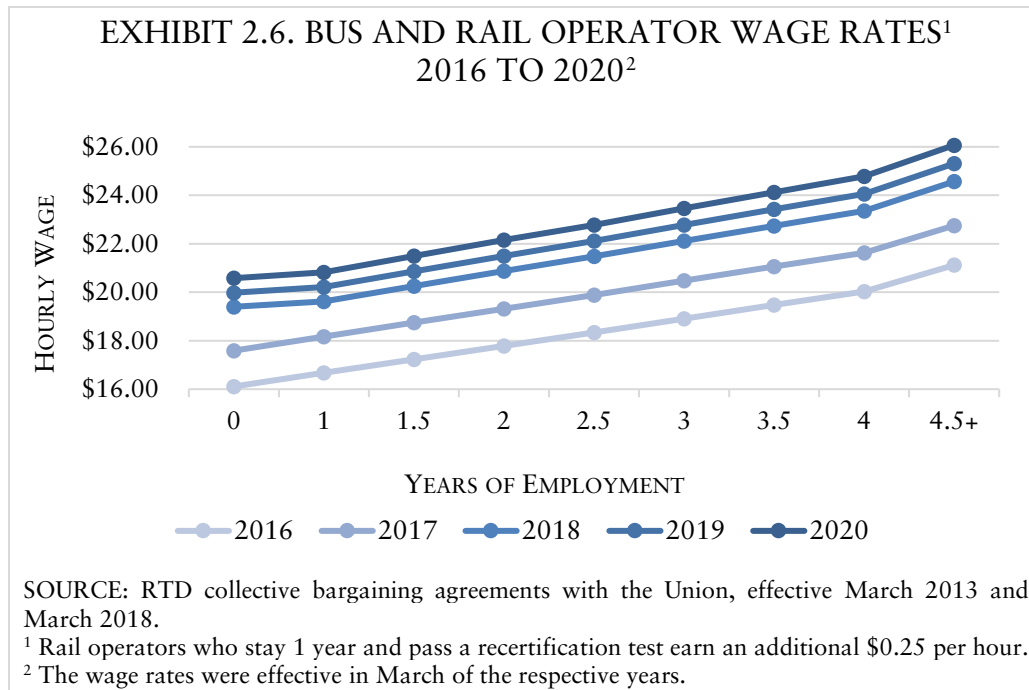
## RTD INITIATIVES TO ADDRESS OPERATOR TURNOVER

From March 2018 through October 2020, RTD took several steps to help improve operator engagement and retention. Some of the key steps are as follows:

- **BUS OPERATIONS PLAN**—RTD developed this plan in June 2020 to improve the working environment for operators. RTD's bus operations division finalized a 5-year plan using feedback from customers, management, operators, and other employees who raised concerns about overtime, organizational communication, and working relationships. The plan includes strategies for achieving goals to make the bus division the premier place to work; improve communications between employees, RTD departments, and the

public; improve working relationships and trust in the organization; improve the customer experience; and improve the bus division's identity within RTD and publicly. The plan includes performance indicators to measure RTD's progress towards the goals, such as improving employee satisfaction by 2023.

- **OPERATOR WAGES**—RTD increased operator wages in March 2018 as part of the collective bargaining agreement with the Union (Union agreement). RTD increased wages for new operators by 10 percent and for all other operators by 8 percent, followed by annual increases of 3 percent for all operators in 2019 and 2020. The increases were based on wage analyses of market conditions and economic forecasts conducted by RTD and the Union. EXHIBIT 2.6 shows the annual operator wage rates from 2016 through 2020. Current wage rates appear competitive on a national level according to data from the American Public Transportation Association, which ranks RTD 27th out of 114 transit agencies for the highest starting wage and 58th for the highest maximum wage. Not shown in EXHIBIT 2.6 or included in the national ranking are (1) additional wages that operators receive for working overtime, two or more shifts per day, or routes that require them to handle baggage regularly; and (2) benefits, which add approximately \$29,000 in annual value to each operator's total compensation.



- **COMMUNICATIONS TRAINING**—RTD provided communications training to some supervisors in February 2020. This training was intended to help supervisors of bus and rail operators learn how to use empathy and explain decisions when having tough conversations with operators. RTD management told us that the training was provided to help improve supervisors’ interactions with operators. More information about this training is described later in the report.
- **INTERNAL COMMITTEES**—RTD created the following committees to address employee engagement and communications:
  - ▶ The Communications Committee, created in 2018, helped develop the supervisory training discussed above; the Recognition Committee discussed below; changes to RTD communications with operators; and a mentoring program for new operators that pairs them with supervisors who offer support, such as on RTD policies, schedules, routes, and fares, and resolving issues with passengers.
  - ▶ The Employee Engagement Committee, created in 2020, comprises a cross section of employees who make

recommendations to management to address concerns raised in the 2019 employee engagement survey.

- ▶ The Information Gateway Committee of management and employees, created in 2020, helped launch an internet portal in August 2020 to provide operators online, real-time updates, such as on changes to bus routes and available restroom facilities; and facilitates town hall meetings between senior management and operators, or other Union-represented employees, to gather ideas to address employee needs.
- **OPERATOR GRIEVANCE PROCESS**—In 2018, RTD revised its process for managing grievances, which are complaints about RTD filed by the Union on behalf of an operator, to have management from the bus and rail divisions review and resolve grievances, instead of supervisors, and have labor relations staff review the grievances that are not resolved by management. RTD management attributes fewer operator grievances to these changes.
- **EMPLOYEE RECOGNITION**—In February 2020, RTD established a Recognition Committee to find ways to make employees feel valued through recognition of accomplishments and expand agency-wide awareness of its recognition programs. For example, from August through October 2020, the committee helped the bus and rail divisions recognize 632 operators for the number of consecutive years they had gone without an accident. Some other ways that RTD recognizes employees are with the Operator of the Month and Operator of the Year awards chosen from public nominations; the RTD Way Program allowing supervisors, dispatchers, peers, and the public to recognize operators for a job well done with a pin, shirt, or hat; the annual Accident Free Operators Award; the Commendation Program allowing the public to submit compliments about operators, who are then notified by letter; Service Awards recognizing milestone service years; and recognition for those retiring with 15 or more years of service.

In September 2020, RTD management told us that it also has begun talking with employees during town hall meetings and focus groups to gauge the effectiveness of its recent initiatives with improving engagement and retention.

## OPERATOR DISCONTENTMENT CONTINUES

Despite the numerous steps taken by RTD to improve operator engagement and retention, our audit found that operators continue to have discontentment and/or low morale. In addition to reviewing RTD data and interviewing RTD and Union representatives, we reviewed RTD's documentation on aspects of operations that have contributed to operator turnover, including documentation from Board meetings, strategic planning, human resources, and the bus and rail divisions. Furthermore, in May and June 2020, we sent surveys or interview requests to a random sample of 207 of the 1,344 bus and rail operators to better understand RTD operations pre-pandemic and during the pandemic, and their experiences working at RTD. A total of 51 operators responded to our survey and interview requests (35 survey respondents and 16 interviewees), and provided comments on various topics including supervisory practices, employee recognition, the impacts of overtime, their work schedules, as well as suggestions for improvement. For example, 31 operators (61 percent) provided some context regarding the reasons for operator turnover, indicating that they felt discontented, undervalued, or experienced low morale at work prior to the pandemic, and 9 (18 percent) expressed feeling continuing low morale and/or additional stress during the pandemic.

RTD is facing an uncertain future in terms of ridership, services, and revenue resulting from the pandemic and its effect on the economy. In April 2020, in response to the pandemic, RTD reduced its transit services by 40 percent, and consequently suspended mandatory overtime for bus operators. According to management, as of the end of our audit work in September 2020, RTD did not have a shortage of bus operators due to service reductions and low turnover during the pandemic, or a shortage of rail operators due to reduced services and a plan to recruit and train more rail operators to help meet staffing goals

for the rail division. In fact, in November 2020, RTD’s Board was planning layoffs of operators and other employees due to reduced ridership, services, and revenue that have created a budget shortfall. Nonetheless, operator staffing is an area of organizational risk for RTD that should be addressed to help ensure that future services are not affected by operator shortages and that RTD is able to retain high quality operators.

RTD can control the work environment it creates for operators with forward-looking plans, policies, and procedures, as recommended in this audit report. Improving operator engagement and morale will be especially important if RTD proceeds with layoffs because that can increase employees’ stress, and decrease job satisfaction and trust, which can negatively impact job and organizational performance [Nyberg, J. & Trevor, C., *After Layoffs, Help Survivors Be More Effective*, Harvard Business Review, June 2009, [www.hbr.org](http://www.hbr.org)].

The remainder of this chapter includes our findings and recommendations to help mitigate the risk of operator turnover and improve areas of RTD’s operations that have contributed to it in the past, but have not been fully addressed, and continue to affect these employees’ engagement and job satisfaction.



# SUPERVISORY PRACTICES

RTD's bus and rail operators are overseen by different types of supervisors with varying roles and responsibilities for ensuring that operators are assigned to drive all routes and follow the rules in the Employee Guidebook's Code of Ethics and Conduct and other rules; providing operators support and assistance; and completing administrative tasks, such as payroll and workers' compensation reports, among other supervisory duties. Supervisors may interact with operators in a variety of ways, such as at the beginning, during, or end of their shift; if an operator encounters a problem, such as an unruly passenger, and asks for supervisory coaching; or to recognize their good work. In addition, when a supervisor observes or learns of an operator violating a rule, such as leaving a bus stop early or violating traffic laws, the supervisor gives them written notice of the violation and meets with them to discuss the incident and any disciplinary action. If RTD customer service receives a customer compliment or complaint about an operator, it is forwarded to a supervisor who should notify the operator.

## WHAT PROBLEMS DID THE AUDIT WORK IDENTIFY AND HOW WERE THE RESULTS MEASURED?

We evaluated RTD's supervisory practices and how they contribute to turnover among bus and rail operators and affect employee engagement and morale. Overall, 31 of the 51 operators who responded to our survey and agreed to interviews (61 percent), told us about problems with how they were supervised. Additionally, RTD management, non-operators, and Union representatives told us about how aspects of supervision can contribute to turnover, a lack of employee engagement, and/or low morale. Specifically, we found:

**OPERATORS DO NOT CONSISTENTLY RECEIVE ADEQUATE OR MEANINGFUL SUPERVISORY FEEDBACK ON THEIR PERFORMANCE.** During the audit, RTD management and human resources staff told us about a lack of

consistent means to provide feedback to operators, and there is no central repository of data or documentation on the feedback that has been provided.

When we asked operators about the performance feedback that they have received, 24 of the 51 (47 percent) survey and interview respondents said that they do not receive adequate or helpful feedback from supervisors about their job performance. Additionally, our survey asked operators about the extent to which their supervisors tell them what they are doing well and what can be improved, and eight of the 35 operators who responded to the survey (23 percent) said they had never received feedback of any kind from RTD supervisors; 14 operators (40 percent) said that they received mostly, or only, negative feedback from RTD supervisors, such as to let them know when they have done something wrong; and two operators (6 percent) said they were new and not sure what to expect in terms of feedback. By contrast, eight of the 35 operators (23 percent) told us that they believed they received positive feedback from supervisors, but none could provide examples of performance feedback they had received; these operators said the positive feedback they received was supervisors being friendly, greeting them, helping with a problem, or asking how they are doing.

According to RTD management and operators, feedback is most often provided to operators as part of the disciplinary process outlined in RTD's agreement with the Union and its Employee Guidebook, and focuses on compliance with rules and subsequent discipline for violations. For example, at the beginning of our audit, rail division supervisors began conducting efficiency checks with operators to assess whether they follow rules and standard operating procedures, and supervisors provide them verbal comments on areas for improvement and what they did well. RTD management told us that while it views the disciplinary process as performance feedback, the operators may not, and management sees the need to provide operators with more meaningful feedback.

Performance feedback is important because it helps engage employees by showing the organization is invested in their performance and

wellbeing. According to the Society for Human Resource Management, effective feedback must be honest, specific, strengths-oriented, focused on behaviors, and delivered in a timely and respectful manner as part of a two-way dialogue [Dorsey, D. & Mueller-Hanson, R., *Performance Management That Makes a Difference: An Evidence-Based Approach*, December 2017, [www.shrm.org](http://www.shrm.org)]. According to the American Public Transportation Association, transit supervisors should engage in regular dialogue with their teams, give specific feedback on performance, and highlight key positive and negative performance issues [*Proposed Core Competencies for New Transit Supervisors*, 2020, [www.apta.com](http://www.apta.com)].

**OPERATORS DO NOT ALWAYS FEEL SUPPORTED BY SUPERVISORS.** During the audit, RTD management told us that supervisors do not always deliver feedback in a manner that seems supportive to operators. Union representatives and operators told us that supervisory communication is sometimes curt, negative, and demoralizing because it typically relates to discipline. Furthermore, 16 of the 51 operators (31 percent) said that they often do not feel supported in their jobs due to supervisors' focus on discipline, and a lack of supervisory communication or poor communication. For example, three of the operators (6 percent) indicated that there are some supervisors who explain rule violations and discipline respectfully, but said they felt that other supervisors can be demeaning. Other feedback included that it would be helpful if operators could look to supervisors for support and/or empathy when operators have a difficult passenger or stressful route. Another common issue we heard from operators is they felt that there is a lack of trust and respect between supervisors and operators. Only seven operators told us there were supervisors at RTD who foster an environment of trust, explaining that some supervisors have an open door policy allowing operators to talk about anything.

According to the consultant that RTD hired to conduct its 2019 employee engagement survey, a feeling of support and trust between supervisors and employees is important to retention and employee engagement. The Society for Human Resource Management notes that trust leads to engagement and is “the foundation for higher levels of

retention, productivity and performance,” and leaders need to “find opportunities to connect, stay visible, communicate more and show genuine interest in their employees” [Hastings, R., *Employees Trust Supervisors More Than Senior Leaders*, September 4, 2012, [www.shrm.org](http://www.shrm.org)]. The American Public Transportation Association further states that transit supervisors should build cooperative relationships, establish rapport and trust, and mentor and motivate staff [*Proposed Core Competencies for New Transit Supervisors*, 2020, [www.apta.com](http://www.apta.com)].

**OPERATORS DO NOT RECEIVE CONSISTENT OR PERSONAL RECOGNITION OF THEIR ACHIEVEMENTS.** Notwithstanding the many recognition programs at RTD, management, as well as 19 of the 51 operators who responded to our survey or were interviewed (37 percent), said that recognition of operator achievements or milestones can be inconsistent, untimely, and/or impersonal. For example, RTD management told us that from June through August 2020, there was a backlog of customer compliments that took the customer care division up to 3 months to provide to the bus and rail divisions for distribution to operators. Other feedback from operators included that they said they had never been recognized for the good work they had done, were not notified when they believed customers submitted a compliment about them, and that recognition felt impersonal and disappointing because awards were left in their work mailbox without personal acknowledgement from their manager or supervisor.

According to the 2013 Transit Cooperative Research Program report *Building a Sustainable Workforce in the Public Transportation Industry*, implementing an awards program for high performing employees is a proven retention strategy for transit agencies, but to be effective, the recognition needs to be consistent and employees must “see a clear alignment between performance and rewards...” Additionally, the Society for Human Resource Management recommends that recognition be timely to “strengthen the link between the employee’s actions and the result to the organization,” as well as “sincere and heartfelt” because employees “can be motivated more by a manager’s single act of personal consideration than by a substantial

gift delivered poorly” [*Managing Employee Recognition Programs*, (n.d.), [www.shrm.org](http://www.shrm.org)]. According to the American Public Transportation Association, transit supervisors should focus on the positives and recognize accomplishments [*Proposed Core Competencies for New Transit Supervisors*, 2020, [www.apta.com](http://www.apta.com)].

## WHY DID THESE PROBLEMS OCCUR?

**INADEQUATE PROCESSES TO PROVIDE PERFORMANCE FEEDBACK.** There is no RTD policy or process for supervisors to give regular performance feedback to operators, other than through the disciplinary process. Although the rail division has an efficiency checks policy that includes telling the rail operator what they did well, RTD has not developed an organization-wide policy or process to provide non-pay and non-discipline related performance feedback to operators. RTD’s only policies for providing feedback to both bus and rail operators is in its Employee Guidebook and its agreement with the Union, and relate to providing operators with disciplinary actions when a supervisor believes an operator violated a rule.

Management told us that RTD does not have a process for consistently managing the performance of operators using performance feedback for two reasons. First, according to management, there is no process to conduct traditional performance evaluations for bus and rail operators, similar to other organizations, because the agreement with the Union does not allow the use of evaluations when determining pay for operators. Second, some RTD managers told us there are not enough supervisors to provide feedback to the large number of operators. Based on RTD’s data in May 2020, there was one bus supervisor for every 16 bus operators and one rail supervisor for every eight rail operators. Implementing consistent and efficient methods for supervisors to communicate performance feedback to operators regularly, such as quarterly short check-in meetings and a standard checklist that is used annually, would help ensure supervisors have the capacity to provide timely feedback and have opportunities to engage and build trust with operators.

**SUPERVISORY TRAINING COULD BE IMPROVED.** RTD’s supervisor training does not provide bus and rail supervisors guidance on how to provide operators with effective performance feedback on areas they are doing well or can improve. Additionally, supervisory training does not cover how supervisors are to show support for operators, such as when they have a difficult route or are tired and under stress; build trust and respect; or personally recognize good work and achievements. Supervisory training primarily focuses on job duties for ensuring buses and rail routes are fully staffed and running on time and safely, and general supervisory and interpersonal skills. Supervisors were trained about the importance of and the criteria for RTD’s recognition programs in 2018, but RTD has not provided this training since then to reinforce the importance of recognition programs. The Society for Human Resource Management notes that few supervisors are naturally adept at carrying out employee recognition and should be trained on soft skills “related to recognizing employees’ contributions and giving effective feedback and praise” [*Managing Employee Recognition Programs*, (n.d.), [www.shrm.org](http://www.shrm.org)].

In addition to supervisory training, RTD began requiring a communications training to supervisors in February 2020, on how to use empathy, have tough conversations with operators, and initiate friendly conversations, as well as de-escalation techniques. The training was intended to help improve supervisory interactions with operators. However, only about 30 of the 103 bus and rail supervisors completed the training because it was paused in March 2020, along with all other supervisory training, due to pandemic social distancing requirements. As of September 2020, RTD was revising the training to provide it remotely. It will be important for RTD to provide all supervisors with this training to improve supervisory communication.

**NO PROCESS TO ENSURE THAT RECOGNITION IS TIMELY OR PERSONAL.** RTD has not established a timeframe for providing recognition to operators or a process to help ensure operators receive personal recognition of an accomplishment from supervisors or management. When operators receive awards, compliments, and other recognition, it should occur soon after their accomplishment, and be delivered

personally to the extent possible, to ensure the recognition reinforces their good performance.

**INSUFFICIENT EXIT INTERVIEW PROCESS.** According to RTD management, there is no organization-wide process, such as by human resources staff or others, to talk to departing employees about why they are leaving, and it is optional for managers and supervisors to do so. The bus division reports that it does not conduct any type of exit interview with departing employees. The manager of the rail division reports that they document the reason each operator leaves on a form, but they do not identify the underlying causes for the departure or what could have made the employee stay, and they do not share the information with supervisors. There is also no standard tool for supervisors to use, such as a list of interview questions, if they choose to ask departing operators why they are leaving. Furthermore, any information about departures that may be gathered is not tracked by RTD in aggregate for analysis or shared with RTD senior management or human resources staff.

RTD management told us that it conducted exit surveys prior to 2018, but stopped because it believed the data was unreliable. According to management, RTD considered developing a standard exit interview process but did not because it plans to survey a sample of current employees, including operators, in 2021 to understand why they stay, what makes them feel valued, and what RTD can do to improve employee retention. Nonetheless, standardized exit interviews or surveys are common tools that organizations use to collect data to improve retention, and implementing such a tool at RTD could also be used to identify additional ways to improve supervision.

## WHY DO THESE PROBLEMS MATTER?

Given the uncertainty of RTD's future budget situation, ridership, and services due to the pandemic, it is imperative that management continue to work to strengthen supervision to ensure that it has the processes in place to retain the highest quality operators. When RTD does not adequately address issues impacting low morale, including providing

regular performance feedback and recognition to make operators feel supported and appreciated, and improving supervisory communication, there is a risk that employee morale will continue to erode. The *Harvard Business Review* has reported that organizations can experience a substantial increase in voluntary departures following layoffs [Nyberg, A. & Trevor, C., *After Layoffs, Help Survivors Be More Effective*, Harvard Business Review, June 2009, [www.hbr.org](http://www.hbr.org)]. If RTD does not address its problems with operator morale and supervisory practices, high operator turnover could return and put additional strain on RTD's budget due to the costs of recruiting, hiring, and training new operators. Additionally, turnover can affect RTD's budget when there is a shortage of operators because RTD must pay overtime wages to the operators who remain to ensure that all scheduled bus and rail services are provided to customers.

## RECOMMENDATION 1

The Regional Transportation District (RTD) management should take additional steps to improve supervisory practices to address operator turnover by:

- A Improving processes for providing operators with feedback on their performance, including regular feedback on what operators are doing well and development areas.
- B Implementing ongoing training for all bus and rail supervisors on how to provide operators regular performance feedback, timely and personal recognition, and a supportive and trusting environment through communication, and continuing to provide supervisors the communication training that has been developed.
- C Implementing a process to ensure awards, customer compliments, and other types of personal recognition are provided to operators timely.



- D Establishing an ongoing process to identify and track the reasons for operator turnover, such as through exit interviews or surveys; report the information to RTD management and human resources staff; and use the information to improve supervision and retention.

## RESPONSE

### REGIONAL TRANSPORTATION DISTRICT

- A AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation and recognizes that regular and timely performance feedback is important to the Operators' development and retention of Operators and the transportation services provided. RTD is committed to improving processes for operator feedback, including on what Operators are doing well and development areas.

Some aspects of performance feedback are defined by the Collective Bargaining Agreement with the Amalgamated Transit Union Local 1001 (the Union) (such as the Employee Performance Code).

RTD management will research and assess ways to improve Operator performance feedback and develop an implementation plan after the assessment is completed. This will include reaching out to other peer transit agencies to identify best practices. Once identified, RTD anticipates implementing supervisory training to include active listening, emotional intelligence, and providing constructive feedback.

- B AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation and recognizes that regular and timely performance feedback and personal recognition is important to Operators' development and retention and the

transportation services provided. RTD management will refine and develop additional training programs that support initiatives stemming from the assessment conducted to improve performance feedback.

RTD has developed training programs that focus on improving communication and trust between Supervisors/Managers and Frontline Employees. This training began in early 2020 and was temporarily suspended due to COVID-19 related issues. RTD management is modifying this training so that it can be conducted remotely going forward. RTD management will also research other channels (e.g., employee engagement survey responses, all-hands meetings, etc.) to further improve communication and enhance the trust as part of Supervisory training programs. RTD anticipates this training will include creating a team environment of inclusion, celebrating successes, and genuinely recognizing and rewarding employees to create an environment where people want to do their best.

C AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation and recognizes the importance of timely employee recognition acknowledgment. RTD has many employee recognition programs, including the RTD Way program, ADA Hero Awards, safety awards to name a few, in addition to customer commendations. RTD has recently implemented some automated management systems that will help with expediting employee recognition within no less than 30 days of the recognized achievement.

RTD management will research additional ways to improve employee recognition, including reaching out to peer transit agencies to identify best practices for timely sharing customer compliments and other personal recognition. RTD will develop an implementation and supervisory training plan based upon those findings.

D AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation and is committed to tracking and reporting the reasons for turnover and to using that information to improve supervision and retention. RTD has compiled information to identify and track reasons for Operator turnover through employee engagement surveys, with the last survey conducted in the fall of 2019. RTD also previously conducted formal exit interviews, but this was discontinued and replaced with more informal exit interviews. RTD anticipates conducting retention and employee surveys every two years.

RTD management will continue to develop surveys that provide useful retention and organization environmental information, and to research and implement more formal exit interview processes and appropriate tracking/reporting mechanisms. This information will be provided timely to management and human resources staff and used to improve supervision and retention.

# REST BREAKS FOR BUS OPERATORS

Bus operators' work schedules can consist of driving multiple different bus routes in a day, each with different round-trip mileage and driving time behind the wheel. Bus routes consist of a planned driving path from one RTD terminal location to another, and an operator typically drives a round-trip, ending at the point of origin. Operators need rest breaks during their shifts to perform end of route duties such as light cleaning of the bus or depositing items in the lost and found, and for time to rest, recover, and use the restroom when they end a round-trip. According to RTD management, operators are allowed to take breaks in between round-trips, which are called layover breaks.

RTD staff use route development software to schedule routes and layover breaks for operators, and use a Global Positioning System (GPS) to track the location of buses during and between each round-trip and provide data on bus timeliness. RTD's GPS system has the ability to use the data on bus locations to analyze when buses are stopped and whether operators are receiving breaks. According to RTD staff who develop route schedules, when they identify issues, such as too little scheduled layover break time or buses that run consistently late on routes causing operators to miss their breaks between round-trips, they update the scheduled break times for routes.

## WHAT WAS THE PURPOSE OF THE AUDIT WORK AND HOW WERE THE RESULTS MEASURED?

The purpose of the audit work was to assess whether RTD ensures that bus operators receive sufficient layover breaks during their work shifts. Since 1980, the Union agreement has required RTD to ensure that operator schedules include breaks. The current Union agreement, established in 2018, states: "All regular runs with more than one round-trip shall have a scheduled recovery time equal to at least 10 percent of

the round-trip [driving] time for each round-trip for the purposes of schedule adherence and use of toilet facilities” (Collective Bargaining Agreement, Article 3, Section 7.A). Regular runs have more than one round-trip and round-trips are grouped together to create operator work schedules. The Union agreement further explains that the 10 percent layover break should provide the operator the actual time needed to perform required duties plus walking time to a restroom (Collective Bargaining Agreement, Article 3, Section 7.A). According to the Union representative, the 10 percent minimum break time has been in the Union agreement since 1980 and specific language about operator break times was added in 1988 because operators were not receiving them. RTD management indicated that the 10 percent minimum for breaks is generally an industry standard.

We focused our review on the 10 percent requirement to assess the extent to which operators received required breaks when working RTD’s local and limited bus routes, which make stops at bus stops. We did not review regional routes that serve distant points, such as Nederland, or SkyRide routes to Denver International Airport.

## WHAT PROBLEMS DID THE AUDIT WORK IDENTIFY AND WHY DO THEY MATTER?

Overall, we found that bus operators do not always receive breaks during their shifts, as required, even though RTD staff incorporate time for breaks in bus route and operator schedules. Specifically:

**RTD DATA SHOWED THAT OPERATORS DID NOT CONSISTENTLY RECEIVE REQUIRED BREAKS.** We reviewed RTD’s published bus routes, data on scheduled route driving times, and RTD staff’s summary of GPS data showing the number and percentage of round-trips for a random sample of 20 routes that either did or did not comply with the minimum required break times. The random sample was of 20 of RTD’s 100 local and limited bus routes, and included 124,970 round-trips driven between August and December 2019, before RTD revised route

schedules in early January 2020, and 25,906 round-trips driven between mid-January and mid-February 2020, to determine if RTD adjusted schedules in January to help ensure sufficient breaks. We used RTD’s summary of GPS data to estimate the percentage of route round-trips that were not compliant with the minimum breaks required by the Union agreement. We estimate that 10 of the 20 (50 percent) sampled routes did not provide operators the minimum required break time at least one-third of the times the routes were driven, as shown in EXHIBIT 2.7. The percentages shown in EXHIBIT 2.7 are the maximum *potential* percentage of noncompliant round-trips because of limitations in RTD’s GPS software to capture bus locations perfectly, as described later in this section.

We also estimated that as many as 981 of 1,957 round-trips (50 percent) did not meet the 10 percent break requirement in the 2019 period or the 2020 period, signaling that some schedules were not adjusted in early 2020 to allow for breaks. Using RTD’s data, we could not determine the exact amount of break time minutes that operators received because RTD’s summary does not include actual minutes, nor could we determine the exact number of individual operators who did not receive required breaks.

**EXHIBIT 2.7. SAMPLED ROUTE ROUND-TRIPS NOT CONSISTENTLY PROVIDING  
REQUIRED LAYOVER BREAKS TO BUS OPERATORS  
AUGUST 2019 THROUGH FEBRUARY 2020**

Sampled Bus Route	Average round-trip driving time minutes	Minimum 10 percent break that was not provided <sup>1</sup>	Max. potential percent of noncompliant round-trips, Aug. to Dec. 2019	Max. potential percent of noncompliant round-trips, Jan. and Feb. 2020	Overall average percentage, Aug. 2019 to Feb. 2020 <sup>2</sup>
30L, South Federal Limited - 20th/Champa to Wadsworth/Hampden	62	6 minutes	100%	100%	100%
59, West Bowles - Littleton Station to Coal Mine/Bowles	71	7 minutes	53%	54%	53%
80, 80th Ave. Crosstown - 80th/Wadsworth to Thornton	52	5 minutes	53%	38%	50%
55, Olde Town Arvada - Arvada Ridge to Olde Town Arvada	32	3 minutes	49%	48%	49%
28, 28th Ave. - Central Park Station to Ward Road/I-70	177	17 minutes	47%	48%	47%
0, South Broadway - Union Station to Highlands Ranch	118	11 minutes	48%	35%	46%
16, West Colfax - 10th/Washington to Golden	107	10 minutes	42%	34%	41%
32, 32nd Ave. & City Park - 32nd/Colorado to Ward Rd./I-70	113	11 minutes	39%	41%	39%
31, Federal Blvd/Evans to Front Range Community College	110	11 minutes	36%	36%	36%
169L, Buckley/Tower/DIA Limited - Smokey Hill/Pheasant to DIA	113	11 minutes	34%	35%	34%
12, Downing St. to North Washington	216	21 minutes	24%	19%	23%
52, West 52nd Ave./South Bannock - Alameda Station to 63rd/Wright	136	13 minutes	23%	14%	21%
72, 72nd Ave. Crosstown - US 85/72nd to 63rd/Wright	130	13 minutes	17%	24%	19%
225, Boulder/Lafayette Park-n-Ride via Baseline	86	8 minutes	18%	7%	16%
88, Thornton/Commerce City/Central Park	138	13 minutes	14%	15%	14%
139, Quincy - Nine Mile Station to Smokey Hill/Picadilly	64	6 minutes	14%	12%	13%
125, Youngfield/Ward - Federal Station to Westwoods/Quaker	76	7 minutes	14%	7%	13%
323, Skyline Crosstown - Bent Way/ Dry Creek to Pace/17th Ave.	96	9 minutes	6%	4%	5%
133, Hampden/Tower - Nine Mile Station to Aurora Metro Center	71	7 minutes	5%	3%	5%
40, Colorado Blvd - Southmoor Station to 60th/Dahlia	107	10 minutes	4%	1%	3%
<b>Average Percentages, All Routes</b>	<b>NA</b>	<b>NA</b>	<b>30%</b>	<b>26%</b>	<b>30%</b>

SOURCE: Office of State Auditor analysis of RTD data.

<sup>1</sup> Shows the minimum break time based on the 10 percent requirement, and not rounding up.

<sup>2</sup> Overall average calculated by combining the maximum potential number of round trips that did not meet the 10 percent minimum from August to December 2019 and from January to February 2020.

**SOME BUS OPERATORS SAID THEY WERE NOT RECEIVING REQUIRED BREAKS.** To provide context on RTD’s operations, we surveyed a random sample of 123 of the 1,079 bus operators employed in 2020 and received responses from 26 of them, and interviewed a random sample of 10 additional bus operators. A total of 19 of the 36 bus operators surveyed or interviewed (53 percent) corroborated what is shown in EXHIBIT 2.7, stating that operators did not always have sufficient time for layover breaks during their shifts to recover and use the restrooms when needed. Examples of operators’ written and verbal comments about insufficient and/or inconsistent breaks included that many routes always seem to run late, often there is not time to take a break or use the restroom, some routes have nice long breaks while others often run late due to traffic and passenger loads, and sometimes they do not drink fluids because they know they will not have time to use the restroom. In July 2020, the Union representative also told us that operators were often raising concerns about inadequate breaks and questioning why they do not receive them as required by the agreement. Some RTD management also told us that it has received comments from bus operators regarding inconsistent or inadequate breaks.

When operators do not receive sufficient breaks during their shifts, it can lead to increased safety risks if operators are tired while driving. A 2012 report by the American College of Occupational and Environmental Medicine on fatigue risk management concluded that “frequent short breaks of 5 to 15 minutes every 1 to 2 hours have been shown to reduce fatigue, improve productivity, and reduce the risk of error or accidents.” Some RTD operators do not receive breaks as frequently as recommended in this 2012 report. According to RTD’s data for the 20 sampled routes, the round-trip minutes that bus operators drove before taking a break averaged 1.8 hours, but ranged from 16 minutes to about 4 hours in January and February 2020. Furthermore, providing bus operators sufficient breaks may help reduce some bus accidents at RTD. According to RTD’s 2019 Bus Accident summary, 529 of the 1,670 bus accidents (32 percent) that occurred that year were classified by RTD as “preventable.” While different factors cause preventable accidents and the factors may not always



involve driver fatigue, 474 of the 529 preventable accidents occurred when the operator had been on duty for longer periods, between 4 and 12 hours. We could not determine how many of the operators with accidents did not receive their breaks due to a lack of available data from RTD.

Insufficient breaks during shifts can also lead to health problems for operators. For example, the Union representative told us that some operators have kidney issues because operators do not have sufficient time to use the bathroom and do not want to make a bus late by taking a break because they have a duty to stay on schedule for customers. Further, a 2011 study by the National Institute for Occupational Health found that 42 percent of transit workers studied suffered from hypertension compared to only 28 percent across all workers in the study.

## WHY DID THESE PROBLEMS OCCUR?

According to RTD, operators may not receive their scheduled breaks for a number of reasons that are outside of RTD's control, such as construction and traffic along the route, accidents, and assisting customers. However, RTD lacks procedures to help mitigate the impact of these extenuating circumstances and ensure that operators receive breaks in line with the Union agreement. Specifically, when the route schedules were revised in January 2020, RTD did not adjust many of them to provide operators the required layover break time because there is no process for its staff to conduct the analysis that we conducted or analyze *actual* break times between round-trips. RTD staff only review the *scheduled* layover break time for each route to check if it appears close to the 10 percent minimum required in the agreement, and review the bus driving times for routes to identify which buses are consistently late, such as due to construction and traffic. Furthermore, RTD has no process to ensure operators receive breaks at the end of round-trips. RTD staff review the aggregate GPS data for bus driving times along routes to check if buses usually run on time or late, but do not use this analysis to schedule breaks at the end of round trips.

RTD management told us that staff attempted to develop a process for comparing actual and scheduled break times in 2014, but the process was never finalized. Based on interviews with RTD management and staff, it can be a challenging and cumbersome process to analyze actual break times because they must manually compare GPS system data to scheduling software route data; the two software programs do not communicate with one another. Additionally, management told us that the GPS system data does not always capture accurate times when each bus arrives at a station if the bus operator does not park in the appropriate location or if the bus GPS sensor cannot capture the bus location because objects such as buildings, block the transmission of data. These limitations in the GPS software can make it difficult for RTD staff to determine whether or not the operator received each full break as required by the Union agreement. Taking into consideration the manual and potentially time-intensive nature of this type of analysis, RTD may want to consider analyzing data on a rotating sample basis, such that all routes are reviewed at least annually and updated, as needed, based on the analysis.

## RECOMMENDATION 2

The Regional Transportation District management should improve its processes to help ensure that bus operators receive adequate rest breaks during their work shifts, in accordance with requirements in the Union Collective Bargaining Agreement (Union agreement), by establishing procedures to capture and analyze more accurate data on the actual breaks that bus operators receive on routes, and use the data to update bus route schedules, as appropriate, to provide operators with required breaks.

# RESPONSE

## REGIONAL TRANSPORTATION DISTRICT

AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation and is committed to ensuring Operators receive adequate rest breaks. RTD currently collects and analyzes data on a continual basis for use in developing operating schedules, which are typically implemented three times per year in accordance with the Collective Bargaining Agreement. RTD management will continue efforts to increase the accuracy of schedules using existing and new software tools, survey data and scheduling processes, including reviewing data on actual breaks taken. Efforts may include a restructure of route alignments (bus) and/or changes to Operating schedule characteristics (bus and rail).

## BUS OPERATOR SCHEDULES

Operators may request to work a standard shift schedule or nonstandard schedule, known as the extra board. A standard shift schedule has consistent hours and routes throughout the week, but can include shifts that may be undesirable to an operator, such as those starting early in the morning or ending in the middle of the night. The nonstandard extra board schedule requires operators to work different hours each day of the workweek, but allows them to choose if they want to work morning or evening shifts.

RTD facilitates a process for operators to vote on which work schedules they would like to work three times per year, in January, May, and September. First, RTD provides operators a list of standard shift schedules and the number of operators needed to work the morning and evening extra board schedules. Second, starting with the most senior operator, operators take turns meeting with RTD supervisors and submitting votes to reflect either the standard shifts or the extra board day or night schedule they would like to work. Operators also vote, in seniority order, on which days they would like off each week, although the Union agreement allows them to work 6 days in a week, either voluntarily or as assigned by a supervisor, and work 7 days in a week voluntarily. Supervisors assign operators schedules based on the votes, and assign extra board schedules that attempt to balance the driving hours across the extra board operators. For example, operators with fewer driving hours one day may be assigned more driving hours the next day.

Operators receive a schedule that includes their daily shift start time—when they must arrive for work, shift end time—when they end their workday, the RTD garage(s) where they will start and end their day, and the primary route they will drive. During their workweek, some operators are assigned to drive different routes that begin at different RTD garage locations, such as in Denver or Boulder. Prior to the pandemic, some operators' schedules included mandatory overtime

because RTD did not have enough operators to drive all scheduled routes.

## HOW WERE THE RESULTS OF THE AUDIT WORK MEASURED?

**RTD IS TO ENSURE THAT OPERATORS WHO WORK THE EXTRA BOARD SCHEDULE HAVE EFFICIENT, FAIR, EQUITABLE, AND CONSISTENT WORK SCHEDULES.** The Union agreement, which includes a memorandum of understanding with additional requirements for extra board schedules, states that for operators working the extra board schedule, “Insofar as practicable, [RTD] will ... avoid the necessity of working extra board employees in excess of their regular workweek.” In addition, the Union agreement states that procedures to assign operators to extra board work “are intended to ensure that work assignments are efficient, fair, equitable and consistent [across RTD]. [RTD] and Union are committed to guarding against any kind of favoritism or disparate treatment.”

**AS A BEST PRACTICE, RTD SHOULD ENSURE THAT WORK SCHEDULES HELP DISTRIBUTE THE RISK OF FATIGUE ACROSS ALL OPERATORS.** In 2015, the U.S. Department of Transportation’s Federal Transit Administration (FTA) issued a report on bus operator fatigue [*Establishing a Fatigue Management Program for the Bus and Rail Transit Industry, 2015, Transit Advisory Committee for Safety 14-02 Report*]. The report defines fatigue as “a physical and/or mental state resulting from prolonged physical and/or mental exertion, or insufficient quantity or quality of sleep or rest, in which an individual’s motor skills, coordination, mood, reasoning, and/or reaction are degraded from their normal function.” The FTA report states that “fatigue risks” are factors that can result in operators experiencing fatigue, and include:

- Inconsistent work schedules that interrupt operators’ sleep-wake cycle, such as inconsistent start and end times of shifts, and working consecutive days or long shifts,

- Changes to the type of work, such as different or unfamiliar routes,
- Overtime on an operator’s scheduled days off, and
- Stress associated with driving inter- and intra-city transit, such as navigating traffic while keeping the bus on schedule.

The FTA recommends that transportation agencies distribute fatigue risks equitably across operators to ensure the safety of operators and their passengers.

RTD provides its operators written guidance on fatigue in the Trailblazer, which is the guide that RTD creates for its operators with details about their job and routes. For example, the Trailblazer states that if operators “do not get enough quality sleep ... [they] have a greater risk of fatigue-related accidents” and that fatigue “can be caused by long hours of work, long hours of physical or mental activity, inadequate rest, excessive stress, and combinations of these factors.” The Trailblazer also explains that sleep deprivation resulting in fatigue increases the likelihood of accidents on the job, and emphasizes that in order for operators to avoid or mitigate fatigue, they should “maintain a lifestyle that is balanced,” such as between work and outside of work.

## WHAT PROBLEMS DID THE AUDIT WORK IDENTIFY?

We assessed RTD’s processes for assigning schedules to full-time bus operators prior to the pandemic to understand how scheduling works during normal operations and the extent to which newer operators’ shifts may contribute to fatigue. Overall, we found that newer operators, who have worked for RTD less than 2 years, are more likely to have work schedules that contribute to fatigue than senior operators. This indicates that RTD may not be distributing fatigue risks equitably among its newer and senior operators. The results of our analysis do not distinguish between operators working standard schedules and those working extra board schedules because we could not reliably determine this using RTD’s data.

**NEWER BUS OPERATORS ARE MORE LIKELY TO WORK 6- OR 7-DAY WEEKS.** We analyzed the schedules worked from January 12 through February 8, 2020 by the 824 full-time bus operators—618 senior operators who had been at RTD for 2 or more years and 206 newer operators who had been at RTD for less than 2 years. The 4-week period we reviewed was the beginning of RTD’s new service schedule for the year and prior to the stay-at-home orders enacted by the State during the pandemic. As shown in EXHIBIT 2.8, a higher percentage of newer operators worked more consecutive days, without days off, compared to senior operators. In nearly every instance, RTD data showed that operators volunteered to work these schedules.

**EXHIBIT 2.8. SUMMARY OF BUS OPERATORS  
WORKING 6 CONSECUTIVE DAYS OR MORE  
JANUARY 12 THROUGH FEBRUARY 8, 2020**

SCHEDULE	PERCENTAGE OF NEWER OPERATORS (NUMBER)	PERCENTAGE OF SENIOR OPERATORS (NUMBER)
Worked at least one 6-day week	90% (186 of 206)	60% (368 of 618)
Worked at least one 7-day week	36% (74 of 206)	13% (80 of 618)
Worked 14 to 28 consecutive days	9% (18 of 206)	3% (21 of 618)

SOURCE: Office of the State Auditor analysis of RTD data.

**NEWER BUS OPERATORS ARE MORE LIKELY TO HAVE SCHEDULES WITH SHIFT START TIMES OR END TIMES THAT FLUCTUATE SIGNIFICANTLY FROM DAY-TO-DAY.** EXHIBIT 2.9 shows that most newer operators had schedules with shift start and end times changing by 4 hours or more from day-to-day, on consecutive days during their work week, whereas a lower percentage of senior operators had such fluctuating schedules. For example, if an operator’s Monday shift starts at 12:00 p.m., and their Tuesday shift starts at 4:00 a.m., this represents an 8-hour change in the shift start time.

**EXHIBIT 2.9. NUMBER OF BUS OPERATORS  
WHOSE DAILY SHIFTS FLUCTUATED SIGNIFICANTLY  
JANUARY 12 THROUGH FEBRUARY 8, 2020**

SHIFT	PERCENTAGE OF NEWER OPERATORS (NUMBER)	PERCENTAGE OF SENIOR OPERATORS (NUMBER)
<b>Shift Start Time Changed by<sup>1</sup>:</b>		
4 to 7 hours	76% (156 of 206)	27% (164 of 618)
8 or more hours	17% (34 of 206)	6% (40 of 618)
<b>Shift End Time Changed by<sup>1</sup>:</b>		
4 to 7 hours	90% (185 of 206)	50% (308 of 618)
8 or more hours	58% (120 of 206)	24% (146 of 618)

SOURCE: Office of the State Auditor analysis of RTD data.

<sup>1</sup> Shows the absolute value of the number of hours earlier or later in the day, from one workday to the next consecutive workday.

EXHIBIT 2.10 shows an example of one of the newer operator's schedules when they worked 7 consecutive days in January 2020.

**EXHIBIT 2.10. EXAMPLE OF A NEWER BUS OPERATOR'S SCHEDULE  
WITH FLUCTUATING START AND END TIMES FOR SHIFTS**

DATE	SHIFT START TIME	CHANGE IN START TIME <sup>1</sup>	SHIFT END TIME	CHANGE IN END TIME <sup>1</sup>
Tuesday, January 14, 2020	12:30 p.m.	-	3:30 p.m.	-
Wednesday, January 15, 2020	8:28 p.m.	8 hours	5:11 a.m.	14 hours
Thursday, January 16, 2020	5:00 p.m.	3 hours	1:25 a.m.	4 hours
Friday, January 17, 2020	6:19 p.m.	1 hour	3:41 a.m.	2 hours
Saturday, January 18, 2020	1:57 p.m.	4 hours	11:57 p.m.	4 hours
Sunday, January 19, 2020	9:33 a.m.	4 hours	5:39 p.m.	6 hours
Monday, January 20, 2020	7:00 a.m.	2.5 hours	3:00 p.m.	2.5 hours

SOURCE: Office of the State Auditor analysis of RTD data.

<sup>1</sup> Shows the absolute value of the number of hours difference between the start time or end time of the current day's schedule compared to the previous day's schedule, rounded to the nearest half hour.

**NEWER BUS OPERATORS ARE MORE LIKELY TO WORK MULTIPLE ROUTES AND AT MULTIPLE GARAGES IN A WEEK.** During the 4-week period we reviewed, 36 percent of newer operators (74 of 206) worked 10 or more different routes, compared to 4 percent of senior operators (26 of 618). In addition, 32 percent of newer operators (65 of 206) were scheduled to work at two or more bus garages in a week, compared to 4 percent of senior operators (22 of 618). EXHIBIT 2.11 shows an example of the schedule for one newer bus operator who was assigned six different



routes that began at three different garage locations during one work week.

**EXHIBIT 2.11. EXAMPLE OF NEWER BUS OPERATOR'S SCHEDULE WITH MULTIPLE ROUTES AND GARAGE LOCATIONS**

DATE	BUS GARAGE LOCATION	ROUTE	SHIFT START TIME	SHIFT END TIME
Sunday, January 12, 2020	East Metro garage, West Aurora	121	4:53 p.m.	1:05 a.m.
Monday, January 13, 2020	Platte garage, Central Denver	16	6:22 p.m.	2:32 a.m.
Tuesday, January 14, 2020	Boulder garage Platte garage,	FF	1:00 p.m.	2:21 a.m.
Wednesday January 15, 2020	Central Denver Platte garage,	Standby <sup>1</sup>	3:00 p.m.	9:00 p.m.
Thursday, January 16, 2020	Central Denver Platte garage,	12	3:30 p.m.	12:50 a.m.
Friday, January 17, 2020	Central Denver	120X	4:30 p.m.	12:03 a.m.

SOURCE: Office of the State Auditor analysis of RTD data.

<sup>1</sup> Standby is when an operator must report to a bus division in the event that the operator is needed to work the routes of another operator.

Additionally, the 36 bus operators who responded to our survey and interviews provided comments that corroborated what was shown in RTD's scheduling data. For example, 23 of the 36 respondents (64 percent) told us that a common reason operators leave RTD or feel fatigued on the job is their difficult work schedules, including working 6- or 7-day workweeks, long days, and/or odd or late hours, which can exhaust them. Furthermore, RTD management and a Union representative told us that newer operators who have been at RTD for less than 2 years are most likely to work longer workweeks and inconsistent shifts.

## WHY DID THESE PROBLEMS OCCUR?

**THE UNION AGREEMENT REQUIRES SENIORITY-BASED SCHEDULING THAT RESTRICTS RTD'S ABILITY TO DISTRIBUTE FATIGUE RISKS AMONG NEWER AND SENIOR OPERATORS.** First, the Union agreement requires operators to choose their schedules and routes based on seniority so the most senior operators typically choose the consistent and more desirable shift schedules, and newer operators typically must work the less desirable schedules, such as late night or early morning shifts, or the inconsistent

extra board schedule. Supervisors typically assign the newest operators, who have just completed new hire training, to work the less desirable extra board schedule unless there are standard schedules that have not yet been assigned. In addition, RTD management and operators told us that this seniority-based process might encourage newer operators to vote to work on the extra board, rather than voting to work a standard schedule that might have undesirable shift schedules or routes. For example, one operator told us they preferred to work the extra board because it allowed them to work during the day, as opposed to being assigned a late night standard run. RTD management said that the nature of the extra board schedule is that operators' schedules change from day-to-day, which could be a reason why some newer operators have more inconsistent schedules compared to senior operators.

Second, the Union agreement requires RTD to assign overtime to newer operators who choose to work the extra board schedule first. According to the Union agreement, if there are any unassigned shifts, supervisors must first offer them as voluntary overtime to all extra board operators, and for any remaining overtime that is needed, assign overtime to newer operators on the extra board schedule. The Union agreement states that operators cannot refuse mandatory overtime. Due to provisions in the Union agreement, RTD management indicated that it does not believe that it has sufficient flexibility to design a scheduling process that would distribute fatigue risk equitably among newer and senior operators. As such, RTD does not have a policy or process for operators to notify a supervisor within a period of time prior to the start of a shift to request time off due to fatigue, nor is there a process for management to help ensure operator fatigue is addressed by supervisors consistently or equitably.

We reviewed the collective bargaining agreements for six other transit agencies with union-represented operators and found that some provided greater flexibility than RTD's Union agreement regarding scheduling to address fatigue risk. Although seniority-based scheduling is common for the other transit agencies, three of their agreements state that extra board scheduling practices are determined outside of the collective bargaining agreement, such as by committees that can be

more responsive to the changing needs of operators and the agency. In addition, guidance from the American College of Occupational and Environmental Medicine (ACOEM) states that “employees should be encouraged to monitor their own level of fatigue and inform their supervisor if they believe that they are too fatigued to safely perform their work,” and that supervisors must create an environment to encourage employees to share this type of safety-related information and supervisors should employ methods to mitigate fatigue [*ACOEM Guidance Statement: Fatigue Risk Management in the Workplace*, 2012, *Journal of Occupational and Environmental Medicine*, Volume 54(2), pp. 231-258].

It is not clear whether the Union agreement, negotiated in 2018, allows for RTD to establish policies or guidelines to distribute fatigue risks among operators equitably because the changes could affect seniority-based and extra board scheduling. For example, policies limiting the number of consecutive days that an operator can voluntarily work or guidelines limiting how often an operator’s scheduled start time, route, and/or garage location can change within a week, may need to be negotiated cooperatively between RTD and the Union. However, establishing policies and guidelines to better distribute fatigue risks may be allowable under the current Union agreement because they would help ensure that schedules for operators who work the extra board are efficient, fair, equitable and consistent across RTD, as required by the Union agreement.

**RTD LACKS SUFFICIENT TRAINING FOR OPERATORS AND SUPERVISORS ON HOW TO MANAGE OPERATOR FATIGUE.** RTD provides onboarding training to new operators on how to recognize and manage fatigue, but does not offer similar training to operators subsequently, such as ongoing training or a refresher course. Instead, RTD offers an optional wellness program to all employees, which provides online resources and newsletters that include advice on managing fatigue. According to RTD management, operators are told to recognize that if they are not feeling well they should change their work schedule. However, as we identified during the audit, newer operators often do not have the ability to change their work schedule. Furthermore, while the versions of the

Trailblazer provided to operators in May 2019, August 2019, and January 2020 explain that fatigue risks include long work hours and inadequate rest, RTD does not provide guidance within the Trailblazer on how operators should manage the fatigue risks with help from their supervisor or on their own.

Additionally, RTD’s supervisory training does not provide guidance on how supervisors are to identify the signs of fatigue and factor in fatigue risk when determining operator schedules. RTD management told us that a supervisor should respond to an operator’s fatigue if it comes to their attention but that some operators do not see or interact with their supervisors on a daily basis.

Guidance from the FTA and the ACOEM states that employers should train employees on how to manage fatigue, such as educating them on the hazards of fatigue to their work and to their personal relationships, recognize fatigue and employ strategies to stay alert at work, and ensure adequate sleep [*Establishing a Fatigue Management Program for the Bus and Rail Transit Industry*, 2015, Transit Advisory Committee for Safety 14-02 Report, pp. 18-20. *ACOEM Guidance Statement: Fatigue Risk Management in the Workplace*, 2012, Journal of Occupational and Environmental Medicine, Volume 54(2), pp. 231-258]. Supervisors should also be trained to identify signs of fatigue in employees and to mitigate fatigue, such as providing more rest breaks for physical activity [*ACOEM Guidance Statement: Fatigue Risk Management in the Workplace*, 2012, Journal of Occupational and Environmental Medicine, Volume 54(2), pp. 231-258]. In addition, the FTA reports that, “Fatigue training for shift schedules is critical” so that schedulers understand the fatigue risks associated with unpredictable shift schedules in order to assign operator shifts that minimize these risks.

## WHY DO THESE PROBLEMS MATTER?

Operator fatigue can increase safety risks and the likelihood of operator turnover, which affect both RTD’s overall service delivery by harming on-time bus performance and causing dropped service, and RTD’s revenue, such as when customers limit their use of RTD services.

- **SAFETY RISKS.** Operator fatigue poses safety risks to RTD operators and passengers, as well as pedestrians and other drivers who share the streets with RTD buses. According to the FTA, fatigue “poses especially significant safety risks” and “impinges upon a transit operator’s ability to selectively attend to changing cognitive landscapes throughout the work period, potentially compromising [their] ability to make real-time safety decisions and appropriately execute related safety-critical tasks.” Fatigue sets in when operators have inconsistent schedules that affect their wake-sleep cycle, decreased work-life balance, and work in high-stress situations.

The FTA report also explains that operator fatigue can lead to delayed reaction times and dimmed alertness, and cause transit accidents. In addition, newer operators are less familiar with the demands of driving a bus for RTD, such as keeping a bus running on-time, managing passengers, and how to maneuver in traffic, which can contribute to increased stress and fatigue. For the bus operators for whom we reviewed work schedules, 95 of the 206 newer operators (46 percent) were involved in an accident or incident while driving, compared to 180 of the 618 senior operators (29 percent).

- **TURNOVER.** When operators feel tired or overworked, they may be less likely to continue working for RTD. In our survey of operators, they told us that some of the common reasons for operator turnover are “working the late night shifts then being scheduled to come back 8 hours later;” feeling “tired, overworked, and underpaid;” “hav[ing] long days where we are gone from home 10-12 hours;” and schedules that can be “rough” on people who are married and/or have a family. Of the 1,289 bus operators hired between 2016 and May 2020, 649 (50 percent) left RTD within 2 years of being employed. This turnover has resulted in persistent operator shortages and RTD not consistently fulfilling its service schedule for customers, which in turn degrades the public’s confidence in RTD.

## RECOMMENDATION 3

The Regional Transportation District management should improve its processes for assigning schedules to operators by:

- A Working with the operators' Union to identify ways to improve scheduling processes to help ensure fatigue risks are distributed among all operators equitably, and then implementing solutions agreed upon by both parties, and clarifying language in the collective bargaining agreement as needed.
- B Providing ongoing training to operators and supervisors on how to manage and mitigate operator fatigue.

## RESPONSE

### REGIONAL TRANSPORTATION DISTRICT

- A AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation and is committed to improving scheduling processes to minimize fatigue risks. RTD management continues to seek out opportunities to address issues that impact Operators' quality of life by actively engaging in the collective bargaining process.

Recognizing an employer cannot unilaterally implement changes subject to the collective bargaining processes, RTD management continues in good faith to work collaboratively to address these issues with the Union, and to identify and implement solutions agreed upon by both parties.

B AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation and is committed to providing training to Operators and Supervisors regarding managing and mitigating operator fatigue. RTD management will review existing training programs and update as appropriate and include Operator Fatigue Training in the agency's Operator Annual Refresher Training in 2021.

# USE OF INTERNAL AUDIT FUNCTION TO IMPROVE OPERATIONS

RTD’s internal audit unit consists of an internal audit manager (audit manager) and two staff auditors who conduct operational, compliance, contract, and information technology (IT) audits of RTD’s systems and processes. The internal audit unit also reviews corrective actions taken by RTD staff in response to audit recommendations and conducts some continuous monitoring of ongoing processes, such as IT system controls. To plan its work, the internal audit unit develops an annual audit plan that is approved by the Board. The purpose, authority, and responsibility of the internal audit unit are defined in a 2017 Internal Audit Charter (Audit Charter) written by the former General Manager and audit manager, and approved by the Board. Organizationally, the internal audit unit is in the executive office and operates under the RTD General Manager’s purview. The audit manager periodically attends meetings of the Board’s Finance, Administration, and Audit Committee (Audit Committee). The Audit Committee is comprised of all 15 Board members, like most of the Board’s committees.

## HOW WERE THE RESULTS OF THE AUDIT WORK MEASURED?

According to RTD’s Audit Charter and the audit manager, RTD’s internal audit activity is guided by the International Standards for the Professional Practice of Internal Auditing (Standards), published by the Institute of Internal Auditors (IIA). According to the IIA’s Definition of Internal Auditing, the internal audit activity is “designed to add value and improve an organization’s operations” by independently and objectively “evaluat[ing] and improv[ing] the effectiveness of governance, risk management, and control processes.” The Standards are a set of principles-based requirements meant to ensure internal audits conform to globally recognized concepts, methodologies, and techniques for the internal auditing profession. By following the



Standards and the IIA's Implementation Guidance (IIA Guidance), internal auditors can serve as an important source of information for the Board and management as they seek to understand and respond to risks strategically. The Standards specify the following characteristics of effective internal auditing:

- **INTERNAL AUDITS SHOULD ALIGN WITH ORGANIZATIONAL GOALS AND ADDRESS ORGANIZATIONAL RISKS.** Audit priorities must be consistent with the organization's goals [Standard 2010], and audit topics should be chosen based on their "potential to improve management of risks, add value, and improve the organization's operations" [Standard 2010.C1]. Audits should conform with the Standards and consider "trends and emerging issues that could impact the organization," as well as "strategies, objectives, and risks" [IIA Interpretation of Standard 2000].
  
- **THE RESULTS OF INTERNAL AUDITS SHOULD IMPROVE THE ORGANIZATION AND BE MONITORED.** The internal audit activity must be effectively managed "to ensure it adds value to the organization" [Standard 2000]. In conducting audits, "The internal audit activity must evaluate and contribute to the improvement of the organization's governance, risk management, and control processes using a systematic, disciplined, and risk-based approach" [Standard 2100]. The audit manager must "ensure that management actions have been effectively implemented or that senior management has accepted the risk of not taking action" [Standards 2500 and 2500.A1]. Based on this Standard, RTD should have processes to ensure that any internal audit recommendations are implemented to help improve the organization. If the audit manager determines that lack of implementation poses an unacceptable risk to the organization, the audit manager "must discuss the matter with senior management" and if it is still not resolved, "communicate the matter to the board" [Standard 2600]. In addition, RTD's Audit Charter states that the audit manager should "report periodically to Senior Management and the Board any corrective actions not effectively implemented."

- **INTERNAL AUDITS AND UPDATES SHOULD BE COMMUNICATED TIMELY TO THE BOARD.** The audit manager must communicate the audit results to the appropriate “parties who can ensure that the results are given due consideration” [Standard 2440.A1]. This communication should be “timely” to allow “management to take appropriate corrective action” [Standard 2420]. The audit manager should also report to the Board and senior management periodically on the internal audit activities’ “purpose, authority, responsibility, and performance” and whether the Standards are being followed [Standard 2060]. According to RTD’s Audit Charter, the Board’s Audit Committee is the appropriate party to whom the results of audits should be communicated. Furthermore, the position description for RTD’s audit manager, which was last updated in April 2017, states that the position, “Serves as a member of the Board of Directors audit committee, acting as an advisor on audit and control issues and presents audit summaries and quarterly audit status reports to the committee through presentations to the Board of Directors [Audit Committee]....” As an Audit Committee member, the audit manager should attend the Committee’s monthly meetings and present audit reports and updates on ongoing audits and resource needs.

Additionally, RTD’s Audit Charter requires the audit manager to, “Ensure each engagement of the annual audit plan is executed,” indicating that audits planned and approved for a calendar year should be completed timely during that year. Timely internal audits are also needed to help RTD meet its performance goal to provide cost-effective and efficient transportation services. According to RTD’s 2019 performance measures, RTD has a strategy to help achieve this goal by completing internal audits on the efficiencies of internal functions. These audits would need to be timely for RTD to reach its goal.

## WHAT PROBLEMS DID THE AUDIT WORK IDENTIFY AND WHY DO THEY MATTER?

Overall, we found that RTD has not utilized its internal audit activity as effectively as it could to identify and respond to risks within the organization, as follows:

**RTD'S INTERNAL AUDIT UNIT DOES NOT CONSISTENTLY FOCUS ON AREAS OF HIGH IMPORTANCE OR RISK.** Although the internal audits that are listed in the audit plans cover a variety of operational areas such as controls over purchase cards, financial reporting, asset management, and IT backup and recovery systems, most audits planned for January 2018 through 2020 did not appear to consistently align with the organization's Strategic Plan goals or address areas of high importance or risk, in line with Standards. We reviewed the internal audit plans and audit reports from January 2018 through August 2020, and RTD's organizational goals from its 2015-2020 Strategic Plan (Strategic Plan). Only nine of the 37 planned audits (24 percent) for 2018 through 2020 appeared to align with RTD's Strategic Plan goals; those nine audits related to goals to improve operator training, recruitment, financial stability, and the accounting and budgeting processes. Furthermore, at the beginning of our audit, Board members and senior management told us that the operator shortage was one of the highest risk factors facing RTD. However, there have been no internal audits of retention or turnover to identify root causes and mitigate risks posed by the operator shortage. At the end of our audit, the budgetary and service challenges that RTD faced during the COVID-19 pandemic were the highest risks at RTD, yet no audit resources had been dedicated to helping assess the risk or identify ways to address it.

When the internal audit unit does not consistently follow Standards by ensuring audit priorities align with organizational goals and risks, RTD cannot ensure that the audit unit is meeting its purpose to add value to the organization and improve operations. In fact, one-third of Board members told us that they were dissatisfied with the quality, quantity,

and objectivity of information they receive from the internal audit unit for the purpose of assessing and improving RTD's operations.

**INTERNAL AUDIT RESULTS ARE NOT ALWAYS USED TO IMPROVE THE ORGANIZATION, AND THE VALUE OF AUDITS IS UNCLEAR.** We were not able to quantify the number of internal audit recommendations that RTD has implemented from 2018 through August 2020, or the improvements that have been made as a result of internal audits, because RTD did not have this information. However, the audit manager told us about instances of RTD not implementing internal audit recommendations or not addressing the problems identified through audits. For example, according to the audit manager, some of the internal audit recommendations related to the finance and administration division have not been implemented within the past 5 years, and recommendations related to overtime and extra shift hours have not been implemented for the bus division, but were implemented for the rail division. In addition, the audit manager does not inform the Board about the implementation status of recommendations or corrective actions taken by management to address problems found in audits.

When RTD does not know whether recommendations from internal audits are implemented and/or the audit manager does not inform the Board about the status of recommendations, RTD is not able to ensure that audits add value and contribute to the improvement of the organization. In addition, when the Board is not aware of the status of audit recommendations, it may not be aware of the risks posed by the problems identified in audits and is not able to hold senior management accountable when risks to the organization perpetuate.

**LACK OF INTERNAL AUDIT REPORTING AND COMMUNICATION WITH THE BOARD.** First, RTD's internal audit unit does not routinely present audit reports or findings to the Board, nor does the audit manager present quarterly audit status reports. According to the audit manager, neither the results of audits nor the status of planned audits are discussed with Board members during meetings or otherwise; audit reports and status updates on planned audits are provided to the Board via email or in

hard copy only. We surveyed the 15 Board members, and five of them told us that they could not recall the audit manager ever discussing the results of internal audits or recommending improvements. Based on our review of Board and Audit Committee meeting minutes from 2018 through July 2020, the audit manager did not present the results of any audit reports or updates on the status of planned audits to the Board. The audit manager told us that in 2020, one update containing seven completed audit reports and the status of audits in the 2019 and 2020 audit plan was provided to the Board by email only. The only other times that internal audit information was presented to Board members was at the end of 2018 and 2019 to provide the next year's audit plan, and in May 2019 to discuss the role of internal audit. Second, most Board members (11 of 15) told us that they could not recall a time when the audit manager had told them the extent to which RTD's internal audit activity followed Standards. Although four members thought this had been discussed in the last year, we found no evidence of a discussion in meeting minutes. Third, we found no record of the audit manager's attendance of most meetings of the Audit Committee during our review period (no record of attendance for 25 of 31 meetings).

When the audit manager has infrequent communication with the Board, members have less assurance that audits are being performed according to the agreed-upon plan to benefit the organization, and members cannot stay apprised of the audit results and take action to address any deficiencies identified. In addition, when audit communication is lacking, the Board is not able to fully evaluate the performance of the audit manager, as required by the RTD Audit Charter and the IIA Standards.

**THE INTERNAL AUDIT UNIT DOES NOT COMPLETE AUDITS IN A TIMELY MANNER.** As of August 2020, the internal audit unit had completed only 19 of the 25 audits that the Board approved for Calendar Years 2018 and 2019, and completed only one of the 12 planned audits approved for 2020, as shown in EXHIBIT 2.12. Of the six audits not completed for 2018 and 2019, five were still in progress as of August 2020, and one was postponed due to a new payroll system being implemented.

EXHIBIT 2.12. PROGRESS OF RTD INTERNAL AUDITS CALENDAR YEARS 2018 THROUGH 2020, AS OF AUGUST 2020			
	2018	2019	2020
Audits planned for the year	13	12	12
Audits not started	0	0	5
Audits in progress	3	3	6
Audits completed	10	9	1
<b>Total audits not completed</b>	<b>3</b>	<b>3</b>	<b>11</b>

SOURCE: Office of the State Auditor analysis of the status of RTD's planned audits from 2018 through 2020, as of August 2020.

When the internal audit unit does not complete audits timely, its value to the organization diminishes because it is not helping to address operational deficiencies timely. For example, if audit resources were dedicated to help assess and identify ways to improve operations while RTD is facing challenges during the pandemic, the results would likely be untimely and could be unusable given the current pace of audits. In addition, untimely audits affect RTD's ability to meet its performance strategy of completing audits on the efficiencies of internal functions. For example, internal audit had only completed 75 percent of its audits related to internal functions in 2019.

## WHY DID THESE PROBLEMS OCCUR?

Overall, RTD's internal audit unit has not been as effective at improving operations as it could because the Board, management, and audit manager have not taken sufficient steps to ensure that the internal audit unit adheres to professional auditing standards.

**LACK OF RISK-BASED AUDIT PLANNING.** Internal audits have not consistently focused on the highest risks to the organization or ways to help meet organizational goals because the internal audit unit did not conduct risk assessments when planning audits, until the end of our audit of RTD. The most recent risk assessment that the internal audit unit could provide was from 2016. During our audit, two Board members asked the audit manager to provide the risk assessment used to create the 2019 audit plan but none was provided, and 12 of the

members told us they had never seen a risk assessment or could not recall seeing one. Additionally, the internal audit unit has no policies or procedures, in the Internal Audit Charter or otherwise, for conducting or communicating risk assessments, such as when developing annual audit plans. According to management and Board members, internal audit has only had periodic informal conversations with senior management and Board members about what areas of the organization are worrisome. The audit manager told us that an email is sent to management and the Board asking for ideas for internal audits. However, if suggestions are not provided when the annual audit plan is being developed, there is no process to include the suggestions in a future audit plan. Additionally, the audit manager is not included in strategic planning and risk assessment meetings, such as the annual retreat with the Board and senior management when organizational goals are established for the year. Two senior managers indicated that the audit manager should be more involved with goal-setting and decision-making for the organization.

Standards require the audit manager to establish “a risk-based plan to determine the priorities of the internal audit activity, consistent with the organization’s goals” [Standard 2010]. The plan should be “based on a documented risk assessment, undertaken at least annually, that considers the input of senior management and the board” regarding the organization’s strategies, key objectives, associated risks, and risk-management processes to help ensure that audit resources are directed to the areas of highest importance for the organization [Standard 2010.A1, IIA Interpretation of Standard 2010, and IIA Guidance 2010].

**INTERNAL AUDIT UNIT LACKS INDEPENDENCE.** The problems we identified also occurred because RTD’s Board has not fully implemented our 2010 performance audit recommendation to “improve the organizational independence of the ... internal audit function by redefining the internal audit unit’s functional reporting line and associated activities in accordance with established professional standards in internal auditing” and that the Board “review the internal audit unit’s administrative reporting line and make any necessary changes.” Although the 2017 Audit Charter states that the audit

manager reports functionally to the Board and administratively to the General Manager, the following impairments to the internal audit unit's independence continue:

- **THE GENERAL MANAGER HAS BOTH FUNCTIONAL (SUPERVISORY) AND ADMINISTRATIVE AUTHORITY OVER THE AUDIT MANAGER.** The Board has not been assigned key supervisory responsibilities over the internal audit unit. Although the Audit Charter states that the audit manager reports functionally to the Board, in practice the General Manager exercises functional authority in areas that the IIA recommends should be under the purview of the Board. Some Board members did not appear to be aware that, under Standards, they should supervise the internal audit unit. In 2017, when the current charter was being drafted, the former general manager removed provisions that would have given the Board supervisory responsibilities over the audit manager without those provisions being proposed to the Board for its consideration. As a result, contrary to Standards, the General Manager has been responsible for hiring and firing, setting compensation, and evaluating the performance of the audit manager—all of which occur without Board approval. RTD's organizational chart and Board bylaws reflect this supervisory relationship.

In addition, the audit manager and others at RTD informed us that in 2019, the former general manager asked the audit manager to limit the duration and content of audit presentations to the Board, and not attend Audit Committee meetings unless there was an audit presentation. Some Board members and RTD staff indicated that they believed that the former general manager's intent was to improve the quality of the audit presentations. However, the former general manager's oversight may have given the appearance that the internal audit function lacks independence because some Board members (five of 15) told us that they believed the audit manager was not always free to communicate with the Board.



Standards state, “The internal audit activity must be independent” [Standard 1100], meaning “freedom from conditions that threaten the ability of the internal audit activity to carry out [its] responsibilities in an unbiased manner” [IIA Interpretation of Standard 1100]. According to Standards, to maintain organizational independence, the audit manager “must report to a level within the organization that allows the internal audit activity to fulfill its responsibilities,” which typically means having “a direct functional [or supervisory] reporting line to the board” [Standard 1110 and IIA Guidance 1110]. The audit manager should have an administrative reporting line (e.g., human resource administration) to senior management, such as the CEO, which implies that the audit manager is a senior role within the organization and is independent from operations that are subject to internal audits [IIA Guidance 1110]. When the chief executive is in charge of the audit manager’s salary and performance reviews, the audit manager may be leery of reporting on management deficiencies to the Board, for fear of reprisal. According to the IIA, to achieve the degree of independence necessary, the audit manager should have “direct” and “unrestricted access to the board” [IIA Guidance 1110], and “must communicate and interact directly with the board” [Standard 1111]. When internal audit communication is not independent, the Board has less assurance in the objectivity of audit reports and in management’s assertions regarding the organization’s performance.

- **THE BOARD HAS NO OVERSIGHT OF INTERNAL AUDIT BUDGET AND RESOURCES.** The Board does not approve the internal audit unit’s budget and resource plan, which appears to be contributing to untimely audits. Although the Board annually approves the overall budget for RTD, internal audit expenditures are not broken out separately in the budget for Board review. According to the IIA [IIA Guidance 1110 and 1111], the board should exercise functional oversight by approving the internal audit budget and resource plan, appointing the internal audit manager, evaluating and approving the compensation of the internal audit manager, in addition to approving the audit charter and audit plan. It is important for the Board to have

oversight of internal audit's budget to ensure audits have enough resources to conduct audits as planned. For example, according to RTD's 2019 performance measures report, the internal audit unit did not complete all of its audits in 2019 because it had "less than full staffing" most of the year.

- **LACK OF COMMUNICATION EXPECTATIONS FOR THE INTERNAL AUDIT UNIT.** RTD has not established any expectations for the audit manager's attendance and participation in the Board's Audit Committee besides the language in the audit manager's position description requiring quarterly presentations of status updates to the Board. Additionally, RTD has no written expectations for the audit manager to communicate information required by Standards, such as audit results and how audits follow Standards. Prior to 2017, the Audit Charter required the audit manager to submit detailed written reports for all audits to the Board and present quarterly on audits and post-audit work to the Audit Committee. However, the audit manager removed these requirements from the Audit Charter that was approved in 2017.
  
- **LACK OF MONITORING OF THE IMPLEMENTATION OF AUDIT RECOMMENDATIONS.** RTD does not have written expectations or a process to track the implementation status of internal audit recommendations or the corrective actions taken to address problems identified through audits. The audit manager has documented the recommendations issued in internal audits from 2013 to September 2019, but has not documented the extent to which they have been implemented, and RTD management does not track this either. The audit manager told us that they felt a lack of support from the former general manager in 2019, to monitor the implementation of internal audit recommendations and report their status to the Board. However, when there was a change in management in January 2020, the internal audit unit did not develop a process to monitor or report the status of recommendations to the Board.

Standards require the audit manager to “establish and maintain a system to monitor the disposition” of audit recommendations to ensure that they have been effectively implemented or that senior management has accepted the risk of not taking action [Standards 2500 and 2500.A1].

- **LACK OF TIMELINESS GUIDELINES.** RTD’s internal audits have not been timely, in part, because RTD has not established accountability mechanisms or clear requirements for planned internal audits to be completed within a reasonable timeframe, such as during the year they are planned. According to the audit manager, turnover and retirement of some audit staff between 2018 and August 2020 contributed to untimely completion of audits. However, the audit manager did not inform the Board that resource limitations would affect the audit plan or seek approval to adjust the plan to defer audits until staff resources became available.

Standards require the audit manager to communicate to the Board and senior management “significant interim changes” to the audit plan for approval, as well as how resource limitations impact the audit plan, such as the need to delay planned audits due to staff turnover [Standard 2020].

- **LACK OF QUALITY ASSURANCE ASSESSMENTS.** The internal audit unit does not conduct internal self-assessments to help ensure audits are completed timely or follow IIA Standards, and has never undergone an external peer review to ensure that it follows Standards. Board members concurred that they had not seen the results of self-assessments of the internal audit function, and the internal audit unit has no procedures to conduct periodic self-assessments. RTD senior management told us that there has been no external peer review of the internal audit activity. Some at RTD told us that there has been no self-assessment or external peer review because the internal audit manager indicated not having time to coordinate them and a lack of funds in the budget.

Standards require the audit manager to “develop and maintain a quality assurance and improvement program that covers all aspects of the internal audit activity” and that includes internal and external quality assessments [Standard 1300]. When internal audits are not periodically subjected to external and internal assessments, the Board has less assurance that auditors adhered to professional standards and based their conclusions and recommendations on sufficient and appropriate evidence. External assessments of the internal audit activity should be conducted at least once every 5 years by an independent, qualified assessor or assessment team from outside the organization [Standard 1312]. Internal assessments must include periodic self-assessments of the audit activity’s performance [Standard 1311] to validate conformance with Standards and “evaluate the quality and supervision of work performed, the adequacy and appropriateness of internal audit policies and procedures, the ways in which the internal audit activity adds value, the achievement of key performance indicators, and the degree to which stakeholder expectations are met” [IIA Guidance 1311].

## RECOMMENDATION 4

The Regional Transportation District's Board of Directors (Board) and management, in consultation with the internal audit manager, should improve the effectiveness of the internal audit unit and its compliance with Internal Audit Standards (Standards) by revising the Board's Bylaws, the Internal Audit Charter, and the internal audit manager's position description, as appropriate, to:

- A Establish procedures to require the internal audit unit to conduct risk assessments to identify audit topics that address the highest risks to the organization and help meet organizational goals, when developing the annual internal audit plan. Procedures should include submitting the assessments to the Board for review before it approves the plan, and management involving the internal audit manager in strategic planning and risk assessment meetings.
- B Ensure the internal audit unit is independent in accordance with guidance from the Institute of Internal Auditors. This should include, but not be limited to, defining the Board's functional role and authority over the audit manager's appointment, removal, compensation, and performance evaluation, and the internal audit unit's budget and resource plan.
- C Establish written expectations regarding how the audit manager should communicate to the Board on items required by Standards, including regular updates on audits in progress and the results of completed audits, and should participate in the Board's Finance, Administration, and Audit Committee meetings.
- D Establish written expectations regarding how the audit manager should track and monitor the status of internal audit recommendations as well as update the Board and management about the status and corrective actions taken to address the recommendations.

- E Clarify written expectations regarding the timeframes for completing planned audits to help ensure they are timely and regarding communications with the Board on resource limitations that may affect the audit plan.
- F Establish an annual process for an internal self-assessment of the quality of internal audits by the audit manager or other competent internal audit professionals, and annual reporting to the Board on the results of the assessment.
- G Establish procedures for the Board to ensure that adequate funds are allocated for external assessments of the quality of internal audits and that such assessments are conducted by a qualified assessor at least once every 5 years.

## RESPONSE

### REGIONAL TRANSPORTATION DISTRICT

- A AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation. The Board's Executive Committee is considering the guidance provided on Internal Audit Standards and is drafting for the Board's consideration and approval proposed changes to the Board's Bylaws, Internal Audit Charter and the audit functions, as appropriate, to establish procedures, including those utilizing risk assessments to develop the audit plan and ensuring the internal audit function is included in strategic planning and risk assessment. RTD agrees that these procedures should provide that risk assessments be submitted to the Board before it approves the audit plan.

B AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation. The Board's Executive Committee is considering the guidance provided on Internal Audit Standards and is drafting for the Board's consideration and approval proposed changes to the Board's Bylaws, Internal Audit Charter and the internal audit function, as appropriate, to ensure the independence of the internal audit function and work, and to outline with specificity the functional reporting relationship, evaluation, and budget and resource plan. RTD agrees that these procedures should define the Board's authority over appointment, removal, and compensation for the internal audit function.

C AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation. The Board's Executive Committee is considering the guidance provided on Internal Audit Standards and is drafting for the Board's consideration and approval proposed changes to the Board's Bylaws, Internal Audit Charter and the internal audit function, as appropriate, to establish written expectations and a schedule for communications and a standard minimum format for regular updates on audits in progress, and the results of completed audits, including the Board's Committee meetings, as appropriate.

D AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation. The Board's Executive Committee is considering the guidance provided on Internal Audit Standards and is drafting for the Board's consideration and approval proposed changes to the Board's Bylaws, Internal Audit Charter and the internal audit functions, as appropriate, to provide for ongoing tracking and status reporting on internal audit recommendations and corrective actions taken.

E AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation. The Executive Committee is considering the guidance provided on Internal Audit Standards and is drafting for the Board's consideration and approval, proposed changes to the Board's Bylaws, Internal Audit Charter and the internal audit function, as appropriate, to establish a completion schedule for the proposed audit plan approved by the Board each year. Moreover, this action will provide for reporting on the status of the current year's audit and any applicable resource limitations.

F AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation. The Executive Committee is considering the guidance provided on Internal Audit Standards and is drafting for the Board's consideration and approval, proposed changes to the Board's Bylaws, Internal Audit Charter and the internal audit function, as appropriate, to establish an annual process for a self-assessment of the quality of internal audits, and for annual reporting to the Board on the results of the assessment.

G AGREE. IMPLEMENTATION DATE: DECEMBER 2021.

RTD agrees with the recommendation. The Executive Committee is considering the guidance provided on Internal Audit Standards and is drafting for the Board's consideration and approval, proposed changes to the Board's Bylaws, Internal Audit Charter and the internal audit function, as appropriate, to establish procedures for the Board to ensure that adequate funds are allocated for external independent assessments of the quality of internal audits, and that such assessments are conducted by a qualified assessor at least once every 5 years.



# CHAPTER 3

## RTD'S FAREBOX RECOVERY RATIO

Historically, the Regional Transportation District (RTD) has relied on a sales and use tax within its boundaries to fund the majority of its operations. In 1989, the General Assembly passed Senate Bill 89-154 in an effort to limit RTD's reliance on sales and use tax dollars, so that it would look for ways to operate efficiently and economically, and consider least-cost alternatives in discharging its responsibilities [Section 32-9-119.7(1), C.R.S.]. This legislative change began requiring RTD to track its farebox recovery ratio.

The General Assembly established RTD's sales and use tax, effective 1974, at a 0.5 percent tax on purchases made within RTD's boundary; in 1983, the tax was increased to 0.6 percent; and in 2005, voters increased the tax to the current rate of 1 percent to help fund FasTracks. In Calendar Year 2019, sales and use tax revenue totaling \$659.4 million funded about 61 percent of RTD's operations, while the remaining 39 percent was funded by non-sales tax revenues. RTD's operating revenue primarily includes fares; advertising revenue; rents from building leases, park-n-rides, and parking garages; and fees, such as those collected for replacement customer fare cards. Nonoperating revenue primarily includes the sales and use tax revenue, grants, and investment income.

The farebox recovery ratio is the percentage of operating costs paid for with non-sales and use tax revenues minus the costs incurred for Americans with Disabilities Act (ADA) services, long-term planning, and rapid transit infrastructures, including FasTracks [Section 32-9-119.7(2), C.R.S.]. The farebox recovery ratio is calculated by RTD staff using revenue and expenditure data from RTD's financial system, and management reports the actual percentage throughout each year to the Board of Directors (Board) to track compliance with statute.

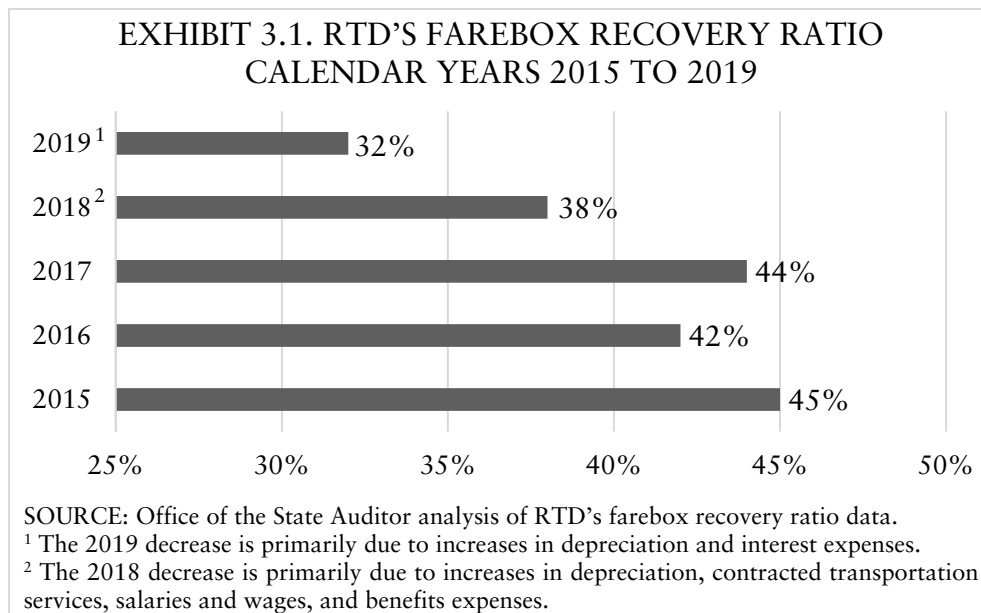
## HOW WERE THE RESULTS OF THE AUDIT WORK MEASURED?

Based on our review of Senate Bill 89-154 and discussions with RTD, the General Assembly implemented the farebox recovery ratio to measure the efficiency and effectiveness of RTD's operations. Statute requires RTD to ensure that its farebox recovery ratio is at least 30 percent; meaning that at least 30 percent of RTD's operational costs must be covered by non-sales and use tax revenues, or no more than 70 percent of operating costs can be covered by sales and use tax revenues [Section 32-9-119.7(3)(d), C.R.S.]. Statute also requires RTD to prepare its annual budget based on the farebox recovery ratio and submit the budget to the Transportation Legislation Review Committee, which is

the General Assembly's oversight committee for RTD [Section 32-9-119.7(4), C.R.S.].

## WHAT PROBLEMS DID THE AUDIT WORK IDENTIFY AND WHY DO THEY MATTER?

We assessed the extent to which RTD complied with the farebox recovery ratio statute [Section 32-9-119.7, C.R.S.] in Calendar Years 2015 through 2019 and found that RTD was in compliance during each of these years, averaging an annual 40 percent ratio, as shown in EXHIBIT 3.1. We also found that RTD presents its Board-approved budgets, in which RTD notes whether the budgets met the farebox recovery ratio, during its annual hearings with the Transportation Legislation Review Committee.



Although we did not identify problems with RTD's compliance with the farebox recovery ratio statute, we found that this ratio may not be a meaningful measure of RTD's efficiency, effectiveness, or operations. Specifically, we found:

**RTD HAS LIMITED CONTROL OVER WHETHER IT MEETS THE FAREBOX RECOVERY RATIO.** First, RTD has little control over a significant amount of expenses that are used to calculate the ratio. In Calendar Year 2019, depreciation and interest expense combined accounted for 46 percent of the expenses used to calculate the farebox recovery ratio, but these expenses fluctuate annually due to financial commitments for FasTracks and other infrastructure improvements, over which RTD has limited control. Depreciation, which is the systematic allocation of the cost of capital assets over their estimated useful life, was RTD’s largest expense from 2017 through 2019, primarily due to new FasTracks rail lines being placed into service, including the G rail line from Denver to Wheat Ridge and the Southeast rail extension. RTD’s interest expense, which is the cost incurred for borrowing funds, increased from 7 percent of RTD’s total expenses in 2018 to 17 percent in 2019 due to the recognition of expenses for FasTracks projects. EXHIBIT 3.2 shows RTD’s depreciation and interest expenses compared to the other expenses used to calculate the 2018 and 2019 farebox recovery ratios.

**EXHIBIT 3.2. FAREBOX RECOVERY RATIO EXPENSE CATEGORIES  
CALENDAR YEARS 2018 AND 2019**

EXPENSE CATEGORY	2018 AMOUNT (IN MILLIONS) AND PERCENTAGE OF TOTAL <sup>1</sup>	2019 AMOUNT (IN MILLIONS) AND PERCENTAGE OF TOTAL
Depreciation	\$220.5 (37%)	\$289.3 (43%)
Interest expense	\$20.2 (3%)	\$17.8 (3%)
All other eligible expenses <sup>2</sup>	\$352.6 (60%)	\$364.1 (54%)
<b>TOTAL FAREBOX RECOVERY RATIO EXPENSES</b>	<b>\$593.3 (100%)</b>	<b>\$671.2 (100%)</b>

SOURCE: Office of the State Auditor analysis of RTD’s farebox recovery ratio data.

<sup>1</sup> By statute, the farebox recovery ratio calculation excludes costs related to long-term planning and development of mass transportation and rapid transit infrastructures.

<sup>2</sup> Includes eligible expenses such as salaries, wages, benefits, contracted transportation services, fuel, and maintenance expenses.

Second, RTD has limited control over the fares and federal grant revenue it receives, which are also used to calculate the farebox recovery ratio. Fare revenue fluctuates depending on the amount of fares collected from passengers, and RTD attempts to keep fares low because it is providing a public service and must remain competitive with other

modes of transportation, such as personal vehicle driving services. If RTD attempted to decrease its dependence on sales and use tax revenue by increasing fares, it could negatively impact ridership and fare collection. There are additional factors that can affect fare revenue that are also beyond RTD's control. For example, beginning in March 2020, the pandemic caused RTD ridership to drop significantly, by about 60 percent, and as of November 2020, ridership remained well below historical averages for these 9 months. In addition, from April through June 2020, RTD did not collect fares due to social distancing requirements and to help protect operators from the pandemic, resulting in only \$33.3 million in fare revenue collected in the first half of Calendar Year 2020; this was a 52 percent decrease from the same period in Calendar Year 2019. Despite this dramatic drop in fare revenue, RTD's farebox recovery ratio for the first half of Calendar Year 2020 was almost 70 percent, well above the statutory percentage of 30 percent, because RTD received a federal Coronavirus Aid, Relief, and Economic Security (CARES) Act grant totaling \$232.3 million.

**THE FAREBOX RECOVERY RATIO IS NOT A COMPLETE MEASURE OF CURRENT OPERATIONS.** The farebox recovery ratio provides an incomplete picture of RTD's financial operations by excluding revenue and costs related to providing ADA service, which are included as operating revenue and operating costs in RTD's Comprehensive Annual Financial Report (CAFR), and by including revenue from grants and investment income, which are nonoperating revenue in RTD's CAFR. In 1993, the General Assembly removed the revenue and costs associated with providing ADA service from the farebox recovery ratio formula because ADA service is an unfunded federally-mandated service that only generates enough revenue to cover about 1 percent of the cost to provide the service. RTD must subsidize the ADA service, so it tracks metrics other than the farebox recovery ratio to monitor subsidization and its performance. Grants and investment income are included as revenue for the ratio because statute specifies that revenue is to include "all non-sales tax revenue generated through the operation and maintenance" of RTD.

**THE 30 PERCENT TARGET DOES NOT APPEAR MEANINGFUL.** When the farebox recovery ratio was enacted in 1989, RTD operations looked much different than they are today. For example, in 1989, RTD had a smaller bus service area, did not have rail service, issued little debt because it did not have large infrastructure projects like FasTracks, and its federal grants were smaller. While the 30 percent ratio may have been a useful measure of RTD’s efficiency and effectiveness when it was enacted, with significant changes to RTD’s operations since 1989, it is not clear that 30 percent is a meaningful target to indicate whether RTD is efficient or effective.

When the statutory measure intended to assess the efficiency and effectiveness of RTD’s operations is not a measure that is within the organization’s control, complete, or meaningful, it is not useful to those who oversee RTD. We listened to RTD’s annual hearings before the Transportation Legislation Review Committee from 2017 to 2019, and found that none of the members discussed or asked about the farebox recovery ratio, and RTD did not mention it either, indicating that the ratio is not a useful measure. Furthermore, due to the problems with the farebox recovery ratio, it is not used by RTD’s Board or management to measure operations. RTD reports that it only calculates the farebox recovery ratio to satisfy the statutory requirement. When a requirement in statute, such as the farebox recovery ratio, does not provide sufficient value in evaluating an agency’s performance, it is reasonable to reevaluate the requirement and consider whether there is a more meaningful performance measure that could be applied.

## WHY DID THESE PROBLEMS OCCUR?

**THE FAREBOX RECOVERY RATIO IS NOT BASED ON INDUSTRY STANDARDS.** It is unclear where the farebox recovery ratio formula and 30 percent target in statute came from. We spoke with RTD management and staff, and researched the farebox recovery ratio legislative history and industry standards, and could find no information on the ratio’s origins or comparable industry metric. RTD management told us that it believes that the farebox recovery ratio was enacted to ensure that there was a fare minimum that RTD customers had to pay in order to lessen

the burden on taxpayers, but management was unsure of the basis for the ratio formula or rationale for the target.

**A BETTER MEASURE OF RTD'S EFFICIENCY AND EFFECTIVENESS HAS NOT BEEN DEVELOPED.** According to RTD management, it is difficult to develop a metric that measures the efficiency of its operations and includes factors that are entirely within RTD's control. For example, RTD's operating ratio is used by management to compare operating expenses to operating revenue, but it only shows the extent to which RTD relies on taxpayer funding, and not whether RTD is operating efficiently and economically. RTD management also reviews data in its annual service performance report, which compares actual ridership for each RTD service to the cost to provide the service to help identify the services and routes that may need marketing, revision, or elimination. However, these data may not be ideal for measuring efficiency because services and routes are approved by RTD's elected board of directors who strive to keep public transportation in their respective districts even when they may not be entirely cost-effective. RTD has not attempted to identify an alternative metric to the farebox recovery ratio.

During the 2020 Legislative Session, the General Assembly considered Senate Bill 20-151, which would have repealed the farebox recovery ratio requirement, but the bill was postponed indefinitely during the pandemic. The bill did not propose a different measure, but did propose that RTD annually report the percentage of its operating costs that are funded by revenues it collects.

In July 2020, the Governor, General Assembly, and RTD Board established the RTD Accountability Committee to provide feedback and recommendations for statutory change to address RTD's budgetary and service challenges. Since the RTD Accountability Committee is tasked with recommending statutory improvements, it would be appropriate for the RTD Board and management to work with the Accountability Committee to identify and recommend an alternative measure or measures to the farebox recovery ratio that can be reported to the Transportation Legislation Review Committee.

## RECOMMENDATION 5

The Regional Transportation District’s (RTD) Board of Directors and management should work with the RTD Accountability Committee to identify a meaningful performance metric(s) that accurately measures the efficiency and effectiveness of RTD operations, and is based on factors that are within RTD’s control. RTD then should work with the General Assembly to amend statute to replace the farebox recovery ratio requirement with the more meaningful performance metric(s) and report on it annually to the General Assembly.

## RESPONSE

### REGIONAL TRANSPORTATION DISTRICT

AGREE. IMPLEMENTATION DATE: SEPTEMBER 2021.

RTD agrees with the recommendation. Since the Accountability Committee was convened in July 2020, RTD has provided information and support in response to the Committee’s requests for information, including setting up an RTD public website to track and post this information. The Committee has discussed a number of potential recommended statutory amendments, including the farebox recovery ratio set forth in § 32-9-119.7, C.R.S.

RTD will continue to work with the Accountability Committee to provide information and support to the Committee to identify meaningful performance metric(s) based on factors within RTD’s control, and to amend the current farebox recovery ratio, as appropriate. The Accountability Committee has the option of providing a preliminary report with recommendations by December 31, 2020, and is required to issue a report of recommendations no later than July 1, 2021. Whether a bill is introduced during the 2021 or 2022 legislative session will depend in part on when the Accountability Committee makes its legislative recommendations.