



## **Review of Broward County Transit's Bus Operator Accidents**

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**February 27, 2013**

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**Office of the County Auditor  
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# Table of Contents

<b>Topic</b>	<b>Page</b>
<b>Executive Summary .....</b>	<b>3</b>
<b>Objectives, Scope, and Methodology .....</b>	<b>4</b>
<b>Background .....</b>	<b>4</b>
<b>Findings &amp; Recommendations .....</b>	<b>6</b>

## Executive Summary

This report presents the results of our review on Broward County Transit's (BCT) accident review process. This review was undertaken due to growing concerns about the safety of BCT's bus system and the driving records of their Bus Operators.

The objectives of our review were to determine the frequency of BCT accidents, compare it against peer transit agencies and evaluate compliance with policies and procedures that aim to reduce preventable accidents.

We analyzed bus accident statistics and records involving BCT Bus Operators that occurred during the four year period from October 1, 2008 through September 30, 2012. We found that:

1. Although BCT's preventable accident rate is increasing, BCT has not conducted sufficient benchmarking analysis to identify and implement effective practices used by peer transit agencies to reduce their rate,
2. While most Bus Operators have accident-free driving records, BCT lacks a system to effectively identify and take action against drivers involved in one or more preventable accidents, and
3. BCT did not timely identify Bus Operators with suspended CDLs and did not consistently take disciplinary actions against Bus Operators for failure to report suspended CDLs.

To correct the deficiencies noted above, we recommend the Board of County Commissioners direct the County Administrator to:

1. Determine reasons for BCT's increasing preventable accident rates and identify effective practices to reduce this rate. At a minimum, BCT should:
  - Complete its analysis of accident statistics and causes to determine why preventable accidents have increased over time,
  - Complete its benchmark analysis to identify where its accident rates rank among peers, and
  - Identify and implement effective practices to reduce preventable accidents.
2. Review existing processes and develop a comprehensive system that includes, at a minimum:
  - A reliable database to track accidents and monitor Bus Operator driving histories,
  - Consistently applying progressive discipline procedures for Bus Operators involved in preventable accidents, and
  - Providing training to Bus Operators who are responsible for multiple preventable accidents.
3. Evaluate BCT's policies and procedures for ensuring that Bus Operators possess a valid CDL. At a minimum, BCT should:

- Evaluate the effectiveness of Risk Management's new process to more expeditiously identify Bus Operators with suspended CDLs,
- Implement a disciplinary plan for Bus Operators who fail to immediately report suspensions of their CDL, and
- Enforce BCT policies and procedures for Bus Operators who do not reinstate their license within 10 business days.

## **Objectives, Scope, and Methodology**

Our objectives were to:

- Determine the frequency of Broward County Transit (BCT) Bus Operator accidents,
- Compare the frequency of BCT's accidents against peer transit agencies, and
- Evaluate BCT's compliance with policies and procedures regarding the prevention of accidents.

We reviewed accidents involving BCT Bus Operators during the period of October 1, 2008, through September 30, 2012; and BCT Bus Operators with suspended CDLs for the 12 month period ending October 30, 2012.

To accomplish our objectives we:

- Analyzed internal accident statistics,
- Analyzed accident statistics submitted to the National Transit Database (NTD) by BCT and other Florida transit agencies,
- Reviewed policies and procedures for Bus Operator accidents established by BCT,
- Interviewed staff from the Bus Operations and Compliance sections of BCT and selected Risk Management staff,
- Reviewed accident reports, disciplinary forms and other accident documentation for compliance with BCT policies and procedures for a judgmentally selected sample of 15 Bus Operators,
- Reviewed employee personnel files, State of Florida driving records, Risk Management notices and payroll timesheets for a judgmentally selected sample of 11 Bus Operators with suspended CDLs by the State of Florida, and,
- Observed a meeting of the Accident Review Board in November 2012.

## **Background**

BCT's bus system operates 41 routes covering most of Broward County. In fiscal year 2012, the bus system consisted of a fleet of 316 buses, carried approximately 38 million passengers and traveled approximately 13.7 million miles. As of September 30, 2012, there were a total of 628 Bus Operators employed at BCT. These Bus Operators are covered by a collective bargaining agreement that expires in September 30, 2013. This agreement, along with written BCT policies and procedures, govern how Bus Operators involved in accidents should be treated, reviewed and disciplined.

## **Accidents**

BCT defines bus accidents as collisions with vehicles, fixed objects or pedestrians. After an accident occurs, the Bus Operator completes an accident report, BCT personnel investigate the accident and accident documentation is presented to an Accident Review Board (ARB) that determines if the accident was preventable or not. The sections below describe the accident review process as represented by management.

### *Accident Documentation*

Bus Operators involved in accidents are required to immediately inform the BCT Communications Center of the location and circumstances of the accident. Communications Center staff contacts the police and dispatches available Supervisors to the scene to perform an investigation. After the investigation, Bus Operators are permitted to continue on their route if no major damage was done to the bus. Bus Operators and Supervisors are required to submit an accident report that contains a description of the accident to the Accident Review Clerk.

The Accident Review Clerk and Safety and Security Manager obtain all documentation needed by the ARB to review accidents. The Accident Review Clerk reviews all accident reports and orders police reports if a police officer was dispatched to the scene of the accident. Once police reports are received, the Accident Review Clerk prepares a listing of all accidents to be reviewed at the ARB meeting. The Safety and Security Manager then reviews the accident listing and downloads available video recordings of accidents.<sup>1</sup> The video recordings, police reports and accident reports are distributed to the ARB at the monthly meeting.

### *Accident Review Board (ARB)*

The ARB was established by the collective bargaining agreement and is composed of five members whose purpose is to review BCT accidents. Two members of the board are Union representatives, two members are from BCT Management and one member is from the County's Risk Management Division.

The ARB meets once a month to review accidents on the Accident Review Clerk's listing. The Chairman of the board leads a discussion of the accidents under review and the board observes available videos of the accidents, reviews all evidence and votes on whether to classify the accident as preventable or non-preventable. Preventable accidents are defined as accidents in which the driver failed to do everything that reasonably could have been done to avoid the crash. Whereas non-preventable accidents are defined as accidents in which a driver commits no errors and reacts reasonably to the errors of others.<sup>2</sup> This vote is generally conducted out loud

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<sup>1</sup> Video recordings are not always available because cameras on the bus may not be functioning properly. In addition, video recordings are not downloaded for accidents where the bus was rear ended.

<sup>2</sup> The ARB uses the National Safety Council's definition of preventable and non-preventable accidents as described in their 2004 "Guide to Determine Motor Vehicle Accident Preventability".

and the outcome is determined by majority vote. If the accident was determined to be non-preventable, the outcome is recorded in the ARB minutes and no further action is taken. However, if the accident was determined to be preventable, BCT management administers progressive discipline.

### *Progressive Discipline*

Within five days of the ARB meeting, management informs Bus Operators in writing of the board's decision and schedules an administrative hearing for Bus Operators with preventable accidents. At the hearings, management reviews the history of accidents over the last 24 months<sup>3</sup> with each Bus Operator. Progressive discipline and training is then given to Bus Operators for accidents in this period, as follows:

- First Preventable Accident- Disciplinary notice issued with a formal warning.
- Second Preventable Accident- Disciplinary notice issued with a one day suspension.
- Third Preventable Accident- Disciplinary notice issued with a three day suspension.
- Fourth Preventable Accident- Disciplinary notice issued with a five day suspension.
- Fifth Preventable Accident- Discipline up to and including termination.

## **Findings & Recommendations**

### **Finding 1**

**Although BCT's preventable accident rate is increasing, BCT has not conducted sufficient benchmarking analysis to identify and implement effective practices used by peer transit agencies to reduce their rate.**

Preventing accidents should be a top priority for public transit agencies because accidents involving buses are costly and can result in injuries and even death to passengers. According to public transit industry research, best practices for preventing accidents and promoting safe driving include a mechanism for tracking and analyzing accident data.<sup>4</sup>

To evaluate the frequency of BCT bus accidents, we analyzed accident rates<sup>5</sup> across time and against peers. In public transit, the accident rate is typically based on the number of accidents occurring per 100,000 miles driven. Specifically we:

- Evaluated preventable<sup>6</sup> accident rates for fiscal years 2009 through 2012, and
- Compared its overall accident rate, as reported on the National Transit Database (NTD), to peer transit agencies.<sup>7</sup>

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<sup>3</sup> The 24 month period of review is established by the collective bargaining agreement.

<sup>4</sup> For an example of industry research refer to: Transportation Research Board, Transit Cooperative Research Program Report 66, "Effective Practices to Reduce Bus Accidents," 2001

<sup>5</sup> Rate refers to 'the occurrence of events over a specific interval in time.'

<sup>6</sup> An accident is deemed to be preventable if it is independently determined that the driver did not do everything reasonably possible to avoid a collision.

<sup>7</sup> The NTD is the Federal Transit Administration's database for statistics concerning public transit agencies.

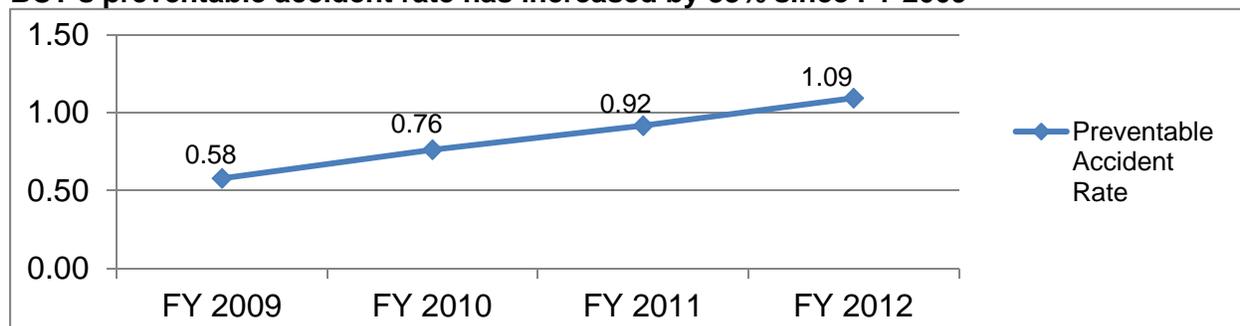
### **Preventable Accident Rate is Consistently Increasing**

To calculate BCT's preventable accident rate, we reviewed the accident statistics database maintained by the Risk Management Division for fiscal years 2009 through 2012. This database captures all accidents, no matter how minor, including fender-benders resulting in very limited or no damage. To standardize the data, we divided the total number of accidents that ARB determined to be preventable each year by 100,000 miles.

In the past four fiscal years, BCT's preventable accident rate increased by 88%, from 0.58 in Fiscal Year 2009 to 1.09 in Fiscal Year 2012. In effect, the Fiscal Year 2012 preventable accident rate of 1.09 means that 1.09 preventable accidents occurred for every 100,000 miles that BCT buses were driven. Over the four fiscal years reviewed, total miles driven remained consistent but the number of accidents increased yearly.

As shown in Exhibit 1 below, BCT's preventable accident rate has increased every year since fiscal year 2009. In response to our request to explain this annual and overall increase, BCT management indicated they track accident statistics and causes and are in the process of determining reasons for the increase.

**Exhibit 1**  
**BCT's preventable accident rate has increased by 88% since FY 2009**



Source: Risk Management's SHIELD Reporting System & BCT Hastus Scheduling Software

### **Overall Accident Rate is Similar to Most Peer Agencies**

To compare BCT's overall accident rate to other large Florida transit agencies, we analyzed NTD data for three fiscal years 2009 to 2011.<sup>8</sup> The FTA requires all U.S. transit agencies receiving federal grants to report accident statistics to the NTD. NTD uses a narrower definition of what constitutes an accident than BCT's more expansive definition; specifically, NTD-reported data include only accidents that occur when a bus is in service, and results in a death, injury and/or damages of at least \$25,000.

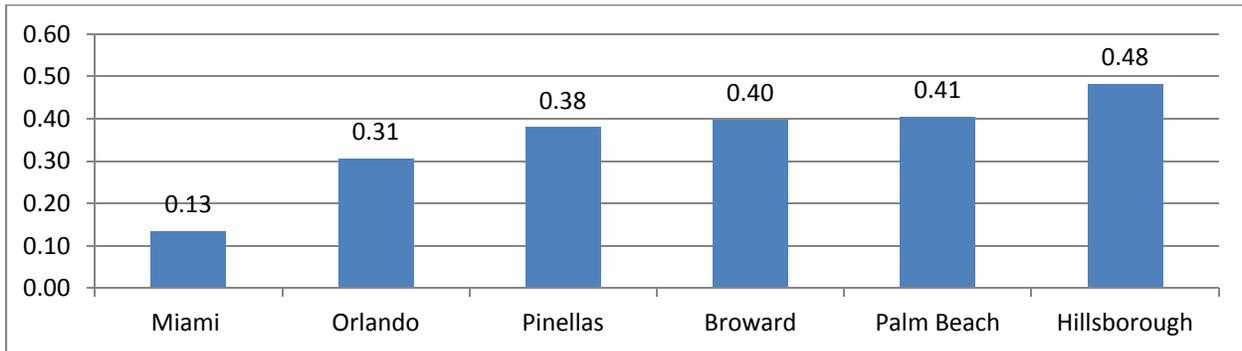
We found that BCT's overall average accident rate reported to the NTD is mid-range compared to its peer transit agencies. To enable a comparative analysis, we calculated

<sup>8</sup> The NTD was not updated to include accident data for fiscal year 2012

rates then averaged them for the three fiscal year period reviewed. Excluding Miami-Dade's overall accident rate, which is reportedly lower than the others, BCT's overall average accident rate of .4 is between the other four large Florida counties (see Exhibit 2 below).

## Exhibit 2

### BCT's overall average accident rate falls in between other large Florida transit agencies



Source: National Transit Database (Fiscal years 2009 to 2011)

### ***BCT Needs to Identify Effective Ways to Reduce Accidents***

BCT managers believe NTD data is unreliable due to agency self-reporting, therefore they initiated efforts to benchmark performance against peer agencies. As of February 2012, BCT had not completed benchmarking its performance against peer agencies or analyzing accident statistics to explain why BCT's preventable accident rates increased.

### ***Recommendation***

1. We recommend the Board of County Commissioners direct the County Administrator to determine reasons for BCT's increasing preventable accident rates and identify effective practices to reduce this rate. At a minimum, BCT should:
  - Complete its analysis of accident statistics and causes to determine why preventable accidents have increased over time,
  - Complete its benchmark analysis to identify where its accident rates rank among peers, and
  - Identify and implement effective practices to reduce preventable accidents.

## Finding 2

### **While most Bus Operators have accident-free driving records, BCT lacks a system to effectively identify and take action against drivers involved in one or more preventable accidents.**

As addressed in the previous finding, public transit agencies should implement practices to effectively reduce bus accident frequency. According to public transit industry literature, there are many reasons for bus accidents, including bus maintenance defects

such as faulty brakes and environmental factors such as roadway hazards. However, many bus accidents are the direct result of mistakes made by Bus Operators.<sup>9</sup>

Consequently, to reduce bus accident frequency, transit agencies should implement practices intended to reduce Bus Operator error. Although public transit industry literature<sup>10</sup> cites considerably varying practices among agencies to prevent accidents and promote safe driving, the following three components are generally considered to be essential:

- A mechanism to readily track and categorize accidents by the Bus Operator responsible for causing them;
- Administering progressive disciplinary procedures to deal with Bus Operators involved in preventable accidents; and
- Providing retraining to Bus Operators involved in preventable accidents.

Our review disclosed that BCT maintains a database containing accident statistics and has established policies and procedures relative to progressive discipline of Bus Operators. For example, Bus Operators are suspended three days after their third preventable accident within a 24 month period.

However, we identified deficiencies hindering BCT's ability to effectively reduce preventable accidents; specifically we found that:

- BCT's accident database does not differentiate between preventable and non-preventable accidents, thus limiting its use to identify Bus Operators requiring remedial actions;
- BCT inconsistently enforced progressive discipline provisions, thereby diminishing its impact in correcting Bus Operator behaviors; and
- BCT did not routinely provide retraining to Bus Operators responsible for multiple preventable accidents, which impedes performance improvements.

### ***Database Limitations Hinder its Usefulness***

Due to problems with BCT's internal database, we used accident data contained in Risk Management's system to conduct our review. BCT informed us that their database may contain incomplete and inaccurate accident data. In addition, BCT's system does not capture whether each accident is deemed preventable or non-preventable. Therefore, BCT managers cannot use this system to readily identify Bus Operators involved in preventable accidents requiring discipline and retraining.

### ***Most Bus Operators had no Preventable Accidents***

To determine the extent to which Bus Operators are responsible for preventable accidents, we analyzed Risk Management accident data for the four year period from October 1, 2009, through September 30, 2012. As previously discussed, this database

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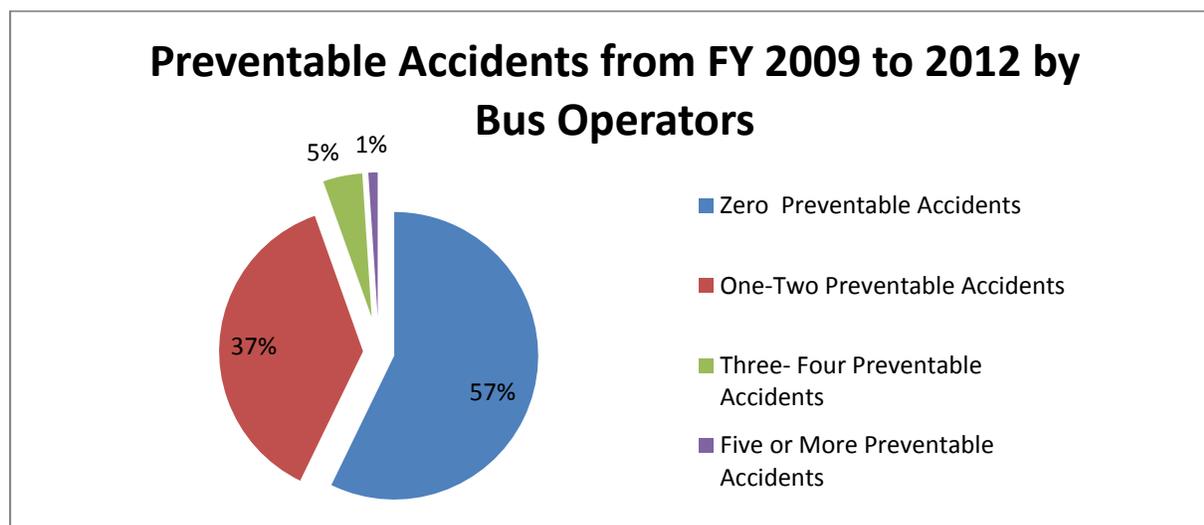
<sup>9</sup> For an example of public transit research refer to: Federal Motor Carrier Safety Administration, "The Bus Crash Causation Study Report To Congress," November 2009

<sup>10</sup> For an example of public transit industry research refer to: Transportation Research Board, Transit Cooperative Research Program Report 66, "Effective Practices to Reduce Bus Accidents," 2001

contains all preventable accidents occurring during this period, including minor accidents resulting in very limited or no injuries or damages.

Of the 771<sup>11</sup> Bus Operators employed during our review period, 441 (57%) were not involved in a preventable accident during this period (see Exhibit 3 below). This statistic is relevant because Bus Operators drive nearly double the number of miles driven by an average driver. For example, BCT Bus Operators drive an average of approximately 26,000 miles each fiscal year; while the Florida Department of Transportation estimates the average person drives approximately 13,500 miles per year.

**Exhibit 3**  
**Most Bus Operators had accident-free driving records in a four-year period**



Source: Risk Management's SHIELD Reporting System

**Relatively Few Bus Operators had Multiple Preventable Accidents**

As shown in Exhibit 3 above, 42 (6%) of 771 Bus Operators were responsible for three or more preventable accidents during this four year review period. The remaining 288 (37%) Bus Operators had one or two preventable accidents in four years.

It is common in the transit industry for a relatively small number of Bus Operators to be involved in a higher number of preventable accidents than the average. These Bus Operators are referred to in the industry as “accident repeaters” and many transit agencies have developed disciplinary policies and procedures and training programs to deal specifically with these drivers.<sup>12</sup> In fact, BCT’s progressive discipline procedures were developed with a focus on accident repeaters as penalties increase for every preventable accident.

<sup>11</sup> This is an unduplicated count of Bus Operators who were employed by BCT from October 1, 2008 through September 30, 2012.

<sup>12</sup> Transportation Research Board, Transit Cooperative Research Program Report 66, “Effective Practices to Reduce Bus Accidents,” 2001

### ***Progressive Disciplinary Action not Taken against Worst Drivers***

BCT has established a progressive discipline policy and procedures to deal with Bus Operators whose accidents the ARB deemed to be preventable. Before administering discipline, BCT managers review a Bus Operator's history and only consider preventable accidents occurring in the previous 24 months. Discipline consists of a warning for the first preventable accident, escalating to suspensions for the second through fourth preventable accidents, and culminating in termination for the fifth accident during a 24-month period.

To determine compliance with this progressive discipline policy, we reviewed the accident histories of Bus Operators with the worst driving records. Of the 42 Bus Operators having three or more preventable accidents within a 24-month period, we randomly selected 15 (36%) to ascertain whether BCT had followed its progressive discipline process.

We found that BCT took appropriate action in accordance with its progressive disciplinary policy for eight (53%) of 15 Bus Operators in our sample. However, BCT did not follow its progressive discipline process for seven (47%) of these 15 Bus Operators. Of these seven Bus Operators, we found the following instances of noncompliance with BCT's established progressive discipline policy and procedures:

- Three Bus Operators who each had five preventable accidents within a 24-month period were not terminated as required by BCT policy. BCT managers could not explain or provide documentation as to why the established policy was not enforced, indicating lax management oversight.
- A Bus Operator was not given the required warning and suspension for his first and second preventable accidents while employed as a maintenance worker.<sup>13</sup> Within six months of being promoted as a Bus Operator, he was involved in a third preventable accident. If BCT had taken required disciplinary actions for the first two preventable accidents, and properly documented them, he may not have been promoted to a Bus Operator position.
- Three Bus Operators received suspensions that were inconsistent with the required progressive disciplinary plan. For example, a Bus Operator was issued a one day suspension instead of a three day suspension for his third preventable accident within an eight month period. It appears that incorrect suspensions were given because of the deficiencies with BCT's database that we previously discussed.

### ***Retraining is Not Routinely Provided to 'Accident Repeaters'***

Training is generally considered among transit officials to be a very effective tool to reduce bus accidents. We identified several studies that demonstrated the effectiveness of training in reducing preventable accidents among accident repeaters. For example, the Tri-County Metropolitan Transportation District of Oregon (Tri-Met) conducted two evaluations of the effectiveness of its defensive driver training program

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<sup>13</sup> Maintenance employees drive County buses for various purposes and are subject to the same progressive discipline as Bus Operators for preventable accidents

that concluded its implementation resulted in 45% and 65% reductions in preventable accidents.

We reviewed the employee files of 15 Bus Operators who are deemed ‘accident repeaters.’ Retraining was not provided to 9 (60%) of these Bus Operators following any of their preventable accidents. The other 6 Bus Operators in our sample received retraining after one, but not all of their multiple preventable accidents. BCT managers indicated their awareness of studies illustrating the effectiveness of providing training to Bus Operators and strongly believe training is vitally important in reducing preventable accidents. However, they said training has not been routinely provided for several years due to its prohibitive cost.

### **Recommendation**

2. We recommend the Board of County Commissioners direct the County Administrator to review existing processes and develop a comprehensive system that includes, at a minimum:
  - A reliable database to track accidents and monitor Bus Operator driving histories,
  - Consistently applying progressive discipline procedures for Bus Operators involved in preventable accidents, and
  - Providing training to Bus Operators who are responsible for multiple preventable accidents.

### **Finding 3**

**BCT did not timely identify Bus Operators with suspended CDLs and did not consistently take disciplinary actions against Bus Operators for failure to report suspended CDLs.**

Florida law<sup>14</sup> requires Bus Operators to have a valid Commercial Driver’s License (CDL) to legally operate a bus. Bus Operators are not permitted to drive a public bus if their CDL is suspended. CDL’s may be suspended for various reasons, such as Bus Operators failing to renew their insurance or pay traffic fines.

BCT has established policies to ensure compliance with these statutory requirements, including the following:

- Bus Operators with suspended licenses are required to immediately notify BCT management and must not operate a bus;
- Bus Operators who do not immediately report their CDL suspension to BCT face disciplinary action; and
- Bus Operators who do not reinstate their CDL within 10 business days of its suspension must be terminated.

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<sup>14</sup> Section 332.03, *Florida Statutes*

To evaluate BCT compliance with its CDL policies, we reviewed a random sample of files pertaining to Bus Operators with suspended CDLs. We sampled 11 (37%) of the 30 Bus Operators identified by Risk Management with suspended CDLs during the period of November 1, 2011, through October 30, 2012. We found that:

- All sampled Bus Operators drove buses with suspended CDLs for periods ranging from 3 to 96 days, raising questions about the effectiveness of BCT's processes; and
- Most sampled Bus Operators were not disciplined or terminated in accordance with BCT policy.

### ***BCT Lacks Effective Process to Immediately Identify Suspended CDLs***

To identify Bus Operators with suspended CDLs, BCT relies on two primary sources: (1) the County's Risk Management Division, and (2) the Bus Operators themselves. Risk Management staff performs periodic checks on the status of Bus Operator CDLs against the State of Florida's database. If Risk Management staff identifies a Bus Operator with a suspended CDL during their review, they immediately notify BCT's management who pulls the Bus Operator from service.

In our review, we found that BCT immediately pulled Bus Operators from service when notified by Risk Management. However, we found the following deficiencies with this process:

1. Prior to February 2013, Risk Management's reviews for suspended CDLs were performed monthly resulting in potential delays in identifying suspended bus operators and notifying BCT. Further, Risk Management staff acknowledged they did not regularly and consistently perform CDL checks during part of fiscal years 2011 and 2012 because during that time the State of Florida instituted a new charge for this service. Beginning in February 2012, Risk Management adopted a new cost-effective process for performing CDL checks.
2. None of the sampled Bus Operators driving buses with suspended CDLs notified BCT management, as required by BCT policy. BCT managers could not provide documentation of reasons why Bus Operators did not comply with this policy.

The County faces a potential serious liability if Bus Operators driving with suspended CDLs are involved in a preventable accident.<sup>15</sup> Therefore, it is imperative that BCT have an effective process to immediately identify and pull from service Bus Operators with suspended CDLs.

### ***BCT did not comply with CDL Policy***

We also found BCT did not properly discipline Bus Operators who drove County buses with suspended CDLs; specifically we found that:

- Although none of the 11 sampled Bus Operators immediately reported their CDL suspensions to BCT, as required, BCT did not take required disciplinary action against most of them. We found documentation consisting of a warning letter for

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<sup>15</sup> None of the 11 Bus Operator sampled were involved in preventable accidents while their CDLs were suspended.

two Bus Operators in our review sample; but 9 (82%) did not receive any disciplinary action because BCT managers stated they do not have written procedures related to this policy.

- On two occasions in 2012, a Bus Operator was not terminated even though he failed to renew his licenses within 10 business days as required by BCT policy. The Bus Operator reinstated his CDL within 12 business days for his first suspension and 14 business days for his second suspension. BCT management could not explain why the Bus Operator was not terminated on either occasion.

Unless BCT enforces its CDL policies, Bus Operators may not fully comprehend the importance and potential adverse effects of not reporting CDL suspensions and complying with Florida law.

### ***Recommendation***

3. We recommend the Board of County Commissioners direct the County Administrator to evaluate BCT's policies and procedures for ensuring that Bus Operators possess a valid CDL. At a minimum, BCT should:
  - Evaluate the effectiveness of Risk Management's new process to more expeditiously identify Bus Operators with suspended CDLs,
  - Implement a disciplinary plan for Bus Operators who fail to immediately report suspensions of their CDL, and
  - Enforce BCT policies and procedures for Bus Operators who do not reinstate their license within 10 business days.